

GW – 028

**Annual DP
Report
(Part 7 of 16)**

2015

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID rb1	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: R26817			RunNo: 26817						
Prep Date:	Analysis Date: 6/12/2015			SeqNo: 799790		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								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Carbon Tetrachloride	ND	1.0								
Chloroform	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Methylene Chloride	ND	3.0								
1,1,2,2 Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.8		10.00		87.6	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.7	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID 100nglcs200T2lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES						
Client ID: LCSW	Batch ID: R26817			RunNo: 26817						
Prep Date:	Analysis Date: 6/12/2015			SeqNo: 799792		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	20	1.0	20.00	0	102	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	113	75.6	144			
Trichloroethene (TCE)	19	1.0	20.00	0	95.2	70	130			
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.1	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	9.1		10.00		90.8	70	130			
Surr: Toluene-d8	10		10.00		102	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 Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-19627		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	19627		RunNo:	26846			
Prep Date:	6/9/2015		Analysis Date:	6/16/2015		SeqNo:	801380		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	2.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	13		20.00		65.6	37.2	136			

Sample ID	LCS-19627		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	19627		RunNo:	26846			
Prep Date:	6/9/2015		Analysis Date:	6/16/2015		SeqNo:	801381		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	74	2.0	80.00	0	92.9	57.8	83.9			S
1-Methylnaphthalene	76	2.0	80.20	0	94.6	43.5	88.5			S
2-Methylnaphthalene	74	2.0	80.00	0	92.8	34.2	94.5			
Acenaphthylene	77	2.5	80.20	0	95.6	58.5	93.6			S
Acenaphthene	74	2.0	80.00	0	91.9	45.5	90.9			S
Fluorene	7.0	0.80	8.020	0	86.7	46.6	90.3			
Phenanthrene	3.6	0.60	4.020	0	89.1	47.2	102			
Anthracene	3.6	0.60	4.020	0	88.8	45.4	99.1			
Fluoranthene	7.3	0.30	8.020	0	90.8	45.3	101			
Pyrene	7.5	0.30	8.020	0	93.0	51.9	104			
Benz(a)anthracene	0.72	0.070	0.8020	0	89.8	46.9	104			
Chrysene	3.6	0.20	4.020	0	89.3	53.6	95.1			
Benzo(b)fluoranthene	0.87	0.10	1.002	0	86.8	54.3	97.9			
Benzo(k)fluoranthene	0.46	0.070	0.5000	0	92.0	47.4	109			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	LCS-19627			SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW			Batch ID:	19627		RunNo:	26846			
Prep Date:	6/9/2015			Analysis Date:	6/16/2015		SeqNo:	801381		Units:	µg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzo(a)pyrene	0.46	0.070	0.5020	0	91.6	56.3	98.6				
Dibenz(a,h)anthracene	0.90	0.12	1.002	0	89.8	57.5	95.7				
Benzo(g,h,i)perylene	0.92	0.12	1.000	0	92.0	55.9	98.6				
Indeno(1,2,3-cd)pyrene	1.8	0.25	2.004	0	90.8	52.8	95.3				
Surr: Benzo(e)pyrene	13		20.00		66.2	37.2	136				

Sample ID	LCSD-19627		SampType: LCSD		TestCode: EPA Method 8310: PAHs					
Client ID:	LCSS02		Batch ID: 19627		RunNo: 26846					
Prep Date:	6/9/2015		Analysis Date: 6/16/2015		SeqNo: 801382		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	70	2.0	80.00	0	88.1	57.8	83.9	5.29	20	S
1-Methylnaphthalene	73	2.0	80.20	0	90.7	43.5	88.5	4.20	20	S
2-Methylnaphthalene	71	2.0	80.00	0	88.8	34.2	94.5	4.35	20	
Acenaphthylene	75	2.5	80.20	0	93.1	58.5	93.6	2.66	20	
Acenaphthene	72	2.0	80.00	0	89.8	45.5	90.9	2.37	20	
Fluorene	6.8	0.80	8.020	0	85.4	46.6	90.3	1.45	20	
Phenanthrene	3.6	0.60	4.020	0	89.8	47.2	102	0.834	24	
Anthracene	3.6	0.60	4.020	0	89.8	45.4	99.1	1.11	20	
Fluoranthene	7.4	0.30	8.020	0	91.9	45.3	101	1.23	20.9	
Pyrene	7.6	0.30	8.020	0	94.4	51.9	104	1.46	20.8	
Benz(a)anthracene	0.71	0.070	0.8020	0	88.5	46.9	104	1.40	20	
Chrysene	3.6	0.20	4.020	0	89.3	53.6	95.1	0	20	
Benzo(b)fluoranthene	0.86	0.10	1.002	0	85.8	54.3	97.9	1.16	20.6	
Benzo(k)fluoranthene	0.45	0.070	0.5000	0	90.0	47.4	109	2.20	20.8	
Benzo(a)pyrene	0.45	0.070	0.5020	0	89.6	56.3	98.6	2.20	20	
Dibenz(a,h)anthracene	0.87	0.12	1.002	0	86.8	57.5	95.7	3.39	20	
Benzo(g,h,i)perylene	0.89	0.12	1.000	0	89.0	55.9	98.6	3.31	20	
Indeno(1,2,3-cd)pyrene	1.8	0.25	2.004	0	87.8	52.8	95.3	3.35	20	
Surr: Benzo(e)pyrene	14		20.00		69.4	37.2	136	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 Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S Spike Recovery outside accepted recovery limits | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-19794		SampType:	MBLK		TestCode:	Total Phenolics by SW-846 9067				
Client ID:	PBW		Batch ID:	19794		RunNo:	26937				
Prep Date:	6/18/2015		Analysis Date:	6/18/2015		SeqNo:	804126	Units:	µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Phenolics, Total Recoverable	ND	2.5									

Sample ID	LCS-19794		SampType:	LCS		TestCode:	Total Phenolics by SW-846 9067				
Client ID:	LCSW		Batch ID:	19794		RunNo:	26937				
Prep Date:	6/18/2015		Analysis Date:	6/18/2015		SeqNo:	804127	Units:	µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Phenolics, Total Recoverable	22	2.5	20.00	0	108	64.4	135				

Qualifiers:

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R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-R26972		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R26972		RunNo:	26972				
Prep Date:			Analysis Date:	6/18/2015		SeqNo:	805487		Units:		mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R26972		SampType: LCS		TestCode: EPA 335.4: Total Cyanide Subbed					
Client ID:	LCSW		Batch ID: R26972		RunNo: 26972					
Prep Date:			Analysis Date: 6/18/2015		SeqNo: 805488		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.501		0.5000	0	100	90	110			

Sample ID	MB-R26972		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R26972		RunNo:	26972				
Prep Date:			Analysis Date:	6/16/2015		SeqNo:	805490		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R26972		SampType:	LCS		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	LCSW		Batch ID:	R26972		RunNo:	26972				
Prep Date:			Analysis Date:	6/16/2015		SeqNo:	805491	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	0.503		0.5000	0	101	90	110				

Qualifiers:

- | | |
|---|--|
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| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit |
| O RSD is greater than RSDlimit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S Spike Recovery outside accepted recovery limits | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-R26972		SampType: MBLK		TestCode: EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed					
Client ID:	PBW		Batch ID: R26972		RunNo: 26972					
Prep Date:			Analysis Date: 6/16/2015		SeqNo: 805511		Units: pCi/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.071	0.659								
Radium-226 ±	0.324	0.659								
Radium-228	0.112	0.774								
Radium-228 ±	0.344	0.774								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506316

22-Jun-15

Client: Navajo Refining Company
Project: Monthly Temporary RO Reject

Sample ID	MB-19636		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	19636		RunNo:	26730				
Prep Date:	6/9/2015		Analysis Date:	6/10/2015		SeqNo:	796757		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-19636		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 19636		RunNo: 26730					
Prep Date:	6/9/2015		Analysis Date: 6/10/2015		SeqNo: 796758		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 Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: **NAVAJO REFINING CO**

Work Order Number: **1506316**

RcptNo: **1**

Received by/date:

Ln 1 06/06/15

Logged By: **Ashley Gallegos**

6/6/2015 12:15:00 PM

Completed By: **Ashley Gallegos**

6/8/2015 9:51:07 AM

Reviewed By:

2/26 06/08/15

Chain of Custody

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

Log In

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

of preserved bottles checked for pH: *8*
(*2* or *12* unless noted)
Adjusted? *Yes*

Checked by: *JA*

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	5.8	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

Project Manager:						
Robert Combs						
Sampler: Elizabeth Salsberry						
On Ice: X Yes <input type="checkbox"/> No						
Sample Temperature: 5.8						
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
-5-15	1:37 +29	Liquid	Amigo06/08/15	2 - 500ml P	1-unpres H2SO4	150603110
-5-15	1:29		South Field RD Reject Discharge	3-40ml VOA	HCL	-001
-5-15	1:29			1-500ml P	HNO3	
-5-15	1:29			1-125ml P	HNO3	
-5-15	1:29			1-500ml P	NaOH	
-5-15	1:29			2- 1L P	HNO3	
-5-15	1:29			3-40ml VOA	HCL	
-5-15	1:27			2 - 1L Glass	unpres	
-5-15	1:29			1 - 1L Glass	unpres	
-5-15	1:29			2-40ml VOA	unpres	
-5-15	1:29		Trip Blank	2-40ml VOA	HCL	-00A
Relinquished by: Elizabeth Salsberry Received by: [Signature] Date: 06/08/15 Time: 12:15						
Relinquished by: Received by: [Signature] Date: _____ Time: _____						

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.



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575.748.3311
(Fax) 575.746.5451

Monthly RO Reject Sample Details Attachment



Project Name	Monthly RO Reject
Sampler's Name	Elizabeth Salisbury
Sampler's Affiliation	Navajo Refining Co. LLC
Start Date and Time	6/5/2015 @ 1:25 pm
End Date and Time	6/5/2015 @ 1:54 pm

Sample Type	Grab <input checked="" type="checkbox"/>
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>
Parts / Sample Intervals	One

Physical Property	Solid <input type="checkbox"/>
	Liquid <input checked="" type="checkbox"/>
	Sludge <input type="checkbox"/>
Type of Sampler	Directly to sample jars

Outfall / Sample Location:	<input type="checkbox"/> North Field R.O. Reject Discharge <input checked="" type="checkbox"/> South Field R.O. Reject Discharge
----------------------------	--

Container	Size	Material	# of Containers	Preservatives							Analysis and/or Method Requested
				Neat (None)	HCL	HNO3	H2SO4	NaCH	Na2S2O3	NaHSO4	
1	500ml	Plastic	2	X			X				
2	40ml	VOA	3		X						
3	500ml	Plastic	1			X					
4	125ml	Plastic	1			X					
5	500ml	Plastic	2					X			
6	1L	Plastic	3			X					
7	40ml	VOA	2		X						
8	1L	Glass	1	X							
9	1L	Glass	2	X							
10	40ml	VOA	2	X							
11	40ml	VOA	2		X						

Field Data (Weather, Observations, Etc):	6/5/2015 01:35 Tmp. 89.6, Humidity 38%, Wind Dir. SE, Wind Speed 16.1 mph, Conditions Clear
Date and Time:	
Field Temp. 25.9 C	Field pH 7.94
Storage Method	Ice <input checked="" type="checkbox"/>
	Refrigerated <input type="checkbox"/>
	Other <input type="checkbox"/>
Shipping Media	Ice <input checked="" type="checkbox"/>
	Other <input type="checkbox"/>



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

June 22, 2015

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly RO Reject

OrderNo.: 1506320

Dear Robert Combs:

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

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

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

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

Sincerely,

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 1506320

Date Reported: 6/22/2015

CLIENT: Navajo Refining Company

Client Sample ID: South Field RO Reject Discharge

Project: Monthly RO Reject

Collection Date: 6/5/2015 1:54:00 PM

Lab ID: 1506320-001

Matrix: AQUEOUS

Received Date: 6/6/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	ND	0.0010		mg/L	1	6/16/2015 7:46:40 PM	R26876
Lead	ND	0.0010		mg/L	1	6/16/2015 7:46:40 PM	R26876
Selenium	0.0062	0.0010		mg/L	1	6/16/2015 7:46:40 PM	R26876
Uranium	0.0053	0.0010		mg/L	1	6/16/2015 7:46:40 PM	R26876
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	1.59	0.615		pCi/L	1	6/16/2015	R26972
Radium-226 ±	0.712	0.615		pCi/L	1	6/16/2015	R26972
Radium-228	0.427	0.757		pCi/L	1	6/16/2015	R26972
Radium-228 ±	0.375	0.757		pCi/L	1	6/16/2015	R26972
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	2.9	0.10		mg/L	1	6/8/2015 1:35:07 PM	R26695
Chloride	380	10		mg/L	20	6/8/2015 2:12:21 PM	R26695
Sulfate	1800	25		mg/L	50	6/10/2015 1:41:18 AM	R26721
Nitrate+Nitrite as N	4.5	1.0		mg/L	5	6/9/2015 4:28:42 AM	R26695
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3640	20.0	*	mg/L	1	6/11/2015 4:07:00 PM	19650
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	6/16/2015	R26972
SM4500-H+B: PH							Analyst: JRR
pH	8.06	1.68	H	pH units	1	6/9/2015 10:02:04 PM	R26740
EPA METHOD 200.7: DISSOLVED METALS							Analyst: JLF
Aluminum	ND	0.020		mg/L	1	6/16/2015 5:09:17 PM	R26882
Barium	0.055	0.0020		mg/L	1	6/16/2015 5:09:17 PM	R26882
Boron	0.092	0.040		mg/L	1	6/16/2015 5:09:17 PM	R26882
Cadmium	ND	0.0020		mg/L	1	6/16/2015 5:09:17 PM	R26882
Chromium	0.0077	0.0060		mg/L	1	6/16/2015 5:09:17 PM	R26882
Cobalt	ND	0.0060		mg/L	1	6/16/2015 5:09:17 PM	R26882
Copper	ND	0.0060		mg/L	1	6/16/2015 5:09:17 PM	R26882
Iron	ND	0.020		mg/L	1	6/16/2015 5:09:17 PM	R26882
Manganese	0.0021	0.0020		mg/L	1	6/16/2015 5:09:17 PM	R26882
Molybdenum	ND	0.0080		mg/L	1	6/16/2015 5:09:17 PM	R26882
Nickel	ND	0.010		mg/L	1	6/16/2015 5:09:17 PM	R26882
Silver	ND	0.0050		mg/L	1	6/16/2015 5:09:17 PM	R26882
Zinc	0.042	0.010		mg/L	1	6/16/2015 5:09:17 PM	R26882
EPA METHOD 245.1: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	6/9/2015 3:15:08 PM	19630

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

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1506320

Date Reported: 6/22/2015

CLIENT: Navajo Refining Company

Client Sample ID: South Field RO Reject Discharge

Project: Monthly RO Reject

Collection Date: 6/5/2015 1:54:00 PM

Lab ID: 1506320-001

Matrix: AQUEOUS

Received Date: 6/6/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	6/11/2015 5:29:43 PM	19674
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	6/12/2015 3:35:55 PM	19626
Aroclor 1221	ND	1.0		µg/L	1	6/12/2015 3:35:55 PM	19626
Aroclor 1232	ND	1.0		µg/L	1	6/12/2015 3:35:55 PM	19626
Aroclor 1242	ND	1.0		µg/L	1	6/12/2015 3:35:55 PM	19626
Aroclor 1248	ND	1.0		µg/L	1	6/12/2015 3:35:55 PM	19626
Aroclor 1254	ND	1.0		µg/L	1	6/12/2015 3:35:55 PM	19626
Aroclor 1260	ND	1.0		µg/L	1	6/12/2015 3:35:55 PM	19626
Surr: Decachlorobiphenyl	81.2	44.5-110		%REC	1	6/12/2015 3:35:55 PM	19626
Surr: Tetrachloro-m-xylene	69.6	31.8-95.7		%REC	1	6/12/2015 3:35:55 PM	19626
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	6/9/2015 10:29:45 PM	19616
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	6/9/2015 10:29:45 PM	19616
Surr: DNOP	100	76.5-150		%REC	1	6/9/2015 10:29:45 PM	19616
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	6/10/2015 8:13:18 PM	R26753
Surr: BFB	89.2	57.8-137		%REC	1	6/10/2015 8:13:18 PM	R26753
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	6/16/2015 12:38:08 PM	19627
1-Methylnaphthalene	ND	2.0		µg/L	1	6/16/2015 12:38:08 PM	19627
2-Methylnaphthalene	ND	2.0		µg/L	1	6/16/2015 12:38:08 PM	19627
Benzo(a)pyrene	ND	0.070		µg/L	1	6/16/2015 12:38:08 PM	19627
Surr: Benzo(e)pyrene	73.2	37.2-136		%REC	1	6/16/2015 12:38:08 PM	19627
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
Toluene	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
Ethylbenzene	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
Carbon Tetrachloride	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
Chloroform	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
1,1-Dichloroethane	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
1,1-Dichloroethene	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
Methylene Chloride	ND	3.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777

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

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1506320

Date Reported: 6/22/2015

CLIENT: Navajo Refining Company

Client Sample ID: South Field RO Reject Discharge

Project: Monthly RO Reject

Collection Date: 6/5/2015 1:54:00 PM

Lab ID: 1506320-001

Matrix: AQUEOUS

Received Date: 6/6/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
Vinyl chloride	ND	1.0		µg/L	1	6/12/2015 5:41:45 AM	R26777
Xylenes, Total	ND	1.5		µg/L	1	6/12/2015 5:41:45 AM	R26777
Surr: 1,2-Dichloroethane-d4	95.7	70-130		%REC	1	6/12/2015 5:41:45 AM	R26777
Surr: 4-Bromofluorobenzene	107	70-130		%REC	1	6/12/2015 5:41:45 AM	R26777
Surr: Dibromofluoromethane	96.0	70-130		%REC	1	6/12/2015 5:41:45 AM	R26777
Surr: Toluene-d8	102	70-130		%REC	1	6/12/2015 5:41:45 AM	R26777
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	6/18/2015	19794

Refer to the QC Summary report and 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 22
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1506320

Date Reported: 6/22/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly RO Reject

Collection Date:

Lab ID: 1506320-002

Matrix: TRIP BLANK

Received Date: 6/6/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
Toluene	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
Ethylbenzene	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
Carbon Tetrachloride	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
Chloroform	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
1,1-Dichloroethane	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
1,1-Dichloroethene	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
Methylene Chloride	ND	3.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
Vinyl chloride	ND	1.0		µg/L	1	6/12/2015 7:07:57 AM	R26777
Xylenes, Total	ND	1.5		µg/L	1	6/12/2015 7:07:57 AM	R26777
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	6/12/2015 7:07:57 AM	R26777
Surr: 4-Bromofluorobenzene	105	70-130		%REC	1	6/12/2015 7:07:57 AM	R26777
Surr: Dibromofluoromethane	102	70-130		%REC	1	6/12/2015 7:07:57 AM	R26777
Surr: Toluene-d8	103	70-130		%REC	1	6/12/2015 7:07:57 AM	R26777

Refer to the QC Summary report and 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 22
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB		SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	PBW		Batch ID: R26882			RunNo: 26882				
Prep Date:			Analysis Date: 6/16/2015			SeqNo: 802272		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
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: R26882			RunNo: 26882				
Prep Date:			Analysis Date: 6/16/2015			SeqNo: 802273		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.53	0.020	0.5000	0	107	85	115			
Barium	0.50	0.0020	0.5000	0	99.3	85	115			
Boron	0.53	0.040	0.5000	0	105	85	115			
Cadmium	0.54	0.0020	0.5000	0	107	85	115			
Chromium	0.51	0.0060	0.5000	0	101	85	115			
Cobalt	0.52	0.0060	0.5000	0	103	85	115			
Copper	0.49	0.0060	0.5000	0	97.4	85	115			
Iron	0.50	0.020	0.5000	0	99.7	85	115			
Manganese	0.48	0.0020	0.5000	0	96.4	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.50	0.010	0.5000	0	100	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Zinc	0.51	0.010	0.5000	0	101	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 Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R26876		RunNo: 26876					
Prep Date:			Analysis Date: 6/16/2015		SeqNo: 802096		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	99.0	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.025	0.0010	0.02500	0	99.4	85	115			
Uranium	0.013	0.00050	0.01250	0	102	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R26876		RunNo: 26876					
Prep Date:			Analysis Date: 6/16/2015		SeqNo: 802099		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	98.9	85	115			
Lead	0.012	0.00050	0.01250	0	96.3	85	115			
Selenium	0.025	0.0010	0.02500	0	100	85	115			
Uranium	0.012	0.00050	0.01250	0	96.9	85	115			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R26876			RunNo: 26876					
Prep Date:		Analysis Date: 6/16/2015			SeqNo: 802100		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R26876			RunNo: 26876					
Prep Date:		Analysis Date: 6/16/2015			SeqNo: 802101		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-19630	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	19630	RunNo:	26705					
Prep Date:	6/9/2015	Analysis Date:	6/9/2015	SeqNo:	795807	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-19630	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	19630	RunNo:	26705					
Prep Date:	6/9/2015	Analysis Date:	6/9/2015	SeqNo:	795808	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	80	120			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R26695	RunNo:	26695					
Prep Date:		Analysis Date:	6/8/2015	SeqNo:	795454	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								
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R26695	RunNo:	26695					
Prep Date:		Analysis Date:	6/8/2015	SeqNo:	795455	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Fluoride	0.48	0.10	0.5000	0	95.8	90	110			
Chloride	4.8	0.50	5.000	0	96.7	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	100	90	110			

Sample ID	1506320-001EMS	SampType:	MS	TestCode:	EPA Method 300.0: Anions					
Client ID:	South Field RO Reje	Batch ID:	R26695	RunNo:	26695					
Prep Date:		Analysis Date:	6/8/2015	SeqNo:	795461	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Fluoride	3.3	0.10	0.5000	2.860	84.6	75.3	111			
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Sample ID	1506320-001EMSD	SampType:	MSD	TestCode:	EPA Method 300.0: Anions					
Client ID:	South Field RO Reje	Batch ID:	R26695	RunNo:	26695					
Prep Date:		Analysis Date:	6/8/2015	SeqNo:	795462	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Fluoride	3.2	0.10	0.5000	2.860	77.6	75.3	111	1.07	20	
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Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R26721	RunNo:	26721					
Prep Date:		Analysis Date:	6/9/2015	SeqNo:	796475	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Sulfate	ND	0.50								
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Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R26721	RunNo:	26721					
Prep Date:		Analysis Date:	6/9/2015	SeqNo:	796476	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Sulfate	11	0.50	10.00	0	106	90	110			
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Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-19674	SampType:	MBLK	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	PBW	Batch ID:	19674	RunNo:	26780					
Prep Date:	6/11/2015	Analysis Date:	6/11/2015	SeqNo:	798570	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID	LCS-19674	SampType:	LCS	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	LCSW	Batch ID:	19674	RunNo:	26780					
Prep Date:	6/11/2015	Analysis Date:	6/11/2015	SeqNo:	798571	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	109	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 Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-19616		SampType:	MBLK		TestCode:	EPA Method 8015D: Diesel Range				
Client ID:	PBW		Batch ID:	19616		RunNo:	26673				
Prep Date:	6/8/2015		Analysis Date:	6/9/2015		SeqNo:	796030		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Diesel Range Organics (DRO)

ND

1.0

Motor Oil Range Organics (MRO)

ND

5.0

Surr: DNOP

0.94

1.000

94.1

76.5

150

Sample ID	LCS-19616		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 19616		RunNo: 26673					
Prep Date:	6/8/2015		Analysis Date: 6/9/2015		SeqNo: 796031		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)

5.0

1.0

5.000

0

99.3

60.1

156

Surr: DNOP

0.45

0.5000

89.8

76.5

150

Qualifiers:

* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

O RSD is greater than RSDlimit

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

P Sample pH Not In Range

RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R26753	RunNo:	26753					
Prep Date:		Analysis Date:	6/10/2015	SeqNo:	797263	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	18		20.00		88.9	57.8	137			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R26753	RunNo:	26753					
Prep Date:		Analysis Date:	6/10/2015	SeqNo:	797264	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	98.5	80	120			
Surr: BFB	21		20.00		103	57.8	137			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-19626		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 19626		RunNo: 26808					
Prep Date:	6/9/2015		Analysis Date: 6/12/2015		SeqNo: 799539		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	1.8		2.500		72.8	44.5	110			
Surr: Tetrachloro-m-xylene	1.6		2.500		63.2	31.8	95.7			

Sample ID	MB-19672		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 19672		RunNo: 26808					
Prep Date:	6/11/2015		Analysis Date: 6/12/2015		SeqNo: 799540		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Decachlorobiphenyl	2.3		2.500		92.0	44.5	110			
Surr: Tetrachloro-m-xylene	1.9		2.500		75.2	31.8	95.7			

Sample ID	LCS-19672		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 19672		RunNo: 26808					
Prep Date:	6/11/2015		Analysis Date: 6/12/2015		SeqNo: 799541		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Decachlorobiphenyl	2.0		2.500		82.0	44.5	110			
Surr: Tetrachloro-m-xylene	1.8		2.500		70.4	31.8	95.7			

Sample ID	LCSD-19626		SampType: LCSD		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSS02		Batch ID: 19626		RunNo: 26808					
Prep Date:	6/9/2015		Analysis Date: 6/12/2015		SeqNo: 799543		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	3.1	1.0	5.000	0	61.8	22.6	127	4.98	26.9	
Aroclor 1260	4.7	1.0	5.000	0	94.3	20.4	122	8.96	29.1	
Surr: Decachlorobiphenyl	1.7		2.500		69.2	44.5	110	0	0	
Surr: Tetrachloro-m-xylene	1.5		2.500		58.4	31.8	95.7	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 Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS-19626		SampType: LCS		TestCode: EPA Method 8082: PCB's					
Client ID:	LCSW		Batch ID: 19626		RunNo: 26808					
Prep Date:	6/9/2015		Analysis Date: 6/12/2015		SeqNo: 799548		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.9	1.0	5.000	0	58.8	22.6	127			
Aroclor 1260	5.2	1.0	5.000	0	103	20.4	122			
Surr: Decachlorobiphenyl	1.9		2.500		74.8	44.5	110			
Surr: Tetrachloro-m-xylene	1.7		2.500		66.4	31.8	95.7			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb1	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R26777	RunNo:	26777					
Prep Date:		Analysis Date:	6/11/2015	SeqNo:	798456	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								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Carbon Tetrachloride	ND	1.0								
Chloroform	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Methylene Chloride	ND	3.0								
1,1,2,2 Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R26777	RunNo:	26777					
Prep Date:		Analysis Date:	6/11/2015	SeqNo:	798458	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	105	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	110	75.6	144			
Trichloroethene (TCE)	18	1.0	20.00	0	89.3	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		103	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 Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	rb3	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R26777			RunNo: 26777					
Prep Date:		Analysis Date: 6/11/2015			SeqNo: 798468		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								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Carbon Tetrachloride	ND	1.0								
Chloroform	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Methylene Chloride	ND	3.0								
1,1,2,2 Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		109	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	11		10.00		109	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID	100ng lcs2		SampType: LCS		TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW		Batch ID: R26777		RunNo: 26777					
Prep Date:			Analysis Date: 6/11/2015		SeqNo: 798470		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	22	1.0	20.00	0	108	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	111	75.6	144			
Trichloroethene (TCE)	19	1.0	20.00	0	92.9	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	11		10.00		105	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 Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	1506320-001a ms		SampType: MS		TestCode: EPA Method 8260B: VOLATILES					
Client ID:	South Field RO Reje		Batch ID: R26777		RunNo: 26777					
Prep Date:			Analysis Date: 6/12/2015		SeqNo: 798483		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	21	1.0	20.00	0	103	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	110	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	89.9	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.7	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.4	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID		1506320-001A MSD			SampType: MSD		TestCode: EPA Method 8260B: VOLATILES				
Client ID:		South Field RO Reje		Batch ID: R26777		RunNo: 26777					
Prep Date:		Analysis Date: 6/12/2015			SeqNo: 798484		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	6.43	20		
Toluene	20	1.0	20.00	0	102	70	130	0.642	20		
1,1-Dichloroethene	19	1.0	20.00	0	96.6	70	130	13.4	20		
Trichloroethene (TCE)	17	1.0	20.00	0	83.8	70	130	7.06	20		
Surr: 1,2-Dichloroethane-d4	9.7		10.00		96.6	70	130	0	0		
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130	0	0		
Surr: Dibromofluoromethane	9.3		10.00		92.9	70	130	0	0		
Surr: Toluene-d8	10		10.00		103	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 Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-19627		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs			
Client ID:	PBW		Batch ID:	19627		RunNo:	26846			
Prep Date:	6/9/2015		Analysis Date:	6/16/2015		SeqNo:	801380	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	2.0								
2-Methylnaphthalene	ND	2.0								
Acenaphthylene	ND	2.5								
Acenaphthene	ND	2.0								
Fluorene	ND	0.80								
Phenanthrene	ND	0.60								
Anthracene	ND	0.60								
Fluoranthene	ND	0.30								
Pyrene	ND	0.30								
Benz(a)anthracene	ND	0.070								
Chrysene	ND	0.20								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.070								
Benzo(a)pyrene	ND	0.070								
Dibenz(a,h)anthracene	ND	0.12								
Benzo(g,h,i)perylene	ND	0.12								
Indeno(1,2,3-cd)pyrene	ND	0.25								
Surr: Benzo(e)pyrene	13		20.00		65.6	37.2	136			

Sample ID	LCS-19627		SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW		Batch ID:	19627		RunNo:	26846			
Prep Date:	6/9/2015		Analysis Date:	6/16/2015		SeqNo:	801381	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	74	2.0	80.00	0	92.9	57.8	83.9			S
1-Methylnaphthalene	76	2.0	80.20	0	94.6	43.5	88.5			S
2-Methylnaphthalene	74	2.0	80.00	0	92.8	34.2	94.5			
Acenaphthylene	77	2.5	80.20	0	95.6	58.5	93.6			S
Acenaphthene	74	2.0	80.00	0	91.9	45.5	90.9			S
Fluorene	7.0	0.80	8.020	0	86.7	46.6	90.3			
Phenanthrene	3.6	0.60	4.020	0	89.1	47.2	102			
Anthracene	3.6	0.60	4.020	0	88.8	45.4	99.1			
Fluoranthene	7.3	0.30	8.020	0	90.8	45.3	101			
Pyrene	7.5	0.30	8.020	0	93.0	51.9	104			
Benz(a)anthracene	0.72	0.070	0.8020	0	89.8	46.9	104			
Chrysene	3.6	0.20	4.020	0	89.3	53.6	95.1			
Benzo(b)fluoranthene	0.87	0.10	1.002	0	86.8	54.3	97.9			
Benzo(k)fluoranthene	0.46	0.070	0.5000	0	92.0	47.4	109			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS-19627			SampType:	LCS		TestCode:	EPA Method 8310: PAHs			
Client ID:	LCSW			Batch ID:	19627		RunNo:	26846			
Prep Date:	6/9/2015			Analysis Date:	6/16/2015		SeqNo:	801381		Units:	µg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzo(a)pyrene	0.46	0.070	0.5020	0	91.6	56.3	98.6				
Dibenz(a,h)anthracene	0.90	0.12	1.002	0	89.8	57.5	95.7				
Benzo(g,h,i)perylene	0.92	0.12	1.000	0	92.0	55.9	98.6				
Indeno(1,2,3-cd)pyrene	1.8	0.25	2.004	0	90.8	52.8	95.3				
Surr: Benzo(e)pyrene	13		20.00		66.2	37.2	136				

Sample ID	LCSD-19627		SampType: LCSD		TestCode: EPA Method 8310: PAHs					
Client ID:	LCSS02		Batch ID: 19627		RunNo: 26846					
Prep Date:	6/9/2015		Analysis Date: 6/16/2015		SeqNo: 801382		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	70	2.0	80.00	0	88.1	57.8	83.9	5.29	20	S
1-Methylnaphthalene	73	2.0	80.20	0	90.7	43.5	88.5	4.20	20	S
2-Methylnaphthalene	71	2.0	80.00	0	88.8	34.2	94.5	4.35	20	
Acenaphthylene	75	2.5	80.20	0	93.1	58.5	93.6	2.66	20	
Acenaphthene	72	2.0	80.00	0	89.8	45.5	90.9	2.37	20	
Fluorene	6.8	0.80	8.020	0	85.4	46.6	90.3	1.45	20	
Phenanthrene	3.6	0.60	4.020	0	89.8	47.2	102	0.834	24	
Anthracene	3.6	0.60	4.020	0	89.8	45.4	99.1	1.11	20	
Fluoranthene	7.4	0.30	8.020	0	91.9	45.3	101	1.23	20.9	
Pyrene	7.6	0.30	8.020	0	94.4	51.9	104	1.46	20.8	
Benz(a)anthracene	0.71	0.070	0.8020	0	88.5	46.9	104	1.40	20	
Chrysene	3.6	0.20	4.020	0	89.3	53.6	95.1	0	20	
Benzo(b)fluoranthene	0.86	0.10	1.002	0	85.8	54.3	97.9	1.16	20.6	
Benzo(k)fluoranthene	0.45	0.070	0.5000	0	90.0	47.4	109	2.20	20.8	
Benzo(a)pyrene	0.45	0.070	0.5020	0	89.6	56.3	98.6	2.20	20	
Dibenz(a,h)anthracene	0.87	0.12	1.002	0	86.8	57.5	95.7	3.39	20	
Benzo(g,h,i)perylene	0.89	0.12	1.000	0	89.0	55.9	98.6	3.31	20	
Indeno(1,2,3-cd)pyrene	1.8	0.25	2.004	0	87.8	52.8	95.3	3.35	20	
Surr: Benzo(e)pyrene	14		20.00		69.4	37.2	136	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 Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-19794	SampType:	MBLK	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	PBW	Batch ID:	19794	RunNo:	26937					
Prep Date:	6/18/2015	Analysis Date:	6/18/2015	SeqNo:	804126	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	ND	2.5								

Sample ID	LCS-19794	SampType:	LCS	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSW	Batch ID:	19794	RunNo:	26937					
Prep Date:	6/18/2015	Analysis Date:	6/18/2015	SeqNo:	804127	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	22	2.5	20.00	0	108	64.4	135			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R26972		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R26972		RunNo:	26972				
Prep Date:			Analysis Date:	6/18/2015		SeqNo:	805487	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R26972		SampType:	LCS		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	LCSW		Batch ID:	R26972		RunNo:	26972				
Prep Date:			Analysis Date:	6/18/2015		SeqNo:	805488	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	0.501		0.5000	0	100	90	110				

Sample ID	MB-R26972		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R26972		RunNo:	26972				
Prep Date:			Analysis Date:	6/16/2015		SeqNo:	805490	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R26972			SampType:	LCS		TestCode:	EPA 335.4: Total Cyanide Subbed			
Client ID:	LCSW			Batch ID:	R26972		RunNo:	26972			
Prep Date:				Analysis Date:	6/16/2015		SeqNo:	805491	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	0.503		0.5000	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 Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-R26972		SampType:	MBLK		TestCode:	EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed				
Client ID:	PBW		Batch ID:	R26972		RunNo:	26972				
Prep Date:			Analysis Date:	6/16/2015		SeqNo:	805511		Units: pCi/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Radium-226	0.071	0.659									
Radium-226 ±	0.324	0.659									
Radium-228	0.112	0.774									
Radium-228 ±	0.344	0.774									

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506320

22-Jun-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-19650	SampType: MBLK			TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID: 19650			RunNo: 26772					
Prep Date:	6/10/2015	Analysis Date: 6/11/2015			SeqNo: 798169		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-19650	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	19650	RunNo:	26772					
Prep Date:	6/10/2015	Analysis Date:	6/11/2015	SeqNo:	798170	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1000	20.0	1000	0	100	80	120			

Qualifiers:

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

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

Sample Log-In Check List

Client Name: **NAVAJO REFINING CO**

Work Order Number: **1506320**

RcptNo: 1

Received by/date:

Jim 04/06/15

Logged By:

Ashley Gallegos

6/6/2012

Completed By:

Ashley Gallegos

6/8/2015 10:03:30 AM

Reviewed By:

[Signature] 04/08/15

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° 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: 6 (2 or 12 unless noted)
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐ Adjusted? Yes
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	5.8	Good	Yes			



Navajo Refining Company, LLC
501 E. Main
Artesia, NM 88210
(Tel) 575.748.3311
(Fax) 575.746.5451

Monthly RO Reject Sample Details Attachment



Project Name	Monthly RO Reject
Sampler's Name	Elizabeth Salisbury
Sampler's Affiliation	Navajo Refining Co. LLC
Start Date and Time	6/5/2015 @ 2:05 pm
End Date and Time	6/5/2015 @ 1:54 pm

Sample Type	Grab <input checked="" type="checkbox"/>
Time Weighted Composite	<input type="checkbox"/>
Flow Weighted Composite	<input type="checkbox"/>

Physical Property	Solid <input type="checkbox"/>
	Liquid <input checked="" type="checkbox"/>
	Sludge <input type="checkbox"/>

Parts / Sample Intervals	One
--------------------------	-----

Type of Sampler	Directly to sample jars
-----------------	-------------------------

Outfall / Sample Location:	<input type="checkbox"/> North Field R.O. Reject Discharge <input checked="" type="checkbox"/> South Field R.O. Reject Discharge
----------------------------	--

Container	Size	Material	# of Containers	Preservatives							Analysis and/or Method Requested
				HCL	HNO3	H2SO4	NaOH	Na2S2O3	NaHSO4	Other	
1	500ml	Plastic	2	X		X					
2	40ml	VOA	3	X							
3	500ml	Plastic	1		X						
4	125ml	Plastic	1		X						
5	500ml	Plastic	2				X				
6	1L	Plastic	3		X						
7	40ml	VOA	2	X							
8	1L	Glass	1	X							
9	1L	Glass	2								
10	40ml	VOA	2	X							
11	40ml	VOA	2	X							

Field Data (Weather, Observations, Etc):	6/5/2015 01:55 Tmp. 89.6 F, Humidity 38%, Wind Dir. SE, Wind Speed 17.3 mph. Conditions Clear
Date and Time:	

Field Temp. 25.7 C	Field pH 7.69
--------------------	---------------

Storage Method	Ice <input checked="" type="checkbox"/>
	Refrigerated <input type="checkbox"/>
	Other <input type="checkbox"/>

Shipping Media	Ice <input checked="" type="checkbox"/>
	Other <input type="checkbox"/>



August 14, 2015

Submitted electronically via email to jim.griswold@state.nm.us and carlj.chavez@state.nm.us

Oil Conservation Division
New Mexico Energy, Minerals & Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: WQA-OCD-CO-2015-002
Monthly Report – July 2015 Reporting Period

Dear Sirs:

In accordance with Exhibit A, paragraph 5, to Agreed Compliance Order No. WQA-OCD-CO-2015-002 (the Order), the Navajo Refining Company, L.L.C. (Navajo), Artesia, New Mexico, Refinery (the Refinery) hereby submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department Oil Conservation Division (OCD). This letter and all attachments provided herein constitute Navajo's August 2015 monthly report, for the period of July 1-31, under the Order.

Specifically, this report covers the July 2015 reporting period and includes the following data and information as required by Exhibit A, Paragraph 2 and Paragraph 5.a – c:

- Daily discharge flow measurements for each reverse osmosis (RO) unit and for all RO units together.
- Calculation of stipulated penalties, if any, required under Section III, Paragraph 2 of the Order.
- Results of the monthly discharge sample results.
- Updates on any new developments related to the treatment and disposal of RO reject fluid at the facility.

A discussion of each topic is provided below and the associated data is provided in Attachments 1 through 3.

Daily RO Reject Fluid Discharge Flow Measurements

Flow rate for the RO reject fluid is monitored from the two permanent RO units and the temporary RO unit on a daily basis. Daily discharge volumes are provided in Attachment 1.

Stipulated Penalties

In accordance with Exhibit A, Paragraph 1 of the Order, Navajo submitted the GW-028 discharge permit modification request on May 22, 2015, prior to 30 days from April 27, 2015, the date of the Order. Therefore, for the entire July reporting period, Paragraph III.2.b.i.2 of the Order is applicable. Stipulated penalties were calculated for each day following Navajo's submittal of the permit modification request, and prior to OCD action on that request, as follows:

- \$100 per day for each daily RO reject fluid discharge volume between 10,000 and 15,000 barrels from July 1 through July 31.
- \$500 per day for each daily RO reject fluid discharge volume that exceeds 15,000 barrels from July 1 through July 31.

Navajo has calculated a penalty of \$2,700 for July 2015. The daily discharge volume exceeded the 10,000 barrels/day (bbl/day) limit, but was under 15,000 barrels total, on 27 days in July. Calculations conducted in accordance with Paragraph III.2.b.i.2 of the Agreed Compliance Order are provided in Attachment 2.

Payment of the stipulated penalty will be sent to the OCD Director's mailing address within 30 days after the date of this monthly report pursuant to Paragraph III.2.b. of the Order.

Monthly Discharge Sample Results

Navajo collected a sample of the RO reject fluid discharge from both the permanent RO units (combined discharge) and the temporary RO unit on July 1, 2015. The analytical lab report for these samples is provided in Attachment 3.

Updates Regarding Treatment and Disposal of RO Reject Fluid

As described in the Order, Navajo is working to enhance its water management system and reduce the total volume of RO reject fluid that is discharged pursuant to its groundwater discharge permit. Options under consideration include the installation of a third permanent RO unit to replace the temporary RO unit and the installation of a secondary RO unit to reduce the total volume of RO reject fluid produced. Navajo is also evaluating options for the underground injection of RO reject fluid. In addition, Navajo has conducted a study of background groundwater concentrations of key chemical constituents of the RO reject fluid discharged under its groundwater discharge permit to determine whether concentrations of these constituents exceed background levels. Navajo

anticipates completion and submittal of the associated background groundwater concentration report to OCD in late August or early September 2015.

In accordance with Exhibit A, Paragraph 1 of the Order, Navajo submitted a GW-028 discharge permit modification request on May 22, 2015. The requested modifications include operating a temporary RO unit at the Navajo Refinery and increasing the total maximum volume of RO reject fluids that can be applied to the surface of Navajo's discharge fields from approximately 10,000 bbl/day to approximately 20,000 bbl/day calculated on a rolling 12-month average. OCD notified Navajo that the application for the requested permit modification is administratively complete by letter dated July 1, 2015.

As the permit modification application was deemed to be administratively complete, Navajo completed the public notice requirements set forth in 20.6.2.3108B New Mexico Administrative Code (NMAC) regarding public notice of the permit modification request. Mailings were sent to adjacent landowners within a 1/3 mile radius of the property, signs have been posted at the discharge location (Richey Avenue) and at the Refinery offices, and the notice has been published in the *Artesia Daily Press*. Navajo is currently preparing the proof of completion of the public notice requirements for submittal to the OCD.

Navajo is committed to proactively meeting the requirements of the Order and working cooperatively with OCD. If you have any questions or comments, please contact me at 575-746-5487.

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

Attachment 1: Daily Discharge Flow Rates
Attachment 2: Stipulated Penalty Calculation
Attachment 3: Analytical Lab Report

cc. HFC: D. McWatters, R. O'Brien, M. Holder
OCD: A. Marks, B. Brancard

Attachment 1
Daily Discharge Flow Rates

**Daily RO Reject Discharge Flow Rate Measurements
and Calculated Daily Discharge**

	Permanent RO Units				Temporary Unit		Daily Discharge Volume
	Metered Data		Combined RO Reject Discharge (Calculated)		Total RO Reject Discharge (Calculated from Log Data)		BBL
	GPM	GPM	GPM	BBL/DAY	GPM	BBL/DAY	
	SOUTH	NORTH					
7/1/2015	126	107	233	7989	62	2140	10129
7/2/2015	128	106	234	8023	62	2131	10154
7/3/2015	137	110	247	8469	63	2160	10629
7/4/2015	140	111	251	8606	66	2270	10876
7/5/2015	132	109	241	8263	67	2293	10556
7/6/2015	125	113	238	8160	68	2331	10491
7/7/2015	129	107	236	8091	71	2426	10517
7/8/2015	131	118	249	8537	74	2545	11082
7/9/2015	131	104	235	8057	64	2204	10261
7/10/2015	138	107	245	8400	65	2236	10636
7/11/2015	134	109	243	8331	68	2317	10648
7/12/2015	125	102	227	7783	70	2401	10184
7/13/2015	137	103	240	8229	72	2452	10681
7/14/2015	133	108	241	8263	73	2514	10777
7/15/2015	132	77	209	7166	74	2537	9703
7/16/2015	132	91	223	7646	75	2571	10217
7/17/2015	132	108	240	8229	76	2591	10820
7/18/2015	133	108	241	8263	78	2673	10936
7/19/2015	129	115	244	8366	77	2636	11002
7/20/2015	133	109	242	8297	78	2689	10986
7/21/2015	127	108	235	8057	78	2684	10741
7/22/2015	134	78	212	7269	77	2655	9924
7/23/2015	131	85	216	7406	75	2569	9975
7/24/2015	140	111	251	8606	63	2150	10756
7/25/2015	127	111	238	8160	64	2201	10361
7/26/2015	127	111	238	8160	65	2228	10388
7/27/2015	133	113	246	8434	65	2218	10652
7/28/2015	135	112	247	8469	65	2223	10692
7/29/2015	142	0	142	4869	67	2310	7179
7/30/2015	129	131	260	8914	69	2350	11264
7/31/2015	129	130	259	8880	69	2366	11246

Attachment 2
Stipulated Penalty Calculation

Calculation of Stipulated Penalties - July 2015

Order Section III, Paragraph Number	Penalty	Payment per day	No. of Days (per violation)	Amount
2.b.i	Exceedance of the 10,000 barrel per day RO reject fluid discharge volume limit specified in Discharge Permit GW-028:	--	--	--
2.b.i.1	- Prior to Navajo submitting a discharge permit modification application	\$1,000		\$0
2.b.i.2	- If the daily volume is between 10,000 and 15,000 barrels after Navajo submits discharge permit modification application	\$100	27	\$2,700
2.b.i.2	- If the daily volume exceeds 15,000 barrels after Navajo submits discharge permit modification application	\$500		\$0
2.b.ii	Failure to conduct sampling as required in Exhibit A of Order	\$2,000		\$0
2.b.iii	Failure to timely submit any report or notifications as required in Exhibit A of Order	\$1,000		\$0
2.b.iv	Failure to record the daily discharge flow from the permanent and the temporary RO units	\$1,000		\$0
Total Amount:				\$2,700

Attachment 3
Analytical Lab Report



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

July 22, 2015

Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, NM 88211-0159
TEL: (575) 748-3311
FAX

RE: Monthly RO Reject

OrderNo.: 1507157

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 7/3/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507157

Date Reported: 7/22/2015

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly RO Reject

Collection Date: 7/1/2015 2:50:00 PM

Lab ID: 1507157-001

Matrix: AQUEOUS

Received Date: 7/3/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	ND	0.0050		mg/L	5	7/14/2015 1:48:38 PM	R27505
Lead	ND	0.00050		mg/L	1	7/13/2015 4:43:45 PM	R27474
Selenium	0.011	0.0010		mg/L	1	7/14/2015 1:11:54 PM	R27505
Uranium	0.0066	0.00050		mg/L	1	7/13/2015 4:43:45 PM	R27474
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	1.79	0.574		pCi/L	1	7/16/2015	R27657
Radium-226 ±	0.792	0.574		pCi/L	1	7/16/2015	R27657
Radium-228	0.141	0.802		pCi/L	1	7/16/2015	R27657
Radium-228 ±	0.359	0.802		pCi/L	1	7/16/2015	R27657
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	3.7	2.0		mg/L	20	7/6/2015 10:17:45 PM	R27319
Chloride	210	10		mg/L	20	7/6/2015 10:17:45 PM	R27319
Sulfate	1800	50		mg/L	100	7/15/2015 4:09:28 PM	R27535
Nitrate+Nitrite as N	2.1	1.0		mg/L	5	7/6/2015 11:32:12 PM	R27319
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3890	20.0	*	mg/L	1	7/9/2015 2:45:00 PM	20140
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	7/13/2015	R27657
SM4500-H+B: PH							Analyst: JRR
pH	8.04	1.68	H	pH units	1	7/9/2015 10:05:05 PM	R27410
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	7/7/2015 3:24:49 PM	R27323
Barium	0.074	0.0020		mg/L	1	7/7/2015 3:24:49 PM	R27323
Boron	0.088	0.040		mg/L	1	7/7/2015 3:24:49 PM	R27323
Cadmium	ND	0.0020		mg/L	1	7/7/2015 3:24:49 PM	R27323
Chromium	ND	0.0060		mg/L	1	7/7/2015 3:24:49 PM	R27323
Cobalt	ND	0.0060		mg/L	1	7/7/2015 3:24:49 PM	R27323
Copper	ND	0.0060		mg/L	1	7/7/2015 3:24:49 PM	R27323
Iron	ND	0.020		mg/L	1	7/7/2015 3:24:49 PM	R27323
Manganese	ND	0.0020		mg/L	1	7/7/2015 3:24:49 PM	R27323
Molybdenum	ND	0.0080		mg/L	1	7/7/2015 3:24:49 PM	R27323
Nickel	ND	0.010		mg/L	1	7/7/2015 3:24:49 PM	R27323
Silver	ND	0.0050		mg/L	1	7/7/2015 3:24:49 PM	R27323
Zinc	0.028	0.010		mg/L	1	7/7/2015 3:24:49 PM	R27323
EPA METHOD 245.1: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	7/8/2015 4:35:51 PM	20160

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507157

Date Reported: 7/22/2015

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly RO Reject

Collection Date: 7/1/2015 2:50:00 PM

Lab ID: 1507157-001

Matrix: AQUEOUS

Received Date: 7/3/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: KJH
1,2-Dibromoethane	ND	0.010		µg/L	1	7/9/2015 5:02:41 PM	20171
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	7/14/2015 8:23:58 AM	20149
Aroclor 1221	ND	1.0		µg/L	1	7/14/2015 8:23:58 AM	20149
Aroclor 1232	ND	1.0		µg/L	1	7/14/2015 8:23:58 AM	20149
Aroclor 1242	ND	1.0		µg/L	1	7/14/2015 8:23:58 AM	20149
Aroclor 1248	ND	1.0		µg/L	1	7/14/2015 8:23:58 AM	20149
Aroclor 1254	ND	1.0		µg/L	1	7/14/2015 8:23:58 AM	20149
Aroclor 1260	ND	1.0		µg/L	1	7/14/2015 8:23:58 AM	20149
Surr: Decachlorobiphenyl	63.2	44.5-110		%REC	1	7/14/2015 8:23:58 AM	20149
Surr: Tetrachloro-m-xylene	65.6	31.8-95.7		%REC	1	7/14/2015 8:23:58 AM	20149
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	7/6/2015 8:38:10 PM	20109
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	7/6/2015 8:38:10 PM	20109
Surr: DNOP	99.5	76.5-150		%REC	1	7/6/2015 8:38:10 PM	20109
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/7/2015 4:57:38 PM	R27335
Surr: BFB	86.0	57.8-137		%REC	1	7/7/2015 4:57:38 PM	R27335
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	7/8/2015 3:12:02 PM	20150
1-Methylnaphthalene	ND	2.0		µg/L	1	7/8/2015 3:12:02 PM	20150
2-Methylnaphthalene	ND	2.0		µg/L	1	7/8/2015 3:12:02 PM	20150
Benzo(a)pyrene	ND	0.070		µg/L	1	7/8/2015 3:12:02 PM	20150
Surr: Benzo(e)pyrene	58.5	37.2-136		%REC	1	7/8/2015 3:12:02 PM	20150
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
Toluene	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
Ethylbenzene	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
Carbon Tetrachloride	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
Chloroform	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
1,1-Dichloroethane	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
1,1-Dichloroethene	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
Methylene Chloride	ND	3.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507157

Date Reported: 7/22/2015

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly RO Reject

Collection Date: 7/1/2015 2:50:00 PM

Lab ID: 1507157-001

Matrix: AQUEOUS

Received Date: 7/3/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
Vinyl chloride	ND	1.0		µg/L	1	7/10/2015 4:49:29 AM	R27395
Xylenes, Total	ND	1.5		µg/L	1	7/10/2015 4:49:29 AM	R27395
Surr: 1,2-Dichloroethane-d4	97.5	70-130		%REC	1	7/10/2015 4:49:29 AM	R27395
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	7/10/2015 4:49:29 AM	R27395
Surr: Dibromofluoromethane	93.5	70-130		%REC	1	7/10/2015 4:49:29 AM	R27395
Surr: Toluene-d8	102	70-130		%REC	1	7/10/2015 4:49:29 AM	R27395
TOTAL PHENOLICS BY SW-846 9067							Analyst: SCC
Phenolics, Total Recoverable	ND	2.5		µg/L	1	7/7/2015	20119

Refer to the QC Summary report and 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 27
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507157

Date Reported: 7/22/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly RO Reject

Collection Date:

Lab ID: 1507157-002

Matrix: TRIP BLANK

Received Date: 7/3/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: KJH
1,2-Dibromoethane	ND	0.010		µg/L	1	7/9/2015 5:16:26 PM	20171
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Benzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Toluene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Ethylbenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Naphthalene	ND	2.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1-Methylnaphthalene	ND	4.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
2-Methylnaphthalene	ND	4.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Acetone	ND	10		µg/L	1	7/10/2015 5:18:14 AM	R27395
Bromobenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Bromodichloromethane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Bromoform	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Bromomethane	ND	3.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
2-Butanone	ND	10		µg/L	1	7/10/2015 5:18:14 AM	R27395
Carbon disulfide	ND	10		µg/L	1	7/10/2015 5:18:14 AM	R27395
Carbon Tetrachloride	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Chlorobenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Chloroethane	ND	2.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Chloroform	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Chloromethane	ND	3.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
2-Chlorotoluene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
4-Chlorotoluene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
cis-1,2-DCE	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Dibromochloromethane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Dibromomethane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,1-Dichloroethane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,1-Dichloroethene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,2-Dichloropropane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507157

Date Reported: 7/22/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly RO Reject

Collection Date:

Lab ID: 1507157-002

Matrix: TRIP BLANK

Received Date: 7/3/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
1,3-Dichloropropane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
2,2-Dichloropropane	ND	2.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,1-Dichloropropene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Hexachlorobutadiene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
2-Hexanone	ND	10		µg/L	1	7/10/2015 5:18:14 AM	R27395
Isopropylbenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
4-Isopropyltoluene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
4-Methyl-2-pentanone	ND	10		µg/L	1	7/10/2015 5:18:14 AM	R27395
Methylene Chloride	ND	3.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
n-Butylbenzene	ND	3.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
n-Propylbenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
sec-Butylbenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Styrene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
tert-Butylbenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
trans-1,2-DCE	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Trichlorofluoromethane	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Vinyl chloride	ND	1.0		µg/L	1	7/10/2015 5:18:14 AM	R27395
Xylenes, Total	ND	1.5		µg/L	1	7/10/2015 5:18:14 AM	R27395
Surr: 1,2-Dichloroethane-d4	97.1	70-130		%REC	1	7/10/2015 5:18:14 AM	R27395
Surr: 4-Bromofluorobenzene	107	70-130		%REC	1	7/10/2015 5:18:14 AM	R27395
Surr: Dibromofluoromethane	95.8	70-130		%REC	1	7/10/2015 5:18:14 AM	R27395
Surr: Toluene-d8	102	70-130		%REC	1	7/10/2015 5:18:14 AM	R27395

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	PBW		Batch ID:	R27323		RunNo:	27323			
Prep Date:			Analysis Date:	7/7/2015		SeqNo:	818884		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
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:	R27323		RunNo:	27323			
Prep Date:			Analysis Date:	7/7/2015		SeqNo:	818885		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.53	0.020	0.5000	0	106	85	115			
Barium	0.47	0.0020	0.5000	0	94.9	85	115			
Boron	0.50	0.040	0.5000	0	100	85	115			
Cadmium	0.51	0.0020	0.5000	0	102	85	115			
Chromium	0.48	0.0060	0.5000	0	96.4	85	115			
Cobalt	0.49	0.0060	0.5000	0	97.9	85	115			
Copper	0.47	0.0060	0.5000	0	95.0	85	115			
Iron	0.47	0.020	0.5000	0	93.1	85	115			
Manganese	0.48	0.0020	0.5000	0	96.9	85	115			
Molybdenum	0.49	0.0080	0.5000	0	98.0	85	115			
Nickel	0.48	0.010	0.5000	0	95.7	85	115			
Silver	0.099	0.0050	0.1000	0	99.3	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Sample ID	LLLCS		SampType:	LCSLL		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	BatchQC		Batch ID:	R27323		RunNo:	27323			
Prep Date:			Analysis Date:	7/7/2015		SeqNo:	818886		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	147	50	150			
Barium	0.0022	0.0020	0.002000	0	112	50	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LLLCS	SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID: R27323			RunNo: 27323					
Prep Date:		Analysis Date: 7/7/2015			SeqNo: 818886		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	ND	0.040	0.04000	0	89.4	50	150			
Cadmium	0.0020	0.0020	0.002000	0	101	50	150			
Chromium	ND	0.0060	0.006000	0	89.8	50	150			
Cobalt	ND	0.0060	0.006000	0	97.2	50	150			
Copper	ND	0.0060	0.006000	0	99.2	50	150			
Iron	0.022	0.020	0.02000	0	112	50	150			
Manganese	ND	0.0020	0.002000	0	98.0	50	150			
Molybdenum	0.0092	0.0080	0.008000	0	115	50	150			
Nickel	ND	0.010	0.005000	0	92.4	50	150			
Silver	0.0055	0.0050	0.005000	0	109	50	150			
Zinc	ND	0.010	0.005000	0	90.4	50	150			

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID: R27323			RunNo: 27323					
Prep Date:		Analysis Date: 7/7/2015			SeqNo: 818887		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
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: R27323		RunNo: 27323					
Prep Date:			Analysis Date: 7/7/2015		SeqNo: 818888		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.54	0.020	0.5000	0	108	85	115			
Barium	0.48	0.0020	0.5000	0	95.6	85	115			
Boron	0.51	0.040	0.5000	0	101	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	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 Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S Spike Recovery outside accepted recovery limits | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	LCSW		Batch ID: R27323			RunNo: 27323				
Prep Date:			Analysis Date: 7/7/2015			SeqNo: 818888		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.48	0.0060	0.5000	0	96.3	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.5	85	115			
Copper	0.48	0.0060	0.5000	0	96.1	85	115			
Iron	0.49	0.020	0.5000	0	97.1	85	115			
Manganese	0.49	0.0020	0.5000	0	97.6	85	115			
Molybdenum	0.49	0.0080	0.5000	0	98.1	85	115			
Nickel	0.48	0.010	0.5000	0	96.1	85	115			
Silver	0.10	0.0050	0.1000	0	99.9	85	115			
Zinc	0.48	0.010	0.5000	0	95.0	85	115			

Sample ID	LLCS		SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	BatchQC		Batch ID: R27323			RunNo: 27323				
Prep Date:			Analysis Date: 7/7/2015			SeqNo: 818889		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	133	50	150			
Barium	0.0024	0.0020	0.002000	0	118	50	150			
Boron	ND	0.040	0.04000	0	89.1	50	150			
Cadmium	ND	0.0020	0.002000	0	89.0	50	150			
Chromium	ND	0.0060	0.006000	0	75.2	50	150			
Cobalt	0.0065	0.0060	0.006000	0	108	50	150			
Copper	0.0066	0.0060	0.006000	0	110	50	150			
Iron	0.021	0.020	0.02000	0	106	50	150			
Manganese	0.0020	0.0020	0.002000	0	103	50	150			
Molybdenum	0.011	0.0080	0.008000	0	140	50	150			
Nickel	ND	0.010	0.005000	0	104	50	150			
Silver	ND	0.0050	0.005000	0	72.0	50	150			
Zinc	ND	0.010	0.005000	0	88.8	50	150			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R27474		RunNo: 27474					
Prep Date:			Analysis Date: 7/13/2015		SeqNo: 824374		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.012	0.00050	0.01250	0	96.3	85	115			
Uranium	0.012	0.00050	0.01250	0	95.6	85	115			

Sample ID	LCS			SampType:	LCS			TestCode:	EPA 200.8: Dissolved Metals		
Client ID:	LCSW			Batch ID:	R27474			RunNo:	27474		
Prep Date:				Analysis Date:	7/13/2015			SeqNo:	824375	Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Lead	0.012	0.00050	0.01250	0	96.4	85	115				
Uranium	0.012	0.00050	0.01250	0	96.3	85	115				

Sample ID	LCSLL		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: R27474		RunNo: 27474					
Prep Date:			Analysis Date: 7/13/2015		SeqNo: 824376		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050	0.0005000	0	94.0	50	150			
Uranium	ND	0.00050	0.0005000	0	92.9	50	150			

Sample ID	LCSLL			SampType:	LCSLL			TestCode:	EPA 200.8: Dissolved Metals		
Client ID:	BatchQC			Batch ID:	R27474			RunNo:	27474		
Prep Date:				Analysis Date:	7/13/2015			SeqNo:	824377	Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Lead	0.00051	0.00050	0.0005000	0	102	50	150				
Uranium	0.00050	0.00050	0.0005000	0	101	50	150				

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R27474			RunNo: 27474					
Prep Date:		Analysis Date: 7/13/2015			SeqNo: 824379		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								
Uranium	ND	0.00050								

Sample ID	MB		SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals				
Client ID:	PBW		Batch ID: R27474			RunNo: 27474				
Prep Date:			Analysis Date: 7/13/2015			SeqNo: 824380		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 Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S Spike Recovery outside accepted recovery limits | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R27474	RunNo:	27474					
Prep Date:		Analysis Date:	7/13/2015	SeqNo:	824380	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								
Uranium	ND	0.00050								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R27505	RunNo:	27505					
Prep Date:		Analysis Date:	7/14/2015	SeqNo:	825388	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	101	85	115			
Selenium	0.025	0.0010	0.02500	0	100	85	115			

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R27505	RunNo:	27505					
Prep Date:		Analysis Date:	7/14/2015	SeqNo:	825389	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			
Selenium	0.026	0.0010	0.02500	0	104	85	115			

Sample ID	LLCS	SampType:	LCSLL	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R27505	RunNo:	27505					
Prep Date:		Analysis Date:	7/14/2015	SeqNo:	825390	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	94.0	50	150			
Selenium	ND	0.0010	0.001000	0	98.3	50	150			

Sample ID	LLCS	SampType:	LCSLL	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	R27505	RunNo:	27505					
Prep Date:		Analysis Date:	7/14/2015	SeqNo:	825391	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	102	50	150			
Selenium	0.0011	0.0010	0.001000	0	108	50	150			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R27505	RunNo:	27505					
Prep Date:		Analysis Date:	7/14/2015	SeqNo:	825392	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 Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals						
Client ID:	PBW	Batch ID: R27505			RunNo: 27505						
Prep Date:		Analysis Date: 7/14/2015			SeqNo: 825392		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								

Sample ID	MB	SampType:	MBLK		TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R27505		RunNo:	27505					
Prep Date:		Analysis Date:	7/14/2015		SeqNo:	825393	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 Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20160	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	20160	RunNo:	27365					
Prep Date:	7/8/2015	Analysis Date:	7/8/2015	SeqNo:	820623	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-20160	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	20160	RunNo:	27365					
Prep Date:	7/8/2015	Analysis Date:	7/8/2015	SeqNo:	820626	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	98.8	80	120			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R27319	RunNo:	27319					
Prep Date:		Analysis Date:	7/6/2015	SeqNo:	818775	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								
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R27319	RunNo:	27319					
Prep Date:		Analysis Date:	7/6/2015	SeqNo:	818776	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	4.7	0.50	5.000	0	93.6	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	99.2	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R27535	RunNo:	27535					
Prep Date:		Analysis Date:	7/15/2015	SeqNo:	826667	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Sulfate	ND	0.50								
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Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R27535	RunNo:	27535					
Prep Date:		Analysis Date:	7/15/2015	SeqNo:	826668	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Sulfate	10	0.50	10.00	0	100	90	110			
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Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20171	SampType:	MBLK	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	PBW	Batch ID:	20171	RunNo:	27393					
Prep Date:	7/9/2015	Analysis Date:	7/9/2015	SeqNo:	821853	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID	LCS-20171	SampType:	LCS	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	LCSW	Batch ID:	20171	RunNo:	27393					
Prep Date:	7/9/2015	Analysis Date:	7/9/2015	SeqNo:	821854	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	107	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 Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-20109	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range					
Client ID:	PBW	Batch ID:	20109	RunNo:	27291					
Prep Date:	7/6/2015	Analysis Date:	7/6/2015	SeqNo:	818285	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)

ND

1.0

Motor Oil Range Organics (MRO)

ND

5.0

Surr: DNOP

0.88

1.000

88.5

76.5

150

Sample ID	LCS-20109	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW	Batch ID:	20109	RunNo:	27291					
Prep Date:	7/6/2015	Analysis Date:	7/6/2015	SeqNo:	818286	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)

4.1

1.0

5.000

0

81.8

60.1

156

Surr: DNOP

0.49

0.5000

97.8

76.5

150

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507157

22-Jul-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R27335	RunNo:	27335					
Prep Date:		Analysis Date:	7/7/2015	SeqNo:	819311	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	18		20.00		89.3	57.8	137			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R27335	RunNo:	27335					
Prep Date:		Analysis Date:	7/7/2015	SeqNo:	819312	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	95.0	80	120			
Surr: BFB	19		20.00		94.6	57.8	137			

Sample ID	1507157-001JMS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	R.O. Reject	Batch ID:	R27335	RunNo:	27335					
Prep Date:		Analysis Date:	7/7/2015	SeqNo:	819318	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.51	0.050	0.5000	0.04740	92.4	51	131			
Surr: BFB	19		20.00		92.6	57.8	137			

Sample ID	1507157-001JMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	R.O. Reject	Batch ID:	R27335	RunNo:	27335					
Prep Date:		Analysis Date:	7/7/2015	SeqNo:	819319	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	0.04740	85.8	51	131	6.70	20	
Surr: BFB	18		20.00		91.6	57.8	137	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 Not In Range
RL Reporting Detection Limit