

GW – 001

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**GW
REMEDIATION
& MONITORING
REPORT**

2014



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

April 25, 2014

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: Refinery Wells 4-15-14

OrderNo.: 1404736

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 4/16/2014 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
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Workorder Sample Summary

WO#: 1404736

25-Apr-14

CLIENT: Western Refining Southwest, Inc.

Project: Refinery Wells 4-15-14

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
1404736-001	MW-8		4/15/2014 1:30:00 PM	4/16/2014 10:10:00 AM	Aqueous

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404736**

Date Reported: **4/25/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-8

Project: Refinery Wells 4-15-14

Collection Date: 4/15/2014 1:30:00 PM

Lab ID: 1404736-001

Matrix: AQUEOUS

Received Date: 4/16/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: KJH	
Benzene	ND	1.0		µg/L	1	4/18/2014 2:38:50 PM	R18099
Toluene	ND	1.0		µg/L	1	4/18/2014 2:38:50 PM	R18099
Ethylbenzene	ND	1.0		µg/L	1	4/18/2014 2:38:50 PM	R18099
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/18/2014 2:38:50 PM	R18099
Xylenes, Total	1.9	1.5		µg/L	1	4/18/2014 2:38:50 PM	R18099
Surr: 1,2-Dichloroethane-d4	93.5	70-130		%REC	1	4/18/2014 2:38:50 PM	R18099
Surr: 4-Bromofluorobenzene	92.1	70-130		%REC	1	4/18/2014 2:38:50 PM	R18099
Surr: Dibromofluoromethane	93.9	70-130		%REC	1	4/18/2014 2:38:50 PM	R18099
Surr: Toluene-d8	90.6	70-130		%REC	1	4/18/2014 2:38:50 PM	R18099

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
	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 greater than 2.
	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#: 1404736

25-Apr-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 4-15-14

Sample ID	5mL-rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R18099	RunNo:	18099					
Prep Date:		Analysis Date:	4/18/2014	SeqNo:	522548	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	9.1		10.00		91.3	70	130			
Surr: 4-Bromofluorobenzene	9.3		10.00		93.1	70	130			
Surr: Dibromofluoromethane	9.5		10.00		95.0	70	130			
Surr: Toluene-d8	9.1		10.00		90.9	70	130			

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 greater than 2.
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: **Western Refining Southw**

Work Order Number: **1404736**

RcptNo: **1**

Received by/date: *Jim* *04/16/14*

Logged By: **Ashley Gallegos**

4/16/2014 10:10:00 AM

Completed By: **Ashley Gallegos**

4/16/2014 10:45:33 AM

Reviewed By: *A* *04/16/14*

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 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	2.1	Good	Yes			



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

October 02, 2014

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: Refinery Wells 8-25-14

OrderNo.: 1408C99

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 9 sample(s) on 8/26/2014 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: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-001A

Client Sample ID: MW-29
Collection Date: 8/25/2014 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: KJH			
Benzene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Toluene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Ethylbenzene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Naphthalene	ND	2.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
1-Methylnaphthalene	ND	4.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
2-Methylnaphthalene	ND	4.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Acetone	ND	10		µg/L	1	9/2/2014 4:56:06 PM	R20949
Bromobenzene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Bromodichloromethane	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Bromoform	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Bromomethane	ND	3.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
2-Butanone	ND	10		µg/L	1	9/2/2014 4:56:06 PM	R20949
Carbon disulfide	ND	10		µg/L	1	9/2/2014 4:56:06 PM	R20949
Carbon Tetrachloride	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Chlorobenzene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Chloroethane	ND	2.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Chloroform	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Chloromethane	ND	3.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
2-Chlorotoluene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
4-Chlorotoluene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
cis-1,2-DCE	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Dibromochloromethane	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Dibromomethane	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
1,2-Dichlorobenzene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
1,3-Dichlorobenzene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
1,4-Dichlorobenzene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Dichlorodifluoromethane	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
1,1-Dichloroethane	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
1,1-Dichloroethene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
1,2-Dichloropropane	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
1,3-Dichloropropane	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
2,2-Dichloropropane	ND	2.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
1,1-Dichloropropene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Hexachlorobutadiene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1408C99

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-001A

Client Sample ID: MW-29
Collection Date: 8/25/2014 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: KJH			
2-Hexanone	ND	10		µg/L	1	9/2/2014 4:56:06 PM	R20949
Isopropylbenzene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
4-Isopropyltoluene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
4-Methyl-2-pentanone	ND	10		µg/L	1	9/2/2014 4:56:06 PM	R20949
Methylene Chloride	ND	3.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
n-Butylbenzene	ND	3.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
n-Propylbenzene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
sec-Butylbenzene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Styrene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
tert-Butylbenzene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
trans-1,2-DCE	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
1,1,1-Trichloroethane	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
1,1,2-Trichloroethane	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Trichloroethene (TCE)	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Trichlorofluoromethane	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Vinyl chloride	ND	1.0		µg/L	1	9/2/2014 4:56:06 PM	R20949
Xylenes, Total	ND	1.5		µg/L	1	9/2/2014 4:56:06 PM	R20949
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	9/2/2014 4:56:06 PM	R20949
Surr: 4-Bromofluorobenzene	98.9	70-130		%REC	1	9/2/2014 4:56:06 PM	R20949
Surr: Dibromofluoromethane	99.5	70-130		%REC	1	9/2/2014 4:56:06 PM	R20949
Surr: Toluene-d8	96.8	70-130		%REC	1	9/2/2014 4:56:06 PM	R20949

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 2 of 76

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-001B

Client Sample ID: MW-29
Collection Date: 8/25/2014 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/27/2014 2:11:35 PM	R20843
Surr: BFB	95.4	70.9-130		%REC	1	8/27/2014 2:11:35 PM	R20843

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 3 of 76

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-001C

Client Sample ID: MW-29
Collection Date: 8/25/2014 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/27/2014 8:37:10 AM	14963
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/27/2014 8:37:10 AM	14963
Surr: DNOP	109	75.2-161		%REC	1	8/27/2014 8:37:10 AM	14963

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: **1408C99**Date Reported: **10/2/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-001D

Client Sample ID: MW-29
Collection Date: 8/25/2014 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.27	0.10		mg/L	1	8/26/2014 12:47:14 PM	R20831
Chloride	48	10		mg/L	20	8/26/2014 1:24:29 PM	R20831
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/26/2014 12:47:14 PM	R20831
Bromide	0.34	0.10		mg/L	1	8/26/2014 12:47:14 PM	R20831
Nitrogen, Nitrate (As N)	0.48	0.10		mg/L	1	8/26/2014 12:47:14 PM	R20831
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/26/2014 12:47:14 PM	R20831
Sulfate	210	10		mg/L	20	8/26/2014 1:24:29 PM	R20831
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	260	1.0	H	mg CO2/L	1	9/2/2014 12:13:28 PM	R20962
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	1100	0.010		µmhos/cm	1	9/2/2014 12:13:28 PM	R20962
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	280	20		mg/L CaCO3	1	9/2/2014 12:13:28 PM	R20962
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	9/2/2014 12:13:28 PM	R20962
Total Alkalinity (as CaCO3)	280	20		mg/L CaCO3	1	9/2/2014 12:13:28 PM	R20962
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	720	20.0	*	mg/L	1	9/2/2014 10:07:00 AM	14989

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-001E

Client Sample ID: MW-29
Collection Date: 8/25/2014 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	0.021	0.0020		mg/L	1	8/28/2014 6:25:26 PM	R20883
Cadmium	ND	0.0020		mg/L	1	8/28/2014 6:25:26 PM	R20883
Calcium	83	1.0		mg/L	1	8/28/2014 6:25:26 PM	R20883
Chromium	ND	0.0060		mg/L	1	8/28/2014 6:25:26 PM	R20883
Iron	ND	0.020		mg/L	1	8/28/2014 6:25:26 PM	R20883
Magnesium	19	1.0		mg/L	1	8/28/2014 6:25:26 PM	R20883
Manganese	1.7	0.010	*	mg/L	5	8/29/2014 3:11:23 PM	R20915
Potassium	2.2	1.0		mg/L	1	8/28/2014 6:25:26 PM	R20883
Silver	ND	0.0050		mg/L	1	8/28/2014 6:25:26 PM	R20883
Sodium	130	5.0		mg/L	5	8/29/2014 3:11:23 PM	R20915
Zinc	ND	0.010		mg/L	1	8/28/2014 6:25:26 PM	R20883
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Arsenic	0.0013	0.0010		mg/L	1	9/8/2014 5:16:53 PM	R21084
Copper	0.0022	0.0010		mg/L	1	9/8/2014 5:16:53 PM	R21084
Lead	ND	0.0010		mg/L	1	9/8/2014 5:16:53 PM	R21084
Selenium	0.0025	0.0010		mg/L	1	9/8/2014 5:16:53 PM	R21084
Uranium	0.0034	0.0010		mg/L	1	9/8/2014 5:16:53 PM	R21084
EPA METHOD 7470: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	8/30/2014 1:28:45 PM	15037

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-001F

Client Sample ID: MW-29
Collection Date: 8/25/2014 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	9/5/2014 5:48:34 PM	15120
Barium	0.026	0.0020		mg/L	1	9/5/2014 5:48:34 PM	15120
Cadmium	ND	0.0020		mg/L	1	9/5/2014 5:48:34 PM	15120
Chromium	ND	0.0060		mg/L	1	9/5/2014 5:48:34 PM	15120
Lead	ND	0.0050		mg/L	1	9/5/2014 5:48:34 PM	15120
Selenium	ND	0.050		mg/L	1	9/5/2014 5:48:34 PM	15120
Silver	ND	0.0050		mg/L	1	9/9/2014 4:43:22 PM	15187
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	9/4/2014 2:49:14 PM	15109

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 7 of 76

Analytical Report

Lab Order: 1408C99

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-002A

Client Sample ID: MW-30
Collection Date: 8/25/2014 11:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: KJH			
Benzene	4600	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
Toluene	2200	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
Ethylbenzene	3900	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
Methyl tert-butyl ether (MTBE)	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
1,2,4-Trimethylbenzene	3400	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
1,3,5-Trimethylbenzene	840	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
1,2-Dichloroethane (EDC)	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
1,2-Dibromoethane (EDB)	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
Naphthalene	860	200		µg/L	100	9/2/2014 6:25:19 PM	R20949
1-Methylnaphthalene	ND	400		µg/L	100	9/2/2014 6:25:19 PM	R20949
2-Methylnaphthalene	ND	400		µg/L	100	9/2/2014 6:25:19 PM	R20949
Acetone	ND	1000		µg/L	100	9/2/2014 6:25:19 PM	R20949
Bromobenzene	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
Bromodichloromethane	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
Bromoform	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
Bromomethane	ND	300		µg/L	100	9/2/2014 6:25:19 PM	R20949
2-Butanone	ND	1000		µg/L	100	9/2/2014 6:25:19 PM	R20949
Carbon disulfide	ND	1000		µg/L	100	9/2/2014 6:25:19 PM	R20949
Carbon Tetrachloride	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
Chlorobenzene	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
Chloroethane	ND	200		µg/L	100	9/2/2014 6:25:19 PM	R20949
Chloroform	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
Chloromethane	ND	300		µg/L	100	9/2/2014 6:25:19 PM	R20949
2-Chlorotoluene	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
4-Chlorotoluene	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
cis-1,2-DCE	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
cis-1,3-Dichloropropene	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
1,2-Dibromo-3-chloropropane	ND	200		µg/L	100	9/2/2014 6:25:19 PM	R20949
Dibromochloromethane	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
Dibromomethane	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
1,2-Dichlorobenzene	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
1,3-Dichlorobenzene	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
1,4-Dichlorobenzene	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
Dichlorodifluoromethane	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
1,1-Dichloroethane	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
1,1-Dichloroethene	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
1,2-Dichloropropane	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
1,3-Dichloropropane	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
2,2-Dichloropropane	ND	200		µg/L	100	9/2/2014 6:25:19 PM	R20949
1,1-Dichloropropene	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
Hexachlorobutadiene	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408C99****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **10/2/2014****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-30**Project:** Refinery Wells 8-25-14**Collection Date:** 8/25/2014 11:45:00 AM**Lab ID:** 1408C99-002A**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: KJH			
2-Hexanone	ND	1000		µg/L	100	9/2/2014 6:25:19 PM	R20949
Isopropylbenzene	150	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
4-Isopropyltoluene	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
4-Methyl-2-pentanone	ND	1000		µg/L	100	9/2/2014 6:25:19 PM	R20949
Methylene Chloride	ND	300		µg/L	100	9/2/2014 6:25:19 PM	R20949
n-Butylbenzene	ND	300		µg/L	100	9/2/2014 6:25:19 PM	R20949
n-Propylbenzene	610	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
sec-Butylbenzene	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
Styrene	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
tert-Butylbenzene	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
1,1,1,2-Tetrachloroethane	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
1,1,2,2-Tetrachloroethane	ND	200		µg/L	100	9/2/2014 6:25:19 PM	R20949
Tetrachloroethene (PCE)	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
trans-1,2-DCE	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
trans-1,3-Dichloropropene	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
1,2,3-Trichlorobenzene	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
1,2,4-Trichlorobenzene	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
1,1,1-Trichloroethane	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
1,1,2-Trichloroethane	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
Trichloroethene (TCE)	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
Trichlorofluoromethane	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
1,2,3-Trichloropropane	ND	200		µg/L	100	9/2/2014 6:25:19 PM	R20949
Vinyl chloride	ND	100		µg/L	100	9/2/2014 6:25:19 PM	R20949
Xylenes, Total	14000	150		µg/L	100	9/2/2014 6:25:19 PM	R20949
Surr: 1,2-Dichloroethane-d4	109	70-130		%REC	100	9/2/2014 6:25:19 PM	R20949
Surr: 4-Bromofluorobenzene	94.0	70-130		%REC	100	9/2/2014 6:25:19 PM	R20949
Surr: Dibromofluoromethane	99.8	70-130		%REC	100	9/2/2014 6:25:19 PM	R20949
Surr: Toluene-d8	93.7	70-130		%REC	100	9/2/2014 6:25:19 PM	R20949

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-002B

Client Sample ID: MW-30
Collection Date: 8/25/2014 11:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	73	5.0		mg/L	100	8/27/2014 2:41:50 PM	R20843
Surr: BFB	112	70.9-130		%REC	100	8/27/2014 2:41:50 PM	R20843

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-002C

Client Sample ID: MW-30
Collection Date: 8/25/2014 11:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	9.4	0.20		mg/L	1	8/28/2014 11:10:59 PM	14963
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/28/2014 11:10:59 PM	14963
Surr: DNOP	117	75.2-161		%REC	1	8/28/2014 11:10:59 PM	14963

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-002D

Client Sample ID: MW-30
Collection Date: 8/25/2014 11:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	ND	0.50		mg/L	5	8/26/2014 2:01:42 PM	R20831
Chloride	270	10		mg/L	20	8/26/2014 2:14:07 PM	R20831
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	8/26/2014 2:01:42 PM	R20831
Bromide	4.7	0.50		mg/L	5	8/26/2014 2:01:42 PM	R20831
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	8/26/2014 2:01:42 PM	R20831
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	8/26/2014 2:01:42 PM	R20831
Sulfate	47	2.5		mg/L	5	8/26/2014 2:01:42 PM	R20831
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	1200	2.5	H	mg CO2/L	2.5	9/2/2014 6:58:37 PM	R20962
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	2900	0.010		µmhos/cm	1	9/2/2014 12:27:57 PM	R20962
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	1300	50		mg/L CaCO3	2.5	9/2/2014 6:58:37 PM	R20962
Carbonate (As CaCO3)	ND	5.0		mg/L CaCO3	2.5	9/2/2014 6:58:37 PM	R20962
Total Alkalinity (as CaCO3)	1300	50		mg/L CaCO3	2.5	9/2/2014 6:58:37 PM	R20962
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2060	100	*	mg/L	1	9/2/2014 10:07:00 AM	14989

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-002E

Client Sample ID: MW-30
Collection Date: 8/25/2014 11:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	0.44	0.0020		mg/L	1	8/28/2014 6:27:19 PM	R20883
Cadmium	ND	0.0020		mg/L	1	8/28/2014 6:27:19 PM	R20883
Calcium	200	10		mg/L	10	8/29/2014 3:13:11 PM	R20915
Chromium	ND	0.0060		mg/L	1	8/28/2014 6:27:19 PM	R20883
Iron	0.35	0.020	*	mg/L	1	8/28/2014 6:27:19 PM	R20883
Magnesium	41	1.0		mg/L	1	8/28/2014 6:27:19 PM	R20883
Manganese	1.1	0.020	*	mg/L	10	8/29/2014 3:13:11 PM	R20915
Potassium	3.2	1.0		mg/L	1	8/28/2014 6:27:19 PM	R20883
Silver	ND	0.0050		mg/L	1	8/28/2014 6:27:19 PM	R20883
Sodium	610	10		mg/L	10	8/29/2014 3:13:11 PM	R20915
Zinc	ND	0.010		mg/L	1	8/28/2014 6:27:19 PM	R20883
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Arsenic	ND	0.010		mg/L	10	9/10/2014 1:14:01 PM	R21134
Copper	ND	0.010		mg/L	10	9/10/2014 1:14:01 PM	R21134
Lead	ND	0.010		mg/L	10	9/10/2014 1:14:01 PM	R21134
Selenium	0.014	0.010		mg/L	10	9/10/2014 1:14:01 PM	R21134
Uranium	ND	0.010		mg/L	10	9/10/2014 1:14:01 PM	R21134
EPA METHOD 7470: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	8/30/2014 1:30:32 PM	15037

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-002F

Client Sample ID: MW-30
Collection Date: 8/25/2014 11:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	9/5/2014 5:54:16 PM	15120
Barium	0.66	0.0020		mg/L	1	9/5/2014 5:54:16 PM	15120
Cadmium	ND	0.0020		mg/L	1	9/5/2014 5:54:16 PM	15120
Chromium	ND	0.0060		mg/L	1	9/5/2014 5:54:16 PM	15120
Lead	ND	0.0050		mg/L	1	9/5/2014 5:54:16 PM	15120
Selenium	ND	0.050		mg/L	1	9/5/2014 5:54:16 PM	15120
Silver	ND	0.0050		mg/L	1	9/9/2014 4:49:23 PM	15187
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	9/4/2014 2:51:05 PM	15109

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-003A

Client Sample ID: Trip Blank
Collection Date:
Matrix: Trip Blank

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: KJH
Benzene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Toluene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Ethylbenzene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Naphthalene	ND	2.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
1-Methylnaphthalene	ND	4.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
2-Methylnaphthalene	ND	4.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Acetone	ND	10		µg/L	1	9/2/2014 7:24:49 PM	R20949
Bromobenzene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Bromodichloromethane	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Bromoform	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Bromomethane	ND	3.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
2-Butanone	ND	10		µg/L	1	9/2/2014 7:24:49 PM	R20949
Carbon disulfide	ND	10		µg/L	1	9/2/2014 7:24:49 PM	R20949
Carbon Tetrachloride	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Chlorobenzene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Chloroethane	ND	2.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Chloroform	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Chloromethane	ND	3.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
2-Chlorotoluene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
4-Chlorotoluene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
cis-1,2-DCE	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Dibromochloromethane	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Dibromomethane	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
1,2-Dichlorobenzene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
1,3-Dichlorobenzene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
1,4-Dichlorobenzene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Dichlorodifluoromethane	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
1,1-Dichloroethane	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
1,1-Dichloroethene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
1,2-Dichloropropane	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
1,3-Dichloropropane	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
2,2-Dichloropropane	ND	2.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
1,1-Dichloropropene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Hexachlorobutadiene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408C99****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **10/2/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-003A

Client Sample ID: Trip Blank
Collection Date:
Matrix: Trip Blank

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: KJH			
2-Hexanone	ND	10		µg/L	1	9/2/2014 7:24:49 PM	R20949
Isopropylbenzene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
4-Isopropyltoluene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
4-Methyl-2-pentanone	ND	10		µg/L	1	9/2/2014 7:24:49 PM	R20949
Methylene Chloride	ND	3.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
n-Butylbenzene	ND	3.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
n-Propylbenzene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
sec-Butylbenzene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Styrene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
tert-Butylbenzene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
trans-1,2-DCE	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
1,1,1-Trichloroethane	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
1,1,2-Trichloroethane	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Trichloroethene (TCE)	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Trichlorofluoromethane	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Vinyl chloride	ND	1.0		µg/L	1	9/2/2014 7:24:49 PM	R20949
Xylenes, Total	ND	1.5		µg/L	1	9/2/2014 7:24:49 PM	R20949
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	1	9/2/2014 7:24:49 PM	R20949
Surr: 4-Bromofluorobenzene	90.9	70-130		%REC	1	9/2/2014 7:24:49 PM	R20949
Surr: Dibromofluoromethane	98.4	70-130		%REC	1	9/2/2014 7:24:49 PM	R20949
Surr: Toluene-d8	91.2	70-130		%REC	1	9/2/2014 7:24:49 PM	R20949

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408C99**Date Reported: **10/2/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** Rinsate**Project:** Refinery Wells 8-25-14**Collection Date:** 8/25/2014 12:00:00 PM**Lab ID:** 1408C99-004A**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: KJH
Benzene	ND	1.0		µg/L	1	9/2/2014 7:54:33 PM	R20949
Toluene	ND	1.0		µg/L	1	9/2/2014 7:54:33 PM	R20949
Ethylbenzene	ND	1.0		µg/L	1	9/2/2014 7:54:33 PM	R20949
Xylenes, Total	ND	1.5		µg/L	1	9/2/2014 7:54:33 PM	R20949
Surr: 1,2-Dichloroethane-d4	104	70-130		%REC	1	9/2/2014 7:54:33 PM	R20949
Surr: 4-Bromofluorobenzene	96.8	70-130		%REC	1	9/2/2014 7:54:33 PM	R20949
Surr: Dibromofluoromethane	99.2	70-130		%REC	1	9/2/2014 7:54:33 PM	R20949
Surr: Toluene-d8	90.9	70-130		%REC	1	9/2/2014 7:54:33 PM	R20949

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-005A

Client Sample ID: MW-31
Collection Date: 8/25/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: KJH			
Benzene	1600	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
Toluene	130	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
Ethylbenzene	770	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
Methyl tert-butyl ether (MTBE)	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
1,2,4-Trimethylbenzene	1200	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
1,3,5-Trimethylbenzene	100	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
1,2-Dichloroethane (EDC)	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
1,2-Dibromoethane (EDB)	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
Naphthalene	180	100		µg/L	50	9/2/2014 8:24:17 PM	R20949
1-Methylnaphthalene	ND	200		µg/L	50	9/2/2014 8:24:17 PM	R20949
2-Methylnaphthalene	ND	200		µg/L	50	9/2/2014 8:24:17 PM	R20949
Acetone	ND	500		µg/L	50	9/2/2014 8:24:17 PM	R20949
Bromobenzene	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
Bromodichloromethane	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
Bromoform	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
Bromomethane	ND	150		µg/L	50	9/2/2014 8:24:17 PM	R20949
2-Butanone	ND	500		µg/L	50	9/2/2014 8:24:17 PM	R20949
Carbon disulfide	ND	500		µg/L	50	9/2/2014 8:24:17 PM	R20949
Carbon Tetrachloride	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
Chlorobenzene	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
Chloroethane	ND	100		µg/L	50	9/2/2014 8:24:17 PM	R20949
Chloroform	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
Chloromethane	ND	150		µg/L	50	9/2/2014 8:24:17 PM	R20949
2-Chlorotoluene	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
4-Chlorotoluene	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
cis-1,2-DCE	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
cis-1,3-Dichloropropene	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
1,2-Dibromo-3-chloropropane	ND	100		µg/L	50	9/2/2014 8:24:17 PM	R20949
Dibromochloromethane	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
Dibromomethane	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
1,2-Dichlorobenzene	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
1,3-Dichlorobenzene	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
1,4-Dichlorobenzene	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
Dichlorodifluoromethane	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
1,1-Dichloroethane	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
1,1-Dichloroethene	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
1,2-Dichloropropane	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
1,3-Dichloropropane	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
2,2-Dichloropropane	ND	100		µg/L	50	9/2/2014 8:24:17 PM	R20949
1,1-Dichloropropene	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
Hexachlorobutadiene	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1408C99

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-005A

Client Sample ID: MW-31
Collection Date: 8/25/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: KJH			
2-Hexanone	ND	500		µg/L	50	9/2/2014 8:24:17 PM	R20949
Isopropylbenzene	73	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
4-Isopropyltoluene	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
4-Methyl-2-pentanone	ND	500		µg/L	50	9/2/2014 8:24:17 PM	R20949
Methylene Chloride	ND	150		µg/L	50	9/2/2014 8:24:17 PM	R20949
n-Butylbenzene	ND	150		µg/L	50	9/2/2014 8:24:17 PM	R20949
n-Propylbenzene	220	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
sec-Butylbenzene	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
Styrene	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
tert-Butylbenzene	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
1,1,1,2-Tetrachloroethane	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
1,1,2,2-Tetrachloroethane	ND	100		µg/L	50	9/2/2014 8:24:17 PM	R20949
Tetrachloroethene (PCE)	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
trans-1,2-DCE	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
trans-1,3-Dichloropropene	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
1,2,3-Trichlorobenzene	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
1,2,4-Trichlorobenzene	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
1,1,1-Trichloroethane	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
1,1,2-Trichloroethane	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
Trichloroethene (TCE)	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
Trichlorofluoromethane	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
1,2,3-Trichloropropane	ND	100		µg/L	50	9/2/2014 8:24:17 PM	R20949
Vinyl chloride	ND	50		µg/L	50	9/2/2014 8:24:17 PM	R20949
Xylenes, Total	1400	75		µg/L	50	9/2/2014 8:24:17 PM	R20949
Surr: 1,2-Dichloroethane-d4	105	70-130		%REC	50	9/2/2014 8:24:17 PM	R20949
Surr: 4-Bromofluorobenzene	97.1	70-130		%REC	50	9/2/2014 8:24:17 PM	R20949
Surr: Dibromofluoromethane	103	70-130		%REC	50	9/2/2014 8:24:17 PM	R20949
Surr: Toluene-d8	89.4	70-130		%REC	50	9/2/2014 8:24:17 PM	R20949

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 19 of 76

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-005B

Client Sample ID: MW-31
Collection Date: 8/25/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	15	2.5		mg/L	50	8/27/2014 4:42:39 PM	R20843
Surr: BFB	115	70.9-130		%REC	50	8/27/2014 4:42:39 PM	R20843

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-005C

Client Sample ID: MW-31
Collection Date: 8/25/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	4.0	0.20		mg/L	1	8/28/2014 11:40:41 PM	14963
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/28/2014 11:40:41 PM	14963
Surr: DNOP	125	75.2-161		%REC	1	8/28/2014 11:40:41 PM	14963

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.**Analytical Report**Lab Order: **1408C99**Date Reported: **10/2/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-005D

Client Sample ID: MW-31
Collection Date: 8/25/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.14	0.10		mg/L	1	8/26/2014 2:26:31 PM	R20831
Chloride	300	10		mg/L	20	8/26/2014 2:38:55 PM	R20831
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/26/2014 2:26:31 PM	R20831
Bromide	5.5	2.0		mg/L	20	8/26/2014 2:38:55 PM	R20831
Nitrogen, Nitrate (As N)	ND	2.0		mg/L	20	8/26/2014 2:38:55 PM	R20831
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/26/2014 2:26:31 PM	R20831
Sulfate	5.4	0.50		mg/L	1	8/26/2014 2:26:31 PM	R20831
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	1100	1.0	H	mg CO2/L	1	9/2/2014 1:02:04 PM	R20962
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	2600	0.010		µmhos/cm	1	9/2/2014 1:02:04 PM	R20962
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	1200	20		mg/L CaCO3	1	9/2/2014 1:02:04 PM	R20962
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	9/2/2014 1:02:04 PM	R20962
Total Alkalinity (as CaCO3)	1200	20		mg/L CaCO3	1	9/2/2014 1:02:04 PM	R20962
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	1810	40.0	*	mg/L	1	9/2/2014 10:07:00 AM	14989

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-005E

Client Sample ID: MW-31
Collection Date: 8/25/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	0.59	0.0020		mg/L	1	8/28/2014 6:29:11 PM	R20883
Cadmium	ND	0.0020		mg/L	1	8/28/2014 6:29:11 PM	R20883
Calcium	98	1.0		mg/L	1	8/28/2014 6:29:11 PM	R20883
Chromium	ND	0.0060		mg/L	1	8/28/2014 6:29:11 PM	R20883
Iron	0.079	0.020		mg/L	1	8/28/2014 6:29:11 PM	R20883
Magnesium	36	1.0		mg/L	1	8/28/2014 6:29:11 PM	R20883
Manganese	0.47	0.0020	*	mg/L	1	8/28/2014 6:29:11 PM	R20883
Potassium	3.3	1.0		mg/L	1	8/28/2014 6:29:11 PM	R20883
Silver	ND	0.0050		mg/L	1	8/28/2014 6:29:11 PM	R20883
Sodium	550	10		mg/L	10	8/29/2014 3:20:50 PM	R20915
Zinc	ND	0.010		mg/L	1	8/28/2014 6:29:11 PM	R20883
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Arsenic	ND	0.010		mg/L	10	9/10/2014 1:19:24 PM	R21134
Copper	ND	0.010		mg/L	10	9/10/2014 1:19:24 PM	R21134
Lead	ND	0.0010		mg/L	1	9/8/2014 5:23:04 PM	R21084
Selenium	0.017	0.010		mg/L	10	9/10/2014 1:19:24 PM	R21134
Uranium	ND	0.0010		mg/L	1	9/8/2014 5:23:04 PM	R21084
EPA METHOD 7470: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	8/30/2014 1:32:18 PM	15037

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-005F

Client Sample ID: MW-31
Collection Date: 8/25/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	9/5/2014 5:56:01 PM	15120
Barium	0.69	0.0020		mg/L	1	9/5/2014 5:56:01 PM	15120
Cadmium	ND	0.0020		mg/L	1	9/5/2014 5:56:01 PM	15120
Chromium	ND	0.0060		mg/L	1	9/5/2014 5:56:01 PM	15120
Lead	ND	0.0050		mg/L	1	9/5/2014 5:56:01 PM	15120
Selenium	ND	0.050		mg/L	1	9/5/2014 5:56:01 PM	15120
Silver	ND	0.0050		mg/L	1	9/9/2014 4:51:14 PM	15187
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	9/4/2014 2:52:49 PM	15109

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-006A

Client Sample ID: MW-44
Collection Date: 8/25/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: KJH			
Benzene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Toluene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Ethylbenzene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Methyl tert-butyl ether (MTBE)	1.0	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Naphthalene	ND	2.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
1-Methylnaphthalene	ND	4.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
2-Methylnaphthalene	ND	4.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Acetone	ND	10		µg/L	1	9/2/2014 8:54:01 PM	R20949
Bromobenzene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Bromodichloromethane	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Bromoform	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Bromomethane	ND	3.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
2-Butanone	ND	10		µg/L	1	9/2/2014 8:54:01 PM	R20949
Carbon disulfide	ND	10		µg/L	1	9/2/2014 8:54:01 PM	R20949
Carbon Tetrachloride	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Chlorobenzene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Chloroethane	ND	2.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Chloroform	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Chloromethane	ND	3.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
2-Chlorotoluene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
4-Chlorotoluene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
cis-1,2-DCE	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Dibromochloromethane	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Dibromomethane	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
1,2-Dichlorobenzene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
1,3-Dichlorobenzene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
1,4-Dichlorobenzene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Dichlorodifluoromethane	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
1,1-Dichloroethane	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
1,1-Dichloroethene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
1,2-Dichloropropane	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
1,3-Dichloropropane	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
2,2-Dichloropropane	ND	2.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
1,1-Dichloropropene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Hexachlorobutadiene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408C99**Date Reported: **10/2/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-44**Project:** Refinery Wells 8-25-14**Collection Date:** 8/25/2014 11:00:00 AM**Lab ID:** 1408C99-006A**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: KJH			
2-Hexanone	ND	10		µg/L	1	9/2/2014 8:54:01 PM	R20949
Isopropylbenzene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
4-Isopropyltoluene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
4-Methyl-2-pentanone	ND	10		µg/L	1	9/2/2014 8:54:01 PM	R20949
Methylene Chloride	ND	3.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
n-Butylbenzene	ND	3.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
n-Propylbenzene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
sec-Butylbenzene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Styrene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
tert-Butylbenzene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
trans-1,2-DCE	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
1,1,1-Trichloroethane	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
1,1,2-Trichloroethane	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Trichloroethene (TCE)	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Trichlorofluoromethane	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Vinyl chloride	ND	1.0		µg/L	1	9/2/2014 8:54:01 PM	R20949
Xylenes, Total	ND	1.5		µg/L	1	9/2/2014 8:54:01 PM	R20949
Surr: 1,2-Dichloroethane-d4	99.8	70-130		%REC	1	9/2/2014 8:54:01 PM	R20949
Surr: 4-Bromofluorobenzene	102	70-130		%REC	1	9/2/2014 8:54:01 PM	R20949
Surr: Dibromofluoromethane	95.7	70-130		%REC	1	9/2/2014 8:54:01 PM	R20949
Surr: Toluene-d8	89.4	70-130		%REC	1	9/2/2014 8:54:01 PM	R20949

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-006B

Client Sample ID: MW-44
Collection Date: 8/25/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/27/2014 5:12:43 PM	R20843
Surr: BFB	101	70.9-130		%REC	1	8/27/2014 5:12:43 PM	R20843

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-006C

Client Sample ID: MW-44
Collection Date: 8/25/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/27/2014 6:19:22 PM	14963
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/27/2014 6:19:22 PM	14963
Surr: DNOP	114	75.2-161		%REC	1	8/27/2014 6:19:22 PM	14963

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-006D

Client Sample ID: MW-44
Collection Date: 8/25/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.26	0.10		mg/L	1	8/26/2014 2:51:20 PM	R20831
Chloride	48	10		mg/L	20	8/26/2014 3:03:45 PM	R20831
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/26/2014 2:51:20 PM	R20831
Bromide	0.20	0.10		mg/L	1	8/26/2014 2:51:20 PM	R20831
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/26/2014 2:51:20 PM	R20831
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	8/26/2014 3:03:45 PM	R20831
Sulfate	3200	50		mg/L	100	8/28/2014 9:59:14 PM	R20888
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	330	1.0	H	mg CO2/L	1	9/2/2014 1:41:44 PM	R20962
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	4800	0.010		µmhos/cm	1	9/2/2014 1:41:44 PM	R20962
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	360	20		mg/L CaCO3	1	9/2/2014 1:41:44 PM	R20962
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	9/2/2014 1:41:44 PM	R20962
Total Alkalinity (as CaCO3)	360	20		mg/L CaCO3	1	9/2/2014 1:41:44 PM	R20962
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	4820	20.0	*	mg/L	1	9/2/2014 10:07:00 AM	14989

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-006E

Client Sample ID: MW-44
Collection Date: 8/25/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	0.0094	0.0020		mg/L	1	8/28/2014 6:31:06 PM	R20883
Cadmium	ND	0.0020		mg/L	1	8/28/2014 6:31:06 PM	R20883
Calcium	460	10		mg/L	10	8/29/2014 3:22:38 PM	R20915
Chromium	ND	0.0060		mg/L	1	8/28/2014 6:31:06 PM	R20883
Iron	ND	0.020		mg/L	1	8/28/2014 6:31:06 PM	R20883
Magnesium	65	1.0		mg/L	1	8/28/2014 6:31:06 PM	R20883
Manganese	0.47	0.0020	*	mg/L	1	8/28/2014 6:31:06 PM	R20883
Potassium	7.3	1.0		mg/L	1	8/28/2014 6:31:06 PM	R20883
Silver	ND	0.0050		mg/L	1	8/28/2014 6:31:06 PM	R20883
Sodium	900	10		mg/L	10	8/29/2014 3:22:38 PM	R20915
Zinc	ND	0.010		mg/L	1	8/28/2014 6:31:06 PM	R20883
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Arsenic	ND	0.0010		mg/L	1	9/8/2014 5:26:09 PM	R21084
Copper	ND	0.020		mg/L	20	9/10/2014 4:31:56 PM	R21134
Lead	ND	0.0010		mg/L	1	9/8/2014 5:26:09 PM	R21084
Selenium	0.0012	0.0010		mg/L	1	9/8/2014 5:26:09 PM	R21084
Uranium	0.0013	0.0010		mg/L	1	9/8/2014 5:26:09 PM	R21084
EPA METHOD 7470: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	8/30/2014 1:34:05 PM	15037

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-006F

Client Sample ID: MW-44
Collection Date: 8/25/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	9/5/2014 5:57:43 PM	15120
Barium	0.012	0.0020		mg/L	1	9/5/2014 5:57:43 PM	15120
Cadmium	ND	0.0020		mg/L	1	9/5/2014 5:57:43 PM	15120
Chromium	ND	0.0060		mg/L	1	9/5/2014 5:57:43 PM	15120
Lead	ND	0.0050		mg/L	1	9/5/2014 5:57:43 PM	15120
Selenium	ND	0.050		mg/L	1	9/5/2014 5:57:43 PM	15120
Silver	ND	0.0050		mg/L	1	9/9/2014 5:01:57 PM	15187
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	9/4/2014 2:54:34 PM	15109

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-007A

Client Sample ID: MW-44D
Collection Date: 8/25/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: KJH			
Benzene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Toluene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Ethylbenzene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Methyl tert-butyl ether (MTBE)	1.1	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Naphthalene	ND	2.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
1-Methylnaphthalene	ND	4.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
2-Methylnaphthalene	ND	4.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Acetone	ND	10		µg/L	1	9/2/2014 9:23:43 PM	R20949
Bromobenzene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Bromodichloromethane	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Bromoform	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Bromomethane	ND	3.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
2-Butanone	ND	10		µg/L	1	9/2/2014 9:23:43 PM	R20949
Carbon disulfide	ND	10		µg/L	1	9/2/2014 9:23:43 PM	R20949
Carbon Tetrachloride	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Chlorobenzene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Chloroethane	ND	2.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Chloroform	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Chloromethane	ND	3.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
2-Chlorotoluene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
4-Chlorotoluene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
cis-1,2-DCE	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Dibromochloromethane	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Dibromomethane	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
1,2-Dichlorobenzene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
1,3-Dichlorobenzene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
1,4-Dichlorobenzene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Dichlorodifluoromethane	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
1,1-Dichloroethane	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
1,1-Dichloroethene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
1,2-Dichloropropane	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
1,3-Dichloropropane	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
2,2-Dichloropropane	ND	2.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
1,1-Dichloropropene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Hexachlorobutadiene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408C99****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **10/2/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-007A

Client Sample ID: MW-44D
Collection Date: 8/25/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: KJH			
2-Hexanone	ND	10		µg/L	1	9/2/2014 9:23:43 PM	R20949
Isopropylbenzene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
4-Isopropyltoluene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
4-Methyl-2-pentanone	ND	10		µg/L	1	9/2/2014 9:23:43 PM	R20949
Methylene Chloride	ND	3.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
n-Butylbenzene	ND	3.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
n-Propylbenzene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
sec-Butylbenzene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Styrene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
tert-Butylbenzene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
trans-1,2-DCE	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
1,1,1-Trichloroethane	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
1,1,2-Trichloroethane	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Trichloroethene (TCE)	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Trichlorofluoromethane	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Vinyl chloride	ND	1.0		µg/L	1	9/2/2014 9:23:43 PM	R20949
Xylenes, Total	ND	1.5		µg/L	1	9/2/2014 9:23:43 PM	R20949
Surr: 1,2-Dichloroethane-d4	97.4	70-130		%REC	1	9/2/2014 9:23:43 PM	R20949
Surr: 4-Bromofluorobenzene	100	70-130		%REC	1	9/2/2014 9:23:43 PM	R20949
Surr: Dibromofluoromethane	95.0	70-130		%REC	1	9/2/2014 9:23:43 PM	R20949
Surr: Toluene-d8	95.0	70-130		%REC	1	9/2/2014 9:23:43 PM	R20949

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-007B

Client Sample ID: MW-44D
Collection Date: 8/25/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/27/2014 5:42:53 PM	R20843
Surr: BFB	103	70.9-130		%REC	1	8/27/2014 5:42:53 PM	R20843

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-007C

Client Sample ID: MW-44D
Collection Date: 8/25/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/27/2014 6:49:32 PM	14963
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/27/2014 6:49:32 PM	14963
Surr: DNOP	103	75.2-161		%REC	1	8/27/2014 6:49:32 PM	14963

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-007D

Client Sample ID: MW-44D
Collection Date: 8/25/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.27	0.10		mg/L	1	8/26/2014 3:16:10 PM	R20831
Chloride	48	10		mg/L	20	8/26/2014 3:28:34 PM	R20831
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/26/2014 3:16:10 PM	R20831
Bromide	0.20	0.10		mg/L	1	8/26/2014 3:16:10 PM	R20831
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/26/2014 3:16:10 PM	R20831
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	8/26/2014 3:28:34 PM	R20831
Sulfate	3200	50		mg/L	100	8/28/2014 10:11:39 PM	R20888
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	340	1.0	H	mg CO2/L	1	9/2/2014 1:57:32 PM	R20962
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	4800	0.010		µmhos/cm	1	9/2/2014 1:57:32 PM	R20962
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	350	20		mg/L CaCO3	1	9/2/2014 1:57:32 PM	R20962
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	9/2/2014 1:57:32 PM	R20962
Total Alkalinity (as CaCO3)	350	20		mg/L CaCO3	1	9/2/2014 1:57:32 PM	R20962
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	4810	20.0	*	mg/L	1	9/2/2014 10:07:00 AM	14989

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-007E

Client Sample ID: MW-44D
Collection Date: 8/25/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	0.0091	0.0020		mg/L	1	8/28/2014 6:33:06 PM	R20883
Cadmium	ND	0.0020		mg/L	1	8/28/2014 6:33:06 PM	R20883
Calcium	460	10		mg/L	10	8/29/2014 3:24:30 PM	R20915
Chromium	ND	0.0060		mg/L	1	8/28/2014 6:33:06 PM	R20883
Iron	ND	0.020		mg/L	1	8/28/2014 6:33:06 PM	R20883
Magnesium	63	1.0		mg/L	1	8/28/2014 6:33:06 PM	R20883
Manganese	0.46	0.0020	*	mg/L	1	8/28/2014 6:33:06 PM	R20883
Potassium	7.2	1.0		mg/L	1	8/28/2014 6:33:06 PM	R20883
Silver	ND	0.0050		mg/L	1	8/28/2014 6:33:06 PM	R20883
Sodium	900	10		mg/L	10	8/29/2014 3:24:30 PM	R20915
Zinc	0.016	0.010		mg/L	1	8/28/2014 6:33:06 PM	R20883
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Arsenic	ND	0.0010		mg/L	1	9/8/2014 5:29:15 PM	R21084
Copper	ND	0.020		mg/L	20	9/10/2014 1:30:08 PM	R21134
Lead	ND	0.0010		mg/L	1	9/8/2014 5:29:15 PM	R21084
Selenium	0.0012	0.0010		mg/L	1	9/8/2014 5:29:15 PM	R21084
Uranium	0.0013	0.0010		mg/L	1	9/8/2014 5:29:15 PM	R21084
EPA METHOD 7470: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	8/30/2014 1:35:51 PM	15037

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-007F

Client Sample ID: MW-44D
Collection Date: 8/25/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	9/5/2014 5:59:39 PM	15120
Barium	0.011	0.0020		mg/L	1	9/5/2014 5:59:39 PM	15120
Cadmium	ND	0.0020		mg/L	1	9/5/2014 5:59:39 PM	15120
Chromium	ND	0.0060		mg/L	1	9/5/2014 5:59:39 PM	15120
Lead	ND	0.0050		mg/L	1	9/5/2014 5:59:39 PM	15120
Selenium	ND	0.050		mg/L	1	9/5/2014 5:59:39 PM	15120
Silver	ND	0.0050		mg/L	1	9/9/2014 5:03:51 PM	15187
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	9/4/2014 2:56:18 PM	15109

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-008A

Client Sample ID: MW-4
Collection Date: 8/25/2014 9:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: KJH			
Benzene	27	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
Toluene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
Ethylbenzene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
1,2,4-Trimethylbenzene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
1,3,5-Trimethylbenzene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
1,2-Dichloroethane (EDC)	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
Naphthalene	55	20		µg/L	10	9/2/2014 9:53:23 PM	R20949
1-Methylnaphthalene	ND	40		µg/L	10	9/2/2014 9:53:23 PM	R20949
2-Methylnaphthalene	ND	40		µg/L	10	9/2/2014 9:53:23 PM	R20949
Acetone	ND	100		µg/L	10	9/2/2014 9:53:23 PM	R20949
Bromobenzene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
Bromodichloromethane	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
Bromoform	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
Bromomethane	ND	30		µg/L	10	9/2/2014 9:53:23 PM	R20949
2-Butanone	ND	100		µg/L	10	9/2/2014 9:53:23 PM	R20949
Carbon disulfide	ND	100		µg/L	10	9/2/2014 9:53:23 PM	R20949
Carbon Tetrachloride	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
Chlorobenzene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
Chloroethane	ND	20		µg/L	10	9/2/2014 9:53:23 PM	R20949
Chloroform	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
Chloromethane	ND	30		µg/L	10	9/2/2014 9:53:23 PM	R20949
2-Chlorotoluene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
4-Chlorotoluene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
cis-1,2-DCE	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
cis-1,3-Dichloropropene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	9/2/2014 9:53:23 PM	R20949
Dibromochloromethane	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
Dibromomethane	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
1,2-Dichlorobenzene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
1,3-Dichlorobenzene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
1,4-Dichlorobenzene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
Dichlorodifluoromethane	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
1,1-Dichloroethane	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
1,1-Dichloroethene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
1,2-Dichloropropane	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
1,3-Dichloropropane	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
2,2-Dichloropropane	ND	20		µg/L	10	9/2/2014 9:53:23 PM	R20949
1,1-Dichloropropene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
Hexachlorobutadiene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408C99****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **10/2/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-008A

Client Sample ID: MW-4
Collection Date: 8/25/2014 9:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: KJH
2-Hexanone	ND	100		µg/L	10	9/2/2014 9:53:23 PM	R20949
Isopropylbenzene	25	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
4-Isopropyltoluene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
4-Methyl-2-pentanone	ND	100		µg/L	10	9/2/2014 9:53:23 PM	R20949
Methylene Chloride	ND	30		µg/L	10	9/2/2014 9:53:23 PM	R20949
n-Butylbenzene	ND	30		µg/L	10	9/2/2014 9:53:23 PM	R20949
n-Propylbenzene	25	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
sec-Butylbenzene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
Styrene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
tert-Butylbenzene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
1,1,2,2-Tetrachloroethane	ND	20		µg/L	10	9/2/2014 9:53:23 PM	R20949
Tetrachloroethene (PCE)	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
trans-1,2-DCE	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
trans-1,3-Dichloropropene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
1,2,3-Trichlorobenzene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
1,2,4-Trichlorobenzene	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
1,1,1-Trichloroethane	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
1,1,2-Trichloroethane	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
Trichloroethene (TCE)	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
Trichlorofluoromethane	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
1,2,3-Trichloropropane	ND	20		µg/L	10	9/2/2014 9:53:23 PM	R20949
Vinyl chloride	ND	10		µg/L	10	9/2/2014 9:53:23 PM	R20949
Xylenes, Total	ND	15		µg/L	10	9/2/2014 9:53:23 PM	R20949
Surr: 1,2-Dichloroethane-d4	105	70-130		%REC	10	9/2/2014 9:53:23 PM	R20949
Surr: 4-Bromofluorobenzene	102	70-130		%REC	10	9/2/2014 9:53:23 PM	R20949
Surr: Dibromofluoromethane	101	70-130		%REC	10	9/2/2014 9:53:23 PM	R20949
Surr: Toluene-d8	90.9	70-130		%REC	10	9/2/2014 9:53:23 PM	R20949

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-008B

Client Sample ID: MW-4
Collection Date: 8/25/2014 9:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	5.4	0.50		mg/L	10	8/27/2014 6:12:56 PM	R20843
Surr: BFB	136	70.9-130	S	%REC	10	8/27/2014 6:12:56 PM	R20843

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-008C

Client Sample ID: MW-4
Collection Date: 8/25/2014 9:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	0.84	0.20		mg/L	1	8/29/2014 12:10:45 AM	14963
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/29/2014 12:10:45 AM	14963
Surr: DNOP	104	75.2-161		%REC	1	8/29/2014 12:10:45 AM	14963

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408C99****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **10/2/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-008D

Client Sample ID: MW-4
Collection Date: 8/25/2014 9:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	ND	0.50		mg/L	5	8/26/2014 3:40:58 PM	R20831
Chloride	220	10		mg/L	20	8/26/2014 3:53:23 PM	R20831
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	8/26/2014 3:40:58 PM	R20831
Bromide	3.4	0.50		mg/L	5	8/26/2014 3:40:58 PM	R20831
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	8/26/2014 3:40:58 PM	R20831
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	8/26/2014 3:40:58 PM	R20831
Sulfate	6.8	2.5		mg/L	5	8/26/2014 3:40:58 PM	R20831
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	1200	2.5	H	mg CO2/L	2.5	9/2/2014 7:19:14 PM	R20962
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	2700	0.010		µmhos/cm	1	9/2/2014 2:13:28 PM	R20962
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	1400	50		mg/L CaCO3	2.5	9/2/2014 7:19:14 PM	R20962
Carbonate (As CaCO3)	ND	5.0		mg/L CaCO3	2.5	9/2/2014 7:19:14 PM	R20962
Total Alkalinity (as CaCO3)	1400	50		mg/L CaCO3	2.5	9/2/2014 7:19:14 PM	R20962
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	1840	100	*	mg/L	1	9/2/2014 10:07:00 AM	14989

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-008E

Client Sample ID: MW-4
Collection Date: 8/25/2014 9:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	2.1	0.020	*	mg/L	10	8/29/2014 3:26:22 PM	R20915
Cadmium	ND	0.0020		mg/L	1	8/28/2014 6:35:04 PM	R20883
Calcium	150	10		mg/L	10	8/29/2014 3:26:22 PM	R20915
Chromium	ND	0.0060		mg/L	1	8/28/2014 6:35:04 PM	R20883
Iron	12	0.40	*	mg/L	20	8/29/2014 3:28:02 PM	R20915
Magnesium	62	1.0		mg/L	1	8/28/2014 6:35:04 PM	R20883
Manganese	2.5	0.020	*	mg/L	10	8/29/2014 3:26:22 PM	R20915
Potassium	6.1	1.0		mg/L	1	8/28/2014 6:35:04 PM	R20883
Silver	ND	0.0050		mg/L	1	8/28/2014 6:35:04 PM	R20883
Sodium	470	10		mg/L	10	8/29/2014 3:26:22 PM	R20915
Zinc	0.011	0.010		mg/L	1	8/28/2014 6:35:04 PM	R20883
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Arsenic	ND	0.010		mg/L	10	9/10/2014 1:35:31 PM	R21134
Copper	0.023	0.0010		mg/L	1	9/8/2014 5:32:20 PM	R21084
Lead	0.0011	0.0010		mg/L	1	9/8/2014 5:32:20 PM	R21084
Selenium	0.012	0.010		mg/L	10	9/10/2014 1:35:31 PM	R21134
Uranium	ND	0.0010		mg/L	1	9/8/2014 5:32:20 PM	R21084
EPA METHOD 7470: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	8/30/2014 1:37:39 PM	15037

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-008F

Client Sample ID: MW-4
Collection Date: 8/25/2014 9:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020	*	mg/L	1	9/5/2014 6:01:36 PM	15120
Barium	2.6	0.010	*	mg/L	5	9/8/2014 5:37:38 PM	15120
Cadmium	ND	0.0020		mg/L	1	9/5/2014 6:01:36 PM	15120
Chromium	0.024	0.0060		mg/L	1	9/5/2014 6:01:36 PM	15120
Lead	0.010	0.0050		mg/L	1	9/5/2014 6:01:36 PM	15120
Selenium	ND	0.050		mg/L	1	9/5/2014 6:01:36 PM	15120
Silver	ND	0.0050		mg/L	1	9/9/2014 5:05:46 PM	15187
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	9/4/2014 2:58:02 PM	15109

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-009A

Client Sample ID: MW-15
Collection Date: 8/25/2014 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: KJH			
Benzene	2100	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
Toluene	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
Ethylbenzene	3400	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
Methyl tert-butyl ether (MTBE)	150	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
1,2,4-Trimethylbenzene	2500	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
1,3,5-Trimethylbenzene	490	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
1,2-Dichloroethane (EDC)	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
1,2-Dibromoethane (EDB)	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
Naphthalene	640	100		µg/L	50	9/3/2014 6:13:35 PM	R20971
1-Methylnaphthalene	ND	200		µg/L	50	9/3/2014 6:13:35 PM	R20971
2-Methylnaphthalene	210	200		µg/L	50	9/3/2014 6:13:35 PM	R20971
Acetone	ND	500		µg/L	50	9/3/2014 6:13:35 PM	R20971
Bromobenzene	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
Bromodichloromethane	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
Bromoform	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
Bromomethane	ND	150		µg/L	50	9/3/2014 6:13:35 PM	R20971
2-Butanone	ND	500		µg/L	50	9/3/2014 6:13:35 PM	R20971
Carbon disulfide	ND	500		µg/L	50	9/3/2014 6:13:35 PM	R20971
Carbon Tetrachloride	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
Chlorobenzene	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
Chloroethane	ND	100		µg/L	50	9/3/2014 6:13:35 PM	R20971
Chloroform	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
Chloromethane	ND	150		µg/L	50	9/3/2014 6:13:35 PM	R20971
2-Chlorotoluene	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
4-Chlorotoluene	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
cis-1,2-DCE	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
cis-1,3-Dichloropropene	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
1,2-Dibromo-3-chloropropane	ND	100		µg/L	50	9/3/2014 6:13:35 PM	R20971
Dibromochloromethane	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
Dibromomethane	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
1,2-Dichlorobenzene	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
1,3-Dichlorobenzene	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
1,4-Dichlorobenzene	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
Dichlorodifluoromethane	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
1,1-Dichloroethane	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
1,1-Dichloroethene	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
1,2-Dichloropropane	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
1,3-Dichloropropane	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
2,2-Dichloropropane	ND	100		µg/L	50	9/3/2014 6:13:35 PM	R20971
1,1-Dichloropropene	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
Hexachlorobutadiene	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408C99****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **10/2/2014****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-15**Project:** Refinery Wells 8-25-14**Collection Date:** 8/25/2014 9:30:00 AM**Lab ID:** 1408C99-009A**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: KJH
2-Hexanone	ND	500		µg/L	50	9/3/2014 6:13:35 PM	R20971
Isopropylbenzene	93	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
4-Isopropyltoluene	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
4-Methyl-2-pentanone	ND	500		µg/L	50	9/3/2014 6:13:35 PM	R20971
Methylene Chloride	ND	150		µg/L	50	9/3/2014 6:13:35 PM	R20971
n-Butylbenzene	ND	150		µg/L	50	9/3/2014 6:13:35 PM	R20971
n-Propylbenzene	320	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
sec-Butylbenzene	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
Styrene	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
tert-Butylbenzene	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
1,1,1,2-Tetrachloroethane	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
1,1,2,2-Tetrachloroethane	ND	100		µg/L	50	9/3/2014 6:13:35 PM	R20971
Tetrachloroethene (PCE)	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
trans-1,2-DCE	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
trans-1,3-Dichloropropene	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
1,2,3-Trichlorobenzene	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
1,2,4-Trichlorobenzene	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
1,1,1-Trichloroethane	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
1,1,2-Trichloroethane	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
Trichloroethene (TCE)	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
Trichlorofluoromethane	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
1,2,3-Trichloropropane	ND	100		µg/L	50	9/3/2014 6:13:35 PM	R20971
Vinyl chloride	ND	50		µg/L	50	9/3/2014 6:13:35 PM	R20971
Xylenes, Total	6600	75		µg/L	50	9/3/2014 6:13:35 PM	R20971
Surr: 1,2-Dichloroethane-d4	97.2	70-130		%REC	50	9/3/2014 6:13:35 PM	R20971
Surr: 4-Bromofluorobenzene	89.9	70-130		%REC	50	9/3/2014 6:13:35 PM	R20971
Surr: Dibromofluoromethane	92.0	70-130		%REC	50	9/3/2014 6:13:35 PM	R20971
Surr: Toluene-d8	97.7	70-130		%REC	50	9/3/2014 6:13:35 PM	R20971

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-009B

Client Sample ID: MW-15
Collection Date: 8/25/2014 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	39	2.5		mg/L	50	8/28/2014 3:53:55 PM	R20862
Surr: BFB	114	70.9-130		%REC	50	8/28/2014 3:53:55 PM	R20862

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-009C

Client Sample ID: MW-15
Collection Date: 8/25/2014 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	4.7	0.20		mg/L	1	8/29/2014 12:40:28 AM	14963
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/29/2014 12:40:28 AM	14963
Surr: DNOP	102	75.2-161		%REC	1	8/29/2014 12:40:28 AM	14963

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408C99****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **10/2/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-009D

Client Sample ID: MW-15
Collection Date: 8/25/2014 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	ND	0.50		mg/L	5	8/26/2014 4:30:37 PM	R20831
Chloride	410	25		mg/L	50	8/28/2014 10:48:52 PM	R20888
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	8/26/2014 4:30:37 PM	R20831
Bromide	6.1	0.50		mg/L	5	8/26/2014 4:30:37 PM	R20831
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	8/26/2014 4:30:37 PM	R20831
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	8/26/2014 4:30:37 PM	R20831
Sulfate	2.8	2.5		mg/L	5	8/26/2014 4:30:37 PM	R20831
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	1100	2.5	H	mg CO2/L	2.5	9/2/2014 7:39:32 PM	R20962
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	3000	0.010		µmhos/cm	1	9/2/2014 2:45:53 PM	R20962
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	1200	50		mg/L CaCO3	2.5	9/2/2014 7:39:32 PM	R20962
Carbonate (As CaCO3)	ND	5.0		mg/L CaCO3	2.5	9/2/2014 7:39:32 PM	R20962
Total Alkalinity (as CaCO3)	1200	50		mg/L CaCO3	2.5	9/2/2014 7:39:32 PM	R20962
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2050	100	*	mg/L	1	9/2/2014 10:07:00 AM	14989

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408C99

Date Reported: 10/2/2014

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-14
Lab ID: 1408C99-009E

Client Sample ID: MW-15
Collection Date: 8/25/2014 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	1.4	0.010		mg/L	5	8/29/2014 3:29:53 PM	R20915
Cadmium	ND	0.0020		mg/L	1	8/28/2014 6:36:42 PM	R20883
Calcium	150	5.0		mg/L	5	8/29/2014 3:29:53 PM	R20915
Chromium	ND	0.0060		mg/L	1	8/28/2014 6:36:42 PM	R20883
Iron	6.8	0.20	*	mg/L	10	8/29/2014 3:31:42 PM	R20915
Magnesium	47	1.0		mg/L	1	8/28/2014 6:36:42 PM	R20883
Manganese	3.6	0.010	*	mg/L	5	8/29/2014 3:29:53 PM	R20915
Potassium	3.5	1.0		mg/L	1	8/28/2014 6:36:42 PM	R20883
Silver	ND	0.0050		mg/L	1	8/28/2014 6:36:42 PM	R20883
Sodium	560	10		mg/L	10	8/29/2014 3:31:42 PM	R20915
Zinc	0.013	0.010		mg/L	1	8/28/2014 6:36:42 PM	R20883
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Arsenic	ND	0.010		mg/L	10	9/10/2014 1:40:54 PM	R21134
Copper	ND	0.010		mg/L	10	9/10/2014 1:40:54 PM	R21134
Lead	ND	0.0010		mg/L	1	9/8/2014 5:35:26 PM	R21084
Selenium	0.020	0.010		mg/L	10	9/10/2014 1:40:54 PM	R21134
Uranium	ND	0.0010		mg/L	1	9/8/2014 5:35:26 PM	R21084
EPA METHOD 7470: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	8/30/2014 1:39:28 PM	15037

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408C99**Date Reported: **10/2/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-15**Project:** Refinery Wells 8-25-14**Collection Date:** 8/25/2014 9:30:00 AM**Lab ID:** 1408C99-009F**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	9/5/2014 6:03:23 PM	15120
Barium	1.6	0.010		mg/L	5	9/8/2014 5:42:34 PM	15120
Cadmium	ND	0.0020		mg/L	1	9/5/2014 6:03:23 PM	15120
Chromium	ND	0.0060		mg/L	1	9/5/2014 6:03:23 PM	15120
Lead	ND	0.0050		mg/L	1	9/5/2014 6:03:23 PM	15120
Selenium	ND	0.050		mg/L	1	9/5/2014 6:03:23 PM	15120
Silver	ND	0.0050		mg/L	1	9/9/2014 5:07:36 PM	15187
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	9/4/2014 3:03:30 PM	15109

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 52 of 76

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID	MB		SampType: MBLK			TestCode: EPA Method 200.7: Metals				
Client ID:	PBW		Batch ID: R20915			RunNo: 20915				
Prep Date:			Analysis Date: 8/29/2014			SeqNo: 608597		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Calcium	ND	1.0								
Iron	ND	0.020								
Manganese	ND	0.0020								

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 200.7: Metals				
Client ID:	LCSW		Batch ID: R20915			RunNo: 20915				
Prep Date:			Analysis Date: 8/29/2014			SeqNo: 608598		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.47	0.0020	0.5000	0	94.3	85	115			
Calcium	49	1.0	50.00	0	99.0	85	115			
Iron	0.47	0.020	0.5000	0	94.1	85	115			
Manganese	0.46	0.0020	0.5000	0	92.4	85	115			

Sample ID	MB-15120		SampType: MBLK			TestCode: EPA Method 200.7: Metals				
Client ID:	PBW		Batch ID: 15120			RunNo: 21047				
Prep Date:	9/4/2014		Analysis Date: 9/5/2014			SeqNo: 612532		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Lead	ND	0.0050								
Selenium	ND	0.050								

Sample ID	LCS-15120		SampType: LCS			TestCode: EPA Method 200.7: Metals				
Client ID:	LCSW		Batch ID: 15120			RunNo: 21047				
Prep Date:	9/4/2014		Analysis Date: 9/5/2014			SeqNo: 612535		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	99.4	85	115			
Barium	0.50	0.0020	0.5000	0	101	85	115			
Cadmium	0.50	0.0020	0.5000	0	101	85	115			
Chromium	0.50	0.0060	0.5000	0	99.8	85	115			
Lead	0.50	0.0050	0.5000	0	100	85	115			
Selenium	0.53	0.050	0.5000	0	106	85	115			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID	1408C99-001FMS			SampType:	MS		TestCode:	EPA Method 200.7: Metals			
Client ID:	MW-29			Batch ID:	15120		RunNo:	21047			
Prep Date:	9/4/2014			Analysis Date:	9/5/2014		SeqNo:	612572		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	105	70	130				
Barium	0.50	0.0020	0.5000	0.02574	95.1	70	130				
Cadmium	0.48	0.0020	0.5000	0	95.6	70	130				
Chromium	0.48	0.0060	0.5000	0	95.3	70	130				
Lead	0.47	0.0050	0.5000	0	93.1	70	130				
Selenium	0.48	0.050	0.5000	0	95.8	70	130				

Sample ID	1408C99-001FMSD			SampType: MSD	TestCode: EPA Method 200.7: Metals					
Client ID:	MW-29			Batch ID: 15120	RunNo: 21047					
Prep Date:	9/4/2014			Analysis Date: 9/5/2014	SeqNo: 612573		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	104	70	130	0.819	20	
Barium	0.50	0.0020	0.5000	0.02574	95.8	70	130	0.608	20	
Cadmium	0.48	0.0020	0.5000	0	96.8	70	130	1.26	20	
Chromium	0.48	0.0060	0.5000	0	95.7	70	130	0.459	20	
Lead	0.47	0.0050	0.5000	0	94.4	70	130	1.40	20	
Selenium	0.48	0.050	0.5000	0	96.7	70	130	0.871	20	

Sample ID	MB-15187			SampType:	MBLK		TestCode:	EPA Method 200.7: Metals			
Client ID:	PBW			Batch ID:	15187		RunNo:	21110			
Prep Date:	9/9/2014			Analysis Date:	9/9/2014		SeqNo:	614315		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Silver	ND	0.0050									

Sample ID	LCS-15187			SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW			Batch ID:	15187		RunNo:	21110			
Prep Date:	9/9/2014			Analysis Date:	9/9/2014		SeqNo:	614316		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Silver	0.47	0.0050	0.5000	0	93.5	85	115				

Sample ID	1408C99-001FMS			SampType:	MS		TestCode:	EPA Method 200.7: Metals			
Client ID:	MW-29			Batch ID:	15187		RunNo:	21110			
Prep Date:	9/9/2014			Analysis Date:	9/9/2014		SeqNo:	614327		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Silver	0.49	0.0050	0.5000	0	98.6	70	130				

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 greater than 2.
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#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID	1408C99-001FMSD	SampType:	MSD	TestCode:	EPA Method 200.7: Metals					
Client ID:	MW-29	Batch ID:	15187	RunNo:	21110					
Prep Date:	9/9/2014	Analysis Date:	9/9/2014	SeqNo:	614328	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.44	0.0050	0.5000	0	87.4	70	130	12.0	20	

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID	MB		SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	PBW		Batch ID: R20883			RunNo: 20883				
Prep Date:			Analysis Date: 8/28/2014			SeqNo: 607543		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	LCSW		Batch ID: R20883			RunNo: 20883				
Prep Date:			Analysis Date: 8/28/2014			SeqNo: 607544		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.46	0.0020	0.5000	0	92.4	85	115			
Cadmium	0.47	0.0020	0.5000	0	94.3	85	115			
Calcium	48	1.0	50.00	0	96.7	85	115			
Chromium	0.47	0.0060	0.5000	0	93.3	85	115			
Iron	0.46	0.020	0.5000	0	92.9	85	115			
Magnesium	49	1.0	50.00	0	97.1	85	115			
Manganese	0.45	0.0020	0.5000	0	90.7	85	115			
Potassium	46	1.0	50.00	0	93.0	85	115			
Silver	0.48	0.0050	0.5000	0	95.4	85	115			
Zinc	0.46	0.010	0.5000	0	92.8	85	115			

Sample ID	MB		SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	PBW		Batch ID: R20915			RunNo: 20915				
Prep Date:			Analysis Date: 8/29/2014			SeqNo: 608593		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Calcium	ND	1.0								
Iron	ND	0.020								
Manganese	ND	0.0020								
Sodium	ND	1.0								

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	LCSW		Batch ID: R20915			RunNo: 20915				
Prep Date:	Analysis Date: 8/29/2014			SeqNo: 608594		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.47	0.0020	0.5000	0	94.0	85	115			
Calcium	49	1.0	50.00	0	98.9	85	115			
Iron	0.47	0.020	0.5000	0	94.9	85	115			
Manganese	0.46	0.0020	0.5000	0	92.3	85	115			
Sodium	49	1.0	50.00	0	98.0	85	115			

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID: R20915			RunNo: 20915					
Prep Date:		Analysis Date: 8/29/2014			SeqNo: 608595		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Calcium	ND	1.0								
Iron	ND	0.020								
Manganese	ND	0.0020								
Sodium	ND	1.0								

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	LCSW		Batch ID: R20915			RunNo: 20915				
Prep Date:	Analysis Date: 8/29/2014			SeqNo: 608596		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.46	0.0020	0.5000	0	91.8	85	115			
Calcium	49	1.0	50.00	0	98.3	85	115			
Iron	0.47	0.020	0.5000	0	93.1	85	115			
Manganese	0.45	0.0020	0.5000	0	90.0	85	115			
Sodium	48	1.0	50.00	0	96.9	85	115			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R21084		RunNo: 21084					
Prep Date:			Analysis Date: 9/8/2014		SeqNo: 613680		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	99.2	85	115			
Copper	0.025	0.0010	0.02500	0	101	85	115			
Lead	0.025	0.0010	0.02500	0	101	85	115			
Selenium	0.024	0.0010	0.02500	0	95.1	85	115			
Uranium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R21084		RunNo: 21084					
Prep Date:			Analysis Date: 9/8/2014		SeqNo: 613681		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	95.7	85	115			
Copper	0.025	0.0010	0.02500	0	98.7	85	115			
Lead	0.025	0.0010	0.02500	0	99.8	85	115			
Selenium	0.024	0.0010	0.02500	0	95.2	85	115			
Uranium	0.024	0.0010	0.02500	0	96.7	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R21084		RunNo: 21084					
Prep Date:			Analysis Date: 9/8/2014		SeqNo: 613682		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.4	85	115			
Copper	0.025	0.0010	0.02500	0	102	85	115			
Lead	0.025	0.0010	0.02500	0	102	85	115			
Selenium	0.024	0.0010	0.02500	0	96.4	85	115			
Uranium	0.025	0.0010	0.02500	0	98.0	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R21084		RunNo: 21084					
Prep Date:			Analysis Date: 9/8/2014		SeqNo: 613683		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Copper	0.026	0.0010	0.02500	0	102	85	115			
Lead	0.024	0.0010	0.02500	0	95.5	85	115			
Selenium	0.024	0.0010	0.02500	0	97.1	85	115			
Uranium	0.024	0.0010	0.02500	0	95.5	85	115			

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 greater than 2.
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#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R21084			RunNo: 21084					
Prep Date:		Analysis Date: 9/8/2014			SeqNo: 613684		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R21084			RunNo: 21084					
Prep Date:		Analysis Date: 9/8/2014			SeqNo: 613685		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R21084			RunNo: 21084					
Prep Date:		Analysis Date: 9/8/2014			SeqNo: 613686		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R21084			RunNo: 21084					
Prep Date:		Analysis Date: 9/8/2014			SeqNo: 613687		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID	LCS		SampType: LCS			TestCode: EPA 200.8: Dissolved Metals				
Client ID:	LCSW		Batch ID: R21134			RunNo: 21134				
Prep Date:	Analysis Date: 9/10/2014			SeqNo: 615240		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.023	0.0010	0.02500	0	92.7	85	115			
Copper	0.024	0.0010	0.02500	0	97.9	85	115			
Lead	0.025	0.0010	0.02500	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	91.2	85	115			
Uranium	0.024	0.0010	0.02500	0	95.4	85	115			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R21134			RunNo: 21134					
Prep Date:		Analysis Date: 9/10/2014			SeqNo: 615241		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID	MB-15109	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	15109	RunNo:	20992					
Prep Date:	9/4/2014	Analysis Date:	9/4/2014	SeqNo:	610945	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-15109	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	15109	RunNo:	20992					
Prep Date:	9/4/2014	Analysis Date:	9/4/2014	SeqNo:	610946	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	104	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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R20831		RunNo: 20831							
Prep Date:	Analysis Date: 8/26/2014		SeqNo: 606285		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								
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: R20831		RunNo: 20831							
Prep Date:	Analysis Date: 8/26/2014		SeqNo: 606286		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.47	0.10	0.5000	0	94.7	90	110			
Chloride	4.6	0.50	5.000	0	92.4	90	110			
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	94.8	90	110			
Bromide	2.4	0.10	2.500	0	97.0	90	110			
Nitrogen, Nitrate (As N)	2.4	0.10	2.500	0	97.7	90	110			
Phosphorus, Orthophosphate (As P)	4.8	0.50	5.000	0	96.5	90	110			
Sulfate	9.8	0.50	10.00	0	97.7	90	110			

Sample ID 1408C99-001DMS	SampType: MS		TestCode: EPA Method 300.0: Anions							
Client ID: MW-29	Batch ID: R20831		RunNo: 20831							
Prep Date:	Analysis Date: 8/26/2014		SeqNo: 606292		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.72	0.10	0.5000	0.2733	88.4	72.7	110			
Nitrogen, Nitrite (As N)	0.90	0.10	1.000	0	89.8	75.5	104			
Bromide	2.7	0.10	2.500	0.3369	94.9	85.1	108			
Nitrogen, Nitrate (As N)	2.9	0.10	2.500	0.4846	96.5	87.8	111			
Phosphorus, Orthophosphate (As P)	4.7	0.50	5.000	0.1807	89.5	81.3	101			

Sample ID 1408C99-001DMSD	SampType: MSD		TestCode: EPA Method 300.0: Anions							
Client ID: MW-29	Batch ID: R20831		RunNo: 20831							
Prep Date:	Analysis Date: 8/26/2014		SeqNo: 606293		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.72	0.10	0.5000	0.2733	89.9	72.7	110	1.08	20	
Nitrogen, Nitrite (As N)	0.91	0.10	1.000	0	91.2	75.5	104	1.60	20	
Bromide	2.7	0.10	2.500	0.3369	95.1	85.1	108	0.177	20	

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 greater than 2.
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#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID	1408C99-001DMSD		SampType: MSD		TestCode: EPA Method 300.0: Anions					
Client ID:	MW-29		Batch ID: R20831		RunNo: 20831					
Prep Date:			Analysis Date: 8/26/2014		SeqNo: 606293		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrate (As N)	2.9	0.10	2.500	0.4846	97.5	87.8	111	0.852	20	
Phosphorus, Orthophosphate (As P)	4.7	0.50	5.000	0.1807	90.4	81.3	101	0.981	20	

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R20831			RunNo: 20831					
Prep Date:		Analysis Date: 8/26/2014			SeqNo: 606339		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								
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: R20831			RunNo: 20831					
Prep Date:		Analysis Date: 8/26/2014			SeqNo: 606340		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.47	0.10	0.5000	0	94.7	90	110			
Chloride	4.6	0.50	5.000	0	92.6	90	110			
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	95.0	90	110			
Bromide	2.4	0.10	2.500	0	97.9	90	110			
Nitrogen, Nitrate (As N)	2.4	0.10	2.500	0	97.8	90	110			
Phosphorus, Orthophosphate (As P	4.9	0.50	5.000	0	98.4	90	110			
Sulfate	9.9	0.50	10.00	0	98.5	90	110			

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R20888			RunNo: 20888					
Prep Date:		Analysis Date: 8/28/2014			SeqNo: 607812		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								

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 greater than 2.
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#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R20888	RunNo:	20888					
Prep Date:		Analysis Date:	8/28/2014	SeqNo:	607813	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	93.4	90	110			
Sulfate	9.5	0.50	10.00	0	95.1	90	110			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID	MB-14963		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW		Batch ID: 14963		RunNo: 20785					
Prep Date:	8/26/2014		Analysis Date: 8/27/2014		SeqNo: 606095		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.44		0.5000		87.1	75.2	161			

Sample ID	LCS-14963		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 14963		RunNo: 20785					
Prep Date:	8/26/2014		Analysis Date: 8/27/2014		SeqNo: 606096		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.6	0.20	2.500	0	106	65.8	162			
Surr: DNOP	0.27		0.2500		108	75.2	161			

Sample ID	1408C99-001CMS		SampType: MS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	MW-29		Batch ID: 14963		RunNo: 20785					
Prep Date:	8/26/2014		Analysis Date: 8/27/2014		SeqNo: 606101		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.9	0.20	2.500	0	115	64.4	178			
Surr: DNOP	0.29		0.2500		114	75.2	161			

Sample ID	1408C99-001CMSD		SampType: MSD		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	MW-29		Batch ID: 14963		RunNo: 20785					
Prep Date:	8/26/2014		Analysis Date: 8/27/2014		SeqNo: 606102		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	3.0	0.20	2.500	0	120	64.4	178	4.08	20	
Surr: DNOP	0.30		0.2500		121	75.2	161	0	0	

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 greater than 2.
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#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID 5ML RB	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBW	Batch ID: R20843		RunNo: 20843							
Prep Date:	Analysis Date: 8/27/2014		SeqNo: 606692		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	19		20.00		97.1	70.9	130			

Sample ID 2.5UG GRO LCS	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSW	Batch ID: R20843		RunNo: 20843							
Prep Date:	Analysis Date: 8/27/2014		SeqNo: 606693		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.52	0.050	0.5000	0	104	80	120			
Surr: BFB	21		20.00		105	70.9	130			

Sample ID 1408C99-002BMS	SampType: MS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: MW-30	Batch ID: R20843		RunNo: 20843							
Prep Date:	Analysis Date: 8/27/2014		SeqNo: 606698		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	130	5.0	50.00	73.10	113	70.4	127			
Surr: BFB	2500		2000		124	70.9	130			

Sample ID 1408C99-002BMSD	SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: MW-30	Batch ID: R20843		RunNo: 20843							
Prep Date:	Analysis Date: 8/27/2014		SeqNo: 606699		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	130	5.0	50.00	73.10	111	70.4	127	0.991	20	
Surr: BFB	2500		2000		125	70.9	130	0	0	

Sample ID 5ML RB	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBW	Batch ID: R20862		RunNo: 20862							
Prep Date:	Analysis Date: 8/28/2014		SeqNo: 607754		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	19		20.00		96.7	70.9	130			

Sample ID 2.5UG GRO LCS	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSW	Batch ID: R20862		RunNo: 20862							
Prep Date:	Analysis Date: 8/28/2014		SeqNo: 607755		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R20862	RunNo:	20862					
Prep Date:		Analysis Date:	8/28/2014	SeqNo:	607755	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.53	0.050	0.5000	0	105	80	120			
Surr: BFB	21		20.00		103	70.9	130			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID	5mL-rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R20949			RunNo: 20949					
Prep Date:		Analysis Date: 9/2/2014			SeqNo: 609628	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								
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.
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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID	5mL-rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R20949	RunNo:	20949					
Prep Date:		Analysis Date:	9/2/2014	SeqNo:	609628	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		96.0	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	8.8		10.00		88.4	70	130			
Surr: Toluene-d8	9.5		10.00		95.4	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R20949	RunNo:	20949					
Prep Date:		Analysis Date:	9/2/2014	SeqNo:	609630	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	89.8	70	130			
Toluene	20	1.0	20.00	0	100	80	120			
Chlorobenzene	19	1.0	20.00	0	95.9	70	130			

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 greater than 2.
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#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID 100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES						
Client ID: LCSW	Batch ID: R20949			RunNo: 20949						
Prep Date:	Analysis Date: 9/2/2014			SeqNo: 609630		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	93.5	82.6	131			
Trichloroethene (TCE)	17	1.0	20.00	0	85.4	70	130			
Surr: 1,2-Dichloroethane-d4	8.1		10.00		81.1	70	130			
Surr: 4-Bromofluorobenzene	9.1		10.00		91.2	70	130			
Surr: Dibromofluoromethane	8.7		10.00		86.8	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID 1408C99-001a ms	SampType: MS			TestCode: EPA Method 8260B: VOLATILES						
Client ID: MW-29	Batch ID: R20949			RunNo: 20949						
Prep Date:	Analysis Date: 9/2/2014			SeqNo: 609651		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	97.0	70	130			
Toluene	18	1.0	20.00	0	88.8	67.5	123			
Chlorobenzene	17	1.0	20.00	0	86.1	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	100	81.9	134			
Trichloroethene (TCE)	18	1.0	20.00	0	90.9	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	9.0		10.00		89.9	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.5		10.00		95.0	70	130			

Sample ID 1408C99-001a msd	SampType: MSD			TestCode: EPA Method 8260B: VOLATILES						
Client ID: MW-29	Batch ID: R20949			RunNo: 20949						
Prep Date:	Analysis Date: 9/2/2014			SeqNo: 609652		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.3	70	130	1.78	20	
Toluene	18	1.0	20.00	0	92.2	67.5	123	3.78	20	
Chlorobenzene	18	1.0	20.00	0	90.7	70	130	5.28	20	
1,1-Dichloroethene	21	1.0	20.00	0	107	81.9	134	6.25	20	
Trichloroethene (TCE)	18	1.0	20.00	0	91.1	70	130	0.176	20	
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130	0	0	
Surr: 4-Bromofluorobenzene	8.7		10.00		87.3	70	130	0	0	
Surr: Dibromofluoromethane	9.7		10.00		96.8	70	130	0	0	
Surr: Toluene-d8	9.7		10.00		97.1	70	130	0	0	

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 greater than 2.
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#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID	5mL-rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R20971			RunNo: 20971					
Prep Date:		Analysis Date: 9/3/2014			SeqNo: 610426	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								
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.
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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID	5mL-rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R20971	RunNo:	20971					
Prep Date:		Analysis Date:	9/3/2014	SeqNo:	610426	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	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	9.3		10.00		93.5	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	8.5		10.00		85.4	70	130			

Sample ID	100ng lcs3	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R20971	RunNo:	20971					
Prep Date:		Analysis Date:	9/3/2014	SeqNo:	610428	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.4	70	130			
Toluene	19	1.0	20.00	0	92.8	80	120			
Chlorobenzene	18	1.0	20.00	0	90.8	70	130			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID	100ng lcs3		SampType: LCS		TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW		Batch ID: R20971		RunNo: 20971					
Prep Date:			Analysis Date: 9/3/2014		SeqNo: 610428		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	95.3	82.6	131			
Trichloroethene (TCE)	18	1.0	20.00	0	90.7	70	130			
Surr: 1,2-Dichloroethane-d4	9.0		10.00		89.8	70	130			
Surr: 4-Bromofluorobenzene	9.0		10.00		90.2	70	130			
Surr: Dibromofluoromethane	8.8		10.00		87.6	70	130			
Surr: Toluene-d8	9.1		10.00		91.3	70	130			

Sample ID	1408C99-009a ms	SampType:	MS		TestCode:	EPA Method 8260B: VOLATILES				
Client ID:	MW-15	Batch ID:	R20971		RunNo:	20971				
Prep Date:		Analysis Date:	9/3/2014		SeqNo:	610431		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3400	50	1000	2104	126	70	130			
Toluene	1000	50	1000	42.00	99.6	67.5	123			
Chlorobenzene	960	50	1000	0	96.1	70	130			
1,1-Dichloroethene	1000	50	1000	0	102	81.9	134			
Trichloroethene (TCE)	990	50	1000	0	98.7	70	130			
Surr: 1,2-Dichloroethane-d4	510		500.0		103	70	130			
Surr: 4-Bromofluorobenzene	440		500.0		87.6	70	130			
Surr: Dibromofluoromethane	480		500.0		96.2	70	130			
Surr: Toluene-d8	480		500.0		96.4	70	130			

Sample ID	1408C99-009a msd		SampType: MSD		TestCode: EPA Method 8260B: VOLATILES					
Client ID:	MW-15		Batch ID: R20971		RunNo: 20971					
Prep Date:			Analysis Date: 9/3/2014		SeqNo: 610432		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3000	50	1000	2104	93.8	70	130	9.96	20	
Toluene	1100	50	1000	42.00	104	67.5	123	4.17	20	
Chlorobenzene	930	50	1000	0	92.6	70	130	3.69	20	
1,1-Dichloroethene	1100	50	1000	0	106	81.9	134	3.87	20	
Trichloroethene (TCE)	940	50	1000	0	94.3	70	130	4.53	20	
Surr: 1,2-Dichloroethane-d4	510		500.0		102	70	130	0	0	
Surr: 4-Bromofluorobenzene	500		500.0		99.1	70	130	0	0	
Surr: Dibromofluoromethane	460		500.0		91.5	70	130	0	0	
Surr: Toluene-d8	490		500.0		98.0	70	130	0	0	

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID	MB-15037	SampType:	MBLK	TestCode:	EPA Method 7470: Mercury					
Client ID:	PBW	Batch ID:	15037	RunNo:	20907					
Prep Date:	8/29/2014	Analysis Date:	8/30/2014	SeqNo:	608339	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-15037	SampType:	LCS	TestCode:	EPA Method 7470: Mercury					
Client ID:	LCSW	Batch ID:	15037	RunNo:	20907					
Prep Date:	8/29/2014	Analysis Date:	8/30/2014	SeqNo:	608340	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0054	0.00020	0.005000	0	107	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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID	mb-1		SampType: MBLK		TestCode: SM2320B: Alkalinity					
Client ID:	PBW		Batch ID: R20962		RunNo: 20962					
Prep Date:			Analysis Date: 9/2/2014		SeqNo: 610172		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	lcs-1		SampType: LCS			TestCode: SM2320B: Alkalinity				
Client ID:	LCSW		Batch ID: R20962			RunNo: 20962				
Prep Date:			Analysis Date: 9/2/2014			SeqNo: 610173		Units: mg/L CaCO3		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80	20	80.00	0	100	90	110			

Sample ID	mb-2		SampType: MBLK		TestCode: SM2320B: Alkalinity					
Client ID:	PBW		Batch ID: R20962		RunNo: 20962					
Prep Date:			Analysis Date: 9/2/2014		SeqNo: 610188		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	lcs-2		SampType: LCS		TestCode: SM2320B: Alkalinity					
Client ID:	LCSW		Batch ID: R20962		RunNo: 20962					
Prep Date:			Analysis Date: 9/2/2014		SeqNo: 610189		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	81	20	80.00	0	101	90	110			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408C99

02-Oct-14

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-14

Sample ID	MB-14989	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	14989	RunNo:	20924					
Prep Date:	8/27/2014	Analysis Date:	9/2/2014	SeqNo:	608856	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-14989	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	14989	RunNo:	20924					
Prep Date:	8/27/2014	Analysis Date:	9/2/2014	SeqNo:	608857	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			

Sample ID	1408C99-005DMS	SampType:	MS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	MW-31	Batch ID:	14989	RunNo:	20924					
Prep Date:	8/27/2014	Analysis Date:	9/2/2014	SeqNo:	608861	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	3810	40.0	2000	1808	100	80	120			

Sample ID	1408C99-005DMSD	SampType:	MSD	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	MW-31	Batch ID:	14989	RunNo:	20924					
Prep Date:	8/27/2014	Analysis Date:	9/2/2014	SeqNo:	608862	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	3810	40.0	2000	1808	100	80	120	0	5	

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 greater than 2.
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

RcptNo: 1

Chain of Custody

1. Custody seals intact on sample bottles?
2. Is Chain of Custody complete?
3. How was the sample delivered?

Yes	No	Not Present	✓
Yes	No	Not Present	✓
Courier			

Log In

4. Was an attempt made to cool the samples?
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ?
6. Sample(s) in proper container(s)?
7. Sufficient sample volume for indicated test(s)?
8. Are samples (except VOA and ONG) properly preserved?
9. Was preservative added to bottles?
10. VOA vials have zero headspace?
11. Were any sample containers received broken?

Yes	✓	No	NA
Yes	✓	No	NA
Yes	✓	No	
Yes	✓	No	
~~Yes~~	~~✓~~	No	✓
Yes	✓	~~No~~	NA
-008F FOR ACCEPTABLE			pH. 4
Yes	✓	No	No VOA Vials
Yes		No	✓
Yes	✓	No	# of preserved bottles checked for pH:
Yes	✓	No	Adjusted
Yes	✓	No	
Yes	✓	No	Checked

of preserved bottles checked for pH: **1**

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	2.6	Good	Yes			

**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

[illegible]

Remarks:

TRIP BLANK -003

Rinsate - BTEX only - 004

Chain-of-Custody Record				Turn-Around Time:	
Client: <u>Western Refining</u>		☒ Standard ☐ Rush			
Mailing Address: <u>#50 CR 4990</u>		Project Name: <u>Refinery Wells 8-25-14</u>			
<u>Bloomfield, NM 87413</u>		Project #: _____			
Phone #: <u>505-682-4135</u>		Project Manager: _____			
email or Fax#: _____					
QA/QC Package: ☒ Level 4 (Full Validation)					
☐ Standard					
Accreditation ☐ NELAP ☐ Other _____		Sampler: <u>Bob + Matt</u>			
☐ EDD (Type) _____		On Ice: ☒ Yes ☐ No			
		Sample Temperature: <u>7.6</u>		HEAL No. <u>1408099</u>	
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type
8-25-14	10:00	H ₂ O	MW-29	5-10A	HCl
				1-500	Amber
				1-500	HNO ₃
		filter		1-250	HNO ₃
				1-500	
				1-250	H ₂ SO ₄
8-25-14	11:45		MW-30	5-10A	HCl
				1-500	Amber
				1-500	HNO ₃
		filter		1-250	HNO ₃
				1-500	
				1-250	H ₂ SO ₄
Date:	Time:	Relinquished by:	Received by:	Date	Time
8-25-14	1550	Robert Kralow	Matt Lott	8/25/14	1550
8-25-14	1715	MA Wells		8/26/14	0745

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this.

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

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

QA/QC Package:

☒ Standard ☒ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☐ EDD (Type)

Project Manager:

Sampler: Bob + Matt

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.6

Date Time Matrix Sample Request ID

8-25-14 10:30 H₂O NW-31

Container Type and #

Preservative Type

HEAL No.

1408009

5-VOA HCl -005

1-500 Amber

1-500 HND3

1-250 HND3

1-500

1-250 H₂SO₄

Date: 8-25-14 Time: 1550

Relinquished by: Robert Krabben

Date: 8-25-14 Time: 1735

Relinquished by: Mr. Wadler

Received by:

Chenethubalt

Date: 8/25/14 Time: 1550

Received by: [Signature]

Date: 8/26/14 Time: 0745

Received by: [Signature]

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

Refinery wells 8-25-14

Project #:



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

BTEX + MTBE + TMB's (8021)

BTEX + MTBE + TPH (Gas only)

TPH 8015B (GRO)

TPH (Method 418.1)

EDB (Method 504.1)

PAH's (8310 or 8270 SIMS)

RCRA 8 Metals 10/14

Anions (F, Cl, NO₃, NO₂, PO₄, SO₄)

8081 Pesticides / 8082 PCB's

8260B (VOA)

8270 (Semi-VOA)

Pro Ext. 8015B

Dissolved Metals

Action/Action Balance

Alkalinity, CO₂

Air Bubbles (Y or N)

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

www.hallenvironmental.com

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

Tel. 505-345-3975

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TMB's (8021)
BTEX + MTBE + TMBE + TMB's (8021)	BTEX + MTBE + TMB's (8021)
TPH (Method 418.1)	TPH (Method 418.1)
EDB (Method 504.1)	EDB (Method 504.1)
PAH's (8310 or 8270 SIMS)	PAH's (8310 or 8270 SIMS)
RCRA 8 Metals Total	RCRA 8 Metals Total
Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)
8081 Pesticides / 8082 PCB's	8081 Pesticides / 8082 PCB's
8260B (VOA)	8260B (VOA)
8270 (Semi-VOA)	8270 (Semi-VOA)
DRO-Extended 8015B	DRO-Extended 8015B
Dissolved Metals	Dissolved Metals
Cation/Anion Balance	Cation/Anion Balance
Alkalinity CO ₂	Alkalinity CO ₂
Air Bubbles (Y or N)	Air Bubbles (Y or N)

Any sub-contracted data will be clearly notated on the analytical report. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



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

April 30, 2014

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: Cross-Gradient Wells

OrderNo.: 1404810

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 4/17/2014 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
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Workorder Sample Summary

WO#: 1404810

30-Apr-14

CLIENT: Western Refining Southwest, Inc.

Project: Cross-Gradient Wells

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
1404810-001	MW-1		4/16/2014 9:30:00 AM	4/17/2014 10:10:00 AM	Aqueous
1404810-001	MW-1		4/16/2014 9:30:00 AM	4/17/2014 10:10:00 AM	Aqueous
1404810-001	MW-1		4/16/2014 9:30:00 AM	4/17/2014 10:10:00 AM	Aqueous
1404810-002	MW-13		4/16/2014 9:40:00 AM	4/17/2014 10:10:00 AM	Aqueous
1404810-003	MW-33		4/16/2014 9:55:00 AM	4/17/2014 10:10:00 AM	Aqueous
1404810-003	MW-33		4/16/2014 9:55:00 AM	4/17/2014 10:10:00 AM	Aqueous
1404810-003	MW-33		4/16/2014 9:55:00 AM	4/17/2014 10:10:00 AM	Aqueous

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404810**Date Reported: **4/30/2014****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-1**Project:** Cross-Gradient Wells**Collection Date:** 4/16/2014 9:30:00 AM**Lab ID:** 1404810-001**Matrix:** AQUEOUS**Received Date:** 4/17/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/18/2014 8:41:38 PM	12782
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/18/2014 8:41:38 PM	12782
Surr: DNOP	122	76-161		%REC	1	4/18/2014 8:41:38 PM	12782
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/22/2014 1:17:00 AM	R18124
Surr: BFB	86.3	80.4-118		%REC	1	4/22/2014 1:17:00 AM	R18124
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Benzene	ND	1.0		µg/L	1	4/18/2014 12:18:25 PM	R18099
Toluene	ND	1.0		µg/L	1	4/18/2014 12:18:25 PM	R18099
Ethylbenzene	ND	1.0		µg/L	1	4/18/2014 12:18:25 PM	R18099
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/18/2014 12:18:25 PM	R18099
Xylenes, Total	ND	1.5		µg/L	1	4/18/2014 12:18:25 PM	R18099
Surr: 1,2-Dichloroethane-d4	92.1	70-130		%REC	1	4/18/2014 12:18:25 PM	R18099
Surr: 4-Bromofluorobenzene	93.6	70-130		%REC	1	4/18/2014 12:18:25 PM	R18099
Surr: Dibromofluoromethane	93.3	70-130		%REC	1	4/18/2014 12:18:25 PM	R18099
Surr: Toluene-d8	91.4	70-130		%REC	1	4/18/2014 12:18:25 PM	R18099

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404810**

Date Reported: **4/30/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-13

Project: Cross-Gradient Wells

Collection Date: 4/16/2014 9:40:00 AM

Lab ID: 1404810-002

Matrix: AQUEOUS

Received Date: 4/17/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: KJH	
Benzene	ND	1.0		µg/L	1	4/18/2014 1:42:59 PM	R18099
Toluene	ND	1.0		µg/L	1	4/18/2014 1:42:59 PM	R18099
Ethylbenzene	ND	1.0		µg/L	1	4/18/2014 1:42:59 PM	R18099
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/18/2014 1:42:59 PM	R18099
Xylenes, Total	ND	1.5		µg/L	1	4/18/2014 1:42:59 PM	R18099
Surr: 1,2-Dichloroethane-d4	94.2	70-130		%REC	1	4/18/2014 1:42:59 PM	R18099
Surr: 4-Bromofluorobenzene	92.7	70-130		%REC	1	4/18/2014 1:42:59 PM	R18099
Surr: Dibromofluoromethane	91.0	70-130		%REC	1	4/18/2014 1:42:59 PM	R18099
Surr: Toluene-d8	90.6	70-130		%REC	1	4/18/2014 1:42:59 PM	R18099

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404810**

Date Reported: **4/30/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-33

Project: Cross-Gradient Wells

Collection Date: 4/16/2014 9:55:00 AM

Lab ID: 1404810-003

Matrix: AQUEOUS

Received Date: 4/17/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/18/2014 9:12:22 PM	12782
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/18/2014 9:12:22 PM	12782
Surr: DNOP	138	76-161		%REC	1	4/18/2014 9:12:22 PM	12782
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/22/2014 1:45:31 AM	R18124
Surr: BFB	87.2	80.4-118		%REC	1	4/22/2014 1:45:31 AM	R18124
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Benzene	ND	1.0		µg/L	1	4/18/2014 2:10:55 PM	R18099
Toluene	ND	1.0		µg/L	1	4/18/2014 2:10:55 PM	R18099
Ethylbenzene	ND	1.0		µg/L	1	4/18/2014 2:10:55 PM	R18099
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/18/2014 2:10:55 PM	R18099
Xylenes, Total	ND	1.5		µg/L	1	4/18/2014 2:10:55 PM	R18099
Surr: 1,2-Dichloroethane-d4	90.0	70-130		%REC	1	4/18/2014 2:10:55 PM	R18099
Surr: 4-Bromofluorobenzene	92.5	70-130		%REC	1	4/18/2014 2:10:55 PM	R18099
Surr: Dibromofluoromethane	95.2	70-130		%REC	1	4/18/2014 2:10:55 PM	R18099
Surr: Toluene-d8	93.9	70-130		%REC	1	4/18/2014 2:10:55 PM	R18099

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
	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 greater than 2.
	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#: 1404810

30-Apr-14

Client: Western Refining Southwest, Inc.**Project:** Cross-Gradient Wells

Sample ID	MB-12782		SampType:	MBLK		TestCode:	EPA Method 8015D: Diesel Range			
Client ID:	PBW		Batch ID:	12782		RunNo:	18069			
Prep Date:	4/18/2014		Analysis Date:	4/18/2014		SeqNo:	522339		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.59		0.5000		118	76	161			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404810

30-Apr-14

Client: Western Refining Southwest, Inc.**Project:** Cross-Gradient Wells

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R18124	RunNo:	18124					
Prep Date:		Analysis Date:	4/21/2014	SeqNo:	523149	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	17		20.00		83.8	80.4	118			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404810

30-Apr-14

Client: Western Refining Southwest, Inc.

Project: Cross-Gradient Wells

Sample ID	5mL-rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R18099	RunNo:	18099					
Prep Date:		Analysis Date:	4/18/2014	SeqNo:	522548	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	9.1		10.00		91.3	70	130			
Surr: 4-Bromofluorobenzene	9.3		10.00		93.1	70	130			
Surr: Dibromofluoromethane	9.5		10.00		95.0	70	130			
Surr: Toluene-d8	9.1		10.00		90.9	70	130			

Sample ID	1404810-001a ms	SampType:	MS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	MW-1	Batch ID:	R18099	RunNo:	18099					
Prep Date:		Analysis Date:	4/18/2014	SeqNo:	522552	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	18	1.0	20.00	0	88.6	67.5	123			
Surr: 1,2-Dichloroethane-d4	9.2		10.00		92.0	70	130			
Surr: 4-Bromofluorobenzene	9.0		10.00		89.9	70	130			
Surr: Dibromofluoromethane	8.8		10.00		88.3	70	130			
Surr: Toluene-d8	8.8		10.00		88.3	70	130			

Sample ID	1404810-001amsd	SampType:	MSD	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	MW-1	Batch ID:	R18099	RunNo:	18099					
Prep Date:		Analysis Date:	4/18/2014	SeqNo:	522553	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	13	1.0	20.00	0	66.9	70	130	35.7	20	RS
Toluene	13	1.0	20.00	0	64.0	67.5	123	32.3	20	RS
Surr: 1,2-Dichloroethane-d4	8.9		10.00		89.1	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.2		10.00		91.9	70	130	0	0	
Surr: Dibromofluoromethane	9.4		10.00		93.9	70	130	0	0	
Surr: Toluene-d8	9.3		10.00		92.8	70	130	0	0	

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 greater than 2.
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1404810

RcptNo: 1

Received by/date:

Logged By: Ashley Gallegos

4/17/2014 10:10:00 AM

Completed By: Ashley Gallegos

4/17/2014 11:33:41 AM

Reviewed By:

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 or >12 unless noted)

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

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:

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			

TABLE 3
Facility-Wide Monitoring Plan - June 2011
Western Refining Southwest, Inc. - Bloomfield Refinery

Well ID	Sampling Event	VOCS (EPA Method 8260)	VOCS - Target List (1)(2)	SVOCs (EPA Method 8260)	TPH - Diesel Range Organics (EPA Method 8270)	Extended TPH - Gasoline Range Organics	TPH - Gasoline Range Organics (EPA Method 8015B)	Total Recoverable Metals - Target List	Total Dissolved Metals - Target List	General Chemistry - Alkalinity (EPA Method 310.1)	General Chemistry - Anions (EPA Method 300.0)	Carbon Dioxide (EPA Method 310.1)	Total Dissolved Solids (TDS) (EPA Method 160.1 or Field Measurement)	Specific Conductance (EPA Method 120.1 or Field Measurement)	Temperature, pH, ORP (Field Measurement)	Dissolved Oxygen (Field Measurement)
REFINERY COMPLEX																
Background Wells																
MW-3	Semi-Annual Event (April)									Not Sampled						
MW-5	Semi-Annual Event (April)									Not Sampled						
MW-6	Semi-Annual Event (April)		X										X	X	X	X
Refinery Wells																
RW-1	Semi-Annual Event (April)									Not Sampled						
MW-4	Semi-Annual Event (April)									Not Sampled						
MW-8	Semi-Annual Event (April)		X							Not Sampled			X	X	X	X
RW-9	Semi-Annual Event (April)									Not Sampled						
RW-15	Semi-Annual Event (April)									Not Sampled						
RW-18	Semi-Annual Event (April)									Not Sampled						
MW-20	Semi-Annual Event (April)		X							Not Sampled			X	X	X	X
MW-21	Semi-Annual Event (April)									Not Sampled						
RW-23	Semi-Annual Event (April)									Not Sampled						
RW-28	Semi-Annual Event (April)									Not Sampled						
MW-29	Semi-Annual Event (April)									Not Sampled						
MW-30	Semi-Annual Event (April)		X							Not Sampled			X	X	X	X
MW-31	Semi-Annual Event (April)									Not Sampled						
MW-40	Semi-Annual Event (April)									Not Sampled						
RW-42	Semi-Annual Event (April)									Not Sampled						
RW-43	Semi-Annual Event (April)									Not Sampled						
MW-44	Semi-Annual Event (April)									Not Sampled						
Cross-Gradient Wells																
MW-1	Semi-Annual Event (April)		X			X	X						X	X	X	X
MW-13	Semi-Annual Event (April)		X										X	X	X	X
MW-26	Semi-Annual Event (April)									Not Sampled						
MW-27	Semi-Annual Event (April)									Not Sampled						
MW-32	Semi-Annual Event (April)									Not Sampled						
MW-33	Semi-Annual Event (April)		X			X	X			Not Sampled			X	X	X	X

Week of
4-8-13

Day No Sample

Spk No Sample

Spk

✓ = sampled



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

September 24, 2014

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: Cross Gradient Wells 8-20-14

OrderNo.: 1408B43

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 8 sample(s) on 8/21/2014 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued September 11, 2014.

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: 1408B43

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-001A

Client Sample ID: MW-1
Collection Date: 8/20/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Toluene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Ethylbenzene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Naphthalene	ND	2.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Acetone	ND	10		µg/L	1	8/28/2014 5:32:47 PM	R20892
Bromobenzene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Bromoform	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Bromomethane	ND	3.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
2-Butanone	ND	10		µg/L	1	8/28/2014 5:32:47 PM	R20892
Carbon disulfide	ND	10		µg/L	1	8/28/2014 5:32:47 PM	R20892
Carbon Tetrachloride	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Chlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Chloroethane	ND	2.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Chloroform	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Chloromethane	ND	3.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Dibromomethane	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
1,1-Dichloroethane	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Hexachlorobutadiene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B43****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-001A

Client Sample ID: MW-1
Collection Date: 8/20/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
2-Hexanone	ND	10		µg/L	1	8/28/2014 5:32:47 PM	R20892
Isopropylbenzene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
4-Isopropyltoluene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2014 5:32:47 PM	R20892
Methylene Chloride	ND	3.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
n-Butylbenzene	ND	3.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
n-Propylbenzene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
sec-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Styrene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
tert-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Vinyl chloride	ND	1.0		µg/L	1	8/28/2014 5:32:47 PM	R20892
Xylenes, Total	ND	1.5		µg/L	1	8/28/2014 5:32:47 PM	R20892
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	8/28/2014 5:32:47 PM	R20892
Surr: 4-Bromofluorobenzene	102	70-130		%REC	1	8/28/2014 5:32:47 PM	R20892
Surr: Dibromofluoromethane	102	70-130		%REC	1	8/28/2014 5:32:47 PM	R20892
Surr: Toluene-d8	91.1	70-130		%REC	1	8/28/2014 5:32:47 PM	R20892

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: **1408B43**

Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-001B

Client Sample ID: MW-1
Collection Date: 8/20/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/22/2014 11:43:10 AM	R20754
Surr: BFB	98.6	70.9-130		%REC	1	8/22/2014 11:43:10 AM	R20754

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B43

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-001C

Client Sample ID: MW-1
Collection Date: 8/20/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/23/2014 2:49:14 AM	14896
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/23/2014 2:49:14 AM	14896
Surr: DNOP	113	75.2-161		%REC	1	8/23/2014 2:49:14 AM	14896

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: **1408B43**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-001D

Client Sample ID: MW-1
Collection Date: 8/20/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.49	0.10		mg/L	1	8/21/2014 7:34:55 PM	R20741
Chloride	14	0.50		mg/L	1	8/21/2014 7:34:55 PM	R20741
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/21/2014 7:34:55 PM	R20741
Bromide	0.12	0.10		mg/L	1	8/21/2014 7:34:55 PM	R20741
Nitrogen, Nitrate (As N)	0.43	0.10		mg/L	1	8/21/2014 7:34:55 PM	R20741
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/21/2014 7:34:55 PM	R20741
Sulfate	110	10		mg/L	20	8/21/2014 7:47:20 PM	R20741
SM 2540 C: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	546	40.0	*	mg/L	1	8/28/2014 2:52:00 PM	14985
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	270	1.0	H	mg CO2/L	1	8/25/2014 5:05:13 PM	R20804
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	630	0.010		µmhos/cm	1	8/25/2014 5:05:13 PM	R20804
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	300	20		mg/L CaCO3	1	8/25/2014 5:05:13 PM	R20804
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	8/25/2014 5:05:13 PM	R20804
Total Alkalinity (as CaCO3)	300	20		mg/L CaCO3	1	8/25/2014 5:05:13 PM	R20804

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Analytical ReportLab Order: **1408B43****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-001E

Client Sample ID: MW-1
Collection Date: 8/20/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	0.027	0.0020		mg/L	1	8/27/2014 3:08:33 PM	R20845
Cadmium	ND	0.0020		mg/L	1	8/27/2014 3:08:33 PM	R20845
Calcium	71	1.0		mg/L	1	8/27/2014 3:08:33 PM	R20845
Chromium	ND	0.0060		mg/L	1	8/27/2014 3:08:33 PM	R20845
Copper	ND	0.0060		mg/L	1	8/27/2014 3:08:33 PM	R20845
Iron	0.053	0.020		mg/L	1	8/27/2014 3:08:33 PM	R20845
Magnesium	16	1.0		mg/L	1	8/27/2014 3:08:33 PM	R20845
Manganese	0.11	0.0020	*	mg/L	1	8/27/2014 3:08:33 PM	R20845
Potassium	2.7	1.0		mg/L	1	8/27/2014 3:08:33 PM	R20845
Silver	ND	0.0050		mg/L	1	8/27/2014 3:08:33 PM	R20845
Sodium	81	5.0		mg/L	5	8/27/2014 5:08:11 PM	R20845
Zinc	ND	0.010		mg/L	1	8/27/2014 3:08:33 PM	R20845
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Antimony	ND	0.0010		mg/L	1	8/29/2014 4:45:22 PM	R20917
Arsenic	0.0011	0.0010		mg/L	1	8/29/2014 4:45:22 PM	R20917
Lead	ND	0.0010		mg/L	1	8/29/2014 4:45:22 PM	R20917
Selenium	0.0015	0.0010		mg/L	1	8/29/2014 4:45:22 PM	R20917
Thallium	ND	0.0010		mg/L	1	8/29/2014 4:45:22 PM	R20917
Uranium	0.0027	0.0010		mg/L	1	8/29/2014 4:45:22 PM	R20917
EPA METHOD 245.1: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	9/3/2014 9:29:42 AM	15056

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 6 of 67

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B43

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-001F

Client Sample ID: MW-1
Collection Date: 8/20/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	8/26/2014 5:14:05 PM	14929
Barium	0.072	0.0020		mg/L	1	8/26/2014 5:14:05 PM	14929
Cadmium	ND	0.0020		mg/L	1	8/26/2014 5:14:05 PM	14929
Chromium	ND	0.0060		mg/L	1	8/26/2014 5:14:05 PM	14929
Lead	ND	0.0050		mg/L	1	8/26/2014 5:14:05 PM	14929
Selenium	ND	0.050		mg/L	1	8/26/2014 5:14:05 PM	14929
Silver	ND	0.0050		mg/L	1	8/28/2014 4:57:37 PM	14991
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/29/2014 1:01:17 PM	15017

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B43

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-002A

Client Sample ID: MW-13
Collection Date: 8/20/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Toluene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Ethylbenzene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Naphthalene	ND	2.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Acetone	ND	10		µg/L	1	8/28/2014 6:02:30 PM	R20892
Bromobenzene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Bromoform	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Bromomethane	ND	3.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
2-Butanone	ND	10		µg/L	1	8/28/2014 6:02:30 PM	R20892
Carbon disulfide	ND	10		µg/L	1	8/28/2014 6:02:30 PM	R20892
Carbon Tetrachloride	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Chlorobenzene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Chloroethane	ND	2.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Chloroform	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Chloromethane	ND	3.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Dibromomethane	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
1,1-Dichloroethane	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Hexachlorobutadiene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B43****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-002A

Client Sample ID: MW-13
Collection Date: 8/20/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
2-Hexanone	ND	10		µg/L	1	8/28/2014 6:02:30 PM	R20892
Isopropylbenzene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
4-Isopropyltoluene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2014 6:02:30 PM	R20892
Methylene Chloride	ND	3.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
n-Butylbenzene	ND	3.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
n-Propylbenzene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
sec-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Styrene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
tert-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Vinyl chloride	ND	1.0		µg/L	1	8/28/2014 6:02:30 PM	R20892
Xylenes, Total	ND	1.5		µg/L	1	8/28/2014 6:02:30 PM	R20892
Surr: 1,2-Dichloroethane-d4	96.9	70-130		%REC	1	8/28/2014 6:02:30 PM	R20892
Surr: 4-Bromofluorobenzene	98.7	70-130		%REC	1	8/28/2014 6:02:30 PM	R20892
Surr: Dibromofluoromethane	93.7	70-130		%REC	1	8/28/2014 6:02:30 PM	R20892
Surr: Toluene-d8	88.6	70-130		%REC	1	8/28/2014 6:02:30 PM	R20892

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B43

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-002B

Client Sample ID: MW-13
Collection Date: 8/20/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/22/2014 12:13:23 PM	R20754
Surr: BFB	101	70.9-130		%REC	1	8/22/2014 12:13:23 PM	R20754

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: **1408B43**

Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-002C

Client Sample ID: MW-13
Collection Date: 8/20/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/23/2014 4:18:35 AM	14896
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/23/2014 4:18:35 AM	14896
Surr: DNOP	98.6	75.2-161		%REC	1	8/23/2014 4:18:35 AM	14896

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B43

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-002D

Client Sample ID: MW-13
Collection Date: 8/20/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	ND	0.10		mg/L	1	8/21/2014 7:59:45 PM	R20741
Chloride	160	10		mg/L	20	8/21/2014 8:12:10 PM	R20741
Nitrogen, Nitrite (As N)	0.36	0.10		mg/L	1	8/21/2014 7:59:45 PM	R20741
Bromide	2.7	2.0		mg/L	20	8/21/2014 8:12:10 PM	R20741
Nitrogen, Nitrate (As N)	2.9	0.10		mg/L	1	8/21/2014 7:59:45 PM	R20741
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/21/2014 7:59:45 PM	R20741
Sulfate	1200	25		mg/L	50	8/22/2014 7:44:49 PM	R20760
SM 2540 C: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2980	20.0	*	mg/L	1	8/28/2014 2:52:00 PM	14985
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	880	1.0	H	mg CO2/L	1	8/25/2014 5:23:29 PM	R20804
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	2200	0.010		µmhos/cm	1	8/25/2014 5:23:29 PM	R20804
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	930	20		mg/L CaCO3	1	8/25/2014 5:23:29 PM	R20804
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	8/25/2014 5:23:29 PM	R20804
Total Alkalinity (as CaCO3)	930	20		mg/L CaCO3	1	8/25/2014 5:23:29 PM	R20804

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B43****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-002E

Client Sample ID: MW-13
Collection Date: 8/20/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	0.022	0.0020		mg/L	1	8/27/2014 3:12:08 PM	R20845
Cadmium	ND	0.0020		mg/L	1	8/27/2014 3:12:08 PM	R20845
Calcium	280	5.0		mg/L	5	8/27/2014 3:14:08 PM	R20845
Chromium	ND	0.0060		mg/L	1	8/27/2014 3:12:08 PM	R20845
Copper	ND	0.0060		mg/L	1	8/27/2014 3:12:08 PM	R20845
Iron	ND	0.020		mg/L	1	8/27/2014 3:12:08 PM	R20845
Magnesium	83	1.0		mg/L	1	8/27/2014 3:12:08 PM	R20845
Manganese	1.4	0.010	*	mg/L	5	8/27/2014 3:14:08 PM	R20845
Potassium	5.5	1.0		mg/L	1	8/27/2014 3:12:08 PM	R20845
Silver	ND	0.0050		mg/L	1	8/27/2014 3:12:08 PM	R20845
Sodium	600	20		mg/L	20	8/27/2014 5:09:58 PM	R20845
Zinc	ND	0.010		mg/L	1	8/27/2014 3:12:08 PM	R20845
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Antimony	ND	0.0010		mg/L	1	8/29/2014 5:01:28 PM	R20917
Arsenic	ND	0.020		mg/L	20	9/2/2014 1:39:38 PM	R20953
Lead	ND	0.0010		mg/L	1	8/29/2014 5:01:28 PM	R20917
Selenium	0.023	0.020		mg/L	20	9/2/2014 1:39:38 PM	R20953
Thallium	ND	0.0010		mg/L	1	8/29/2014 5:01:28 PM	R20917
Uranium	0.0081	0.0010		mg/L	1	8/29/2014 5:01:28 PM	R20917
EPA METHOD 245.1: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	9/3/2014 9:35:15 AM	15056

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 13 of 67

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B43

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-002F

Client Sample ID: MW-13
Collection Date: 8/20/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	8/26/2014 5:15:40 PM	14929
Barium	0.023	0.0020		mg/L	1	8/26/2014 5:15:40 PM	14929
Cadmium	ND	0.0020		mg/L	1	8/26/2014 5:15:40 PM	14929
Chromium	ND	0.0060		mg/L	1	8/26/2014 5:15:40 PM	14929
Lead	ND	0.0050		mg/L	1	8/26/2014 5:15:40 PM	14929
Selenium	ND	0.050		mg/L	1	8/26/2014 5:15:40 PM	14929
Silver	ND	0.0050		mg/L	1	8/28/2014 4:59:11 PM	14991
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/29/2014 1:03:03 PM	15017

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B43

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-003A

Client Sample ID: MW-27
Collection Date: 8/20/2014 1:30:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Toluene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Ethylbenzene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Methyl tert-butyl ether (MTBE)	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
1,2,4-Trimethylbenzene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
1,3,5-Trimethylbenzene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
1,2-Dichloroethane (EDC)	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
1,2-Dibromoethane (EDB)	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Naphthalene	ND	4.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
1-Methylnaphthalene	ND	8.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
2-Methylnaphthalene	ND	8.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Acetone	ND	20		µg/L	2	8/29/2014 12:33:36 PM	R20920
Bromobenzene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Bromodichloromethane	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Bromoform	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Bromomethane	ND	6.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
2-Butanone	ND	20		µg/L	2	8/29/2014 12:33:36 PM	R20920
Carbon disulfide	ND	20		µg/L	2	8/29/2014 12:33:36 PM	R20920
Carbon Tetrachloride	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Chlorobenzene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Chloroethane	ND	4.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Chloroform	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Chloromethane	ND	6.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
2-Chlorotoluene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
4-Chlorotoluene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
cis-1,2-DCE	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
cis-1,3-Dichloropropene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
1,2-Dibromo-3-chloropropane	ND	4.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Dibromochloromethane	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Dibromomethane	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
1,2-Dichlorobenzene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
1,3-Dichlorobenzene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
1,4-Dichlorobenzene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Dichlorodifluoromethane	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
1,1-Dichloroethane	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
1,1-Dichloroethene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
1,2-Dichloropropane	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
1,3-Dichloropropane	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
2,2-Dichloropropane	ND	4.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
1,1-Dichloropropene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Hexachlorobutadiene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1408B43

Date Reported: 9/24/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-003A

Client Sample ID: MW-27
Collection Date: 8/20/2014 1:30:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
2-Hexanone	ND	20		µg/L	2	8/29/2014 12:33:36 PM	R20920
Isopropylbenzene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
4-Isopropyltoluene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
4-Methyl-2-pentanone	ND	20		µg/L	2	8/29/2014 12:33:36 PM	R20920
Methylene Chloride	ND	6.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
n-Butylbenzene	ND	6.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
n-Propylbenzene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
sec-Butylbenzene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Styrene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
tert-Butylbenzene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
1,1,2,2-Tetrachloroethane	ND	4.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Tetrachloroethene (PCE)	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
trans-1,2-DCE	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
trans-1,3-Dichloropropene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
1,2,3-Trichlorobenzene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
1,2,4-Trichlorobenzene	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
1,1,1-Trichloroethane	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
1,1,2-Trichloroethane	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Trichloroethene (TCE)	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Trichlorofluoromethane	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
1,2,3-Trichloropropane	ND	4.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Vinyl chloride	ND	2.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Xylenes, Total	ND	3.0		µg/L	2	8/29/2014 12:33:36 PM	R20920
Surr: 1,2-Dichloroethane-d4	92.4	70-130		%REC	2	8/29/2014 12:33:36 PM	R20920
Surr: 4-Bromofluorobenzene	109	70-130		%REC	2	8/29/2014 12:33:36 PM	R20920
Surr: Dibromofluoromethane	93.7	70-130		%REC	2	8/29/2014 12:33:36 PM	R20920
Surr: Toluene-d8	88.3	70-130		%REC	2	8/29/2014 12:33:36 PM	R20920

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B43**Date Reported: **9/24/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-003B

Client Sample ID: MW-27
Collection Date: 8/20/2014 1:30:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/22/2014 12:43:34 PM	R20754
Surr: BFB	98.9	70.9-130		%REC	1	8/22/2014 12:43:34 PM	R20754

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: **1408B43**

Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-003C

Client Sample ID: MW-27
Collection Date: 8/20/2014 1:30:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	0.34	0.20		mg/L	1	8/23/2014 4:48:38 AM	14896
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/23/2014 4:48:38 AM	14896
Surr: DNOP	101	75.2-161		%REC	1	8/23/2014 4:48:38 AM	14896

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B43**Date Reported: **9/24/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-003D

Client Sample ID: MW-27
Collection Date: 8/20/2014 1:30:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.19	0.10		mg/L	1	8/21/2014 8:24:34 PM	R20741
Chloride	690	50		mg/L	100	8/22/2014 8:22:02 PM	R20760
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	8/21/2014 8:36:59 PM	R20741
Bromide	6.2	2.0		mg/L	20	8/21/2014 8:36:59 PM	R20741
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/21/2014 8:24:34 PM	R20741
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	8/21/2014 8:36:59 PM	R20741
Sulfate	3100	50		mg/L	100	8/22/2014 8:22:02 PM	R20760
SM 2540 C: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	5790	40.0	*	mg/L	1	8/28/2014 2:52:00 PM	14985
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	230	1.0	H	mg CO2/L	1	8/25/2014 5:55:55 PM	R20804
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	3400	0.010		µmhos/cm	1	8/25/2014 5:55:55 PM	R20804
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	220	20		mg/L CaCO3	1	8/25/2014 5:55:55 PM	R20804
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	8/25/2014 5:55:55 PM	R20804
Total Alkalinity (as CaCO3)	220	20		mg/L CaCO3	1	8/25/2014 5:55:55 PM	R20804

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B43****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-003E

Client Sample ID: MW-27
Collection Date: 8/20/2014 1:30:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	0.053	0.0020		mg/L	1	8/27/2014 3:16:05 PM	R20845
Cadmium	ND	0.0020		mg/L	1	8/27/2014 3:16:05 PM	R20845
Calcium	700	20		mg/L	20	8/27/2014 5:11:46 PM	R20845
Chromium	ND	0.0060		mg/L	1	8/27/2014 3:16:05 PM	R20845
Copper	ND	0.0060		mg/L	1	8/27/2014 3:16:05 PM	R20845
Iron	0.36	0.020	*	mg/L	1	8/27/2014 3:16:05 PM	R20845
Magnesium	110	5.0		mg/L	5	8/27/2014 3:17:58 PM	R20845
Manganese	0.80	0.0020	*	mg/L	1	8/27/2014 3:16:05 PM	R20845
Potassium	3.3	1.0		mg/L	1	8/27/2014 3:16:05 PM	R20845
Silver	ND	0.0050		mg/L	1	8/27/2014 3:16:05 PM	R20845
Sodium	910	20		mg/L	20	8/27/2014 5:11:46 PM	R20845
Zinc	ND	0.010		mg/L	1	8/27/2014 3:16:05 PM	R20845
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Antimony	ND	0.010		mg/L	10	9/2/2014 1:44:58 PM	R20953
Arsenic	0.016	0.010	*	mg/L	10	9/2/2014 1:44:58 PM	R20953
Lead	ND	0.010		mg/L	10	9/2/2014 1:44:58 PM	R20953
Selenium	0.054	0.010	*	mg/L	10	9/2/2014 1:44:58 PM	R20953
Thallium	ND	0.010		mg/L	10	9/2/2014 1:44:58 PM	R20953
Uranium	ND	0.010		mg/L	10	9/2/2014 1:44:58 PM	R20953
EPA METHOD 245.1: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	9/3/2014 9:37:04 AM	15056

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B43

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-003F

Client Sample ID: MW-27
Collection Date: 8/20/2014 1:30:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	8/26/2014 5:21:48 PM	14929
Barium	0.058	0.0020		mg/L	1	8/26/2014 5:21:48 PM	14929
Cadmium	ND	0.0020		mg/L	1	8/26/2014 5:21:48 PM	14929
Chromium	ND	0.0060		mg/L	1	8/26/2014 5:21:48 PM	14929
Lead	ND	0.0050		mg/L	1	8/26/2014 5:21:48 PM	14929
Selenium	ND	0.050		mg/L	1	8/26/2014 5:21:48 PM	14929
Silver	ND	0.0050		mg/L	1	8/28/2014 5:01:08 PM	14991
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/29/2014 1:04:49 PM	15017

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B43

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-004A

Client Sample ID: MW-32
Collection Date: 8/20/2014 11:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Toluene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Ethylbenzene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Naphthalene	ND	2.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
1-Methylnaphthalene	ND	4.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
2-Methylnaphthalene	ND	4.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Acetone	ND	10		µg/L	1	8/29/2014 1:03:18 PM	R20920
Bromobenzene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Bromodichloromethane	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Bromoform	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Bromomethane	ND	3.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
2-Butanone	ND	10		µg/L	1	8/29/2014 1:03:18 PM	R20920
Carbon disulfide	ND	10		µg/L	1	8/29/2014 1:03:18 PM	R20920
Carbon Tetrachloride	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Chlorobenzene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Chloroethane	ND	2.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Chloroform	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Chloromethane	ND	3.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
2-Chlorotoluene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
4-Chlorotoluene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
cis-1,2-DCE	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Dibromochloromethane	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Dibromomethane	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
1,1-Dichloroethane	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
1,1-Dichloroethene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
1,2-Dichloropropane	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
1,3-Dichloropropane	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
2,2-Dichloropropane	ND	2.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
1,1-Dichloropropene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Hexachlorobutadiene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B43****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-004A

Client Sample ID: MW-32
Collection Date: 8/20/2014 11:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
2-Hexanone	ND	10		µg/L	1	8/29/2014 1:03:18 PM	R20920
Isopropylbenzene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
4-Isopropyltoluene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
4-Methyl-2-pentanone	ND	10		µg/L	1	8/29/2014 1:03:18 PM	R20920
Methylene Chloride	ND	3.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
n-Butylbenzene	ND	3.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
n-Propylbenzene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
sec-Butylbenzene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Styrene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
tert-Butylbenzene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
trans-1,2-DCE	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Trichlorofluoromethane	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Vinyl chloride	ND	1.0		µg/L	1	8/29/2014 1:03:18 PM	R20920
Xylenes, Total	ND	1.5		µg/L	1	8/29/2014 1:03:18 PM	R20920
Surr: 1,2-Dichloroethane-d4	93.8	70-130		%REC	1	8/29/2014 1:03:18 PM	R20920
Surr: 4-Bromofluorobenzene	95.8	70-130		%REC	1	8/29/2014 1:03:18 PM	R20920
Surr: Dibromofluoromethane	94.5	70-130		%REC	1	8/29/2014 1:03:18 PM	R20920
Surr: Toluene-d8	89.7	70-130		%REC	1	8/29/2014 1:03:18 PM	R20920

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B43

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-004B

Client Sample ID: MW-32
Collection Date: 8/20/2014 11:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/22/2014 1:13:40 PM	R20754
Surr: BFB	95.9	70.9-130		%REC	1	8/22/2014 1:13:40 PM	R20754

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: **1408B43**

Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-004C

Client Sample ID: MW-32
Collection Date: 8/20/2014 11:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/23/2014 5:18:25 AM	14896
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/23/2014 5:18:25 AM	14896
Surr: DNOP	114	75.2-161		%REC	1	8/23/2014 5:18:25 AM	14896

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B43****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-004D

Client Sample ID: MW-32
Collection Date: 8/20/2014 11:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS				Analyst: LGP			
Fluoride	0.15	0.10		mg/L	1	8/21/2014 8:49:23 PM	R20741
Chloride	650	25		mg/L	50	8/22/2014 8:34:27 PM	R20760
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/21/2014 8:49:23 PM	R20741
Bromide	4.9	2.0		mg/L	20	8/21/2014 9:01:47 PM	R20741
Nitrogen, Nitrate (As N)	39	2.0	*	mg/L	20	8/21/2014 9:01:47 PM	R20741
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	8/21/2014 9:01:47 PM	R20741
Sulfate	1600	25		mg/L	50	8/22/2014 8:34:27 PM	R20760
SM 2540 C: TOTAL DISSOLVED SOLIDS				Analyst: KS			
Total Dissolved Solids	3610	40.0	*	mg/L	1	8/28/2014 2:52:00 PM	14985
CARBON DIOXIDE				Analyst: JRR			
Total Carbon Dioxide	170	1.0	H	mg CO2/L	1	8/25/2014 6:08:57 PM	R20804
SM2510B: SPECIFIC CONDUCTANCE				Analyst: JRR			
Conductivity	2900	0.010		µmhos/cm	1	8/25/2014 6:08:57 PM	R20804
SM2320B: ALKALINITY				Analyst: JRR			
Bicarbonate (As CaCO3)	190	20		mg/L CaCO3	1	8/25/2014 6:08:57 PM	R20804
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	8/25/2014 6:08:57 PM	R20804
Total Alkalinity (as CaCO3)	190	20		mg/L CaCO3	1	8/25/2014 6:08:57 PM	R20804

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 26 of 67

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: **1408B43**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-004E

Client Sample ID: MW-32
Collection Date: 8/20/2014 11:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	0.017	0.0020		mg/L	1	8/27/2014 3:19:54 PM	R20845
Cadmium	ND	0.0020		mg/L	1	8/27/2014 3:19:54 PM	R20845
Calcium	290	5.0		mg/L	5	8/27/2014 3:21:55 PM	R20845
Chromium	ND	0.0060		mg/L	1	8/27/2014 3:19:54 PM	R20845
Copper	ND	0.0060		mg/L	1	8/27/2014 3:19:54 PM	R20845
Iron	ND	0.020		mg/L	1	8/27/2014 3:19:54 PM	R20845
Magnesium	44	1.0		mg/L	1	8/27/2014 3:19:54 PM	R20845
Manganese	ND	0.0020		mg/L	1	8/27/2014 3:19:54 PM	R20845
Potassium	5.9	1.0		mg/L	1	8/27/2014 3:19:54 PM	R20845
Silver	ND	0.0050		mg/L	1	8/27/2014 3:19:54 PM	R20845
Sodium	800	20		mg/L	20	8/27/2014 5:13:35 PM	R20845
Zinc	ND	0.010		mg/L	1	8/27/2014 3:19:54 PM	R20845
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Antimony	ND	0.0010		mg/L	1	8/29/2014 5:12:10 PM	R20917
Arsenic	ND	0.020	*	mg/L	20	9/2/2014 1:50:19 PM	R20953
Lead	ND	0.0010		mg/L	1	8/29/2014 5:12:10 PM	R20917
Selenium	0.057	0.020	*	mg/L	20	9/2/2014 1:50:19 PM	R20953
Thallium	ND	0.0010		mg/L	1	8/29/2014 5:12:10 PM	R20917
Uranium	0.016	0.0010		mg/L	1	8/29/2014 5:12:10 PM	R20917
EPA METHOD 245.1: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	9/3/2014 9:38:54 AM	15056

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B43**Date Reported: **9/24/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-32**Project:** Cross Gradient Wells 8-20-14**Collection Date:** 8/20/2014 11:30:00 AM**Lab ID:** 1408B43-004F**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	8/26/2014 5:23:34 PM	14929
Barium	0.034	0.0020		mg/L	1	8/26/2014 5:23:34 PM	14929
Cadmium	ND	0.0020		mg/L	1	8/26/2014 5:23:34 PM	14929
Chromium	ND	0.0060		mg/L	1	8/26/2014 5:23:34 PM	14929
Lead	ND	0.0050		mg/L	1	8/26/2014 5:23:34 PM	14929
Selenium	ND	0.050		mg/L	1	8/26/2014 5:23:34 PM	14929
Silver	ND	0.0050		mg/L	1	8/28/2014 5:02:54 PM	14991
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/29/2014 1:06:36 PM	15017

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B43****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-005A

Client Sample ID: MW-33
Collection Date: 8/20/2014 1:00:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Toluene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Ethylbenzene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Naphthalene	ND	2.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
1-Methylnaphthalene	ND	4.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
2-Methylnaphthalene	ND	4.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Acetone	ND	10		µg/L	1	8/29/2014 1:32:59 PM	R20920
Bromobenzene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Bromodichloromethane	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Bromoform	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Bromomethane	ND	3.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
2-Butanone	ND	10		µg/L	1	8/29/2014 1:32:59 PM	R20920
Carbon disulfide	ND	10		µg/L	1	8/29/2014 1:32:59 PM	R20920
Carbon Tetrachloride	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Chlorobenzene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Chloroethane	ND	2.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Chloroform	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Chloromethane	ND	3.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
2-Chlorotoluene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
4-Chlorotoluene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
cis-1,2-DCE	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Dibromochloromethane	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Dibromomethane	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
1,1-Dichloroethane	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
1,1-Dichloroethene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
1,2-Dichloropropane	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
1,3-Dichloropropane	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
2,2-Dichloropropane	ND	2.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
1,1-Dichloropropene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Hexachlorobutadiene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B43**Date Reported: **9/24/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-005A

Client Sample ID: MW-33
Collection Date: 8/20/2014 1:00:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
2-Hexanone	ND	10		µg/L	1	8/29/2014 1:32:59 PM	R20920
Isopropylbenzene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
4-Isopropyltoluene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
4-Methyl-2-pentanone	ND	10		µg/L	1	8/29/2014 1:32:59 PM	R20920
Methylene Chloride	ND	3.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
n-Butylbenzene	ND	3.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
n-Propylbenzene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
sec-Butylbenzene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Styrene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
tert-Butylbenzene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
trans-1,2-DCE	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Trichlorofluoromethane	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Vinyl chloride	ND	1.0		µg/L	1	8/29/2014 1:32:59 PM	R20920
Xylenes, Total	ND	1.5		µg/L	1	8/29/2014 1:32:59 PM	R20920
Surr: 1,2-Dichloroethane-d4	94.1	70-130		%REC	1	8/29/2014 1:32:59 PM	R20920
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	8/29/2014 1:32:59 PM	R20920
Surr: Dibromofluoromethane	89.2	70-130		%REC	1	8/29/2014 1:32:59 PM	R20920
Surr: Toluene-d8	90.6	70-130		%REC	1	8/29/2014 1:32:59 PM	R20920

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B43**Date Reported: **9/24/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-005B

Client Sample ID: MW-33
Collection Date: 8/20/2014 1:00:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/22/2014 1:43:51 PM	R20754
Surr: BFB	102	70.9-130		%REC	1	8/22/2014 1:43:51 PM	R20754

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: **1408B43**

Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-005C

Client Sample ID: MW-33
Collection Date: 8/20/2014 1:00:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/23/2014 5:48:25 AM	14896
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/23/2014 5:48:25 AM	14896
Surr: DNOP	117	75.2-161		%REC	1	8/23/2014 5:48:25 AM	14896

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B43****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-005D

Client Sample ID: MW-33
Collection Date: 8/20/2014 1:00:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS				Analyst: LGP			
Fluoride	0.10	0.10		mg/L	1	8/21/2014 9:14:12 PM	R20741
Chloride	340	50		mg/L	100	8/22/2014 8:46:52 PM	R20760
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/21/2014 9:14:12 PM	R20741
Bromide	1.7	0.10		mg/L	1	8/21/2014 9:14:12 PM	R20741
Nitrogen, Nitrate (As N)	24	2.0	*	mg/L	20	8/21/2014 9:26:38 PM	R20741
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	8/21/2014 9:26:38 PM	R20741
Sulfate	2100	50		mg/L	100	8/22/2014 8:46:52 PM	R20760
SM 2540 C: TOTAL DISSOLVED SOLIDS				Analyst: KS			
Total Dissolved Solids	3960	40.0	*	mg/L	1	8/28/2014 2:52:00 PM	14985
CARBON DIOXIDE				Analyst: JRR			
Total Carbon Dioxide	110	1.0	H	mg CO2/L	1	8/25/2014 6:19:37 PM	R20804
SM2510B: SPECIFIC CONDUCTANCE				Analyst: JRR			
Conductivity	2900	0.010		µmhos/cm	1	8/25/2014 6:19:37 PM	R20804
SM2320B: ALKALINITY				Analyst: JRR			
Bicarbonate (As CaCO3)	120	20		mg/L CaCO3	1	8/25/2014 6:19:37 PM	R20804
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	8/25/2014 6:19:37 PM	R20804
Total Alkalinity (as CaCO3)	120	20		mg/L CaCO3	1	8/25/2014 6:19:37 PM	R20804

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B43****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-005E

Client Sample ID: MW-33
Collection Date: 8/20/2014 1:00:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	0.015	0.0020		mg/L	1	8/27/2014 3:39:53 PM	R20845
Cadmium	ND	0.0020		mg/L	1	8/27/2014 3:39:53 PM	R20845
Calcium	370	5.0		mg/L	5	8/27/2014 3:42:05 PM	R20845
Chromium	ND	0.0060		mg/L	1	8/27/2014 3:39:53 PM	R20845
Copper	ND	0.0060		mg/L	1	8/27/2014 3:39:53 PM	R20845
Iron	ND	0.020		mg/L	1	8/27/2014 3:39:53 PM	R20845
Magnesium	55	1.0		mg/L	1	8/27/2014 3:39:53 PM	R20845
Manganese	ND	0.0020		mg/L	1	8/27/2014 3:39:53 PM	R20845
Potassium	7.0	1.0		mg/L	1	8/27/2014 3:39:53 PM	R20845
Silver	ND	0.0050		mg/L	1	8/28/2014 5:44:20 PM	R20883
Sodium	770	20		mg/L	20	8/27/2014 5:15:23 PM	R20845
Zinc	ND	0.010		mg/L	1	8/27/2014 3:39:53 PM	R20845
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Antimony	ND	0.0010		mg/L	1	8/29/2014 5:17:32 PM	R20917
Arsenic	ND	0.010		mg/L	10	9/2/2014 1:55:40 PM	R20953
Lead	ND	0.010		mg/L	10	9/2/2014 1:55:40 PM	R20953
Selenium	0.049	0.010		mg/L	10	9/2/2014 1:55:40 PM	R20953
Thallium	ND	0.010		mg/L	10	9/2/2014 1:55:40 PM	R20953
Uranium	0.012	0.0010		mg/L	1	8/29/2014 5:17:32 PM	R20917
EPA METHOD 245.1: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	9/3/2014 9:40:46 AM	15056

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B43

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-005F

Client Sample ID: MW-33
Collection Date: 8/20/2014 1:00:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	8/26/2014 5:33:24 PM	14929
Barium	0.016	0.0020		mg/L	1	8/26/2014 5:33:24 PM	14929
Cadmium	ND	0.0020		mg/L	1	8/26/2014 5:33:24 PM	14929
Chromium	ND	0.0060		mg/L	1	8/26/2014 5:33:24 PM	14929
Lead	ND	0.0050		mg/L	1	8/26/2014 5:33:24 PM	14929
Selenium	ND	0.050		mg/L	1	8/26/2014 5:33:24 PM	14929
Silver	ND	0.0050		mg/L	1	8/28/2014 5:12:55 PM	14991
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/29/2014 1:08:24 PM	15017

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1408B43

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-006A

Client Sample ID: MW-1D
Collection Date: 8/20/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Toluene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Ethylbenzene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Naphthalene	ND	2.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
1-Methylnaphthalene	ND	4.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
2-Methylnaphthalene	ND	4.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Acetone	ND	10		µg/L	1	8/29/2014 2:02:39 PM	R20920
Bromobenzene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Bromodichloromethane	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Bromoform	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Bromomethane	ND	3.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
2-Butanone	ND	10		µg/L	1	8/29/2014 2:02:39 PM	R20920
Carbon disulfide	ND	10		µg/L	1	8/29/2014 2:02:39 PM	R20920
Carbon Tetrachloride	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Chlorobenzene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Chloroethane	ND	2.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Chloroform	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Chloromethane	ND	3.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
2-Chlorotoluene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
4-Chlorotoluene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
cis-1,2-DCE	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Dibromochloromethane	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Dibromomethane	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
1,1-Dichloroethane	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
1,1-Dichloroethene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
1,2-Dichloropropane	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
1,3-Dichloropropane	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
2,2-Dichloropropane	ND	2.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
1,1-Dichloropropene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Hexachlorobutadiene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B43****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-006A

Client Sample ID: MW-1D
Collection Date: 8/20/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
2-Hexanone	ND	10		µg/L	1	8/29/2014 2:02:39 PM	R20920
Isopropylbenzene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
4-Isopropyltoluene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
4-Methyl-2-pentanone	ND	10		µg/L	1	8/29/2014 2:02:39 PM	R20920
Methylene Chloride	ND	3.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
n-Butylbenzene	ND	3.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
n-Propylbenzene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
sec-Butylbenzene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Styrene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
tert-Butylbenzene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
trans-1,2-DCE	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Trichlorofluoromethane	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Vinyl chloride	ND	1.0		µg/L	1	8/29/2014 2:02:39 PM	R20920
Xylenes, Total	ND	1.5		µg/L	1	8/29/2014 2:02:39 PM	R20920
Surr: 1,2-Dichloroethane-d4	97.5	70-130		%REC	1	8/29/2014 2:02:39 PM	R20920
Surr: 4-Bromofluorobenzene	98.8	70-130		%REC	1	8/29/2014 2:02:39 PM	R20920
Surr: Dibromofluoromethane	94.7	70-130		%REC	1	8/29/2014 2:02:39 PM	R20920
Surr: Toluene-d8	89.2	70-130		%REC	1	8/29/2014 2:02:39 PM	R20920

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B43

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-006B

Client Sample ID: MW-1D
Collection Date: 8/20/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/22/2014 2:16:43 PM	R20754
Surr: BFB	101	70.9-130		%REC	1	8/22/2014 2:16:43 PM	R20754

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: **1408B43**

Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-006C

Client Sample ID: MW-1D
Collection Date: 8/20/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/23/2014 6:18:07 AM	14896
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/23/2014 6:18:07 AM	14896
Surr: DNOP	105	75.2-161		%REC	1	8/23/2014 6:18:07 AM	14896

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B43**Date Reported: **9/24/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-006D

Client Sample ID: MW-1D
Collection Date: 8/20/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.49	0.10		mg/L	1	8/21/2014 10:03:53 PM	R20741
Chloride	14	0.50		mg/L	1	8/21/2014 10:03:53 PM	R20741
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/21/2014 10:03:53 PM	R20741
Bromide	0.13	0.10		mg/L	1	8/21/2014 10:03:53 PM	R20741
Nitrogen, Nitrate (As N)	0.21	0.10		mg/L	1	8/21/2014 10:03:53 PM	R20741
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/21/2014 10:03:53 PM	R20741
Sulfate	100	10		mg/L	20	8/21/2014 10:16:17 PM	R20741
SM 2540 C: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	458	40.0		mg/L	1	8/28/2014 2:52:00 PM	14985
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	240	1.0	H	mg CO2/L	1	8/25/2014 6:28:27 PM	R20804
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	590	0.010		µmhos/cm	1	8/25/2014 6:28:27 PM	R20804
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	260	20		mg/L CaCO3	1	8/25/2014 6:28:27 PM	R20804
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	8/25/2014 6:28:27 PM	R20804
Total Alkalinity (as CaCO3)	260	20		mg/L CaCO3	1	8/25/2014 6:28:27 PM	R20804

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B43****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-006E

Client Sample ID: MW-1D
Collection Date: 8/20/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	0.027	0.0020		mg/L	1	8/27/2014 3:44:01 PM	R20845
Cadmium	ND	0.0020		mg/L	1	8/27/2014 3:44:01 PM	R20845
Calcium	69	1.0		mg/L	1	8/27/2014 3:44:01 PM	R20845
Chromium	ND	0.0060		mg/L	1	8/27/2014 3:44:01 PM	R20845
Copper	ND	0.0060		mg/L	1	8/27/2014 3:44:01 PM	R20845
Iron	0.082	0.020		mg/L	1	8/27/2014 3:44:01 PM	R20845
Magnesium	16	1.0		mg/L	1	8/27/2014 3:44:01 PM	R20845
Manganese	0.13	0.0020	*	mg/L	1	8/27/2014 3:44:01 PM	R20845
Potassium	2.6	1.0		mg/L	1	8/27/2014 3:44:01 PM	R20845
Silver	ND	0.0050		mg/L	1	8/28/2014 5:46:21 PM	R20883
Sodium	77	5.0		mg/L	5	8/27/2014 5:17:10 PM	R20845
Zinc	ND	0.010		mg/L	1	8/27/2014 3:44:01 PM	R20845
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Antimony	ND	0.0010		mg/L	1	8/29/2014 5:22:53 PM	R20917
Arsenic	0.0010	0.0010		mg/L	1	8/29/2014 5:22:53 PM	R20917
Lead	ND	0.0010		mg/L	1	8/29/2014 5:22:53 PM	R20917
Selenium	0.0018	0.0010		mg/L	1	8/29/2014 5:22:53 PM	R20917
Thallium	ND	0.0010		mg/L	1	8/29/2014 5:22:53 PM	R20917
Uranium	0.0026	0.0010		mg/L	1	8/29/2014 5:22:53 PM	R20917
EPA METHOD 245.1: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	9/3/2014 9:42:37 AM	15056

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 41 of 67

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B43

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-006F

Client Sample ID: MW-1D
Collection Date: 8/20/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	8/26/2014 5:35:23 PM	14929
Barium	0.041	0.0020		mg/L	1	8/26/2014 5:35:23 PM	14929
Cadmium	ND	0.0020		mg/L	1	8/26/2014 5:35:23 PM	14929
Chromium	ND	0.0060		mg/L	1	8/26/2014 5:35:23 PM	14929
Lead	ND	0.0050		mg/L	1	8/26/2014 5:35:23 PM	14929
Selenium	ND	0.050		mg/L	1	8/26/2014 5:35:23 PM	14929
Silver	ND	0.0050		mg/L	1	8/28/2014 5:19:01 PM	14991
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/29/2014 1:10:11 PM	15017

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B43****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-007A

Client Sample ID: Trip Blank
Collection Date:
Matrix: Trip Blank

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Toluene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Ethylbenzene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Naphthalene	ND	2.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
1-Methylnaphthalene	ND	4.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
2-Methylnaphthalene	ND	4.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Acetone	ND	10		µg/L	1	8/29/2014 2:32:17 PM	R20920
Bromobenzene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Bromodichloromethane	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Bromoform	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Bromomethane	ND	3.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
2-Butanone	ND	10		µg/L	1	8/29/2014 2:32:17 PM	R20920
Carbon disulfide	ND	10		µg/L	1	8/29/2014 2:32:17 PM	R20920
Carbon Tetrachloride	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Chlorobenzene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Chloroethane	ND	2.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Chloroform	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Chloromethane	ND	3.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
2-Chlorotoluene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
4-Chlorotoluene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
cis-1,2-DCE	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Dibromochloromethane	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Dibromomethane	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
1,1-Dichloroethane	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
1,1-Dichloroethene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
1,2-Dichloropropane	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
1,3-Dichloropropane	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
2,2-Dichloropropane	ND	2.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
1,1-Dichloropropene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Hexachlorobutadiene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B43**Date Reported: **9/24/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-007A

Client Sample ID: Trip Blank
Collection Date:
Matrix: Trip Blank

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
2-Hexanone	ND	10		µg/L	1	8/29/2014 2:32:17 PM	R20920
Isopropylbenzene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
4-Isopropyltoluene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
4-Methyl-2-pentanone	ND	10		µg/L	1	8/29/2014 2:32:17 PM	R20920
Methylene Chloride	ND	3.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
n-Butylbenzene	ND	3.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
n-Propylbenzene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
sec-Butylbenzene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Styrene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
tert-Butylbenzene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
trans-1,2-DCE	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Trichlorofluoromethane	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Vinyl chloride	ND	1.0		µg/L	1	8/29/2014 2:32:17 PM	R20920
Xylenes, Total	ND	1.5		µg/L	1	8/29/2014 2:32:17 PM	R20920
Surr: 1,2-Dichloroethane-d4	96.8	70-130		%REC	1	8/29/2014 2:32:17 PM	R20920
Surr: 4-Bromofluorobenzene	94.0	70-130		%REC	1	8/29/2014 2:32:17 PM	R20920
Surr: Dibromofluoromethane	96.8	70-130		%REC	1	8/29/2014 2:32:17 PM	R20920
Surr: Toluene-d8	90.4	70-130		%REC	1	8/29/2014 2:32:17 PM	R20920

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B43**Date Reported: **9/24/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-20-14
Lab ID: 1408B43-008A

Client Sample ID: Rinsate
Collection Date: 8/20/2014 1:45:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/29/2014 12:03:52 PM	R20920
Toluene	ND	1.0		µg/L	1	8/29/2014 12:03:52 PM	R20920
Ethylbenzene	ND	1.0		µg/L	1	8/29/2014 12:03:52 PM	R20920
Xylenes, Total	ND	1.5		µg/L	1	8/29/2014 12:03:52 PM	R20920
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	8/29/2014 12:03:52 PM	R20920
Surr: 4-Bromofluorobenzene	101	70-130		%REC	1	8/29/2014 12:03:52 PM	R20920
Surr: Dibromofluoromethane	98.7	70-130		%REC	1	8/29/2014 12:03:52 PM	R20920
Surr: Toluene-d8	91.1	70-130		%REC	1	8/29/2014 12:03:52 PM	R20920

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID	MB-14929		SampType:	MBLK		TestCode:	EPA Method 200.7: Metals			
Client ID:	PBW		Batch ID:	14929		RunNo:	20802			
Prep Date:	8/25/2014		Analysis Date:	8/26/2014		SeqNo:	605254		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								

Sample ID	LCS-14929		SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW		Batch ID:	14929		RunNo:	20802			
Prep Date:	8/25/2014		Analysis Date:	8/26/2014		SeqNo:	605255		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	104	85	115			
Barium	0.52	0.0020	0.5000	0	103	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			

Sample ID	MB-14929		SampType:	MBLK		TestCode:	EPA Method 200.7: Metals			
Client ID:	PBW		Batch ID:	14929		RunNo:	20816			
Prep Date:	8/25/2014		Analysis Date:	8/26/2014		SeqNo:	605686		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.0050								
Selenium	ND	0.050								

Sample ID	LCS-14929		SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW		Batch ID:	14929		RunNo:	20816			
Prep Date:	8/25/2014		Analysis Date:	8/26/2014		SeqNo:	605687		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.51	0.0050	0.5000	0	101	85	115			
Selenium	0.52	0.050	0.5000	0	105	85	115			

Sample ID	1408B43-002FMS		SampType:	MS		TestCode:	EPA Method 200.7: Metals			
Client ID:	MW-13		Batch ID:	14929		RunNo:	20816			
Prep Date:	8/25/2014		Analysis Date:	8/26/2014		SeqNo:	605703		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	105	70	130			
Barium	0.49	0.0020	0.5000	0.02349	93.7	70	130			
Cadmium	0.49	0.0020	0.5000	0	97.6	70	130			
Chromium	0.48	0.0060	0.5000	0	95.1	70	130			

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 greater than 2.
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#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID	1408B43-002FMS		SampType: MS		TestCode: EPA Method 200.7: Metals					
Client ID:	MW-13		Batch ID: 14929		RunNo: 20816					
Prep Date:	8/25/2014		Analysis Date: 8/26/2014		SeqNo: 605703		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.46	0.0050	0.5000	0	91.5	70	130			
Selenium	0.46	0.050	0.5000	0	91.7	70	130			

Sample ID	1408B43-002FMSD		SampType: MSD		TestCode: EPA Method 200.7: Metals					
Client ID:	MW-13		Batch ID: 14929		RunNo: 20816					
Prep Date:	8/25/2014		Analysis Date: 8/26/2014		SeqNo: 605704		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	70	130	1.83	20	
Barium	0.49	0.0020	0.5000	0.02349	93.4	70	130	0.334	20	
Cadmium	0.49	0.0020	0.5000	0	97.0	70	130	0.580	20	
Chromium	0.47	0.0060	0.5000	0	94.7	70	130	0.478	20	
Lead	0.46	0.0050	0.5000	0	91.1	70	130	0.451	20	
Selenium	0.45	0.050	0.5000	0	89.9	70	130	1.93	20	

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID: R20845			RunNo: 20845					
Prep Date:		Analysis Date: 8/27/2014			SeqNo: 606768		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 200.7: Metals					
Client ID:	LCSW		Batch ID: R20845		RunNo: 20845					
Prep Date:			Analysis Date: 8/27/2014		SeqNo: 606769		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.4	85	115			
Cadmium	0.48	0.0020	0.5000	0	96.1	85	115			

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 greater than 2.
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#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 200.7: Metals						
Client ID:	LCSW		Batch ID: R20845		RunNo: 20845						
Prep Date:			Analysis Date: 8/27/2014		SeqNo: 606769		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Calcium	50	1.0	50.00	0	99.6	85	115				
Chromium	0.50	0.0060	0.5000	0	99.6	85	115				
Copper	0.47	0.0060	0.5000	0	94.3	85	115				
Iron	0.51	0.020	0.5000	0	103	85	115				
Magnesium	50	1.0	50.00	0	100	85	115				
Manganese	0.49	0.0020	0.5000	0	97.9	85	115				
Potassium	49	1.0	50.00	0	98.0	85	115				
Silver	0.50	0.0050	0.5000	0	99.4	85	115				
Sodium	49	1.0	50.00	0	98.3	85	115				
Zinc	0.48	0.010	0.5000	0	95.2	85	115				

Sample ID	MB-14991		SampType: MBLK		TestCode: EPA Method 200.7: Metals					
Client ID:	PBW		Batch ID: 14991		RunNo: 20883					
Prep Date:	8/27/2014		Analysis Date: 8/28/2014		SeqNo: 607539		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Sample ID	LCS-14991		SampType: LCS		TestCode: EPA Method 200.7: Metals					
Client ID:	LCSW		Batch ID: 14991		RunNo: 20883					
Prep Date:	8/27/2014		Analysis Date: 8/28/2014		SeqNo: 607540		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.50	0.0050	0.5000	0	99.6	85	115			

Sample ID	1408B43-005FMS		SampType: MS		TestCode: EPA Method 200.7: Metals					
Client ID:	MW-33		Batch ID: 14991		RunNo: 20883					
Prep Date:	8/27/2014		Analysis Date: 8/28/2014		SeqNo: 607562		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.45	0.0050	0.5000	0	89.1	70	130			

Sample ID	1408B43-005FMSD		SampType: MSD		TestCode: EPA Method 200.7: Metals					
Client ID:	MW-33		Batch ID: 14991		RunNo: 20883					
Prep Date:	8/27/2014		Analysis Date: 8/28/2014		SeqNo: 607563		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.45	0.0050	0.5000	0	90.0	70	130	0.911	20	

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 greater than 2.
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#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	PBW		Batch ID:	R20845		RunNo:	20845			
Prep Date:			Analysis Date:	8/27/2014		SeqNo:	606770		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	LCSW		Batch ID:	R20845		RunNo:	20845			
Prep Date:			Analysis Date:	8/27/2014		SeqNo:	606771		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	98.3	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.3	85	115			
Calcium	51	1.0	50.00	0	101	85	115			
Chromium	0.51	0.0060	0.5000	0	103	85	115			
Copper	0.49	0.0060	0.5000	0	97.2	85	115			
Iron	0.52	0.020	0.5000	0	103	85	115			
Magnesium	51	1.0	50.00	0	102	85	115			
Manganese	0.50	0.0020	0.5000	0	101	85	115			
Potassium	50	1.0	50.00	0	100	85	115			
Silver	0.52	0.0050	0.5000	0	103	85	115			
Sodium	50	1.0	50.00	0	100	85	115			
Zinc	0.49	0.010	0.5000	0	97.7	85	115			

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	PBW		Batch ID:	R20883		RunNo:	20883			
Prep Date:			Analysis Date:	8/28/2014		SeqNo:	607543		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R20883	RunNo:	20883					
Prep Date:		Analysis Date:	8/28/2014	SeqNo:	607544	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.48	0.0050	0.5000	0	95.4	85	115			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R20917		RunNo: 20917					
Prep Date:			Analysis Date: 8/29/2014		SeqNo: 608778		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.023	0.0010	0.02500	0	90.5	85	115			
Arsenic	0.023	0.0010	0.02500	0	91.9	85	115			
Lead	0.024	0.0010	0.02500	0	96.8	85	115			
Selenium	0.023	0.0010	0.02500	0	90.3	85	115			
Thallium	0.024	0.0010	0.02500	0	96.9	85	115			
Uranium	0.025	0.0010	0.02500	0	98.2	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R20917		RunNo: 20917					
Prep Date:			Analysis Date: 8/29/2014		SeqNo: 608779		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	99.7	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.8	85	115			
Lead	0.024	0.0010	0.02500	0	97.4	85	115			
Selenium	0.023	0.0010	0.02500	0	90.7	85	115			
Thallium	0.024	0.0010	0.02500	0	97.6	85	115			
Uranium	0.025	0.0010	0.02500	0	100	85	115			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R20917			RunNo: 20917					
Prep Date:		Analysis Date: 8/29/2014			SeqNo: 608780		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								
Thallium	ND	0.0010								
Uranium	ND	0.0010								

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R20917			RunNo: 20917					
Prep Date:		Analysis Date: 8/29/2014			SeqNo: 608781		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R20917	RunNo:	20917					
Prep Date:		Analysis Date:	8/29/2014	SeqNo:	608781	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Thallium	ND	0.0010								
Uranium	ND	0.0010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R20953	RunNo:	20953					
Prep Date:		Analysis Date:	9/2/2014	SeqNo:	609801	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.1	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.4	85	115			
Lead	0.025	0.0010	0.02500	0	101	85	115			
Selenium	0.023	0.0010	0.02500	0	93.1	85	115			
Thallium	0.025	0.0010	0.02500	0	100	85	115			
Uranium	0.026	0.0010	0.02500	0	102	85	115			

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R20953	RunNo:	20953					
Prep Date:		Analysis Date:	9/2/2014	SeqNo:	609802	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.024	0.0010	0.02500	0	96.9	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R20953	RunNo:	20953					
Prep Date:		Analysis Date:	9/2/2014	SeqNo:	609803	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								
Thallium	ND	0.0010								
Uranium	ND	0.0010								

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R20953	RunNo:	20953					
Prep Date:		Analysis Date:	9/2/2014	SeqNo:	609804	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.0010								

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 greater than 2.
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#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID	MB-15017	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	15017	RunNo:	20896					
Prep Date:	8/28/2014	Analysis Date:	8/29/2014	SeqNo:	608095	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-15017	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	15017	RunNo:	20896					
Prep Date:	8/28/2014	Analysis Date:	8/29/2014	SeqNo:	608096	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	98.4	80	120			

Sample ID	MB-15056	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	15056	RunNo:	20955					
Prep Date:	9/2/2014	Analysis Date:	9/3/2014	SeqNo:	609874	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-15056	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	15056	RunNo:	20955					
Prep Date:	9/2/2014	Analysis Date:	9/3/2014	SeqNo:	609875	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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID	MB-14985	SampType:	MBLK	TestCode:	SM 2540 C: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	14985	RunNo:	20874					
Prep Date:	8/27/2014	Analysis Date:	8/28/2014	SeqNo:	607415	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-14985	SampType:	LCS	TestCode:	SM 2540 C: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	14985	RunNo:	20874					
Prep Date:	8/27/2014	Analysis Date:	8/28/2014	SeqNo:	607416	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

Sample ID	1408B43-001DMS	SampType:	MS	TestCode:	SM 2540 C: Total Dissolved Solids					
Client ID:	MW-1	Batch ID:	14985	RunNo:	20874					
Prep Date:	8/27/2014	Analysis Date:	8/28/2014	SeqNo:	607418	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	2550	40.0	2000	546.0	100	80	120			

Sample ID	1408B43-001DMSD	SampType:	MSD	TestCode:	SM 2540 C: Total Dissolved Solids					
Client ID:	MW-1	Batch ID:	14985	RunNo:	20874					
Prep Date:	8/27/2014	Analysis Date:	8/28/2014	SeqNo:	607419	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	2560	40.0	2000	546.0	101	80	120	0.391	5	

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R20741	RunNo:	20741					
Prep Date:		Analysis Date:	8/21/2014	SeqNo:	603501	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								
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:	R20741	RunNo:	20741					
Prep Date:		Analysis Date:	8/21/2014	SeqNo:	603502	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	102	90	110			
Chloride	4.9	0.50	5.000	0	97.2	90	110			
Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0	100	90	110			
Bromide	2.5	0.10	2.500	0	101	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	102	90	110			
Phosphorus, Orthophosphate (As P	4.9	0.50	5.000	0	97.3	90	110			
Sulfate	9.9	0.50	10.00	0	99.3	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R20741	RunNo:	20741					
Prep Date:		Analysis Date:	8/21/2014	SeqNo:	603565	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								
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:	R20741	RunNo:	20741					
Prep Date:		Analysis Date:	8/21/2014	SeqNo:	603566	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	102	90	110			

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 300.0: Anions				
Client ID:	LCSW		Batch ID: R20741			RunNo: 20741				
Prep Date:	Analysis Date: 8/21/2014			SeqNo: 603566		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	98.2	90	110			
Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0	101	90	110			
Bromide	2.5	0.10	2.500	0	101	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	102	90	110			
Phosphorus, Orthophosphate (As P	4.9	0.50	5.000	0	97.3	90	110			
Sulfate	9.9	0.50	10.00	0	98.8	90	110			

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R20760			RunNo: 20760					
Prep Date:		Analysis Date: 8/22/2014			SeqNo: 604138		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: R20760		RunNo: 20760					
Prep Date:			Analysis Date: 8/22/2014		SeqNo: 604139		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	95.4	90	110			
Sulfate	9.7	0.50	10.00	0	97.2	90	110			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID	MB-14896		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW		Batch ID: 14896		RunNo: 20738					
Prep Date:	8/21/2014		Analysis Date: 8/22/2014		SeqNo: 603778		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.47		0.5000		93.5	75.2	161			

Sample ID	LCS-14896		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 14896		RunNo: 20738					
Prep Date:	8/21/2014		Analysis Date: 8/22/2014		SeqNo: 603880		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.9	0.20	2.500	0	115	65.8	162			
Surr: DNOP	0.27		0.2500		109	75.2	161			

Sample ID	1408B43-001CMS		SampType: MS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	MW-1		Batch ID: 14896		RunNo: 20738					
Prep Date:	8/21/2014		Analysis Date: 8/23/2014		SeqNo: 603903		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	3.0	0.20	2.500	0	120	64.4	178			
Surr: DNOP	0.29		0.2500		116	75.2	161			

Sample ID	1408B43-001CMSD			SampType:	MSD		TestCode:	EPA Method 8015D: Diesel Range			
Client ID:	MW-1		Batch ID:	14896		RunNo:	20738				
Prep Date:	8/21/2014		Analysis Date:	8/23/2014		SeqNo:	603904		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	2.7	0.20	2.500	0	109	64.4	178	9.47	20		
Surr: DNOP	0.27		0.2500		108	75.2	161	0	0		

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R20754	RunNo:	20754					
Prep Date:		Analysis Date:	8/22/2014	SeqNo:	603970	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	20		20.00		98.2	70.9	130			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R20754	RunNo:	20754					
Prep Date:		Analysis Date:	8/22/2014	SeqNo:	603971	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.54	0.050	0.5000	0	109	80	120			
Surr: BFB	20		20.00		101	70.9	130			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R20892			RunNo: 20892					
Prep Date:		Analysis Date: 8/28/2014			SeqNo: 607980		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								
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.
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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R20892			RunNo: 20892					
Prep Date:		Analysis Date: 8/28/2014			SeqNo: 607980		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	6.7		10.00		67.3	70	130			S
Surr: 4-Bromofluorobenzene	9.3		10.00		93.2	70	130			
Surr: Dibromofluoromethane	8.7		10.00		87.0	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R20892			RunNo: 20892					
Prep Date:		Analysis Date: 8/28/2014			SeqNo: 607982		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	92.7	70	130			
Toluene	21	1.0	20.00	0	107	80	120			
Chlorobenzene	20	1.0	20.00	0	100	70	130			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R20892			RunNo: 20892					
Prep Date:		Analysis Date: 8/28/2014			SeqNo: 607982		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	105	82.6	131			
Trichloroethene (TCE)	19	1.0	20.00	0	96.6	70	130			
Surr: 1,2-Dichloroethane-d4	7.1		10.00		70.6	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		96.7	70	130			
Surr: Dibromofluoromethane	8.9		10.00		88.7	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R20920			RunNo: 20920					
Prep Date:		Analysis Date: 8/29/2014			SeqNo: 608784		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								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R20920			RunNo: 20920					
Prep Date:		Analysis Date: 8/29/2014			SeqNo: 608784	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.3	70	130			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R20920			RunNo: 20920					
Prep Date:		Analysis Date: 8/29/2014			SeqNo: 608784		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.6		10.00		96.3	70	130			
Surr: Toluene-d8	8.8		10.00		87.9	70	130			

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R20920			RunNo: 20920					
Prep Date:		Analysis Date: 8/29/2014			SeqNo: 608786		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	100	70	130			
Toluene	21	1.0	20.00	0	106	80	120			
Chlorobenzene	19	1.0	20.00	0	97.2	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	109	82.6	131			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		96.5	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.6	70	130			
Surr: Dibromofluoromethane	9.0		10.00		89.6	70	130			
Surr: Toluene-d8	9.6		10.00		96.1	70	130			

Sample ID	b4	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R20920			RunNo: 20920					
Prep Date:		Analysis Date: 8/29/2014			SeqNo: 608825		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								

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID	b4	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R20920	RunNo:	20920					
Prep Date:		Analysis Date:	8/29/2014	SeqNo:	608825	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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								
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								

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 greater than 2.

RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID b4	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES							
Client ID: PBW	Batch ID: R20920		RunNo: 20920							
Prep Date:	Analysis Date: 8/29/2014		SeqNo: 608825		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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	9.8		10.00		97.5	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.1		10.00		91.3	70	130			
Surr: Toluene-d8	9.1		10.00		91.1	70	130			

Sample ID 100ng lcs2	SampType: LCS		TestCode: EPA Method 8260B: VOLATILES							
Client ID: LCSW	Batch ID: R20920		RunNo: 20920							
Prep Date:	Analysis Date: 8/30/2014		SeqNo: 608827		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	106	70	130			
Toluene	21	1.0	20.00	0	103	80	120			
Chlorobenzene	19	1.0	20.00	0	94.2	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	115	82.6	131			
Trichloroethene (TCE)	21	1.0	20.00	0	107	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	9.4		10.00		93.7	70	130			
Surr: Toluene-d8	9.3		10.00		93.3	70	130			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID		1408b43-001d dup		SampType: DUP		TestCode: SM2510B: Specific Conductance				
Client ID:		MW-1		Batch ID: R20804		RunNo: 20804				
Prep Date:				Analysis Date: 8/25/2014		SeqNo: 605418		Units: µmhos/cm		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	640	0.010						1.91	20	

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B43

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-20-14

Sample ID	mb-1	SampType:	MBLK	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R20804	RunNo:	20804					
Prep Date:		Analysis Date:	8/25/2014	SeqNo:	605425	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	lcs-1	SampType:	LCS	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R20804	RunNo:	20804					
Prep Date:		Analysis Date:	8/25/2014	SeqNo:	605426	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80	20	80.00	0	99.7	90	110			

Sample ID	mb-2	SampType:	MBLK	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R20804	RunNo:	20804					
Prep Date:		Analysis Date:	8/25/2014	SeqNo:	605442	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	lcs-2	SampType:	LCS	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R20804	RunNo:	20804					
Prep Date:		Analysis Date:	8/25/2014	SeqNo:	605443	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80	20	80.00	0	100	90	110			

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 greater than 2.
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: **Western Refining Southw**

Work Order Number: **1408B43**

RcptNo: 1

Received by/date:

Logged By: **Ashley Gallegos**

8/21/2014 7:45:00 AM

Completed By: **Ashley Gallegos**

8/21/2014 2:03:20 PM

Reviewed By:

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° 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? Yes ✓ No
(Note discrepancies on chain of custody)
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.)
- # of preserved bottles checked for pH: **018**
(**<2** or **>12** unless noted)
Adjusted? **No**
Checked by: **h**

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	1.3	Good	Yes			

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

[illegible]

Remarks:

TRIP BLANK - 007

Rinsate → BTEX only 8/20/14 345 -008

If necessary samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record									
Client: <u>Western Refining</u>									
Mailing Address: <u>#50 CR 4990</u>									
<u>Bloomfield, NM 87413</u>									
Phone #: <u>505-632-4135</u>									
email or Fax#:									
QA/QC Package:									
☒ Standard ☐ Level 4 (Full Validation)									
Accreditation									
☐ NELAP ☐ Other									
☐ EDD (Type)									
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.			
8-20-14	1:00	H ₂ O	MW-33	5-VOA	HCl	1408343			
				1-500	amber	-005			
				1-500	HNO ₃				
			filter	1-250	HNO ₃				
				1-500					
				1-250	H ₂ SO ₄				
8-20-14			MW-1 D	5-VOA	HCl	-006			
				1-500	amber				
				1-500	HNO ₃				
			filter	1-250	HNO ₃				
				1-500					
				1-250	H ₂ SO ₄				
Date:	Time:	Relinquished by:	Received by: <u>Shirley</u> Date: <u>8/20/14</u> Time: <u>1447</u>						
8-20-14	1447	<u>Colin Krakauer</u>	Received by: <u>Shirley</u> Date: <u>8/21/14</u> Time: <u>0745</u>						
Date:	Time:	Relinquished by:	Received by: <u>Shirley</u> Date: <u>8/21/14</u> Time: <u>0745</u>						
8/20/14	1830	<u>Shirley</u>	Received by: <u>Shirley</u> Date: <u>8/21/14</u> Time: <u>0745</u>						

TABLE 2
Analytical Methods and Target Analytes

VOCs (EPA Method 8260B) ⁽¹⁾	
- Target List	
Benzene	
Toluene	
Ethylbenzene	
Xylenes	
Methyl tert butyl ether (MTBE)	
SVOCs - (EPA Method 8270)	
- Method List	
TPH-GRO (EPA Method 8015B)	
- Gasoline Range Organics	
TPH-DRO (EPA Method 8015B)	
- Diesel Range Organics	
- Motor Oil Range Organics	
Total Carbon Dioxide (Laboratory Calculated)	
- Dissolved CO2	
Specific Conductivity (EPA Method 120.1 or field measurement)	
- Specific conductance	
TDS (EPA Method 160.1 or field measurement)	
- Total dissolved solids	
General Chemistry - Anions (EPA Method 300.0)	
Fluoride	
Chloride	
Bromide	
Nitrogen, Nitrite (as N)	
Nitrogen, Nitrate (as N)	
Phosphorous, Orthophosphate (As P)	
Sulfate	
General Chemistry - Alkalinity (EPA Method 310.1)	
Alkalinity, Total	
Carbonate	
Bicarbonate	

Total Recoverable Metals (EPA Method 6010B/7470)	
- Target List (not applicable to River Terrace Sampling Events)	
Arsenic	Lead
Barium	Mercury
Cadmium	Selenium
Chromium	Silver
- Target List (for River Terrace Sampling Events Only)	
Lead	
Mercury (DW-1 ONLY)	
Dissolved Metals (EPA Method 6010B / 7470)	
- Target List (for Refinery Complex, Outfalls, and River)	
Arsenic	Manganese
Barium	Mercury
Cadmium	Potassium
Calcium	Selenium
Chromium	Silver
Copper	Sodium
Iron	Uranium
Lead	Zinc
Magnesium	

TPH = total petroleum hydrocarbons
 GRO = gasoline range organics
 VOCs = volatile organic compounds
 DRO = diesel range organics
 TDS = total dissolved solids

NOTES:

- (1) VOCs Target List for River Terrace samples are analyzed by EPA Method 8021B per NMED's letter Approval with Direction dated June 16, 2009.
- (2) Target List for San Juan River Terrace Monitoring Wells and Piezometer Wells only, per the River Terrace Bioventing System Monitoring Plan.

Table 2



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

April 30, 2014

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: Down Gradient 4-16-14

OrderNo.: 1404807

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 4/17/2014 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', with a stylized flourish at the end.

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

Workorder Sample Summary

WO#: 1404807

30-Apr-14

CLIENT: Western Refining Southwest, Inc.

Project: Down Gradient 4-16-14

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
1404807-001	MW-12		4/16/2014 10:40:00 AM	4/17/2014 10:10:00 AM	Aqueous
1404807-001	MW-12		4/16/2014 10:40:00 AM	4/17/2014 10:10:00 AM	Aqueous
1404807-001	MW-12		4/16/2014 10:40:00 AM	4/17/2014 10:10:00 AM	Aqueous
1404807-002	MW-35		4/16/2014 11:00:00 AM	4/17/2014 10:10:00 AM	Aqueous
1404807-002	MW-35		4/16/2014 11:00:00 AM	4/17/2014 10:10:00 AM	Aqueous
1404807-003	MW-37		4/16/2014 11:15:00 AM	4/17/2014 10:10:00 AM	Aqueous
1404807-003	MW-37		4/16/2014 11:15:00 AM	4/17/2014 10:10:00 AM	Aqueous
1404807-003	MW-37		4/16/2014 11:15:00 AM	4/17/2014 10:10:00 AM	Aqueous
1404807-004	MW-38		4/16/2014 11:45:00 AM	4/17/2014 10:10:00 AM	Aqueous
1404807-004	MW-38		4/16/2014 11:45:00 AM	4/17/2014 10:10:00 AM	Aqueous
1404807-004	MW-38		4/16/2014 11:45:00 AM	4/17/2014 10:10:00 AM	Aqueous
1404807-005	TRIP BLANK			4/17/2014 10:10:00 AM	Trip Blank
1404807-005	TRIP BLANK			4/17/2014 10:10:00 AM	Trip Blank

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404807**Date Reported: **4/30/2014****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-12**Project:** Down Gradient 4-16-14**Collection Date:** 4/16/2014 10:40:00 AM**Lab ID:** 1404807-001**Matrix:** AQUEOUS**Received Date:** 4/17/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/18/2014 6:06:31 PM	12782
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/18/2014 6:06:31 PM	12782
Surr: DNOP	140	76-161		%REC	1	4/18/2014 6:06:31 PM	12782
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/21/2014 11:22:47 PM	R18124
Surr: BFB	85.2	80.4-118		%REC	1	4/21/2014 11:22:47 PM	R18124
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/24/2014 1:05:33 PM	R18198
Toluene	ND	1.0		µg/L	1	4/24/2014 1:05:33 PM	R18198
Ethylbenzene	ND	1.0		µg/L	1	4/24/2014 1:05:33 PM	R18198
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/24/2014 1:05:33 PM	R18198
Xylenes, Total	ND	1.5		µg/L	1	4/24/2014 1:05:33 PM	R18198
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	4/24/2014 1:05:33 PM	R18198
Surr: 4-Bromofluorobenzene	97.4	70-130		%REC	1	4/24/2014 1:05:33 PM	R18198
Surr: Dibromofluoromethane	104	70-130		%REC	1	4/24/2014 1:05:33 PM	R18198
Surr: Toluene-d8	103	70-130		%REC	1	4/24/2014 1:05:33 PM	R18198

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 10
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404807**

Date Reported: **4/30/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-35

Project: Down Gradient 4-16-14

Collection Date: 4/16/2014 11:00:00 AM

Lab ID: 1404807-002

Matrix: AQUEOUS

Received Date: 4/17/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: cadg	
Benzene	ND	1.0		µg/L	1	4/18/2014 3:13:58 PM	R18092
Toluene	ND	1.0		µg/L	1	4/18/2014 3:13:58 PM	R18092
Ethylbenzene	ND	1.0		µg/L	1	4/18/2014 3:13:58 PM	R18092
Methyl tert-butyl ether (MTBE)	1.2	1.0		µg/L	1	4/18/2014 3:13:58 PM	R18092
Xylenes, Total	ND	1.5		µg/L	1	4/18/2014 3:13:58 PM	R18092
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	4/18/2014 3:13:58 PM	R18092
Surr: 4-Bromofluorobenzene	89.4	70-130		%REC	1	4/18/2014 3:13:58 PM	R18092
Surr: Dibromofluoromethane	98.6	70-130		%REC	1	4/18/2014 3:13:58 PM	R18092
Surr: Toluene-d8	90.7	70-130		%REC	1	4/18/2014 3:13:58 PM	R18092

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 10
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404807**Date Reported: **4/30/2014****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-37**Project:** Down Gradient 4-16-14**Collection Date:** 4/16/2014 11:15:00 AM**Lab ID:** 1404807-003**Matrix:** AQUEOUS**Received Date:** 4/17/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/18/2014 7:39:46 PM	12782
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/18/2014 7:39:46 PM	12782
Surr: DNOP	146	76-161		%REC	1	4/18/2014 7:39:46 PM	12782
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/21/2014 11:51:23 PM	R18124
Surr: BFB	86.1	80.4-118		%REC	1	4/21/2014 11:51:23 PM	R18124
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/18/2014 3:42:40 PM	R18092
Toluene	ND	1.0		µg/L	1	4/18/2014 3:42:40 PM	R18092
Ethylbenzene	ND	1.0		µg/L	1	4/18/2014 3:42:40 PM	R18092
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/18/2014 3:42:40 PM	R18092
Xylenes, Total	ND	1.5		µg/L	1	4/18/2014 3:42:40 PM	R18092
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	4/18/2014 3:42:40 PM	R18092
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	4/18/2014 3:42:40 PM	R18092
Surr: Dibromofluoromethane	103	70-130		%REC	1	4/18/2014 3:42:40 PM	R18092
Surr: Toluene-d8	91.2	70-130		%REC	1	4/18/2014 3:42:40 PM	R18092

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 4 of 10
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404807**Date Reported: **4/30/2014****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-38**Project:** Down Gradient 4-16-14**Collection Date:** 4/16/2014 11:45:00 AM**Lab ID:** 1404807-004**Matrix:** AQUEOUS**Received Date:** 4/17/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/18/2014 8:10:51 PM	12782
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/18/2014 8:10:51 PM	12782
Surr: DNOP	131	76-161		%REC	1	4/18/2014 8:10:51 PM	12782
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/22/2014 12:19:57 AM	R18124
Surr: BFB	88.4	80.4-118		%REC	1	4/22/2014 12:19:57 AM	R18124
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/18/2014 4:11:26 PM	R18092
Toluene	ND	1.0		µg/L	1	4/18/2014 4:11:26 PM	R18092
Ethylbenzene	ND	1.0		µg/L	1	4/18/2014 4:11:26 PM	R18092
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/18/2014 4:11:26 PM	R18092
Xylenes, Total	ND	1.5		µg/L	1	4/18/2014 4:11:26 PM	R18092
Surr: 1,2-Dichloroethane-d4	98.6	70-130		%REC	1	4/18/2014 4:11:26 PM	R18092
Surr: 4-Bromofluorobenzene	99.3	70-130		%REC	1	4/18/2014 4:11:26 PM	R18092
Surr: Dibromofluoromethane	105	70-130		%REC	1	4/18/2014 4:11:26 PM	R18092
Surr: Toluene-d8	96.3	70-130		%REC	1	4/18/2014 4:11:26 PM	R18092

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 5 of 10
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404807**

Date Reported: **4/30/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: TRIP BLANK

Project: Down Gradient 4-16-14

Collection Date:

Lab ID: 1404807-005

Matrix: TRIP BLANK

Received Date: 4/17/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE				Analyst: NSB			
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/22/2014 12:48:30 AM	R18124
Surr: BFB	86.8	80.4-118		%REC	1	4/22/2014 12:48:30 AM	R18124
EPA METHOD 8260: VOLATILES SHORT LIST				Analyst: cadg			
Benzene	ND	1.0		µg/L	1	4/18/2014 4:40:10 PM	R18092
Toluene	ND	1.0		µg/L	1	4/18/2014 4:40:10 PM	R18092
Ethylbenzene	ND	1.0		µg/L	1	4/18/2014 4:40:10 PM	R18092
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/18/2014 4:40:10 PM	R18092
Xylenes, Total	ND	1.5		µg/L	1	4/18/2014 4:40:10 PM	R18092
Surr: 1,2-Dichloroethane-d4	104	70-130		%REC	1	4/18/2014 4:40:10 PM	R18092
Surr: 4-Bromofluorobenzene	105	70-130		%REC	1	4/18/2014 4:40:10 PM	R18092
Surr: Dibromofluoromethane	105	70-130		%REC	1	4/18/2014 4:40:10 PM	R18092
Surr: Toluene-d8	93.6	70-130		%REC	1	4/18/2014 4:40:10 PM	R18092

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 10
	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 greater than 2.	
	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#: 1404807

30-Apr-14

Client: Western Refining Southwest, Inc.

Project: Down Gradient 4-16-14

Sample ID	MB-12782		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW		Batch ID: 12782		RunNo: 18069					
Prep Date:	4/18/2014		Analysis Date: 4/18/2014		SeqNo: 522339		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.59		0.5000		118	76	161			

Sample ID	1404807-001CMS		SampType: MS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	MW-12		Batch ID: 12782		RunNo: 18094					
Prep Date:	4/18/2014		Analysis Date: 4/21/2014		SeqNo: 523016		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	4.4	0.20	2.500	0	177	72.1	156			S
Surr: DNOP	0.43		0.2500		173	76	161			S

Sample ID	1404807-001CMSD		SampType: MSD		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	MW-12		Batch ID: 12782		RunNo: 18094					
Prep Date:	4/18/2014		Analysis Date: 4/21/2014		SeqNo: 523017		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	4.1	0.20	2.500	0	164	72.1	156	14.6	20	S
Surr: DNOP	0.40		0.2500		162	76	161	0	0	S

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404807

30-Apr-14

Client: Western Refining Southwest, Inc.

Project: Down Gradient 4-16-14

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R18124	RunNo:	18124					
Prep Date:		Analysis Date:	4/21/2014	SeqNo:	523149	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	17		20.00		83.8	80.4	118			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404807

30-Apr-14

Client: Western Refining Southwest, Inc.

Project: Down Gradient 4-16-14

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R18092	RunNo:	18092					
Prep Date:		Analysis Date:	4/18/2014	SeqNo:	522367	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	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.4		10.00		94.3	70	130			

Sample ID	1404807-001a ms	SampType:	MS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	MW-12	Batch ID:	R18092	RunNo:	18092					
Prep Date:		Analysis Date:	4/18/2014	SeqNo:	522379	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	97.8	70	130			
Toluene	16	1.0	20.00	0	82.2	67.5	123			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.3		10.00		92.5	70	130			

Sample ID	1404807-001a msd	SampType:	MSD	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	MW-12	Batch ID:	R18092	RunNo:	18092					
Prep Date:		Analysis Date:	4/18/2014	SeqNo:	522380	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.5	70	130	1.35	20	
Toluene	16	1.0	20.00	0	79.0	67.5	123	4.07	20	
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130	0	0	
Surr: Dibromofluoromethane	10		10.00		103	70	130	0	0	
Surr: Toluene-d8	9.2		10.00		92.0	70	130	0	0	

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R18198	RunNo:	18198					
Prep Date:		Analysis Date:	4/24/2014	SeqNo:	525242	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404807

30-Apr-14

Client: Western Refining Southwest, Inc.

Project: Down Gradient 4-16-14

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R18198	RunNo:	18198					
Prep Date:		Analysis Date:	4/24/2014	SeqNo:	525242	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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	9.9		10.00		99.0	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.9	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	10		10.00		99.7	70	130			

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 greater than 2.
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1404807

RcptNo: 1

Received by/date:

Logged By:

Ashley Gallegos

4/17/2014 10:10:00 AM

Completed By:

Ashley Gallegos

4/17/2014 11:23:19 AM

Reviewed By:

mg

04/17/14

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° 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 °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Well ID	Sampling Event	VOCs (EPA Method 8260)	VOCs - Target List (1) (2) (EPA Method 8260)	SVOCs (EPA Method 8270)	TPH - Diesel Range Organics Extended	TPH - Gasoline Range Organics (EPA Method 8015B)	Total Recoverable Metals - Target List	Total Dissolved Metals - Target List	General Chemistry - Alkalinity (EPA Method 310.1)	General Chemistry - Anions (EPA Method 300.0)	Carbon Dioxide (EPA Method 310.1)	Total Dissolved Solids (TDS) (EPA Method 160.1 or Field Measurement)	Specific Conductance (EPA Method 120.1 or Field Measurement)	Temperature, pH, ORP (Field Measurement)	Dissolved Oxygen (Field Measurement)
Downgradient Wells															
MW-11	Semi-Annual Event (April)								Not Sampled						
MW-12	Semi-Annual Event (April)		X		X	X			Not Sampled						
MW-34	Semi-Annual Event (April)														
MW-35	Semi-Annual Event (April)		X		X	X									
MW-37	Semi-Annual Event (April)		X		X	X									
MW-38	Semi-Annual Event (April)		X		X	X									
RCRA Investigation Wells															
MW-50 *	Semi-Annual Event (April)								Not Sampled						
MW-51 *	Semi-Annual Event (April)								Not Sampled						
MW-52 *	Semi-Annual Event (April)								Not Sampled						
MW-53 *	Semi-Annual Event (April)								Not Sampled						
MW-54 *	Semi-Annual Event (April)								Not Sampled						
MW-55 *	Semi-Annual Event (April)								Not Sampled						
MW-56 *	Semi-Annual Event (April)								Not Sampled						
MW-57 *	Semi-Annual Event (April)								Not Sampled						
MW-58 *	Semi-Annual Event (April)								Not Sampled						
MW-59 *	Semi-Annual Event (April)								Not Sampled						
MW-60 *	Semi-Annual Event (April)								Not Sampled						
MW-61 *	Semi-Annual Event (April)								Not Sampled						
MW-62 *	Semi-Annual Event (April)								Not Sampled						
MW-63 *	Semi-Annual Event (April)								Not Sampled						
MW-64 *	Semi-Annual Event (April)								Not Sampled						
MW-65 *	Semi-Annual Event (April)								Not Sampled						
MW-66 *	Semi-Annual Event (April)								Not Sampled						
MW-67 **	Semi-Annual Event (April)								Not Sampled						
MW-68 **	Semi-Annual Event (April)								Not Sampled						
MW-69 **	Semi-Annual Event (April)								Not Sampled						



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

September 24, 2014

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: Downgradient Wells 8-21-14

OrderNo.: 1408B57

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 8 sample(s) on 8/22/2014 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued September 15, 2014.

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: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-001A

Client Sample ID: MW-37
Collection Date: 8/21/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Toluene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Ethylbenzene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Naphthalene	ND	2.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Acetone	ND	10		µg/L	1	8/28/2014 12:36:13 PM	R20892
Bromobenzene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Bromoform	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Bromomethane	ND	3.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
2-Butanone	ND	10		µg/L	1	8/28/2014 12:36:13 PM	R20892
Carbon disulfide	ND	10		µg/L	1	8/28/2014 12:36:13 PM	R20892
Carbon Tetrachloride	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Chlorobenzene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Chloroethane	ND	2.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Chloroform	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Chloromethane	ND	3.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Dibromomethane	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
1,1-Dichloroethane	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Hexachlorobutadiene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-001A

Client Sample ID: MW-37
Collection Date: 8/21/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
2-Hexanone	ND	10		µg/L	1	8/28/2014 12:36:13 PM	R20892
Isopropylbenzene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
4-Isopropyltoluene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2014 12:36:13 PM	R20892
Methylene Chloride	ND	3.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
n-Butylbenzene	ND	3.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
n-Propylbenzene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
sec-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Styrene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
tert-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Vinyl chloride	ND	1.0		µg/L	1	8/28/2014 12:36:13 PM	R20892
Xylenes, Total	ND	1.5		µg/L	1	8/28/2014 12:36:13 PM	R20892
Surr: 1,2-Dichloroethane-d4	94.6	70-130		%REC	1	8/28/2014 12:36:13 PM	R20892
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	8/28/2014 12:36:13 PM	R20892
Surr: Dibromofluoromethane	90.2	70-130		%REC	1	8/28/2014 12:36:13 PM	R20892
Surr: Toluene-d8	87.7	70-130		%REC	1	8/28/2014 12:36:13 PM	R20892

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-001B

Client Sample ID: MW-37
Collection Date: 8/21/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.074	0.050		mg/L	1	8/22/2014 2:46:47 PM	R20754
Surr: BFB	106	70.9-130		%REC	1	8/22/2014 2:46:47 PM	R20754

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: **1408B57**

Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-001C

Client Sample ID: MW-37
Collection Date: 8/21/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	0.55	0.20		mg/L	1	8/25/2014 3:38:19 PM	14896
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/25/2014 3:38:19 PM	14896
Surr: DNOP	114	75.2-161		%REC	1	8/25/2014 3:38:19 PM	14896

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-001D

Client Sample ID: MW-37
Collection Date: 8/21/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.74	0.10		mg/L	1	8/22/2014 3:01:17 PM	R20765
Chloride	190	10		mg/L	20	8/22/2014 3:13:41 PM	R20765
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/22/2014 3:01:17 PM	R20765
Bromide	2.7	2.0		mg/L	20	8/22/2014 3:13:41 PM	R20765
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/22/2014 3:01:17 PM	R20765
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/22/2014 3:01:17 PM	R20765
Sulfate	24	0.50		mg/L	1	8/22/2014 3:01:17 PM	R20765
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	810	1.0	H	mg CO2/L	1	8/25/2014 12:47:37 PM	R20804
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	2000	0.010		µmhos/cm	1	8/25/2014 12:47:37 PM	R20804
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	890	20		mg/L CaCO3	1	8/25/2014 12:47:37 PM	R20804
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	8/25/2014 12:47:37 PM	R20804
Total Alkalinity (as CaCO3)	890	20		mg/L CaCO3	1	8/25/2014 12:47:37 PM	R20804
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	1350	40.0	*	mg/L	1	8/27/2014 4:44:00 PM	14958

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-001E

Client Sample ID: MW-37
Collection Date: 8/21/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	0.20	0.0020		mg/L	1	8/27/2014 3:47:39 PM	R20845
Cadmium	ND	0.0020		mg/L	1	8/27/2014 3:47:39 PM	R20845
Calcium	44	1.0		mg/L	1	8/27/2014 3:47:39 PM	R20845
Chromium	ND	0.0060		mg/L	1	8/27/2014 3:47:39 PM	R20845
Copper	ND	0.0060		mg/L	1	8/27/2014 3:47:39 PM	R20845
Iron	0.38	0.020	*	mg/L	1	8/27/2014 3:47:39 PM	R20845
Magnesium	15	1.0		mg/L	1	8/27/2014 3:47:39 PM	R20845
Manganese	0.99	0.0020	*	mg/L	1	8/27/2014 3:47:39 PM	R20845
Potassium	3.0	1.0		mg/L	1	8/27/2014 3:47:39 PM	R20845
Silver	ND	0.0050		mg/L	1	8/28/2014 5:48:07 PM	R20883
Sodium	460	5.0		mg/L	5	8/27/2014 5:18:57 PM	R20845
Zinc	ND	0.010		mg/L	1	8/27/2014 3:47:39 PM	R20845
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Arsenic	ND	0.010		mg/L	10	9/3/2014 11:44:14 AM	R20973
Lead	ND	0.0010		mg/L	1	9/2/2014 2:58:18 PM	R20953
Selenium	0.022	0.010		mg/L	10	9/3/2014 11:44:14 AM	R20973
Uranium	0.0010	0.0010		mg/L	1	9/2/2014 2:58:18 PM	R20953
EPA METHOD 245.1: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	9/3/2014 9:44:28 AM	15056

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-001F

Client Sample ID: MW-37
Collection Date: 8/21/2014 11:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	8/26/2014 5:36:57 PM	14929
Barium	0.31	0.0020		mg/L	1	8/26/2014 5:36:57 PM	14929
Cadmium	ND	0.0020		mg/L	1	8/26/2014 5:36:57 PM	14929
Chromium	ND	0.0060		mg/L	1	8/26/2014 5:36:57 PM	14929
Lead	ND	0.0050		mg/L	1	8/26/2014 5:36:57 PM	14929
Selenium	ND	0.050		mg/L	1	8/26/2014 5:36:57 PM	14929
Silver	ND	0.0050		mg/L	1	8/28/2014 5:26:32 PM	14992
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/29/2014 1:12:01 PM	15017

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 7 of 70

Analytical ReportLab Order: **1408B57****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-002A

Client Sample ID: MW-38
Collection Date: 8/21/2014 11:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Toluene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Ethylbenzene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Naphthalene	ND	2.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Acetone	ND	10		µg/L	1	8/28/2014 2:05:08 PM	R20892
Bromobenzene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Bromoform	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Bromomethane	ND	3.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
2-Butanone	ND	10		µg/L	1	8/28/2014 2:05:08 PM	R20892
Carbon disulfide	ND	10		µg/L	1	8/28/2014 2:05:08 PM	R20892
Carbon Tetrachloride	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Chlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Chloroethane	ND	2.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Chloroform	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Chloromethane	ND	3.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Dibromomethane	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
1,1-Dichloroethane	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Hexachlorobutadiene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57**Date Reported: **9/24/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-002A

Client Sample ID: MW-38
Collection Date: 8/21/2014 11:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
2-Hexanone	ND	10		µg/L	1	8/28/2014 2:05:08 PM	R20892
Isopropylbenzene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
4-Isopropyltoluene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2014 2:05:08 PM	R20892
Methylene Chloride	ND	3.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
n-Butylbenzene	ND	3.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
n-Propylbenzene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
sec-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Styrene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
tert-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Vinyl chloride	ND	1.0		µg/L	1	8/28/2014 2:05:08 PM	R20892
Xylenes, Total	ND	1.5		µg/L	1	8/28/2014 2:05:08 PM	R20892
Surr: 1,2-Dichloroethane-d4	93.8	70-130		%REC	1	8/28/2014 2:05:08 PM	R20892
Surr: 4-Bromofluorobenzene	108	70-130		%REC	1	8/28/2014 2:05:08 PM	R20892
Surr: Dibromofluoromethane	91.2	70-130		%REC	1	8/28/2014 2:05:08 PM	R20892
Surr: Toluene-d8	90.3	70-130		%REC	1	8/28/2014 2:05:08 PM	R20892

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-002B

Client Sample ID: MW-38
Collection Date: 8/21/2014 11:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/22/2014 3:16:48 PM	R20754
Surr: BFB	107	70.9-130		%REC	1	8/22/2014 3:16:48 PM	R20754

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-002C

Client Sample ID: MW-38
Collection Date: 8/21/2014 11:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/25/2014 4:08:25 PM	14896
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/25/2014 4:08:25 PM	14896
Surr: DNOP	124	75.2-161		%REC	1	8/25/2014 4:08:25 PM	14896

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-002D

Client Sample ID: MW-38
Collection Date: 8/21/2014 11:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.96	0.10		mg/L	1	8/22/2014 3:50:55 PM	R20765
Chloride	62	10		mg/L	20	8/22/2014 4:03:19 PM	R20765
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/22/2014 3:50:55 PM	R20765
Bromide	0.87	0.10		mg/L	1	8/22/2014 3:50:55 PM	R20765
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/22/2014 3:50:55 PM	R20765
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/22/2014 3:50:55 PM	R20765
Sulfate	36	0.50		mg/L	1	8/22/2014 3:50:55 PM	R20765
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	490	1.0	H	mg CO2/L	1	8/25/2014 1:17:33 PM	R20804
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	1100	0.010		µmhos/cm	1	8/25/2014 1:17:33 PM	R20804
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	520	20		mg/L CaCO3	1	8/25/2014 1:17:33 PM	R20804
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	8/25/2014 1:17:33 PM	R20804
Total Alkalinity (as CaCO3)	520	20		mg/L CaCO3	1	8/25/2014 1:17:33 PM	R20804
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	790	100	*	mg/L	1	8/27/2014 4:44:00 PM	14958

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-002E

Client Sample ID: MW-38
Collection Date: 8/21/2014 11:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	0.18	0.0020		mg/L	1	8/27/2014 3:51:27 PM	R20845
Cadmium	ND	0.0020		mg/L	1	8/27/2014 3:51:27 PM	R20845
Calcium	42	1.0		mg/L	1	8/27/2014 3:51:27 PM	R20845
Chromium	ND	0.0060		mg/L	1	8/27/2014 3:51:27 PM	R20845
Copper	ND	0.0060		mg/L	1	8/27/2014 3:51:27 PM	R20845
Iron	0.89	0.020	*	mg/L	1	8/27/2014 3:51:27 PM	R20845
Magnesium	7.3	1.0		mg/L	1	8/27/2014 3:51:27 PM	R20845
Manganese	1.2	0.010	*	mg/L	5	8/27/2014 3:53:07 PM	R20845
Potassium	1.9	1.0		mg/L	1	8/27/2014 3:51:27 PM	R20845
Silver	ND	0.0050		mg/L	1	8/28/2014 5:50:00 PM	R20883
Sodium	240	5.0		mg/L	5	8/27/2014 5:20:44 PM	R20845
Zinc	ND	0.010		mg/L	1	8/27/2014 3:51:27 PM	R20845
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Arsenic	ND	0.0050		mg/L	5	9/3/2014 11:47:16 AM	R20973
Lead	ND	0.0010		mg/L	1	9/2/2014 3:03:39 PM	R20953
Selenium	0.0072	0.0050		mg/L	5	9/3/2014 11:47:16 AM	R20973
Uranium	0.0017	0.0010		mg/L	1	9/2/2014 3:03:39 PM	R20953
EPA METHOD 245.1: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	9/3/2014 9:46:13 AM	15056

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-002F

Client Sample ID: MW-38
Collection Date: 8/21/2014 11:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	8/26/2014 5:38:33 PM	14929
Barium	0.28	0.0020		mg/L	1	8/26/2014 5:38:33 PM	14929
Cadmium	ND	0.0020		mg/L	1	8/26/2014 5:38:33 PM	14929
Chromium	ND	0.0060		mg/L	1	8/26/2014 5:38:33 PM	14929
Lead	0.0052	0.0050		mg/L	1	8/26/2014 5:38:33 PM	14929
Selenium	ND	0.050		mg/L	1	8/26/2014 5:38:33 PM	14929
Silver	ND	0.0050		mg/L	1	8/28/2014 5:28:09 PM	14992
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/29/2014 1:13:49 PM	15017

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-002G

Client Sample ID: MW-38
Collection Date: 8/21/2014 11:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Acenaphthylene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Aniline	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Anthracene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Azobenzene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Benz(a)anthracene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Benzo(a)pyrene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Benzo(b)fluoranthene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Benzo(k)fluoranthene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Benzoic acid	ND	20		µg/L	1	8/25/2014 5:56:14 PM	14928
Benzyl alcohol	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Butyl benzyl phthalate	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Carbazole	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
4-Chloroaniline	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
2-Chloronaphthalene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
2-Chlorophenol	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Chrysene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Di-n-butyl phthalate	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Di-n-octyl phthalate	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Dibenzofuran	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
1,2-Dichlorobenzene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
1,3-Dichlorobenzene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
1,4-Dichlorobenzene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Diethyl phthalate	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Dimethyl phthalate	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
2,4-Dichlorophenol	ND	20		µg/L	1	8/25/2014 5:56:14 PM	14928
2,4-Dimethylphenol	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/25/2014 5:56:14 PM	14928
2,4-Dinitrophenol	ND	20		µg/L	1	8/25/2014 5:56:14 PM	14928
2,4-Dinitrotoluene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
2,6-Dinitrotoluene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-38**Project:** Downgradient Wells 8-21-14**Collection Date:** 8/21/2014 11:30:00 AM**Lab ID:** 1408B57-002G**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Fluoranthene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Fluorene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Hexachlorobenzene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Hexachlorobutadiene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Hexachloroethane	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Isophorone	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
1-Methylnaphthalene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
2-Methylnaphthalene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
2-Methylphenol	ND	20		µg/L	1	8/25/2014 5:56:14 PM	14928
3+4-Methylphenol	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
N-Nitrosodimethylamine	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Naphthalene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
2-Nitroaniline	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
3-Nitroaniline	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
4-Nitroaniline	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Nitrobenzene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
2-Nitrophenol	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
4-Nitrophenol	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Pentachlorophenol	ND	20		µg/L	1	8/25/2014 5:56:14 PM	14928
Phenanthrene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Phenol	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Pyrene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Pyridine	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/25/2014 5:56:14 PM	14928
Surr: 2-Fluorophenol	71.7	12.1-85.8		%REC	1	8/25/2014 5:56:14 PM	14928
Surr: Phenol-d5	46.1	17.7-65.8		%REC	1	8/25/2014 5:56:14 PM	14928
Surr: 2,4,6-Tribromophenol	63.2	26-138		%REC	1	8/25/2014 5:56:14 PM	14928
Surr: Nitrobenzene-d5	103	47.5-119		%REC	1	8/25/2014 5:56:14 PM	14928
Surr: 2-Fluorobiphenyl	100	48.1-106		%REC	1	8/25/2014 5:56:14 PM	14928
Surr: 4-Terphenyl-d14	82.2	44-113		%REC	1	8/25/2014 5:56:14 PM	14928

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1408B57

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-003A

Client Sample ID: MW-12
Collection Date: 8/21/2014 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Toluene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Ethylbenzene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Naphthalene	ND	2.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Acetone	ND	10		µg/L	1	8/28/2014 2:34:51 PM	R20892
Bromobenzene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Bromoform	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Bromomethane	ND	3.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
2-Butanone	ND	10		µg/L	1	8/28/2014 2:34:51 PM	R20892
Carbon disulfide	ND	10		µg/L	1	8/28/2014 2:34:51 PM	R20892
Carbon Tetrachloride	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Chlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Chloroethane	ND	2.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Chloroform	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Chloromethane	ND	3.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Dibromomethane	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
1,1-Dichloroethane	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Hexachlorobutadiene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57**Date Reported: **9/24/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-003A

Client Sample ID: MW-12
Collection Date: 8/21/2014 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
2-Hexanone	ND	10		µg/L	1	8/28/2014 2:34:51 PM	R20892
Isopropylbenzene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
4-Isopropyltoluene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2014 2:34:51 PM	R20892
Methylene Chloride	ND	3.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
n-Butylbenzene	ND	3.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
n-Propylbenzene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
sec-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Styrene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
tert-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Vinyl chloride	ND	1.0		µg/L	1	8/28/2014 2:34:51 PM	R20892
Xylenes, Total	ND	1.5		µg/L	1	8/28/2014 2:34:51 PM	R20892
Surr: 1,2-Dichloroethane-d4	95.2	70-130		%REC	1	8/28/2014 2:34:51 PM	R20892
Surr: 4-Bromofluorobenzene	101	70-130		%REC	1	8/28/2014 2:34:51 PM	R20892
Surr: Dibromofluoromethane	92.6	70-130		%REC	1	8/28/2014 2:34:51 PM	R20892
Surr: Toluene-d8	90.7	70-130		%REC	1	8/28/2014 2:34:51 PM	R20892

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-003B

Client Sample ID: MW-12
Collection Date: 8/21/2014 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/22/2014 3:47:03 PM	R20754
Surr: BFB	101	70.9-130		%REC	1	8/22/2014 3:47:03 PM	R20754

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57**Date Reported: **9/24/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-003C

Client Sample ID: MW-12
Collection Date: 8/21/2014 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/25/2014 4:38:32 PM	14896
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/25/2014 4:38:32 PM	14896
Surr: DNOP	115	75.2-161		%REC	1	8/25/2014 4:38:32 PM	14896

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: **1408B57**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-003D

Client Sample ID: MW-12
Collection Date: 8/21/2014 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.63	0.10		mg/L	1	8/22/2014 4:15:44 PM	R20765
Chloride	4.0	0.50		mg/L	1	8/22/2014 4:15:44 PM	R20765
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/22/2014 4:15:44 PM	R20765
Bromide	ND	0.10		mg/L	1	8/22/2014 4:15:44 PM	R20765
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/22/2014 4:15:44 PM	R20765
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/22/2014 4:15:44 PM	R20765
Sulfate	120	10		mg/L	20	8/22/2014 4:28:08 PM	R20765
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	130	1.0	H	mg CO2/L	1	8/25/2014 1:38:31 PM	R20804
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	530	0.010		µmhos/cm	1	8/25/2014 1:38:31 PM	R20804
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	140	20		mg/L CaCO3	1	8/25/2014 1:38:31 PM	R20804
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	8/25/2014 1:38:31 PM	R20804
Total Alkalinity (as CaCO3)	140	20		mg/L CaCO3	1	8/25/2014 1:38:31 PM	R20804
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	380	100		mg/L	1	8/27/2014 4:44:00 PM	14958

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-003E

Client Sample ID: MW-12
Collection Date: 8/21/2014 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	0.062	0.0020		mg/L	1	8/27/2014 4:12:31 PM	R20845
Cadmium	ND	0.0020		mg/L	1	8/27/2014 4:12:31 PM	R20845
Calcium	66	1.0		mg/L	1	8/27/2014 4:12:31 PM	R20845
Chromium	ND	0.0060		mg/L	1	8/27/2014 4:12:31 PM	R20845
Copper	ND	0.0060		mg/L	1	8/27/2014 4:12:31 PM	R20845
Iron	0.046	0.020		mg/L	1	8/27/2014 4:12:31 PM	R20845
Magnesium	9.3	1.0		mg/L	1	8/27/2014 4:12:31 PM	R20845
Manganese	0.25	0.0020	*	mg/L	1	8/27/2014 4:12:31 PM	R20845
Potassium	1.1	1.0		mg/L	1	8/27/2014 4:12:31 PM	R20845
Silver	ND	0.0050		mg/L	1	8/28/2014 5:51:33 PM	R20883
Sodium	40	1.0		mg/L	1	8/27/2014 5:22:33 PM	R20845
Zinc	ND	0.010		mg/L	1	8/27/2014 4:12:31 PM	R20845
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Arsenic	0.0012	0.0010		mg/L	1	9/2/2014 3:25:38 PM	R20953
Lead	ND	0.0010		mg/L	1	9/2/2014 3:25:38 PM	R20953
Selenium	ND	0.0010		mg/L	1	9/2/2014 3:25:38 PM	R20953
Uranium	ND	0.0010		mg/L	1	9/2/2014 3:25:38 PM	R20953
EPA METHOD 245.1: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	9/3/2014 9:47:57 AM	15056

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-003F

Client Sample ID: MW-12
Collection Date: 8/21/2014 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	8/26/2014 5:40:11 PM	14929
Barium	0.19	0.0020		mg/L	1	8/26/2014 5:40:11 PM	14929
Cadmium	ND	0.0020		mg/L	1	8/26/2014 5:40:11 PM	14929
Chromium	0.82	0.0060	*	mg/L	1	8/26/2014 5:40:11 PM	14929
Lead	0.0096	0.0050		mg/L	1	8/26/2014 5:40:11 PM	14929
Selenium	ND	0.050		mg/L	1	8/26/2014 5:40:11 PM	14929
Silver	ND	0.0050		mg/L	1	8/28/2014 5:37:45 PM	14992
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/29/2014 1:19:23 PM	15017

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-003G

Client Sample ID: MW-12
Collection Date: 8/21/2014 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Acenaphthylene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Aniline	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Anthracene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Azobenzene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Benz(a)anthracene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Benzo(a)pyrene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Benzo(b)fluoranthene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Benzo(k)fluoranthene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Benzoic acid	ND	20		µg/L	1	8/25/2014 6:25:21 PM	14928
Benzyl alcohol	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Butyl benzyl phthalate	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Carbazole	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
4-Chloroaniline	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
2-Chloronaphthalene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
2-Chlorophenol	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Chrysene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Di-n-butyl phthalate	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Di-n-octyl phthalate	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Dibenzofuran	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
1,2-Dichlorobenzene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
1,3-Dichlorobenzene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
1,4-Dichlorobenzene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Diethyl phthalate	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Dimethyl phthalate	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
2,4-Dichlorophenol	ND	20		µg/L	1	8/25/2014 6:25:21 PM	14928
2,4-Dimethylphenol	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/25/2014 6:25:21 PM	14928
2,4-Dinitrophenol	ND	20		µg/L	1	8/25/2014 6:25:21 PM	14928
2,4-Dinitrotoluene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
2,6-Dinitrotoluene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-003G

Client Sample ID: MW-12
Collection Date: 8/21/2014 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Fluoranthene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Fluorene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Hexachlorobenzene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Hexachlorobutadiene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Hexachloroethane	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Isophorone	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
1-Methylnaphthalene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
2-Methylnaphthalene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
2-Methylphenol	ND	20		µg/L	1	8/25/2014 6:25:21 PM	14928
3+4-Methylphenol	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
N-Nitrosodimethylamine	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Naphthalene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
2-Nitroaniline	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
3-Nitroaniline	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
4-Nitroaniline	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Nitrobenzene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
2-Nitrophenol	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
4-Nitrophenol	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Pentachlorophenol	ND	20		µg/L	1	8/25/2014 6:25:21 PM	14928
Phenanthrene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Phenol	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Pyrene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Pyridine	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/25/2014 6:25:21 PM	14928
Surr: 2-Fluorophenol	73.3	12.1-85.8		%REC	1	8/25/2014 6:25:21 PM	14928
Surr: Phenol-d5	51.1	17.7-65.8		%REC	1	8/25/2014 6:25:21 PM	14928
Surr: 2,4,6-Tribromophenol	76.4	26-138		%REC	1	8/25/2014 6:25:21 PM	14928
Surr: Nitrobenzene-d5	110	47.5-119		%REC	1	8/25/2014 6:25:21 PM	14928
Surr: 2-Fluorobiphenyl	107	48.1-106	S	%REC	1	8/25/2014 6:25:21 PM	14928
Surr: 4-Terphenyl-d14	105	44-113		%REC	1	8/25/2014 6:25:21 PM	14928

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-004A

Client Sample ID: MW-11
Collection Date: 8/21/2014 9:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
Toluene	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
Ethylbenzene	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
1,2,4-Trimethylbenzene	230	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
1,3,5-Trimethylbenzene	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
1,2-Dichloroethane (EDC)	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
1,2-Dibromoethane (EDB)	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
Naphthalene	59	10		µg/L	5	8/28/2014 3:04:32 PM	R20892
1-Methylnaphthalene	ND	20		µg/L	5	8/28/2014 3:04:32 PM	R20892
2-Methylnaphthalene	ND	20		µg/L	5	8/28/2014 3:04:32 PM	R20892
Acetone	ND	50		µg/L	5	8/28/2014 3:04:32 PM	R20892
Bromobenzene	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
Bromodichloromethane	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
Bromoform	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
Bromomethane	ND	15		µg/L	5	8/28/2014 3:04:32 PM	R20892
2-Butanone	ND	50		µg/L	5	8/28/2014 3:04:32 PM	R20892
Carbon disulfide	ND	50		µg/L	5	8/28/2014 3:04:32 PM	R20892
Carbon Tetrachloride	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
Chlorobenzene	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
Chloroethane	ND	10		µg/L	5	8/28/2014 3:04:32 PM	R20892
Chloroform	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
Chloromethane	ND	15		µg/L	5	8/28/2014 3:04:32 PM	R20892
2-Chlorotoluene	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
4-Chlorotoluene	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
cis-1,2-DCE	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
cis-1,3-Dichloropropene	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
1,2-Dibromo-3-chloropropane	ND	10		µg/L	5	8/28/2014 3:04:32 PM	R20892
Dibromochloromethane	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
Dibromomethane	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
1,2-Dichlorobenzene	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
1,3-Dichlorobenzene	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
1,4-Dichlorobenzene	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
Dichlorodifluoromethane	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
1,1-Dichloroethane	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
1,1-Dichloroethene	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
1,2-Dichloropropane	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
1,3-Dichloropropane	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
2,2-Dichloropropane	ND	10		µg/L	5	8/28/2014 3:04:32 PM	R20892
1,1-Dichloropropene	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
Hexachlorobutadiene	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57**Date Reported: **9/24/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-004A

Client Sample ID: MW-11
Collection Date: 8/21/2014 9:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
2-Hexanone	ND	50		µg/L	5	8/28/2014 3:04:32 PM	R20892
Isopropylbenzene	48	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
4-Isopropyltoluene	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
4-Methyl-2-pentanone	ND	50		µg/L	5	8/28/2014 3:04:32 PM	R20892
Methylene Chloride	ND	15		µg/L	5	8/28/2014 3:04:32 PM	R20892
n-Butylbenzene	ND	15		µg/L	5	8/28/2014 3:04:32 PM	R20892
n-Propylbenzene	62	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
sec-Butylbenzene	12	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
Styrene	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
tert-Butylbenzene	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
1,1,2,2-Tetrachloroethane	ND	10		µg/L	5	8/28/2014 3:04:32 PM	R20892
Tetrachloroethene (PCE)	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
trans-1,2-DCE	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
trans-1,3-Dichloropropene	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
1,2,3-Trichlorobenzene	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
1,2,4-Trichlorobenzene	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
1,1,1-Trichloroethane	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
1,1,2-Trichloroethane	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
Trichloroethene (TCE)	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
Trichlorofluoromethane	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
1,2,3-Trichloropropane	ND	10		µg/L	5	8/28/2014 3:04:32 PM	R20892
Vinyl chloride	ND	5.0		µg/L	5	8/28/2014 3:04:32 PM	R20892
Xylenes, Total	ND	7.5		µg/L	5	8/28/2014 3:04:32 PM	R20892
Surr: 1,2-Dichloroethane-d4	92.8	70-130		%REC	5	8/28/2014 3:04:32 PM	R20892
Surr: 4-Bromofluorobenzene	105	70-130		%REC	5	8/28/2014 3:04:32 PM	R20892
Surr: Dibromofluoromethane	92.8	70-130		%REC	5	8/28/2014 3:04:32 PM	R20892
Surr: Toluene-d8	89.4	70-130		%REC	5	8/28/2014 3:04:32 PM	R20892

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57**Date Reported: **9/24/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-11**Project:** Downgradient Wells 8-21-14**Collection Date:** 8/21/2014 9:00:00 AM**Lab ID:** 1408B57-004B**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	2.3	0.25		mg/L	5	8/22/2014 4:17:16 PM	R20754
Surr: BFB	214	70.9-130	S	%REC	5	8/22/2014 4:17:16 PM	R20754

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57**Date Reported: **9/24/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-004C

Client Sample ID: MW-11
Collection Date: 8/21/2014 9:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	1.6	0.20		mg/L	1	8/25/2014 5:08:43 PM	14896
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/25/2014 5:08:43 PM	14896
Surr: DNOP	116	75.2-161		%REC	1	8/25/2014 5:08:43 PM	14896

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-004D

Client Sample ID: MW-11
Collection Date: 8/21/2014 9:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.62	0.50		mg/L	5	8/22/2014 4:40:33 PM	R20765
Chloride	96	10		mg/L	20	8/22/2014 4:52:58 PM	R20765
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	8/22/2014 4:40:33 PM	R20765
Bromide	1.4	0.50		mg/L	5	8/22/2014 4:40:33 PM	R20765
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	8/22/2014 4:40:33 PM	R20765
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	8/22/2014 4:40:33 PM	R20765
Sulfate	6.3	2.5		mg/L	5	8/22/2014 4:40:33 PM	R20765
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	1100	1.0	H	mg CO2/L	1	8/25/2014 1:48:12 PM	R20804
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	1900	0.010		µmhos/cm	1	8/25/2014 1:48:12 PM	R20804
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	1000	20		mg/L CaCO3	1	8/25/2014 1:48:12 PM	R20804
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	8/25/2014 1:48:12 PM	R20804
Total Alkalinity (as CaCO3)	1000	20		mg/L CaCO3	1	8/25/2014 1:48:12 PM	R20804
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	1380	100	*	mg/L	1	8/27/2014 4:44:00 PM	14958

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-004E

Client Sample ID: MW-11
Collection Date: 8/21/2014 9:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	0.64	0.0020		mg/L	1	8/27/2014 4:16:04 PM	R20845
Cadmium	ND	0.0020		mg/L	1	8/27/2014 4:16:04 PM	R20845
Calcium	73	1.0		mg/L	1	8/27/2014 4:16:04 PM	R20845
Chromium	ND	0.0060		mg/L	1	8/27/2014 4:16:04 PM	R20845
Copper	ND	0.0060		mg/L	1	8/27/2014 4:16:04 PM	R20845
Iron	8.0	0.40	*	mg/L	20	8/27/2014 5:34:41 PM	R20845
Magnesium	17	1.0		mg/L	1	8/27/2014 4:16:04 PM	R20845
Manganese	1.2	0.010	*	mg/L	5	8/27/2014 4:17:46 PM	R20845
Potassium	2.4	1.0		mg/L	1	8/27/2014 4:16:04 PM	R20845
Silver	ND	0.0050		mg/L	1	8/28/2014 6:01:29 PM	R20883
Sodium	380	5.0		mg/L	5	8/28/2014 6:03:04 PM	R20883
Zinc	ND	0.010		mg/L	1	8/27/2014 4:16:04 PM	R20845
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Arsenic	ND	0.0050		mg/L	5	9/3/2014 11:50:18 AM	R20973
Lead	0.0019	0.0010		mg/L	1	9/2/2014 3:30:59 PM	R20953
Selenium	0.0090	0.0050		mg/L	5	9/3/2014 11:50:18 AM	R20973
Uranium	ND	0.0010		mg/L	1	9/2/2014 3:30:59 PM	R20953
EPA METHOD 245.1: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	9/3/2014 9:49:42 AM	15056

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57**Date Reported: **9/24/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-11**Project:** Downgradient Wells 8-21-14**Collection Date:** 8/21/2014 9:00:00 AM**Lab ID:** 1408B57-004F**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	8/26/2014 5:41:43 PM	14929
Barium	0.74	0.0020		mg/L	1	8/26/2014 5:41:43 PM	14929
Cadmium	ND	0.0020		mg/L	1	8/26/2014 5:41:43 PM	14929
Chromium	ND	0.0060		mg/L	1	8/26/2014 5:41:43 PM	14929
Lead	0.019	0.0050	*	mg/L	1	8/26/2014 5:41:43 PM	14929
Selenium	ND	0.050		mg/L	1	8/26/2014 5:41:43 PM	14929
Silver	ND	0.0050		mg/L	1	8/28/2014 5:39:32 PM	14992
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/29/2014 1:21:12 PM	15017

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-004G

Client Sample ID: MW-11
Collection Date: 8/21/2014 9:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Acenaphthylene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Aniline	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Anthracene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Azobenzene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Benz(a)anthracene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Benzo(a)pyrene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Benzo(b)fluoranthene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Benzo(k)fluoranthene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Benzoic acid	ND	20		µg/L	1	8/25/2014 6:54:26 PM	14928
Benzyl alcohol	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Butyl benzyl phthalate	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Carbazole	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
4-Chloroaniline	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
2-Chloronaphthalene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
2-Chlorophenol	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Chrysene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Di-n-butyl phthalate	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Di-n-octyl phthalate	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Dibenzofuran	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
1,2-Dichlorobenzene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
1,3-Dichlorobenzene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
1,4-Dichlorobenzene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Diethyl phthalate	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Dimethyl phthalate	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
2,4-Dichlorophenol	ND	20		µg/L	1	8/25/2014 6:54:26 PM	14928
2,4-Dimethylphenol	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/25/2014 6:54:26 PM	14928
2,4-Dinitrophenol	ND	20		µg/L	1	8/25/2014 6:54:26 PM	14928
2,4-Dinitrotoluene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
2,6-Dinitrotoluene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-004G

Client Sample ID: MW-11
Collection Date: 8/21/2014 9:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Fluoranthene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Fluorene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Hexachlorobenzene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Hexachlorobutadiene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Hexachloroethane	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Isophorone	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
1-Methylnaphthalene	16	10		µg/L	1	8/25/2014 6:54:26 PM	14928
2-Methylnaphthalene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
2-Methylphenol	ND	20		µg/L	1	8/25/2014 6:54:26 PM	14928
3+4-Methylphenol	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
N-Nitrosodimethylamine	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Naphthalene	23	10		µg/L	1	8/25/2014 6:54:26 PM	14928
2-Nitroaniline	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
3-Nitroaniline	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
4-Nitroaniline	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Nitrobenzene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
2-Nitrophenol	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
4-Nitrophenol	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Pentachlorophenol	ND	20		µg/L	1	8/25/2014 6:54:26 PM	14928
Phenanthrene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Phenol	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Pyrene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Pyridine	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/25/2014 6:54:26 PM	14928
Surr: 2-Fluorophenol	67.2	12.1-85.8		%REC	1	8/25/2014 6:54:26 PM	14928
Surr: Phenol-d5	49.1	17.7-65.8		%REC	1	8/25/2014 6:54:26 PM	14928
Surr: 2,4,6-Tribromophenol	96.0	26-138		%REC	1	8/25/2014 6:54:26 PM	14928
Surr: Nitrobenzene-d5	95.9	47.5-119		%REC	1	8/25/2014 6:54:26 PM	14928
Surr: 2-Fluorobiphenyl	90.3	48.1-106		%REC	1	8/25/2014 6:54:26 PM	14928
Surr: 4-Terphenyl-d14	84.0	44-113		%REC	1	8/25/2014 6:54:26 PM	14928

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57**Date Reported: **9/24/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-005A

Client Sample ID: Rinsate
Collection Date: 8/21/2014 1:15:00 PM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/28/2014 3:34:13 PM	R20892
Toluene	ND	1.0		µg/L	1	8/28/2014 3:34:13 PM	R20892
Ethylbenzene	ND	1.0		µg/L	1	8/28/2014 3:34:13 PM	R20892
Xylenes, Total	ND	1.5		µg/L	1	8/28/2014 3:34:13 PM	R20892
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	8/28/2014 3:34:13 PM	R20892
Surr: 4-Bromofluorobenzene	93.5	70-130		%REC	1	8/28/2014 3:34:13 PM	R20892
Surr: Dibromofluoromethane	100	70-130		%REC	1	8/28/2014 3:34:13 PM	R20892
Surr: Toluene-d8	91.9	70-130		%REC	1	8/28/2014 3:34:13 PM	R20892

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1408B57

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-006A

Client Sample ID: MW-34
Collection Date: 8/21/2014 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Toluene	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Ethylbenzene	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
1,2,4-Trimethylbenzene	51	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Naphthalene	4.2	2.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Acetone	ND	10		µg/L	1	8/28/2014 4:03:54 PM	R20892
Bromobenzene	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Bromoform	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Bromomethane	ND	3.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
2-Butanone	ND	10		µg/L	1	8/28/2014 4:03:54 PM	R20892
Carbon disulfide	ND	10		µg/L	1	8/28/2014 4:03:54 PM	R20892
Carbon Tetrachloride	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Chlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Chloroethane	ND	2.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Chloroform	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Chloromethane	ND	3.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Dibromomethane	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
1,1-Dichloroethane	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Hexachlorobutadiene	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-006A

Client Sample ID: MW-34
Collection Date: 8/21/2014 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
2-Hexanone	ND	10		µg/L	1	8/28/2014 4:03:54 PM	R20892
Isopropylbenzene	13	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
4-Isopropyltoluene	3.1	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2014 4:03:54 PM	R20892
Methylene Chloride	ND	3.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
n-Butylbenzene	ND	3.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
n-Propylbenzene	10	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
sec-Butylbenzene	6.7	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Styrene	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
tert-Butylbenzene	2.5	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Vinyl chloride	ND	1.0		µg/L	1	8/28/2014 4:03:54 PM	R20892
Xylenes, Total	ND	1.5		µg/L	1	8/28/2014 4:03:54 PM	R20892
Surr: 1,2-Dichloroethane-d4	105	70-130		%REC	1	8/28/2014 4:03:54 PM	R20892
Surr: 4-Bromofluorobenzene	125	70-130		%REC	1	8/28/2014 4:03:54 PM	R20892
Surr: Dibromofluoromethane	100	70-130		%REC	1	8/28/2014 4:03:54 PM	R20892
Surr: Toluene-d8	83.9	70-130		%REC	1	8/28/2014 4:03:54 PM	R20892

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-006B

Client Sample ID: MW-34
Collection Date: 8/21/2014 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	2.0	0.050		mg/L	1	8/22/2014 5:47:39 PM	R20754
Surr: BFB	378	70.9-130	S	%REC	1	8/22/2014 5:47:39 PM	R20754

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-006C

Client Sample ID: MW-34
Collection Date: 8/21/2014 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	2.2	0.20		mg/L	1	8/25/2014 5:38:43 PM	14896
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/25/2014 5:38:43 PM	14896
Surr: DNOP	112	75.2-161		%REC	1	8/25/2014 5:38:43 PM	14896

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-006D

Client Sample ID: MW-34
Collection Date: 8/21/2014 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.70	0.50		mg/L	5	8/22/2014 5:05:22 PM	R20765
Chloride	180	10		mg/L	20	8/22/2014 5:17:46 PM	R20765
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	8/22/2014 5:05:22 PM	R20765
Bromide	2.3	0.50		mg/L	5	8/22/2014 5:05:22 PM	R20765
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	8/22/2014 5:05:22 PM	R20765
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	8/22/2014 5:05:22 PM	R20765
Sulfate	14	2.5		mg/L	5	8/22/2014 5:05:22 PM	R20765
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	870	1.0	H	mg CO2/L	1	8/25/2014 2:23:26 PM	R20804
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	1900	0.010		µmhos/cm	1	8/25/2014 2:23:26 PM	R20804
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	900	20		mg/L CaCO3	1	8/25/2014 2:23:26 PM	R20804
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	8/25/2014 2:23:26 PM	R20804
Total Alkalinity (as CaCO3)	900	20		mg/L CaCO3	1	8/25/2014 2:23:26 PM	R20804
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	1380	100	*	mg/L	1	8/27/2014 4:44:00 PM	14958

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 40 of 70

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-006E

Client Sample ID: MW-34
Collection Date: 8/21/2014 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	0.50	0.0020		mg/L	1	8/27/2014 4:19:24 PM	R20845
Cadmium	ND	0.0020		mg/L	1	8/27/2014 4:19:24 PM	R20845
Calcium	110	5.0		mg/L	5	8/27/2014 4:21:10 PM	R20845
Chromium	ND	0.0060		mg/L	1	8/27/2014 4:19:24 PM	R20845
Copper	ND	0.0060		mg/L	1	8/27/2014 4:19:24 PM	R20845
Iron	1.5	0.10	*	mg/L	5	8/27/2014 4:21:10 PM	R20845
Magnesium	21	1.0		mg/L	1	8/27/2014 4:19:24 PM	R20845
Manganese	2.9	0.010	*	mg/L	5	8/27/2014 4:21:10 PM	R20845
Potassium	2.8	1.0		mg/L	1	8/27/2014 4:19:24 PM	R20845
Silver	ND	0.0050		mg/L	1	8/28/2014 6:04:45 PM	R20883
Sodium	420	5.0		mg/L	5	8/28/2014 6:06:20 PM	R20883
Zinc	ND	0.010		mg/L	1	8/27/2014 4:19:24 PM	R20845
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Arsenic	ND	0.010		mg/L	10	9/3/2014 11:53:19 AM	R20973
Lead	ND	0.0010		mg/L	1	9/2/2014 3:36:20 PM	R20953
Selenium	ND	0.010		mg/L	10	9/3/2014 11:53:19 AM	R20973
Uranium	ND	0.0010		mg/L	1	9/2/2014 3:36:20 PM	R20953
EPA METHOD 245.1: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	9/3/2014 9:51:27 AM	15056

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-006F

Client Sample ID: MW-34
Collection Date: 8/21/2014 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	8/26/2014 5:45:28 PM	14929
Barium	0.39	0.0020		mg/L	1	8/26/2014 5:45:28 PM	14929
Cadmium	ND	0.0020		mg/L	1	8/26/2014 5:45:28 PM	14929
Chromium	ND	0.0060		mg/L	1	8/26/2014 5:45:28 PM	14929
Lead	0.0076	0.0050		mg/L	1	8/26/2014 5:45:28 PM	14929
Selenium	ND	0.050		mg/L	1	8/26/2014 5:45:28 PM	14929
Silver	ND	0.0050		mg/L	1	8/28/2014 5:41:12 PM	14992
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/29/2014 1:23:02 PM	15017

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1408B57

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-007A

Client Sample ID: MW-35
Collection Date: 8/21/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Toluene	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Ethylbenzene	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
1,2,4-Trimethylbenzene	51	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Naphthalene	ND	2.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Acetone	ND	10		µg/L	1	8/28/2014 4:33:34 PM	R20892
Bromobenzene	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Bromoform	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Bromomethane	ND	3.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
2-Butanone	ND	10		µg/L	1	8/28/2014 4:33:34 PM	R20892
Carbon disulfide	ND	10		µg/L	1	8/28/2014 4:33:34 PM	R20892
Carbon Tetrachloride	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Chlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Chloroethane	ND	2.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Chloroform	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Chloromethane	ND	3.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Dibromomethane	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
1,1-Dichloroethane	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Hexachlorobutadiene	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57**Date Reported: **9/24/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-007A

Client Sample ID: MW-35
Collection Date: 8/21/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
2-Hexanone	ND	10		µg/L	1	8/28/2014 4:33:34 PM	R20892
Isopropylbenzene	5.9	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
4-Isopropyltoluene	2.3	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2014 4:33:34 PM	R20892
Methylene Chloride	ND	3.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
n-Butylbenzene	ND	3.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
n-Propylbenzene	5.8	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
sec-Butylbenzene	3.7	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Styrene	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
tert-Butylbenzene	2.2	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Vinyl chloride	ND	1.0		µg/L	1	8/28/2014 4:33:34 PM	R20892
Xylenes, Total	ND	1.5		µg/L	1	8/28/2014 4:33:34 PM	R20892
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	8/28/2014 4:33:34 PM	R20892
Surr: 4-Bromofluorobenzene	111	70-130		%REC	1	8/28/2014 4:33:34 PM	R20892
Surr: Dibromofluoromethane	99.2	70-130		%REC	1	8/28/2014 4:33:34 PM	R20892
Surr: Toluene-d8	85.5	70-130		%REC	1	8/28/2014 4:33:34 PM	R20892

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-007B

Client Sample ID: MW-35
Collection Date: 8/21/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	1.0	0.050		mg/L	1	8/22/2014 6:47:59 PM	R20754
Surr: BFB	230	70.9-130	S	%REC	1	8/22/2014 6:47:59 PM	R20754

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57**Date Reported: **9/24/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-35**Project:** Downgradient Wells 8-21-14**Collection Date:** 8/21/2014 10:30:00 AM**Lab ID:** 1408B57-007C**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	1.5	0.20		mg/L	1	8/25/2014 6:08:46 PM	14896
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/25/2014 6:08:46 PM	14896
Surr: DNOP	122	75.2-161		%REC	1	8/25/2014 6:08:46 PM	14896

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-007D

Client Sample ID: MW-35
Collection Date: 8/21/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.76	0.50		mg/L	5	8/22/2014 5:30:11 PM	R20765
Chloride	130	10		mg/L	20	8/22/2014 5:42:36 PM	R20765
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	8/22/2014 5:30:11 PM	R20765
Bromide	1.7	0.50		mg/L	5	8/22/2014 5:30:11 PM	R20765
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	8/22/2014 5:30:11 PM	R20765
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	8/22/2014 5:30:11 PM	R20765
Sulfate	7.4	2.5		mg/L	5	8/22/2014 5:30:11 PM	R20765
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	900	1.0	H	mg CO2/L	1	8/25/2014 2:55:12 PM	R20804
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	1800	0.010		µmhos/cm	1	8/25/2014 2:55:12 PM	R20804
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	950	20		mg/L CaCO3	1	8/25/2014 2:55:12 PM	R20804
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	8/25/2014 2:55:12 PM	R20804
Total Alkalinity (as CaCO3)	950	20		mg/L CaCO3	1	8/25/2014 2:55:12 PM	R20804
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	1340	100	*	mg/L	1	8/27/2014 4:44:00 PM	14958

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-007E

Client Sample ID: MW-35
Collection Date: 8/21/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	0.67	0.0020		mg/L	1	8/27/2014 4:23:00 PM	R20845
Cadmium	ND	0.0020		mg/L	1	8/27/2014 4:23:00 PM	R20845
Calcium	83	1.0		mg/L	1	8/27/2014 4:23:00 PM	R20845
Chromium	ND	0.0060		mg/L	1	8/27/2014 4:23:00 PM	R20845
Copper	ND	0.0060		mg/L	1	8/27/2014 4:23:00 PM	R20845
Iron	3.5	0.10	*	mg/L	5	8/27/2014 4:24:43 PM	R20845
Magnesium	16	1.0		mg/L	1	8/27/2014 4:23:00 PM	R20845
Manganese	2.1	0.010	*	mg/L	5	8/27/2014 4:24:43 PM	R20845
Potassium	3.5	1.0		mg/L	1	8/27/2014 4:23:00 PM	R20845
Silver	ND	0.0050		mg/L	1	8/28/2014 6:08:13 PM	R20883
Sodium	380	5.0		mg/L	5	8/28/2014 6:09:49 PM	R20883
Zinc	ND	0.010		mg/L	1	8/27/2014 4:23:00 PM	R20845
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Arsenic	0.013	0.010	*	mg/L	10	9/3/2014 11:56:21 AM	R20973
Lead	ND	0.0010		mg/L	1	9/2/2014 3:41:40 PM	R20953
Selenium	0.015	0.010		mg/L	10	9/3/2014 11:56:21 AM	R20973
Uranium	ND	0.0010		mg/L	1	9/2/2014 3:41:40 PM	R20953
EPA METHOD 245.1: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	9/3/2014 9:57:00 AM	15056

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408B57

Date Reported: 9/24/2014

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-007F

Client Sample ID: MW-35
Collection Date: 8/21/2014 10:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	8/26/2014 5:47:02 PM	14929
Barium	0.75	0.0020		mg/L	1	8/26/2014 5:47:02 PM	14929
Cadmium	ND	0.0020		mg/L	1	8/26/2014 5:47:02 PM	14929
Chromium	ND	0.0060		mg/L	1	8/26/2014 5:47:02 PM	14929
Lead	0.0054	0.0050		mg/L	1	8/26/2014 5:47:02 PM	14929
Selenium	ND	0.050		mg/L	1	8/26/2014 5:47:02 PM	14929
Silver	ND	0.0050		mg/L	1	8/28/2014 5:42:47 PM	14992
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/29/2014 1:24:52 PM	15017

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/24/2014**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-008A

Client Sample ID: Trip Blank
Collection Date:
Matrix: Trip Blank

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Toluene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Ethylbenzene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Naphthalene	ND	2.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Acetone	ND	10		µg/L	1	8/28/2014 5:03:11 PM	R20892
Bromobenzene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Bromoform	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Bromomethane	ND	3.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
2-Butanone	ND	10		µg/L	1	8/28/2014 5:03:11 PM	R20892
Carbon disulfide	ND	10		µg/L	1	8/28/2014 5:03:11 PM	R20892
Carbon Tetrachloride	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Chlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Chloroethane	ND	2.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Chloroform	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Chloromethane	ND	3.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Dibromomethane	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
1,1-Dichloroethane	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Hexachlorobutadiene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408B57**Date Reported: **9/24/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Downgradient Wells 8-21-14
Lab ID: 1408B57-008A

Client Sample ID: Trip Blank
Collection Date:
Matrix: Trip Blank

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg
2-Hexanone	ND	10		µg/L	1	8/28/2014 5:03:11 PM	R20892
Isopropylbenzene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
4-Isopropyltoluene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2014 5:03:11 PM	R20892
Methylene Chloride	ND	3.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
n-Butylbenzene	ND	3.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
n-Propylbenzene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
sec-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Styrene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
tert-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Vinyl chloride	ND	1.0		µg/L	1	8/28/2014 5:03:11 PM	R20892
Xylenes, Total	ND	1.5		µg/L	1	8/28/2014 5:03:11 PM	R20892
Surr: 1,2-Dichloroethane-d4	96.9	70-130		%REC	1	8/28/2014 5:03:11 PM	R20892
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	8/28/2014 5:03:11 PM	R20892
Surr: Dibromofluoromethane	94.5	70-130		%REC	1	8/28/2014 5:03:11 PM	R20892
Surr: Toluene-d8	89.7	70-130		%REC	1	8/28/2014 5:03:11 PM	R20892

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B57

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Downgradient Wells 8-21-14

Sample ID	MB-14929		SampType:	MBLK		TestCode:	EPA Method 200.7: Metals			
Client ID:	PBW		Batch ID:	14929		RunNo:	20802			
Prep Date:	8/25/2014		Analysis Date:	8/26/2014		SeqNo:	605254		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								

Sample ID	LCS-14929		SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW		Batch ID:	14929		RunNo:	20802			
Prep Date:	8/25/2014		Analysis Date:	8/26/2014		SeqNo:	605255		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	104	85	115			
Barium	0.52	0.0020	0.5000	0	103	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			

Sample ID	MB-14929		SampType:	MBLK		TestCode:	EPA Method 200.7: Metals			
Client ID:	PBW		Batch ID:	14929		RunNo:	20816			
Prep Date:	8/25/2014		Analysis Date:	8/26/2014		SeqNo:	605686		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.0050								
Selenium	ND	0.050								

Sample ID	LCS-14929		SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW		Batch ID:	14929		RunNo:	20816			
Prep Date:	8/25/2014		Analysis Date:	8/26/2014		SeqNo:	605687		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.51	0.0050	0.5000	0	101	85	115			
Selenium	0.52	0.050	0.5000	0	105	85	115			

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Metals			
Client ID:	PBW		Batch ID:	R20845		RunNo:	20845			
Prep Date:			Analysis Date:	8/27/2014		SeqNo:	606768		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B57

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Downgradient Wells 8-21-14

Sample ID	MB		SampType: MBLK			TestCode: EPA Method 200.7: Metals				
Client ID:	PBW		Batch ID: R20845			RunNo: 20845				
Prep Date:			Analysis Date: 8/27/2014			SeqNo: 606768		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 200.7: Metals				
Client ID:	LCSW		Batch ID: R20845			RunNo: 20845				
Prep Date:			Analysis Date: 8/27/2014			SeqNo: 606769		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.4	85	115			
Cadmium	0.48	0.0020	0.5000	0	96.1	85	115			
Calcium	50	1.0	50.00	0	99.6	85	115			
Chromium	0.50	0.0060	0.5000	0	99.6	85	115			
Copper	0.47	0.0060	0.5000	0	94.3	85	115			
Iron	0.51	0.020	0.5000	0	103	85	115			
Magnesium	50	1.0	50.00	0	100	85	115			
Manganese	0.49	0.0020	0.5000	0	97.9	85	115			
Potassium	49	1.0	50.00	0	98.0	85	115			
Sodium	49	1.0	50.00	0	98.3	85	115			
Zinc	0.48	0.010	0.5000	0	95.2	85	115			

Sample ID	MB-14992		SampType: MBLK			TestCode: EPA Method 200.7: Metals				
Client ID:	PBW		Batch ID: 14992			RunNo: 20883				
Prep Date:	8/27/2014		Analysis Date: 8/28/2014			SeqNo: 607541		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Sample ID	LCS-14992		SampType: LCS			TestCode: EPA Method 200.7: Metals				
Client ID:	LCSW		Batch ID: 14992			RunNo: 20883				
Prep Date:	8/27/2014		Analysis Date: 8/28/2014			SeqNo: 607542		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.49	0.0050	0.5000	0	97.1	85	115			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B57

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Downgradient Wells 8-21-14

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R20845	RunNo:	20845					
Prep Date:		Analysis Date:	8/27/2014	SeqNo:	606770	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R20845	RunNo:	20845					
Prep Date:		Analysis Date:	8/27/2014	SeqNo:	606771	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.49	0.0020	0.5000	0	98.3	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.3	85	115			
Calcium	51	1.0	50.00	0	101	85	115			
Chromium	0.51	0.0060	0.5000	0	103	85	115			
Copper	0.49	0.0060	0.5000	0	97.2	85	115			
Iron	0.52	0.020	0.5000	0	103	85	115			
Magnesium	51	1.0	50.00	0	102	85	115			
Manganese	0.50	0.0020	0.5000	0	101	85	115			
Potassium	50	1.0	50.00	0	100	85	115			
Sodium	50	1.0	50.00	0	100	85	115			
Zinc	0.49	0.010	0.5000	0	97.7	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R20883	RunNo:	20883					
Prep Date:		Analysis Date:	8/28/2014	SeqNo:	607543	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Silver	ND	0.0050								
Sodium	ND	1.0								

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B57

24-Sep-14

Client: Western Refining Southwest, Inc.**Project:** Downgradient Wells 8-21-14

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: R20883		RunNo: 20883					
Prep Date:			Analysis Date: 8/28/2014		SeqNo: 607544		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.48	0.0050	0.5000	0	95.4	85	115			
Sodium	47	1.0	50.00	0	95.0	85	115			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B57

24-Sep-14

Client: Western Refining Southwest, Inc.**Project:** Downgradient Wells 8-21-14

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R20953		RunNo: 20953					
Prep Date:			Analysis Date: 9/2/2014		SeqNo: 609801		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	96.4	85	115			
Lead	0.025	0.0010	0.02500	0	101	85	115			
Selenium	0.023	0.0010	0.02500	0	93.1	85	115			
Uranium	0.026	0.0010	0.02500	0	102	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R20953		RunNo: 20953					
Prep Date:			Analysis Date: 9/2/2014		SeqNo: 609802		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.024	0.0010	0.02500	0	96.9	85	115			

Sample ID	MB		SampType: MBLK		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW		Batch ID: R20953		RunNo: 20953					
Prep Date:			Analysis Date: 9/2/2014		SeqNo: 609803		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

Sample ID	MB		SampType: MBLK		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW		Batch ID: R20953		RunNo: 20953					
Prep Date:			Analysis Date: 9/2/2014		SeqNo: 609804		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.0010								

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R20973		RunNo: 20973					
Prep Date:			Analysis Date: 9/3/2014		SeqNo: 610602		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.022	0.0010	0.02500	0	89.9	85	115			
Selenium	0.022	0.0010	0.02500	0	89.1	85	115			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B57

24-Sep-14

Client: Western Refining Southwest, Inc.**Project:** Downgradient Wells 8-21-14

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals						
Client ID:	PBW	Batch ID: R20973			RunNo: 20973						
Prep Date:		Analysis Date: 9/3/2014			SeqNo: 610603		Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic		ND	0.0010								
Selenium		ND	0.0010								

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B57

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Downgradient Wells 8-21-14

Sample ID	MB-15017		SampType: MBLK		TestCode: EPA Method 245.1: Mercury					
Client ID:	PBW		Batch ID: 15017		RunNo: 20896					
Prep Date:	8/28/2014		Analysis Date: 8/29/2014		SeqNo: 608095		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercurv	ND	0.00020								

Sample ID	LCS-15017		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 15017		RunNo: 20896					
Prep Date:	8/28/2014		Analysis Date: 8/29/2014		SeqNo: 608096		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	98.4	80	120			

Sample ID	MB-15056		SampType:	MBLK		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	15056		RunNo:	20955				
Prep Date:	9/2/2014		Analysis Date:	9/3/2014		SeqNo:	609874		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-15056		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 15056		RunNo: 20955					
Prep Date:	9/2/2014		Analysis Date: 9/3/2014		SeqNo: 609875		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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B57

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Downgradient Wells 8-21-14

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R20765	RunNo:	20765					
Prep Date:		Analysis Date:	8/22/2014	SeqNo:	604385	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								
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:	R20765	RunNo:	20765					
Prep Date:		Analysis Date:	8/22/2014	SeqNo:	604386	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.47	0.10	0.5000	0	93.6	90	110			
Chloride	4.7	0.50	5.000	0	93.3	90	110			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	96.3	90	110			
Bromide	2.4	0.10	2.500	0	96.7	90	110			
Nitrogen, Nitrate (As N)	2.4	0.10	2.500	0	97.6	90	110			
Phosphorus, Orthophosphate (As P)	4.7	0.50	5.000	0	93.1	90	110			
Sulfate	9.5	0.50	10.00	0	95.3	90	110			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B57

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Downgradient Wells 8-21-14

Sample ID	MB-14896		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW		Batch ID: 14896		RunNo: 20738					
Prep Date:	8/21/2014		Analysis Date: 8/22/2014		SeqNo: 603778		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.47		0.5000		93.5	75.2	161			

Sample ID	LCS-14896		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 14896		RunNo: 20738					
Prep Date:	8/21/2014		Analysis Date: 8/22/2014		SeqNo: 603880		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.9	0.20	2.500	0	115	65.8	162			
Surr: DNOP	0.27		0.2500		109	75.2	161			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B57

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Downgradient Wells 8-21-14

Sample ID	5ML RB		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBW		Batch ID: R20754		RunNo: 20754					
Prep Date:			Analysis Date: 8/22/2014		SeqNo: 603970		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	20		20.00		98.2	70.9	130			

Sample ID	2.5UG GRO LCS	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID: R20754			RunNo: 20754					
Prep Date:		Analysis Date: 8/22/2014			SeqNo: 603971		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.54	0.050	0.5000	0	109	80	120			
Surr: BFB	20		20.00		101	70.9	130			

Sample ID	1408B57-004BMS		SampType: MS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	MW-11		Batch ID: R20754		RunNo: 20754					
Prep Date:			Analysis Date: 8/22/2014		SeqNo: 603982		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	5.1	0.25	2.500	2.311	112	70.4	127			
Surr: BFB	230		100.0		234	70.9	130			S

Sample ID	1408B57-004BMSD		SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	MW-11		Batch ID: R20754		RunNo: 20754					
Prep Date:			Analysis Date: 8/22/2014		SeqNo: 603983		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	5.1	0.25	2.500	2.311	113	70.4	127	0.644	20	
Surr: BFB	240		100.0		235	70.9	130	0	0	S

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B57

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Downgradient Wells 8-21-14

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R20892			RunNo: 20892					
Prep Date:		Analysis Date: 8/28/2014			SeqNo: 607980		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								
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.
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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B57

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Downgradient Wells 8-21-14

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R20892			RunNo: 20892					
Prep Date:		Analysis Date: 8/28/2014			SeqNo: 607980		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	6.7		10.00		67.3	70	130			S
Surr: 4-Bromofluorobenzene	9.3		10.00		93.2	70	130			
Surr: Dibromofluoromethane	8.7		10.00		87.0	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R20892			RunNo: 20892					
Prep Date:		Analysis Date: 8/28/2014			SeqNo: 607982		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	92.7	70	130			
Toluene	21	1.0	20.00	0	107	80	120			
Chlorobenzene	20	1.0	20.00	0	100	70	130			

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 greater than 2.
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#: 1408B57

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Downgradient Wells 8-21-14

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R20892			RunNo: 20892					
Prep Date:	Analysis Date: 8/28/2014			SeqNo: 607982		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	105	82.6	131			
Trichloroethene (TCE)	19	1.0	20.00	0	96.6	70	130			
Surr: 1,2-Dichloroethane-d4	7.1		10.00		70.6	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		96.7	70	130			
Surr: Dibromofluoromethane	8.9		10.00		88.7	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B57

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Downgradient Wells 8-21-14

Sample ID	mb-14928	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	14928	RunNo:	20778					
Prep Date:	8/25/2014	Analysis Date:	8/25/2014	SeqNo:	604653	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.
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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B57

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Downgradient Wells 8-21-14

Sample ID	mb-14928	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	14928	RunNo:	20778					
Prep Date:	8/25/2014	Analysis Date:	8/25/2014	SeqNo:	604653	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	20								
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		68.6	12.1	85.8			
Surr: Phenol-d5	100		200.0		51.9	17.7	65.8			
Surr: 2,4,6-Tribromophenol	100		200.0		50.5	26	138			
Surr: Nitrobenzene-d5	100		100.0		103	47.5	119			
Surr: 2-Fluorobiphenyl	100		100.0		104	48.1	106			
Surr: 4-Terphenyl-d14	85		100.0		84.5	44	113			

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 greater than 2.
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#: 1408B57

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Downgradient Wells 8-21-14

Sample ID	lcs-14928		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSW		Batch ID: 14928		RunNo: 20778					
Prep Date:	8/25/2014		Analysis Date: 8/25/2014		SeqNo: 604654		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	89	10	100.0	0	89.2	50.3	109			
4-Chloro-3-methylphenol	200	10	200.0	0	101	51.2	113			
2-Chlorophenol	190	10	200.0	0	97.1	48.5	104			
1,4-Dichlorobenzene	79	10	100.0	0	79.2	39.5	106			
2,4-Dinitrotoluene	83	10	100.0	0	83.2	45.4	107			
N-Nitrosodi-n-propylamine	93	10	100.0	0	93.3	50.4	119			
4-Nitrophenol	120	10	200.0	0	59.6	15.5	62.2			
Pentachlorophenol	150	20	200.0	0	73.0	23.5	93.5			
Phenol	120	10	200.0	0	59.2	26.8	65.6			
Pyrene	93	10	100.0	0	92.6	54.4	108			
1,2,4-Trichlorobenzene	82	10	100.0	0	82.0	39.9	106			
Surr: 2-Fluorophenol	150		200.0		74.7	12.1	85.8			
Surr: Phenol-d5	110		200.0		53.8	17.7	65.8			
Surr: 2,4,6-Tribromophenol	140		200.0		71.4	26	138			
Surr: Nitrobenzene-d5	100		100.0		104	47.5	119			
Surr: 2-Fluorobiphenyl	100		100.0		101	48.1	106			
Surr: 4-Terphenyl-d14	97		100.0		97.4	44	113			

Sample ID	lcsd-14928		SampType: LCSD		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02		Batch ID: 14928		RunNo: 20778					
Prep Date:	8/25/2014		Analysis Date: 8/25/2014		SeqNo: 604958		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	100	10	100.0	0	104	50.3	109	15.4	27.2	
4-Chloro-3-methylphenol	220	10	200.0	0	110	51.2	113	8.80	25.9	
2-Chlorophenol	160	10	200.0	0	78.7	48.5	104	21.0	22.5	
1,4-Dichlorobenzene	87	10	100.0	0	87.2	39.5	106	9.59	24.6	
2,4-Dinitrotoluene	110	10	100.0	0	111	45.4	107	28.6	25.3	RS
N-Nitrosodi-n-propylamine	100	10	100.0	0	104	50.4	119	11.3	23.6	
4-Nitrophenol	71	10	200.0	0	35.6	15.5	62.2	50.5	34.7	R
Pentachlorophenol	89	20	200.0	0	44.6	23.5	93.5	48.3	32.8	R
Phenol	110	10	200.0	0	56.9	26.8	65.6	3.96	25.5	
Pyrene	120	10	100.0	0	125	54.4	108	29.6	31.4	S
1,2,4-Trichlorobenzene	87	10	100.0	0	86.8	39.9	106	5.71	25.9	
Surr: 2-Fluorophenol	92		200.0		46.2	12.1	85.8	0	0	
Surr: Phenol-d5	110		200.0		53.0	17.7	65.8	0	0	
Surr: 2,4,6-Tribromophenol	100		200.0		52.2	26	138	0	0	
Surr: Nitrobenzene-d5	110		100.0		108	47.5	119	0	0	
Surr: 2-Fluorobiphenyl	110		100.0		112	48.1	106	0	0	S

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B57

24-Sep-14

Client: Western Refining Southwest, Inc.**Project:** Downgradient Wells 8-21-14

Sample ID	lcsd-14928		SampType: LCSD		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02		Batch ID: 14928		RunNo: 20778					
Prep Date:	8/25/2014		Analysis Date: 8/25/2014		SeqNo: 604958		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	110		100.0		110	44	113	0	0	

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B57

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Downgradient Wells 8-21-14

Sample ID	mb-1		SampType: MBLK		TestCode: SM2320B: Alkalinity					
Client ID:	PBW		Batch ID: R20804		RunNo: 20804					
Prep Date:			Analysis Date: 8/25/2014		SeqNo: 605425		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	lcs-1		SampType: LCS			TestCode: SM2320B: Alkalinity				
Client ID:	LCSW		Batch ID: R20804			RunNo: 20804				
Prep Date:			Analysis Date: 8/25/2014			SeqNo: 605426		Units: mg/L CaCO3		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80	20	80.00	0	99.7	90	110			

Sample ID	mb-2		SampType: MBLK		TestCode: SM2320B: Alkalinity					
Client ID:	PBW		Batch ID: R20804		RunNo: 20804					
Prep Date:			Analysis Date: 8/25/2014		SeqNo: 605442		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	lcs-2		SampType: LCS		TestCode: SM2320B: Alkalinity					
Client ID:	LCSW		Batch ID: R20804		RunNo: 20804					
Prep Date:			Analysis Date: 8/25/2014		SeqNo: 605443		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80	20	80.00	0	100	90	110			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B57

24-Sep-14

Client: Western Refining Southwest, Inc.

Project: Downgradient Wells 8-21-14

Sample ID	MB-14958	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	14958	RunNo:	20839					
Prep Date:	8/26/2014	Analysis Date:	8/27/2014	SeqNo:	606511	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-14958	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	14958	RunNo:	20839					
Prep Date:	8/26/2014	Analysis Date:	8/27/2014	SeqNo:	606512	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.
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 greater than 2.
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1408B57

RcptNo: 1

Received by/date:

[Signature]

08/22/14

Logged By: Lindsay Mangin

8/22/2014 7:00:00 AM

[Signature]

Completed By: Lindsay Mangin

8/22/2014 7:23:49 AM

[Signature]

Reviewed By:

IO

08/22/14

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° 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 # of preserved bottles checked for pH: 18 or >12 unless noted
13. Are matrices correctly identified on Chain of Custody? Yes ✓ No Adjusted? 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 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	1.8	Good	Yes			

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

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4135

Email or Fax#:

QA/QC Package:

☒ Standard ☒ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

downgraded Wells 8-21-14

Project #:

Project Manager:

Sampler: Robert Nash

On Ice: ☒ Yes ☐ No

Sample Temperature: 15

Container Type and #

HEAL No.

12088557

Preservative Type

-006

Sample Request ID

MW-34

Date

-21-14/1000

Time

10:30

Matrix

H₂O

Sample Request ID

MW-35

Date

-21-14/10:30

Time

10:30

Matrix

H₂O

Sample Request ID

MW-36

Date

-21-14/10:30

Time

10:30

Matrix

H₂O

Sample Request ID

MW-37

Date

-21-14/10:30

Time

10:30

Matrix

H₂O

Sample Request ID

MW-38

Date

-21-14/10:30

Time

10:30

Matrix

H₂O

Sample Request ID

MW-39

Date

-21-14/10:30

Time

10:30

Matrix

H₂O

Sample Request ID

MW-40

Date

-21-14/10:30

Time

10:30

Matrix

H₂O

Sample Request ID

MW-41

Date

-21-14/10:30

Time

10:30

Matrix

H₂O

Sample Request ID

MW-42

Date

-21-14/10:30

Time

10:30

Matrix

H₂O

Sample Request ID

MW-43

Date

-21-14/10:30

Time

10:30

Matrix

H₂O

Sample Request ID

MW-44

Date

-21-14/10:30

Time

10:30

Matrix

H₂O

Sample Request ID

MW-45

Date

-21-14/10:30

Time

10:30

Matrix

H₂O

Sample Request ID

MW-46

Date

-21-14/10:30

Time

10:30

Matrix

H₂O

Sample Request ID

MW-47

Date

-21-14/10:30

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Sample Request ID

MW-48

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-21-14/10:30

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Sample Request ID

MW-49

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MW-60

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Sample Request ID

MW-61

Date

-21-14/10:30

Time

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Matrix

H₂O

Sample Request ID

MW-62

Date

-21-14/10:30

Time

10:30

Matrix

H₂O

Sample Request ID

MW-63

Date

-21-14/10:30

Time

10:30

Matrix

H₂O

Sample Request ID

MW-64

Date

-21-14/10:30

Time

10:30

Matrix

H₂O

Sample Request ID

MW-65

Date

-21-14/10:30

Time

10:30

Matrix

H₂O

Sample Request ID

MW-66

Date

-21-14/10:30

Time

TABLE 2
Analytical Methods and Target Analytes

VOCs (EPA Method 8260B) ⁽¹⁾
- Target List
Benzene
Toluene
Ethylbenzene
Xylenes
Methyl tert butyl ether (MTBE)
SVOCs - (EPA Method 8270)
- Method List
TPH-GRO (EPA Method 8015B)
- Gasoline Range Organics
TPH-DRO (EPA Method 8015B)
- Diesel Range Organics
- Motor Oil Range Organics
Total Carbon Dioxide (Laboratory Calculated)
- Dissolved CO ₂
Specific Conductivity (EPA Method 120.1 or field measurement)
- Specific conductance
TDS (EPA Method 160.1 or field measurement)
- Total dissolved solids
General Chemistry - Anions (EPA Method 300.0)
Fluoride
Chloride
Bromide
Nitrogen, Nitrite (as N)
Nitrogen, Nitrate (as N)
Phosphorous, Orthophosphate (As P)
Sulfate
General Chemistry - Alkalinity (EPA Method 310.1)
Alkalinity, Total
Carbonate
Bicarbonate

Total Recoverable Metals (EPA Method 6010B/7470)
- Target List (not applicable to River Terrace Sampling Events)
Arsenic
Barium
Cadmium
Chromium
Lead
Mercury
Selenium
Silver
- Target List (for River Terrace Sampling Events Only)
Lead
Mercury (DW-I ONLY)
Dissolved Metals (EPA Method 6010B / 7470)
- Target List (for Refinery Complex, Outfalls, and River)
Arsenic
Barium
Cadmium
Calcium
Chromium
Copper
Iron
Lead
Magnesium
Manganese
Mercury
Potassium
Selenium
Silver
Sodium
Uranium
Zinc

TPH = total petroleum hydrocarbons
GRO = gasoline range organics
VOCs = volatile organic compounds
DRO = diesel range organics
TDS = total dissolved solids

NOTES:

- (1) VOCs Target List for River Terrace samples are analyzed by EPA Method 8021B per NMED's letter Approval with Direction dated June 16, 2009.
- (2) Target List for San Juan River Terrace Monitoring Wells and Piezometer Wells only, per the River Terrace Bioventing System Monitoring Plan.

TABLE 2
Analytical Methods and Target Analytes

VOCs (EPA Method 8260B) ⁽¹⁾
- Target List
Benzene
Toluene
Ethylbenzene
Xylenes
Methyl tert butyl ether (MTBE)
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- Method List
TPH-GRO (EPA Method 8015B)
- Gasoline Range Organics
TPH-DRO (EPA Method 8015B)
- Diesel Range Organics
- Motor Oil Range Organics
Total Carbon Dioxide (Laboratory Calculated)
- Dissolved CO2
Specific Conductivity (EPA Method 120.1 or field measurement)
- Specific conductance
TDS (EPA Method 160.1 or field measurement)
- Total dissolved solids
General Chemistry - Anions (EPA Method 300.0)
Fluoride
Chloride
Bromide
Nitrogen, Nitrite (as N)
Nitrogen, Nitrate (as N)
Phosphorous, Orthophosphate (As P)
Sulfate
General Chemistry - Alkalinity (EPA Method 310.1)
Alkalinity, Total
Carbonate
Bicarbonate

Total Recoverable Metals (EPA Method 6010B/7470)
- Target List (not applicable to River Terrace Sampling Events)
Arsenic
Barium
Cadmium
Chromium
Lead
Mercury
Selenium
Silver
- Target List (for River Terrace Sampling Events Only)
Lead
Mercury (DW-1 ONLY)
Dissolved Metals (EPA Method 6010B / 7470)
- Target List (for Refinery Complex, Outfalls, and River)
— Arsenic
— Barium
— Cadmium
— Calcium
— Chromium
— Copper
— Iron
— Lead
— Magnesium
— Manganese
— Mercury
— Potassium
— Selenium
— Silver
— Sodium
— Uranium
— Zinc

TPH = total petroleum hydrocarbons
GRO = gasoline range organics
VOCs = volatile organic compounds
DRO = diesel range organics
TDS = total dissolved solids

NOTES:

- (1) VOCs Target List for River Terrace samples are analyzed by EPA Method 8021B per NMED's letter Approval with Direction dated June 16, 2009.
- (2) Target List for San Juan River Terrace Monitoring Wells and Piezometer Wells only, per the River Terrace Bioventing System Monitoring Plan.



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

September 09, 2014

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: RCRA Wells 8-19-14

OrderNo.: 1408A13

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 14 sample(s) on 8/20/2014 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 **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-51

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 8:40:00 AM

Lab ID: 1408A13-001

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/20/2014 10:25:15 PM	14873
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/20/2014 10:25:15 PM	14873
Surr: DNOP	109	75.2-161		%REC	1	8/20/2014 10:25:15 PM	14873
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/21/2014 6:18:12 PM	R20730
Surr: BFB	97.5	70.9-130		%REC	1	8/21/2014 6:18:12 PM	R20730
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.54	0.10		mg/L	1	8/20/2014 4:17:06 PM	R20712
Chloride	15	0.50		mg/L	1	8/20/2014 4:17:06 PM	R20712
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2014 4:17:06 PM	R20712
Bromide	0.12	0.10		mg/L	1	8/20/2014 4:17:06 PM	R20712
Nitrogen, Nitrate (As N)	1.4	0.10		mg/L	1	8/20/2014 4:17:06 PM	R20712
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2014 4:17:06 PM	R20712
Sulfate	76	10		mg/L	20	8/20/2014 4:29:30 PM	R20712
EPA METHOD 7470: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/22/2014 2:34:02 PM	14900
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 11:54:24 AM	R20721
Barium	0.056	0.020		mg/L	1	8/21/2014 11:54:24 AM	R20721
Cadmium	ND	0.0020		mg/L	1	8/21/2014 11:54:24 AM	R20721
Calcium	76	1.0		mg/L	1	8/21/2014 11:54:24 AM	R20721
Chromium	ND	0.0060		mg/L	1	8/21/2014 11:54:24 AM	R20721
Copper	ND	0.0060		mg/L	1	8/21/2014 11:54:24 AM	R20721
Iron	ND	0.020		mg/L	1	8/21/2014 11:54:24 AM	R20721
Lead	ND	0.0050		mg/L	1	8/21/2014 11:54:24 AM	R20721
Magnesium	15	1.0		mg/L	1	8/21/2014 11:54:24 AM	R20721
Manganese	1.2	0.010		mg/L	5	8/21/2014 12:32:41 PM	R20721
Potassium	1.9	1.0		mg/L	1	8/21/2014 11:54:24 AM	R20721
Selenium	ND	0.050		mg/L	1	8/21/2014 11:54:24 AM	R20721
Silver	ND	0.0050		mg/L	1	8/21/2014 11:54:24 AM	R20721
Sodium	55	1.0		mg/L	1	8/21/2014 11:54:24 AM	R20721
Uranium	ND	0.10		mg/L	1	8/21/2014 11:54:24 AM	R20721
Zinc	ND	0.020		mg/L	1	8/21/2014 11:54:24 AM	R20721
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 11:23:25 AM	14876
Barium	0.095	0.020		mg/L	1	8/21/2014 11:23:25 AM	14876
Cadmium	ND	0.0020		mg/L	1	8/21/2014 11:23:25 AM	14876

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-51

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 8:40:00 AM

Lab ID: 1408A13-001

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Chromium	ND	0.0060		mg/L	1	8/21/2014 11:23:25 AM	14876
Lead	ND	0.0050		mg/L	1	8/21/2014 11:23:25 AM	14876
Selenium	ND	0.050		mg/L	1	8/21/2014 11:23:25 AM	14876
Silver	ND	0.0050		mg/L	1	8/21/2014 11:23:25 AM	14876
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Acenaphthylene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Aniline	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Anthracene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Azobenzene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Benz(a)anthracene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Benzo(a)pyrene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Benzo(b)fluoranthene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Benzo(k)fluoranthene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Benzoic acid	ND	21		µg/L	1	8/22/2014 6:02:48 PM	14909
Benzyl alcohol	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Butyl benzyl phthalate	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Carbazole	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
4-Chloroaniline	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
2-Chloronaphthalene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
2-Chlorophenol	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Chrysene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Di-n-butyl phthalate	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Di-n-octyl phthalate	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Dibenzofuran	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
1,2-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
1,3-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
1,4-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Diethyl phthalate	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-51

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 8:40:00 AM

Lab ID: 1408A13-001

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Dimethyl phthalate	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
2,4-Dichlorophenol	ND	21		µg/L	1	8/22/2014 6:02:48 PM	14909
2,4-Dimethylphenol	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
4,6-Dinitro-2-methylphenol	ND	21		µg/L	1	8/22/2014 6:02:48 PM	14909
2,4-Dinitrophenol	ND	21		µg/L	1	8/22/2014 6:02:48 PM	14909
2,4-Dinitrotoluene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
2,6-Dinitrotoluene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Fluoranthene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Fluorene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Hexachlorobenzene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Hexachlorobutadiene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Hexachloroethane	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Isophorone	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
1-Methylnaphthalene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
2-Methylnaphthalene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
2-Methylphenol	ND	21		µg/L	1	8/22/2014 6:02:48 PM	14909
3+4-Methylphenol	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
N-Nitrosodimethylamine	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Naphthalene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
2-Nitroaniline	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
3-Nitroaniline	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
4-Nitroaniline	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Nitrobenzene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
2-Nitrophenol	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
4-Nitrophenol	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Pentachlorophenol	ND	21		µg/L	1	8/22/2014 6:02:48 PM	14909
Phenanthrene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Phenol	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Pyrene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Pyridine	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/22/2014 6:02:48 PM	14909
Surr: 2-Fluorophenol	32.9	12.1-85.8		%REC	1	8/22/2014 6:02:48 PM	14909
Surr: Phenol-d5	16.7	17.7-65.8	S	%REC	1	8/22/2014 6:02:48 PM	14909

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-51

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 8:40:00 AM

Lab ID: 1408A13-001

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Surr: 2,4,6-Tribromophenol	52.3	26-138		%REC	1	8/22/2014 6:02:48 PM	14909
Surr: Nitrobenzene-d5	86.1	47.5-119		%REC	1	8/22/2014 6:02:48 PM	14909
Surr: 2-Fluorobiphenyl	75.6	48.1-106		%REC	1	8/22/2014 6:02:48 PM	14909
Surr: 4-Terphenyl-d14	74.1	44-113		%REC	1	8/22/2014 6:02:48 PM	14909
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Toluene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Ethylbenzene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Naphthalene	ND	2.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Acetone	ND	10		µg/L	1	8/28/2014 12:47:15 PM	R20875
Bromobenzene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Bromoform	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Bromomethane	ND	3.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
2-Butanone	ND	10		µg/L	1	8/28/2014 12:47:15 PM	R20875
Carbon disulfide	ND	10		µg/L	1	8/28/2014 12:47:15 PM	R20875
Carbon Tetrachloride	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Chlorobenzene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Chloroethane	ND	2.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Chloroform	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Chloromethane	ND	3.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Dibromomethane	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875

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 4 of 94
	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 greater than 2.	
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-51

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 8:40:00 AM

Lab ID: 1408A13-001

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
1,1-Dichloroethane	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Hexachlorobutadiene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
2-Hexanone	ND	10		µg/L	1	8/28/2014 12:47:15 PM	R20875
Isopropylbenzene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
4-Isopropyltoluene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2014 12:47:15 PM	R20875
Methylene Chloride	ND	3.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
n-Butylbenzene	ND	3.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
n-Propylbenzene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
sec-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Styrene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
tert-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Vinyl chloride	ND	1.0		µg/L	1	8/28/2014 12:47:15 PM	R20875
Xylenes, Total	ND	1.5		µg/L	1	8/28/2014 12:47:15 PM	R20875
Surr: 1,2-Dichloroethane-d4	97.0	70-130		%REC	1	8/28/2014 12:47:15 PM	R20875
Surr: 4-Bromofluorobenzene	124	70-130		%REC	1	8/28/2014 12:47:15 PM	R20875
Surr: Dibromofluoromethane	93.8	70-130		%REC	1	8/28/2014 12:47:15 PM	R20875
Surr: Toluene-d8	98.1	70-130		%REC	1	8/28/2014 12:47:15 PM	R20875

CARBON DIOXIDE

Analyst: **JRR**

Total Carbon Dioxide	250	1.0	H	mg CO2/L	1	8/22/2014 3:59:36 PM	R20763

SM2320B: ALKALINITY

Analyst: **JRR**

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 5 of 94
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-51

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 8:40:00 AM

Lab ID: 1408A13-001

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	270	20		mg/L CaCO ₃	1	8/22/2014 3:59:36 PM	R20763
Carbonate (As CaCO ₃)	ND	2.0		mg/L CaCO ₃	1	8/22/2014 3:59:36 PM	R20763
Total Alkalinity (as CaCO ₃)	270	20		mg/L CaCO ₃	1	8/22/2014 3:59:36 PM	R20763
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	438	40.0		mg/L	1	8/27/2014 4:44:00 PM	14958

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 94
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: TRIP BLANK

Project: RCRA Wells 8-19-14

Collection Date:

Lab ID: 1408A13-002

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Toluene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Ethylbenzene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Naphthalene	ND	2.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Acetone	ND	10		µg/L	1	8/28/2014 2:13:14 PM	R20875
Bromobenzene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Bromoform	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Bromomethane	ND	3.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
2-Butanone	ND	10		µg/L	1	8/28/2014 2:13:14 PM	R20875
Carbon disulfide	ND	10		µg/L	1	8/28/2014 2:13:14 PM	R20875
Carbon Tetrachloride	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Chlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Chloroethane	ND	2.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Chloroform	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Chloromethane	ND	3.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Dibromomethane	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
1,1-Dichloroethane	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2014 2:13:14 PM	R20875

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 7 of 94
	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 greater than 2.	
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: TRIP BLANK

Project: RCRA Wells 8-19-14

Collection Date:

Lab ID: 1408A13-002

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES				Analyst: cadg			
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Hexachlorobutadiene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
2-Hexanone	ND	10		µg/L	1	8/28/2014 2:13:14 PM	R20875
Isopropylbenzene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
4-Isopropyltoluene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2014 2:13:14 PM	R20875
Methylene Chloride	ND	3.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
n-Butylbenzene	ND	3.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
n-Propylbenzene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
sec-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Styrene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
tert-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Vinyl chloride	ND	1.0		µg/L	1	8/28/2014 2:13:14 PM	R20875
Xylenes, Total	ND	1.5		µg/L	1	8/28/2014 2:13:14 PM	R20875
Surr: 1,2-Dichloroethane-d4	99.0	70-130		%REC	1	8/28/2014 2:13:14 PM	R20875
Surr: 4-Bromofluorobenzene	123	70-130		%REC	1	8/28/2014 2:13:14 PM	R20875
Surr: Dibromofluoromethane	87.0	70-130		%REC	1	8/28/2014 2:13:14 PM	R20875
Surr: Toluene-d8	99.9	70-130		%REC	1	8/28/2014 2:13:14 PM	R20875

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 8 of 94
	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 greater than 2.	
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-52

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 9:00:00 AM

Lab ID: 1408A13-003

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/20/2014 11:54:34 PM	14873
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/20/2014 11:54:34 PM	14873
Surr: DNOP	117	75.2-161		%REC	1	8/20/2014 11:54:34 PM	14873
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/21/2014 6:48:23 PM	R20730
Surr: BFB	95.6	70.9-130		%REC	1	8/21/2014 6:48:23 PM	R20730
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.49	0.10		mg/L	1	8/20/2014 4:41:55 PM	R20712
Chloride	820	25	*	mg/L	50	8/21/2014 11:43:15 AM	R20741
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	8/20/2014 4:54:21 PM	R20712
Bromide	2.0	0.10		mg/L	1	8/20/2014 4:41:55 PM	R20712
Nitrogen, Nitrate (As N)	18	2.0	*	mg/L	20	8/20/2014 4:54:21 PM	R20712
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2014 4:41:55 PM	R20712
Sulfate	1700	25	*	mg/L	50	8/21/2014 11:43:15 AM	R20741
EPA METHOD 7470: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/22/2014 2:35:50 PM	14900
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 11:56:10 AM	R20721
Barium	ND	0.020		mg/L	1	8/21/2014 11:56:10 AM	R20721
Cadmium	ND	0.0020		mg/L	1	8/21/2014 11:56:10 AM	R20721
Calcium	430	5.0		mg/L	5	8/21/2014 12:34:31 PM	R20721
Chromium	ND	0.0060		mg/L	1	8/21/2014 11:56:10 AM	R20721
Copper	ND	0.0060		mg/L	1	8/21/2014 11:56:10 AM	R20721
Iron	4.1	0.10		mg/L	5	8/21/2014 12:34:31 PM	R20721
Lead	ND	0.0050		mg/L	1	8/21/2014 11:56:10 AM	R20721
Magnesium	110	5.0		mg/L	5	8/21/2014 12:34:31 PM	R20721
Manganese	8.8	0.020		mg/L	10	8/21/2014 12:36:21 PM	R20721
Potassium	5.6	1.0		mg/L	1	8/21/2014 11:56:10 AM	R20721
Selenium	ND	0.050		mg/L	1	8/21/2014 11:56:10 AM	R20721
Silver	ND	0.0050		mg/L	1	8/21/2014 11:56:10 AM	R20721
Sodium	590	10		mg/L	10	8/21/2014 12:36:21 PM	R20721
Uranium	ND	0.10		mg/L	1	8/21/2014 11:56:10 AM	R20721
Zinc	0.13	0.020		mg/L	1	8/21/2014 11:56:10 AM	R20721
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 11:25:11 AM	14876
Barium	0.052	0.020		mg/L	1	8/21/2014 11:25:11 AM	14876
Cadmium	ND	0.0020		mg/L	1	8/21/2014 11:25:11 AM	14876

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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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-52

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 9:00:00 AM

Lab ID: 1408A13-003

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Chromium	ND	0.0060		mg/L	1	8/21/2014 11:25:11 AM	14876
Lead	ND	0.0050		mg/L	1	8/21/2014 11:25:11 AM	14876
Selenium	ND	0.050		mg/L	1	8/21/2014 11:25:11 AM	14876
Silver	ND	0.0050		mg/L	1	8/21/2014 11:25:11 AM	14876
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Acenaphthylene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Aniline	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Anthracene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Azobenzene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Benz(a)anthracene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Benzo(a)pyrene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Benzo(b)fluoranthene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Benzo(k)fluoranthene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Benzoic acid	ND	20		µg/L	1	8/21/2014 11:27:47 PM	14881
Benzyl alcohol	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Butyl benzyl phthalate	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Carbazole	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
4-Chloroaniline	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
2-Chloronaphthalene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
2-Chlorophenol	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Chrysene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Di-n-butyl phthalate	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Di-n-octyl phthalate	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Dibenzofuran	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
1,2-Dichlorobenzene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
1,3-Dichlorobenzene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
1,4-Dichlorobenzene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Diethyl phthalate	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-52

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 9:00:00 AM

Lab ID: 1408A13-003

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC
Dimethyl phthalate	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
2,4-Dichlorophenol	ND	20		µg/L	1	8/21/2014 11:27:47 PM	14881
2,4-Dimethylphenol	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/21/2014 11:27:47 PM	14881
2,4-Dinitrophenol	ND	20		µg/L	1	8/21/2014 11:27:47 PM	14881
2,4-Dinitrotoluene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
2,6-Dinitrotoluene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Fluoranthene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Fluorene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Hexachlorobenzene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Hexachlorobutadiene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Hexachloroethane	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Isophorone	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
1-Methylnaphthalene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
2-Methylnaphthalene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
2-Methylphenol	ND	20		µg/L	1	8/21/2014 11:27:47 PM	14881
3+4-Methylphenol	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
N-Nitrosodimethylamine	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Naphthalene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
2-Nitroaniline	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
3-Nitroaniline	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
4-Nitroaniline	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Nitrobenzene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
2-Nitrophenol	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
4-Nitrophenol	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Pentachlorophenol	ND	20		µg/L	1	8/21/2014 11:27:47 PM	14881
Phenanthrene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Phenol	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Pyrene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Pyridine	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/21/2014 11:27:47 PM	14881
Surr: 2-Fluorophenol	63.5	12.1-85.8		%REC	1	8/21/2014 11:27:47 PM	14881
Surr: Phenol-d5	47.9	17.7-65.8		%REC	1	8/21/2014 11:27:47 PM	14881

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-52

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 9:00:00 AM

Lab ID: 1408A13-003

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC
Surr: 2,4,6-Tribromophenol	32.1	26-138		%REC	1	8/21/2014 11:27:47 PM	14881
Surr: Nitrobenzene-d5	96.5	47.5-119		%REC	1	8/21/2014 11:27:47 PM	14881
Surr: 2-Fluorobiphenyl	94.3	48.1-106		%REC	1	8/21/2014 11:27:47 PM	14881
Surr: 4-Terphenyl-d14	87.9	44-113		%REC	1	8/21/2014 11:27:47 PM	14881
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Toluene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Ethylbenzene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Naphthalene	ND	2.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Acetone	ND	10		µg/L	1	8/28/2014 2:41:55 PM	R20875
Bromobenzene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Bromoform	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Bromomethane	ND	3.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
2-Butanone	ND	10		µg/L	1	8/28/2014 2:41:55 PM	R20875
Carbon disulfide	ND	10		µg/L	1	8/28/2014 2:41:55 PM	R20875
Carbon Tetrachloride	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Chlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Chloroethane	ND	2.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Chloroform	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Chloromethane	ND	3.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Dibromomethane	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-52

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 9:00:00 AM

Lab ID: 1408A13-003

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
1,1-Dichloroethane	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Hexachlorobutadiene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
2-Hexanone	ND	10		µg/L	1	8/28/2014 2:41:55 PM	R20875
Isopropylbenzene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
4-Isopropyltoluene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2014 2:41:55 PM	R20875
Methylene Chloride	ND	3.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
n-Butylbenzene	ND	3.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
n-Propylbenzene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
sec-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Styrene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
tert-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Vinyl chloride	ND	1.0		µg/L	1	8/28/2014 2:41:55 PM	R20875
Xylenes, Total	ND	1.5		µg/L	1	8/28/2014 2:41:55 PM	R20875
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	8/28/2014 2:41:55 PM	R20875
Surr: 4-Bromofluorobenzene	124	70-130		%REC	1	8/28/2014 2:41:55 PM	R20875
Surr: Dibromofluoromethane	92.8	70-130		%REC	1	8/28/2014 2:41:55 PM	R20875
Surr: Toluene-d8	97.3	70-130		%REC	1	8/28/2014 2:41:55 PM	R20875

CARBON DIOXIDE

Analyst: **JRR**

Total Carbon Dioxide	220	1.0	H	mg CO2/L	1	8/22/2014 4:12:57 PM	R20763

SM2320B: ALKALINITY

Analyst: **JRR**

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-52

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 9:00:00 AM

Lab ID: 1408A13-003

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	170	20		mg/L CaCO ₃	1	8/22/2014 4:12:57 PM	R20763
Carbonate (As CaCO ₃)	ND	2.0		mg/L CaCO ₃	1	8/22/2014 4:12:57 PM	R20763
Total Alkalinity (as CaCO ₃)	170	20		mg/L CaCO ₃	1	8/22/2014 4:12:57 PM	R20763
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3760	40.0	*	mg/L	1	8/27/2014 4:44:00 PM	14958

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 14 of 94
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-53

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 9:20:00 AM

Lab ID: 1408A13-004

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/21/2014 12:24:32 AM	14873
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/21/2014 12:24:32 AM	14873
Surr: DNOP	110	75.2-161		%REC	1	8/21/2014 12:24:32 AM	14873
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/21/2014 7:18:38 PM	R20730
Surr: BFB	101	70.9-130		%REC	1	8/21/2014 7:18:38 PM	R20730
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.11	0.10		mg/L	1	8/20/2014 5:06:45 PM	R20712
Chloride	1000	50	*	mg/L	100	8/21/2014 12:20:29 PM	R20741
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	8/20/2014 5:19:10 PM	R20712
Bromide	2.2	0.10		mg/L	1	8/20/2014 5:06:45 PM	R20712
Nitrogen, Nitrate (As N)	6.8	2.0		mg/L	20	8/20/2014 5:19:10 PM	R20712
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2014 5:06:45 PM	R20712
Sulfate	1300	50	*	mg/L	100	8/21/2014 12:20:29 PM	R20741
EPA METHOD 7470: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/22/2014 2:37:38 PM	14900
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 12:03:18 PM	R20721
Barium	ND	0.020		mg/L	1	8/21/2014 12:03:18 PM	R20721
Cadmium	ND	0.0020		mg/L	1	8/21/2014 12:03:18 PM	R20721
Calcium	340	10		mg/L	10	8/21/2014 12:38:17 PM	R20721
Chromium	ND	0.0060		mg/L	1	8/21/2014 12:03:18 PM	R20721
Copper	ND	0.0060		mg/L	1	8/21/2014 12:03:18 PM	R20721
Iron	0.029	0.020		mg/L	1	8/21/2014 12:03:18 PM	R20721
Lead	ND	0.0050		mg/L	1	8/21/2014 12:03:18 PM	R20721
Magnesium	59	1.0		mg/L	1	8/21/2014 12:03:18 PM	R20721
Manganese	0.10	0.0020		mg/L	1	8/21/2014 12:03:18 PM	R20721
Potassium	5.1	1.0		mg/L	1	8/21/2014 12:03:18 PM	R20721
Selenium	ND	0.050		mg/L	1	8/21/2014 12:03:18 PM	R20721
Silver	ND	0.0050		mg/L	1	8/21/2014 12:03:18 PM	R20721
Sodium	750	10		mg/L	10	8/21/2014 12:38:17 PM	R20721
Uranium	ND	0.10		mg/L	1	8/21/2014 12:03:18 PM	R20721
Zinc	ND	0.020		mg/L	1	8/21/2014 12:03:18 PM	R20721
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 11:26:47 AM	14876
Barium	0.041	0.020		mg/L	1	8/21/2014 11:26:47 AM	14876
Cadmium	ND	0.0020		mg/L	1	8/21/2014 11:26:47 AM	14876

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-53

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 9:20:00 AM

Lab ID: 1408A13-004

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Chromium	ND	0.0060		mg/L	1	8/21/2014 11:26:47 AM	14876
Lead	ND	0.0050		mg/L	1	8/21/2014 11:26:47 AM	14876
Selenium	ND	0.050		mg/L	1	8/21/2014 11:26:47 AM	14876
Silver	ND	0.0050		mg/L	1	8/21/2014 11:26:47 AM	14876
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Acenaphthylene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Aniline	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Anthracene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Azobenzene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Benz(a)anthracene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Benzo(a)pyrene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Benzo(b)fluoranthene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Benzo(g,h,i)perylene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Benzo(k)fluoranthene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Benzoic acid	ND	22		µg/L	1	8/22/2014 6:31:45 PM	14909
Benzyl alcohol	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Bis(2-chloroethoxy)methane	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Bis(2-chloroethyl)ether	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Bis(2-chloroisopropyl)ether	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Bis(2-ethylhexyl)phthalate	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
4-Bromophenyl phenyl ether	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Butyl benzyl phthalate	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Carbazole	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
4-Chloro-3-methylphenol	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
4-Chloroaniline	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
2-Chloronaphthalene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
2-Chlorophenol	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
4-Chlorophenyl phenyl ether	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Chrysene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Di-n-butyl phthalate	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Di-n-octyl phthalate	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Dibenz(a,h)anthracene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Dibenzofuran	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
1,2-Dichlorobenzene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
1,3-Dichlorobenzene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
1,4-Dichlorobenzene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
3,3'-Dichlorobenzidine	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Diethyl phthalate	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-53

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 9:20:00 AM

Lab ID: 1408A13-004

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Dimethyl phthalate	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
2,4-Dichlorophenol	ND	22		µg/L	1	8/22/2014 6:31:45 PM	14909
2,4-Dimethylphenol	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
4,6-Dinitro-2-methylphenol	ND	22		µg/L	1	8/22/2014 6:31:45 PM	14909
2,4-Dinitrophenol	ND	22		µg/L	1	8/22/2014 6:31:45 PM	14909
2,4-Dinitrotoluene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
2,6-Dinitrotoluene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Fluoranthene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Fluorene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Hexachlorobenzene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Hexachlorobutadiene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Hexachlorocyclopentadiene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Hexachloroethane	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Indeno(1,2,3-cd)pyrene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Isophorone	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
1-Methylnaphthalene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
2-Methylnaphthalene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
2-Methylphenol	ND	22		µg/L	1	8/22/2014 6:31:45 PM	14909
3+4-Methylphenol	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
N-Nitrosodi-n-propylamine	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
N-Nitrosodimethylamine	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
N-Nitrosodiphenylamine	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Naphthalene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
2-Nitroaniline	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
3-Nitroaniline	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
4-Nitroaniline	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Nitrobenzene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
2-Nitrophenol	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
4-Nitrophenol	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Pentachlorophenol	ND	22		µg/L	1	8/22/2014 6:31:45 PM	14909
Phenanthrene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Phenol	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Pyrene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Pyridine	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
1,2,4-Trichlorobenzene	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
2,4,5-Trichlorophenol	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
2,4,6-Trichlorophenol	ND	11		µg/L	1	8/22/2014 6:31:45 PM	14909
Surr: 2-Fluorophenol	56.2	12.1-85.8		%REC	1	8/22/2014 6:31:45 PM	14909
Surr: Phenol-d5	42.0	17.7-65.8		%REC	1	8/22/2014 6:31:45 PM	14909

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-53

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 9:20:00 AM

Lab ID: 1408A13-004

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Surr: 2,4,6-Tribromophenol	65.3	26-138		%REC	1	8/22/2014 6:31:45 PM	14909
Surr: Nitrobenzene-d5	76.4	47.5-119		%REC	1	8/22/2014 6:31:45 PM	14909
Surr: 2-Fluorobiphenyl	75.0	48.1-106		%REC	1	8/22/2014 6:31:45 PM	14909
Surr: 4-Terphenyl-d14	71.3	44-113		%REC	1	8/22/2014 6:31:45 PM	14909
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Toluene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Ethylbenzene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Naphthalene	ND	2.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Acetone	ND	10		µg/L	1	8/28/2014 3:10:37 PM	R20875
Bromobenzene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Bromoform	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Bromomethane	ND	3.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
2-Butanone	ND	10		µg/L	1	8/28/2014 3:10:37 PM	R20875
Carbon disulfide	ND	10		µg/L	1	8/28/2014 3:10:37 PM	R20875
Carbon Tetrachloride	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Chlorobenzene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Chloroethane	ND	2.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Chloroform	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Chloromethane	ND	3.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Dibromomethane	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**Date Reported: **9/9/2014****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-53**Project:** RCRA Wells 8-19-14**Collection Date:** 8/19/2014 9:20:00 AM**Lab ID:** 1408A13-004**Matrix:** AQUEOUS**Received Date:** 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
1,1-Dichloroethane	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Hexachlorobutadiene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
2-Hexanone	ND	10		µg/L	1	8/28/2014 3:10:37 PM	R20875
Isopropylbenzene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
4-Isopropyltoluene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2014 3:10:37 PM	R20875
Methylene Chloride	ND	3.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
n-Butylbenzene	ND	3.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
n-Propylbenzene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
sec-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Styrene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
tert-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Vinyl chloride	ND	1.0		µg/L	1	8/28/2014 3:10:37 PM	R20875
Xylenes, Total	ND	1.5		µg/L	1	8/28/2014 3:10:37 PM	R20875
Surr: 1,2-Dichloroethane-d4	97.5	70-130		%REC	1	8/28/2014 3:10:37 PM	R20875
Surr: 4-Bromofluorobenzene	126	70-130		%REC	1	8/28/2014 3:10:37 PM	R20875
Surr: Dibromofluoromethane	89.1	70-130		%REC	1	8/28/2014 3:10:37 PM	R20875
Surr: Toluene-d8	99.0	70-130		%REC	1	8/28/2014 3:10:37 PM	R20875

CARBON DIOXIDEAnalyst: **JRR**

Total Carbon Dioxide	310	1.0	H	mg CO2/L	1	8/22/2014 4:24:22 PM	R20763

SM2320B: ALKALINITYAnalyst: **JRR**

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-53

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 9:20:00 AM

Lab ID: 1408A13-004

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	330	20		mg/L CaCO ₃	1	8/22/2014 4:24:22 PM	R20763
Carbonate (As CaCO ₃)	ND	2.0		mg/L CaCO ₃	1	8/22/2014 4:24:22 PM	R20763
Total Alkalinity (as CaCO ₃)	330	20		mg/L CaCO ₃	1	8/22/2014 4:24:22 PM	R20763
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3560	100	*	mg/L	1	8/27/2014 4:44:00 PM	14958

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 20 of 94
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-59

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 1:20:00 PM

Lab ID: 1408A13-005

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	0.62	0.20		mg/L	1	8/21/2014 12:54:24 AM	14873
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/21/2014 12:54:24 AM	14873
Surr: DNOP	117	75.2-161		%REC	1	8/21/2014 12:54:24 AM	14873
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.72	0.050		mg/L	1	8/21/2014 9:49:30 PM	R20730
Surr: BFB	167	70.9-130	S	%REC	1	8/21/2014 9:49:30 PM	R20730
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.20	0.10		mg/L	1	8/20/2014 5:56:24 PM	R20712
Chloride	210	10		mg/L	20	8/20/2014 6:08:49 PM	R20712
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2014 5:56:24 PM	R20712
Bromide	2.0	0.10		mg/L	1	8/20/2014 5:56:24 PM	R20712
Nitrogen, Nitrate (As N)	ND	2.0		mg/L	20	8/20/2014 6:08:49 PM	R20712
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2014 5:56:24 PM	R20712
Sulfate	830	10	*	mg/L	20	8/20/2014 6:08:49 PM	R20712
EPA METHOD 7470: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/22/2014 2:46:48 PM	14900
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 12:05:19 PM	R20721
Barium	0.059	0.020		mg/L	1	8/21/2014 12:05:19 PM	R20721
Cadmium	ND	0.0020		mg/L	1	8/21/2014 12:05:19 PM	R20721
Calcium	260	5.0		mg/L	5	8/21/2014 12:40:10 PM	R20721
Chromium	ND	0.0060		mg/L	1	8/21/2014 12:05:19 PM	R20721
Copper	ND	0.0060		mg/L	1	8/21/2014 12:05:19 PM	R20721
Iron	7.9	0.20		mg/L	10	8/21/2014 12:41:44 PM	R20721
Lead	ND	0.0050		mg/L	1	8/21/2014 12:05:19 PM	R20721
Magnesium	69	1.0		mg/L	1	8/21/2014 12:05:19 PM	R20721
Manganese	3.0	0.010		mg/L	5	8/21/2014 12:40:10 PM	R20721
Potassium	3.4	1.0		mg/L	1	8/21/2014 12:05:19 PM	R20721
Selenium	ND	0.050		mg/L	1	8/21/2014 12:05:19 PM	R20721
Silver	ND	0.0050		mg/L	1	8/21/2014 12:05:19 PM	R20721
Sodium	440	5.0		mg/L	5	8/21/2014 12:40:10 PM	R20721
Uranium	ND	0.10		mg/L	1	8/21/2014 12:05:19 PM	R20721
Zinc	ND	0.020		mg/L	1	8/21/2014 12:05:19 PM	R20721
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 11:28:30 AM	14876
Barium	0.26	0.020		mg/L	1	8/21/2014 11:28:30 AM	14876
Cadmium	ND	0.0020		mg/L	1	8/21/2014 11:28:30 AM	14876

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-59

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 1:20:00 PM

Lab ID: 1408A13-005

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Chromium	0.011	0.0060		mg/L	1	8/21/2014 11:28:30 AM	14876
Lead	0.011	0.0050		mg/L	1	8/21/2014 11:28:30 AM	14876
Selenium	ND	0.050		mg/L	1	8/21/2014 11:28:30 AM	14876
Silver	ND	0.0050		mg/L	1	8/21/2014 11:28:30 AM	14876
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Acenaphthylene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Aniline	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Anthracene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Azobenzene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Benz(a)anthracene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Benzo(a)pyrene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Benzo(b)fluoranthene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Benzo(k)fluoranthene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Benzoic acid	ND	20		µg/L	1	8/22/2014 12:26:40 AM	14881
Benzyl alcohol	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Butyl benzyl phthalate	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Carbazole	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
4-Chloroaniline	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
2-Chloronaphthalene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
2-Chlorophenol	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Chrysene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Di-n-butyl phthalate	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Di-n-octyl phthalate	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Dibenzofuran	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
1,2-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
1,3-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
1,4-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Diethyl phthalate	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-59

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 1:20:00 PM

Lab ID: 1408A13-005

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES					Analyst: JDC		
Dimethyl phthalate	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
2,4-Dichlorophenol	ND	20		µg/L	1	8/22/2014 12:26:40 AM	14881
2,4-Dimethylphenol	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/22/2014 12:26:40 AM	14881
2,4-Dinitrophenol	ND	20		µg/L	1	8/22/2014 12:26:40 AM	14881
2,4-Dinitrotoluene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
2,6-Dinitrotoluene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Fluoranthene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Fluorene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Hexachlorobenzene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Hexachlorobutadiene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Hexachloroethane	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Isophorone	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
1-Methylnaphthalene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
2-Methylnaphthalene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
2-Methylphenol	ND	20		µg/L	1	8/22/2014 12:26:40 AM	14881
3+4-Methylphenol	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
N-Nitrosodimethylamine	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Naphthalene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
2-Nitroaniline	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
3-Nitroaniline	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
4-Nitroaniline	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Nitrobenzene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
2-Nitrophenol	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
4-Nitrophenol	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Pentachlorophenol	ND	20		µg/L	1	8/22/2014 12:26:40 AM	14881
Phenanthrene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Phenol	14	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Pyrene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Pyridine	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/22/2014 12:26:40 AM	14881
Surr: 2-Fluorophenol	69.6	12.1-85.8		%REC	1	8/22/2014 12:26:40 AM	14881
Surr: Phenol-d5	46.7	17.7-65.8		%REC	1	8/22/2014 12:26:40 AM	14881

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-59

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 1:20:00 PM

Lab ID: 1408A13-005

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC
Surr: 2,4,6-Tribromophenol	69.4	26-138		%REC	1	8/22/2014 12:26:40 AM	14881
Surr: Nitrobenzene-d5	90.7	47.5-119		%REC	1	8/22/2014 12:26:40 AM	14881
Surr: 2-Fluorobiphenyl	88.3	48.1-106		%REC	1	8/22/2014 12:26:40 AM	14881
Surr: 4-Terphenyl-d14	84.4	44-113		%REC	1	8/22/2014 12:26:40 AM	14881
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	13	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Toluene	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Ethylbenzene	58	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Methyl tert-butyl ether (MTBE)	750	10		µg/L	10	8/29/2014 1:48:06 PM	R20928
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
1,2-Dichloroethane (EDC)	10	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Naphthalene	3.6	2.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Acetone	ND	10		µg/L	1	8/28/2014 3:39:19 PM	R20875
Bromobenzene	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Bromoform	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Bromomethane	ND	3.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
2-Butanone	ND	10		µg/L	1	8/28/2014 3:39:19 PM	R20875
Carbon disulfide	ND	10		µg/L	1	8/28/2014 3:39:19 PM	R20875
Carbon Tetrachloride	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Chlorobenzene	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Chloroethane	ND	2.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Chloroform	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Chloromethane	ND	3.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Dibromomethane	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-59

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 1:20:00 PM

Lab ID: 1408A13-005

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
1,1-Dichloroethane	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Hexachlorobutadiene	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
2-Hexanone	ND	10		µg/L	1	8/28/2014 3:39:19 PM	R20875
Isopropylbenzene	7.8	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
4-Isopropyltoluene	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2014 3:39:19 PM	R20875
Methylene Chloride	ND	3.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
n-Butylbenzene	ND	3.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
n-Propylbenzene	7.3	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
sec-Butylbenzene	3.8	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Styrene	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
tert-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Vinyl chloride	ND	1.0		µg/L	1	8/28/2014 3:39:19 PM	R20875
Xylenes, Total	ND	1.5		µg/L	1	8/28/2014 3:39:19 PM	R20875
Surr: 1,2-Dichloroethane-d4	99.3	70-130		%REC	1	8/28/2014 3:39:19 PM	R20875
Surr: 4-Bromofluorobenzene	100	70-130		%REC	1	8/28/2014 3:39:19 PM	R20875
Surr: Dibromofluoromethane	97.2	70-130		%REC	1	8/28/2014 3:39:19 PM	R20875
Surr: Toluene-d8	97.8	70-130		%REC	1	8/28/2014 3:39:19 PM	R20875

CARBON DIOXIDE

Analyst: **JRR**

Total Carbon Dioxide	910	1.0	H	mg CO2/L	1	8/22/2014 4:39:23 PM	R20763

SM2320B: ALKALINITY

Analyst: **JRR**

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-59

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 1:20:00 PM

Lab ID: 1408A13-005

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	950	20		mg/L CaCO3	1	8/22/2014 4:39:23 PM	R20763
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	8/22/2014 4:39:23 PM	R20763
Total Alkalinity (as CaCO3)	950	20		mg/L CaCO3	1	8/22/2014 4:39:23 PM	R20763
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2370	100	*	mg/L	1	8/27/2014 4:44:00 PM	14958

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 26 of 94
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-62

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 1:40:00 PM

Lab ID: 1408A13-006

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/21/2014 1:54:20 AM	14873
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/21/2014 1:54:20 AM	14873
Surr: DNOP	92.3	75.2-161		%REC	1	8/21/2014 1:54:20 AM	14873
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/21/2014 10:49:53 PM	R20730
Surr: BFB	104	70.9-130		%REC	1	8/21/2014 10:49:53 PM	R20730
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	ND	2.0		mg/L	20	8/20/2014 6:33:38 PM	R20712
Chloride	14	10		mg/L	20	8/20/2014 6:33:38 PM	R20712
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2014 6:21:14 PM	R20712
Bromide	ND	0.10		mg/L	1	8/20/2014 6:21:14 PM	R20712
Nitrogen, Nitrate (As N)	0.38	0.10		mg/L	1	8/20/2014 6:21:14 PM	R20712
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	8/20/2014 6:33:38 PM	R20712
Sulfate	4100	50	*	mg/L	100	8/21/2014 12:32:54 PM	R20741
EPA METHOD 7470: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/22/2014 2:48:38 PM	14900
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 12:06:59 PM	R20721
Barium	ND	0.020		mg/L	1	8/21/2014 12:06:59 PM	R20721
Cadmium	ND	0.0020		mg/L	1	8/21/2014 12:06:59 PM	R20721
Calcium	440	5.0		mg/L	5	8/21/2014 12:43:43 PM	R20721
Chromium	ND	0.0060		mg/L	1	8/21/2014 12:06:59 PM	R20721
Copper	ND	0.0060		mg/L	1	8/21/2014 12:06:59 PM	R20721
Iron	ND	0.020		mg/L	1	8/21/2014 12:06:59 PM	R20721
Lead	ND	0.0050		mg/L	1	8/21/2014 12:06:59 PM	R20721
Magnesium	39	1.0		mg/L	1	8/21/2014 12:06:59 PM	R20721
Manganese	0.49	0.0020		mg/L	1	8/21/2014 12:06:59 PM	R20721
Potassium	9.7	1.0		mg/L	1	8/21/2014 12:06:59 PM	R20721
Selenium	ND	0.050		mg/L	1	8/21/2014 12:06:59 PM	R20721
Silver	ND	0.0050		mg/L	1	8/21/2014 12:06:59 PM	R20721
Sodium	1400	20		mg/L	20	8/21/2014 12:45:33 PM	R20721
Uranium	ND	0.10		mg/L	1	8/21/2014 12:06:59 PM	R20721
Zinc	ND	0.020		mg/L	1	8/21/2014 12:06:59 PM	R20721
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 11:30:13 AM	14876
Barium	ND	0.020		mg/L	1	8/21/2014 11:30:13 AM	14876
Cadmium	ND	0.0020		mg/L	1	8/21/2014 11:30:13 AM	14876

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-62

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 1:40:00 PM

Lab ID: 1408A13-006

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Chromium	ND	0.0060		mg/L	1	8/21/2014 11:30:13 AM	14876
Lead	ND	0.0050		mg/L	1	8/21/2014 11:30:13 AM	14876
Selenium	ND	0.050		mg/L	1	8/21/2014 11:30:13 AM	14876
Silver	ND	0.0050		mg/L	1	8/21/2014 11:30:13 AM	14876
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Acenaphthylene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Aniline	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Anthracene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Azobenzene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Benz(a)anthracene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Benzo(a)pyrene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Benzo(b)fluoranthene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Benzo(k)fluoranthene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Benzoic acid	ND	20		µg/L	1	8/22/2014 12:56:12 AM	14881
Benzyl alcohol	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Butyl benzyl phthalate	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Carbazole	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
4-Chloroaniline	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
2-Chloronaphthalene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
2-Chlorophenol	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Chrysene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Di-n-butyl phthalate	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Di-n-octyl phthalate	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Dibenzofuran	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
1,2-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
1,3-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
1,4-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Diethyl phthalate	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**Date Reported: **9/9/2014****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-62**Project:** RCRA Wells 8-19-14**Collection Date:** 8/19/2014 1:40:00 PM**Lab ID:** 1408A13-006**Matrix:** AQUEOUS**Received Date:** 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC
Dimethyl phthalate	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
2,4-Dichlorophenol	ND	20		µg/L	1	8/22/2014 12:56:12 AM	14881
2,4-Dimethylphenol	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/22/2014 12:56:12 AM	14881
2,4-Dinitrophenol	ND	20		µg/L	1	8/22/2014 12:56:12 AM	14881
2,4-Dinitrotoluene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
2,6-Dinitrotoluene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Fluoranthene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Fluorene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Hexachlorobenzene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Hexachlorobutadiene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Hexachloroethane	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Isophorone	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
1-Methylnaphthalene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
2-Methylnaphthalene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
2-Methylphenol	ND	20		µg/L	1	8/22/2014 12:56:12 AM	14881
3+4-Methylphenol	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
N-Nitrosodimethylamine	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Naphthalene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
2-Nitroaniline	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
3-Nitroaniline	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
4-Nitroaniline	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Nitrobenzene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
2-Nitrophenol	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
4-Nitrophenol	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Pentachlorophenol	ND	20		µg/L	1	8/22/2014 12:56:12 AM	14881
Phenanthrene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Phenol	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Pyrene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Pyridine	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/22/2014 12:56:12 AM	14881
Surr: 2-Fluorophenol	71.2	12.1-85.8		%REC	1	8/22/2014 12:56:12 AM	14881
Surr: Phenol-d5	49.2	17.7-65.8		%REC	1	8/22/2014 12:56:12 AM	14881

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-62

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 1:40:00 PM

Lab ID: 1408A13-006

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC
Surr: 2,4,6-Tribromophenol	59.6	26-138		%REC	1	8/22/2014 12:56:12 AM	14881
Surr: Nitrobenzene-d5	95.7	47.5-119		%REC	1	8/22/2014 12:56:12 AM	14881
Surr: 2-Fluorobiphenyl	94.5	48.1-106		%REC	1	8/22/2014 12:56:12 AM	14881
Surr: 4-Terphenyl-d14	89.3	44-113		%REC	1	8/22/2014 12:56:12 AM	14881
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Toluene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Ethylbenzene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Naphthalene	ND	2.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Acetone	ND	10		µg/L	1	8/28/2014 4:08:03 PM	R20875
Bromobenzene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Bromoform	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Bromomethane	ND	3.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
2-Butanone	ND	10		µg/L	1	8/28/2014 4:08:03 PM	R20875
Carbon disulfide	ND	10		µg/L	1	8/28/2014 4:08:03 PM	R20875
Carbon Tetrachloride	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Chlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Chloroethane	ND	2.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Chloroform	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Chloromethane	ND	3.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Dibromomethane	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-62

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 1:40:00 PM

Lab ID: 1408A13-006

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
1,1-Dichloroethane	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Hexachlorobutadiene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
2-Hexanone	ND	10		µg/L	1	8/28/2014 4:08:03 PM	R20875
Isopropylbenzene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
4-Isopropyltoluene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2014 4:08:03 PM	R20875
Methylene Chloride	ND	3.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
n-Butylbenzene	ND	3.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
n-Propylbenzene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
sec-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Styrene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
tert-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Vinyl chloride	ND	1.0		µg/L	1	8/28/2014 4:08:03 PM	R20875
Xylenes, Total	ND	1.5		µg/L	1	8/28/2014 4:08:03 PM	R20875
Surr: 1,2-Dichloroethane-d4	98.8	70-130		%REC	1	8/28/2014 4:08:03 PM	R20875
Surr: 4-Bromofluorobenzene	116	70-130		%REC	1	8/28/2014 4:08:03 PM	R20875
Surr: Dibromofluoromethane	92.1	70-130		%REC	1	8/28/2014 4:08:03 PM	R20875
Surr: Toluene-d8	99.4	70-130		%REC	1	8/28/2014 4:08:03 PM	R20875

CARBON DIOXIDE

Analyst: **JRR**

Total Carbon Dioxide	470	1.0	H	mg CO2/L	1	8/22/2014 5:11:50 PM	R20763

SM2320B: ALKALINITY

Analyst: **JRR**

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-62

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 1:40:00 PM

Lab ID: 1408A13-006

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	500	20		mg/L CaCO ₃	1	8/22/2014 5:11:50 PM	R20763
Carbonate (As CaCO ₃)	ND	2.0		mg/L CaCO ₃	1	8/22/2014 5:11:50 PM	R20763
Total Alkalinity (as CaCO ₃)	500	20		mg/L CaCO ₃	1	8/22/2014 5:11:50 PM	R20763
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	5940	40.0	*	mg/L	1	8/27/2014 4:44:00 PM	14958

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 32 of 94
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-63

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 1:00:00 PM

Lab ID: 1408A13-007

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/21/2014 2:24:10 AM	14873
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/21/2014 2:24:10 AM	14873
Surr: DNOP	109	75.2-161		%REC	1	8/21/2014 2:24:10 AM	14873
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/21/2014 11:20:08 PM	R20730
Surr: BFB	99.9	70.9-130		%REC	1	8/21/2014 11:20:08 PM	R20730
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	ND	0.10		mg/L	1	8/20/2014 6:46:03 PM	R20712
Chloride	390	50	*	mg/L	100	8/21/2014 12:45:18 PM	R20741
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2014 6:46:03 PM	R20712
Bromide	7.3	2.0		mg/L	20	8/20/2014 6:58:27 PM	R20712
Nitrogen, Nitrate (As N)	170	2.0	*	mg/L	20	8/20/2014 6:58:27 PM	R20712
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	8/20/2014 6:58:27 PM	R20712
Sulfate	2400	50	*	mg/L	100	8/21/2014 12:45:18 PM	R20741
EPA METHOD 7470: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/22/2014 2:50:29 PM	14900
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 12:09:01 PM	R20721
Barium	ND	0.020		mg/L	1	8/21/2014 12:09:01 PM	R20721
Cadmium	ND	0.0020		mg/L	1	8/21/2014 12:09:01 PM	R20721
Calcium	560	10		mg/L	10	8/21/2014 12:52:45 PM	R20721
Chromium	ND	0.0060		mg/L	1	8/21/2014 12:09:01 PM	R20721
Copper	ND	0.0060		mg/L	1	8/21/2014 12:09:01 PM	R20721
Iron	0.022	0.020		mg/L	1	8/21/2014 12:09:01 PM	R20721
Lead	ND	0.0050		mg/L	1	8/21/2014 12:09:01 PM	R20721
Magnesium	180	10		mg/L	10	8/21/2014 12:52:45 PM	R20721
Manganese	1.4	0.020		mg/L	10	8/21/2014 12:52:45 PM	R20721
Potassium	5.7	1.0		mg/L	1	8/21/2014 12:09:01 PM	R20721
Selenium	ND	0.050		mg/L	1	8/21/2014 12:09:01 PM	R20721
Silver	ND	0.0050		mg/L	1	8/21/2014 12:09:01 PM	R20721
Sodium	680	10		mg/L	10	8/21/2014 12:52:45 PM	R20721
Uranium	ND	0.10		mg/L	1	8/21/2014 12:09:01 PM	R20721
Zinc	ND	0.020		mg/L	1	8/21/2014 12:09:01 PM	R20721
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 11:41:58 AM	14876
Barium	0.093	0.020		mg/L	1	8/21/2014 11:41:58 AM	14876
Cadmium	ND	0.0020		mg/L	1	8/21/2014 11:41:58 AM	14876

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-63

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 1:00:00 PM

Lab ID: 1408A13-007

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Chromium	ND	0.0060		mg/L	1	8/21/2014 11:41:58 AM	14876
Lead	ND	0.0050		mg/L	1	8/21/2014 11:41:58 AM	14876
Selenium	ND	0.050		mg/L	1	8/21/2014 11:41:58 AM	14876
Silver	ND	0.0050		mg/L	1	8/21/2014 11:41:58 AM	14876
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Acenaphthylene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Aniline	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Anthracene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Azobenzene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Benz(a)anthracene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Benzo(a)pyrene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Benzo(b)fluoranthene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Benzo(k)fluoranthene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Benzoic acid	ND	20		µg/L	1	8/22/2014 1:25:44 AM	14881
Benzyl alcohol	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Butyl benzyl phthalate	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Carbazole	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
4-Chloroaniline	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
2-Chloronaphthalene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
2-Chlorophenol	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Chrysene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Di-n-butyl phthalate	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Di-n-octyl phthalate	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Dibenzofuran	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
1,2-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
1,3-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
1,4-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Diethyl phthalate	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881

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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
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	O RSD is greater than RSDlimit	P Sample pH greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

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Lab ID: 1408A13-007

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES				Analyst: JDC			
Dimethyl phthalate	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
2,4-Dichlorophenol	ND	20		µg/L	1	8/22/2014 1:25:44 AM	14881
2,4-Dimethylphenol	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/22/2014 1:25:44 AM	14881
2,4-Dinitrophenol	ND	20		µg/L	1	8/22/2014 1:25:44 AM	14881
2,4-Dinitrotoluene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
2,6-Dinitrotoluene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Fluoranthene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Fluorene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Hexachlorobenzene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Hexachlorobutadiene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Hexachloroethane	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Isophorone	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
1-Methylnaphthalene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
2-Methylnaphthalene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
2-Methylphenol	ND	20		µg/L	1	8/22/2014 1:25:44 AM	14881
3+4-Methylphenol	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
N-Nitrosodimethylamine	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Naphthalene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
2-Nitroaniline	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
3-Nitroaniline	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
4-Nitroaniline	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Nitrobenzene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
2-Nitrophenol	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
4-Nitrophenol	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Pentachlorophenol	ND	20		µg/L	1	8/22/2014 1:25:44 AM	14881
Phenanthrene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Phenol	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Pyrene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Pyridine	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/22/2014 1:25:44 AM	14881
Surr: 2-Fluorophenol	71.6	12.1-85.8		%REC	1	8/22/2014 1:25:44 AM	14881
Surr: Phenol-d5	50.2	17.7-65.8		%REC	1	8/22/2014 1:25:44 AM	14881

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-63

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 1:00:00 PM

Lab ID: 1408A13-007

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC
Surr: 2,4,6-Tribromophenol	55.6	26-138		%REC	1	8/22/2014 1:25:44 AM	14881
Surr: Nitrobenzene-d5	105	47.5-119		%REC	1	8/22/2014 1:25:44 AM	14881
Surr: 2-Fluorobiphenyl	101	48.1-106		%REC	1	8/22/2014 1:25:44 AM	14881
Surr: 4-Terphenyl-d14	91.4	44-113		%REC	1	8/22/2014 1:25:44 AM	14881
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Toluene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Ethylbenzene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Naphthalene	ND	2.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Acetone	ND	10		µg/L	1	8/28/2014 4:36:44 PM	R20875
Bromobenzene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Bromoform	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Bromomethane	ND	3.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
2-Butanone	ND	10		µg/L	1	8/28/2014 4:36:44 PM	R20875
Carbon disulfide	ND	10		µg/L	1	8/28/2014 4:36:44 PM	R20875
Carbon Tetrachloride	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Chlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Chloroethane	ND	2.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Chloroform	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Chloromethane	ND	3.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Dibromomethane	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-63

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 1:00:00 PM

Lab ID: 1408A13-007

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
1,1-Dichloroethane	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Hexachlorobutadiene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
2-Hexanone	ND	10		µg/L	1	8/28/2014 4:36:44 PM	R20875
Isopropylbenzene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
4-Isopropyltoluene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2014 4:36:44 PM	R20875
Methylene Chloride	ND	3.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
n-Butylbenzene	ND	3.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
n-Propylbenzene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
sec-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Styrene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
tert-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Vinyl chloride	ND	1.0		µg/L	1	8/28/2014 4:36:44 PM	R20875
Xylenes, Total	ND	1.5		µg/L	1	8/28/2014 4:36:44 PM	R20875
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	8/28/2014 4:36:44 PM	R20875
Surr: 4-Bromofluorobenzene	124	70-130		%REC	1	8/28/2014 4:36:44 PM	R20875
Surr: Dibromofluoromethane	92.8	70-130		%REC	1	8/28/2014 4:36:44 PM	R20875
Surr: Toluene-d8	97.1	70-130		%REC	1	8/28/2014 4:36:44 PM	R20875

CARBON DIOXIDE

Analyst: **JRR**

Total Carbon Dioxide	380	1.0	H	mg CO2/L	1	8/22/2014 5:32:19 PM	R20763

SM2320B: ALKALINITY

Analyst: **JRR**

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-63

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 1:00:00 PM

Lab ID: 1408A13-007

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	400	20		mg/L CaCO ₃	1	8/22/2014 5:32:19 PM	R20763
Carbonate (As CaCO ₃)	ND	2.0		mg/L CaCO ₃	1	8/22/2014 5:32:19 PM	R20763
Total Alkalinity (as CaCO ₃)	400	20		mg/L CaCO ₃	1	8/22/2014 5:32:19 PM	R20763
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	5230	40.0	*	mg/L	1	8/27/2014 4:44:00 PM	14958

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 38 of 94
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-64

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 11:11:00 AM

Lab ID: 1408A13-008

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/21/2014 2:54:03 AM	14873
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/21/2014 2:54:03 AM	14873
Surr: DNOP	103	75.2-161		%REC	1	8/21/2014 2:54:03 AM	14873
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/21/2014 11:50:11 PM	R20730
Surr: BFB	100	70.9-130		%REC	1	8/21/2014 11:50:11 PM	R20730
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	ND	0.10		mg/L	1	8/20/2014 7:10:52 PM	R20712
Chloride	1100	50	*	mg/L	100	8/21/2014 12:57:43 PM	R20741
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	8/20/2014 7:23:17 PM	R20712
Bromide	2.6	0.10		mg/L	1	8/20/2014 7:10:52 PM	R20712
Nitrogen, Nitrate (As N)	36	2.0	*	mg/L	20	8/20/2014 7:23:17 PM	R20712
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2014 7:10:52 PM	R20712
Sulfate	1600	50	*	mg/L	100	8/21/2014 12:57:43 PM	R20741
EPA METHOD 7470: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/22/2014 2:52:20 PM	14900
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 12:11:02 PM	R20721
Barium	ND	0.020		mg/L	1	8/21/2014 12:11:02 PM	R20721
Cadmium	ND	0.0020		mg/L	1	8/21/2014 12:11:02 PM	R20721
Calcium	470	10		mg/L	10	8/21/2014 12:54:31 PM	R20721
Chromium	ND	0.0060		mg/L	1	8/21/2014 12:11:02 PM	R20721
Copper	ND	0.0060		mg/L	1	8/21/2014 12:11:02 PM	R20721
Iron	0.045	0.020		mg/L	1	8/21/2014 12:11:02 PM	R20721
Lead	ND	0.0050		mg/L	1	8/21/2014 12:11:02 PM	R20721
Magnesium	69	1.0		mg/L	1	8/21/2014 12:11:02 PM	R20721
Manganese	ND	0.0020		mg/L	1	8/21/2014 12:11:02 PM	R20721
Potassium	5.4	1.0		mg/L	1	8/21/2014 12:11:02 PM	R20721
Selenium	ND	0.050		mg/L	1	8/21/2014 12:11:02 PM	R20721
Silver	ND	0.0050		mg/L	1	8/21/2014 12:11:02 PM	R20721
Sodium	840	10		mg/L	10	8/21/2014 12:54:31 PM	R20721
Uranium	ND	0.10		mg/L	1	8/21/2014 12:11:02 PM	R20721
Zinc	ND	0.020		mg/L	1	8/21/2014 12:11:02 PM	R20721
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 11:43:45 AM	14876
Barium	0.11	0.020		mg/L	1	8/21/2014 11:43:45 AM	14876
Cadmium	ND	0.0020		mg/L	1	8/21/2014 11:43:45 AM	14876

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-64

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 11:11:00 AM

Lab ID: 1408A13-008

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Chromium	ND	0.0060		mg/L	1	8/21/2014 11:43:45 AM	14876
Lead	ND	0.0050		mg/L	1	8/21/2014 11:43:45 AM	14876
Selenium	ND	0.050		mg/L	1	8/21/2014 11:43:45 AM	14876
Silver	ND	0.0050		mg/L	1	8/21/2014 11:43:45 AM	14876
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Acenaphthylene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Aniline	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Anthracene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Azobenzene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Benz(a)anthracene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Benzo(a)pyrene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Benzo(b)fluoranthene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Benzo(k)fluoranthene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Benzoic acid	ND	20		µg/L	1	8/22/2014 1:55:17 AM	14881
Benzyl alcohol	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Butyl benzyl phthalate	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Carbazole	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
4-Chloroaniline	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
2-Chloronaphthalene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
2-Chlorophenol	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Chrysene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Di-n-butyl phthalate	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Di-n-octyl phthalate	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Dibenzofuran	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
1,2-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
1,3-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
1,4-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Diethyl phthalate	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-64

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 11:11:00 AM

Lab ID: 1408A13-008

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC
Dimethyl phthalate	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
2,4-Dichlorophenol	ND	20		µg/L	1	8/22/2014 1:55:17 AM	14881
2,4-Dimethylphenol	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/22/2014 1:55:17 AM	14881
2,4-Dinitrophenol	ND	20		µg/L	1	8/22/2014 1:55:17 AM	14881
2,4-Dinitrotoluene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
2,6-Dinitrotoluene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Fluoranthene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Fluorene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Hexachlorobenzene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Hexachlorobutadiene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Hexachloroethane	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Isophorone	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
1-Methylnaphthalene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
2-Methylnaphthalene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
2-Methylphenol	ND	20		µg/L	1	8/22/2014 1:55:17 AM	14881
3+4-Methylphenol	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
N-Nitrosodimethylamine	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Naphthalene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
2-Nitroaniline	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
3-Nitroaniline	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
4-Nitroaniline	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Nitrobenzene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
2-Nitrophenol	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
4-Nitrophenol	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Pentachlorophenol	ND	20		µg/L	1	8/22/2014 1:55:17 AM	14881
Phenanthrene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Phenol	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Pyrene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Pyridine	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/22/2014 1:55:17 AM	14881
Surr: 2-Fluorophenol	61.9	12.1-85.8		%REC	1	8/22/2014 1:55:17 AM	14881
Surr: Phenol-d5	54.4	17.7-65.8		%REC	1	8/22/2014 1:55:17 AM	14881

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-64

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 11:11:00 AM

Lab ID: 1408A13-008

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC
Surr: 2,4,6-Tribromophenol	27.2	26-138		%REC	1	8/22/2014 1:55:17 AM	14881
Surr: Nitrobenzene-d5	105	47.5-119		%REC	1	8/22/2014 1:55:17 AM	14881
Surr: 2-Fluorobiphenyl	104	48.1-106		%REC	1	8/22/2014 1:55:17 AM	14881
Surr: 4-Terphenyl-d14	94.1	44-113		%REC	1	8/22/2014 1:55:17 AM	14881
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Toluene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Ethylbenzene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Naphthalene	ND	2.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Acetone	ND	10		µg/L	1	8/28/2014 5:05:23 PM	R20875
Bromobenzene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Bromoform	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Bromomethane	ND	3.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
2-Butanone	ND	10		µg/L	1	8/28/2014 5:05:23 PM	R20875
Carbon disulfide	ND	10		µg/L	1	8/28/2014 5:05:23 PM	R20875
Carbon Tetrachloride	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Chlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Chloroethane	ND	2.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Chloroform	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Chloromethane	ND	3.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Dibromomethane	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-64

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 11:11:00 AM

Lab ID: 1408A13-008

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
1,1-Dichloroethane	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Hexachlorobutadiene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
2-Hexanone	ND	10		µg/L	1	8/28/2014 5:05:23 PM	R20875
Isopropylbenzene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
4-Isopropyltoluene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2014 5:05:23 PM	R20875
Methylene Chloride	ND	3.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
n-Butylbenzene	ND	3.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
n-Propylbenzene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
sec-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Styrene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
tert-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Vinyl chloride	ND	1.0		µg/L	1	8/28/2014 5:05:23 PM	R20875
Xylenes, Total	ND	1.5		µg/L	1	8/28/2014 5:05:23 PM	R20875
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	8/28/2014 5:05:23 PM	R20875
Surr: 4-Bromofluorobenzene	126	70-130		%REC	1	8/28/2014 5:05:23 PM	R20875
Surr: Dibromofluoromethane	93.4	70-130		%REC	1	8/28/2014 5:05:23 PM	R20875
Surr: Toluene-d8	97.0	70-130		%REC	1	8/28/2014 5:05:23 PM	R20875

CARBON DIOXIDE

Analyst: **JRR**

Total Carbon Dioxide	270	1.0	H	mg CO2/L	1	8/22/2014 5:49:40 PM	R20763

SM2320B: ALKALINITY

Analyst: **JRR**

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-64

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 11:11:00 AM

Lab ID: 1408A13-008

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	290	20		mg/L CaCO3	1	8/22/2014 5:49:40 PM	R20763
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	8/22/2014 5:49:40 PM	R20763
Total Alkalinity (as CaCO3)	290	20		mg/L CaCO3	1	8/22/2014 5:49:40 PM	R20763
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	4340	40.0	*	mg/L	1	8/27/2014 4:44:00 PM	14958

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 44 of 94
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-64 D

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 11:11:00 AM

Lab ID: 1408A13-009

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/21/2014 3:23:55 AM	14873
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/21/2014 3:23:55 AM	14873
Surr: DNOP	85.6	75.2-161		%REC	1	8/21/2014 3:23:55 AM	14873
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/22/2014 12:20:16 AM	R20730
Surr: BFB	103	70.9-130		%REC	1	8/22/2014 12:20:16 AM	R20730
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	ND	0.10		mg/L	1	8/20/2014 7:35:41 PM	R20712
Chloride	1000	50	*	mg/L	100	8/21/2014 1:10:07 PM	R20741
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	8/20/2014 7:48:06 PM	R20712
Bromide	2.6	0.10		mg/L	1	8/20/2014 7:35:41 PM	R20712
Nitrogen, Nitrate (As N)	36	2.0	*	mg/L	20	8/20/2014 7:48:06 PM	R20712
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2014 7:35:41 PM	R20712
Sulfate	1600	50	*	mg/L	100	8/21/2014 1:10:07 PM	R20741
EPA METHOD 7470: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/22/2014 2:54:12 PM	14900
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 12:13:03 PM	R20721
Barium	ND	0.020		mg/L	1	8/21/2014 12:13:03 PM	R20721
Cadmium	ND	0.0020		mg/L	1	8/21/2014 12:13:03 PM	R20721
Calcium	470	10		mg/L	10	8/21/2014 12:56:26 PM	R20721
Chromium	ND	0.0060		mg/L	1	8/21/2014 12:13:03 PM	R20721
Copper	ND	0.0060		mg/L	1	8/21/2014 12:13:03 PM	R20721
Iron	0.039	0.020		mg/L	1	8/21/2014 12:13:03 PM	R20721
Lead	ND	0.0050		mg/L	1	8/21/2014 12:13:03 PM	R20721
Magnesium	68	1.0		mg/L	1	8/21/2014 12:13:03 PM	R20721
Manganese	ND	0.0020		mg/L	1	8/21/2014 12:13:03 PM	R20721
Potassium	5.4	1.0		mg/L	1	8/21/2014 12:13:03 PM	R20721
Selenium	ND	0.050		mg/L	1	8/21/2014 12:13:03 PM	R20721
Silver	ND	0.0050		mg/L	1	8/21/2014 12:13:03 PM	R20721
Sodium	820	10		mg/L	10	8/21/2014 12:56:26 PM	R20721
Uranium	ND	0.10		mg/L	1	8/21/2014 12:13:03 PM	R20721
Zinc	ND	0.020		mg/L	1	8/21/2014 12:13:03 PM	R20721
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 11:45:29 AM	14876
Barium	0.21	0.020		mg/L	1	8/21/2014 11:45:29 AM	14876
Cadmium	ND	0.0020		mg/L	1	8/21/2014 11:45:29 AM	14876

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 45 of 94
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-64 D

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 11:11:00 AM

Lab ID: 1408A13-009

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Chromium	0.0083	0.0060		mg/L	1	8/21/2014 11:45:29 AM	14876
Lead	ND	0.0050		mg/L	1	8/21/2014 11:45:29 AM	14876
Selenium	ND	0.050		mg/L	1	8/21/2014 11:45:29 AM	14876
Silver	ND	0.0050		mg/L	1	8/21/2014 11:45:29 AM	14876
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Acenaphthylene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Aniline	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Anthracene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Azobenzene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Benz(a)anthracene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Benzo(a)pyrene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Benzo(b)fluoranthene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Benzo(k)fluoranthene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Benzoic acid	ND	20		µg/L	1	8/22/2014 2:24:50 AM	14881
Benzyl alcohol	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Butyl benzyl phthalate	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Carbazole	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
4-Chloroaniline	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
2-Chloronaphthalene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
2-Chlorophenol	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Chrysene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Di-n-butyl phthalate	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Di-n-octyl phthalate	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Dibenzofuran	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
1,2-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
1,3-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
1,4-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Diethyl phthalate	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-64 D

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 11:11:00 AM

Lab ID: 1408A13-009

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC
Dimethyl phthalate	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
2,4-Dichlorophenol	ND	20		µg/L	1	8/22/2014 2:24:50 AM	14881
2,4-Dimethylphenol	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/22/2014 2:24:50 AM	14881
2,4-Dinitrophenol	ND	20		µg/L	1	8/22/2014 2:24:50 AM	14881
2,4-Dinitrotoluene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
2,6-Dinitrotoluene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Fluoranthene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Fluorene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Hexachlorobenzene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Hexachlorobutadiene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Hexachloroethane	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Isophorone	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
1-Methylnaphthalene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
2-Methylnaphthalene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
2-Methylphenol	ND	20		µg/L	1	8/22/2014 2:24:50 AM	14881
3+4-Methylphenol	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
N-Nitrosodimethylamine	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Naphthalene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
2-Nitroaniline	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
3-Nitroaniline	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
4-Nitroaniline	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Nitrobenzene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
2-Nitrophenol	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
4-Nitrophenol	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Pentachlorophenol	ND	20		µg/L	1	8/22/2014 2:24:50 AM	14881
Phenanthrene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Phenol	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Pyrene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Pyridine	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/22/2014 2:24:50 AM	14881
Surr: 2-Fluorophenol	60.9	12.1-85.8		%REC	1	8/22/2014 2:24:50 AM	14881
Surr: Phenol-d5	46.1	17.7-65.8		%REC	1	8/22/2014 2:24:50 AM	14881

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-64 D

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 11:11:00 AM

Lab ID: 1408A13-009

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC
Surr: 2,4,6-Tribromophenol	44.5	26-138		%REC	1	8/22/2014 2:24:50 AM	14881
Surr: Nitrobenzene-d5	89.5	47.5-119		%REC	1	8/22/2014 2:24:50 AM	14881
Surr: 2-Fluorobiphenyl	93.3	48.1-106		%REC	1	8/22/2014 2:24:50 AM	14881
Surr: 4-Terphenyl-d14	85.2	44-113		%REC	1	8/22/2014 2:24:50 AM	14881
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Toluene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Ethylbenzene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Naphthalene	ND	2.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Acetone	ND	10		µg/L	1	8/28/2014 5:34:01 PM	R20875
Bromobenzene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Bromoform	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Bromomethane	ND	3.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
2-Butanone	ND	10		µg/L	1	8/28/2014 5:34:01 PM	R20875
Carbon disulfide	ND	10		µg/L	1	8/28/2014 5:34:01 PM	R20875
Carbon Tetrachloride	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Chlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Chloroethane	ND	2.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Chloroform	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Chloromethane	ND	3.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Dibromomethane	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-64 D

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 11:11:00 AM

Lab ID: 1408A13-009

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
1,1-Dichloroethane	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Hexachlorobutadiene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
2-Hexanone	ND	10		µg/L	1	8/28/2014 5:34:01 PM	R20875
Isopropylbenzene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
4-Isopropyltoluene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2014 5:34:01 PM	R20875
Methylene Chloride	ND	3.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
n-Butylbenzene	ND	3.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
n-Propylbenzene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
sec-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Styrene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
tert-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Vinyl chloride	ND	1.0		µg/L	1	8/28/2014 5:34:01 PM	R20875
Xylenes, Total	ND	1.5		µg/L	1	8/28/2014 5:34:01 PM	R20875
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	8/28/2014 5:34:01 PM	R20875
Surr: 4-Bromofluorobenzene	127	70-130		%REC	1	8/28/2014 5:34:01 PM	R20875
Surr: Dibromofluoromethane	91.9	70-130		%REC	1	8/28/2014 5:34:01 PM	R20875
Surr: Toluene-d8	97.2	70-130		%REC	1	8/28/2014 5:34:01 PM	R20875

CARBON DIOXIDE

Analyst: **JRR**

Total Carbon Dioxide	270	1.0	H	mg CO2/L	1	8/22/2014 6:03:54 PM	R20763

SM2320B: ALKALINITY

Analyst: **JRR**

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-64 D

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 11:11:00 AM

Lab ID: 1408A13-009

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	290	20		mg/L CaCO ₃	1	8/22/2014 6:03:54 PM	R20763
Carbonate (As CaCO ₃)	ND	2.0		mg/L CaCO ₃	1	8/22/2014 6:03:54 PM	R20763
Total Alkalinity (as CaCO ₃)	290	20		mg/L CaCO ₃	1	8/22/2014 6:03:54 PM	R20763
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	4340	40.0	*	mg/L	1	8/27/2014 4:44:00 PM	14958

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 50 of 94
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-65

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 2:40:00 PM

Lab ID: 1408A13-010

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	7.4	0.20		mg/L	1	8/21/2014 3:53:36 AM	14873
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/21/2014 3:53:36 AM	14873
Surr: DNOP	114	75.2-161		%REC	1	8/21/2014 3:53:36 AM	14873
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	21	2.5		mg/L	50	8/21/2014 4:17:25 PM	R20730
Surr: BFB	113	70.9-130		%REC	50	8/21/2014 4:17:25 PM	R20730
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	ND	0.10		mg/L	1	8/20/2014 8:25:19 PM	R20712
Chloride	290	10	*	mg/L	20	8/20/2014 8:37:44 PM	R20712
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2014 8:25:19 PM	R20712
Bromide	0.69	0.10		mg/L	1	8/20/2014 8:25:19 PM	R20712
Nitrogen, Nitrate (As N)	1.2	0.10		mg/L	1	8/21/2014 10:16:21 AM	R20741
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2014 8:25:19 PM	R20712
Sulfate	530	10	*	mg/L	20	8/20/2014 8:37:44 PM	R20712
EPA METHOD 7470: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/22/2014 2:55:56 PM	14900
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 12:15:03 PM	R20721
Barium	0.17	0.020		mg/L	1	8/21/2014 12:15:03 PM	R20721
Cadmium	ND	0.0020		mg/L	1	8/21/2014 12:15:03 PM	R20721
Calcium	250	5.0		mg/L	5	8/21/2014 12:58:23 PM	R20721
Chromium	ND	0.0060		mg/L	1	8/21/2014 12:15:03 PM	R20721
Copper	ND	0.0060		mg/L	1	8/21/2014 12:15:03 PM	R20721
Iron	3.4	0.10		mg/L	5	8/21/2014 12:58:23 PM	R20721
Lead	ND	0.0050		mg/L	1	8/21/2014 12:15:03 PM	R20721
Magnesium	73	1.0		mg/L	1	8/21/2014 12:15:03 PM	R20721
Manganese	2.7	0.010		mg/L	5	8/21/2014 12:58:23 PM	R20721
Potassium	4.3	1.0		mg/L	1	8/21/2014 12:15:03 PM	R20721
Selenium	ND	0.050		mg/L	1	8/21/2014 12:15:03 PM	R20721
Silver	ND	0.0050		mg/L	1	8/21/2014 12:15:03 PM	R20721
Sodium	650	10		mg/L	10	8/21/2014 1:00:10 PM	R20721
Uranium	ND	0.10		mg/L	1	8/21/2014 12:15:03 PM	R20721
Zinc	ND	0.020		mg/L	1	8/21/2014 12:15:03 PM	R20721
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 11:47:23 AM	14876
Barium	0.17	0.020		mg/L	1	8/21/2014 11:47:23 AM	14876
Cadmium	ND	0.0020		mg/L	1	8/21/2014 11:47:23 AM	14876

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-65

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 2:40:00 PM

Lab ID: 1408A13-010

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Chromium	ND	0.0060		mg/L	1	8/21/2014 11:47:23 AM	14876
Lead	ND	0.0050		mg/L	1	8/21/2014 11:47:23 AM	14876
Selenium	ND	0.050		mg/L	1	8/21/2014 11:47:23 AM	14876
Silver	ND	0.0050		mg/L	1	8/21/2014 11:47:23 AM	14876
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Acenaphthylene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Aniline	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Anthracene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Azobenzene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Benz(a)anthracene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Benzo(a)pyrene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Benzo(b)fluoranthene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Benzo(k)fluoranthene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Benzoic acid	ND	20		µg/L	1	8/22/2014 2:54:01 AM	14881
Benzyl alcohol	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Butyl benzyl phthalate	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Carbazole	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
4-Chloroaniline	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
2-Chloronaphthalene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
2-Chlorophenol	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Chrysene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Di-n-butyl phthalate	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Di-n-octyl phthalate	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Dibenzofuran	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
1,2-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
1,3-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
1,4-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Diethyl phthalate	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-65

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 2:40:00 PM

Lab ID: 1408A13-010

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC
Dimethyl phthalate	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
2,4-Dichlorophenol	ND	20		µg/L	1	8/22/2014 2:54:01 AM	14881
2,4-Dimethylphenol	210	50		µg/L	5	8/22/2014 11:49:28 AM	14881
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/22/2014 2:54:01 AM	14881
2,4-Dinitrophenol	ND	20		µg/L	1	8/22/2014 2:54:01 AM	14881
2,4-Dinitrotoluene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
2,6-Dinitrotoluene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Fluoranthene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Fluorene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Hexachlorobenzene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Hexachlorobutadiene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Hexachloroethane	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Isophorone	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
1-Methylnaphthalene	150	10		µg/L	1	8/22/2014 2:54:01 AM	14881
2-Methylnaphthalene	150	10		µg/L	1	8/22/2014 2:54:01 AM	14881
2-Methylphenol	ND	20		µg/L	1	8/22/2014 2:54:01 AM	14881
3+4-Methylphenol	14	10		µg/L	1	8/22/2014 2:54:01 AM	14881
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
N-Nitrosodimethylamine	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Naphthalene	430	50		µg/L	5	8/22/2014 11:49:28 AM	14881
2-Nitroaniline	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
3-Nitroaniline	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
4-Nitroaniline	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Nitrobenzene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
2-Nitrophenol	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
4-Nitrophenol	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Pentachlorophenol	ND	20		µg/L	1	8/22/2014 2:54:01 AM	14881
Phenanthrene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Phenol	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Pyrene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Pyridine	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/22/2014 2:54:01 AM	14881
Surr: 2-Fluorophenol	21.0	12.1-85.8		%REC	1	8/22/2014 2:54:01 AM	14881
Surr: Phenol-d5	41.2	17.7-65.8		%REC	1	8/22/2014 2:54:01 AM	14881

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-65

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 2:40:00 PM

Lab ID: 1408A13-010

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC
Surr: 2,4,6-Tribromophenol	25.0	26-138	S	%REC	1	8/22/2014 2:54:01 AM	14881
Surr: Nitrobenzene-d5	98.7	47.5-119		%REC	1	8/22/2014 2:54:01 AM	14881
Surr: 2-Fluorobiphenyl	113	48.1-106	S	%REC	1	8/22/2014 2:54:01 AM	14881
Surr: 4-Terphenyl-d14	100	44-113		%REC	1	8/22/2014 2:54:01 AM	14881
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	5100	100		µg/L	100	8/28/2014 6:02:42 PM	R20875
Toluene	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
Ethylbenzene	1400	100		µg/L	100	8/28/2014 6:02:42 PM	R20875
Methyl tert-butyl ether (MTBE)	480	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
1,2,4-Trimethylbenzene	1400	100		µg/L	100	8/28/2014 6:02:42 PM	R20875
1,3,5-Trimethylbenzene	17	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
1,2-Dichloroethane (EDC)	140	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
Naphthalene	240	20		µg/L	10	8/28/2014 6:31:23 PM	R20875
1-Methylnaphthalene	110	40		µg/L	10	8/28/2014 6:31:23 PM	R20875
2-Methylnaphthalene	50	40		µg/L	10	8/28/2014 6:31:23 PM	R20875
Acetone	ND	100		µg/L	10	8/28/2014 6:31:23 PM	R20875
Bromobenzene	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
Bromodichloromethane	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
Bromoform	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
Bromomethane	ND	30		µg/L	10	8/28/2014 6:31:23 PM	R20875
2-Butanone	ND	100		µg/L	10	8/28/2014 6:31:23 PM	R20875
Carbon disulfide	ND	100		µg/L	10	8/28/2014 6:31:23 PM	R20875
Carbon Tetrachloride	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
Chlorobenzene	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
Chloroethane	ND	20		µg/L	10	8/28/2014 6:31:23 PM	R20875
Chloroform	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
Chloromethane	ND	30		µg/L	10	8/28/2014 6:31:23 PM	R20875
2-Chlorotoluene	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
4-Chlorotoluene	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
cis-1,2-DCE	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
cis-1,3-Dichloropropene	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	8/28/2014 6:31:23 PM	R20875
Dibromochloromethane	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
Dibromomethane	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
1,2-Dichlorobenzene	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
1,3-Dichlorobenzene	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
1,4-Dichlorobenzene	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
Dichlorodifluoromethane	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**Date Reported: **9/9/2014****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-65**Project:** RCRA Wells 8-19-14**Collection Date:** 8/19/2014 2:40:00 PM**Lab ID:** 1408A13-010**Matrix:** AQUEOUS**Received Date:** 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
1,1-Dichloroethane	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
1,1-Dichloroethene	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
1,2-Dichloropropane	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
1,3-Dichloropropane	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
2,2-Dichloropropane	ND	20		µg/L	10	8/28/2014 6:31:23 PM	R20875
1,1-Dichloropropene	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
Hexachlorobutadiene	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
2-Hexanone	ND	100		µg/L	10	8/28/2014 6:31:23 PM	R20875
Isopropylbenzene	84	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
4-Isopropyltoluene	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
4-Methyl-2-pentanone	ND	100		µg/L	10	8/28/2014 6:31:23 PM	R20875
Methylene Chloride	ND	30		µg/L	10	8/28/2014 6:31:23 PM	R20875
n-Butylbenzene	ND	30		µg/L	10	8/28/2014 6:31:23 PM	R20875
n-Propylbenzene	190	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
sec-Butylbenzene	12	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
Styrene	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
tert-Butylbenzene	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
1,1,2,2-Tetrachloroethane	ND	20		µg/L	10	8/28/2014 6:31:23 PM	R20875
Tetrachloroethene (PCE)	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
trans-1,2-DCE	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
trans-1,3-Dichloropropene	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
1,2,3-Trichlorobenzene	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
1,2,4-Trichlorobenzene	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
1,1,1-Trichloroethane	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
1,1,2-Trichloroethane	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
Trichloroethene (TCE)	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
Trichlorofluoromethane	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
1,2,3-Trichloropropane	ND	20		µg/L	10	8/28/2014 6:31:23 PM	R20875
Vinyl chloride	ND	10		µg/L	10	8/28/2014 6:31:23 PM	R20875
Xylenes, Total	280	15		µg/L	10	8/28/2014 6:31:23 PM	R20875
Surr: 1,2-Dichloroethane-d4	94.6	70-130		%REC	10	8/28/2014 6:31:23 PM	R20875
Surr: 4-Bromofluorobenzene	72.8	70-130		%REC	10	8/28/2014 6:31:23 PM	R20875
Surr: Dibromofluoromethane	88.6	70-130		%REC	10	8/28/2014 6:31:23 PM	R20875
Surr: Toluene-d8	95.2	70-130		%REC	10	8/28/2014 6:31:23 PM	R20875

CARBON DIOXIDEAnalyst: **JRR**

Total Carbon Dioxide	1400	2.5	H	mg CO2/L	2.5	8/25/2014 4:35:07 PM	R20804

SM2320B: ALKALINITYAnalyst: **JRR**

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-65

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 2:40:00 PM

Lab ID: 1408A13-010

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	1500	50		mg/L CaCO ₃	2.5	8/25/2014 4:35:07 PM	R20804
Carbonate (As CaCO ₃)	ND	5.0		mg/L CaCO ₃	2.5	8/25/2014 4:35:07 PM	R20804
Total Alkalinity (as CaCO ₃)	1500	50		mg/L CaCO ₃	2.5	8/25/2014 4:35:07 PM	R20804
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2630	100	*	mg/L	1	8/27/2014 4:44:00 PM	14958

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 56 of 94
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**Date Reported: **9/9/2014****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-67**Project:** RCRA Wells 8-19-14**Collection Date:** 8/19/2014 9:40:00 AM**Lab ID:** 1408A13-011**Matrix:** AQUEOUS**Received Date:** 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	0.64	0.20		mg/L	1	8/21/2014 4:23:10 AM	14873
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/21/2014 4:23:10 AM	14873
Surr: DNOP	103	75.2-161		%REC	1	8/21/2014 4:23:10 AM	14873
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/22/2014 12:50:14 AM	R20730
Surr: BFB	102	70.9-130		%REC	1	8/22/2014 12:50:14 AM	R20730
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.63	0.10		mg/L	1	8/20/2014 8:50:09 PM	R20712
Chloride	12	0.50		mg/L	1	8/20/2014 8:50:09 PM	R20712
Bromide	0.11	0.10		mg/L	1	8/20/2014 8:50:09 PM	R20712
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2014 8:50:09 PM	R20712
Sulfate	210	10		mg/L	20	8/20/2014 9:02:34 PM	R20712
Nitrate+Nitrite as N	2.7	1.0		mg/L	5	8/25/2014 5:11:54 PM	R20794
EPA METHOD 7470: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/22/2014 2:57:41 PM	14900
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 12:16:49 PM	R20721
Barium	0.034	0.020		mg/L	1	8/21/2014 12:16:49 PM	R20721
Cadmium	ND	0.0020		mg/L	1	8/21/2014 12:16:49 PM	R20721
Calcium	130	5.0		mg/L	5	8/21/2014 1:02:10 PM	R20721
Chromium	ND	0.0060		mg/L	1	8/21/2014 12:16:49 PM	R20721
Copper	ND	0.0060		mg/L	1	8/21/2014 12:16:49 PM	R20721
Iron	ND	0.020		mg/L	1	8/21/2014 12:16:49 PM	R20721
Lead	ND	0.0050		mg/L	1	8/21/2014 12:16:49 PM	R20721
Magnesium	25	1.0		mg/L	1	8/21/2014 12:16:49 PM	R20721
Manganese	0.088	0.0020		mg/L	1	8/21/2014 12:16:49 PM	R20721
Potassium	3.2	1.0		mg/L	1	8/21/2014 12:16:49 PM	R20721
Selenium	ND	0.050		mg/L	1	8/21/2014 12:16:49 PM	R20721
Silver	ND	0.0050		mg/L	1	8/21/2014 12:16:49 PM	R20721
Sodium	55	1.0		mg/L	1	8/21/2014 12:16:49 PM	R20721
Uranium	ND	0.10		mg/L	1	8/21/2014 12:16:49 PM	R20721
Zinc	ND	0.020		mg/L	1	8/21/2014 12:16:49 PM	R20721
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 11:48:59 AM	14876
Barium	0.047	0.020		mg/L	1	8/21/2014 11:48:59 AM	14876
Cadmium	ND	0.0020		mg/L	1	8/21/2014 11:48:59 AM	14876
Chromium	ND	0.0060		mg/L	1	8/21/2014 11:48:59 AM	14876

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-67

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 9:40:00 AM

Lab ID: 1408A13-011

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Lead	0.0058	0.0050		mg/L	1	8/21/2014 11:48:59 AM	14876
Selenium	ND	0.050		mg/L	1	8/21/2014 11:48:59 AM	14876
Silver	ND	0.0050		mg/L	1	8/21/2014 11:48:59 AM	14876
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Acenaphthylene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Aniline	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Anthracene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Azobenzene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Benz(a)anthracene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Benzo(a)pyrene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Benzo(b)fluoranthene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Benzo(g,h,i)perylene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Benzo(k)fluoranthene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Benzoic acid	ND	23		µg/L	1	8/22/2014 7:00:40 PM	14909
Benzyl alcohol	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Bis(2-chloroethoxy)methane	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Bis(2-chloroethyl)ether	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Bis(2-chloroisopropyl)ether	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Bis(2-ethylhexyl)phthalate	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
4-Bromophenyl phenyl ether	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Butyl benzyl phthalate	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Carbazole	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
4-Chloro-3-methylphenol	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
4-Chloroaniline	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
2-Chloronaphthalene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
2-Chlorophenol	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
4-Chlorophenyl phenyl ether	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Chrysene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Di-n-butyl phthalate	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Di-n-octyl phthalate	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Dibenz(a,h)anthracene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Dibenzofuran	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
1,2-Dichlorobenzene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
1,3-Dichlorobenzene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
1,4-Dichlorobenzene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
3,3'-Dichlorobenzidine	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Diethyl phthalate	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Dimethyl phthalate	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-67

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 9:40:00 AM

Lab ID: 1408A13-011

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
2,4-Dichlorophenol	ND	23		µg/L	1	8/22/2014 7:00:40 PM	14909
2,4-Dimethylphenol	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
4,6-Dinitro-2-methylphenol	ND	23		µg/L	1	8/22/2014 7:00:40 PM	14909
2,4-Dinitrophenol	ND	23		µg/L	1	8/22/2014 7:00:40 PM	14909
2,4-Dinitrotoluene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
2,6-Dinitrotoluene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Fluoranthene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Fluorene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Hexachlorobenzene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Hexachlorobutadiene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Hexachlorocyclopentadiene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Hexachloroethane	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Indeno(1,2,3-cd)pyrene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Isophorone	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
1-Methylnaphthalene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
2-Methylnaphthalene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
2-Methylphenol	ND	23		µg/L	1	8/22/2014 7:00:40 PM	14909
3+4-Methylphenol	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
N-Nitrosodi-n-propylamine	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
N-Nitrosodimethylamine	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
N-Nitrosodiphenylamine	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Naphthalene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
2-Nitroaniline	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
3-Nitroaniline	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
4-Nitroaniline	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Nitrobenzene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
2-Nitrophenol	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
4-Nitrophenol	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Pentachlorophenol	ND	23		µg/L	1	8/22/2014 7:00:40 PM	14909
Phenanthrene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Phenol	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Pyrene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Pyridine	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
1,2,4-Trichlorobenzene	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
2,4,5-Trichlorophenol	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
2,4,6-Trichlorophenol	ND	11		µg/L	1	8/22/2014 7:00:40 PM	14909
Surr: 2-Fluorophenol	24.6	12.1-85.8		%REC	1	8/22/2014 7:00:40 PM	14909
Surr: Phenol-d5	24.2	17.7-65.8		%REC	1	8/22/2014 7:00:40 PM	14909
Surr: 2,4,6-Tribromophenol	34.4	26-138		%REC	1	8/22/2014 7:00:40 PM	14909

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-67

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 9:40:00 AM

Lab ID: 1408A13-011

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Surr: Nitrobenzene-d5	54.8	47.5-119		%REC	1	8/22/2014 7:00:40 PM	14909
Surr: 2-Fluorobiphenyl	56.6	48.1-106		%REC	1	8/22/2014 7:00:40 PM	14909
Surr: 4-Terphenyl-d14	54.5	44-113		%REC	1	8/22/2014 7:00:40 PM	14909
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Toluene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Ethylbenzene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Naphthalene	ND	2.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Acetone	ND	10		µg/L	1	8/28/2014 7:28:42 PM	R20875
Bromobenzene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Bromoform	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Bromomethane	ND	3.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
2-Butanone	ND	10		µg/L	1	8/28/2014 7:28:42 PM	R20875
Carbon disulfide	ND	10		µg/L	1	8/28/2014 7:28:42 PM	R20875
Carbon Tetrachloride	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Chlorobenzene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Chloroethane	ND	2.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Chloroform	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Chloromethane	ND	3.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Dibromomethane	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
1,1-Dichloroethane	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-67

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 9:40:00 AM

Lab ID: 1408A13-011

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Hexachlorobutadiene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
2-Hexanone	ND	10		µg/L	1	8/28/2014 7:28:42 PM	R20875
Isopropylbenzene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
4-Isopropyltoluene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2014 7:28:42 PM	R20875
Methylene Chloride	ND	3.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
n-Butylbenzene	ND	3.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
n-Propylbenzene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
sec-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Styrene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
tert-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Vinyl chloride	ND	1.0		µg/L	1	8/28/2014 7:28:42 PM	R20875
Xylenes, Total	ND	1.5		µg/L	1	8/28/2014 7:28:42 PM	R20875
Surr: 1,2-Dichloroethane-d4	99.6	70-130		%REC	1	8/28/2014 7:28:42 PM	R20875
Surr: 4-Bromofluorobenzene	114	70-130		%REC	1	8/28/2014 7:28:42 PM	R20875
Surr: Dibromofluoromethane	91.3	70-130		%REC	1	8/28/2014 7:28:42 PM	R20875
Surr: Toluene-d8	95.6	70-130		%REC	1	8/28/2014 7:28:42 PM	R20875
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	380	1.0	H	mg CO2/L	1	8/22/2014 6:52:09 PM	R20763
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	410	20		mg/L CaCO3	1	8/22/2014 6:52:09 PM	R20763

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-67

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 9:40:00 AM

Lab ID: 1408A13-011

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2320B: ALKALINITY							Analyst: JRR
Carbonate (As CaCO ₃)	ND	2.0		mg/L CaCO ₃	1	8/22/2014 6:52:09 PM	R20763
Total Alkalinity (as CaCO ₃)	410	20		mg/L CaCO ₃	1	8/22/2014 6:52:09 PM	R20763
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	830	100	*	mg/L	1	8/27/2014 4:44:00 PM	14958

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 62 of 94
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Rinsate

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 3:15:00 PM

Lab ID: 1408A13-012

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	8/21/2014 2:47:12 PM	R20730
Benzene	ND	1.0		µg/L	1	8/21/2014 2:47:12 PM	R20730
Toluene	ND	1.0		µg/L	1	8/21/2014 2:47:12 PM	R20730
Ethylbenzene	ND	1.0		µg/L	1	8/21/2014 2:47:12 PM	R20730
Xylenes, Total	ND	2.0		µg/L	1	8/21/2014 2:47:12 PM	R20730
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2014 2:47:12 PM	R20730
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2014 2:47:12 PM	R20730
Surr: 4-Bromofluorobenzene	115	82.9-139		%REC	1	8/21/2014 2:47:12 PM	R20730

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 63 of 94
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-68

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 10:30:00 AM

Lab ID: 1408A13-013

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/21/2014 4:52:38 AM	14873
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/21/2014 4:52:38 AM	14873
Surr: DNOP	112	75.2-161		%REC	1	8/21/2014 4:52:38 AM	14873
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/22/2014 1:20:16 AM	R20730
Surr: BFB	103	70.9-130		%REC	1	8/22/2014 1:20:16 AM	R20730
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.45	0.10		mg/L	1	8/20/2014 9:14:59 PM	R20712
Chloride	34	10		mg/L	20	8/20/2014 9:27:24 PM	R20712
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2014 9:14:59 PM	R20712
Bromide	0.23	0.10		mg/L	1	8/20/2014 9:14:59 PM	R20712
Nitrogen, Nitrate (As N)	8.6	0.10		mg/L	1	8/21/2014 10:03:56 AM	R20741
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2014 9:14:59 PM	R20712
Sulfate	300	10	*	mg/L	20	8/20/2014 9:27:24 PM	R20712
EPA METHOD 7470: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/22/2014 2:59:26 PM	14900
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 12:18:40 PM	R20721
Barium	ND	0.020		mg/L	1	8/21/2014 12:18:40 PM	R20721
Cadmium	ND	0.0020		mg/L	1	8/21/2014 12:18:40 PM	R20721
Calcium	90	1.0		mg/L	1	8/21/2014 12:18:40 PM	R20721
Chromium	ND	0.0060		mg/L	1	8/21/2014 12:18:40 PM	R20721
Copper	ND	0.0060		mg/L	1	8/21/2014 12:18:40 PM	R20721
Iron	0.031	0.020		mg/L	1	8/21/2014 12:18:40 PM	R20721
Lead	ND	0.0050		mg/L	1	8/21/2014 12:18:40 PM	R20721
Magnesium	24	1.0		mg/L	1	8/21/2014 12:18:40 PM	R20721
Manganese	0.059	0.0020		mg/L	1	8/21/2014 12:18:40 PM	R20721
Potassium	3.0	1.0		mg/L	1	8/21/2014 12:18:40 PM	R20721
Selenium	ND	0.050		mg/L	1	8/21/2014 12:18:40 PM	R20721
Silver	ND	0.0050		mg/L	1	8/21/2014 12:18:40 PM	R20721
Sodium	120	5.0		mg/L	5	8/21/2014 1:04:04 PM	R20721
Uranium	ND	0.10		mg/L	1	8/21/2014 12:18:40 PM	R20721
Zinc	ND	0.020		mg/L	1	8/21/2014 12:18:40 PM	R20721
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 11:50:49 AM	14876
Barium	0.16	0.020		mg/L	1	8/21/2014 11:50:49 AM	14876
Cadmium	ND	0.0020		mg/L	1	8/21/2014 11:50:49 AM	14876

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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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-68

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 10:30:00 AM

Lab ID: 1408A13-013

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Chromium	ND	0.0060		mg/L	1	8/21/2014 11:50:49 AM	14876
Lead	ND	0.0050		mg/L	1	8/21/2014 11:50:49 AM	14876
Selenium	ND	0.050		mg/L	1	8/21/2014 11:50:49 AM	14876
Silver	ND	0.0050		mg/L	1	8/21/2014 11:50:49 AM	14876
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Acenaphthylene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Aniline	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Anthracene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Azobenzene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Benz(a)anthracene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Benzo(a)pyrene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Benzo(b)fluoranthene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Benzo(k)fluoranthene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Benzoic acid	ND	20		µg/L	1	8/22/2014 3:52:04 AM	14881
Benzyl alcohol	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Butyl benzyl phthalate	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Carbazole	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
4-Chloro-3-methylphenol	ND	11		µg/L	1	8/22/2014 7:29:24 PM	14909
4-Chloroaniline	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
2-Chloronaphthalene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
2-Chlorophenol	ND	11		µg/L	1	8/22/2014 7:29:24 PM	14909
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Chrysene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Di-n-butyl phthalate	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Di-n-octyl phthalate	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Dibenzofuran	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
1,2-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
1,3-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
1,4-Dichlorobenzene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Diethyl phthalate	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881

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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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-68

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 10:30:00 AM

Lab ID: 1408A13-013

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES				Analyst: JDC			
Dimethyl phthalate	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
2,4-Dichlorophenol	ND	22		µg/L	1	8/22/2014 7:29:24 PM	14909
2,4-Dimethylphenol	ND	11		µg/L	1	8/22/2014 7:29:24 PM	14909
4,6-Dinitro-2-methylphenol	ND	22		µg/L	1	8/22/2014 7:29:24 PM	14909
2,4-Dinitrophenol	ND	22		µg/L	1	8/22/2014 7:29:24 PM	14909
2,4-Dinitrotoluene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
2,6-Dinitrotoluene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Fluoranthene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Fluorene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Hexachlorobenzene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Hexachlorobutadiene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Hexachloroethane	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Isophorone	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
1-Methylnaphthalene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
2-Methylnaphthalene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
2-Methylphenol	ND	22		µg/L	1	8/22/2014 7:29:24 PM	14909
3+4-Methylphenol	ND	11		µg/L	1	8/22/2014 7:29:24 PM	14909
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
N-Nitrosodimethylamine	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Naphthalene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
2-Nitroaniline	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
3-Nitroaniline	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
4-Nitroaniline	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Nitrobenzene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
2-Nitrophenol	ND	11		µg/L	1	8/22/2014 7:29:24 PM	14909
4-Nitrophenol	ND	11		µg/L	1	8/22/2014 7:29:24 PM	14909
Pentachlorophenol	ND	22		µg/L	1	8/22/2014 7:29:24 PM	14909
Phenanthrene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Phenol	ND	11		µg/L	1	8/22/2014 7:29:24 PM	14909
Pyrene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
Pyridine	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/22/2014 3:52:04 AM	14881
2,4,5-Trichlorophenol	ND	11		µg/L	1	8/22/2014 7:29:24 PM	14909
2,4,6-Trichlorophenol	ND	11		µg/L	1	8/22/2014 7:29:24 PM	14909
Surr: 2-Fluorophenol	39.5	12.1-85.8		%REC	1	8/22/2014 7:29:24 PM	14909
Surr: Phenol-d5	25.6	17.7-65.8		%REC	1	8/22/2014 7:29:24 PM	14909

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1408A13

Date Reported: 9/9/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-68

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 10:30:00 AM

Lab ID: 1408A13-013

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC
Surr: 2,4,6-Tribromophenol	62.8	26-138		%REC	1	8/22/2014 7:29:24 PM	14909
Surr: Nitrobenzene-d5	95.0	47.5-119		%REC	1	8/22/2014 3:52:04 AM	14881
Surr: 2-Fluorobiphenyl	99.5	48.1-106		%REC	1	8/22/2014 3:52:04 AM	14881
Surr: 4-Terphenyl-d14	92.7	44-113		%REC	1	8/22/2014 3:52:04 AM	14881
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Toluene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Ethylbenzene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Naphthalene	ND	2.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Acetone	ND	10		µg/L	1	8/28/2014 7:57:27 PM	R20875
Bromobenzene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Bromoform	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Bromomethane	ND	3.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
2-Butanone	ND	10		µg/L	1	8/28/2014 7:57:27 PM	R20875
Carbon disulfide	ND	10		µg/L	1	8/28/2014 7:57:27 PM	R20875
Carbon Tetrachloride	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Chlorobenzene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Chloroethane	ND	2.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Chloroform	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Chloromethane	ND	3.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Dibromomethane	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-68

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 10:30:00 AM

Lab ID: 1408A13-013

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
1,1-Dichloroethane	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Hexachlorobutadiene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
2-Hexanone	ND	10		µg/L	1	8/28/2014 7:57:27 PM	R20875
Isopropylbenzene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
4-Isopropyltoluene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2014 7:57:27 PM	R20875
Methylene Chloride	ND	3.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
n-Butylbenzene	ND	3.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
n-Propylbenzene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
sec-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Styrene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
tert-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Vinyl chloride	ND	1.0		µg/L	1	8/28/2014 7:57:27 PM	R20875
Xylenes, Total	ND	1.5		µg/L	1	8/28/2014 7:57:27 PM	R20875
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	8/28/2014 7:57:27 PM	R20875
Surr: 4-Bromofluorobenzene	118	70-130		%REC	1	8/28/2014 7:57:27 PM	R20875
Surr: Dibromofluoromethane	92.2	70-130		%REC	1	8/28/2014 7:57:27 PM	R20875
Surr: Toluene-d8	101	70-130		%REC	1	8/28/2014 7:57:27 PM	R20875

CARBON DIOXIDE

Analyst: **JRR**

Total Carbon Dioxide	200	1.0	H	mg CO2/L	1	8/22/2014 7:09:28 PM	R20763

SM2320B: ALKALINITY

Analyst: **JRR**

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-68

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 10:30:00 AM

Lab ID: 1408A13-013

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	220	20		mg/L CaCO ₃	1	8/22/2014 7:09:28 PM	R20763
Carbonate (As CaCO ₃)	ND	2.0		mg/L CaCO ₃	1	8/22/2014 7:09:28 PM	R20763
Total Alkalinity (as CaCO ₃)	220	20		mg/L CaCO ₃	1	8/22/2014 7:09:28 PM	R20763
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	790	40.0	*	mg/L	1	8/27/2014 4:44:00 PM	14958

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 69 of 94
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-70

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 10:00:00 AM

Lab ID: 1408A13-014

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/21/2014 5:22:13 AM	14873
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/21/2014 5:22:13 AM	14873
Surr: DNOP	119	75.2-161		%REC	1	8/21/2014 5:22:13 AM	14873
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/22/2014 1:50:28 AM	R20730
Surr: BFB	102	70.9-130		%REC	1	8/22/2014 1:50:28 AM	R20730
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.69	0.10		mg/L	1	8/20/2014 9:39:48 PM	R20712
Chloride	440	50	*	mg/L	100	8/21/2014 1:22:32 PM	R20741
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2014 9:39:48 PM	R20712
Bromide	0.99	0.10		mg/L	1	8/20/2014 9:39:48 PM	R20712
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/21/2014 9:51:31 AM	R20741
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2014 9:39:48 PM	R20712
Sulfate	2500	50	*	mg/L	100	8/21/2014 1:22:32 PM	R20741
EPA METHOD 7470: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/22/2014 3:01:13 PM	14900
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 12:20:25 PM	R20721
Barium	ND	0.020		mg/L	1	8/21/2014 12:20:25 PM	R20721
Cadmium	ND	0.0020		mg/L	1	8/21/2014 12:20:25 PM	R20721
Calcium	600	10		mg/L	10	8/21/2014 1:17:49 PM	R20721
Chromium	ND	0.0060		mg/L	1	8/21/2014 12:20:25 PM	R20721
Copper	ND	0.0060		mg/L	1	8/21/2014 12:20:25 PM	R20721
Iron	18	0.40		mg/L	20	8/21/2014 1:19:35 PM	R20721
Lead	ND	0.0050		mg/L	1	8/21/2014 12:20:25 PM	R20721
Magnesium	170	5.0		mg/L	5	8/21/2014 1:05:56 PM	R20721
Manganese	3.0	0.010		mg/L	5	8/21/2014 1:05:56 PM	R20721
Potassium	5.0	1.0		mg/L	1	8/21/2014 12:20:25 PM	R20721
Selenium	ND	0.050		mg/L	1	8/21/2014 12:20:25 PM	R20721
Silver	ND	0.0050		mg/L	1	8/21/2014 12:20:25 PM	R20721
Sodium	720	10		mg/L	10	8/21/2014 1:17:49 PM	R20721
Uranium	ND	0.50		mg/L	5	8/21/2014 1:05:56 PM	R20721
Zinc	ND	0.020		mg/L	1	8/21/2014 12:20:25 PM	R20721
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/21/2014 11:52:32 AM	14876
Barium	0.22	0.020		mg/L	1	8/21/2014 11:52:32 AM	14876
Cadmium	ND	0.0020		mg/L	1	8/21/2014 11:52:32 AM	14876

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-70

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 10:00:00 AM

Lab ID: 1408A13-014

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Chromium	0.0080	0.0060		mg/L	1	8/21/2014 11:52:32 AM	14876
Lead	ND	0.0050		mg/L	1	8/21/2014 11:52:32 AM	14876
Selenium	ND	0.050		mg/L	1	8/21/2014 11:52:32 AM	14876
Silver	ND	0.0050		mg/L	1	8/21/2014 11:52:32 AM	14876
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Acenaphthylene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Aniline	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Anthracene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Azobenzene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Benz(a)anthracene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Benzo(a)pyrene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Benzo(b)fluoranthene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Benzo(g,h,i)perylene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Benzo(k)fluoranthene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Benzoic acid	ND	25		µg/L	1	8/22/2014 7:58:05 PM	14909
Benzyl alcohol	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Bis(2-chloroethoxy)methane	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Bis(2-chloroethyl)ether	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Bis(2-chloroisopropyl)ether	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Bis(2-ethylhexyl)phthalate	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
4-Bromophenyl phenyl ether	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Butyl benzyl phthalate	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Carbazole	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
4-Chloro-3-methylphenol	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
4-Chloroaniline	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
2-Chloronaphthalene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
2-Chlorophenol	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
4-Chlorophenyl phenyl ether	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Chrysene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Di-n-butyl phthalate	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Di-n-octyl phthalate	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Dibenz(a,h)anthracene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Dibenzofuran	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
1,2-Dichlorobenzene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
1,3-Dichlorobenzene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
1,4-Dichlorobenzene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
3,3'-Dichlorobenzidine	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Diethyl phthalate	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-70

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 10:00:00 AM

Lab ID: 1408A13-014

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Dimethyl phthalate	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
2,4-Dichlorophenol	ND	25		µg/L	1	8/22/2014 7:58:05 PM	14909
2,4-Dimethylphenol	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
4,6-Dinitro-2-methylphenol	ND	25		µg/L	1	8/22/2014 7:58:05 PM	14909
2,4-Dinitrophenol	ND	25		µg/L	1	8/22/2014 7:58:05 PM	14909
2,4-Dinitrotoluene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
2,6-Dinitrotoluene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Fluoranthene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Fluorene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Hexachlorobenzene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Hexachlorobutadiene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Hexachlorocyclopentadiene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Hexachloroethane	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Indeno(1,2,3-cd)pyrene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Isophorone	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
1-Methylnaphthalene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
2-Methylnaphthalene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
2-Methylphenol	ND	25		µg/L	1	8/22/2014 7:58:05 PM	14909
3+4-Methylphenol	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
N-Nitrosodi-n-propylamine	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
N-Nitrosodimethylamine	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
N-Nitrosodiphenylamine	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Naphthalene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
2-Nitroaniline	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
3-Nitroaniline	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
4-Nitroaniline	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Nitrobenzene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
2-Nitrophenol	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
4-Nitrophenol	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Pentachlorophenol	ND	25		µg/L	1	8/22/2014 7:58:05 PM	14909
Phenanthrene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Phenol	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Pyrene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Pyridine	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
1,2,4-Trichlorobenzene	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
2,4,5-Trichlorophenol	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
2,4,6-Trichlorophenol	ND	12		µg/L	1	8/22/2014 7:58:05 PM	14909
Surr: 2-Fluorophenol	47.0	12.1-85.8		%REC	1	8/22/2014 7:58:05 PM	14909
Surr: Phenol-d5	37.1	17.7-65.8		%REC	1	8/22/2014 7:58:05 PM	14909

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-70

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 10:00:00 AM

Lab ID: 1408A13-014

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Surr: 2,4,6-Tribromophenol	64.3	26-138		%REC	1	8/22/2014 7:58:05 PM	14909
Surr: Nitrobenzene-d5	67.9	47.5-119		%REC	1	8/22/2014 7:58:05 PM	14909
Surr: 2-Fluorobiphenyl	66.4	48.1-106		%REC	1	8/22/2014 7:58:05 PM	14909
Surr: 4-Terphenyl-d14	58.6	44-113		%REC	1	8/22/2014 7:58:05 PM	14909
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Toluene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Ethylbenzene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Naphthalene	ND	2.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
1-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
2-Methylnaphthalene	ND	4.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Acetone	ND	10		µg/L	1	8/28/2014 8:26:19 PM	R20875
Bromobenzene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Bromodichloromethane	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Bromoform	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Bromomethane	ND	3.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
2-Butanone	ND	10		µg/L	1	8/28/2014 8:26:19 PM	R20875
Carbon disulfide	ND	10		µg/L	1	8/28/2014 8:26:19 PM	R20875
Carbon Tetrachloride	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Chlorobenzene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Chloroethane	ND	2.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Chloroform	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Chloromethane	ND	3.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
2-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
4-Chlorotoluene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
cis-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Dibromochloromethane	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Dibromomethane	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-70

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 10:00:00 AM

Lab ID: 1408A13-014

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
1,1-Dichloroethane	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
1,1-Dichloroethene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
1,2-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
1,3-Dichloropropane	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
2,2-Dichloropropane	ND	2.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
1,1-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Hexachlorobutadiene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
2-Hexanone	ND	10		µg/L	1	8/28/2014 8:26:19 PM	R20875
Isopropylbenzene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
4-Isopropyltoluene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
4-Methyl-2-pentanone	ND	10		µg/L	1	8/28/2014 8:26:19 PM	R20875
Methylene Chloride	ND	3.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
n-Butylbenzene	ND	3.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
n-Propylbenzene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
sec-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Styrene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
tert-Butylbenzene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
trans-1,2-DCE	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Trichlorofluoromethane	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Vinyl chloride	ND	1.0		µg/L	1	8/28/2014 8:26:19 PM	R20875
Xylenes, Total	ND	1.5		µg/L	1	8/28/2014 8:26:19 PM	R20875
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	1	8/28/2014 8:26:19 PM	R20875
Surr: 4-Bromofluorobenzene	124	70-130		%REC	1	8/28/2014 8:26:19 PM	R20875
Surr: Dibromofluoromethane	90.6	70-130		%REC	1	8/28/2014 8:26:19 PM	R20875
Surr: Toluene-d8	94.5	70-130		%REC	1	8/28/2014 8:26:19 PM	R20875

CARBON DIOXIDE

Analyst: **JRR**

Total Carbon Dioxide	730	1.0	H	mg CO2/L	1	8/22/2014 7:20:53 PM	R20763

SM2320B: ALKALINITY

Analyst: **JRR**

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1408A13**

Date Reported: **9/9/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-70

Project: RCRA Wells 8-19-14

Collection Date: 8/19/2014 10:00:00 AM

Lab ID: 1408A13-014

Matrix: AQUEOUS

Received Date: 8/20/2014 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	780	20		mg/L CaCO3	1	8/22/2014 7:20:53 PM	R20763
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	8/22/2014 7:20:53 PM	R20763
Total Alkalinity (as CaCO3)	780	20		mg/L CaCO3	1	8/22/2014 7:20:53 PM	R20763
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	4960	100	*	mg/L	1	8/27/2014 4:44:00 PM	14958

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 75 of 94
	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 greater than 2.	
	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#: 1408A13

09-Sep-14

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-19-14

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R20712	RunNo:	20712					
Prep Date:		Analysis Date:	8/20/2014	SeqNo:	602707	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
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	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R20741	RunNo:	20741					
Prep Date:		Analysis Date:	8/21/2014	SeqNo:	603501	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	ND	0.50
Nitrogen, Nitrate (As N)	ND	0.10
Sulfate	ND	0.50

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R20741	RunNo:	20741					
Prep Date:		Analysis Date:	8/21/2014	SeqNo:	603565	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	ND	0.50
Nitrogen, Nitrate (As N)	ND	0.10
Sulfate	ND	0.50

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R20794	RunNo:	20794					
Prep Date:		Analysis Date:	8/25/2014	SeqNo:	605116	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	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R20794	RunNo:	20794					
Prep Date:		Analysis Date:	8/25/2014	SeqNo:	605154	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Nitrate+Nitrite as N	ND	0.20

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408A13

09-Sep-14

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-19-14

Sample ID	MB-14873		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW		Batch ID: 14873		RunNo: 20683					
Prep Date:	8/20/2014		Analysis Date: 8/20/2014		SeqNo: 602569		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.42		0.5000		83.8	75.2	161			

Sample ID	1408A13-001CMS		SampType: MS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	MW-51		Batch ID: 14873		RunNo: 20683					
Prep Date:	8/20/2014		Analysis Date: 8/20/2014		SeqNo: 602586		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.7	0.20	2.500	0	106	64.4	178			
Surr: DNOP	0.27		0.2500		109	75.2	161			

Sample ID	1408A13-001CMSD		SampType: MSD		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	MW-51		Batch ID: 14873		RunNo: 20683					
Prep Date:	8/20/2014		Analysis Date: 8/20/2014		SeqNo: 602587		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.8	0.20	2.500	0	112	64.4	178	5.70	20	
Surr: DNOP	0.29		0.2500		118	75.2	161	0	0	

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408A13

09-Sep-14

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-19-14

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R20730	RunNo:	20730					
Prep Date:		Analysis Date:	8/21/2014	SeqNo:	603220	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	20		20.00		99.1	70.9	130			

Sample ID	1408A13-010BMS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	MW-65	Batch ID:	R20730	RunNo:	20730					
Prep Date:		Analysis Date:	8/21/2014	SeqNo:	603230	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	49	2.5	25.00	21.09	111	70.4	127			
Surr: BFB	1200		1000		121	70.9	130			

Sample ID	1408A13-010BMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	MW-65	Batch ID:	R20730	RunNo:	20730					
Prep Date:		Analysis Date:	8/21/2014	SeqNo:	603231	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	47	2.5	25.00	21.09	103	70.4	127	3.99	20	
Surr: BFB	1200		1000		120	70.9	130	0	0	

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408A13

09-Sep-14

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-19-14

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID:	R20730	RunNo:	20730					
Prep Date:		Analysis Date:	8/21/2014	SeqNo:	603246	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	2.5								
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
Surr: 4-Bromofluorobenzene	23		20.00		115	82.9	139			

Sample ID	1408A13-012AMS	SampType:	MS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	Rinsate	Batch ID:	R20730	RunNo:	20730					
Prep Date:		Analysis Date:	8/21/2014	SeqNo:	603255	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	18	2.5	20.00	0	89.8	45.4	143			
Benzene	20	1.0	20.00	0.4000	98.9	80	120			
Toluene	20	1.0	20.00	0.4660	99.8	80	120			
Ethylbenzene	21	1.0	20.00	0	105	79.7	126			
Xylenes, Total	66	2.0	60.00	1.180	107	80	120			
1,2,4-Trimethylbenzene	22	1.0	20.00	0.4120	106	80.3	122			
1,3,5-Trimethylbenzene	22	1.0	20.00	0.3020	109	80	120			
Surr: 4-Bromofluorobenzene	24		20.00		122	82.9	139			

Sample ID	1408A13-012AMSD	SampType:	MSD	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	Rinsate	Batch ID:	R20730	RunNo:	20730					
Prep Date:		Analysis Date:	8/21/2014	SeqNo:	603256	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	18	2.5	20.00	0	89.5	45.4	143	0.290	20	
Benzene	20	1.0	20.00	0.4000	96.5	80	120	2.33	20	
Toluene	20	1.0	20.00	0.4660	96.9	80	120	2.91	20	
Ethylbenzene	21	1.0	20.00	0	103	79.7	126	2.12	20	
Xylenes, Total	64	2.0	60.00	1.180	105	80	120	2.38	20	
1,2,4-Trimethylbenzene	21	1.0	20.00	0.4120	104	80.3	122	1.79	20	
1,3,5-Trimethylbenzene	22	1.0	20.00	0.3020	107	80	120	1.97	20	
Surr: 4-Bromofluorobenzene	24		20.00		121	82.9	139	0	0	

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408A13

09-Sep-14

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-19-14

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R20875			RunNo: 20875					
Prep Date:		Analysis Date: 8/28/2014			SeqNo: 607425	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								
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.
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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408A13

09-Sep-14

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-19-14

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R20875			RunNo: 20875					
Prep Date:		Analysis Date: 8/28/2014			SeqNo: 607425		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	9.7		10.00		96.6	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		124	70	130			
Surr: Dibromofluoromethane	8.5		10.00		85.0	70	130			
Surr: Toluene-d8	10		10.00		99.7	70	130			

Sample ID	b4	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R20875			RunNo: 20875					
Prep Date:		Analysis Date: 8/28/2014			SeqNo: 607445		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								

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 greater than 2.
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#: 1408A13

09-Sep-14

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-19-14

Sample ID b4	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: R20875			RunNo: 20875						
Prep Date:	Analysis Date: 8/28/2014			SeqNo: 607445	Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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								
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								

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408A13

09-Sep-14

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-19-14

Sample ID b4	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: R20875			RunNo: 20875						
Prep Date:	Analysis Date: 8/28/2014			SeqNo: 607445		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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	9.7		10.00		97.1	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		121	70	130			
Surr: Dibromofluoromethane	8.3		10.00		83.4	70	130			
Surr: Toluene-d8	9.6		10.00		95.9	70	130			

Sample ID 5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: R20928			RunNo: 20928						
Prep Date:	Analysis Date: 8/29/2014			SeqNo: 608986		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	1.0								
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		95.7	70	130			
Surr: Dibromofluoromethane	11		10.00		109	70	130			
Surr: Toluene-d8	9.7		10.00		97.2	70	130			

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 greater than 2.
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#: 1408A13

09-Sep-14

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-19-14

Sample ID	1408a13-001a ms	SampType: MS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	MW-51	Batch ID: R20928			RunNo: 20928					
Prep Date:		Analysis Date: 8/29/2014			SeqNo: 608990		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	10		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.5	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	9.6		10.00		95.8	70	130			

Sample ID	1408a13-001a msd	SampType:	MSD	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	MW-51	Batch ID:	R20928	RunNo:	20928					
Prep Date:		Analysis Date:	8/29/2014	SeqNo:	608991	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.5		10.00		95.2	70	130	0	0	
Surr: Dibromofluoromethane	11		10.00		112	70	130	0	0	
Surr: Toluene-d8	10		10.00		101	70	130	0	0	

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408A13

09-Sep-14

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-19-14

Sample ID	mb-14881		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBW		Batch ID: 14881		RunNo: 20725					
Prep Date:	8/21/2014		Analysis Date: 8/21/2014		SeqNo: 603354		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.
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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408A13

09-Sep-14

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-19-14

Sample ID	mb-14881	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	14881	RunNo:	20725					
Prep Date:	8/21/2014	Analysis Date:	8/21/2014	SeqNo:	603354	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	20								
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	120		200.0		58.2	12.1	85.8			
Surr: Phenol-d5	82		200.0		41.1	17.7	65.8			
Surr: 2,4,6-Tribromophenol	120		200.0		60.8	26	138			
Surr: Nitrobenzene-d5	78		100.0		78.3	47.5	119			
Surr: 2-Fluorobiphenyl	78		100.0		78.5	48.1	106			
Surr: 4-Terphenyl-d14	81		100.0		81.3	44	113			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408A13

09-Sep-14

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-19-14

Sample ID	mb-14909		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBW		Batch ID: 14909		RunNo: 20759					
Prep Date:	8/22/2014		Analysis Date: 8/22/2014		SeqNo: 604193		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.
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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408A13

09-Sep-14

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-19-14

Sample ID	mb-14909	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	14909	RunNo:	20759					
Prep Date:	8/22/2014	Analysis Date:	8/22/2014	SeqNo:	604193	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	20								
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	130		200.0		65.4	12.1	85.8			
Surr: Phenol-d5	130		200.0		62.9	17.7	65.8			
Surr: 2,4,6-Tribromophenol	120		200.0		60.6	26	138			
Surr: Nitrobenzene-d5	77		100.0		76.8	47.5	119			
Surr: 2-Fluorobiphenyl	74		100.0		74.3	48.1	106			
Surr: 4-Terphenyl-d14	79		100.0		79.0	44	113			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408A13

09-Sep-14

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-19-14

Sample ID	MB-14900	SampType:	MBLK	TestCode:	EPA Method 7470: Mercury					
Client ID:	PBW	Batch ID:	14900	RunNo:	20745					
Prep Date:	8/22/2014	Analysis Date:	8/22/2014	SeqNo:	603750	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	1408A13-004FMS	SampType:	MS	TestCode:	EPA Method 7470: Mercury					
Client ID:	MW-53	Batch ID:	14900	RunNo:	20745					
Prep Date:	8/22/2014	Analysis Date:	8/22/2014	SeqNo:	603759	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0045	0.00020	0.005000	0	90.9	75	125			

Sample ID	1408A13-004FMSD	SampType:	MSD	TestCode:	EPA Method 7470: Mercury					
Client ID:	MW-53	Batch ID:	14900	RunNo:	20745					
Prep Date:	8/22/2014	Analysis Date:	8/22/2014	SeqNo:	603762	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0045	0.00020	0.005000	0	90.5	75	125	0.460	20	

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408A13

09-Sep-14

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-19-14

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	PBW	Batch ID:	R20721	RunNo:	20721					
Prep Date:		Analysis Date:	8/21/2014	SeqNo:	602939	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								
Copper	ND	0.0060								
Iron	ND	0.020								
Lead	ND	0.0050								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Selenium	ND	0.050								
Silver	ND	0.0050								
Sodium	ND	1.0								
Uranium	ND	0.10								
Zinc	ND	0.020								

Sample ID	1408A13-014GMS	SampType:	MS	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	MW-70	Batch ID:	R20721	RunNo:	20721					
Prep Date:		Analysis Date:	8/21/2014	SeqNo:	603182	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Arsenic	0.57	0.020	0.5000	0	115	75	125			
Barium	0.48	0.020	0.5000	0.01993	91.8	75	125			
Cadmium	0.48	0.0020	0.5000	0	96.7	75	125			
Chromium	0.47	0.0060	0.5000	0	93.6	75	125			
Copper	0.50	0.0060	0.5000	0	99.2	75	125			
Lead	0.45	0.0050	0.5000	0	89.1	75	125			
Potassium	57	1.0	50.00	5.001	104	75	125			
Selenium	0.55	0.050	0.5000	0	110	75	125			
Silver	0.45	0.0050	0.5000	0	91.0	75	125			
Zinc	0.48	0.020	0.5000	0.007150	93.7	75	125			

Sample ID	1408A13-014GMSD	SampType:	MSD	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	MW-70	Batch ID:	R20721	RunNo:	20721					
Prep Date:		Analysis Date:	8/21/2014	SeqNo:	603183	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Arsenic	0.57	0.020	0.5000	0	114	75	125	0.522	20	
Barium	0.45	0.020	0.5000	0.01993	86.6	75	125	5.64	20	

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408A13

09-Sep-14

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-19-14

Sample ID	1408A13-014GMSD			SampType:	MSD			TestCode:	EPA Method 6010B: Dissolved Metals		
Client ID:	MW-70			Batch ID:	R20721			RunNo:	20721		
Prep Date:				Analysis Date:	8/21/2014			SeqNo:	603183		
								Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cadmium	0.48	0.0020	0.5000	0	95.2	75	125	1.52	20		
Chromium	0.46	0.0060	0.5000	0	92.1	75	125	1.62	20		
Copper	0.49	0.0060	0.5000	0	97.2	75	125	2.04	20		
Lead	0.44	0.0050	0.5000	0	87.8	75	125	1.42	20		
Potassium	57	1.0	50.00	5.001	104	75	125	0.171	20		
Selenium	0.52	0.050	0.5000	0	104	75	125	5.65	20		
Silver	0.44	0.0050	0.5000	0	88.1	75	125	3.28	20		
Zinc	0.47	0.020	0.5000	0.007150	92.3	75	125	1.44	20		

Sample ID	1408A13-014GMS			SampType:	MS			TestCode:	EPA Method 6010B: Dissolved Metals		
Client ID:	MW-70			Batch ID:	R20721			RunNo:	20721		
Prep Date:				Analysis Date:	8/21/2014			SeqNo:	603203		
								Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Uranium	2.1	0.50	2.500	0	83.5	75	125				

Sample ID	1408A13-014GMSD			SampType:	MSD			TestCode:	EPA Method 6010B: Dissolved Metals		
Client ID:	MW-70			Batch ID:	R20721			RunNo:	20721		
Prep Date:				Analysis Date:	8/21/2014			SeqNo:	603204		
								Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Uranium	2.0	0.50	2.500	0	81.4	75	125	2.47	20		

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408A13

09-Sep-14

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-19-14

Sample ID	MB-14876		SampType: MBLK		TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	PBW		Batch ID: 14876		RunNo: 20721					
Prep Date:	8/20/2014		Analysis Date: 8/21/2014		SeqNo: 602943		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	1408A13-006FMS		SampType: MS		TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	MW-62		Batch ID: 14876		RunNo: 20721					
Prep Date:	8/20/2014		Analysis Date: 8/21/2014		SeqNo: 602965		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.49	0.020	0.5000	0.01082	95.1	75	125			
Barium	0.45	0.020	0.5000	0.01339	86.4	75	125			
Cadmium	0.45	0.0020	0.5000	0	89.8	75	125			
Chromium	0.42	0.0060	0.5000	0	84.7	75	125			
Lead	0.42	0.0050	0.5000	0	83.1	75	125			
Selenium	0.40	0.050	0.5000	0	79.3	75	125			
Silver	0.49	0.0050	0.5000	0	97.9	75	125			

Sample ID	1408A13-006FMSD		SampType: MSD		TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	MW-62		Batch ID: 14876		RunNo: 20721					
Prep Date:	8/20/2014		Analysis Date: 8/21/2014		SeqNo: 602969		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.51	0.020	0.5000	0.01082	99.4	75	125	4.29	20	
Barium	0.46	0.020	0.5000	0.01339	88.5	75	125	2.33	20	
Cadmium	0.46	0.0020	0.5000	0	92.4	75	125	2.86	20	
Chromium	0.44	0.0060	0.5000	0	88.0	75	125	3.73	20	
Lead	0.43	0.0050	0.5000	0	86.4	75	125	3.87	20	
Selenium	0.43	0.050	0.5000	0	86.6	75	125	8.79	20	
Silver	0.50	0.0050	0.5000	0	99.2	75	125	1.36	20	

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408A13

09-Sep-14

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-19-14

Sample ID	mb-1	SampType:	MBLK	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R20763	RunNo:	20763					
Prep Date:		Analysis Date:	8/22/2014	SeqNo:	604272	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	mb-2	SampType:	MBLK	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R20763	RunNo:	20763					
Prep Date:		Analysis Date:	8/22/2014	SeqNo:	604287	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	mb-1	SampType:	MBLK	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R20804	RunNo:	20804					
Prep Date:		Analysis Date:	8/25/2014	SeqNo:	605425	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	mb-2	SampType:	MBLK	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R20804	RunNo:	20804					
Prep Date:		Analysis Date:	8/25/2014	SeqNo:	605442	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408A13

09-Sep-14

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-19-14

Sample ID	MB-14958	SampType: MBLK			TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID: 14958			RunNo: 20839					
Prep Date:	8/26/2014	Analysis Date: 8/27/2014			SeqNo: 606511		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	1408A13-008EMS	SampType: MS			TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	MW-64	Batch ID: 14958			RunNo: 20839					
Prep Date:	8/26/2014	Analysis Date: 8/27/2014			SeqNo: 606520		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	6460	40.0	2000	4340	106	80	120			

Sample ID	1408A13-008EMSD	SampType:	MSD	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	MW-64	Batch ID:	14958	RunNo:	20839					
Prep Date:	8/26/2014	Analysis Date:	8/27/2014	SeqNo:	606521	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	6410	40.0	2000	4340	103	80	120	0.870	5	

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 greater than 2.
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1408A13

RcptNo: 1

Received by/date:

Logged By: Ashley Gallegos

8/20/2014 8:05:00 AM

Completed By: Ashley Gallegos

8/20/2014 10:57:19 AM

Reviewed By:

At 08/20/14

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: 36
(<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 $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.8	Good	Yes			

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

[illegible][illegible]

if necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: Western Refinery

Mailing Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

QA/QC Package:

☒ Level 4 (Full Validation)

☐ Standard

Accreditation

☐ NELAP

☐ Other

☐ EDD (Type)

Date

Time

Matrix

Sample Request ID

Container Type and #

Preservative Type

HEAL No

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

RCRA 8-14-19

Project #:

Project Manager:

Kelly Robinson

Sampler:

Bob & Matt

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.8

2-19-14 1:40 H₂O MW-62

1:40

H₂O

MW-62

5-VDA

HCl

1408413

X

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)

DRO - Extended 8015 B

Dissolved Metals

Gen. Chem. ALKALINITY

Gen. Chem. - anions Cor

Air Bubbles (Y or N)

TPH 8015B (GRO)

BTEX + MTBE + TPH (Gas only)

BTEX + MTBE + TMB's (8021)

TPH 8015B (GRO)

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)

DRO - Extended 8015 B

Dissolved Metals

Gen. Chem. ALKALINITY

Gen. Chem. - anions Cor

Air Bubbles (Y or N)

Date: 1-19-14

Time: 1020

Relinquished by: Robert Robinson

Received by:

Signature: Whelan

Date: 8/19/14

Time: 1020

Date: 8/20/14

Time: 0805

Remarks:

~~X~~ Standard

PCRA wells 8-19-14

Project #:

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

Analysis Request

Project Manager:

Project Manager: Kelly Robinson

Sampler: *Bob + Matt*

On Ice: ☒ Yes ☐ No

Sample Temperature: 18

Container Type and #	Preservative Type

5-V0A	HCl

1-liter	amber
1-500	amber

1-250	HNO ₃

1-250	H2SO4

Received by:

Robert Redford

Received by:

Arthur. Wadley

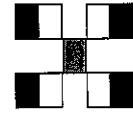
Remarks:

Date _____ Time _____

Date, Time

0820217705

if necessary, samples submitted to Hall Environmental may be subcontracted to other/accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

[illegible]

Remarks:

[illegible]

if necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

~~Standard~~
Project Name:

Project #:

Project #:

1

email or Fax#:

QA/QC Package:

☐ Standard ☒ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other _____

☐ EDD (Type)

HEAL NO.

1100-110

012

1000

10.000 20.000 30.000 40.000 50.000 60.000 70.000 80.000 90.000 100.000

1

Date _____ Time _____

8/19/19

1

0.1000

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

TABLE 2
Analytical Methods and Target Analytes

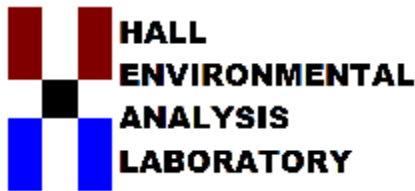
VOCs (EPA Method 8260B) ⁽¹⁾	
- Target List	
Benzene	
Toluene	
Ethylbenzene	
Xylenes	
Methyl tert butyl ether (MTBE)	
SVOCs - (EPA Method 8270)	
- Method List	
TPH-GRO (EPA Method 8015B)	
- Gasoline Range Organics	
TPH-DRO (EPA Method 8015B)	
- Diesel Range Organics	
- Motor Oil Range Organics	
Total Carbon Dioxide (Laboratory Calculated)	
- Dissolved CO ₂	
Specific Conductivity (EPA Method 120.1 or field measurement)	
- Specific conductance	
TDS (EPA Method 160.1 or field measurement)	
- Total dissolved solids	
General Chemistry - Anions (EPA Method 300.0)	
Fluoride	
Chloride	
Bromide	
Nitrogen, Nitrite (as N)	
Nitrogen, Nitrate (as N)	
Phosphorous, Orthophosphate (As P)	
Sulfate	
General Chemistry - Alkalinity (EPA Method 310.1)	
Alkalinity, Total	
Carbonate	
Bicarbonate	

Total Recoverable Metals (EPA Method 6010B/7470)	
- Target List (not applicable to River Terrace Sampling Events)	
Arsenic	Lead
Barium	Mercury
Cadmium	Selenium
Chromium	Silver
- Target List (for River Terrace Sampling Events Only)	
Lead	
Mercury (DW-1 ONLY)	
Dissolved Metals (EPA Method 6010B / 7470)	
- Target List (for Refinery Complex, Outfalls, and River)	
Arsenic	Manganese
Barium	Mercury
Cadmium	Potassium
Calcium	Selenium
Chromium	Silver
Copper	Sodium
Iron	Uranium
Lead	Zinc
Magnesium	

TPH = total petroleum hydrocarbons
GRO = gasoline range organics
VOCs = volatile organic compounds
DRO = diesel range organics
TDS = total dissolved solids

NOTES:

- (1) VOCs Target List for River Terrace samples are analyzed by EPA Method 8021B per NMED's letter Approval with Direction dated June 16, 2009.
- (2) Target List for San Juan River Terrace Monitoring Wells and Piezometer Wells only, per the River Terrace Bioventing System Monitoring Plan.



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

April 29, 2014

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: CW Wells 4-15-14

OrderNo.: 1404738

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 4/16/2014 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
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Workorder Sample Summary

WO#: 1404738

29-Apr-14

CLIENT: Western Refining Southwest, Inc.

Project: CW Wells 4-15-14

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
1404738-001	CW 0+60		4/15/2014 9:30:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404738-001	CW 0+60		4/15/2014 9:30:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404738-002	CW 25+95		4/15/2014 1:00:00 PM	4/16/2014 10:10:00 AM	Aqueous
1404738-002	CW 25+95		4/15/2014 1:00:00 PM	4/16/2014 10:10:00 AM	Aqueous

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404738**

Date Reported: **4/29/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: CW 0+60

Project: CW Wells 4-15-14

Collection Date: 4/15/2014 9:30:00 AM

Lab ID: 1404738-001

Matrix: AQUEOUS

Received Date: 4/16/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	1.7	0.20		mg/L	1	4/17/2014 2:19:01 PM	12735
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/17/2014 2:19:01 PM	12735
Surr: DNOP	106	76-161		%REC	1	4/17/2014 2:19:01 PM	12735
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	5.6	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Toluene	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Ethylbenzene	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
1,2,4-Trimethylbenzene	4.0	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Naphthalene	120	20		µg/L	10	4/18/2014 3:06:45 PM	R18099
1-Methylnaphthalene	22	4.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
2-Methylnaphthalene	41	4.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Acetone	ND	10		µg/L	1	4/22/2014 5:29:11 PM	R18153
Bromobenzene	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Bromodichloromethane	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Bromoform	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Bromomethane	ND	3.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
2-Butanone	ND	10		µg/L	1	4/22/2014 5:29:11 PM	R18153
Carbon disulfide	ND	10		µg/L	1	4/22/2014 5:29:11 PM	R18153
Carbon Tetrachloride	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Chlorobenzene	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Chloroethane	ND	2.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Chloroform	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Chloromethane	ND	3.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
2-Chlorotoluene	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
4-Chlorotoluene	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
cis-1,2-DCE	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Dibromochloromethane	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Dibromomethane	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
1,2-Dichlorobenzene	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
1,3-Dichlorobenzene	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
1,4-Dichlorobenzene	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Dichlorodifluoromethane	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
1,1-Dichloroethane	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404738**Date Reported: **4/29/2014****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** CW 0+60**Project:** CW Wells 4-15-14**Collection Date:** 4/15/2014 9:30:00 AM**Lab ID:** 1404738-001**Matrix:** AQUEOUS**Received Date:** 4/16/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES				Analyst: RAA			
1,1-Dichloroethene	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
1,2-Dichloropropane	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
1,3-Dichloropropane	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
2,2-Dichloropropane	ND	2.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
1,1-Dichloropropene	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Hexachlorobutadiene	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
2-Hexanone	ND	10		µg/L	1	4/22/2014 5:29:11 PM	R18153
Isopropylbenzene	110	10		µg/L	10	4/18/2014 3:06:45 PM	R18099
4-Isopropyltoluene	1.1	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
4-Methyl-2-pentanone	ND	10		µg/L	1	4/22/2014 5:29:11 PM	R18153
Methylene Chloride	ND	3.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
n-Butylbenzene	4.9	3.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
n-Propylbenzene	120	10		µg/L	10	4/18/2014 3:06:45 PM	R18099
sec-Butylbenzene	14	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Styrene	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
tert-Butylbenzene	3.3	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
trans-1,2-DCE	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Trichlorofluoromethane	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
1,2,3-Trichloropropane	ND	2.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Vinyl chloride	ND	1.0		µg/L	1	4/22/2014 5:29:11 PM	R18153
Xylenes, Total	ND	1.5		µg/L	1	4/22/2014 5:29:11 PM	R18153
Surr: 1,2-Dichloroethane-d4	95.1	70-130		%REC	1	4/22/2014 5:29:11 PM	R18153
Surr: 4-Bromofluorobenzene	102	70-130		%REC	1	4/22/2014 5:29:11 PM	R18153
Surr: Dibromofluoromethane	94.2	70-130		%REC	1	4/22/2014 5:29:11 PM	R18153
Surr: Toluene-d8	93.2	70-130		%REC	1	4/22/2014 5:29:11 PM	R18153

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 9
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404738**

Date Reported: **4/29/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: CW 25+95

Project: CW Wells 4-15-14

Collection Date: 4/15/2014 1:00:00 PM

Lab ID: 1404738-002

Matrix: AQUEOUS

Received Date: 4/16/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/17/2014 2:49:30 PM	12735
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/17/2014 2:49:30 PM	12735
Surr: DNOP	106	76-161		%REC	1	4/17/2014 2:49:30 PM	12735
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	280	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
Toluene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
Ethylbenzene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
1,2,4-Trimethylbenzene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
1,3,5-Trimethylbenzene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
1,2-Dichloroethane (EDC)	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
Naphthalene	ND	20		µg/L	10	4/22/2014 6:25:10 PM	R18153
1-Methylnaphthalene	ND	40		µg/L	10	4/22/2014 6:25:10 PM	R18153
2-Methylnaphthalene	ND	40		µg/L	10	4/22/2014 6:25:10 PM	R18153
Acetone	ND	100		µg/L	10	4/22/2014 6:25:10 PM	R18153
Bromobenzene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
Bromodichloromethane	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
Bromoform	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
Bromomethane	ND	30		µg/L	10	4/22/2014 6:25:10 PM	R18153
2-Butanone	ND	100		µg/L	10	4/22/2014 6:25:10 PM	R18153
Carbon disulfide	ND	100		µg/L	10	4/22/2014 6:25:10 PM	R18153
Carbon Tetrachloride	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
Chlorobenzene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
Chloroethane	ND	20		µg/L	10	4/22/2014 6:25:10 PM	R18153
Chloroform	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
Chloromethane	ND	30		µg/L	10	4/22/2014 6:25:10 PM	R18153
2-Chlorotoluene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
4-Chlorotoluene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
cis-1,2-DCE	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
cis-1,3-Dichloropropene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	4/22/2014 6:25:10 PM	R18153
Dibromochloromethane	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
Dibromomethane	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
1,2-Dichlorobenzene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
1,3-Dichlorobenzene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
1,4-Dichlorobenzene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
Dichlorodifluoromethane	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
1,1-Dichloroethane	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404738**

Date Reported: **4/29/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: CW 25+95

Project: CW Wells 4-15-14

Collection Date: 4/15/2014 1:00:00 PM

Lab ID: 1404738-002

Matrix: AQUEOUS

Received Date: 4/16/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES				Analyst: RAA			
1,1-Dichloroethene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
1,2-Dichloropropane	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
1,3-Dichloropropane	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
2,2-Dichloropropane	ND	20		µg/L	10	4/22/2014 6:25:10 PM	R18153
1,1-Dichloropropene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
Hexachlorobutadiene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
2-Hexanone	ND	100		µg/L	10	4/22/2014 6:25:10 PM	R18153
Isopropylbenzene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
4-Isopropyltoluene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
4-Methyl-2-pentanone	ND	100		µg/L	10	4/22/2014 6:25:10 PM	R18153
Methylene Chloride	ND	30		µg/L	10	4/22/2014 6:25:10 PM	R18153
n-Butylbenzene	ND	30		µg/L	10	4/22/2014 6:25:10 PM	R18153
n-Propylbenzene	10	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
sec-Butylbenzene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
Styrene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
tert-Butylbenzene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
1,1,2,2-Tetrachloroethane	ND	20		µg/L	10	4/22/2014 6:25:10 PM	R18153
Tetrachloroethene (PCE)	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
trans-1,2-DCE	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
trans-1,3-Dichloropropene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
1,2,3-Trichlorobenzene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
1,2,4-Trichlorobenzene	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
1,1,1-Trichloroethane	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
1,1,2-Trichloroethane	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
Trichloroethene (TCE)	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
Trichlorofluoromethane	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
1,2,3-Trichloropropane	ND	20		µg/L	10	4/22/2014 6:25:10 PM	R18153
Vinyl chloride	ND	10		µg/L	10	4/22/2014 6:25:10 PM	R18153
Xylenes, Total	ND	15		µg/L	10	4/22/2014 6:25:10 PM	R18153
Surr: 1,2-Dichloroethane-d4	92.5	70-130		%REC	10	4/22/2014 6:25:10 PM	R18153
Surr: 4-Bromofluorobenzene	94.4	70-130		%REC	10	4/22/2014 6:25:10 PM	R18153
Surr: Dibromofluoromethane	93.5	70-130		%REC	10	4/22/2014 6:25:10 PM	R18153
Surr: Toluene-d8	91.3	70-130		%REC	10	4/22/2014 6:25:10 PM	R18153

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 5 of 9
	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 greater than 2.	
	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#: 1404738

29-Apr-14

Client: Western Refining Southwest, Inc.

Project: CW Wells 4-15-14

Sample ID	MB-12735	SampType: MBLK			TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW	Batch ID: 12735			RunNo: 18017					
Prep Date:	4/16/2014	Analysis Date: 4/17/2014			SeqNo: 520905		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.59		0.5000		117	76	161			

Sample ID	1404738-001BMS		SampType: MS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	CW 0+60		Batch ID: 12735		RunNo: 18017					
Prep Date:	4/16/2014		Analysis Date: 4/17/2014		SeqNo: 520948		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	4.2	0.20	2.500	1.677	100	72.1	156			
Surr: DNOP	0.28		0.2500		111	76	161			

Sample ID	1404738-001BMSD		SampType: MSD		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	CW 0+60		Batch ID: 12735		RunNo: 18017					
Prep Date:	4/16/2014		Analysis Date: 4/17/2014		SeqNo: 520949		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	4.1	0.20	2.500	1.677	96.6	72.1	156	2.08	20	
Surr: DNOP	0.30		0.2500		118	76	161	0	0	

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404738

29-Apr-14

Client: Western Refining Southwest, Inc.

Project: CW Wells 4-15-14

Sample ID	5mL-rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R18099			RunNo: 18099					
Prep Date:		Analysis Date: 4/18/2014			SeqNo: 522540		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
Isopropylbenzene	ND	1.0								
n-Propylbenzene	ND	1.0								
Surr: 1,2-Dichloroethane-d4	9.1		10.00		91.3	70	130			
Surr: 4-Bromofluorobenzene	9.3		10.00		93.1	70	130			
Surr: Dibromofluoromethane	9.5		10.00		95.0	70	130			
Surr: Toluene-d8	9.1		10.00		90.9	70	130			

Sample ID	b3	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R18099			RunNo: 18099					
Prep Date:		Analysis Date: 4/18/2014			SeqNo: 522545		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
Isopropylbenzene	ND	1.0								
n-Propylbenzene	ND	1.0								
Surr: 1,2-Dichloroethane-d4	9.2		10.00		91.8	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		94.5	70	130			
Surr: Dibromofluoromethane	9.4		10.00		94.5	70	130			
Surr: Toluene-d8	9.3		10.00		92.6	70	130			

Sample ID	5mL-rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R18153			RunNo: 18153					
Prep Date:		Analysis Date: 4/22/2014			SeqNo: 523911		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								

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404738

29-Apr-14

Client: Western Refining Southwest, Inc.

Project: CW Wells 4-15-14

Sample ID	5mL-rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R18153	RunNo:	18153					
Prep Date:		Analysis Date:	4/22/2014	SeqNo:	523911	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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								
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								

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404738

29-Apr-14

Client: Western Refining Southwest, Inc.

Project: CW Wells 4-15-14

Sample ID	5mL-rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R18153	RunNo:	18153					
Prep Date:		Analysis Date:	4/22/2014	SeqNo:	523911	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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	9.2		10.00		92.4	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		95.6	70	130			
Surr: Dibromofluoromethane	9.2		10.00		92.4	70	130			
Surr: Toluene-d8	9.2		10.00		91.6	70	130			

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 greater than 2.
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1404738

RcptNo: 1

Received by/date:

alm

04/16/14

Logged By: Ashley Gallegos

4/16/2014 10:10:00 AM

Completed By: Ashley Gallegos

4/16/2014 10:58:35 AM

Reviewed By:

A 04/16/14

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 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 °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			



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

April 30, 2014

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: OW Wells 4/15/14

OrderNo.: 1404740

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 9 sample(s) on 4/16/2014 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', with a stylized flourish at the end.

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

Workorder Sample Summary

WO#: 1404740

30-Apr-14

CLIENT: Western Refining Southwest, Inc.

Project: OW Wells 4/15/14

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
1404740-001	OW-3+85		4/15/2014 9:45:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404740-001	OW-3+85		4/15/2014 9:45:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404740-001	OW-3+85		4/15/2014 9:45:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404740-002	OW-16+60		4/15/2014 10:30:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404740-002	OW-16+60		4/15/2014 10:30:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404740-002	OW-16+60		4/15/2014 10:30:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404740-003	OW-22+00		4/15/2014 10:45:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404740-003	OW-22+00		4/15/2014 10:45:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404740-003	OW-22+00		4/15/2014 10:45:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404740-004	OW-23+10		4/15/2014 11:00:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404740-004	OW-23+10		4/15/2014 11:00:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404740-004	OW-23+10		4/15/2014 11:00:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404740-005	OW-23+90		4/15/2014 11:15:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404740-005	OW-23+90		4/15/2014 11:15:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404740-005	OW-23+90		4/15/2014 11:15:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404740-006	OW-25+70		4/15/2014 11:40:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404740-006	OW-25+70		4/15/2014 11:40:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404740-006	OW-25+70		4/15/2014 11:40:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404740-007	OW-25+70D		4/15/2014 11:40:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404740-007	OW-25+70D		4/15/2014 11:40:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404740-007	OW-25+70D		4/15/2014 11:40:00 AM	4/16/2014 10:10:00 AM	Aqueous
1404740-008	Rinsate		4/15/2014 2:30:00 PM	4/16/2014 10:10:00 AM	Aqueous
1404740-009	TRIP BLANK			4/16/2014 10:10:00 AM	Aqueous
1404740-009	TRIP BLANK			4/16/2014 10:10:00 AM	Aqueous

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404740**Date Reported: **4/30/2014****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** OW-3+85**Project:** OW Wells 4/15/14**Collection Date:** 4/15/2014 9:45:00 AM**Lab ID:** 1404740-001**Matrix:** AQUEOUS**Received Date:** 4/16/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	110	2.0		mg/L	10	4/21/2014 2:04:56 PM	12735
Motor Oil Range Organics (MRO)	ND	25		mg/L	10	4/21/2014 2:04:56 PM	12735
Surr: DNOP	0	76-161	S	%REC	10	4/21/2014 2:04:56 PM	12735
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	5.0	0.50		mg/L	10	4/21/2014 1:22:22 PM	R18124
Surr: BFB	187	80.4-118	S	%REC	10	4/21/2014 1:22:22 PM	R18124
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	10		µg/L	10	4/18/2014 5:37:34 PM	R18092
Toluene	ND	10		µg/L	10	4/18/2014 5:37:34 PM	R18092
Ethylbenzene	25	10		µg/L	10	4/18/2014 5:37:34 PM	R18092
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	4/18/2014 5:37:34 PM	R18092
Xylenes, Total	ND	15		µg/L	10	4/18/2014 5:37:34 PM	R18092
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	10	4/18/2014 5:37:34 PM	R18092
Surr: 4-Bromofluorobenzene	81.1	70-130		%REC	10	4/18/2014 5:37:34 PM	R18092
Surr: Dibromofluoromethane	103	70-130		%REC	10	4/18/2014 5:37:34 PM	R18092
Surr: Toluene-d8	90.2	70-130		%REC	10	4/18/2014 5:37:34 PM	R18092

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 13
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404740**Date Reported: **4/30/2014****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** OW-16+60**Project:** OW Wells 4/15/14**Collection Date:** 4/15/2014 10:30:00 AM**Lab ID:** 1404740-002**Matrix:** AQUEOUS**Received Date:** 4/16/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	40	0.20		mg/L	1	4/17/2014 4:21:54 PM	12735
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/17/2014 4:21:54 PM	12735
Surr: DNOP	117	76-161		%REC	1	4/17/2014 4:21:54 PM	12735
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	2.9	0.50		mg/L	10	4/21/2014 3:16:49 PM	R18124
Surr: BFB	227	80.4-118	S	%REC	10	4/21/2014 3:16:49 PM	R18124
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	2.0		µg/L	2	4/24/2014 3:57:58 PM	R18198
Toluene	ND	2.0		µg/L	2	4/24/2014 3:57:58 PM	R18198
Ethylbenzene	8.2	2.0		µg/L	2	4/24/2014 3:57:58 PM	R18198
Methyl tert-butyl ether (MTBE)	660	10		µg/L	10	4/18/2014 6:34:51 PM	R18092
Xylenes, Total	ND	3.0		µg/L	2	4/24/2014 3:57:58 PM	R18198
Surr: 1,2-Dichloroethane-d4	91.8	70-130		%REC	2	4/24/2014 3:57:58 PM	R18198
Surr: 4-Bromofluorobenzene	105	70-130		%REC	2	4/24/2014 3:57:58 PM	R18198
Surr: Dibromofluoromethane	101	70-130		%REC	2	4/24/2014 3:57:58 PM	R18198
Surr: Toluene-d8	98.6	70-130		%REC	2	4/24/2014 3:57:58 PM	R18198

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404740**

Date Reported: **4/30/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW-22+00

Project: OW Wells 4/15/14

Collection Date: 4/15/2014 10:45:00 AM

Lab ID: 1404740-003

Matrix: AQUEOUS

Received Date: 4/16/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/17/2014 4:52:39 PM	12735
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/17/2014 4:52:39 PM	12735
Surr: DNOP	115	76-161		%REC	1	4/17/2014 4:52:39 PM	12735
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/21/2014 4:14:02 PM	R18124
Surr: BFB	85.4	80.4-118		%REC	1	4/21/2014 4:14:02 PM	R18124
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/18/2014 7:32:08 PM	R18092
Toluene	ND	1.0		µg/L	1	4/18/2014 7:32:08 PM	R18092
Ethylbenzene	ND	1.0		µg/L	1	4/18/2014 7:32:08 PM	R18092
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/18/2014 7:32:08 PM	R18092
Xylenes, Total	ND	1.5		µg/L	1	4/18/2014 7:32:08 PM	R18092
Surr: 1,2-Dichloroethane-d4	106	70-130		%REC	1	4/18/2014 7:32:08 PM	R18092
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	4/18/2014 7:32:08 PM	R18092
Surr: Dibromofluoromethane	107	70-130		%REC	1	4/18/2014 7:32:08 PM	R18092
Surr: Toluene-d8	94.3	70-130		%REC	1	4/18/2014 7:32:08 PM	R18092

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 4 of 13
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404740**Date Reported: **4/30/2014****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** OW-23+10**Project:** OW Wells 4/15/14**Collection Date:** 4/15/2014 11:00:00 AM**Lab ID:** 1404740-004**Matrix:** AQUEOUS**Received Date:** 4/16/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	1.0	0.20		mg/L	1	4/17/2014 5:23:14 PM	12735
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/17/2014 5:23:14 PM	12735
Surr: DNOP	113	76-161		%REC	1	4/17/2014 5:23:14 PM	12735
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.15	0.050		mg/L	1	4/21/2014 4:42:39 PM	R18124
Surr: BFB	86.3	80.4-118		%REC	1	4/21/2014 4:42:39 PM	R18124
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/18/2014 8:00:45 PM	R18092
Toluene	ND	1.0		µg/L	1	4/18/2014 8:00:45 PM	R18092
Ethylbenzene	ND	1.0		µg/L	1	4/18/2014 8:00:45 PM	R18092
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/18/2014 8:00:45 PM	R18092
Xylenes, Total	ND	1.5		µg/L	1	4/18/2014 8:00:45 PM	R18092
Surr: 1,2-Dichloroethane-d4	97.5	70-130		%REC	1	4/18/2014 8:00:45 PM	R18092
Surr: 4-Bromofluorobenzene	96.1	70-130		%REC	1	4/18/2014 8:00:45 PM	R18092
Surr: Dibromofluoromethane	97.0	70-130		%REC	1	4/18/2014 8:00:45 PM	R18092
Surr: Toluene-d8	96.4	70-130		%REC	1	4/18/2014 8:00:45 PM	R18092

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404740**

Date Reported: **4/30/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW-23+90

Project: OW Wells 4/15/14

Collection Date: 4/15/2014 11:15:00 AM

Lab ID: 1404740-005

Matrix: AQUEOUS

Received Date: 4/16/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/17/2014 5:54:05 PM	12735
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/17/2014 5:54:05 PM	12735
Surr: DNOP	111	76-161		%REC	1	4/17/2014 5:54:05 PM	12735
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/21/2014 5:11:13 PM	R18124
Surr: BFB	83.7	80.4-118		%REC	1	4/21/2014 5:11:13 PM	R18124
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/18/2014 8:29:30 PM	R18092
Toluene	ND	1.0		µg/L	1	4/18/2014 8:29:30 PM	R18092
Ethylbenzene	ND	1.0		µg/L	1	4/18/2014 8:29:30 PM	R18092
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/18/2014 8:29:30 PM	R18092
Xylenes, Total	ND	1.5		µg/L	1	4/18/2014 8:29:30 PM	R18092
Surr: 1,2-Dichloroethane-d4	98.9	70-130		%REC	1	4/18/2014 8:29:30 PM	R18092
Surr: 4-Bromofluorobenzene	105	70-130		%REC	1	4/18/2014 8:29:30 PM	R18092
Surr: Dibromofluoromethane	102	70-130		%REC	1	4/18/2014 8:29:30 PM	R18092
Surr: Toluene-d8	93.9	70-130		%REC	1	4/18/2014 8:29:30 PM	R18092

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 13
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404740**

Date Reported: **4/30/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW-25+70

Project: OW Wells 4/15/14

Collection Date: 4/15/2014 11:40:00 AM

Lab ID: 1404740-006

Matrix: AQUEOUS

Received Date: 4/16/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/17/2014 6:24:50 PM	12735
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/17/2014 6:24:50 PM	12735
Surr: DNOP	113	76-161		%REC	1	4/17/2014 6:24:50 PM	12735
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.20	0.050		mg/L	1	4/21/2014 5:39:48 PM	R18124
Surr: BFB	88.4	80.4-118		%REC	1	4/21/2014 5:39:48 PM	R18124
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/18/2014 8:58:17 PM	R18092
Toluene	ND	1.0		µg/L	1	4/18/2014 8:58:17 PM	R18092
Ethylbenzene	ND	1.0		µg/L	1	4/18/2014 8:58:17 PM	R18092
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/18/2014 8:58:17 PM	R18092
Xylenes, Total	ND	1.5		µg/L	1	4/18/2014 8:58:17 PM	R18092
Surr: 1,2-Dichloroethane-d4	97.6	70-130		%REC	1	4/18/2014 8:58:17 PM	R18092
Surr: 4-Bromofluorobenzene	101	70-130		%REC	1	4/18/2014 8:58:17 PM	R18092
Surr: Dibromofluoromethane	102	70-130		%REC	1	4/18/2014 8:58:17 PM	R18092
Surr: Toluene-d8	92.8	70-130		%REC	1	4/18/2014 8:58:17 PM	R18092

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 7 of 13
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404740**Date Reported: **4/30/2014****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** OW-25+70D**Project:** OW Wells 4/15/14**Collection Date:** 4/15/2014 11:40:00 AM**Lab ID:** 1404740-007**Matrix:** AQUEOUS**Received Date:** 4/16/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/17/2014 6:55:51 PM	12735
Motor Oil Range Organics (MRO)	3.0	2.5		mg/L	1	4/17/2014 6:55:51 PM	12735
Surr: DNOP	116	76-161		%REC	1	4/17/2014 6:55:51 PM	12735
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.18	0.050		mg/L	1	4/21/2014 6:08:20 PM	R18124
Surr: BFB	88.3	80.4-118		%REC	1	4/21/2014 6:08:20 PM	R18124
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/18/2014 9:27:03 PM	R18092
Toluene	ND	1.0		µg/L	1	4/18/2014 9:27:03 PM	R18092
Ethylbenzene	ND	1.0		µg/L	1	4/18/2014 9:27:03 PM	R18092
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/18/2014 9:27:03 PM	R18092
Xylenes, Total	ND	1.5		µg/L	1	4/18/2014 9:27:03 PM	R18092
Surr: 1,2-Dichloroethane-d4	98.8	70-130		%REC	1	4/18/2014 9:27:03 PM	R18092
Surr: 4-Bromofluorobenzene	106	70-130		%REC	1	4/18/2014 9:27:03 PM	R18092
Surr: Dibromofluoromethane	98.6	70-130		%REC	1	4/18/2014 9:27:03 PM	R18092
Surr: Toluene-d8	91.4	70-130		%REC	1	4/18/2014 9:27:03 PM	R18092

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 8 of 13
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404740**

Date Reported: **4/30/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Rinsate

Project: OW Wells 4/15/14

Collection Date: 4/15/2014 2:30:00 PM

Lab ID: 1404740-008

Matrix: AQUEOUS

Received Date: 4/16/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: cadg	
Benzene	ND	1.0		µg/L	1	4/18/2014 9:55:41 PM	R18092
Toluene	ND	1.0		µg/L	1	4/18/2014 9:55:41 PM	R18092
Ethylbenzene	ND	1.0		µg/L	1	4/18/2014 9:55:41 PM	R18092
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/18/2014 9:55:41 PM	R18092
Xylenes, Total	ND	1.5		µg/L	1	4/18/2014 9:55:41 PM	R18092
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	4/18/2014 9:55:41 PM	R18092
Surr: 4-Bromofluorobenzene	102	70-130		%REC	1	4/18/2014 9:55:41 PM	R18092
Surr: Dibromofluoromethane	106	70-130		%REC	1	4/18/2014 9:55:41 PM	R18092
Surr: Toluene-d8	93.4	70-130		%REC	1	4/18/2014 9:55:41 PM	R18092

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 9 of 13
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404740**

Date Reported: **4/30/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: TRIP BLANK

Project: OW Wells 4/15/14

Collection Date:

Lab ID: 1404740-009

Matrix: AQUEOUS

Received Date: 4/16/2014 10:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE				Analyst: NSB			
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/21/2014 6:37:00 PM	R18124
Surr: BFB	86.0	80.4-118		%REC	1	4/21/2014 6:37:00 PM	R18124
EPA METHOD 8260: VOLATILES SHORT LIST				Analyst: cadg			
Benzene	ND	1.0		µg/L	1	4/18/2014 5:08:52 PM	R18092
Toluene	ND	1.0		µg/L	1	4/18/2014 5:08:52 PM	R18092
Ethylbenzene	ND	1.0		µg/L	1	4/18/2014 5:08:52 PM	R18092
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/18/2014 5:08:52 PM	R18092
Xylenes, Total	ND	1.5		µg/L	1	4/18/2014 5:08:52 PM	R18092
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	4/18/2014 5:08:52 PM	R18092
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	4/18/2014 5:08:52 PM	R18092
Surr: Dibromofluoromethane	106	70-130		%REC	1	4/18/2014 5:08:52 PM	R18092
Surr: Toluene-d8	90.1	70-130		%REC	1	4/18/2014 5:08:52 PM	R18092

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 10 of 13
	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 greater than 2.	
	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#: 1404740

30-Apr-14

Client: Western Refining Southwest, Inc.

Project: OW Wells 4/15/14

Sample ID	MB-12735	SampType:	MBLK	TestCode:	EPA Method 8015D: Diesel Range					
Client ID:	PBW	Batch ID:	12735	RunNo:	18017					
Prep Date:	4/16/2014	Analysis Date:	4/17/2014	SeqNo:	520905	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.59		0.5000		117	76	161			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404740

30-Apr-14

Client: Western Refining Southwest, Inc.

Project: OW Wells 4/15/14

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range						
Client ID:	PBW	Batch ID:	R18124	RunNo:	18124						
Prep Date:		Analysis Date:	4/21/2014	SeqNo:	523149	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	17		20.00		83.8	80.4	118				

Sample ID	1404740-001BMS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range						
Client ID:	OW-3+85	Batch ID:	R18124	RunNo:	18124						
Prep Date:		Analysis Date:	4/21/2014	SeqNo:	523152	Units:	mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	8.2	0.50	5.000	5.048	63.2	79	121			S	
Surr: BFB	300		200.0		151	80.4	118			S	

Sample ID	1404740-001BMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range						
Client ID:	OW-3+85	Batch ID:	R18124	RunNo:	18124						
Prep Date:		Analysis Date:	4/21/2014	SeqNo:	523153	Units:	mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	8.8	0.50	5.000	5.048	74.3	79	121	6.55	20	S	
Surr: BFB	320		200.0		159	80.4	118	0	0	S	

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404740

30-Apr-14

Client: Western Refining Southwest, Inc.

Project: OW Wells 4/15/14

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R18092	RunNo:	18092					
Prep Date:		Analysis Date:	4/18/2014	SeqNo:	522367	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	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.4		10.00		94.3	70	130			

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R18198	RunNo:	18198					
Prep Date:		Analysis Date:	4/24/2014	SeqNo:	525242	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								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.9		10.00		99.0	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.9	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	10		10.00		99.7	70	130			

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 greater than 2.
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1404740

RcptNo: 1

Received by/date:

Jim

04/16/14

Logged By: Ashley Gallegos

4/16/2014 10:10:00 AM

Completed By: Ashley Gallegos

4/16/2014 11:03:18 AM

Reviewed By:

A 04/16/14

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 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	2.1	Good	Yes			

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

QA/QC Package:

☐ Standard ☒ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☐ EDD (Type)

Sampler: Matt & Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 21

Date Time Matrix Sample Request ID

1-15-14 9:45 H₂O OW-3+85

1-15-14 10:30 OW-16+60

1-15-14 10:45 OW-23+00

1-15-14 11:00 OW-23+90

1-15-14 11:15 OW-23+90

Date: 4-15-14 1549

Relinquished by: Robert Snakow

Date: 4/15/14 1700

Relinquished by: Cynthia Wacker

Turn-Around Time:

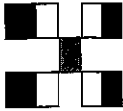
☒ Standard ☐ Rush

Project Name:

OW wells 4-15-14

Project #:

Project Manager:



**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

BTEX + MTBE + TMBs (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO /)	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) BTEX, MTBE only	8270 (Semi-VOA)	Extended DRO 8015B
		X							X		
		X							X		
		X							X		
		X							X		
		X							X		
		X							X		

Remarks:

Received by: Cynthia Wacker Date: 4/15/14 1549

Received by: Cynthia Wacker Date: 4/16/14 1710

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

QA/QC Package:

☒ Standard ☒ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

OW wells 4-15-14

Project #:

Project Manager:

Sampler: Matt + Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.1

Container Type and #

Preservative Type

HEAL No.

1404740

-006

1-500ml amber

-007

4-VOA HCl

-008

1-500ml amber

3-VOA HCl

RINSE

1-15-14 11:40

OW-25+70

1-15-14 11:40

OW-25+70D

1-15-14 2:30

RINSE

Matrix

Sample Request ID

Date

Time

Matrix

Sample Request ID

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Sample Request ID

Date



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

September 10, 2014

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: Collection Wells 8-27-14

OrderNo.: 1408E58

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 8/28/2014 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 **1408E58**Date Reported: **9/10/2014****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** CW-0+60**Project:** Collection Wells 8-27-14**Collection Date:** 8/27/2014 8:45:00 AM**Lab ID:** 1408E58-001**Matrix:** AQUEOUS**Received Date:** 8/28/2014 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	0.74	0.20		mg/L	1	8/30/2014 1:02:04 AM	15015
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/30/2014 1:02:04 AM	15015
Surr: DNOP	113	75.2-161		%REC	1	8/30/2014 1:02:04 AM	15015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	2.9	0.050		mg/L	1	8/29/2014 5:02:48 PM	R20897
Surr: BFB	1020	70.9-130	S	%REC	1	8/29/2014 5:02:48 PM	R20897
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Benzene	2.0	1.0		µg/L	1	9/4/2014 4:01:29 PM	R20995
Toluene	ND	1.0		µg/L	1	9/4/2014 4:01:29 PM	R20995
Ethylbenzene	1.8	1.0		µg/L	1	9/4/2014 4:01:29 PM	R20995
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/4/2014 4:01:29 PM	R20995
Xylenes, Total	ND	1.5		µg/L	1	9/4/2014 4:01:29 PM	R20995
Surr: 1,2-Dichloroethane-d4	108	70-130		%REC	1	9/4/2014 4:01:29 PM	R20995
Surr: 4-Bromofluorobenzene	91.5	70-130		%REC	1	9/4/2014 4:01:29 PM	R20995
Surr: Dibromofluoromethane	112	70-130		%REC	1	9/4/2014 4:01:29 PM	R20995
Surr: Toluene-d8	80.3	70-130		%REC	1	9/4/2014 4:01:29 PM	R20995

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1408E58

Date Reported: 9/10/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: CW-25+95

Project: Collection Wells 8-27-14

Collection Date: 8/27/2014 11:15:00 AM

Lab ID: 1408E58-002

Matrix: AQUEOUS

Received Date: 8/28/2014 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	0.24	0.20		mg/L	1	8/30/2014 1:44:40 AM	15015
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/30/2014 1:44:40 AM	15015
Surr: DNOP	116	75.2-161		%REC	1	8/30/2014 1:44:40 AM	15015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.80	0.25		mg/L	5	8/29/2014 5:33:03 PM	R20897
Surr: BFB	109	70.9-130		%REC	5	8/29/2014 5:33:03 PM	R20897
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Benzene	330	50		µg/L	50	9/3/2014 10:40:55 PM	R20971
Toluene	ND	50		µg/L	50	9/3/2014 10:40:55 PM	R20971
Ethylbenzene	ND	50		µg/L	50	9/3/2014 10:40:55 PM	R20971
Methyl tert-butyl ether (MTBE)	ND	50		µg/L	50	9/3/2014 10:40:55 PM	R20971
Xylenes, Total	ND	75		µg/L	50	9/3/2014 10:40:55 PM	R20971
Surr: 1,2-Dichloroethane-d4	98.1	70-130		%REC	50	9/3/2014 10:40:55 PM	R20971
Surr: 4-Bromofluorobenzene	91.5	70-130		%REC	50	9/3/2014 10:40:55 PM	R20971
Surr: Dibromofluoromethane	89.5	70-130		%REC	50	9/3/2014 10:40:55 PM	R20971
Surr: Toluene-d8	88.0	70-130		%REC	50	9/3/2014 10:40:55 PM	R20971

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
	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 greater than 2.
	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#: 1408E58

10-Sep-14

Client: Western Refining Southwest, Inc.

Project: Collection Wells 8-27-14

Sample ID	MB-15015	SampType: MBLK			TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW	Batch ID: 15015			RunNo: 20880					
Prep Date:	8/28/2014	Analysis Date: 8/29/2014			SeqNo: 608537		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.54		0.5000		108	75.2	161			

Sample ID	LCS-15015		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 15015		RunNo: 20880					
Prep Date:	8/28/2014		Analysis Date: 8/29/2014		SeqNo: 608538		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.7	0.20	2.500	0	107	65.8	162			
Surr: DNOP	0.27		0.2500		107	75.2	161			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408E58

10-Sep-14

Client: Western Refining Southwest, Inc.

Project: Collection Wells 8-27-14

Sample ID	5ML RB	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID: R20897			RunNo: 20897					
Prep Date:		Analysis Date: 8/29/2014			SeqNo: 608571		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	20		20.00		100	70.9	130			

Sample ID	2.5UG GRO LCS	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID: R20897			RunNo: 20897					
Prep Date:		Analysis Date: 8/29/2014			SeqNo: 608572		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	120			
Surr: BFB	19		20.00		95.4	70.9	130			

Sample ID	1408E58-002AMS		SampType: MS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	CW-25+95		Batch ID: R20897		RunNo: 20897					
Prep Date:			Analysis Date: 8/29/2014		SeqNo: 608580		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	3.5	0.25	2.500	0.7990	108	70.4	127			
Surr: BFB	120		100.0		124	70.9	130			

Sample ID	1408E58-002AMSD		SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	CW-25+95		Batch ID: R20897		RunNo: 20897					
Prep Date:			Analysis Date: 8/29/2014		SeqNo: 608581		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	3.5	0.25	2.500	0.7990	108	70.4	127	0.515	20	
Surr: BFB	110		100.0		112	70.9	130	0	0	

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408E58

10-Sep-14

Client: Western Refining Southwest, Inc.

Project: Collection Wells 8-27-14

Sample ID	5mL-rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R20971	RunNo:	20971					
Prep Date:		Analysis Date:	9/3/2014	SeqNo:	610448	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
mp-Xylenes	ND	1.0								
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								
o-Xylene	ND	1.0								
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	9.3		10.00		93.5	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	8.5		10.00		85.4	70	130			

Sample ID	100ng lcs3	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	R20971	RunNo:	20971					
Prep Date:		Analysis Date:	9/3/2014	SeqNo:	610449	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.4	70	130			
Toluene	19	1.0	20.00	0	92.8	80	120			
Surr: 1,2-Dichloroethane-d4	9.0		10.00		89.8	70	130			
Surr: 4-Bromofluorobenzene	9.0		10.00		90.2	70	130			
Surr: Dibromofluoromethane	8.8		10.00		87.6	70	130			
Surr: Toluene-d8	9.1		10.00		91.3	70	130			

Sample ID	5mL-rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R20995	RunNo:	20995					
Prep Date:		Analysis Date:	9/4/2014	SeqNo:	611315	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								
mp-Xylenes	ND	1.0								
o-Xylene	ND	1.0								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.0	70	130			
Surr: 4-Bromofluorobenzene	9.2		10.00		91.7	70	130			
Surr: Dibromofluoromethane	9.3		10.00		92.9	70	130			
Surr: Toluene-d8	8.9		10.00		89.3	70	130			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408E58

10-Sep-14

Client: Western Refining Southwest, Inc.

Project: Collection Wells 8-27-14

Sample ID	100ng lcs2	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	R20995	RunNo:	20995					
Prep Date:		Analysis Date:	9/4/2014	SeqNo:	611316	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	109	70	130			
Toluene	20	1.0	20.00	0	100	80	120			
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.6		10.00		96.4	70	130			
Surr: Toluene-d8	8.9		10.00		89.1	70	130			

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 greater than 2.
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1408E58

RcptNo: 1

Received by/date:

AT MG-08/28/14

Logged By: Anne Thorne

8/28/2014 8:15:00 AM

Anne Thorne

Completed By: Anne Thorne

8/28/2014

Anne Thorne

Reviewed By:

[Signature]

08/28/14

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° 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?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

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.)

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 °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.4	Good	Yes			



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

September 10, 2014

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: Observation Wells 8-27-14

OrderNo.: 1408E55

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 8/28/2014 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 1408E55

Date Reported: 9/10/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW-22+00

Project: Observation Wells 8-27-14

Collection Date: 8/27/2014 10:10:00 AM

Lab ID: 1408E55-001

Matrix: AQUEOUS

Received Date: 8/28/2014 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/29/2014 10:32:36 PM	15015
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/29/2014 10:32:36 PM	15015
Surr: DNOP	114	75.2-161		%REC	1	8/29/2014 10:32:36 PM	15015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/29/2014 2:32:02 PM	R20897
Surr: BFB	100	70.9-130		%REC	1	8/29/2014 2:32:02 PM	R20897
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Benzene	ND	1.0		µg/L	1	9/3/2014 11:10:36 PM	R20971
Toluene	ND	1.0		µg/L	1	9/3/2014 11:10:36 PM	R20971
Ethylbenzene	ND	1.0		µg/L	1	9/3/2014 11:10:36 PM	R20971
Methyl tert-butyl ether (MTBE)	1.7	1.0		µg/L	1	9/3/2014 11:10:36 PM	R20971
Xylenes, Total	ND	1.5		µg/L	1	9/3/2014 11:10:36 PM	R20971
Surr: 1,2-Dichloroethane-d4	95.8	70-130		%REC	1	9/3/2014 11:10:36 PM	R20971
Surr: 4-Bromofluorobenzene	98.3	70-130		%REC	1	9/3/2014 11:10:36 PM	R20971
Surr: Dibromofluoromethane	96.7	70-130		%REC	1	9/3/2014 11:10:36 PM	R20971
Surr: Toluene-d8	97.2	70-130		%REC	1	9/3/2014 11:10:36 PM	R20971

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1408E55

Date Reported: 9/10/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW-23+10

Project: Observation Wells 8-27-14

Collection Date: 8/27/2014 10:20:00 AM

Lab ID: 1408E55-002

Matrix: AQUEOUS

Received Date: 8/28/2014 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	2.1	0.20		mg/L	1	8/29/2014 11:36:35 PM	15015
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/29/2014 11:36:35 PM	15015
Surr: DNOP	115	75.2-161		%REC	1	8/29/2014 11:36:35 PM	15015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.16	0.050		mg/L	1	8/29/2014 3:02:10 PM	R20897
Surr: BFB	118	70.9-130		%REC	1	8/29/2014 3:02:10 PM	R20897
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Benzene	ND	1.0		µg/L	1	9/3/2014 11:40:18 PM	R20971
Toluene	ND	1.0		µg/L	1	9/3/2014 11:40:18 PM	R20971
Ethylbenzene	ND	1.0		µg/L	1	9/3/2014 11:40:18 PM	R20971
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/3/2014 11:40:18 PM	R20971
Xylenes, Total	ND	1.5		µg/L	1	9/3/2014 11:40:18 PM	R20971
Surr: 1,2-Dichloroethane-d4	106	70-130		%REC	1	9/3/2014 11:40:18 PM	R20971
Surr: 4-Bromofluorobenzene	94.7	70-130		%REC	1	9/3/2014 11:40:18 PM	R20971
Surr: Dibromofluoromethane	102	70-130		%REC	1	9/3/2014 11:40:18 PM	R20971
Surr: Toluene-d8	94.1	70-130		%REC	1	9/3/2014 11:40:18 PM	R20971

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1408E55

Date Reported: 9/10/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW-23+90

Project: Observation Wells 8-27-14

Collection Date: 8/27/2014 10:40:00 AM

Lab ID: 1408E55-003

Matrix: AQUEOUS

Received Date: 8/28/2014 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/29/2014 11:57:55 PM	15015
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/29/2014 11:57:55 PM	15015
Surr: DNOP	114	75.2-161		%REC	1	8/29/2014 11:57:55 PM	15015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/29/2014 3:32:23 PM	R20897
Surr: BFB	110	70.9-130		%REC	1	8/29/2014 3:32:23 PM	R20897
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Benzene	ND	1.0		µg/L	1	9/4/2014 12:10:01 AM	R20971
Toluene	ND	1.0		µg/L	1	9/4/2014 12:10:01 AM	R20971
Ethylbenzene	ND	1.0		µg/L	1	9/4/2014 12:10:01 AM	R20971
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/4/2014 12:10:01 AM	R20971
Xylenes, Total	ND	1.5		µg/L	1	9/4/2014 12:10:01 AM	R20971
Surr: 1,2-Dichloroethane-d4	110	70-130		%REC	1	9/4/2014 12:10:01 AM	R20971
Surr: 4-Bromofluorobenzene	93.8	70-130		%REC	1	9/4/2014 12:10:01 AM	R20971
Surr: Dibromofluoromethane	102	70-130		%REC	1	9/4/2014 12:10:01 AM	R20971
Surr: Toluene-d8	97.4	70-130		%REC	1	9/4/2014 12:10:01 AM	R20971

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1408E55

Date Reported: 9/10/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW-25+70

Project: Observation Wells 8-27-14

Collection Date: 8/27/2014 11:00:00 AM

Lab ID: 1408E55-004

Matrix: AQUEOUS

Received Date: 8/28/2014 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/30/2014 12:19:18 AM	15015
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/30/2014 12:19:18 AM	15015
Surr: DNOP	109	75.2-161		%REC	1	8/30/2014 12:19:18 AM	15015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.14	0.050		mg/L	1	8/29/2014 4:02:35 PM	R20897
Surr: BFB	115	70.9-130		%REC	1	8/29/2014 4:02:35 PM	R20897
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Benzene	ND	1.0		µg/L	1	9/4/2014 12:39:41 AM	R20971
Toluene	ND	1.0		µg/L	1	9/4/2014 12:39:41 AM	R20971
Ethylbenzene	ND	1.0		µg/L	1	9/4/2014 12:39:41 AM	R20971
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/4/2014 12:39:41 AM	R20971
Xylenes, Total	ND	1.5		µg/L	1	9/4/2014 12:39:41 AM	R20971
Surr: 1,2-Dichloroethane-d4	98.3	70-130		%REC	1	9/4/2014 12:39:41 AM	R20971
Surr: 4-Bromofluorobenzene	99.2	70-130		%REC	1	9/4/2014 12:39:41 AM	R20971
Surr: Dibromofluoromethane	96.5	70-130		%REC	1	9/4/2014 12:39:41 AM	R20971
Surr: Toluene-d8	90.7	70-130		%REC	1	9/4/2014 12:39:41 AM	R20971

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 4 of 8
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1408E55

Date Reported: 9/10/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW-25+70D

Project: Observation Wells 8-27-14

Collection Date: 8/27/2014 11:00:00 AM

Lab ID: 1408E55-005

Matrix: AQUEOUS

Received Date: 8/28/2014 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/30/2014 12:40:36 AM	15015
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/30/2014 12:40:36 AM	15015
Surr: DNOP	128	75.2-161		%REC	1	8/30/2014 12:40:36 AM	15015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.14	0.050		mg/L	1	8/29/2014 4:32:39 PM	R20897
Surr: BFB	116	70.9-130		%REC	1	8/29/2014 4:32:39 PM	R20897
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Benzene	ND	1.0		µg/L	1	9/4/2014 1:09:20 AM	R20971
Toluene	ND	1.0		µg/L	1	9/4/2014 1:09:20 AM	R20971
Ethylbenzene	ND	1.0		µg/L	1	9/4/2014 1:09:20 AM	R20971
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/4/2014 1:09:20 AM	R20971
Xylenes, Total	ND	1.5		µg/L	1	9/4/2014 1:09:20 AM	R20971
Surr: 1,2-Dichloroethane-d4	105	70-130		%REC	1	9/4/2014 1:09:20 AM	R20971
Surr: 4-Bromofluorobenzene	101	70-130		%REC	1	9/4/2014 1:09:20 AM	R20971
Surr: Dibromofluoromethane	103	70-130		%REC	1	9/4/2014 1:09:20 AM	R20971
Surr: Toluene-d8	89.5	70-130		%REC	1	9/4/2014 1:09:20 AM	R20971

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
	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 greater than 2.
	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#: 1408E55

10-Sep-14

Client: Western Refining Southwest, Inc.

Project: Observation Wells 8-27-14

Sample ID	MB-15015		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW		Batch ID: 15015		RunNo: 20880					
Prep Date:	8/28/2014		Analysis Date: 8/29/2014		SeqNo: 608537		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.54		0.5000		108	75.2	161			

Sample ID	LCS-15015		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 15015		RunNo: 20880					
Prep Date:	8/28/2014		Analysis Date: 8/29/2014		SeqNo: 608538		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.7	0.20	2.500	0	107	65.8	162			
Surr: DNOP	0.27		0.2500		107	75.2	161			

Sample ID	1408E55-001BMS		SampType: MS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	OW-22+00		Batch ID: 15015		RunNo: 20880					
Prep Date:	8/28/2014		Analysis Date: 8/29/2014		SeqNo: 608539		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.7	0.20	2.500	0	109	64.4	178			
Surr: DNOP	0.27		0.2500		108	75.2	161			

Sample ID	1408E55-001BMSD		SampType: MSD		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	OW-22+00		Batch ID: 15015		RunNo: 20880					
Prep Date:	8/28/2014		Analysis Date: 8/29/2014		SeqNo: 608540		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	3.0	0.20	2.500	0	118	64.4	178	7.79	20	
Surr: DNOP	0.28		0.2500		114	75.2	161	0	0	

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 greater than 2.
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#: 1408E55

10-Sep-14

Client: Western Refining Southwest, Inc.

Project: Observation Wells 8-27-14

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R20897	RunNo:	20897					
Prep Date:		Analysis Date:	8/29/2014	SeqNo:	608571	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	20		20.00		100	70.9	130			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R20897	RunNo:	20897					
Prep Date:		Analysis Date:	8/29/2014	SeqNo:	608572	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	120			
Surr: BFB	19		20.00		95.4	70.9	130			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408E55

10-Sep-14

Client: Western Refining Southwest, Inc.

Project: Observation Wells 8-27-14

Sample ID	5mL-rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R20971	RunNo:	20971					
Prep Date:		Analysis Date:	9/3/2014	SeqNo:	610448	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
mp-Xylenes	ND	1.0								
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								
o-Xylene	ND	1.0								
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	9.3		10.00		93.5	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	8.5		10.00		85.4	70	130			

Sample ID	100ng lcs3	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	R20971	RunNo:	20971					
Prep Date:		Analysis Date:	9/3/2014	SeqNo:	610449	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.4	70	130			
Toluene	19	1.0	20.00	0	92.8	80	120			
Surr: 1,2-Dichloroethane-d4	9.0		10.00		89.8	70	130			
Surr: 4-Bromofluorobenzene	9.0		10.00		90.2	70	130			
Surr: Dibromofluoromethane	8.8		10.00		87.6	70	130			
Surr: Toluene-d8	9.1		10.00		91.3	70	130			

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 greater than 2.
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1408E55

RcptNo: 1

Received by/date:

MG 08/28/14

Logged By: Anne Thorne

8/28/2014 8:15:00 AM

Anne Thorne

Completed By: Anne Thorne

8/28/2014

Anne Thorne

Reviewed By:

[Signature]

08/28/14

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° 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:

By Whom:

Regarding:

Client Instructions:

Date

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.4	Good	Yes			

TABLE 2
Analytical Methods and Target Analytes

VOCs (EPA Method 8260B) ⁽¹⁾
- Target List
Benzene
Toluene
Ethylbenzene
Xylenes
Methyl tert butyl ether (MTBE)
SVOCs - (EPA Method 8270)
- Method List
TPH-GRO (EPA Method 8015B)
- Gasoline Range Organics
TPH-DRO (EPA Method 8015B)
- Diesel Range Organics
- Motor Oil Range Organics
Total Carbon Dioxide (Laboratory Calculated)
- Dissolved CO ₂
Specific Conductivity (EPA Method 120.1 or field measurement)
- Specific conductance
TDS (EPA Method 160.1 or field measurement)
- Total dissolved solids
General Chemistry - Anions (EPA Method 300.0)
Fluoride
Chloride
Bromide
Nitrogen, Nitrite (as N)
Nitrogen, Nitrate (as N)
Phosphorous, Orthophosphate (As P)
Sulfate
General Chemistry - Alkalinity (EPA Method 310.1)
Alkalinity, Total
Carbonate
Bicarbonate

Total Recoverable Metals (EPA Method 6010B/7470)
- Target List (not applicable to River Terrace Sampling Events)
Arsenic
Barium
Cadmium
Chromium
Lead
Mercury
Selenium
Silver
- Target List (for River Terrace Sampling Events Only)
Lead
Mercury (DW-1 ONLY)
Dissolved Metals (EPA Method 6010B / 7470)
- Target List (for Refinery Complex, Outfalls, and River)
Arsenic
Barium
Cadmium
Calcium
Chromium
Copper
Iron
Lead
Magnesium
Manganese
Mercury
Potassium
Selenium
Silver
Sodium
Uranium
Zinc

TPH = total petroleum hydrocarbons
GRO = gasoline range organics
VOCs = volatile organic compounds
DRO = diesel range organics
TDS = total dissolved solids

NOTES:

- (1) VOCs Target List for River Terrace samples are analyzed by EPA Method 8021B per NMED's letter Approval with Direction dated June 16, 2009.
- (2) Target List for San Juan River Terrace Monitoring Wells and Piezometer Wells only, per the River Terrace Bioventing System Monitoring Plan.



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

September 10, 2014

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: Observation Wells 8-27-14

OrderNo.: 1408E60

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 8/28/2014 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 **1408E60**

Date Reported: **9/10/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW-0+60

Project: Observation Wells 8-27-14

Collection Date: 8/27/2014 9:00:00 AM

Lab ID: 1408E60-001

Matrix: AQUEOUS

Received Date: 8/28/2014 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	1.5	0.20		mg/L	1	8/30/2014 2:05:58 AM	15015
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/30/2014 2:05:58 AM	15015
Surr: DNOP	106	75.2-161		%REC	1	8/30/2014 2:05:58 AM	15015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.23	0.050		mg/L	1	8/29/2014 7:03:49 PM	R20897
Surr: BFB	202	70.9-130	S	%REC	1	8/29/2014 7:03:49 PM	R20897
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Benzene	ND	1.0		µg/L	1	9/5/2014 7:16:31 PM	R21044
Toluene	ND	1.0		µg/L	1	9/5/2014 7:16:31 PM	R21044
Ethylbenzene	ND	1.0		µg/L	1	9/5/2014 7:16:31 PM	R21044
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/5/2014 7:16:31 PM	R21044
Xylenes, Total	ND	1.5		µg/L	1	9/5/2014 7:16:31 PM	R21044
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	9/5/2014 7:16:31 PM	R21044
Surr: 4-Bromofluorobenzene	96.7	70-130		%REC	1	9/5/2014 7:16:31 PM	R21044
Surr: Dibromofluoromethane	95.8	70-130		%REC	1	9/5/2014 7:16:31 PM	R21044
Surr: Toluene-d8	82.9	70-130		%REC	1	9/5/2014 7:16:31 PM	R21044

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1408E60

Date Reported: 9/10/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW-11+15

Project: Observation Wells 8-27-14

Collection Date: 8/27/2014 9:40:00 AM

Lab ID: 1408E60-002

Matrix: AQUEOUS

Received Date: 8/28/2014 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	34	0.20		mg/L	1	8/30/2014 2:27:19 AM	15015
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/30/2014 2:27:19 AM	15015
Surr: DNOP	120	75.2-161		%REC	1	8/30/2014 2:27:19 AM	15015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	3.7	0.50		mg/L	10	8/29/2014 7:33:56 PM	R20897
Surr: BFB	124	70.9-130		%REC	10	8/29/2014 7:33:56 PM	R20897
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Benzene	840	100		µg/L	100	9/8/2014 12:04:54 PM	R21080
Toluene	ND	10		µg/L	10	9/5/2014 7:46:14 PM	R21044
Ethylbenzene	ND	10		µg/L	10	9/5/2014 7:46:14 PM	R21044
Methyl tert-butyl ether (MTBE)	870	10		µg/L	10	9/5/2014 7:46:14 PM	R21044
Xylenes, Total	ND	15		µg/L	10	9/5/2014 7:46:14 PM	R21044
Surr: 1,2-Dichloroethane-d4	96.2	70-130		%REC	10	9/5/2014 7:46:14 PM	R21044
Surr: 4-Bromofluorobenzene	98.2	70-130		%REC	10	9/5/2014 7:46:14 PM	R21044
Surr: Dibromofluoromethane	90.1	70-130		%REC	10	9/5/2014 7:46:14 PM	R21044
Surr: Toluene-d8	94.3	70-130		%REC	10	9/5/2014 7:46:14 PM	R21044

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1408E60

Date Reported: 9/10/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW-16+60

Project: Observation Wells 8-27-14

Collection Date: 8/27/2014 10:50:00 AM

Lab ID: 1408E60-003

Matrix: AQUEOUS

Received Date: 8/28/2014 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	35	0.20		mg/L	1	8/30/2014 2:48:38 AM	15015
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/30/2014 2:48:38 AM	15015
Surr: DNOP	118	75.2-161		%REC	1	8/30/2014 2:48:38 AM	15015
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	2.7	0.25		mg/L	5	8/29/2014 8:04:09 PM	R20897
Surr: BFB	347	70.9-130	S	%REC	5	8/29/2014 8:04:09 PM	R20897
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Benzene	ND	5.0		µg/L	5	9/8/2014 12:34:33 PM	R21080
Toluene	ND	5.0		µg/L	5	9/8/2014 12:34:33 PM	R21080
Ethylbenzene	5.6	5.0		µg/L	5	9/8/2014 12:34:33 PM	R21080
Methyl tert-butyl ether (MTBE)	730	5.0		µg/L	5	9/8/2014 12:34:33 PM	R21080
Xylenes, Total	ND	7.5		µg/L	5	9/8/2014 12:34:33 PM	R21080
Surr: 1,2-Dichloroethane-d4	104	70-130		%REC	5	9/8/2014 12:34:33 PM	R21080
Surr: 4-Bromofluorobenzene	98.1	70-130		%REC	5	9/8/2014 12:34:33 PM	R21080
Surr: Dibromofluoromethane	96.6	70-130		%REC	5	9/8/2014 12:34:33 PM	R21080
Surr: Toluene-d8	91.1	70-130		%REC	5	9/8/2014 12:34:33 PM	R21080

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1408E60

Date Reported: 9/10/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Rinsate

Project: Observation Wells 8-27-14

Collection Date: 8/27/2014 1:00:00 PM

Lab ID: 1408E60-004

Matrix: AQUEOUS

Received Date: 8/28/2014 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: KJH	
Benzene	ND	1.0		µg/L	1	9/5/2014 8:45:36 PM	R21044
Toluene	ND	1.0		µg/L	1	9/5/2014 8:45:36 PM	R21044
Ethylbenzene	ND	1.0		µg/L	1	9/5/2014 8:45:36 PM	R21044
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/5/2014 8:45:36 PM	R21044
Xylenes, Total	ND	1.5		µg/L	1	9/5/2014 8:45:36 PM	R21044
Surr: 1,2-Dichloroethane-d4	93.7	70-130		%REC	1	9/5/2014 8:45:36 PM	R21044
Surr: 4-Bromofluorobenzene	89.4	70-130		%REC	1	9/5/2014 8:45:36 PM	R21044
Surr: Dibromofluoromethane	88.9	70-130		%REC	1	9/5/2014 8:45:36 PM	R21044
Surr: Toluene-d8	93.2	70-130		%REC	1	9/5/2014 8:45:36 PM	R21044

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 4 of 9
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1408E60

Date Reported: 9/10/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Trip Blank

Project: Observation Wells 8-27-14

Collection Date:

Lab ID: 1408E60-005

Matrix: AQUEOUS

Received Date: 8/28/2014 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: KJH	
Benzene	ND	1.0		µg/L	1	9/5/2014 9:15:16 PM	R21044
Toluene	ND	1.0		µg/L	1	9/5/2014 9:15:16 PM	R21044
Ethylbenzene	ND	1.0		µg/L	1	9/5/2014 9:15:16 PM	R21044
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/5/2014 9:15:16 PM	R21044
Xylenes, Total	ND	1.5		µg/L	1	9/5/2014 9:15:16 PM	R21044
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	1	9/5/2014 9:15:16 PM	R21044
Surr: 4-Bromofluorobenzene	99.1	70-130		%REC	1	9/5/2014 9:15:16 PM	R21044
Surr: Dibromofluoromethane	94.0	70-130		%REC	1	9/5/2014 9:15:16 PM	R21044
Surr: Toluene-d8	91.1	70-130		%REC	1	9/5/2014 9:15:16 PM	R21044

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
	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 greater than 2.
	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#: 1408E60

10-Sep-14

Client: Western Refining Southwest, Inc.

Project: Observation Wells 8-27-14

Sample ID	MB-15015	SampType: MBLK			TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW	Batch ID: 15015			RunNo: 20880					
Prep Date:	8/28/2014	Analysis Date: 8/29/2014			SeqNo: 608537		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.54		0.5000		108	75.2	161			

Sample ID	LCS-15015		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 15015		RunNo: 20880					
Prep Date:	8/28/2014		Analysis Date: 8/29/2014		SeqNo: 608538		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.7	0.20	2.500	0	107	65.8	162			
Surr: DNOP	0.27		0.2500		107	75.2	161			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408E60

10-Sep-14

Client: Western Refining Southwest, Inc.

Project: Observation Wells 8-27-14

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R20897	RunNo:	20897					
Prep Date:		Analysis Date:	8/29/2014	SeqNo:	608571	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	20		20.00		100	70.9	130			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R20897	RunNo:	20897					
Prep Date:		Analysis Date:	8/29/2014	SeqNo:	608572	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	120			
Surr: BFB	19		20.00		95.4	70.9	130			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408E60

10-Sep-14

Client: Western Refining Southwest, Inc.

Project: Observation Wells 8-27-14

Sample ID b3	SampType: MBLK				TestCode: EPA Method 8260: Volatiles Short List					
Client ID: PBW	Batch ID: R21044				RunNo: 21044					
Prep Date:	Analysis Date: 9/5/2014				SeqNo: 612441	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								
mp-Xylenes	ND	1.0								
o-Xylene	ND	1.0								
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.3	70	130			
Surr: 4-Bromofluorobenzene	9.1		10.00		91.4	70	130			
Surr: Dibromofluoromethane	8.9		10.00		88.5	70	130			
Surr: Toluene-d8	9.2		10.00		91.8	70	130			

Sample ID 100ng lcs	SampType: LCS				TestCode: EPA Method 8260: Volatiles Short List					
Client ID: LCSW	Batch ID: R21044				RunNo: 21044					
Prep Date:	Analysis Date: 9/5/2014				SeqNo: 612445	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	101	80	120			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		96.5	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		96.8	70	130			
Surr: Dibromofluoromethane	8.9		10.00		88.8	70	130			
Surr: Toluene-d8	9.0		10.00		90.4	70	130			

Sample ID b4	SampType: MBLK				TestCode: EPA Method 8260: Volatiles Short List					
Client ID: PBW	Batch ID: R21080				RunNo: 21080					
Prep Date:	Analysis Date: 9/8/2014				SeqNo: 613381	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								
mp-Xylenes	ND	1.0								
o-Xylene	ND	1.0								
Surr: 1,2-Dichloroethane-d4	8.8		10.00		87.5	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.0	70	130			
Surr: Dibromofluoromethane	8.5		10.00		84.6	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

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 greater than 2.
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#: 1408E60

10-Sep-14

Client: Western Refining Southwest, Inc.

Project: Observation Wells 8-27-14

Sample ID	100ng lcs2	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	R21080	RunNo:	21080					
Prep Date:		Analysis Date:	9/8/2014	SeqNo:	613382	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.9	70	130			
Toluene	20	1.0	20.00	0	99.1	80	120			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	9.1		10.00		90.6	70	130			
Surr: Toluene-d8	9.3		10.00		93.4	70	130			

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 greater than 2.
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

RcptNo: 1

MG 08/28/14

Anne Hume

Anne Thorne

~~Phone~~

08/28/14

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)

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	3.4	Good	Yes			

TABLE 2
Analytical Methods and Target Analytes

VOCs (EPA Method 8260B) ⁽¹⁾
- Target List
Benzene
Toluene
Ethylbenzene
Xylenes
Methyl tert butyl ether (MTBE)
SVOCs - (EPA Method 8270)
- Method List
TPH-GRO (EPA Method 8015B)
- Gasoline Range Organics
TPH-DRO (EPA Method 8015B)
- Diesel Range Organics
- Motor Oil Range Organics
Total Carbon Dioxide (Laboratory Calculated)
- Dissolved CO ₂
Specific Conductivity (EPA Method 120.1 or field measurement)
- Specific conductance
TDS (EPA Method 160.1 or field measurement)
- Total dissolved solids
General Chemistry - Anions (EPA Method 300.0)
Fluoride
Chloride
Bromide
Nitrogen, Nitrite (as N)
Nitrogen, Nitrate (as N)
Phosphorous, Orthophosphate (As P)
Sulfate
General Chemistry - Alkalinity (EPA Method 310.1)
Alkalinity, Total
Carbonate
Bicarbonate

Total Recoverable Metals (EPA Method 6010B/7470)
- Target List (not applicable to River Terrace Sampling Events)
Arsenic
Barium
Cadmium
Chromium
Lead
Mercury (DW-1 ONLY)
- Target List (for River Terrace Sampling Events Only)
Lead
Mercury (DW-1 ONLY)
Dissolved Metals (EPA Method 6010B / 7470)
- Target List (for Refinery Complex, Outfalls, and River)
Arsenic
Barium
Cadmium
Calcium
Chromium
Copper
Iron
Lead
Magnesium
Manganese
Mercury
Potassium
Selenium
Silver
Sodium
Uranium
Zinc

TPH = total petroleum hydrocarbons
GRO = gasoline range organics
VOCs = volatile organic compounds
DRO = diesel range organics
TDS = total dissolved solids

NOTES:

- (1) VOCs Target List for River Terrace samples are analyzed by EPA Method 8021B per NMED's letter Approval with Direction dated June 16, 2009.
- (2) Target List for San Juan River Terrace Monitoring Wells and Piezometer Wells only, per the River Terrace Bioventing System Monitoring Plan.



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

October 09, 2014

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: San Juan River 8-28-14

OrderNo.: 1408F37

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 6 sample(s) on 8/29/2014 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', with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical ReportLab Order: **1408F37**Date Reported: **10/9/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River 8-28-14
Lab ID: 1408F37-001A

Client Sample ID: Upstream
Collection Date: 8/28/2014 8:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Benzene	ND	1.0		µg/L	1	9/6/2014 8:07:16 AM	R21044
Toluene	ND	1.0		µg/L	1	9/6/2014 8:07:16 AM	R21044
Ethylbenzene	ND	1.0		µg/L	1	9/6/2014 8:07:16 AM	R21044
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/6/2014 8:07:16 AM	R21044
Xylenes, Total	ND	2.0		µg/L	1	9/6/2014 8:07:16 AM	R21044
Surr: 1,2-Dichloroethane-d4	105	70-130		%REC	1	9/6/2014 8:07:16 AM	R21044
Surr: 4-Bromofluorobenzene	99.5	70-130		%REC	1	9/6/2014 8:07:16 AM	R21044
Surr: Dibromofluoromethane	98.0	70-130		%REC	1	9/6/2014 8:07:16 AM	R21044
Surr: Toluene-d8	85.8	70-130		%REC	1	9/6/2014 8:07:16 AM	R21044

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408F37

Date Reported: 10/9/2014

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River 8-28-14
Lab ID: 1408F37-001B

Client Sample ID: Upstream
Collection Date: 8/28/2014 8:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	9/2/2014 1:27:49 PM	R20946
Surr: BFB	103	70.9-130		%REC	1	9/2/2014 1:27:49 PM	R20946

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408F37**Date Reported: **10/9/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** Upstream**Project:** San Juan River 8-28-14**Collection Date:** 8/28/2014 8:00:00 AM**Lab ID:** 1408F37-001C**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/30/2014 3:10:03 AM	15015
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/30/2014 3:10:03 AM	15015
Surr: DNOP	121	75.2-161		%REC	1	8/30/2014 3:10:03 AM	15015

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408F37**Date Reported: **10/9/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River 8-28-14
Lab ID: 1408F37-001D

Client Sample ID: Upstream
Collection Date: 8/28/2014 8:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.18	0.10		mg/L	1	9/2/2014 12:23:53 PM	R20961
Chloride	3.3	0.50		mg/L	1	9/2/2014 12:23:53 PM	R20961
Bromide	ND	0.10		mg/L	1	9/2/2014 12:23:53 PM	R20961
Phosphorus, Orthophosphate (As P _i)	ND	0.50	H	mg/L	1	9/2/2014 12:23:53 PM	R20961
Sulfate	66	10		mg/L	20	9/2/2014 1:01:07 PM	R20961
Nitrate+Nitrite as N	ND	1.0		mg/L	5	9/3/2014 4:50:43 AM	R20957
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	350	0.010		µmhos/cm	1	9/2/2014 3:26:45 PM	R20962
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	96	20		mg/L CaCO ₃	1	9/2/2014 3:26:45 PM	R20962
Carbonate (As CaCO ₃)	ND	2.0		mg/L CaCO ₃	1	9/2/2014 3:26:45 PM	R20962
Total Alkalinity (as CaCO ₃)	96	20		mg/L CaCO ₃	1	9/2/2014 3:26:45 PM	R20962
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	225	100		mg/L	1	9/5/2014 10:21:00 AM	15087

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 4 of 40

Analytical ReportLab Order: **1408F37**Date Reported: **10/9/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** Upstream**Project:** San Juan River 8-28-14**Collection Date:** 8/28/2014 8:00:00 AM**Lab ID:** 1408F37-001E**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	9/10/2014 1:49:40 PM	15178
Barium	0.18	0.0020		mg/L	1	9/10/2014 1:49:40 PM	15178
Cadmium	ND	0.0020		mg/L	1	9/10/2014 1:49:40 PM	15178
Chromium	0.0074	0.0060		mg/L	1	9/10/2014 1:49:40 PM	15178
Lead	ND	0.0050		mg/L	1	9/10/2014 1:49:40 PM	15178
Selenium	ND	0.050		mg/L	1	9/10/2014 1:49:40 PM	15178
Silver	ND	0.0050		mg/L	1	9/10/2014 1:49:40 PM	15178
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	9/9/2014 10:52:10 AM	15169

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 5 of 40

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408F37

Date Reported: 10/9/2014

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River 8-28-14
Lab ID: 1408F37-001F

Client Sample ID: Upstream
Collection Date: 8/28/2014 8:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	0.079	0.0020		mg/L	1	8/29/2014 4:45:08 PM	R20915
Cadmium	ND	0.0020		mg/L	1	8/29/2014 4:45:08 PM	R20915
Calcium	39	1.0		mg/L	1	8/29/2014 4:45:08 PM	R20915
Chromium	ND	0.0060		mg/L	1	8/29/2014 4:45:08 PM	R20915
Copper	ND	0.0060		mg/L	1	8/29/2014 4:45:08 PM	R20915
Iron	0.34	0.020	*	mg/L	1	8/29/2014 4:45:08 PM	R20915
Magnesium	6.3	1.0		mg/L	1	8/29/2014 4:45:08 PM	R20915
Manganese	0.028	0.0020		mg/L	1	9/2/2014 4:57:45 PM	R20947
Potassium	2.0	1.0		mg/L	1	8/29/2014 4:45:08 PM	R20915
Silver	ND	0.0050		mg/L	1	8/29/2014 4:45:08 PM	R20915
Sodium	22	1.0		mg/L	1	8/29/2014 4:45:08 PM	R20915
Zinc	ND	0.010		mg/L	1	8/29/2014 4:45:08 PM	R20915
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Arsenic	0.0011	0.0010		mg/L	1	9/8/2014 6:25:05 PM	R21084
Lead	ND	0.0010		mg/L	1	9/8/2014 6:25:05 PM	R21084
Selenium	ND	0.0010		mg/L	1	9/8/2014 6:25:05 PM	R21084
Uranium	ND	0.0010		mg/L	1	9/8/2014 6:25:05 PM	R21084
EPA METHOD 245.1: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	9/10/2014 9:59:41 AM	15200

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408F37

Date Reported: 10/9/2014

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River 8-28-14
Lab ID: 1408F37-002A

Client Sample ID: Downstream
Collection Date: 8/28/2014 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Benzene	ND	1.0		µg/L	1	9/6/2014 8:36:53 AM	R21044
Toluene	ND	1.0		µg/L	1	9/6/2014 8:36:53 AM	R21044
Ethylbenzene	ND	1.0		µg/L	1	9/6/2014 8:36:53 AM	R21044
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/6/2014 8:36:53 AM	R21044
Xylenes, Total	ND	2.0		µg/L	1	9/6/2014 8:36:53 AM	R21044
Surr: 1,2-Dichloroethane-d4	97.4	70-130		%REC	1	9/6/2014 8:36:53 AM	R21044
Surr: 4-Bromofluorobenzene	96.8	70-130		%REC	1	9/6/2014 8:36:53 AM	R21044
Surr: Dibromofluoromethane	94.0	70-130		%REC	1	9/6/2014 8:36:53 AM	R21044
Surr: Toluene-d8	89.7	70-130		%REC	1	9/6/2014 8:36:53 AM	R21044

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408F37

Date Reported: 10/9/2014

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River 8-28-14
Lab ID: 1408F37-002B

Client Sample ID: Downstream
Collection Date: 8/28/2014 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	9/2/2014 1:58:02 PM	R20946
Surr: BFB	105	70.9-130		%REC	1	9/2/2014 1:58:02 PM	R20946

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408F37

Date Reported: 10/9/2014

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River 8-28-14
Lab ID: 1408F37-002C

Client Sample ID: Downstream
Collection Date: 8/28/2014 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/30/2014 3:31:27 AM	15015
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/30/2014 3:31:27 AM	15015
Surr: DNOP	119	75.2-161		%REC	1	8/30/2014 3:31:27 AM	15015

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408F37**Date Reported: **10/9/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River 8-28-14
Lab ID: 1408F37-002D

Client Sample ID: Downstream
Collection Date: 8/28/2014 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.18	0.10		mg/L	1	9/2/2014 1:13:32 PM	R20961
Chloride	3.3	0.50		mg/L	1	9/2/2014 1:13:32 PM	R20961
Bromide	ND	0.10		mg/L	1	9/2/2014 1:13:32 PM	R20961
Phosphorus, Orthophosphate (As P _i)	ND	0.50		mg/L	1	9/2/2014 1:13:32 PM	R20961
Sulfate	60	10		mg/L	20	9/2/2014 1:25:57 PM	R20961
Nitrate+Nitrite as N	ND	1.0		mg/L	5	9/3/2014 5:03:07 AM	R20957
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	340	0.010		µmhos/cm	1	9/2/2014 3:34:50 PM	R20962
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	96	20		mg/L CaCO ₃	1	9/2/2014 3:34:50 PM	R20962
Carbonate (As CaCO ₃)	ND	2.0		mg/L CaCO ₃	1	9/2/2014 3:34:50 PM	R20962
Total Alkalinity (as CaCO ₃)	96	20		mg/L CaCO ₃	1	9/2/2014 3:34:50 PM	R20962
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	220	100		mg/L	1	9/5/2014 10:21:00 AM	15087

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408F37**Date Reported: **10/9/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** Downstream**Project:** San Juan River 8-28-14**Collection Date:** 8/28/2014 10:00:00 AM**Lab ID:** 1408F37-002E**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	9/10/2014 1:51:24 PM	15178
Barium	0.17	0.0020		mg/L	1	9/10/2014 1:51:24 PM	15178
Cadmium	ND	0.0020		mg/L	1	9/10/2014 1:51:24 PM	15178
Chromium	0.0060	0.0060		mg/L	1	9/10/2014 1:51:24 PM	15178
Lead	ND	0.0050		mg/L	1	9/10/2014 1:51:24 PM	15178
Selenium	ND	0.050		mg/L	1	9/10/2014 1:51:24 PM	15178
Silver	ND	0.0050		mg/L	1	9/10/2014 1:51:24 PM	15178
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	9/9/2014 10:54:00 AM	15169

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408F37

Date Reported: 10/9/2014

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River 8-28-14
Lab ID: 1408F37-002F

Client Sample ID: Downstream
Collection Date: 8/28/2014 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	0.081	0.0020		mg/L	1	8/29/2014 4:46:59 PM	R20915
Cadmium	ND	0.0020		mg/L	1	8/29/2014 4:46:59 PM	R20915
Calcium	38	1.0		mg/L	1	8/29/2014 4:46:59 PM	R20915
Chromium	ND	0.0060		mg/L	1	8/29/2014 4:46:59 PM	R20915
Copper	ND	0.0060		mg/L	1	8/29/2014 4:46:59 PM	R20915
Iron	0.44	0.020	*	mg/L	1	8/29/2014 4:46:59 PM	R20915
Magnesium	6.0	1.0		mg/L	1	8/29/2014 4:46:59 PM	R20915
Manganese	0.022	0.0020		mg/L	1	9/2/2014 4:59:40 PM	R20947
Potassium	2.0	1.0		mg/L	1	8/29/2014 4:46:59 PM	R20915
Silver	ND	0.0050		mg/L	1	8/29/2014 4:46:59 PM	R20915
Sodium	21	1.0		mg/L	1	8/29/2014 4:46:59 PM	R20915
Zinc	ND	0.010		mg/L	1	8/29/2014 4:46:59 PM	R20915
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Arsenic	0.0010	0.0010		mg/L	1	9/8/2014 6:28:10 PM	R21084
Lead	ND	0.0010		mg/L	1	9/8/2014 6:28:10 PM	R21084
Selenium	ND	0.0010		mg/L	1	9/8/2014 6:28:10 PM	R21084
Uranium	ND	0.0010		mg/L	1	9/8/2014 6:28:10 PM	R21084
EPA METHOD 245.1: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	9/10/2014 10:01:29 AM	15200

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408F37**Date Reported: **10/9/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** North of 45**Project:** San Juan River 8-28-14**Collection Date:** 8/28/2014 9:00:00 AM**Lab ID:** 1408F37-003A**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Benzene	ND	1.0		µg/L	1	9/6/2014 9:06:32 AM	R21044
Toluene	ND	1.0		µg/L	1	9/6/2014 9:06:32 AM	R21044
Ethylbenzene	ND	1.0		µg/L	1	9/6/2014 9:06:32 AM	R21044
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/6/2014 9:06:32 AM	R21044
Xylenes, Total	ND	2.0		µg/L	1	9/6/2014 9:06:32 AM	R21044
Surr: 1,2-Dichloroethane-d4	105	70-130		%REC	1	9/6/2014 9:06:32 AM	R21044
Surr: 4-Bromofluorobenzene	100	70-130		%REC	1	9/6/2014 9:06:32 AM	R21044
Surr: Dibromofluoromethane	101	70-130		%REC	1	9/6/2014 9:06:32 AM	R21044
Surr: Toluene-d8	79.1	70-130		%REC	1	9/6/2014 9:06:32 AM	R21044

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408F37**Date Reported: **10/9/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** North of 45**Project:** San Juan River 8-28-14**Collection Date:** 8/28/2014 9:00:00 AM**Lab ID:** 1408F37-003B**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	9/2/2014 2:28:28 PM	R20946
Surr: BFB	103	70.9-130		%REC	1	9/2/2014 2:28:28 PM	R20946

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408F37**Date Reported: **10/9/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** North of 45**Project:** San Juan River 8-28-14**Collection Date:** 8/28/2014 9:00:00 AM**Lab ID:** 1408F37-003C**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/30/2014 3:52:51 AM	15015
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/30/2014 3:52:51 AM	15015
Surr: DNOP	119	75.2-161		%REC	1	8/30/2014 3:52:51 AM	15015

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408F37**Date Reported: **10/9/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** North of 45**Project:** San Juan River 8-28-14**Collection Date:** 8/28/2014 9:00:00 AM**Lab ID:** 1408F37-003D**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.18	0.10		mg/L	1	9/2/2014 1:38:21 PM	R20961
Chloride	3.2	0.50		mg/L	1	9/2/2014 1:38:21 PM	R20961
Bromide	ND	0.10		mg/L	1	9/2/2014 1:38:21 PM	R20961
Phosphorus, Orthophosphate (As P _i)	ND	0.50		mg/L	1	9/2/2014 1:38:21 PM	R20961
Sulfate	59	10		mg/L	20	9/2/2014 1:50:46 PM	R20961
Nitrate+Nitrite as N	ND	1.0		mg/L	5	9/3/2014 5:15:32 AM	R20957
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	340	0.010		µmhos/cm	1	9/2/2014 3:42:44 PM	R20962
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	95	20		mg/L CaCO ₃	1	9/2/2014 3:42:44 PM	R20962
Carbonate (As CaCO ₃)	ND	2.0		mg/L CaCO ₃	1	9/2/2014 3:42:44 PM	R20962
Total Alkalinity (as CaCO ₃)	95	20		mg/L CaCO ₃	1	9/2/2014 3:42:44 PM	R20962
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	345	100		mg/L	1	9/5/2014 10:21:00 AM	15087

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408F37**Date Reported: **10/9/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** North of 45**Project:** San Juan River 8-28-14**Collection Date:** 8/28/2014 9:00:00 AM**Lab ID:** 1408F37-003E**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	9/10/2014 1:53:03 PM	15178
Barium	0.18	0.0020		mg/L	1	9/10/2014 1:53:03 PM	15178
Cadmium	ND	0.0020		mg/L	1	9/10/2014 1:53:03 PM	15178
Chromium	ND	0.0060		mg/L	1	9/10/2014 1:53:03 PM	15178
Lead	ND	0.0050		mg/L	1	9/10/2014 1:53:03 PM	15178
Selenium	ND	0.050		mg/L	1	9/10/2014 1:53:03 PM	15178
Silver	ND	0.0050		mg/L	1	9/10/2014 1:53:03 PM	15178
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	9/9/2014 10:55:50 AM	15169

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408F37****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **10/9/2014**

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River 8-28-14
Lab ID: 1408F37-003F

Client Sample ID: North of 45
Collection Date: 8/28/2014 9:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	0.076	0.0020		mg/L	1	8/29/2014 4:48:50 PM	R20915
Cadmium	ND	0.0020		mg/L	1	8/29/2014 4:48:50 PM	R20915
Calcium	37	1.0		mg/L	1	8/29/2014 4:48:50 PM	R20915
Chromium	ND	0.0060		mg/L	1	8/29/2014 4:48:50 PM	R20915
Copper	ND	0.0060		mg/L	1	8/29/2014 4:48:50 PM	R20915
Iron	0.27	0.020		mg/L	1	8/29/2014 4:48:50 PM	R20915
Magnesium	6.0	1.0		mg/L	1	8/29/2014 4:48:50 PM	R20915
Manganese	0.014	0.0020		mg/L	1	9/2/2014 5:01:38 PM	R20947
Potassium	2.0	1.0		mg/L	1	8/29/2014 4:48:50 PM	R20915
Silver	ND	0.0050		mg/L	1	8/29/2014 4:48:50 PM	R20915
Sodium	21	1.0		mg/L	1	8/29/2014 4:48:50 PM	R20915
Zinc	ND	0.010		mg/L	1	8/29/2014 4:48:50 PM	R20915
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Arsenic	ND	0.0010		mg/L	1	9/8/2014 6:31:16 PM	R21084
Lead	ND	0.0010		mg/L	1	9/8/2014 6:31:16 PM	R21084
Selenium	ND	0.0010		mg/L	1	9/8/2014 6:31:16 PM	R21084
Uranium	ND	0.0010		mg/L	1	9/8/2014 6:31:16 PM	R21084
EPA METHOD 245.1: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	9/10/2014 10:03:17 AM	15200

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408F37**Date Reported: **10/9/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** North of 46**Project:** San Juan River 8-28-14**Collection Date:** 8/28/2014 9:30:00 AM**Lab ID:** 1408F37-004A**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Benzene	ND	1.0		µg/L	1	9/6/2014 9:36:07 AM	R21044
Toluene	ND	1.0		µg/L	1	9/6/2014 9:36:07 AM	R21044
Ethylbenzene	ND	1.0		µg/L	1	9/6/2014 9:36:07 AM	R21044
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/6/2014 9:36:07 AM	R21044
Xylenes, Total	ND	2.0		µg/L	1	9/6/2014 9:36:07 AM	R21044
Surr: 1,2-Dichloroethane-d4	104	70-130		%REC	1	9/6/2014 9:36:07 AM	R21044
Surr: 4-Bromofluorobenzene	95.7	70-130		%REC	1	9/6/2014 9:36:07 AM	R21044
Surr: Dibromofluoromethane	105	70-130		%REC	1	9/6/2014 9:36:07 AM	R21044
Surr: Toluene-d8	85.7	70-130		%REC	1	9/6/2014 9:36:07 AM	R21044

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408F37

Date Reported: 10/9/2014

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River 8-28-14
Lab ID: 1408F37-004B

Client Sample ID: North of 46
Collection Date: 8/28/2014 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	9/2/2014 2:58:41 PM	R20946
Surr: BFB	104	70.9-130		%REC	1	9/2/2014 2:58:41 PM	R20946

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1408F37

Date Reported: 10/9/2014

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River 8-28-14
Lab ID: 1408F37-004C

Client Sample ID: North of 46
Collection Date: 8/28/2014 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/30/2014 4:14:08 AM	15015
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/30/2014 4:14:08 AM	15015
Surr: DNOP	119	75.2-161		%REC	1	8/30/2014 4:14:08 AM	15015

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408F37**Date Reported: **10/9/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River 8-28-14
Lab ID: 1408F37-004D

Client Sample ID: North of 46
Collection Date: 8/28/2014 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.18	0.10		mg/L	1	9/2/2014 2:28:01 PM	R20961
Chloride	3.2	0.50		mg/L	1	9/2/2014 2:28:01 PM	R20961
Bromide	ND	0.10		mg/L	1	9/2/2014 2:28:01 PM	R20961
Phosphorus, Orthophosphate (As P _i)	ND	0.50		mg/L	1	9/2/2014 2:28:01 PM	R20961
Sulfate	58	10		mg/L	20	9/2/2014 2:40:26 PM	R20961
Nitrate+Nitrite as N	ND	1.0		mg/L	5	9/3/2014 5:27:56 AM	R20957
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	330	0.010		µmhos/cm	1	9/2/2014 3:51:07 PM	R20962
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	95	20		mg/L CaCO ₃	1	9/2/2014 3:51:07 PM	R20962
Carbonate (As CaCO ₃)	ND	2.0		mg/L CaCO ₃	1	9/2/2014 3:51:07 PM	R20962
Total Alkalinity (as CaCO ₃)	95	20		mg/L CaCO ₃	1	9/2/2014 3:51:07 PM	R20962
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	260	100		mg/L	1	9/5/2014 10:21:00 AM	15087

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408F37**Date Reported: **10/9/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** North of 46**Project:** San Juan River 8-28-14**Collection Date:** 8/28/2014 9:30:00 AM**Lab ID:** 1408F37-004E**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	9/10/2014 1:54:49 PM	15178
Barium	0.17	0.0020		mg/L	1	9/10/2014 1:54:49 PM	15178
Cadmium	ND	0.0020		mg/L	1	9/10/2014 1:54:49 PM	15178
Chromium	0.0060	0.0060		mg/L	1	9/10/2014 1:54:49 PM	15178
Lead	ND	0.0050		mg/L	1	9/10/2014 1:54:49 PM	15178
Selenium	ND	0.050		mg/L	1	9/10/2014 1:54:49 PM	15178
Silver	ND	0.0050		mg/L	1	9/10/2014 1:54:49 PM	15178
EPA METHOD 245.1: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	9/9/2014 10:57:42 AM	15169

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408F37****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **10/9/2014**

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River 8-28-14
Lab ID: 1408F37-004F

Client Sample ID: North of 46
Collection Date: 8/28/2014 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 200.7: DISSOLVED METALS				Analyst: JLF			
Barium	0.078	0.0020		mg/L	1	8/29/2014 4:50:40 PM	R20915
Cadmium	ND	0.0020		mg/L	1	8/29/2014 4:50:40 PM	R20915
Calcium	37	1.0		mg/L	1	8/29/2014 4:50:40 PM	R20915
Chromium	ND	0.0060		mg/L	1	8/29/2014 4:50:40 PM	R20915
Copper	ND	0.0060		mg/L	1	8/29/2014 4:50:40 PM	R20915
Iron	0.35	0.020	*	mg/L	1	8/29/2014 4:50:40 PM	R20915
Magnesium	6.1	1.0		mg/L	1	8/29/2014 4:50:40 PM	R20915
Manganese	0.020	0.0020		mg/L	1	9/2/2014 5:03:32 PM	R20947
Potassium	2.0	1.0		mg/L	1	8/29/2014 4:50:40 PM	R20915
Silver	ND	0.0050		mg/L	1	8/29/2014 4:50:40 PM	R20915
Sodium	21	1.0		mg/L	1	8/29/2014 4:50:40 PM	R20915
Zinc	ND	0.010		mg/L	1	8/29/2014 4:50:40 PM	R20915
EPA 200.8: DISSOLVED METALS				Analyst: DBD			
Arsenic	0.0011	0.0010		mg/L	1	9/8/2014 6:34:21 PM	R21084
Lead	ND	0.0010		mg/L	1	9/8/2014 6:34:21 PM	R21084
Selenium	ND	0.0010		mg/L	1	9/8/2014 6:34:21 PM	R21084
Uranium	ND	0.0010		mg/L	1	9/8/2014 6:34:21 PM	R21084
EPA METHOD 245.1: MERCURY				Analyst: MMD			
Mercury	ND	0.00020		mg/L	1	9/10/2014 10:05:05 AM	15200

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1408F37**Date Reported: **10/9/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** Rinsate**Project:** San Juan River 8-28-14**Collection Date:** 8/28/2014 10:30:00 AM**Lab ID:** 1408F37-005A**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Benzene	ND	1.0		µg/L	1	9/6/2014 10:05:43 AM	R21044
Toluene	ND	1.0		µg/L	1	9/6/2014 10:05:43 AM	R21044
Ethylbenzene	ND	1.0		µg/L	1	9/6/2014 10:05:43 AM	R21044
Xylenes, Total	ND	2.0		µg/L	1	9/6/2014 10:05:43 AM	R21044
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	9/6/2014 10:05:43 AM	R21044
Surr: 4-Bromofluorobenzene	90.5	70-130		%REC	1	9/6/2014 10:05:43 AM	R21044
Surr: Dibromofluoromethane	96.1	70-130		%REC	1	9/6/2014 10:05:43 AM	R21044
Surr: Toluene-d8	86.9	70-130		%REC	1	9/6/2014 10:05:43 AM	R21044

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 25 of 40

Analytical ReportLab Order: **1408F37**Date Reported: **10/9/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River 8-28-14
Lab ID: 1408F37-006A

Client Sample ID: Trip Blank
Collection Date:
Matrix: Trip Blank

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Benzene	ND	1.0		µg/L	1	9/6/2014 10:35:18 AM	R21044
Toluene	ND	1.0		µg/L	1	9/6/2014 10:35:18 AM	R21044
Ethylbenzene	ND	1.0		µg/L	1	9/6/2014 10:35:18 AM	R21044
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/6/2014 10:35:18 AM	R21044
Xylenes, Total	ND	2.0		µg/L	1	9/6/2014 10:35:18 AM	R21044
Surr: 1,2-Dichloroethane-d4	99.8	70-130		%REC	1	9/6/2014 10:35:18 AM	R21044
Surr: 4-Bromofluorobenzene	101	70-130		%REC	1	9/6/2014 10:35:18 AM	R21044
Surr: Dibromofluoromethane	96.5	70-130		%REC	1	9/6/2014 10:35:18 AM	R21044
Surr: Toluene-d8	85.0	70-130		%REC	1	9/6/2014 10:35:18 AM	R21044

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408F37

09-Oct-14

Client: Western Refining Southwest, Inc.

Project: San Juan River 8-28-14

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID: R20915			RunNo: 20915					
Prep Date:		Analysis Date: 8/29/2014			SeqNo: 608597		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Silver	ND	0.0050								
Zinc	ND	0.010								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 200.7: Metals					
Client ID:	LCSW		Batch ID: R20915		RunNo: 20915					
Prep Date:			Analysis Date: 8/29/2014		SeqNo: 608598		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.47	0.0020	0.5000	0	94.3	85	115			
Cadmium	0.48	0.0020	0.5000	0	95.3	85	115			
Calcium	49	1.0	50.00	0	99.0	85	115			
Chromium	0.47	0.0060	0.5000	0	93.5	85	115			
Copper	0.47	0.0060	0.5000	0	93.9	85	115			
Iron	0.47	0.020	0.5000	0	94.1	85	115			
Magnesium	50	1.0	50.00	0	100	85	115			
Potassium	49	1.0	50.00	0	97.5	85	115			
Silver	0.49	0.0050	0.5000	0	97.4	85	115			
Zinc	0.47	0.010	0.5000	0	93.4	85	115			

Sample ID	MB	SampType:	MBLK		TestCode:	EPA Method 200.7: Metals				
Client ID:	PBW	Batch ID:	R20947		RunNo:	20947				
Prep Date:		Analysis Date:	9/2/2014		SeqNo:	609524		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	ND	0.0020								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 200.7: Metals					
Client ID:	LCSW		Batch ID: R20947		RunNo: 20947					
Prep Date:			Analysis Date: 9/2/2014		SeqNo: 609525		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.46	0.0020	0.5000	0	92.9	85	115			

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 greater than 2.
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#: 1408F37

09-Oct-14

Client: Western Refining Southwest, Inc.

Project: San Juan River 8-28-14

Sample ID	MB-15178		SampType:	MBLK		TestCode:	EPA Method 200.7: Metals			
Client ID:	PBW		Batch ID:	15178		RunNo:	21110			
Prep Date:	9/8/2014		Analysis Date:	9/9/2014		SeqNo:	614436		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Silver	ND	0.0050								

Sample ID	LCS-15178		SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW		Batch ID:	15178		RunNo:	21110			
Prep Date:	9/8/2014		Analysis Date:	9/9/2014		SeqNo:	614437		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.5	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.1	85	115			
Chromium	0.48	0.0060	0.5000	0	96.2	85	115			
Silver	0.48	0.0050	0.5000	0	95.8	85	115			

Sample ID	MB-15178		SampType:	MBLK		TestCode:	EPA Method 200.7: Metals			
Client ID:	PBW		Batch ID:	15178		RunNo:	21132			
Prep Date:	9/8/2014		Analysis Date:	9/10/2014		SeqNo:	614927		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Lead	ND	0.0050								
Selenium	ND	0.050								

Sample ID	LCS-15178		SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW		Batch ID:	15178		RunNo:	21132			
Prep Date:	9/8/2014		Analysis Date:	9/10/2014		SeqNo:	614928		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.49	0.020	0.5000	0	97.6	85	115			
Lead	0.49	0.0050	0.5000	0	98.0	85	115			
Selenium	0.49	0.050	0.5000	0	97.6	85	115			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408F37

09-Oct-14

Client: Western Refining Southwest, Inc.

Project: San Juan River 8-28-14

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R20915	RunNo:	20915					
Prep Date:		Analysis Date:	8/29/2014	SeqNo:	608593	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R20915	RunNo:	20915					
Prep Date:		Analysis Date:	8/29/2014	SeqNo:	608594	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.47	0.0020	0.5000	0	94.0	85	115			
Cadmium	0.48	0.0020	0.5000	0	95.7	85	115			
Calcium	49	1.0	50.00	0	98.9	85	115			
Chromium	0.47	0.0060	0.5000	0	94.2	85	115			
Copper	0.47	0.0060	0.5000	0	94.4	85	115			
Iron	0.47	0.020	0.5000	0	94.9	85	115			
Magnesium	50	1.0	50.00	0	99.3	85	115			
Potassium	48	1.0	50.00	0	96.9	85	115			
Silver	0.49	0.0050	0.5000	0	97.3	85	115			
Sodium	49	1.0	50.00	0	98.0	85	115			
Zinc	0.47	0.010	0.5000	0	94.0	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R20915	RunNo:	20915					
Prep Date:		Analysis Date:	8/29/2014	SeqNo:	608595	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408F37

09-Oct-14

Client: Western Refining Southwest, Inc.

Project: San Juan River 8-28-14

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R20915	RunNo:	20915					
Prep Date:		Analysis Date:	8/29/2014	SeqNo:	608595	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	ND	1.0								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R20915	RunNo:	20915					
Prep Date:		Analysis Date:	8/29/2014	SeqNo:	608596	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.46	0.0020	0.5000	0	91.8	85	115			
Cadmium	0.47	0.0020	0.5000	0	93.2	85	115			
Calcium	49	1.0	50.00	0	98.3	85	115			
Chromium	0.46	0.0060	0.5000	0	91.5	85	115			
Copper	0.46	0.0060	0.5000	0	92.0	85	115			
Iron	0.47	0.020	0.5000	0	93.1	85	115			
Magnesium	49	1.0	50.00	0	98.4	85	115			
Potassium	48	1.0	50.00	0	95.6	85	115			
Silver	0.48	0.0050	0.5000	0	95.8	85	115			
Sodium	48	1.0	50.00	0	96.9	85	115			
Zinc	0.45	0.010	0.5000	0	90.9	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R20947	RunNo:	20947					
Prep Date:		Analysis Date:	9/2/2014	SeqNo:	609620	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	ND	0.0020								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R20947	RunNo:	20947					
Prep Date:		Analysis Date:	9/2/2014	SeqNo:	609621	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.46	0.0020	0.5000	0	92.9	85	115			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408F37

09-Oct-14

Client: Western Refining Southwest, Inc.

Project: San Juan River 8-28-14

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R21084		RunNo: 21084					
Prep Date:			Analysis Date: 9/8/2014		SeqNo: 613680		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	99.2	85	115			
Lead	0.025	0.0010	0.02500	0	101	85	115			
Selenium	0.024	0.0010	0.02500	0	95.1	85	115			
Uranium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R21084		RunNo: 21084					
Prep Date:			Analysis Date: 9/8/2014		SeqNo: 613681		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	95.7	85	115			
Lead	0.025	0.0010	0.02500	0	99.8	85	115			
Selenium	0.024	0.0010	0.02500	0	95.2	85	115			
Uranium	0.024	0.0010	0.02500	0	96.7	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R21084		RunNo: 21084					
Prep Date:			Analysis Date: 9/8/2014		SeqNo: 613682		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	97.4	85	115			
Lead	0.025	0.0010	0.02500	0	102	85	115			
Selenium	0.024	0.0010	0.02500	0	96.4	85	115			
Uranium	0.025	0.0010	0.02500	0	98.0	85	115			

Sample ID	LCS			SampType: LCS		TestCode: EPA 200.8: Dissolved Metals				
Client ID:	LCSW			Batch ID: R21084		RunNo: 21084				
Prep Date:				Analysis Date: 9/8/2014		SeqNo: 613683		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	100	85	115			
Lead	0.024	0.0010	0.02500	0	95.5	85	115			
Selenium	0.024	0.0010	0.02500	0	97.1	85	115			
Uranium	0.024	0.0010	0.02500	0	95.5	85	115			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R21084			RunNo: 21084					
Prep Date:		Analysis Date: 9/8/2014			SeqNo: 613684		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

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 greater than 2.
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#: 1408F37

09-Oct-14

Client: Western Refining Southwest, Inc.

Project: San Juan River 8-28-14

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R21084	RunNo:	21084					
Prep Date:		Analysis Date:	9/8/2014	SeqNo:	613684	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R21084	RunNo:	21084					
Prep Date:		Analysis Date:	9/8/2014	SeqNo:	613685	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R21084	RunNo:	21084					
Prep Date:		Analysis Date:	9/8/2014	SeqNo:	613686	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R21084	RunNo:	21084					
Prep Date:		Analysis Date:	9/8/2014	SeqNo:	613687	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								
Uranium	ND	0.0010								

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408F37

09-Oct-14

Client: Western Refining Southwest, Inc.

Project: San Juan River 8-28-14

Sample ID	MB-15169		SampType: MBLK		TestCode: EPA Method 245.1: Mercury					
Client ID:	PBW		Batch ID: 15169		RunNo: 21090					
Prep Date:	9/8/2014		Analysis Date: 9/9/2014		SeqNo: 613856		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-15169		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 15169		RunNo: 21090					
Prep Date:	9/8/2014		Analysis Date: 9/9/2014		SeqNo: 613857		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	99.2	80	120			

Sample ID	MB-15200		SampType: MBLK		TestCode: EPA Method 245.1: Mercury					
Client ID:	PBW		Batch ID: 15200		RunNo: 21121					
Prep Date:	9/9/2014		Analysis Date: 9/10/2014		SeqNo: 614619		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-15200		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 15200		RunNo: 21121					
Prep Date:	9/9/2014		Analysis Date: 9/10/2014		SeqNo: 614620		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	104	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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408F37

09-Oct-14

Client: Western Refining Southwest, Inc.

Project: San Juan River 8-28-14

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R20957		RunNo: 20957							
Prep Date:	Analysis Date: 9/2/2014		SeqNo: 609966		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: R20957		RunNo: 20957							
Prep Date:	Analysis Date: 9/2/2014		SeqNo: 609967		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	98.1	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R20957		RunNo: 20957							
Prep Date:	Analysis Date: 9/2/2014		SeqNo: 610018		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: R20957		RunNo: 20957							
Prep Date:	Analysis Date: 9/2/2014		SeqNo: 610019		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.3	0.20	3.500	0	95.6	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R20961		RunNo: 20961							
Prep Date:	Analysis Date: 9/2/2014		SeqNo: 610078		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								
Bromide	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: R20961		RunNo: 20961							
Prep Date:	Analysis Date: 9/2/2014		SeqNo: 610079		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	106	90	110			

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 greater than 2.
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#: 1408F37

09-Oct-14

Client: Western Refining Southwest, Inc.

Project: San Juan River 8-28-14

Sample ID	LCS	SampType: LCS			TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID: R20961			RunNo: 20961					
Prep Date:		Analysis Date: 9/2/2014			SeqNo: 610079		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	95.4	90	110			
Bromide	2.5	0.10	2.500	0	99.1	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	95.5	90	110			
Sulfate	9.8	0.50	10.00	0	97.8	90	110			

Sample ID	1408F37-001DMS		SampType: MS		TestCode: EPA Method 300.0: Anions					
Client ID:	Upstream		Batch ID: R20961		RunNo: 20961					
Prep Date:			Analysis Date: 9/2/2014		SeqNo: 610081		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.76	0.10	0.5000	0	152	72.7	110			S
Chloride	8.3	0.50	5.000	3.412	96.9	92.6	107			
Bromide	2.5	0.10	2.500	0	99.5	85.1	108			

Sample ID	1408F37-001DMSD			SampType: MSD		TestCode: EPA Method 300.0: Anions				
Client ID:	Upstream		Batch ID: R20961		RunNo: 20961					
Prep Date:	Analysis Date: 9/2/2014			SeqNo: 610082		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.68	0.10	0.5000	0	135	72.7	110	11.7	20	S
Chloride	8.2	0.50	5.000	3.412	96.6	92.6	107	0.150	20	
Bromide	2.5	0.10	2.500	0	99.5	85.1	108	0.0161	20	

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408F37

09-Oct-14

Client: Western Refining Southwest, Inc.

Project: San Juan River 8-28-14

Sample ID	MB-15015		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW		Batch ID: 15015		RunNo: 20880					
Prep Date:	8/28/2014		Analysis Date: 8/29/2014		SeqNo: 608537		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.54		0.5000		108	75.2	161			

Sample ID	LCS-15015		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 15015		RunNo: 20880					
Prep Date:	8/28/2014		Analysis Date: 8/29/2014		SeqNo: 608538		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.7	0.20	2.500	0	107	65.8	162			
Surr: DNOP	0.27		0.2500		107	75.2	161			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408F37

09-Oct-14

Client: Western Refining Southwest, Inc.

Project: San Juan River 8-28-14

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R20946	RunNo:	20946					
Prep Date:		Analysis Date:	9/2/2014	SeqNo:	609479	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	19		20.00		93.1	70.9	130			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R20946	RunNo:	20946					
Prep Date:		Analysis Date:	9/2/2014	SeqNo:	609480	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.54	0.050	0.5000	0	108	80	120			
Surr: BFB	22		20.00		110	70.9	130			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408F37

09-Oct-14

Client: Western Refining Southwest, Inc.

Project: San Juan River 8-28-14

Sample ID b3	SampType: MBLK			TestCode: EPA Method 8260: Volatiles Short List						
Client ID: PBW	Batch ID: R21044			RunNo: 21044						
Prep Date:	Analysis Date: 9/5/2014			SeqNo: 612441		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								
mp-Xylenes	ND	1.0								
o-Xylene	ND	1.0								
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.3	70	130			
Surr: 4-Bromofluorobenzene	9.1		10.00		91.4	70	130			
Surr: Dibromofluoromethane	8.9		10.00		88.5	70	130			
Surr: Toluene-d8	9.2		10.00		91.8	70	130			

Sample ID 100ng lcs	SampType: LCS			TestCode: EPA Method 8260: Volatiles Short List						
Client ID: LCSW	Batch ID: R21044			RunNo: 21044						
Prep Date:	Analysis Date: 9/5/2014			SeqNo: 612445		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	101	80	120			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		96.5	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		96.8	70	130			
Surr: Dibromofluoromethane	8.9		10.00		88.8	70	130			
Surr: Toluene-d8	9.0		10.00		90.4	70	130			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408F37

09-Oct-14

Client: Western Refining Southwest, Inc.

Project: San Juan River 8-28-14

Sample ID	mb-1	SampType:	MBLK	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R20962	RunNo:	20962					
Prep Date:		Analysis Date:	9/2/2014	SeqNo:	610172	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	lcs-1	SampType:	LCS	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R20962	RunNo:	20962					
Prep Date:		Analysis Date:	9/2/2014	SeqNo:	610173	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80	20	80.00	0	100	90	110			

Sample ID	mb-2	SampType:	MBLK	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R20962	RunNo:	20962					
Prep Date:		Analysis Date:	9/2/2014	SeqNo:	610188	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	lcs-2	SampType:	LCS	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R20962	RunNo:	20962					
Prep Date:		Analysis Date:	9/2/2014	SeqNo:	610189	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	81	20	80.00	0	101	90	110			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408F37

09-Oct-14

Client: Western Refining Southwest, Inc.

Project: San Juan River 8-28-14

Sample ID	MB-15087		SampType: MBLK		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW		Batch ID: 15087		RunNo: 21012					
Prep Date:	9/3/2014		Analysis Date: 9/5/2014		SeqNo: 611700		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-15087		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 15087		RunNo: 21012					
Prep Date:	9/3/2014		Analysis Date: 9/5/2014		SeqNo: 611701		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

Sample ID	1408F37-002DMS	SampType:	MS			TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	Downstream	Batch ID:	15087			RunNo:	21012				
Prep Date:	9/3/2014	Analysis Date:	9/5/2014			SeqNo:	611711	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	5370	100	5000	220.0	103	80	120				

Sample ID	1408F37-002DMSD		SampType: MSD		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	Downstream		Batch ID: 15087		RunNo: 21012					
Prep Date:	9/3/2014		Analysis Date: 9/5/2014		SeqNo: 611712		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	5290	100	5000	220.0	101	80	120	1.50	5	

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 greater than 2.
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1408F37

RcptNo: 1

Received by/date:

MG 08/29/14

Logged By: Celina Sessa

8/29/2014 8:25:00 AM

Celina Sessa

Completed By: Celina Sessa

8/29/2014 10:23:29 AM

Celina Sessa

Reviewed By:

[Signature]

08/29/14

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° 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?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

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.)

of preserved
bottles checked
for pH:

12
<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 °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

QA/QC Package:

☒ Standard ☒ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☐ EDD (Type)

Project Manager:

Sampler: Bob & MFT

On Ice: ☒ Yes ☐ No

Sample Temperature: 10

Container Type and #

Preservative Type

HEAL No

1408F37

Date

Time

Matrix

Sample Request ID

28-14 9:00 H₂O North of 45

1-500ml amber -003

1-500ml HNO₃ -003

1-250ml HNO₃ -003

1-250ml H₂SO₄ -003

1-500ml -003

3-28-14 9:30 North of 46

1-500ml amber -004

1-500ml HNO₃ -004

1-250ml HNO₃ -004

1-250ml H₂SO₄ -004

1-500ml -004

Date

Time

Relinquished by:

28-14 1310 Robert Kackan

Date

Time

Relinquished by:

28/14 1800 Christina Warden

Received by:

28/14 1310 Christina Warden

Date

Time

Received by:

28/14 0825 Christina Warden

Date

Time

Received by:

28/14 0825 Christina Warden

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TABLE 2
Analytical Methods and Target Analytes

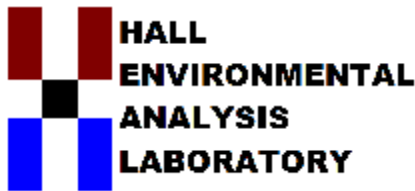
VOCs (EPA Method 8260B) ⁽¹⁾	
- Target List	
Benzene	
Toluene	
Ethylbenzene	
Xylenes	
Methyl tert butyl ether (MTBE)	
SVOCs - (EPA Method 8270)	
- Method List	
TPH-GRO (EPA Method 8015B)	
- Gasoline Range Organics	
TPH-DRO (EPA Method 8015B)	
- Diesel Range Organics	
- Motor Oil Range Organics	
Total Carbon Dioxide (Laboratory Calculated)	
- Dissolved CO ₂	
Specific Conductivity (EPA Method 120.1 or field measurement)	
- Specific conductance	
TDS (EPA Method 160.1 or field measurement)	
- Total dissolved solids	
General Chemistry - Anions (EPA Method 300.0)	
Fluoride	
Chloride	
Bromide	
Nitrogen, Nitrite (as N)	
Nitrogen, Nitrate (as N)	
Phosphorous, Orthophosphate (As P)	
Sulfate	
General Chemistry - Alkalinity (EPA Method 310.1)	
Alkalinity, Total	
Carbonate	
Bicarbonate	

Total Recoverable Metals (EPA Method 6010B/7470)	
- Target List (not applicable to River Terrace Sampling Events)	
Arsenic	Lead
Barium	Mercury
Cadmium	Selenium
Chromium	Silver
- Target List (for River Terrace Sampling Events Only)	
Lead	
Mercury (DW-1 ONLY)	
Dissolved Metals (EPA Method 6010B / 7470)	
- Target List (for Refinery Complex, Outfalls, and River)	
Arsenic	Manganese
Barium	Mercury
Cadmium	Potassium
Calcium	Selenium
Chromium	Silver
Copper	Sodium
Iron	Uranium
Lead	Zinc
Magnesium	

TPH = total petroleum hydrocarbons
 GRO = gasoline range organics
 VOCs = volatile organic compounds
 DRO = diesel range organics
 TDS = total dissolved solids

NOTES:

- (1) VOCs Target List for River Terrace samples are analyzed by EPA Method 8021B per NMED's letter Approval with Direction dated June 16, 2009.
- (2) Target List for San Juan River Terrace Monitoring Wells and Piezometer Wells only, per the River Terrace Bioventing System Monitoring Plan.



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

September 16, 2014

Kelly Robinson

Western Refining Southwest, Inc.
#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: San Juan River Bluff 8-26-14

OrderNo.: 1408D76

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/27/2014 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 1408D76

Date Reported: 9/16/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Outfall #2

Project: San Juan River Bluff 8-26-14

Collection Date: 8/26/2014 8:10:00 AM

Lab ID: 1408D76-001

Matrix: AQUEOUS

Received Date: 8/27/2014 4:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.50	0.10		mg/L	1	8/27/2014 12:13:57 PM	R20852
Chloride	9.2	0.50		mg/L	1	8/27/2014 12:13:57 PM	R20852
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/27/2014 12:13:57 PM	R20852
Bromide	0.11	0.10		mg/L	1	8/27/2014 12:13:57 PM	R20852
Nitrogen, Nitrate (As N)	0.37	0.10		mg/L	1	8/27/2014 12:13:57 PM	R20852
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/27/2014 12:13:57 PM	R20852
Sulfate	98	10		mg/L	20	8/27/2014 12:51:10 PM	R20852
EPA METHOD 7470: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/30/2014 1:41:17 PM	15037
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	9/4/2014 12:12:46 PM	R21000
Barium	0.089	0.020		mg/L	1	9/4/2014 12:12:46 PM	R21000
Cadmium	ND	0.0020		mg/L	1	9/4/2014 12:12:46 PM	R21000
Calcium	100	5.0		mg/L	5	9/4/2014 12:14:30 PM	R21000
Chromium	ND	0.0060		mg/L	1	9/4/2014 12:12:46 PM	R21000
Copper	ND	0.0060		mg/L	1	9/4/2014 12:12:46 PM	R21000
Iron	ND	0.020		mg/L	1	9/4/2014 12:12:46 PM	R21000
Lead	ND	0.0050		mg/L	1	9/4/2014 12:12:46 PM	R21000
Magnesium	22	1.0		mg/L	1	9/4/2014 12:12:46 PM	R21000
Manganese	ND	0.0020		mg/L	1	9/4/2014 12:12:46 PM	R21000
Potassium	1.7	1.0		mg/L	1	9/4/2014 12:12:46 PM	R21000
Selenium	ND	0.050		mg/L	1	9/4/2014 12:12:46 PM	R21000
Silver	ND	0.0050		mg/L	1	9/4/2014 12:12:46 PM	R21000
Sodium	60	1.0		mg/L	1	9/4/2014 12:12:46 PM	R21000
Uranium	ND	0.10		mg/L	1	9/4/2014 12:12:46 PM	R21000
Zinc	ND	0.020		mg/L	1	9/4/2014 12:12:46 PM	R21000
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/30/2014 8:10:35 AM	15047
Barium	0.19	0.020		mg/L	1	8/30/2014 8:10:35 AM	15047
Cadmium	ND	0.0020		mg/L	1	8/30/2014 8:10:35 AM	15047
Chromium	0.0072	0.0060		mg/L	1	8/30/2014 8:10:35 AM	15047
Lead	ND	0.0050		mg/L	1	8/30/2014 8:10:35 AM	15047
Selenium	ND	0.050		mg/L	1	8/30/2014 8:10:35 AM	15047
Silver	ND	0.0050		mg/L	1	8/30/2014 8:10:35 AM	15047
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Benzene	ND	1.0		µg/L	1	9/4/2014 6:30:05 PM	R20995
Toluene	ND	1.0		µg/L	1	9/4/2014 6:30:05 PM	R20995

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 17
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1408D76

Date Reported: 9/16/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Outfall #2

Project: San Juan River Bluff 8-26-14

Collection Date: 8/26/2014 8:10:00 AM

Lab ID: 1408D76-001

Matrix: AQUEOUS

Received Date: 8/27/2014 4:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Ethylbenzene	ND	1.0		µg/L	1	9/4/2014 6:30:05 PM	R20995
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/4/2014 6:30:05 PM	R20995
Xylenes, Total	ND	2.0		µg/L	1	9/4/2014 6:30:05 PM	R20995
Surr: 1,2-Dichloroethane-d4	98.5	70-130		%REC	1	9/4/2014 6:30:05 PM	R20995
Surr: 4-Bromofluorobenzene	95.1	70-130		%REC	1	9/4/2014 6:30:05 PM	R20995
Surr: Dibromofluoromethane	102	70-130		%REC	1	9/4/2014 6:30:05 PM	R20995
Surr: Toluene-d8	85.8	70-130		%REC	1	9/4/2014 6:30:05 PM	R20995
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	320	1.0	H	mg CO2/L	1	8/28/2014 11:35:14 AM	R20890
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	350	20		mg/L CaCO3	1	8/28/2014 11:35:14 AM	R20890
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	8/28/2014 11:35:14 AM	R20890
Total Alkalinity (as CaCO3)	350	20		mg/L CaCO3	1	8/28/2014 11:35:14 AM	R20890

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1408D76

Date Reported: 9/16/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Outfall #3

Project: San Juan River Bluff 8-26-14

Collection Date: 8/26/2014 8:00:00 AM

Lab ID: 1408D76-002

Matrix: AQUEOUS

Received Date: 8/27/2014 4:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.19	0.10		mg/L	1	8/27/2014 1:03:35 PM	R20852
Chloride	3.3	0.50		mg/L	1	8/27/2014 1:03:35 PM	R20852
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/27/2014 1:03:35 PM	R20852
Bromide	ND	0.10		mg/L	1	8/27/2014 1:03:35 PM	R20852
Nitrogen, Nitrate (As N)	0.12	0.10		mg/L	1	8/27/2014 1:03:35 PM	R20852
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/27/2014 1:03:35 PM	R20852
Sulfate	43	10		mg/L	20	8/27/2014 1:15:59 PM	R20852
EPA METHOD 7470: MERCURY							Analyst: MMD
Mercury	ND	0.00020		mg/L	1	8/30/2014 1:46:48 PM	15037
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	9/4/2014 12:16:22 PM	R21000
Barium	0.071	0.020		mg/L	1	9/4/2014 12:16:22 PM	R21000
Cadmium	ND	0.0020		mg/L	1	9/4/2014 12:16:22 PM	R21000
Calcium	35	1.0		mg/L	1	9/4/2014 12:16:22 PM	R21000
Chromium	ND	0.0060		mg/L	1	9/4/2014 12:16:22 PM	R21000
Copper	ND	0.0060		mg/L	1	9/4/2014 12:16:22 PM	R21000
Iron	ND	0.020		mg/L	1	9/4/2014 12:16:22 PM	R21000
Lead	ND	0.0050		mg/L	1	9/4/2014 12:16:22 PM	R21000
Magnesium	6.1	1.0		mg/L	1	9/4/2014 12:16:22 PM	R21000
Manganese	0.0022	0.0020		mg/L	1	9/4/2014 12:16:22 PM	R21000
Potassium	1.9	1.0		mg/L	1	9/4/2014 12:16:22 PM	R21000
Selenium	ND	0.050		mg/L	1	9/4/2014 12:16:22 PM	R21000
Silver	ND	0.0050		mg/L	1	9/4/2014 12:16:22 PM	R21000
Sodium	17	1.0		mg/L	1	9/4/2014 12:16:22 PM	R21000
Uranium	ND	0.10		mg/L	1	9/4/2014 12:16:22 PM	R21000
Zinc	ND	0.020		mg/L	1	9/4/2014 12:16:22 PM	R21000
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	8/30/2014 8:12:00 AM	15047
Barium	0.073	0.020		mg/L	1	8/30/2014 8:12:00 AM	15047
Cadmium	ND	0.0020		mg/L	1	8/30/2014 8:12:00 AM	15047
Chromium	ND	0.0060		mg/L	1	8/30/2014 8:12:00 AM	15047
Lead	ND	0.0050		mg/L	1	8/30/2014 8:12:00 AM	15047
Selenium	ND	0.050		mg/L	1	8/30/2014 8:12:00 AM	15047
Silver	ND	0.0050		mg/L	1	8/30/2014 8:12:00 AM	15047
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Benzene	ND	1.0		µg/L	1	9/4/2014 7:59:24 PM	R20995
Toluene	ND	1.0		µg/L	1	9/4/2014 7:59:24 PM	R20995

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1408D76

Date Reported: 9/16/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Outfall #3

Project: San Juan River Bluff 8-26-14

Collection Date: 8/26/2014 8:00:00 AM

Lab ID: 1408D76-002

Matrix: AQUEOUS

Received Date: 8/27/2014 4:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Ethylbenzene	ND	1.0		µg/L	1	9/4/2014 7:59:24 PM	R20995
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/4/2014 7:59:24 PM	R20995
Xylenes, Total	ND	2.0		µg/L	1	9/4/2014 7:59:24 PM	R20995
Surr: 1,2-Dichloroethane-d4	106	70-130		%REC	1	9/4/2014 7:59:24 PM	R20995
Surr: 4-Bromofluorobenzene	94.5	70-130		%REC	1	9/4/2014 7:59:24 PM	R20995
Surr: Dibromofluoromethane	102	70-130		%REC	1	9/4/2014 7:59:24 PM	R20995
Surr: Toluene-d8	87.0	70-130		%REC	1	9/4/2014 7:59:24 PM	R20995
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	86	1.0	H	mg CO2/L	1	8/28/2014 12:27:14 PM	R20890
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	95	20		mg/L CaCO3	1	8/28/2014 12:27:14 PM	R20890
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	8/28/2014 12:27:14 PM	R20890
Total Alkalinity (as CaCO3)	95	20		mg/L CaCO3	1	8/28/2014 12:27:14 PM	R20890

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1408D76

Date Reported: 9/16/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Seep #1

Project: San Juan River Bluff 8-26-14

Collection Date: 8/26/2014 7:30:00 AM

Lab ID: 1408D76-003

Matrix: AQUEOUS

Received Date: 8/27/2014 4:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGP
Fluoride	0.23	0.10		mg/L	1	8/27/2014 1:28:23 PM	R20852
Chloride	230	10		mg/L	20	8/27/2014 1:40:48 PM	R20852
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/27/2014 1:28:23 PM	R20852
Bromide	2.7	0.10		mg/L	1	8/27/2014 1:28:23 PM	R20852
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/27/2014 1:28:23 PM	R20852
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	8/27/2014 1:40:48 PM	R20852
Sulfate	1600	25		mg/L	50	8/28/2014 11:13:41 PM	R20888
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: KJH
Benzene	ND	1.0		µg/L	1	9/4/2014 8:29:06 PM	R20995
Toluene	ND	1.0		µg/L	1	9/4/2014 8:29:06 PM	R20995
Ethylbenzene	ND	1.0		µg/L	1	9/4/2014 8:29:06 PM	R20995
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/4/2014 8:29:06 PM	R20995
Xylenes, Total	ND	2.0		µg/L	1	9/4/2014 8:29:06 PM	R20995
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	9/4/2014 8:29:06 PM	R20995
Surr: 4-Bromofluorobenzene	92.7	70-130		%REC	1	9/4/2014 8:29:06 PM	R20995
Surr: Dibromofluoromethane	94.4	70-130		%REC	1	9/4/2014 8:29:06 PM	R20995
Surr: Toluene-d8	85.5	70-130		%REC	1	9/4/2014 8:29:06 PM	R20995
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	350	1.0	H	mg CO2/L	1	8/28/2014 12:35:23 PM	R20890
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	380	20		mg/L CaCO3	1	8/28/2014 12:35:23 PM	R20890
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	8/28/2014 12:35:23 PM	R20890
Total Alkalinity (as CaCO3)	380	20		mg/L CaCO3	1	8/28/2014 12:35:23 PM	R20890

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1408D76

Date Reported: 9/16/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Trip Blank

Project: San Juan River Bluff 8-26-14

Collection Date:

Lab ID: 1408D76-004

Matrix: TRIP BLANK

Received Date: 8/27/2014 4:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: KJH	
Benzene	ND	1.0		µg/L	1	9/4/2014 8:58:47 PM	R20995
Toluene	ND	1.0		µg/L	1	9/4/2014 8:58:47 PM	R20995
Ethylbenzene	ND	1.0		µg/L	1	9/4/2014 8:58:47 PM	R20995
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/4/2014 8:58:47 PM	R20995
Xylenes, Total	ND	2.0		µg/L	1	9/4/2014 8:58:47 PM	R20995
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	9/4/2014 8:58:47 PM	R20995
Surr: 4-Bromofluorobenzene	100	70-130		%REC	1	9/4/2014 8:58:47 PM	R20995
Surr: Dibromofluoromethane	98.7	70-130		%REC	1	9/4/2014 8:58:47 PM	R20995
Surr: Toluene-d8	85.3	70-130		%REC	1	9/4/2014 8:58:47 PM	R20995

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 17
	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 greater than 2.	
	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#: 1408D76

16-Sep-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-14

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R20852		RunNo: 20852							
Prep Date:	Analysis Date: 8/27/2014		SeqNo: 607023		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								
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: R20852		RunNo: 20852							
Prep Date:	Analysis Date: 8/27/2014		SeqNo: 607024		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.47	0.10	0.5000	0	93.9	90	110			
Chloride	4.7	0.50	5.000	0	93.5	90	110			
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	95.4	90	110			
Bromide	2.4	0.10	2.500	0	95.4	90	110			
Nitrogen, Nitrate (As N)	2.4	0.10	2.500	0	97.7	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	93.3	90	110			
Sulfate	9.5	0.50	10.00	0	95.2	90	110			

Sample ID 1408D76-001BMS	SampType: MS		TestCode: EPA Method 300.0: Anions							
Client ID: Outfall #2	Batch ID: R20852		RunNo: 20852							
Prep Date:	Analysis Date: 8/27/2014		SeqNo: 607026		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.92	0.10	0.5000	0.4994	84.3	72.7	110			
Chloride	14	0.50	5.000	9.218	96.0	92.6	107			
Nitrogen, Nitrite (As N)	0.89	0.10	1.000	0	88.5	75.5	104			
Bromide	2.3	0.10	2.500	0.1078	86.6	85.1	108			
Nitrogen, Nitrate (As N)	2.7	0.10	2.500	0.3701	91.9	87.8	111			
Phosphorus, Orthophosphate (As P	4.2	0.50	5.000	0	85.0	81.3	101			

Sample ID 1408D76-001BMSD	SampType: MSD		TestCode: EPA Method 300.0: Anions							
Client ID: Outfall #2	Batch ID: R20852		RunNo: 20852							
Prep Date:	Analysis Date: 8/27/2014		SeqNo: 607027		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.92	0.10	0.5000	0.4994	84.4	72.7	110	0.0760	20	
Chloride	14	0.50	5.000	9.218	96.5	92.6	107	0.175	20	

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 greater than 2.
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#: 1408D76

16-Sep-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-14

Sample ID	1408D76-001BMSD		SampType: MSD		TestCode: EPA Method 300.0: Anions					
Client ID:	Outfall #2		Batch ID: R20852		RunNo: 20852					
Prep Date:			Analysis Date: 8/27/2014		SeqNo: 607027		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.89	0.10	1.000	0	88.8	75.5	104	0.259	20	
Bromide	2.3	0.10	2.500	0.1078	86.5	85.1	108	0.0572	20	
Nitrogen, Nitrate (As N)	2.7	0.10	2.500	0.3701	91.8	87.8	111	0.109	20	
Phosphorus, Orthophosphate (As P)	4.3	0.50	5.000	0	86.2	81.3	101	1.40	20	

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R20852			RunNo: 20852					
Prep Date:		Analysis Date: 8/27/2014			SeqNo: 607088		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								
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: R20852		RunNo: 20852					
Prep Date:			Analysis Date: 8/27/2014		SeqNo: 607089		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	98.7	90	110			
Chloride	4.7	0.50	5.000	0	93.3	90	110			
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	95.5	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			
Phosphorus, Orthophosphate (As P)	4.7	0.50	5.000	0	94.8	90	110			
Sulfate	9.5	0.50	10.00	0	95.0	90	110			

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R20888			RunNo: 20888					
Prep Date:		Analysis Date: 8/28/2014			SeqNo: 607812		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408D76

16-Sep-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-14

Sample ID	LCS	SampType: LCS			TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID: R20888			RunNo: 20888					
Prep Date:		Analysis Date: 8/28/2014			SeqNo: 607813		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.5	0.50	10.00	0	95.1	90	110			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408D76

16-Sep-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-14

Sample ID	5mL-rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R20995	RunNo:	20995					
Prep Date:		Analysis Date:	9/4/2014	SeqNo:	611315	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								
mp-Xylenes	ND	1.0								
o-Xylene	ND	1.0								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.0	70	130			
Surr: 4-Bromofluorobenzene	9.2		10.00		91.7	70	130			
Surr: Dibromofluoromethane	9.3		10.00		92.9	70	130			
Surr: Toluene-d8	8.9		10.00		89.3	70	130			

Sample ID	100ng lcs2	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	R20995	RunNo:	20995					
Prep Date:		Analysis Date:	9/4/2014	SeqNo:	611316	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	109	70	130			
Toluene	20	1.0	20.00	0	100	80	120			
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.6		10.00		96.4	70	130			
Surr: Toluene-d8	8.9		10.00		89.1	70	130			

Sample ID	1408D76-001a ms	SampType:	MS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	Outfall #2	Batch ID:	R20995	RunNo:	20995					
Prep Date:		Analysis Date:	9/4/2014	SeqNo:	611318	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	25	1.0	20.00	0	127	70	130			
Toluene	19	1.0	20.00	0	95.9	67.5	123			
Surr: 1,2-Dichloroethane-d4	11		10.00		109	70	130			
Surr: 4-Bromofluorobenzene	9.4		10.00		94.2	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	8.6		10.00		86.0	70	130			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408D76

16-Sep-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-14

Sample ID	1408D76-001a msd	SampType:	MSD	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	Outfall #2	Batch ID:	R20995	RunNo:	20995					
Prep Date:		Analysis Date:	9/4/2014	SeqNo:	611319	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	114	70	130	11.1	20	
Toluene	19	1.0	20.00	0	96.8	67.5	123	0.955	20	
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.2		10.00		92.0	70	130	0	0	
Surr: Dibromofluoromethane	9.5		10.00		95.4	70	130	0	0	
Surr: Toluene-d8	8.8		10.00		87.8	70	130	0	0	

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408D76

16-Sep-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-14

Sample ID	MB-15037		SampType: MBLK		TestCode: EPA Method 7470: Mercury					
Client ID:	PBW		Batch ID: 15037		RunNo: 20907					
Prep Date:	8/29/2014		Analysis Date: 8/30/2014		SeqNo: 608339		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercurv	ND	0.00020								

Sample ID	LCS-15037		SampType: LCS		TestCode: EPA Method 7470: Mercury					
Client ID:	LCSW		Batch ID: 15037		RunNo: 20907					
Prep Date:	8/29/2014		Analysis Date: 8/30/2014		SeqNo: 608340		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0054	0.00020	0.005000	0	107	80	120			

Sample ID	1408D76-002CMS		SampType: MS		TestCode: EPA Method 7470: Mercury					
Client ID:	Outfall #3		Batch ID: 15037		RunNo: 20907					
Prep Date:	8/29/2014		Analysis Date: 8/30/2014		SeqNo: 608352		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0048	0.00020	0.005000	0	96.7	75	125			

Sample ID	1408D76-002CMSD		SampType: MSD		TestCode: EPA Method 7470: Mercury					
Client ID:	Outfall #3		Batch ID: 15037		RunNo: 20907					
Prep Date:	8/29/2014		Analysis Date: 8/30/2014		SeqNo: 608353		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	107	75	125	9.88	20	

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408D76

16-Sep-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-14

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	PBW	Batch ID:	R21000	RunNo:	21000					
Prep Date:		Analysis Date:	9/4/2014	SeqNo:	611209	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								
Copper	ND	0.0060								
Iron	ND	0.020								
Lead	ND	0.0050								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Selenium	ND	0.050								
Silver	ND	0.0050								
Sodium	ND	1.0								
Uranium	ND	0.10								
Zinc	ND	0.020								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R21000	RunNo:	21000					
Prep Date:		Analysis Date:	9/4/2014	SeqNo:	611210	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.49	0.020	0.5000	0	97.6	80	120			
Barium	0.47	0.020	0.5000	0	94.4	80	120			
Cadmium	0.47	0.0020	0.5000	0	94.8	80	120			
Calcium	49	1.0	50.00	0	98.0	80	120			
Chromium	0.47	0.0060	0.5000	0	94.2	80	120			
Copper	0.48	0.0060	0.5000	0	95.6	80	120			
Iron	0.47	0.020	0.5000	0	94.4	80	120			
Lead	0.47	0.0050	0.5000	0	93.9	80	120			
Magnesium	50	1.0	50.00	0	101	80	120			
Manganese	0.46	0.0020	0.5000	0	92.7	80	120			
Potassium	49	1.0	50.00	0	98.8	80	120			
Selenium	0.47	0.050	0.5000	0	94.6	80	120			
Silver	0.49	0.0050	0.5000	0	97.6	80	120			
Sodium	50	1.0	50.00	0	100	80	120			
Uranium	0.44	0.10	0.5000	0	88.3	80	120			
Zinc	0.47	0.020	0.5000	0	94.0	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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408D76

16-Sep-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-14

Sample ID	1408D76-002DMS		SampType: MS		TestCode: EPA Method 6010B: Dissolved Metals					
Client ID:	Outfall #3		Batch ID: R21000		RunNo: 21000					
Prep Date:			Analysis Date: 9/4/2014		SeqNo: 611229		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	0.07088	96.9	75	125			
Cadmium	0.50	0.0020	0.5000	0	101	75	125			
Calcium	84	1.0	50.00	34.56	98.1	75	125			
Chromium	0.49	0.0060	0.5000	0	98.4	75	125			
Copper	0.50	0.0060	0.5000	0	99.7	75	125			
Iron	0.49	0.020	0.5000	0	98.6	75	125			
Lead	0.49	0.0050	0.5000	0	97.3	75	125			
Magnesium	57	1.0	50.00	6.149	102	75	125			
Manganese	0.48	0.0020	0.5000	0.002200	96.4	75	125			
Potassium	52	1.0	50.00	1.883	100	75	125			
Selenium	0.51	0.050	0.5000	0	102	75	125			
Silver	0.47	0.0050	0.5000	0	94.6	75	125			
Sodium	68	1.0	50.00	17.23	101	75	125			
Uranium	0.46	0.10	0.5000	0	92.2	75	125			
Zinc	0.50	0.020	0.5000	0	99.0	75	125			

Sample ID	1408D76-002DMSD		SampType: MSD		TestCode: EPA Method 6010B: Dissolved Metals					
Client ID:	Outfall #3		Batch ID: R21000		RunNo: 21000					
Prep Date:			Analysis Date: 9/4/2014		SeqNo: 611230		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	104	75	125	2.15	20	
Barium	0.55	0.020	0.5000	0.07088	94.9	75	125	1.78	20	
Cadmium	0.49	0.0020	0.5000	0	98.4	75	125	2.38	20	
Calcium	83	1.0	50.00	34.56	97.8	75	125	0.135	20	
Chromium	0.48	0.0060	0.5000	0	95.9	75	125	2.65	20	
Copper	0.49	0.0060	0.5000	0	97.8	75	125	1.94	20	
Iron	0.49	0.020	0.5000	0	98.0	75	125	0.606	20	
Lead	0.48	0.0050	0.5000	0	95.3	75	125	2.10	20	
Magnesium	56	1.0	50.00	6.149	99.1	75	125	2.46	20	
Manganese	0.47	0.0020	0.5000	0.002200	94.4	75	125	2.15	20	
Potassium	50	1.0	50.00	1.883	97.2	75	125	2.86	20	
Selenium	0.51	0.050	0.5000	0	102	75	125	0.558	20	
Silver	0.47	0.0050	0.5000	0	93.8	75	125	0.809	20	
Sodium	66	1.0	50.00	17.23	96.8	75	125	2.83	20	
Uranium	0.45	0.10	0.5000	0	90.1	75	125	2.38	20	
Zinc	0.48	0.020	0.5000	0	96.6	75	125	2.50	20	

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 greater than 2.
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#: 1408D76

16-Sep-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-14

Sample ID	MB-15047	SampType:	MBLK	TestCode:	EPA 6010B: Total Recoverable Metals					
Client ID:	PBW	Batch ID:	15047	RunNo:	20905					
Prep Date:	8/29/2014	Analysis Date:	8/30/2014	SeqNo:	608262	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-15047	SampType:	LCS	TestCode:	EPA 6010B: Total Recoverable Metals					
Client ID:	LCSW	Batch ID:	15047	RunNo:	20905					
Prep Date:	8/29/2014	Analysis Date:	8/30/2014	SeqNo:	608263	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Arsenic	0.49	0.020	0.5000	0	98.3	80	120			
Barium	0.49	0.020	0.5000	0	98.0	80	120			
Cadmium	0.48	0.0020	0.5000	0	96.7	80	120			
Chromium	0.49	0.0060	0.5000	0	97.4	80	120			
Lead	0.48	0.0050	0.5000	0	97.0	80	120			
Selenium	0.49	0.050	0.5000	0	97.5	80	120			
Silver	0.48	0.0050	0.5000	0	97.0	80	120			

Sample ID	1408D76-002CMS	SampType:	MS	TestCode:	EPA 6010B: Total Recoverable Metals					
Client ID:	Outfall #3	Batch ID:	15047	RunNo:	20905					
Prep Date:	8/29/2014	Analysis Date:	8/30/2014	SeqNo:	608278	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	75	125			
Barium	0.55	0.020	0.5000	0.07284	95.0	75	125			
Cadmium	0.48	0.0020	0.5000	0	96.1	75	125			
Chromium	0.48	0.0060	0.5000	0	96.3	75	125			
Lead	0.47	0.0050	0.5000	0	94.4	75	125			
Selenium	0.47	0.050	0.5000	0	93.8	75	125			
Silver	0.49	0.0050	0.5000	0	98.6	75	125			

Sample ID	1408D76-002CMSD	SampType:	MSD	TestCode:	EPA 6010B: Total Recoverable Metals					
Client ID:	Outfall #3	Batch ID:	15047	RunNo:	20905					
Prep Date:	8/29/2014	Analysis Date:	8/30/2014	SeqNo:	608279	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	104	75	125	1.53	20	

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 greater than 2.
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#: 1408D76

16-Sep-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-14

Sample ID	1408D76-002CMSD	SampType:	MSD	TestCode:	EPA 6010B: Total Recoverable Metals					
Client ID:	Outfall #3	Batch ID:	15047	RunNo:	20905					
Prep Date:	8/29/2014	Analysis Date:	8/30/2014	SeqNo:	608279	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.55	0.020	0.5000	0.07284	95.9	75	125	0.783	20	
Cadmium	0.49	0.0020	0.5000	0	97.4	75	125	1.30	20	
Chromium	0.49	0.0060	0.5000	0	97.7	75	125	1.35	20	
Lead	0.48	0.0050	0.5000	0	96.5	75	125	2.16	20	
Selenium	0.47	0.050	0.5000	0	94.7	75	125	1.02	20	
Silver	0.50	0.0050	0.5000	0	99.7	75	125	1.11	20	

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408D76

16-Sep-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-14

Sample ID	mb-1		SampType: MBLK		TestCode: SM2320B: Alkalinity					
Client ID:	PBW		Batch ID: R20890		RunNo: 20890					
Prep Date:			Analysis Date: 8/28/2014		SeqNo: 607928		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	lcs-1		SampType: LCS			TestCode: SM2320B: Alkalinity				
Client ID:	LCSW		Batch ID: R20890			RunNo: 20890				
Prep Date:			Analysis Date: 8/28/2014			SeqNo: 607929		Units: mg/L CaCO3		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80	20	80.00	0	99.7	90	110			

Sample ID	1408d76-001b ms		SampType: MS		TestCode: SM2320B: Alkalinity					
Client ID:	Outfall #2		Batch ID: R20890		RunNo: 20890					
Prep Date:			Analysis Date: 8/28/2014		SeqNo: 607932		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	410	20	80.00	347.6	76.5	34.9	123			

Sample ID	1408d76-001b msd			SampType:	MSD		TestCode:	SM2320B: Alkalinity			
Client ID:	Outfall #2			Batch ID:	R20890		RunNo:	20890			
Prep Date:				Analysis Date:	8/28/2014		SeqNo:	607933		Units:	mg/L CaCO3
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Alkalinity (as CaCO3)	410	20	80.00	347.6	78.9	34.9	123	0.488	20		

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 greater than 2.
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: Western Refining Southw

Work Order Number: 1408D76

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

08/27/14
8/27/2014 4:55:00 AM

Completed By: Lindsay Mangin

8/27/2014 6:43:53 AM

Reviewed By: IO

08/27/2014

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° 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? Yes ✓ No
(Note discrepancies on chain of custody)
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.)
of preserved bottles checked for pH: 12 or >12 unless noted
Adjusted? 12
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	3.3	Good	Yes			

TABLE 2
Analytical Methods and Target Analytes

VOCs (EPA Method 8260B) ⁽¹⁾	
- Target List	
Benzene	
Toluene	
Ethylbenzene	
Xylenes	
Methyl tert butyl ether (MTBE)	
SVOCs - (EPA Method 8270)	
- Method List	
TPH-GRO (EPA Method 8015B)	
- Gasoline Range Organics	
TPH-DRO (EPA Method 8015B)	
- Diesel Range Organics	
- Motor Oil Range Organics	
Total Carbon Dioxide (Laboratory Calculated)	
- Dissolved CO ₂	
Specific Conductivity (EPA Method 120.1 or field measurement)	
- Specific conductance	
TDS (EPA Method 160.1 or field measurement)	
- Total dissolved solids	
General Chemistry - Anions (EPA Method 300.0)	
Fluoride	
Chloride	
Bromide	
Nitrogen, Nitrite (as N)	
Nitrogen, Nitrate (as N)	
Phosphorous, Orthophosphate (As P)	
Sulfate	
General Chemistry - Alkalinity (EPA Method 310.1)	
Alkalinity, Total	
Carbonate	
Bicarbonate	

Total Recoverable Metals (EPA Method 6010B/7470)	
- Target List (not applicable to River Terrace Sampling Events)	
Arsenic	Lead
Barium	Mercury
Cadmium	Selenium
Chromium	Silver
- Target List (for River Terrace Sampling Events Only)	
Lead	
Mercury (DW-1 ONLY)	
Dissolved Metals (EPA Method 6010B / 7470)	
- Target List (for Refinery Complex, Outfalls, and River)	
Arsenic	Manganese
Barium	Mercury
Cadmium	Potassium
Calcium	Selenium
Chromium	Silver
Copper	Sodium
Iron	Uranium
Lead	Zinc
Magnesium	

TPH = total petroleum hydrocarbons
GRO = gasoline range organics
VOCs = volatile organic compounds
DRO = diesel range organics
TDS = total dissolved solids

NOTES:

- (1) VOCs Target List for River Terrace samples are analyzed by EPA Method 8021B per NMED's letter Approval with Direction dated June 16, 2009.
- (2) Target List for San Juan River Terrace Monitoring Wells and Piezometer Wells only, per the River Terrace Bioventing System Monitoring Plan.



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

April 14, 2014

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: Seeps 4-1-14

OrderNo.: 1404092

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/2/2014 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 **1404092**

Date Reported: **4/14/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: #1

Project: Seeps 4-1-14

Collection Date: 4/1/2014 10:30:00 AM

Lab ID: 1404092-001

Matrix: AQUEOUS

Received Date: 4/2/2014 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JRR
Fluoride	0.30	0.10		mg/L	1	4/2/2014 4:25:19 PM	R17774
Chloride	150	10		mg/L	20	4/2/2014 4:37:43 PM	R17774
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	4/2/2014 4:25:19 PM	R17774
Bromide	1.9	0.10		mg/L	1	4/2/2014 4:25:19 PM	R17774
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	4/2/2014 4:25:19 PM	R17774
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	4/2/2014 4:25:19 PM	R17774
Sulfate	1200	25	*	mg/L	50	4/5/2014 5:32:20 AM	R17830
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/3/2014 2:23:42 PM	R17772
Toluene	ND	1.0		µg/L	1	4/3/2014 2:23:42 PM	R17772
Ethylbenzene	ND	1.0		µg/L	1	4/3/2014 2:23:42 PM	R17772
Methyl tert-butyl ether (MTBE)	66	1.0		µg/L	1	4/3/2014 2:23:42 PM	R17772
Xylenes, Total	ND	1.5		µg/L	1	4/3/2014 2:23:42 PM	R17772
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	4/3/2014 2:23:42 PM	R17772
Surr: 4-Bromofluorobenzene	102	70-130		%REC	1	4/3/2014 2:23:42 PM	R17772
Surr: Dibromofluoromethane	105	70-130		%REC	1	4/3/2014 2:23:42 PM	R17772
Surr: Toluene-d8	91.4	70-130		%REC	1	4/3/2014 2:23:42 PM	R17772
CARBON DIOXIDE							Analyst: JML
Total Carbon Dioxide	390	1.0	H	mg CO2/L	1	4/2/2014 5:55:54 PM	R17767
SM2320B: ALKALINITY							Analyst: JML
Bicarbonate (As CaCO3)	430	20		mg/L CaCO3	1	4/2/2014 5:55:54 PM	R17767
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	4/2/2014 5:55:54 PM	R17767
Total Alkalinity (as CaCO3)	430	20		mg/L CaCO3	1	4/2/2014 5:55:54 PM	R17767

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 9
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404092**

Date Reported: **4/14/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: #6

Project: Seeps 4-1-14

Collection Date: 4/1/2014 10:45:00 AM

Lab ID: 1404092-002

Matrix: AQUEOUS

Received Date: 4/2/2014 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JRR
Fluoride	ND	0.10		mg/L	1	4/2/2014 4:50:07 PM	R17774
Chloride	1600	100	*	mg/L	200	4/5/2014 5:57:10 AM	R17830
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	4/2/2014 5:02:32 PM	R17774
Bromide	ND	2.0		mg/L	20	4/2/2014 5:02:32 PM	R17774
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	4/2/2014 4:50:07 PM	R17774
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	4/2/2014 4:50:07 PM	R17774
Sulfate	1500	25	*	mg/L	50	4/5/2014 5:44:45 AM	R17830
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/3/2014 3:50:05 PM	R17772
Toluene	ND	1.0		µg/L	1	4/3/2014 3:50:05 PM	R17772
Ethylbenzene	ND	1.0		µg/L	1	4/3/2014 3:50:05 PM	R17772
Methyl tert-butyl ether (MTBE)	5.8	1.0		µg/L	1	4/3/2014 3:50:05 PM	R17772
Xylenes, Total	ND	1.5		µg/L	1	4/3/2014 3:50:05 PM	R17772
Surr: 1,2-Dichloroethane-d4	104	70-130		%REC	1	4/3/2014 3:50:05 PM	R17772
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	4/3/2014 3:50:05 PM	R17772
Surr: Dibromofluoromethane	105	70-130		%REC	1	4/3/2014 3:50:05 PM	R17772
Surr: Toluene-d8	98.4	70-130		%REC	1	4/3/2014 3:50:05 PM	R17772
CARBON DIOXIDE							Analyst: JML
Total Carbon Dioxide	390	1.0	H	mg CO2/L	1	4/2/2014 6:13:51 PM	R17767
SM2320B: ALKALINITY							Analyst: JML
Bicarbonate (As CaCO3)	420	20		mg/L CaCO3	1	4/2/2014 6:13:51 PM	R17767
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	4/2/2014 6:13:51 PM	R17767
Total Alkalinity (as CaCO3)	420	20		mg/L CaCO3	1	4/2/2014 6:13:51 PM	R17767

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 9
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404092**

Date Reported: **4/14/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: #9

Project: Seeps 4-1-14

Collection Date: 4/1/2014 11:00:00 AM

Lab ID: 1404092-003

Matrix: AQUEOUS

Received Date: 4/2/2014 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JRR
Fluoride	0.50	0.10		mg/L	1	4/2/2014 5:14:56 PM	R17774
Chloride	550	25	*	mg/L	50	4/5/2014 6:09:34 AM	R17830
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	4/2/2014 5:27:21 PM	R17774
Bromide	2.0	0.10		mg/L	1	4/2/2014 5:14:56 PM	R17774
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	4/2/2014 5:14:56 PM	R17774
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	4/2/2014 5:27:21 PM	R17774
Sulfate	2000	25	*	mg/L	50	4/5/2014 6:09:34 AM	R17830
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/3/2014 4:18:43 PM	R17772
Toluene	ND	1.0		µg/L	1	4/3/2014 4:18:43 PM	R17772
Ethylbenzene	ND	1.0		µg/L	1	4/3/2014 4:18:43 PM	R17772
Methyl tert-butyl ether (MTBE)	24	1.0		µg/L	1	4/3/2014 4:18:43 PM	R17772
Xylenes, Total	ND	1.5		µg/L	1	4/3/2014 4:18:43 PM	R17772
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	4/3/2014 4:18:43 PM	R17772
Surr: 4-Bromofluorobenzene	100	70-130		%REC	1	4/3/2014 4:18:43 PM	R17772
Surr: Dibromofluoromethane	109	70-130		%REC	1	4/3/2014 4:18:43 PM	R17772
Surr: Toluene-d8	97.0	70-130		%REC	1	4/3/2014 4:18:43 PM	R17772
CARBON DIOXIDE							Analyst: JML
Total Carbon Dioxide	290	1.0	H	mg CO2/L	1	4/2/2014 6:32:19 PM	R17767
SM2320B: ALKALINITY							Analyst: JML
Bicarbonate (As CaCO3)	320	20		mg/L CaCO3	1	4/2/2014 6:32:19 PM	R17767
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	4/2/2014 6:32:19 PM	R17767
Total Alkalinity (as CaCO3)	320	20		mg/L CaCO3	1	4/2/2014 6:32:19 PM	R17767

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 9
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404092**

Date Reported: **4/14/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Trip Blank

Project: Seeps 4-1-14

Collection Date:

Lab ID: 1404092-004

Matrix: TRIP BLANK

Received Date: 4/2/2014 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/3/2014 4:47:34 PM	R17772
Toluene	ND	1.0		µg/L	1	4/3/2014 4:47:34 PM	R17772
Ethylbenzene	ND	1.0		µg/L	1	4/3/2014 4:47:34 PM	R17772
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/3/2014 4:47:34 PM	R17772
Xylenes, Total	ND	1.5		µg/L	1	4/3/2014 4:47:34 PM	R17772
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	1	4/3/2014 4:47:34 PM	R17772
Surr: 4-Bromofluorobenzene	98.0	70-130		%REC	1	4/3/2014 4:47:34 PM	R17772
Surr: Dibromofluoromethane	103	70-130		%REC	1	4/3/2014 4:47:34 PM	R17772
Surr: Toluene-d8	91.7	70-130		%REC	1	4/3/2014 4:47:34 PM	R17772

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
	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 greater than 2.
	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#: 1404092

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: Seeps 4-1-14

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R17774		RunNo: 17774							
Prep Date:	Analysis Date: 4/2/2014		SeqNo: 512157		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								
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								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R17774		RunNo: 17774							
Prep Date:	Analysis Date: 4/2/2014		SeqNo: 512158		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.8	90	110			
Chloride	4.7	0.50	5.000	0	94.0	90	110			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	96.0	90	110			
Bromide	2.5	0.10	2.500	0	98.1	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	98.2	90	110			
Phosphorus, Orthophosphate (As P)	4.8	0.50	5.000	0	95.2	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R17774		RunNo: 17774							
Prep Date:	Analysis Date: 4/2/2014		SeqNo: 512214		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								
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								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R17774		RunNo: 17774							
Prep Date:	Analysis Date: 4/2/2014		SeqNo: 512215		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	101	90	110			
Chloride	4.7	0.50	5.000	0	93.6	90	110			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	96.0	90	110			
Bromide	2.4	0.10	2.500	0	97.8	90	110			

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 greater than 2.
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#: 1404092

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: Seeps 4-1-14

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R17774		RunNo: 17774					
Prep Date:			Analysis Date: 4/2/2014		SeqNo: 512215		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrate (As N)	2.4	0.10	2.500	0	97.6	90	110			
Phosphorus, Orthophosphate (As P)	4.8	0.50	5.000	0	95.8	90	110			

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R17830			RunNo: 17830					
Prep Date:		Analysis Date: 4/4/2014			SeqNo: 513962		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: R17830		RunNo: 17830					
Prep Date:			Analysis Date: 4/4/2014		SeqNo: 513963		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	93.1	90	110			
Sulfate	9.5	0.50	10.00	0	94.7	90	110			

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R17830			RunNo: 17830					
Prep Date:		Analysis Date: 4/4/2014			SeqNo: 514005		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: R17830		RunNo: 17830					
Prep Date:			Analysis Date: 4/4/2014		SeqNo: 514006		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	93.2	90	110			
Sulfate	9.5	0.50	10.00	0	95.1	90	110			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404092

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: Seeps 4-1-14

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R17772	RunNo:	17772					
Prep Date:		Analysis Date:	4/3/2014	SeqNo:	512644	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	9.9		10.00		98.7	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		99.6	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.5		10.00		94.6	70	130			

Sample ID	1404092-001a ms	SampType:	MS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	#1	Batch ID:	R17772	RunNo:	17772					
Prep Date:		Analysis Date:	4/3/2014	SeqNo:	512647	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	102	70	130			
Toluene	20	1.0	20.00	0	99.1	67.5	123			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.6	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.5	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.5	70	130			
Surr: Toluene-d8	10		10.00		99.6	70	130			

Sample ID	1404092-001a msd	SampType:	MSD	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	#1	Batch ID:	R17772	RunNo:	17772					
Prep Date:		Analysis Date:	4/3/2014	SeqNo:	512648	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	103	70	130	0.926	20	
Toluene	19	1.0	20.00	0	94.7	67.5	123	4.49	20	
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.7		10.00		97.4	70	130	0	0	
Surr: Dibromofluoromethane	10		10.00		103	70	130	0	0	
Surr: Toluene-d8	10		10.00		101	70	130	0	0	

Sample ID	100ng lcs1	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	R17772	RunNo:	17772					
Prep Date:		Analysis Date:	4/3/2014	SeqNo:	512777	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	103	70	130			

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 greater than 2.
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#: 1404092

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: Seeps 4-1-14

Sample ID	100ng lcs1		SampType: LCS		TestCode: EPA Method 8260: Volatiles Short List					
Client ID:	LCSW		Batch ID: R17772		RunNo: 17772					
Prep Date:			Analysis Date: 4/3/2014		SeqNo: 512777		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Toluene	19	1.0	20.00	0	96.5	80	120			
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.9		10.00		98.7	70	130			
Surr: Toluene-d8	9.7		10.00		97.0	70	130			

Sample ID	b3	SampType: MBLK			TestCode: EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID: R17772			RunNo: 17772					
Prep Date:		Analysis Date: 4/3/2014			SeqNo: 512791		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	9.5		10.00		95.2	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.4		10.00		94.1	70	130			

Sample ID	100ng lcs2		SampType: LCS		TestCode: EPA Method 8260: Volatiles Short List					
Client ID:	LCSW		Batch ID: R17772		RunNo: 17772					
Prep Date:			Analysis Date: 4/3/2014		SeqNo: 512792		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	103	70	130			
Toluene	19	1.0	20.00	0	93.8	80	120			
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.5	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	9.8		10.00		97.8	70	130			

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 greater than 2.
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#: 1404092

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: Seeps 4-1-14

Sample ID	mb-1		SampType:	mblk		TestCode:	SM2320B: Alkalinity				
Client ID:	PBW		Batch ID:	R17767		RunNo:	17767				
Prep Date:			Analysis Date:	4/2/2014		SeqNo:	511976	Units:	mg/L CaCO3		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Alkalinity (as CaCO3)	ND	20									

Sample ID	lcs-1		SampType: lcs		TestCode: SM2320B: Alkalinity					
Client ID:	LCSW		Batch ID: R17767		RunNo: 17767					
Prep Date:			Analysis Date: 4/2/2014		SeqNo: 511977		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	78	20	80.00	0	97.0	90	110			

Sample ID	mb-2		SampType: mblk		TestCode: SM2320B: Alkalinity					
Client ID:	PBW		Batch ID: R17767		RunNo: 17767					
Prep Date:			Analysis Date: 4/2/2014		SeqNo: 511991		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	lcs-2		SampType: lcs		TestCode: SM2320B: Alkalinity					
Client ID:	LCSW		Batch ID: R17767		RunNo: 17767					
Prep Date:			Analysis Date: 4/2/2014		SeqNo: 511992		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	82	20	80.00	0	102	90	110			

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 greater than 2.
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1404092

RcptNo: 1

Received by/date:

[Signature] 04/02/14

Logged By: Lindsay Mangin

4/2/2014 9:45:00 AM

[Signature]

Completed By: Lindsay Mangin

4/2/2014 10:33:15 AM

[Signature]

Reviewed By:

[Signature] 04/02/14

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° 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: 3
(<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	1.4	Good	Yes			



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

April 14, 2014

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: San Juan River Bluff 4/1/14

OrderNo.: 1404091

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/2/2014 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 **1404091**

Date Reported: **4/14/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: North Of 45

Project: San Juan River Bluff 4/1/14

Collection Date: 4/1/2014 9:45:00 AM

Lab ID: 1404091-001

Matrix: AQUEOUS

Received Date: 4/2/2014 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/2/2014 10:35:48 PM	12504
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/2/2014 10:35:48 PM	12504
Surr: DNOP	96.8	76-161		%REC	1	4/2/2014 10:35:48 PM	12504
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/4/2014 2:31:53 PM	R17799
Surr: BFB	95.7	80.4-118		%REC	1	4/4/2014 2:31:53 PM	R17799
EPA METHOD 300.0: ANIONS							Analyst: JRR
Fluoride	0.20	0.10		mg/L	1	4/2/2014 1:56:25 PM	R17774
Chloride	3.8	0.50		mg/L	1	4/2/2014 1:56:25 PM	R17774
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	4/2/2014 1:56:25 PM	R17774
Bromide	ND	0.10		mg/L	1	4/2/2014 1:56:25 PM	R17774
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	4/2/2014 1:56:25 PM	R17774
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	4/2/2014 1:56:25 PM	R17774
Sulfate	92	10		mg/L	20	4/2/2014 2:33:39 PM	R17774
EPA METHOD 7470: MERCURY							Analyst: JML
Mercury	ND	0.00020		mg/L	1	4/2/2014 5:29:27 PM	12508
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/5/2014 12:42:37 PM	R17809
Barium	0.071	0.020		mg/L	1	4/3/2014 12:58:12 PM	R17788
Cadmium	ND	0.0020		mg/L	1	4/3/2014 12:58:12 PM	R17788
Calcium	42	1.0		mg/L	1	4/3/2014 12:58:12 PM	R17788
Chromium	ND	0.0060		mg/L	1	4/3/2014 12:58:12 PM	R17788
Copper	ND	0.0060		mg/L	1	4/3/2014 12:58:12 PM	R17788
Iron	0.033	0.020		mg/L	1	4/3/2014 12:58:12 PM	R17788
Lead	ND	0.0050		mg/L	1	4/3/2014 12:58:12 PM	R17788
Magnesium	6.9	1.0		mg/L	1	4/3/2014 12:58:12 PM	R17788
Manganese	0.022	0.0020		mg/L	1	4/3/2014 12:58:12 PM	R17788
Potassium	2.0	1.0		mg/L	1	4/3/2014 12:58:12 PM	R17788
Selenium	ND	0.050		mg/L	1	4/3/2014 12:58:12 PM	R17788
Silver	ND	0.0050		mg/L	1	4/3/2014 12:58:12 PM	R17788
Sodium	32	1.0		mg/L	1	4/3/2014 12:58:12 PM	R17788
Uranium	ND	0.10		mg/L	1	4/3/2014 12:58:12 PM	R17788
Zinc	ND	0.020		mg/L	1	4/3/2014 12:58:12 PM	R17788
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/5/2014 1:01:16 PM	12551
Barium	0.086	0.020		mg/L	1	4/5/2014 1:01:16 PM	12551
Cadmium	ND	0.0020		mg/L	1	4/5/2014 1:01:16 PM	12551

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 30
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404091**

Date Reported: **4/14/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: North Of 45

Project: San Juan River Bluff 4/1/14

Collection Date: 4/1/2014 9:45:00 AM

Lab ID: 1404091-001

Matrix: AQUEOUS

Received Date: 4/2/2014 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Chromium	ND	0.0060		mg/L	1	4/5/2014 1:01:16 PM	12551
Lead	ND	0.0050		mg/L	1	4/5/2014 1:01:16 PM	12551
Selenium	ND	0.050		mg/L	1	4/5/2014 1:01:16 PM	12551
Silver	ND	0.0050		mg/L	1	4/5/2014 1:01:16 PM	12551
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Toluene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Ethylbenzene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Naphthalene	ND	2.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
1-Methylnaphthalene	ND	4.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
2-Methylnaphthalene	ND	4.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Acetone	ND	10		µg/L	1	4/3/2014 2:29:45 PM	R17789
Bromobenzene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Bromodichloromethane	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Bromoform	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Bromomethane	ND	3.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
2-Butanone	ND	10		µg/L	1	4/3/2014 2:29:45 PM	R17789
Carbon disulfide	ND	10		µg/L	1	4/3/2014 2:29:45 PM	R17789
Carbon Tetrachloride	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Chlorobenzene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Chloroethane	ND	2.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Chloroform	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Chloromethane	ND	3.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
2-Chlorotoluene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
4-Chlorotoluene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
cis-1,2-DCE	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Dibromochloromethane	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Dibromomethane	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
1,2-Dichlorobenzene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
1,3-Dichlorobenzene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
1,4-Dichlorobenzene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Dichlorodifluoromethane	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404091**

Date Reported: **4/14/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: North Of 45

Project: San Juan River Bluff 4/1/14

Collection Date: 4/1/2014 9:45:00 AM

Lab ID: 1404091-001

Matrix: AQUEOUS

Received Date: 4/2/2014 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
1,1-Dichloroethane	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
1,1-Dichloroethene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
1,2-Dichloropropane	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
1,3-Dichloropropane	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
2,2-Dichloropropane	ND	2.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
1,1-Dichloropropene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Hexachlorobutadiene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
2-Hexanone	ND	10		µg/L	1	4/3/2014 2:29:45 PM	R17789
Isopropylbenzene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
4-Isopropyltoluene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
4-Methyl-2-pentanone	ND	10		µg/L	1	4/3/2014 2:29:45 PM	R17789
Methylene Chloride	ND	3.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
n-Butylbenzene	ND	3.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
n-Propylbenzene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
sec-Butylbenzene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Styrene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
tert-Butylbenzene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
trans-1,2-DCE	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Trichlorofluoromethane	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
1,2,3-Trichloropropane	ND	2.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Vinyl chloride	ND	1.0		µg/L	1	4/3/2014 2:29:45 PM	R17789
Xylenes, Total	ND	1.5		µg/L	1	4/3/2014 2:29:45 PM	R17789
Surr: 1,2-Dichloroethane-d4	105	70-130		%REC	1	4/3/2014 2:29:45 PM	R17789
Surr: 4-Bromofluorobenzene	92.4	70-130		%REC	1	4/3/2014 2:29:45 PM	R17789
Surr: Dibromofluoromethane	96.4	70-130		%REC	1	4/3/2014 2:29:45 PM	R17789
Surr: Toluene-d8	101	70-130		%REC	1	4/3/2014 2:29:45 PM	R17789

SM 2540 C: TOTAL DISSOLVED SOLIDS

Analyst: **KS**

Total Dissolved Solids	259	20.0	mg/L	1	4/7/2014 12:12:00 PM	12549

CARBON DIOXIDE

Analyst: **JML**

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404091**

Date Reported: **4/14/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: North Of 45

Project: San Juan River Bluff 4/1/14

Collection Date: 4/1/2014 9:45:00 AM

Lab ID: 1404091-001

Matrix: AQUEOUS

Received Date: 4/2/2014 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
CARBON DIOXIDE							Analyst: JML
Total Carbon Dioxide	89	1.0	H	mg CO2/L	1	4/2/2014 4:04:22 PM	R17767
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JML
Conductivity	380	0.010		µmhos/cm	1	4/2/2014 4:04:22 PM	R17767
SM2320B: ALKALINITY							Analyst: JML
Bicarbonate (As CaCO3)	100	20		mg/L CaCO3	1	4/2/2014 4:04:22 PM	R17767
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	4/2/2014 4:04:22 PM	R17767
Total Alkalinity (as CaCO3)	100	20		mg/L CaCO3	1	4/2/2014 4:04:22 PM	R17767

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 4 of 30
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404091**

Date Reported: **4/14/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: North Of 46

Project: San Juan River Bluff 4/1/14

Collection Date: 4/1/2014 9:30:00 AM

Lab ID: 1404091-002

Matrix: AQUEOUS

Received Date: 4/2/2014 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/3/2014 9:50:46 AM	12504
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/3/2014 9:50:46 AM	12504
Surr: DNOP	95.8	76-161		%REC	1	4/3/2014 9:50:46 AM	12504
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/4/2014 3:01:59 PM	R17799
Surr: BFB	99.5	80.4-118		%REC	1	4/4/2014 3:01:59 PM	R17799
EPA METHOD 300.0: ANIONS							Analyst: JRR
Fluoride	0.20	0.10		mg/L	1	4/2/2014 2:46:03 PM	R17774
Chloride	3.8	0.50		mg/L	1	4/2/2014 2:46:03 PM	R17774
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	4/2/2014 2:46:03 PM	R17774
Bromide	ND	0.10		mg/L	1	4/2/2014 2:46:03 PM	R17774
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	4/2/2014 2:46:03 PM	R17774
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	4/2/2014 2:46:03 PM	R17774
Sulfate	87	10		mg/L	20	4/2/2014 2:58:27 PM	R17774
EPA METHOD 7470: MERCURY							Analyst: JML
Mercury	ND	0.00020		mg/L	1	4/2/2014 5:34:51 PM	12508
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/5/2014 12:44:25 PM	R17809
Barium	0.071	0.020		mg/L	1	4/3/2014 1:01:56 PM	R17788
Cadmium	ND	0.0020		mg/L	1	4/3/2014 1:01:56 PM	R17788
Calcium	41	1.0		mg/L	1	4/3/2014 1:01:56 PM	R17788
Chromium	ND	0.0060		mg/L	1	4/3/2014 1:01:56 PM	R17788
Copper	ND	0.0060		mg/L	1	4/3/2014 1:01:56 PM	R17788
Iron	0.030	0.020		mg/L	1	4/3/2014 1:01:56 PM	R17788
Lead	ND	0.0050		mg/L	1	4/3/2014 1:01:56 PM	R17788
Magnesium	6.8	1.0		mg/L	1	4/3/2014 1:01:56 PM	R17788
Manganese	0.015	0.0020		mg/L	1	4/3/2014 1:01:56 PM	R17788
Potassium	1.9	1.0		mg/L	1	4/3/2014 1:01:56 PM	R17788
Selenium	ND	0.050		mg/L	1	4/3/2014 1:01:56 PM	R17788
Silver	ND	0.0050		mg/L	1	4/3/2014 1:01:56 PM	R17788
Sodium	31	1.0		mg/L	1	4/3/2014 1:01:56 PM	R17788
Uranium	ND	0.10		mg/L	1	4/3/2014 1:01:56 PM	R17788
Zinc	ND	0.020		mg/L	1	4/3/2014 1:01:56 PM	R17788
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/5/2014 1:02:36 PM	12551
Barium	0.090	0.020		mg/L	1	4/5/2014 1:02:36 PM	12551
Cadmium	ND	0.0020		mg/L	1	4/5/2014 1:02:36 PM	12551

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

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Date Reported: **4/14/2014**

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Client Sample ID: North Of 46

Project: San Juan River Bluff 4/1/14

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Lab ID: 1404091-002

Matrix: AQUEOUS

Received Date: 4/2/2014 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Chromium	ND	0.0060		mg/L	1	4/5/2014 1:02:36 PM	12551
Lead	ND	0.0050		mg/L	1	4/5/2014 1:02:36 PM	12551
Selenium	ND	0.050		mg/L	1	4/5/2014 1:02:36 PM	12551
Silver	ND	0.0050		mg/L	1	4/5/2014 1:02:36 PM	12551
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Toluene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Ethylbenzene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Naphthalene	ND	2.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
1-Methylnaphthalene	ND	4.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
2-Methylnaphthalene	ND	4.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Acetone	ND	10		µg/L	1	4/3/2014 4:32:58 PM	R17789
Bromobenzene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Bromodichloromethane	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Bromoform	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Bromomethane	ND	3.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
2-Butanone	ND	10		µg/L	1	4/3/2014 4:32:58 PM	R17789
Carbon disulfide	ND	10		µg/L	1	4/3/2014 4:32:58 PM	R17789
Carbon Tetrachloride	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Chlorobenzene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Chloroethane	ND	2.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Chloroform	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Chloromethane	ND	3.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
2-Chlorotoluene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
4-Chlorotoluene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
cis-1,2-DCE	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Dibromochloromethane	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Dibromomethane	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
1,2-Dichlorobenzene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
1,3-Dichlorobenzene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
1,4-Dichlorobenzene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Dichlorodifluoromethane	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404091**Date Reported: **4/14/2014****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** North Of 46**Project:** San Juan River Bluff 4/1/14**Collection Date:** 4/1/2014 9:30:00 AM**Lab ID:** 1404091-002**Matrix:** AQUEOUS**Received Date:** 4/2/2014 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
1,1-Dichloroethane	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
1,1-Dichloroethene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
1,2-Dichloropropane	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
1,3-Dichloropropane	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
2,2-Dichloropropane	ND	2.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
1,1-Dichloropropene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Hexachlorobutadiene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
2-Hexanone	ND	10		µg/L	1	4/3/2014 4:32:58 PM	R17789
Isopropylbenzene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
4-Isopropyltoluene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
4-Methyl-2-pentanone	ND	10		µg/L	1	4/3/2014 4:32:58 PM	R17789
Methylene Chloride	ND	3.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
n-Butylbenzene	ND	3.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
n-Propylbenzene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
sec-Butylbenzene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Styrene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
tert-Butylbenzene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
trans-1,2-DCE	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Trichlorofluoromethane	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
1,2,3-Trichloropropane	ND	2.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Vinyl chloride	ND	1.0		µg/L	1	4/3/2014 4:32:58 PM	R17789
Xylenes, Total	ND	1.5		µg/L	1	4/3/2014 4:32:58 PM	R17789
Surr: 1,2-Dichloroethane-d4	108	70-130		%REC	1	4/3/2014 4:32:58 PM	R17789
Surr: 4-Bromofluorobenzene	87.3	70-130		%REC	1	4/3/2014 4:32:58 PM	R17789
Surr: Dibromofluoromethane	103	70-130		%REC	1	4/3/2014 4:32:58 PM	R17789
Surr: Toluene-d8	100	70-130		%REC	1	4/3/2014 4:32:58 PM	R17789

SM 2540 C: TOTAL DISSOLVED SOLIDSAnalyst: **KS**

Total Dissolved Solids	262	20.0	mg/L	1	4/7/2014 12:12:00 PM	12549

CARBON DIOXIDEAnalyst: **JML**

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 7 of 30
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404091**

Date Reported: **4/14/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: North Of 46

Project: San Juan River Bluff 4/1/14

Collection Date: 4/1/2014 9:30:00 AM

Lab ID: 1404091-002

Matrix: AQUEOUS

Received Date: 4/2/2014 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
CARBON DIOXIDE							Analyst: JML
Total Carbon Dioxide	89	1.0	H	mg CO2/L	1	4/2/2014 4:17:37 PM	R17767
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JML
Conductivity	390	0.010		µmhos/cm	1	4/2/2014 4:17:37 PM	R17767
SM2320B: ALKALINITY							Analyst: JML
Bicarbonate (As CaCO3)	100	20		mg/L CaCO3	1	4/2/2014 4:17:37 PM	R17767
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	4/2/2014 4:17:37 PM	R17767
Total Alkalinity (as CaCO3)	100	20		mg/L CaCO3	1	4/2/2014 4:17:37 PM	R17767

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 8 of 30
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404091**

Date Reported: **4/14/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Upstream

Project: San Juan River Bluff 4/1/14

Collection Date: 4/1/2014 10:15:00 AM

Lab ID: 1404091-003

Matrix: AQUEOUS

Received Date: 4/2/2014 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/3/2014 12:37:18 AM	12504
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/3/2014 12:37:18 AM	12504
Surr: DNOP	91.6	76-161		%REC	1	4/3/2014 12:37:18 AM	12504
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/4/2014 3:32:09 PM	R17799
Surr: BFB	105	80.4-118		%REC	1	4/4/2014 3:32:09 PM	R17799
EPA METHOD 300.0: ANIONS							Analyst: JRR
Fluoride	0.20	0.10		mg/L	1	4/2/2014 3:10:52 PM	R17774
Chloride	3.9	0.50		mg/L	1	4/2/2014 3:10:52 PM	R17774
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	4/2/2014 3:10:52 PM	R17774
Bromide	ND	0.10		mg/L	1	4/2/2014 3:10:52 PM	R17774
Nitrogen, Nitrate (As N)	0.12	0.10		mg/L	1	4/2/2014 3:10:52 PM	R17774
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	4/2/2014 3:10:52 PM	R17774
Sulfate	96	10		mg/L	20	4/2/2014 3:23:16 PM	R17774
EPA METHOD 7470: MERCURY							Analyst: JML
Mercury	ND	0.00020		mg/L	1	4/2/2014 5:36:36 PM	12508
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/5/2014 12:46:11 PM	R17809
Barium	0.072	0.020		mg/L	1	4/3/2014 1:05:29 PM	R17788
Cadmium	ND	0.0020		mg/L	1	4/3/2014 1:05:29 PM	R17788
Calcium	41	1.0		mg/L	1	4/3/2014 1:05:29 PM	R17788
Chromium	ND	0.0060		mg/L	1	4/3/2014 1:05:29 PM	R17788
Copper	ND	0.0060		mg/L	1	4/3/2014 1:05:29 PM	R17788
Iron	0.024	0.020		mg/L	1	4/3/2014 1:05:29 PM	R17788
Lead	ND	0.0050		mg/L	1	4/3/2014 1:05:29 PM	R17788
Magnesium	7.1	1.0		mg/L	1	4/3/2014 1:05:29 PM	R17788
Manganese	0.028	0.0020		mg/L	1	4/3/2014 1:05:29 PM	R17788
Potassium	2.0	1.0		mg/L	1	4/3/2014 1:05:29 PM	R17788
Selenium	ND	0.050		mg/L	1	4/3/2014 1:05:29 PM	R17788
Silver	ND	0.0050		mg/L	1	4/3/2014 1:05:29 PM	R17788
Sodium	36	1.0		mg/L	1	4/3/2014 1:05:29 PM	R17788
Uranium	ND	0.10		mg/L	1	4/3/2014 1:05:29 PM	R17788
Zinc	0.023	0.020		mg/L	1	4/3/2014 1:05:29 PM	R17788
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/5/2014 1:03:54 PM	12551
Barium	0.086	0.020		mg/L	1	4/5/2014 1:03:54 PM	12551
Cadmium	ND	0.0020		mg/L	1	4/5/2014 1:03:54 PM	12551

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 9 of 30
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404091**

Date Reported: **4/14/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Upstream

Project: San Juan River Bluff 4/1/14

Collection Date: 4/1/2014 10:15:00 AM

Lab ID: 1404091-003

Matrix: AQUEOUS

Received Date: 4/2/2014 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Chromium	ND	0.0060		mg/L	1	4/5/2014 1:03:54 PM	12551
Lead	ND	0.0050		mg/L	1	4/5/2014 1:03:54 PM	12551
Selenium	ND	0.050		mg/L	1	4/5/2014 1:03:54 PM	12551
Silver	ND	0.0050		mg/L	1	4/5/2014 1:03:54 PM	12551
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Toluene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Ethylbenzene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Naphthalene	ND	2.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
1-Methylnaphthalene	ND	4.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
2-Methylnaphthalene	ND	4.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Acetone	ND	10		µg/L	1	4/3/2014 5:03:49 PM	R17789
Bromobenzene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Bromodichloromethane	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Bromoform	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Bromomethane	ND	3.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
2-Butanone	ND	10		µg/L	1	4/3/2014 5:03:49 PM	R17789
Carbon disulfide	ND	10		µg/L	1	4/3/2014 5:03:49 PM	R17789
Carbon Tetrachloride	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Chlorobenzene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Chloroethane	ND	2.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Chloroform	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Chloromethane	ND	3.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
2-Chlorotoluene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
4-Chlorotoluene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
cis-1,2-DCE	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Dibromochloromethane	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Dibromomethane	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
1,2-Dichlorobenzene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
1,3-Dichlorobenzene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
1,4-Dichlorobenzene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Dichlorodifluoromethane	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404091**

Date Reported: **4/14/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Upstream

Project: San Juan River Bluff 4/1/14

Collection Date: 4/1/2014 10:15:00 AM

Lab ID: 1404091-003

Matrix: AQUEOUS

Received Date: 4/2/2014 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
1,1-Dichloroethane	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
1,1-Dichloroethene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
1,2-Dichloropropane	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
1,3-Dichloropropane	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
2,2-Dichloropropane	ND	2.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
1,1-Dichloropropene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Hexachlorobutadiene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
2-Hexanone	ND	10		µg/L	1	4/3/2014 5:03:49 PM	R17789
Isopropylbenzene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
4-Isopropyltoluene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
4-Methyl-2-pentanone	ND	10		µg/L	1	4/3/2014 5:03:49 PM	R17789
Methylene Chloride	ND	3.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
n-Butylbenzene	ND	3.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
n-Propylbenzene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
sec-Butylbenzene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Styrene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
tert-Butylbenzene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
trans-1,2-DCE	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Trichlorofluoromethane	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
1,2,3-Trichloropropane	ND	2.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Vinyl chloride	ND	1.0		µg/L	1	4/3/2014 5:03:49 PM	R17789
Xylenes, Total	ND	1.5		µg/L	1	4/3/2014 5:03:49 PM	R17789
Surr: 1,2-Dichloroethane-d4	105	70-130		%REC	1	4/3/2014 5:03:49 PM	R17789
Surr: 4-Bromofluorobenzene	94.0	70-130		%REC	1	4/3/2014 5:03:49 PM	R17789
Surr: Dibromofluoromethane	105	70-130		%REC	1	4/3/2014 5:03:49 PM	R17789
Surr: Toluene-d8	96.5	70-130		%REC	1	4/3/2014 5:03:49 PM	R17789

SM 2540 C: TOTAL DISSOLVED SOLIDS

Analyst: **KS**

Total Dissolved Solids	269	20.0		mg/L	1	4/7/2014 12:12:00 PM	12549

CARBON DIOXIDE

Analyst: **JML**

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404091**

Date Reported: **4/14/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Upstream

Project: San Juan River Bluff 4/1/14

Collection Date: 4/1/2014 10:15:00 AM

Lab ID: 1404091-003

Matrix: AQUEOUS

Received Date: 4/2/2014 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
CARBON DIOXIDE							Analyst: JML
Total Carbon Dioxide	89	1.0	H	mg CO2/L	1	4/2/2014 4:26:19 PM	R17767
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JML
Conductivity	400	0.010		µmhos/cm	1	4/2/2014 4:26:19 PM	R17767
SM2320B: ALKALINITY							Analyst: JML
Bicarbonate (As CaCO3)	99	20		mg/L CaCO3	1	4/2/2014 4:26:19 PM	R17767
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	4/2/2014 4:26:19 PM	R17767
Total Alkalinity (as CaCO3)	99	20		mg/L CaCO3	1	4/2/2014 4:26:19 PM	R17767

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 12 of 30
	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 greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404091**

Date Reported: **4/14/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Down Stream

Project: San Juan River Bluff 4/1/14

Collection Date: 4/1/2014 9:00:00 AM

Lab ID: 1404091-004

Matrix: AQUEOUS

Received Date: 4/2/2014 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: BCN
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/3/2014 1:07:35 AM	12504
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/3/2014 1:07:35 AM	12504
Surr: DNOP	111	76-161		%REC	1	4/3/2014 1:07:35 AM	12504
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/4/2014 4:02:20 PM	R17799
Surr: BFB	86.3	80.4-118		%REC	1	4/4/2014 4:02:20 PM	R17799
EPA METHOD 300.0: ANIONS							Analyst: JRR
Fluoride	0.20	0.10		mg/L	1	4/2/2014 3:35:41 PM	R17774
Chloride	4.2	0.50		mg/L	1	4/2/2014 3:35:41 PM	R17774
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	4/2/2014 3:35:41 PM	R17774
Bromide	ND	0.10		mg/L	1	4/2/2014 3:35:41 PM	R17774
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	4/2/2014 3:35:41 PM	R17774
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	4/2/2014 3:35:41 PM	R17774
Sulfate	91	10		mg/L	20	4/2/2014 3:48:05 PM	R17774
EPA METHOD 7470: MERCURY							Analyst: JML
Mercury	ND	0.00020		mg/L	1	4/2/2014 5:38:21 PM	12508
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/5/2014 12:48:00 PM	R17809
Barium	0.071	0.020		mg/L	1	4/3/2014 1:09:05 PM	R17788
Cadmium	ND	0.0020		mg/L	1	4/3/2014 1:09:05 PM	R17788
Calcium	45	1.0		mg/L	1	4/3/2014 1:09:05 PM	R17788
Chromium	ND	0.0060		mg/L	1	4/3/2014 1:09:05 PM	R17788
Copper	ND	0.0060		mg/L	1	4/3/2014 1:09:05 PM	R17788
Iron	0.023	0.020		mg/L	1	4/3/2014 1:09:05 PM	R17788
Lead	ND	0.0050		mg/L	1	4/3/2014 1:09:05 PM	R17788
Magnesium	7.1	1.0		mg/L	1	4/3/2014 1:09:05 PM	R17788
Manganese	0.060	0.0020		mg/L	1	4/3/2014 1:09:05 PM	R17788
Potassium	1.9	1.0		mg/L	1	4/3/2014 1:09:05 PM	R17788
Selenium	ND	0.050		mg/L	1	4/3/2014 1:09:05 PM	R17788
Silver	ND	0.0050		mg/L	1	4/3/2014 1:09:05 PM	R17788
Sodium	34	1.0		mg/L	1	4/3/2014 1:09:05 PM	R17788
Uranium	ND	0.10		mg/L	1	4/3/2014 1:09:05 PM	R17788
Zinc	0.021	0.020		mg/L	1	4/3/2014 1:09:05 PM	R17788
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/5/2014 1:05:16 PM	12551
Barium	0.089	0.020		mg/L	1	4/5/2014 1:05:16 PM	12551
Cadmium	ND	0.0020		mg/L	1	4/5/2014 1:05:16 PM	12551

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404091**

Date Reported: **4/14/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Down Stream

Project: San Juan River Bluff 4/1/14

Collection Date: 4/1/2014 9:00:00 AM

Lab ID: 1404091-004

Matrix: AQUEOUS

Received Date: 4/2/2014 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Chromium	ND	0.0060		mg/L	1	4/5/2014 1:05:16 PM	12551
Lead	ND	0.0050		mg/L	1	4/5/2014 1:05:16 PM	12551
Selenium	ND	0.050		mg/L	1	4/5/2014 1:05:16 PM	12551
Silver	ND	0.0050		mg/L	1	4/5/2014 1:05:16 PM	12551
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Toluene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Ethylbenzene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Naphthalene	ND	2.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
1-Methylnaphthalene	ND	4.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
2-Methylnaphthalene	ND	4.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Acetone	ND	10		µg/L	1	4/3/2014 5:34:39 PM	R17789
Bromobenzene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Bromodichloromethane	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Bromoform	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Bromomethane	ND	3.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
2-Butanone	ND	10		µg/L	1	4/3/2014 5:34:39 PM	R17789
Carbon disulfide	ND	10		µg/L	1	4/3/2014 5:34:39 PM	R17789
Carbon Tetrachloride	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Chlorobenzene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Chloroethane	ND	2.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Chloroform	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Chloromethane	ND	3.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
2-Chlorotoluene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
4-Chlorotoluene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
cis-1,2-DCE	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Dibromochloromethane	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Dibromomethane	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
1,2-Dichlorobenzene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
1,3-Dichlorobenzene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
1,4-Dichlorobenzene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Dichlorodifluoromethane	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789

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
	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 greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404091**Date Reported: **4/14/2014****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** Down Stream**Project:** San Juan River Bluff 4/1/14**Collection Date:** 4/1/2014 9:00:00 AM**Lab ID:** 1404091-004**Matrix:** AQUEOUS**Received Date:** 4/2/2014 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
1,1-Dichloroethane	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
1,1-Dichloroethene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
1,2-Dichloropropane	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
1,3-Dichloropropane	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
2,2-Dichloropropane	ND	2.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
1,1-Dichloropropene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Hexachlorobutadiene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
2-Hexanone	ND	10		µg/L	1	4/3/2014 5:34:39 PM	R17789
Isopropylbenzene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
4-Isopropyltoluene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
4-Methyl-2-pentanone	ND	10		µg/L	1	4/3/2014 5:34:39 PM	R17789
Methylene Chloride	ND	3.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
n-Butylbenzene	ND	3.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
n-Propylbenzene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
sec-Butylbenzene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Styrene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
tert-Butylbenzene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
trans-1,2-DCE	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Trichlorofluoromethane	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
1,2,3-Trichloropropane	ND	2.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Vinyl chloride	ND	1.0		µg/L	1	4/3/2014 5:34:39 PM	R17789
Xylenes, Total	ND	1.5		µg/L	1	4/3/2014 5:34:39 PM	R17789
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	4/3/2014 5:34:39 PM	R17789
Surr: 4-Bromofluorobenzene	90.5	70-130		%REC	1	4/3/2014 5:34:39 PM	R17789
Surr: Dibromofluoromethane	94.7	70-130		%REC	1	4/3/2014 5:34:39 PM	R17789
Surr: Toluene-d8	97.1	70-130		%REC	1	4/3/2014 5:34:39 PM	R17789

SM 2540 C: TOTAL DISSOLVED SOLIDSAnalyst: **KS**

Total Dissolved Solids	272	20.0	mg/L	1	4/7/2014 12:12:00 PM	12549

CARBON DIOXIDEAnalyst: **JML**

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1404091**

Date Reported: **4/14/2014**

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Down Stream

Project: San Juan River Bluff 4/1/14

Collection Date: 4/1/2014 9:00:00 AM

Lab ID: 1404091-004

Matrix: AQUEOUS

Received Date: 4/2/2014 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
CARBON DIOXIDE							Analyst: JML
Total Carbon Dioxide	91	1.0	H	mg CO2/L	1	4/2/2014 4:35:02 PM	R17767
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JML
Conductivity	400	0.010		µmhos/cm	1	4/2/2014 4:35:02 PM	R17767
SM2320B: ALKALINITY							Analyst: JML
Bicarbonate (As CaCO3)	100	20		mg/L CaCO3	1	4/2/2014 4:35:02 PM	R17767
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	4/2/2014 4:35:02 PM	R17767
Total Alkalinity (as CaCO3)	100	20		mg/L CaCO3	1	4/2/2014 4:35:02 PM	R17767

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 16 of 30
	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 greater than 2.	
	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#: 1404091

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4/1/14

Sample ID	MB-12549		SampType: MBLK		TestCode: SM 2540 C: Total Dissolved Solids					
Client ID:	PBW		Batch ID: 12549		RunNo: 17841					
Prep Date:	4/4/2014		Analysis Date: 4/7/2014		SeqNo: 514543		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-12549		SampType: LCS		TestCode: SM 2540 C: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 12549		RunNo: 17841					
Prep Date:	4/4/2014		Analysis Date: 4/7/2014		SeqNo: 514544		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

Sample ID	1404091-002DMS		SampType: MS		TestCode: SM 2540 C: Total Dissolved Solids					
Client ID:	North Of 46		Batch ID: 12549		RunNo: 17841					
Prep Date:	4/4/2014		Analysis Date: 4/7/2014		SeqNo: 514547		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1290	20.0	1000	262.0	103	80	120			

Sample ID	1404091-002DMSD		SampType: MSD		TestCode: SM 2540 C: Total Dissolved Solids					
Client ID:	North Of 46		Batch ID: 12549		RunNo: 17841					
Prep Date:	4/4/2014		Analysis Date: 4/7/2014		SeqNo: 514548		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1290	20.0	1000	262.0	103	80	120	0	5	

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404091

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4/1/14

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R17774			RunNo: 17774					
Prep Date:		Analysis Date: 4/2/2014			SeqNo: 512157		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								
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: R17774		RunNo: 17774					
Prep Date:			Analysis Date: 4/2/2014		SeqNo: 512158		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.8	90	110			
Chloride	4.7	0.50	5.000	0	94.0	90	110			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	96.0	90	110			
Bromide	2.5	0.10	2.500	0	98.1	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	98.2	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	95.2	90	110			
Sulfate	9.4	0.50	10.00	0	94.4	90	110			

Sample ID	1404091-001DMS			SampType:	MS		TestCode:	EPA Method 300.0: Anions			
Client ID:	North Of 45			Batch ID:	R17774		RunNo:	17774			
Prep Date:				Analysis Date:	4/2/2014		SeqNo:	512171		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Fluoride	0.69	0.10	0.5000	0.2001	97.1	76.4	109				
Chloride	8.8	0.50	5.000	3.799	100	90.1	116				
Nitrogen, Nitrite (As N)	0.98	0.10	1.000	0	97.9	85.2	109				
Bromide	2.5	0.10	2.500	0	101	85.9	111				
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	102	93.8	111				
Phosphorus, Orthophosphate (As P	4.9	0.50	5.000	0	98.3	81.1	108				

Sample ID	1404091-001DMSD		SampType: MSD		TestCode: EPA Method 300.0: Anions					
Client ID:	North Of 45		Batch ID: R17774		RunNo: 17774					
Prep Date:			Analysis Date: 4/2/2014		SeqNo: 512172		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.69	0.10	0.5000	0.2001	97.0	76.4	109	0.0729	20	
Chloride	8.8	0.50	5.000	3.799	100	90.1	116	0.0432	20	

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404091

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4/1/14

Sample ID	1404091-001DMSD		SampType: MSD		TestCode: EPA Method 300.0: Anions					
Client ID:	North Of 45		Batch ID: R17774		RunNo: 17774					
Prep Date:			Analysis Date: 4/2/2014		SeqNo: 512172		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.98	0.10	1.000	0	97.9	85.2	109	0.0204	20	
Bromide	2.5	0.10	2.500	0	100	85.9	111	0.191	20	
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	102	93.8	111	0.125	20	
Phosphorus, Orthophosphate (As P)	4.9	0.50	5.000	0	98.8	81.1	108	0.491	20	

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R17774			RunNo: 17774					
Prep Date:		Analysis Date: 4/2/2014			SeqNo: 512214		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								
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: R17774			RunNo: 17774					
Prep Date:		Analysis Date: 4/2/2014			SeqNo: 512215		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	101	90	110			
Chloride	4.7	0.50	5.000	0	93.6	90	110			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	96.0	90	110			
Bromide	2.4	0.10	2.500	0	97.8	90	110			
Nitrogen, Nitrate (As N)	2.4	0.10	2.500	0	97.6	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	95.8	90	110			
Sulfate	9.4	0.50	10.00	0	94.3	90	110			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404091

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4/1/14

Sample ID	MB-12504	SampType: MBLK			TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW	Batch ID: 12504			RunNo: 17730					
Prep Date:	4/2/2014	Analysis Date: 4/2/2014			SeqNo: 511654		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.39		0.5000		77.7	76	161			

Sample ID	LCS-12504		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 12504		RunNo: 17730					
Prep Date:	4/2/2014		Analysis Date: 4/2/2014		SeqNo: 511665		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.9	0.20	2.500	0	116	79.2	165			
Surr: DNOP	0.24		0.2500		95.4	76	161			

Sample ID	1404091-001CMS	SampType: MS			TestCode: EPA Method 8015D: Diesel Range					
Client ID:	North Of 45	Batch ID: 12504			RunNo: 17730					
Prep Date:	4/2/2014	Analysis Date: 4/2/2014			SeqNo: 511684		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	3.1	0.20	2.500	0	123	72.1	156			
Surr: DNOP	0.25		0.2500		101	76	161			

Sample ID	1404091-001CMSD		SampType: MSD		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	North Of 45		Batch ID: 12504		RunNo: 17730					
Prep Date:	4/2/2014		Analysis Date: 4/2/2014		SeqNo: 511685		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.5	0.20	2.500	0	99.2	72.1	156	21.3	20	R
Surr: DNOP	0.19		0.2500		76.7	76	161	0	0	

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 greater than 2.
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#: 1404091

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4/1/14

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R17799	RunNo:	17799					
Prep Date:		Analysis Date:	4/4/2014	SeqNo:	513545	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	20		20.00		99.2	80.4	118			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R17799	RunNo:	17799					
Prep Date:		Analysis Date:	4/4/2014	SeqNo:	513546	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.52	0.050	0.5000	0	103	80	120			
Surr: BFB	22		20.00		109	80.4	118			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404091

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4/1/14

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R17789			RunNo: 17789					
Prep Date:		Analysis Date: 4/3/2014			SeqNo: 512719		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								
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.
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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404091

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4/1/14

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R17789	RunNo:	17789					
Prep Date:		Analysis Date:	4/3/2014	SeqNo:	512719	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	10		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	9.1		10.00		90.7	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.8		10.00		97.9	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R17789	RunNo:	17789					
Prep Date:		Analysis Date:	4/3/2014	SeqNo:	512721	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	100	70	130			
Toluene	18	1.0	20.00	0	90.4	80	120			
Chlorobenzene	19	1.0	20.00	0	95.1	70	130			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404091

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4/1/14

Sample ID 100ng lcs	SampType: LCS				TestCode: EPA Method 8260B: VOLATILES					
Client ID: LCSW	Batch ID: R17789				RunNo: 17789					
Prep Date:	Analysis Date: 4/3/2014				SeqNo: 512721		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	23	1.0	20.00	0	117	90	143			
Trichloroethene (TCE)	20	1.0	20.00	0	97.6	70	130			
Surr: 1,2-Dichloroethane-d4	7.3		10.00		73.3	70	130			
Surr: 4-Bromofluorobenzene	9.4		10.00		93.6	70	130			
Surr: Dibromofluoromethane	9.3		10.00		92.8	70	130			
Surr: Toluene-d8	9.7		10.00		96.8	70	130			

Sample ID 1404091-001ams	SampType: MS				TestCode: EPA Method 8260B: VOLATILES					
Client ID: North Of 45	Batch ID: R17789				RunNo: 17789					
Prep Date:	Analysis Date: 4/3/2014				SeqNo: 512725		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.1	70	130			
Toluene	17	1.0	20.00	0.2660	85.6	67.5	123			
Chlorobenzene	19	1.0	20.00	0	92.9	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	113	81.9	134			
Trichloroethene (TCE)	18	1.0	20.00	0	89.1	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		94.8	70	130			
Surr: Dibromofluoromethane	8.9		10.00		88.9	70	130			
Surr: Toluene-d8	9.6		10.00		96.2	70	130			

Sample ID 1404091-001amsd	SampType: MSD				TestCode: EPA Method 8260B: VOLATILES					
Client ID: North Of 45	Batch ID: R17789				RunNo: 17789					
Prep Date:	Analysis Date: 4/3/2014				SeqNo: 512726		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	91.6	70	130	3.67	20	
Toluene	18	1.0	20.00	0.2660	86.2	67.5	123	0.711	20	
Chlorobenzene	18	1.0	20.00	0	90.2	70	130	2.97	20	
1,1-Dichloroethene	21	1.0	20.00	0	105	81.9	134	7.97	20	
Trichloroethene (TCE)	16	1.0	20.00	0	79.6	70	130	11.2	20	
Surr: 1,2-Dichloroethane-d4	11		10.00		108	70	130	0	0	
Surr: 4-Bromofluorobenzene	8.8		10.00		87.8	70	130	0	0	
Surr: Dibromofluoromethane	9.7		10.00		96.5	70	130	0	0	
Surr: Toluene-d8	10		10.00		101	70	130	0	0	

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 greater than 2.
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#: 1404091

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4/1/14

Sample ID 1404091-001d dup		SampType: dup		TestCode: SM2510B: Specific Conductance						
Client ID: North Of 45	Batch ID: R17767			RunNo: 17767						
Prep Date:	Analysis Date: 4/2/2014			SeqNo: 512022		Units: µmhos/cm				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	390	0.010						1.85	20	

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404091

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4/1/14

Sample ID	MB-12508		SampType: MBLK		TestCode: EPA Method 7470: Mercury					
Client ID:	PBW		Batch ID: 12508		RunNo: 17752					
Prep Date:	4/2/2014		Analysis Date: 4/2/2014		SeqNo: 511357		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercurv	ND	0.00020								

Sample ID	LCS-12508		SampType: LCS		TestCode: EPA Method 7470: Mercury					
Client ID:	LCSW		Batch ID: 12508		RunNo: 17752					
Prep Date:	4/2/2014		Analysis Date: 4/2/2014		SeqNo: 511358		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	99.4	80	120			

Sample ID	1404091-001FMS		SampType: MS		TestCode: EPA Method 7470: Mercury					
Client ID:	North Of 45		Batch ID: 12508		RunNo: 17752					
Prep Date:	4/2/2014		Analysis Date: 4/2/2014		SeqNo: 511360		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	98.6	75	125			

Sample ID	1404091-001FMSD			SampType:	MSD		TestCode:	EPA Method 7470: Mercury			
Client ID:	North Of 45			Batch ID:	12508		RunNo:	17752			
Prep Date:	4/2/2014			Analysis Date:	4/2/2014		SeqNo:	511361		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	97.6	75	125	0.924	20		

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404091

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4/1/14

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	PBW	Batch ID:	R17788	RunNo:	17788					
Prep Date:		Analysis Date:	4/3/2014	SeqNo:	512533	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	ND	0.020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Lead	ND	0.0050								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Selenium	ND	0.050								
Silver	ND	0.0050								
Sodium	ND	1.0								
Uranium	ND	0.10								
Zinc	ND	0.020								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R17788	RunNo:	17788					
Prep Date:		Analysis Date:	4/3/2014	SeqNo:	512534	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.49	0.020	0.5000	0	97.4	80	120			
Cadmium	0.50	0.0020	0.5000	0	99.8	80	120			
Calcium	49	1.0	50.00	0	97.5	80	120			
Chromium	0.48	0.0060	0.5000	0	96.8	80	120			
Copper	0.49	0.0060	0.5000	0	97.5	80	120			
Iron	0.48	0.020	0.5000	0	96.2	80	120			
Lead	0.49	0.0050	0.5000	0	97.1	80	120			
Magnesium	49	1.0	50.00	0	98.0	80	120			
Manganese	0.47	0.0020	0.5000	0	95.0	80	120			
Potassium	47	1.0	50.00	0	94.2	80	120			
Selenium	0.50	0.050	0.5000	0	99.2	80	120			
Silver	0.10	0.0050	0.1000	0	100	80	120			
Sodium	48	1.0	50.00	0	96.5	80	120			
Uranium	0.50	0.10	0.5000	0	100	80	120			
Zinc	0.48	0.020	0.5000	0	96.6	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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404091

14-Apr-14

Client: Western Refining Southwest, Inc.**Project:** San Juan River Bluff 4/1/14

Sample ID MB	SampType: MBLK		TestCode: EPA Method 6010B: Dissolved Metals							
Client ID: PBW	Batch ID: R17809		RunNo: 17809							
Prep Date:	Analysis Date: 4/5/2014		SeqNo: 513373		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 6010B: Dissolved Metals							
Client ID: LCSW	Batch ID: R17809		RunNo: 17809							
Prep Date:	Analysis Date: 4/5/2014		SeqNo: 513374		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	99.5	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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404091

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4/1/14

Sample ID	MB-12551	SampType: MBLK			TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	PBW	Batch ID: 12551			RunNo: 17809					
Prep Date:	4/4/2014	Analysis Date: 4/5/2014			SeqNo: 513371		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-12551		SampType: LCS		TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	LCSW		Batch ID: 12551		RunNo: 17809					
Prep Date:	4/4/2014		Analysis Date: 4/5/2014		SeqNo: 513372		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	99.7	80	120			
Barium	0.48	0.020	0.5000	0	95.0	80	120			
Cadmium	0.48	0.0020	0.5000	0	96.4	80	120			
Chromium	0.48	0.0060	0.5000	0	95.1	80	120			
Lead	0.47	0.0050	0.5000	0	94.5	80	120			
Selenium	0.50	0.050	0.5000	0	100	80	120			
Silver	0.098	0.0050	0.1000	0	98.2	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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404091

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4/1/14

Sample ID	mb-1	SampType:	mblk	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R17767	RunNo:	17767					
Prep Date:		Analysis Date:	4/2/2014	SeqNo:	511976	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	lcs-1	SampType:	lcs	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R17767	RunNo:	17767					
Prep Date:		Analysis Date:	4/2/2014	SeqNo:	511977	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	78	20	80.00	0	97.0	90	110			

Sample ID	mb-2	SampType:	mblk	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R17767	RunNo:	17767					
Prep Date:		Analysis Date:	4/2/2014	SeqNo:	511991	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	lcs-2	SampType:	lcs	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R17767	RunNo:	17767					
Prep Date:		Analysis Date:	4/2/2014	SeqNo:	511992	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	82	20	80.00	0	102	90	110			

Sample ID	1404091-004d ms	SampType:	ms	TestCode:	SM2320B: Alkalinity					
Client ID:	Down Stream	Batch ID:	R17767	RunNo:	17767					
Prep Date:		Analysis Date:	4/2/2014	SeqNo:	511997	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	140	20	80.00	101.4	49.9	65.2	112			S

Sample ID	1404091-004d msd	SampType:	msd	TestCode:	SM2320B: Alkalinity					
Client ID:	Down Stream	Batch ID:	R17767	RunNo:	17767					
Prep Date:		Analysis Date:	4/2/2014	SeqNo:	511998	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	140	20	80.00	101.4	42.1	65.2	112	4.52	20	S

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 greater than 2.
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: **Western Refining Southw**

Work Order Number: **1404091**

RcptNo: **1**

Received by/date:

LM 04/02/14

Logged By: **Lindsay Mangin**

4/2/2014 9:45:00 AM

Completed By: **Ashley Gallegos**

4/2/2014 10:39:58 AM

Reviewed By:

[Signature] 04/02/14

[Signature] AG *[Signature]*

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: 12
(<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 $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

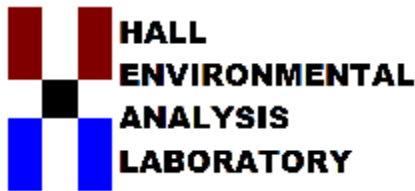
[illegible]

Remarks:

email or Fax#:		Project Manager:			
QA/QC Package:		Sampler: <u>Bob & Matt</u>			
☒ Standard		☒ Yes ☐ No			
Accreditation		Sample Temperature: <u>1.5</u>			
☐ NELAP		HEAL No. <u>1401091</u>			
☐ EDD (Type) _____					
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type
4-1-14	9:45	H ₂ O	North of 45	5-VOA	HCl
				1-liter	Amber
				1-500ml	HNO ₃
				filtered 1-250ml	HNO ₃
				1-500ml	—
				1-250ml	H ₂ SO ₄
4-1-14	9:30		North of 46	5-VOA	HCl
				1-liter	Amber
				1-500ml	HNO ₃
				filtered 1-250ml	HNO ₃
				1-500ml	—
				1-250ml	H ₂ SO ₄

Date:	Time:	Relinquished by:	Received by:	Date	Time
1-1-14	1101	Robert Krabson	Misto White	4/1/14	1600
4-1-14	1749	Misto White	Misto White	4-1-14	0915

if necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



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

April 14, 2014

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4135

FAX (505) 632-3911

RE: San Juan River Bluff 4-1-14

OrderNo.: 1404099

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 4/2/2014 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', with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1404099

Date Reported: 4/14/2014

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River Bluff 4-1-14
Lab ID: 1404099-001A

Client Sample ID: Outfall #2
Collection Date: 4/1/2014 11:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	4/3/2014 6:05:32 PM	R17789
Toluene	ND	1.0		µg/L	1	4/3/2014 6:05:32 PM	R17789
Ethylbenzene	ND	1.0		µg/L	1	4/3/2014 6:05:32 PM	R17789
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/3/2014 6:05:32 PM	R17789
Xylenes, Total	ND	1.5		µg/L	1	4/3/2014 6:05:32 PM	R17789
Surr: 1,2-Dichloroethane-d4	108	70-130		%REC	1	4/3/2014 6:05:32 PM	R17789
Surr: 4-Bromofluorobenzene	89.7	70-130		%REC	1	4/3/2014 6:05:32 PM	R17789
Surr: Dibromofluoromethane	102	70-130		%REC	1	4/3/2014 6:05:32 PM	R17789
Surr: Toluene-d8	98.4	70-130		%REC	1	4/3/2014 6:05:32 PM	R17789

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1404099**Date Reported: **4/14/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River Bluff 4-1-14
Lab ID: 1404099-001B

Client Sample ID: Outfall #2
Collection Date: 4/1/2014 11:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: JRR
Fluoride	0.56	0.10		mg/L	1	4/3/2014 7:06:26 AM	R17774
Chloride	7.6	0.50		mg/L	1	4/3/2014 7:06:26 AM	R17774
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	4/3/2014 7:06:26 AM	R17774
Bromide	0.10	0.10		mg/L	1	4/3/2014 7:06:26 AM	R17774
Nitrogen, Nitrate (As N)	3.7	0.10		mg/L	1	4/3/2014 7:06:26 AM	R17774
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	4/3/2014 7:06:26 AM	R17774
Sulfate	77	10		mg/L	20	4/3/2014 7:18:50 AM	R17774
CARBON DIOXIDE							Analyst: JML
Total Carbon Dioxide	320	1.0	H	mg CO2/L	1	4/2/2014 5:09:07 PM	R17767
SM2320B: ALKALINITY							Analyst: JML
Bicarbonate (As CaCO3)	340	20		mg/L CaCO3	1	4/2/2014 5:09:07 PM	R17767
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	4/2/2014 5:09:07 PM	R17767
Total Alkalinity (as CaCO3)	340	20		mg/L CaCO3	1	4/2/2014 5:09:07 PM	R17767

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1404099**Date Reported: **4/14/2014****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River Bluff 4-1-14
Lab ID: 1404099-001C

Client Sample ID: Outfall #2
Collection Date: 4/1/2014 11:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JML
Mercury	ND	0.00020		mg/L	1	4/2/2014 5:40:06 PM	12508
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/5/2014 12:49:46 PM	R17809
Barium	0.079	0.020		mg/L	1	4/3/2014 1:19:42 PM	R17788
Cadmium	ND	0.0020		mg/L	1	4/3/2014 1:19:42 PM	R17788
Calcium	94	1.0		mg/L	1	4/3/2014 1:19:42 PM	R17788
Chromium	ND	0.0060		mg/L	1	4/3/2014 1:19:42 PM	R17788
Copper	ND	0.0060		mg/L	1	4/3/2014 1:19:42 PM	R17788
Iron	ND	0.020		mg/L	1	4/3/2014 1:19:42 PM	R17788
Lead	ND	0.0050		mg/L	1	4/3/2014 1:19:42 PM	R17788
Magnesium	20	1.0		mg/L	1	4/3/2014 1:19:42 PM	R17788
Manganese	0.0053	0.0020		mg/L	1	4/3/2014 1:19:42 PM	R17788
Potassium	1.3	1.0		mg/L	1	4/3/2014 1:19:42 PM	R17788
Selenium	ND	0.050		mg/L	1	4/3/2014 1:19:42 PM	R17788
Silver	ND	0.0050		mg/L	1	4/3/2014 1:19:42 PM	R17788
Sodium	54	1.0		mg/L	1	4/3/2014 1:19:42 PM	R17788
Uranium	ND	0.10		mg/L	1	4/3/2014 1:19:42 PM	R17788
Zinc	ND	0.020		mg/L	1	4/3/2014 1:19:42 PM	R17788

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 3 of 21

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1404099

Date Reported: 4/14/2014

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River Bluff 4-1-14
Lab ID: 1404099-001D

Client Sample ID: Outfall #2
Collection Date: 4/1/2014 11:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JML
Mercury	ND	0.00020		mg/L	1	4/3/2014 5:13:54 PM	12531
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/5/2014 1:06:36 PM	12551
Barium	0.080	0.020		mg/L	1	4/5/2014 1:06:36 PM	12551
Cadmium	ND	0.0020		mg/L	1	4/5/2014 1:06:36 PM	12551
Chromium	ND	0.0060		mg/L	1	4/5/2014 1:06:36 PM	12551
Lead	ND	0.0050		mg/L	1	4/5/2014 1:06:36 PM	12551
Selenium	ND	0.050		mg/L	1	4/5/2014 1:06:36 PM	12551
Silver	ND	0.0050		mg/L	1	4/5/2014 1:06:36 PM	12551

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 4 of 21

Analytical ReportLab Order: **1404099**Date Reported: **4/14/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** Outfall #3**Project:** San Juan River Bluff 4-1-14**Collection Date:** 4/1/2014 11:45:00 AM**Lab ID:** 1404099-002A**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	4/3/2014 6:36:25 PM	R17789
Toluene	ND	1.0		µg/L	1	4/3/2014 6:36:25 PM	R17789
Ethylbenzene	ND	1.0		µg/L	1	4/3/2014 6:36:25 PM	R17789
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/3/2014 6:36:25 PM	R17789
Xylenes, Total	ND	1.5		µg/L	1	4/3/2014 6:36:25 PM	R17789
Surr: 1,2-Dichloroethane-d4	105	70-130		%REC	1	4/3/2014 6:36:25 PM	R17789
Surr: 4-Bromofluorobenzene	91.4	70-130		%REC	1	4/3/2014 6:36:25 PM	R17789
Surr: Dibromofluoromethane	101	70-130		%REC	1	4/3/2014 6:36:25 PM	R17789
Surr: Toluene-d8	98.7	70-130		%REC	1	4/3/2014 6:36:25 PM	R17789

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 5 of 21

Analytical ReportLab Order: **1404099**Date Reported: **4/14/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** Outfall #3**Project:** San Juan River Bluff 4-1-14**Collection Date:** 4/1/2014 11:45:00 AM**Lab ID:** 1404099-002B**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: JRR
Fluoride	0.39	0.10		mg/L	1	4/3/2014 7:31:14 AM	R17774
Chloride	13	0.50		mg/L	1	4/3/2014 7:31:14 AM	R17774
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	4/3/2014 7:31:14 AM	R17774
Bromide	0.11	0.10		mg/L	1	4/3/2014 7:31:14 AM	R17774
Nitrogen, Nitrate (As N)	3.3	0.10		mg/L	1	4/3/2014 7:31:14 AM	R17774
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	4/3/2014 7:31:14 AM	R17774
Sulfate	120	10		mg/L	20	4/3/2014 7:43:39 AM	R17774
CARBON DIOXIDE							Analyst: JML
Total Carbon Dioxide	330	1.0	H	mg CO2/L	1	4/2/2014 5:24:27 PM	R17767
SM2320B: ALKALINITY							Analyst: JML
Bicarbonate (As CaCO3)	350	20		mg/L CaCO3	1	4/2/2014 5:24:27 PM	R17767
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	4/2/2014 5:24:27 PM	R17767
Total Alkalinity (as CaCO3)	350	20		mg/L CaCO3	1	4/2/2014 5:24:27 PM	R17767

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1404099

Date Reported: 4/14/2014

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River Bluff 4-1-14
Lab ID: 1404099-002C

Client Sample ID: Outfall #3
Collection Date: 4/1/2014 11:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY				Analyst: JML			
Mercury	ND	0.00020		mg/L	1	4/2/2014 5:45:34 PM	12508
EPA METHOD 6010B: DISSOLVED METALS				Analyst: ELS			
Arsenic	ND	0.020		mg/L	1	4/5/2014 12:51:31 PM	R17809
Barium	0.060	0.020		mg/L	1	4/3/2014 1:23:18 PM	R17788
Cadmium	ND	0.0020		mg/L	1	4/3/2014 1:23:18 PM	R17788
Calcium	110	5.0		mg/L	5	4/3/2014 1:25:02 PM	R17788
Chromium	ND	0.0060		mg/L	1	4/3/2014 1:23:18 PM	R17788
Copper	ND	0.0060		mg/L	1	4/3/2014 1:23:18 PM	R17788
Iron	ND	0.020		mg/L	1	4/3/2014 1:23:18 PM	R17788
Lead	ND	0.0050		mg/L	1	4/3/2014 1:23:18 PM	R17788
Magnesium	21	1.0		mg/L	1	4/3/2014 1:23:18 PM	R17788
Manganese	ND	0.0020		mg/L	1	4/3/2014 1:23:18 PM	R17788
Potassium	1.9	1.0		mg/L	1	4/3/2014 1:23:18 PM	R17788
Selenium	ND	0.050		mg/L	1	4/3/2014 1:23:18 PM	R17788
Silver	ND	0.0050		mg/L	1	4/3/2014 1:23:18 PM	R17788
Sodium	68	1.0		mg/L	1	4/3/2014 1:23:18 PM	R17788
Uranium	ND	0.10		mg/L	1	4/3/2014 1:23:18 PM	R17788
Zinc	0.034	0.020		mg/L	1	4/3/2014 1:23:18 PM	R17788

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 7 of 21

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1404099

Date Reported: 4/14/2014

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River Bluff 4-1-14
Lab ID: 1404099-002D

Client Sample ID: Outfall #3
Collection Date: 4/1/2014 11:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JML
Mercury	ND	0.00020		mg/L	1	4/3/2014 5:15:40 PM	12531
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/5/2014 1:08:23 PM	12551
Barium	0.060	0.020		mg/L	1	4/5/2014 1:08:23 PM	12551
Cadmium	ND	0.0020		mg/L	1	4/5/2014 1:08:23 PM	12551
Chromium	ND	0.0060		mg/L	1	4/5/2014 1:08:23 PM	12551
Lead	ND	0.0050		mg/L	1	4/5/2014 1:08:23 PM	12551
Selenium	ND	0.050		mg/L	1	4/5/2014 1:08:23 PM	12551
Silver	ND	0.0050		mg/L	1	4/5/2014 1:08:23 PM	12551

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1404099

Date Reported: 4/14/2014

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River Bluff 4-1-14
Lab ID: 1404099-003A

Client Sample ID: Outfall #3D
Collection Date: 4/1/2014 11:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	4/3/2014 7:07:15 PM	R17789
Toluene	ND	1.0		µg/L	1	4/3/2014 7:07:15 PM	R17789
Ethylbenzene	ND	1.0		µg/L	1	4/3/2014 7:07:15 PM	R17789
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/3/2014 7:07:15 PM	R17789
Xylenes, Total	ND	1.5		µg/L	1	4/3/2014 7:07:15 PM	R17789
Surr: 1,2-Dichloroethane-d4	110	70-130		%REC	1	4/3/2014 7:07:15 PM	R17789
Surr: 4-Bromofluorobenzene	88.8	70-130		%REC	1	4/3/2014 7:07:15 PM	R17789
Surr: Dibromofluoromethane	104	70-130		%REC	1	4/3/2014 7:07:15 PM	R17789
Surr: Toluene-d8	99.0	70-130		%REC	1	4/3/2014 7:07:15 PM	R17789

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1404099**Date Reported: **4/14/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** Outfall #3D**Project:** San Juan River Bluff 4-1-14**Collection Date:** 4/1/2014 11:45:00 AM**Lab ID:** 1404099-003B**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: JRR
Fluoride	0.39	0.10		mg/L	1	4/3/2014 8:20:53 AM	R17774
Chloride	13	0.50		mg/L	1	4/3/2014 8:20:53 AM	R17774
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	4/3/2014 8:20:53 AM	R17774
Bromide	0.11	0.10		mg/L	1	4/3/2014 8:20:53 AM	R17774
Nitrogen, Nitrate (As N)	3.3	0.10		mg/L	1	4/3/2014 8:20:53 AM	R17774
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	4/3/2014 8:20:53 AM	R17774
Sulfate	120	10		mg/L	20	4/3/2014 8:33:18 AM	R17774
CARBON DIOXIDE							Analyst: JML
Total Carbon Dioxide	330	1.0	H	mg CO2/L	1	4/2/2014 5:40:11 PM	R17767
SM2320B: ALKALINITY							Analyst: JML
Bicarbonate (As CaCO3)	350	20		mg/L CaCO3	1	4/2/2014 5:40:11 PM	R17767
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	4/2/2014 5:40:11 PM	R17767
Total Alkalinity (as CaCO3)	350	20		mg/L CaCO3	1	4/2/2014 5:40:11 PM	R17767

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: **1404099**Date Reported: **4/14/2014**

CLIENT: Western Refining Southwest, Inc.
Project: San Juan River Bluff 4-1-14
Lab ID: 1404099-003C

Client Sample ID: Outfall #3D
Collection Date: 4/1/2014 11:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JML
Mercury	ND	0.00020		mg/L	1	4/2/2014 5:47:19 PM	12508
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/5/2014 12:56:28 PM	R17809
Barium	0.061	0.020		mg/L	1	4/3/2014 1:26:55 PM	R17788
Cadmium	ND	0.0020		mg/L	1	4/3/2014 1:26:55 PM	R17788
Calcium	110	5.0		mg/L	5	4/3/2014 1:32:28 PM	R17788
Chromium	ND	0.0060		mg/L	1	4/3/2014 1:26:55 PM	R17788
Copper	ND	0.0060		mg/L	1	4/3/2014 1:26:55 PM	R17788
Iron	ND	0.020		mg/L	1	4/3/2014 1:26:55 PM	R17788
Lead	ND	0.0050		mg/L	1	4/3/2014 1:26:55 PM	R17788
Magnesium	21	1.0		mg/L	1	4/3/2014 1:26:55 PM	R17788
Manganese	ND	0.0020		mg/L	1	4/3/2014 1:26:55 PM	R17788
Potassium	1.8	1.0		mg/L	1	4/3/2014 1:26:55 PM	R17788
Selenium	ND	0.050		mg/L	1	4/3/2014 1:26:55 PM	R17788
Silver	ND	0.0050		mg/L	1	4/3/2014 1:26:55 PM	R17788
Sodium	69	5.0		mg/L	5	4/3/2014 1:32:28 PM	R17788
Uranium	ND	0.10		mg/L	1	4/3/2014 1:26:55 PM	R17788
Zinc	ND	0.020		mg/L	1	4/3/2014 1:26:55 PM	R17788

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1404099**Date Reported: **4/14/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** Outfall #3D**Project:** San Juan River Bluff 4-1-14**Collection Date:** 4/1/2014 11:45:00 AM**Lab ID:** 1404099-003D**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JML
Mercury	ND	0.00020		mg/L	1	4/3/2014 5:17:25 PM	12531
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/5/2014 1:10:08 PM	12551
Barium	0.060	0.020		mg/L	1	4/5/2014 1:10:08 PM	12551
Cadmium	ND	0.0020		mg/L	1	4/5/2014 1:10:08 PM	12551
Chromium	ND	0.0060		mg/L	1	4/5/2014 1:10:08 PM	12551
Lead	ND	0.0050		mg/L	1	4/5/2014 1:10:08 PM	12551
Selenium	ND	0.050		mg/L	1	4/5/2014 1:10:08 PM	12551
Silver	ND	0.0050		mg/L	1	4/5/2014 1:10:08 PM	12551

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
	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 greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404099

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4-1-14

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R17774			RunNo: 17774					
Prep Date:		Analysis Date: 4/2/2014			SeqNo: 512157		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								
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: R17774		RunNo: 17774					
Prep Date:			Analysis Date: 4/2/2014		SeqNo: 512158		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.8	90	110			
Chloride	4.7	0.50	5.000	0	94.0	90	110			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	96.0	90	110			
Bromide	2.5	0.10	2.500	0	98.1	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	98.2	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	95.2	90	110			
Sulfate	9.4	0.50	10.00	0	94.4	90	110			

Sample ID	MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions						
Client ID:	PBW	Batch ID: R17774		RunNo: 17774						
Prep Date:		Analysis Date: 4/2/2014		SeqNo: 512214		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								
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: R17774		RunNo: 17774					
Prep Date:			Analysis Date: 4/2/2014		SeqNo: 512215		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	101	90	110			

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 greater than 2.
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#: 1404099

14-Apr-14

Client: Western Refining Southwest, Inc.**Project:** San Juan River Bluff 4-1-14

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 300.0: Anions				
Client ID:	LCSW		Batch ID: R17774			RunNo: 17774				
Prep Date:	Analysis Date: 4/2/2014			SeqNo: 512215		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	93.6	90	110			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	96.0	90	110			
Bromide	2.4	0.10	2.500	0	97.8	90	110			
Nitrogen, Nitrate (As N)	2.4	0.10	2.500	0	97.6	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	95.8	90	110			
Sulfate	9.4	0.50	10.00	0	94.3	90	110			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404099

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4-1-14

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R17789	RunNo:	17789					
Prep Date:		Analysis Date:	4/3/2014	SeqNo:	512735	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	10		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	9.1		10.00		90.7	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.8		10.00		97.9	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	R17789	RunNo:	17789					
Prep Date:		Analysis Date:	4/3/2014	SeqNo:	512736	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	100	70	130			
Toluene	18	1.0	20.00	0	90.4	80	120			
Surr: 1,2-Dichloroethane-d4	7.3		10.00		73.3	70	130			
Surr: 4-Bromofluorobenzene	9.4		10.00		93.6	70	130			
Surr: Dibromofluoromethane	9.3		10.00		92.8	70	130			
Surr: Toluene-d8	9.7		10.00		96.8	70	130			

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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404099

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4-1-14

Sample ID	MB-12508	SampType:	MBLK	TestCode:	EPA Method 7470: Mercury					
Client ID:	PBW	Batch ID:	12508	RunNo:	17752					
Prep Date:	4/2/2014	Analysis Date:	4/2/2014	SeqNo:	511357	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-12508	SampType:	LCS	TestCode:	EPA Method 7470: Mercury					
Client ID:	LCSW	Batch ID:	12508	RunNo:	17752					
Prep Date:	4/2/2014	Analysis Date:	4/2/2014	SeqNo:	511358	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	99.4	80	120			

Sample ID	MB-12531	SampType:	MBLK	TestCode:	EPA Method 7470: Mercury					
Client ID:	PBW	Batch ID:	12531	RunNo:	17786					
Prep Date:	4/3/2014	Analysis Date:	4/3/2014	SeqNo:	512451	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-12531	SampType:	LCS	TestCode:	EPA Method 7470: Mercury					
Client ID:	LCSW	Batch ID:	12531	RunNo:	17786					
Prep Date:	4/3/2014	Analysis Date:	4/3/2014	SeqNo:	512452	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	101	80	120			

Sample ID	1404099-003DMS	SampType:	MS	TestCode:	EPA Method 7470: Mercury					
Client ID:	Outfall #3D	Batch ID:	12531	RunNo:	17786					
Prep Date:	4/3/2014	Analysis Date:	4/3/2014	SeqNo:	512456	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	99.0	75	125			

Sample ID	1404099-003DMSD	SampType:	MSD	TestCode:	EPA Method 7470: Mercury					
Client ID:	Outfall #3D	Batch ID:	12531	RunNo:	17786					
Prep Date:	4/3/2014	Analysis Date:	4/3/2014	SeqNo:	512457	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	100	75	125	1.48	20	

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404099

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4-1-14

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	PBW	Batch ID:	R17788	RunNo:	17788					
Prep Date:		Analysis Date:	4/3/2014	SeqNo:	512533	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	ND	0.020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Lead	ND	0.0050								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Selenium	ND	0.050								
Silver	ND	0.0050								
Sodium	ND	1.0								
Uranium	ND	0.10								
Zinc	ND	0.020								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R17788	RunNo:	17788					
Prep Date:		Analysis Date:	4/3/2014	SeqNo:	512534	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.49	0.020	0.5000	0	97.4	80	120			
Cadmium	0.50	0.0020	0.5000	0	99.8	80	120			
Calcium	49	1.0	50.00	0	97.5	80	120			
Chromium	0.48	0.0060	0.5000	0	96.8	80	120			
Copper	0.49	0.0060	0.5000	0	97.5	80	120			
Iron	0.48	0.020	0.5000	0	96.2	80	120			
Lead	0.49	0.0050	0.5000	0	97.1	80	120			
Magnesium	49	1.0	50.00	0	98.0	80	120			
Manganese	0.47	0.0020	0.5000	0	95.0	80	120			
Potassium	47	1.0	50.00	0	94.2	80	120			
Selenium	0.50	0.050	0.5000	0	99.2	80	120			
Silver	0.10	0.0050	0.1000	0	100	80	120			
Sodium	48	1.0	50.00	0	96.5	80	120			
Uranium	0.50	0.10	0.5000	0	100	80	120			
Zinc	0.48	0.020	0.5000	0	96.6	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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404099

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4-1-14

Sample ID	1404099-003CMS		SampType: MS			TestCode: EPA Method 6010B: Dissolved Metals				
Client ID:	Outfall #3D		Batch ID: R17788			RunNo: 17788				
Prep Date:			Analysis Date: 4/3/2014			SeqNo: 512551		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.56	0.020	0.5000	0.06130	99.4	75	125			
Cadmium	0.51	0.0020	0.5000	0	102	75	125			
Chromium	0.49	0.0060	0.5000	0	98.7	75	125			
Copper	0.51	0.0060	0.5000	0	102	75	125			
Iron	0.50	0.020	0.5000	0	99.9	75	125			
Lead	0.49	0.0050	0.5000	0	99.0	75	125			
Magnesium	71	1.0	50.00	21.11	99.9	75	125			
Manganese	0.49	0.0020	0.5000	0.001490	97.9	75	125			
Potassium	51	1.0	50.00	1.847	97.4	75	125			
Selenium	0.57	0.050	0.5000	0	114	75	125			
Silver	0.098	0.0050	0.1000	0	97.9	75	125			
Uranium	0.51	0.10	0.5000	0	101	75	125			
Zinc	0.51	0.020	0.5000	0.006620	99.7	75	125			

Sample ID	1404099-003CMSD		SampType: MSD			TestCode: EPA Method 6010B: Dissolved Metals				
Client ID:	Outfall #3D		Batch ID: R17788			RunNo: 17788				
Prep Date:			Analysis Date: 4/3/2014			SeqNo: 512552		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.57	0.020	0.5000	0.06130	101	75	125	1.38	20	
Cadmium	0.52	0.0020	0.5000	0	103	75	125	1.12	20	
Chromium	0.50	0.0060	0.5000	0	100	75	125	1.32	20	
Copper	0.52	0.0060	0.5000	0	104	75	125	1.82	20	
Iron	0.49	0.020	0.5000	0	98.9	75	125	0.990	20	
Lead	0.50	0.0050	0.5000	0	99.5	75	125	0.578	20	
Magnesium	71	1.0	50.00	21.11	99.6	75	125	0.206	20	
Manganese	0.50	0.0020	0.5000	0.001490	99.5	75	125	1.54	20	
Potassium	51	1.0	50.00	1.847	97.4	75	125	0.0257	20	
Selenium	0.57	0.050	0.5000	0	114	75	125	0.261	20	
Silver	0.099	0.0050	0.1000	0	98.6	75	125	0.774	20	
Uranium	0.52	0.10	0.5000	0	104	75	125	3.09	20	
Zinc	0.51	0.020	0.5000	0.006620	101	75	125	1.11	20	

Sample ID	1404099-003CMS		SampType: MS			TestCode: EPA Method 6010B: Dissolved Metals				
Client ID:	Outfall #3D		Batch ID: R17788			RunNo: 17788				
Prep Date:			Analysis Date: 4/3/2014			SeqNo: 512554		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	380	5.0	250.0	109.0	106	75	125			
Sodium	330	5.0	250.0	68.96	103	75	125			

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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404099

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4-1-14

Sample ID	1404099-003CMSD		SampType: MSD		TestCode: EPA Method 6010B: Dissolved Metals					
Client ID:	Outfall #3D		Batch ID: R17788		RunNo: 17788					
Prep Date:			Analysis Date: 4/3/2014		SeqNo: 512555		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	390	5.0	250.0	109.0	114	75	125	4.59	20	
Sodium	340	5.0	250.0	68.96	108	75	125	4.21	20	

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 6010B: Dissolved Metals					
Client ID:	PBW	Batch ID: R17809			RunNo: 17809					
Prep Date:		Analysis Date: 4/5/2014			SeqNo: 513373		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 6010B: Dissolved Metals					
Client ID:	LCSW		Batch ID: R17809		RunNo: 17809					
Prep Date:			Analysis Date: 4/5/2014		SeqNo: 513374		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	99.5	80	120			

Sample ID	1404099-003CMS		SampType: MS		TestCode: EPA Method 6010B: Dissolved Metals					
Client ID:	Outfall #3D		Batch ID: R17809		RunNo: 17809					
Prep Date:			Analysis Date: 4/5/2014		SeqNo: 513384		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.47	0.020	0.5000	0	94.7	75	125			

Sample ID	1404099-003CMSD		SampType:	MSD		TestCode:	EPA Method 6010B: Dissolved Metals				
Client ID:	Outfall #3D		Batch ID:	R17809		RunNo:	17809				
Prep Date:			Analysis Date:	4/5/2014		SeqNo:	513385		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic	0.48	0.020	0.5000	0	95.6	75	125	0.902	20		

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 greater than 2.
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#: 1404099

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4-1-14

Sample ID	MB-12551	SampType: MBLK			TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	PBW	Batch ID: 12551			RunNo: 17809					
Prep Date:	4/4/2014	Analysis Date: 4/5/2014			SeqNo: 513371		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-12551		SampType: LCS		TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	LCSW		Batch ID: 12551		RunNo: 17809					
Prep Date:	4/4/2014		Analysis Date: 4/5/2014		SeqNo: 513372		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	99.7	80	120			
Barium	0.48	0.020	0.5000	0	95.0	80	120			
Cadmium	0.48	0.0020	0.5000	0	96.4	80	120			
Chromium	0.48	0.0060	0.5000	0	95.1	80	120			
Lead	0.47	0.0050	0.5000	0	94.5	80	120			
Selenium	0.50	0.050	0.5000	0	100	80	120			
Silver	0.098	0.0050	0.1000	0	98.2	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 greater than 2.
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1404099

14-Apr-14

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4-1-14

Sample ID	mb-1	SampType:	mbk	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R17767	RunNo:	17767					
Prep Date:		Analysis Date:	4/2/2014	SeqNo:	511976	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	lcs-1	SampType:	lcs	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R17767	RunNo:	17767					
Prep Date:		Analysis Date:	4/2/2014	SeqNo:	511977	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	78	20	80.00	0	97.0	90	110			

Sample ID	mb-2	SampType:	mbk	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R17767	RunNo:	17767					
Prep Date:		Analysis Date:	4/2/2014	SeqNo:	511991	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID	lcs-2	SampType:	lcs	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R17767	RunNo:	17767					
Prep Date:		Analysis Date:	4/2/2014	SeqNo:	511992	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	82	20	80.00	0	102	90	110			

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 greater than 2.
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: **Western Refining Southw**

Work Order Number: **1404099**

RcptNo: 1

Received by/date:

RM 04/02/14

Logged By: **Ashley Gallegos**

4/2/2014 9:45:00 AM

Completed By: **Ashley Gallegos**

4/2/2014 11:29:08 AM

Reviewed By:

AG 04/02/14

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 ☐

FOR DISSOLVED METALS ANALYSIS: Added 0.14 mL HNO_3 to -0030 FOR ACCEPTABLE pH. Held in Log In for 24 hours AFTER PRESERVATION

of preserved bottles checked for pH:

09

(≤ 2 or >12 unless noted)

Adjusted?

YES

Checked by:

AG

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	1.4	Good	Yes			

Rpt	T	Analyte	Units	Synonym	MDL	LOD	LOQ
☐	A	Aluminum	mg/L		0.004123	0	
☐	A	Antimony	mg/L		0.022393	0	
☒	A	Arsenic	mg/L		0.018673	0	
☒	A	Barium	mg/L		0.000790	0	
☐	A	Beryllium	mg/L		0.000113	0	
☐	A	Boron	mg/L		0.012703	0	
☒	A	Cadmium	mg/L		0.000558	0	
☒	A	Calcium	mg/L		0.055778	0	
☒	A	Chromium	mg/L		0.001537	0	
☐	A	Cobalt	mg/L		0.001307	0	
☒	A	Copper	mg/L		0.002482	0	
☒	A	Iron	mg/L		0.003231	0	
☒	A	Lead	mg/L		0.004822	0	
☒	A	Magnesium	mg/L		0.008294	0	
☒	A	Manganese	mg/L		0.000409	0	
☐	A	Molybdenum	mg/L		0.003016	0	
☐	A	Nickel	mg/L		0.001275	0	
☒	A	Potassium	mg/L		0.04975	0	
☒	A	Selenium	mg/L		0.024390	0	
☐	A	Silicon	mg/L		0.008201	0	
☒	A	Silver	mg/L		0.000421	0	
☒	A	Sodium	mg/L		0.080371	0	
☐	A	Strontium	mg/L		0.00015	0	
☐	A	Thallium	mg/L		0.017170	0	
☐	A	Tin	mg/L		0.005269	0	
☐	A	Titanium	mg/L		0.000334	0	
☒	A	Uranium	mg/L		0.01086	0	
☐	A	Vanadium	mg/L		0.001088	0	
☒	A	Zinc	mg/L		0.000434	0	
☐	C	Silica	mg/L		0.01755	0	
☐	I	Yttrium	%		0	0	
☐	I	Yttrium Radial	%		0	0	

+ Hg

Dissolved Metals