GW-028

Annual DP Report (4 of 6)

2016

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1601101**

28-Jan-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID **MB-23090**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **23090**	RunNo: **31315**
Prep Date: **1/6/2016**	Analysis Date: **1/7/2016**	SeqNo: **958376** 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-23090**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **23090**	RunNo: **31315**
Prep Date: **1/6/2016**	Analysis Date: **1/7/2016**	SeqNo: **958377** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: NAVAJO REFINING CO Work Order Number: 1601101 RcptNo: 1

Received by/date: 01/06/16

Logged By: Lindsay Mangin 1/6/2016 9:56:00 AM

Completed By: Lindsay Mangin 1/6/2016 9:58:40 AM

Reviewed By:

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° 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: 7, 1 (<2 or >12 unless noted)

Adjusted? NO

Checked by:

Special Handling (if applicable)

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

Person Notified: ____ Date: ____

By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: ____

Client Instructions: ____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.1	Good	Yes			

Chain-of-Custody Record

Client: Navajo Refinery

Mailing Address: P.O. Box 159 Artesia, NM 88211-0159

Phone #: 575-748-3311

email or Fax#: 575-746-5451

QA/QC Package:

X Standard ☐ Level 4 (Full Validation)

☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

X Standard ☐ Rush _____

Project Name:

Monthly Temporary R.O. Reject

Project #: P.O. # 167796

Project Manager:

Robert Combs

Sampler: Elizabeth Salsberry

On Ice: X Yes ☐ No

Sample Temperature: 3.1

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1601101	8260B:WQCC List VOCs	8270C: WQCC list SVOCs	6010B: WQCC Metals	335.4: Total Cyanide	7470: Mercury	8015: GRO, DRO, ORO	8082: PCBs	Radioactivity (Ra-226+Ra-228)	Sulfate Chloride	Phenols	Fluoride	Nitrate/Nitrite	Total Dissolved Solids	PH	504.1:EDB	Air Bubbles (Y or N)
1/5/15	10:10	liquid	Temporary R.O. Reject	2 - 500ml P	1-unpres 1-H2SO4	-001									X		X	X	X	X		
1/5/15	10:10	liquid	Temporary R.O. Reject	3-40ml VOA	HCL	-001	X															
1/5/15	10:10	liquid	Temporary R.O. Reject	1-500ml P	HNO3	-001					X											
1/5/15	10:10	liquid	Temporary R.O. Reject	1-125ml P	HNO3	-001			X													
1/5/15	10:10	liquid	Temporary R.O. Reject	1-500ml P	NaOH	-001				X												
1/5/15	10:10	liquid	Temporary R.O. Reject	2- 1L P	HNO3	-001								X								
1/5/15	10:10	liquid	Temporary R.O. Reject	3-40ml VOA	Na2S2O3	-001															X	
1/5/15	10:10	liquid	Temporary R.O. Reject	2 - 1L Glass	unpres	-001							X									
1/5/15	10:10	liquid	Temporary R.O. Reject	1 - 1L Glass	unpres	-001		X														
1/5/15	10:10	liquid	Temporary R.O. Reject	3-40ml VOA	HCl	-001						X										
1/5/15	10:10	liquid	Temporary R.O. Reject	1-250mlGlass	unpres	-001						X										
1/5/15	10:10	liquid	Temporary R.O. Reject	1 - 1L Glass	H2SO4	-001										X						
1/5/15	10:10	liquid	Trip Blank	2-40ml VOA	HCL	-002																

Date:	Time:	Relinquished by:	Received by:	Date	Time
				01/06/16	0956
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

Metals: As, Al, Ba, B, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Mo, Ni, Se, Ag, U, Zn

VOCs: 1,1,1-Trichloroethane; 1,1,2,2-Tetrachloroethane; 1,1,2,2-Tetrachloroethylene; 1,1,2-Trichloroethane; 1,1,2-Trichloroethylene; 1,1-Dichloroethane; 1,1-Dichloroethene; 1,2-Dibromoethane; 1,2-Dichloroethane; Benzene; Carbon Tetrachloride; Chloroform; Dichloromethane; Ethylbenzene; Toluene; Total Xylenes; Vinyl Chloride

SVOCs: benzo(a)pyrene, phenol, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene

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

Monthly Temporary RO Reject Sample Details

HOLLYFRONTIER
The HollyFrontier Companies

Project Name	Biannual RO Reject
Samplers Name	Elizabeth Salsberry
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	1/5/2016 9:55 a.m.
End Date and Time	1/5/2016 10:20 a.m.

Sample Type	
Grab	☑
Time Weighted Composite	☐
Flow Weighted Composite	☐

Parts / Sample Intervals	One

Physical Property	
Solid	☐
Liquid	☑
Sludge	☐

Type of Sampler	Directly to sample jars

Outfall / Sample Location: ☐ North Field R.O. Reject Discarge ☑ South Field R.O. Reject Discarge

				Preservatives								
Container	Size	Material	# of Containers	Neat (None)	HCL	HNO3	H2SO4	NaOH	Na2S2O3	NaHSO4	Other	Analysis and/or Method Requested
1	500ml	Plastic	2	X			X					pH, Cl, F, S04, NO2/NO3, TDS
2	40ml	VOA	3		X							8015 GRO
3	500ml	Plastic	1			X						6020 total metals, 7470 Hg
4	125ml	Plastic	1			X						6020 Dissolved Metals
5	500ml	Plastic	2					X				Cyanide
6	1L	Plastic	3			X						Radium 226/228
7	40ml	VOA	2		X							8260 see attached list
8	1L	Glass	1	X								8270 see attached list
9	1L	Glass	2	X								8082 PCBs
10	40ml	VOA	2	X								8015 DRO
11	40ml	VOA	2		X							Radium 226/228

Field Data (Weather, Observations, Etc): 1/5/2015 Tmp.33.8 °F, Humidity 100%, Wind Dir. Calm, Wind Speed Calm, Conditions Overcast

Date and Time:

Field Temp. 19.8 Field pH 7.79

Storage Method	
Ice	☑
Refrigerated	☐
Other	☐

Shipping Media	
Ice	☑
Other	☐

HOLLYFRONTIER.

March 15, 2016

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 – February 1 to February 4, 2016 Reporting Period

Dear Sirs:

In accordance with Exhibit A, paragraph 5, to Agreed Compliance Order No. WQA-OCD-CO-2015-002 (the Order), the HollyFrontier Navajo Refining LLC (Navajo), Artesia, New Mexico, Refinery (the Refinery) submits the required monthly report to the New Mexico Energy, Minerals, and Natural Resources Department Oil Conservation Division (OCD) on the 15th day of the month following each monthly reporting period. OCD issued modifications to Discharge Permit GW-028 with an effective date of February 4, 2016, and as a result, the Agreed Order has been terminated as of that date. However, to meet the requirements of the Order through February 4, 2016, Navajo hereby submits this letter and all attachments constituting Navajo's February 2016 monthly report. This monthly report covers the period of February 1 through February 4, 2016, and is the final report to satisfy requirements under the Order. Monthly reporting required by the modified Discharge Permit GW-028, Condition 4.B.7, will commence in March 2016.

Specifically, this report covers the February 1 through February 4, 2016 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 period of February 1 through February 4, 2016, 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 February 1 through February 4.
- $500 per day for each daily RO reject fluid discharge volume that exceeds 15,000 barrels from February 1 through February 4.

Navajo has calculated a penalty of $300 for the reporting period from February 1 through February 4, 2016. The daily discharge volume exceeded the 10,000 barrels/day (bbl/day) limit in effect during the reporting period, but was under 15,000 barrels total, on 3 days from February 1 to February 4, 2016. 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 February 4, 2016. 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. Navajo is currently preparing a notification to submit to OCD for Discharge Permit GW-028 authorization regarding installation of a third permanent primary 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, and other options for discharge, of RO reject fluid.

OCD issued the final modified permit conditions on February 4, 2016. In accordance with the modified Condition 4.B.4, Navajo is maintaining daily records of the flow rate and volumes from each RO unit, as well as the discharge locations. No exceedances of the 15,000 bpd limit have occurred since the permit modifications took effect on February 4, 2016. In accordance with the modified Condition 4.B.7, Navajo will submit under separate cover a monthly report to include the daily discharge flow measurements and analytical sample results for the February reporting period by March 15, 2016.

Navajo is currently preparing an early submittal of the Renewal Application for Discharge Permit GW-028. The Renewal Application will include a permit application for construction and operation of water management ponds for evaporation of RO reject fluid and possibly additional fluid streams.

Navajo has been committed to proactively meeting the requirements of the Order during its period of effect and to 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)		
	GPM	GPM	GPM	BBL/DAY	GPM	BBL/DAY	BBL
	SOUTH	NORTH					
2/1/2016	91	81	172	5,897	145	4957	10,854
2/2/2016	89	88	177	6,069	154	5271	11,340
2/3/2016	89	88	177	6,069	98	3365	9,434
2/4/2016	94	83	177	6,069	122	4167	10,236

Attachment 2
Stipulated Penalty Calculation

Calculation of Stipulated Penalties – February 1 – February 4, 2016

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	3	$300
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:		**$300**

Attachment 3
Analytical Lab Report

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

February 24, 2016

Robert Combs

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

RE: Monthly R.O. Reject OrderNo.: 1602206

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 2/5/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued February 22, 2016.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1602206**
Date Reported: **2/24/2016**

CLIENT: Navajo Refining Company
Project: Monthly R.O. Reject
Lab ID: 1602206-001 **Matrix:** AQUEOUS

Client Sample ID: R.O. Reject
Collection Date: 2/4/2016 9:35:00 AM
Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS						Analyst: **JLF**	
Arsenic	ND	0.0050		mg/L	5	2/9/2016 4:03:42 PM	A32026
Lead	ND	0.00050		mg/L	1	2/8/2016 7:55:24 PM	B31999
Selenium	0.0086	0.0010		mg/L	1	2/8/2016 7:55:24 PM	B31999
Uranium	0.0049	0.00050		mg/L	1	2/8/2016 7:55:24 PM	B31999
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED						Analyst: **SUB**	
Radium-226	0.537	0.826		pCi/L	1	2/16/2016	R32295
Radium-226 ±	0.546	0.826		pCi/L	1	2/16/2016	R32295
Radium-228	0.595	0.672		pCi/L	1	2/16/2016	R32295
Radium-228 ±	0.361	0.672		pCi/L	1	2/16/2016	R32295
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Fluoride	2.2	0.10		mg/L	1	2/6/2016 12:10:43 AM	R31977
Chloride	71	10		mg/L	20	2/6/2016 12:23:08 AM	R31977
Nitrogen, Nitrate (As N)	1.3	0.10		mg/L	1	2/6/2016 12:10:43 AM	R31977
Sulfate	900	25		mg/L	50	2/18/2016 7:37:57 PM	R32274
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1940	20.0	*	mg/L	1	2/10/2016 3:47:00 PM	23638
EPA 335.4: TOTAL CYANIDE SUBBED						Analyst: **SUB**	
Cyanide	ND	0.0100		mg/L	1	2/11/2016	R32129
SM4500-H+B: PH						Analyst: **MRA**	
pH	7.94	1.68	H	pH units	1	2/8/2016 3:55:25 PM	R32011
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**	
Aluminum	ND	0.020		mg/L	1	2/24/2016 11:17:05 AM	B32368
Barium	0.059	0.0020		mg/L	1	2/24/2016 11:17:05 AM	B32368
Boron	0.094	0.040		mg/L	1	2/24/2016 11:17:05 AM	B32368
Cadmium	ND	0.0020		mg/L	1	2/24/2016 11:17:05 AM	B32368
Chromium	ND	0.0060		mg/L	1	2/24/2016 11:17:05 AM	B32368
Cobalt	ND	0.0060		mg/L	1	2/24/2016 11:17:05 AM	B32368
Copper	ND	0.0060		mg/L	1	2/24/2016 11:17:05 AM	B32368
Iron	ND	0.020		mg/L	1	2/24/2016 11:17:05 AM	B32368
Manganese	ND	0.0020		mg/L	1	2/24/2016 11:17:05 AM	B32368
Molybdenum	0.0094	0.0080		mg/L	1	2/24/2016 11:17:05 AM	B32368
Nickel	ND	0.010		mg/L	1	2/24/2016 11:17:05 AM	B32368
Silver	ND	0.0050		mg/L	1	2/24/2016 11:17:05 AM	B32368
Zinc	0.023	0.010		mg/L	1	2/24/2016 11:17:05 AM	B32368
EPA METHOD 245.1: MERCURY						Analyst: **pmf**	
Mercury	ND	0.00020		mg/L	1	2/10/2016 12:05:40 PM	23640

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company
Client Sample ID: R.O. Reject
Project: Monthly R.O. Reject
Collection Date: 2/4/2016 9:35:00 AM
Lab ID: 1602206-001 **Matrix:** AQUEOUS **Received Date:** 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **JME**	
1,2-Dibromoethane	ND	0.010		µg/L	1	2/8/2016 12:55:14 PM	23604
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	1.0		µg/L	1	2/17/2016 7:18:10 AM	23676
Aroclor 1221	ND	1.0		µg/L	1	2/17/2016 7:18:10 AM	23676
Aroclor 1232	ND	1.0		µg/L	1	2/17/2016 7:18:10 AM	23676
Aroclor 1242	ND	1.0		µg/L	1	2/17/2016 7:18:10 AM	23676
Aroclor 1248	ND	1.0		µg/L	1	2/17/2016 7:18:10 AM	23676
Aroclor 1254	ND	1.0		µg/L	1	2/17/2016 7:18:10 AM	23676
Aroclor 1260	ND	1.0		µg/L	1	2/17/2016 7:18:10 AM	23676
Surr: Decachlorobiphenyl	96.0	26.1-140		%Rec	1	2/17/2016 7:18:10 AM	23676
Surr: Tetrachloro-m-xylene	60.8	15-123		%Rec	1	2/17/2016 7:18:10 AM	23676
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	2/8/2016 1:52:07 PM	23596
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	2/8/2016 1:52:07 PM	23596
Surr: DNOP	105	70-141		%Rec	1	2/8/2016 1:52:07 PM	23596
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	2/5/2016 4:52:41 PM	R31967
Surr: BFB	86.7	49.5-130		%Rec	1	2/5/2016 4:52:41 PM	R31967
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	2/17/2016 9:51:15 AM	23677
1-Methylnaphthalene	ND	2.0		µg/L	1	2/17/2016 9:51:15 AM	23677
2-Methylnaphthalene	ND	2.0		µg/L	1	2/17/2016 9:51:15 AM	23677
Benzo(a)pyrene	ND	0.070		µg/L	1	2/17/2016 9:51:15 AM	23677
Surr: Benzo(e)pyrene	61.3	33.4-129		%Rec	1	2/17/2016 9:51:15 AM	23677
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Toluene	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Ethylbenzene	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Carbon Tetrachloride	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Chloroform	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
1,1-Dichloroethane	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
1,1-Dichloroethene	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Methylene Chloride	ND	3.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company
Client Sample ID: R.O. Reject
Project: Monthly R.O. Reject
Collection Date: 2/4/2016 9:35:00 AM
Lab ID: 1602206-001 **Matrix:** AQUEOUS **Received Date:** 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,1,1-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
1,1,2-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Trichloroethene (TCE)	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Vinyl chloride	ND	1.0		µg/L	1	2/9/2016 5:47:24 AM	B31998
Xylenes, Total	ND	1.5		µg/L	1	2/9/2016 5:47:24 AM	B31998
Surr: 1,2-Dichloroethane-d4	93.8	70-130		%Rec	1	2/9/2016 5:47:24 AM	B31998
Surr: 4-Bromofluorobenzene	111	70-130		%Rec	1	2/9/2016 5:47:24 AM	B31998
Surr: Dibromofluoromethane	100	70-130		%Rec	1	2/9/2016 5:47:24 AM	B31998
Surr: Toluene-d8	103	70-130		%Rec	1	2/9/2016 5:47:24 AM	B31998
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	ND	2.5		µg/L	1	2/18/2016	23801

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company
Client Sample ID: Trip Blank
Project: Monthly R.O. Reject
Collection Date:
Lab ID: 1602206-002
Matrix: TRIP BLANK
Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **JME**	
1,2-Dibromoethane	ND	0.010		µg/L	1	2/8/2016 1:10:09 PM	23604
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	2/5/2016 5:17:25 PM	R31967
Surr: BFB	82.9	49.5-130		%Rec	1	2/5/2016 5:17:25 PM	R31967
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Toluene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Ethylbenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Naphthalene	ND	2.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1-Methylnaphthalene	ND	4.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
2-Methylnaphthalene	ND	4.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Acetone	ND	10		µg/L	1	2/9/2016 6:15:43 AM	B31998
Bromobenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Bromodichloromethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Bromoform	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Bromomethane	ND	3.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
2-Butanone	ND	10		µg/L	1	2/9/2016 6:15:43 AM	B31998
Carbon disulfide	ND	10		µg/L	1	2/9/2016 6:15:43 AM	B31998
Carbon Tetrachloride	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Chlorobenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Chloroethane	ND	2.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Chloroform	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Chloromethane	ND	3.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
2-Chlorotoluene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
4-Chlorotoluene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
cis-1,2-DCE	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Dibromochloromethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Dibromomethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2-Dichlorobenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,3-Dichlorobenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,4-Dichlorobenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company
Client Sample ID: Trip Blank
Project: Monthly R.O. Reject
Collection Date:
Lab ID: 1602206-002
Matrix: TRIP BLANK
Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Dichlorodifluoromethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,1-Dichloroethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,1-Dichloroethene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2-Dichloropropane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,3-Dichloropropane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
2,2-Dichloropropane	ND	2.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,1-Dichloropropene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Hexachlorobutadiene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
2-Hexanone	ND	10		µg/L	1	2/9/2016 6:15:43 AM	B31998
Isopropylbenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
4-Isopropyltoluene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
4-Methyl-2-pentanone	ND	10		µg/L	1	2/9/2016 6:15:43 AM	B31998
Methylene Chloride	ND	3.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
n-Butylbenzene	ND	3.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
n-Propylbenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
sec-Butylbenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Styrene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
tert-Butylbenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
trans-1,2-DCE	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,1,1-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,1,2-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Trichloroethene (TCE)	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Trichlorofluoromethane	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
1,2,3-Trichloropropane	ND	2.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Vinyl chloride	ND	1.0		µg/L	1	2/9/2016 6:15:43 AM	B31998
Xylenes, Total	ND	1.5		µg/L	1	2/9/2016 6:15:43 AM	B31998
Surr: 1,2-Dichloroethane-d4	94.4	70-130		%Rec	1	2/9/2016 6:15:43 AM	B31998
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	2/9/2016 6:15:43 AM	B31998
Surr: Dibromofluoromethane	101	70-130		%Rec	1	2/9/2016 6:15:43 AM	B31998
Surr: Toluene-d8	101	70-130		%Rec	1	2/9/2016 6:15:43 AM	B31998

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

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1602206**
24-Feb-16

Client: Navajo Refining Company
Project: Monthly R.O. Reject

Sample ID **MB-B**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B32368**	RunNo: **32368**
Prep Date:	Analysis Date: **2/24/2016**	SeqNo: **989628** 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-B**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B32368**	RunNo: **32368**
Prep Date:	Analysis Date: **2/24/2016**	SeqNo: **989629** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.52	0.020	0.5000	0	105	85	115			
Barium	0.48	0.0020	0.5000	0	96.9	85	115			
Boron	0.51	0.040	0.5000	0	102	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.6	85	115			
Chromium	0.48	0.0060	0.5000	0	96.4	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.3	85	115			
Copper	0.49	0.0060	0.5000	0	98.6	85	115			
Iron	0.49	0.020	0.5000	0	97.7	85	115			
Manganese	0.48	0.0020	0.5000	0	95.9	85	115			
Molybdenum	0.51	0.0080	0.5000	0	101	85	115			
Nickel	0.47	0.010	0.5000	0	94.0	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.9	85	115			

Sample ID **LLLCS-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B32368**	RunNo: **32368**
Prep Date:	Analysis Date: **2/24/2016**	SeqNo: **989630** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	95.9	50	150			
Barium	0.0021	0.0020	0.002000	0	105	50	150			

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1602206**
24-Feb-16

Client: Navajo Refining Company
Project: Monthly R.O. Reject

Sample ID	**LLLCS-B**	SampType:	**LCSLL**	TestCode:	**EPA Method 200.7: Dissolved Metals**
Client ID:	**BatchQC**	Batch ID:	**B32368**	RunNo:	**32368**
Prep Date:		Analysis Date:	**2/24/2016**	SeqNo:	**989630** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	ND	0.040	0.04000	0	100	50	150			
Cadmium	ND	0.0020	0.002000	0	85.0	50	150			
Chromium	0.0062	0.0060	0.006000	0	103	50	150			
Cobalt	ND	0.0060	0.006000	0	97.2	50	150			
Copper	0.0064	0.0060	0.006000	0	107	50	150			
Iron	ND	0.020	0.02000	0	90.8	50	150			
Manganese	0.0020	0.0020	0.002000	0	101	50	150			
Molybdenum	0.010	0.0080	0.008000	0	130	50	150			
Nickel	ND	0.010	0.005000	0	101	50	150			
Silver	ND	0.0050	0.005000	0	95.0	50	150			
Zinc	ND	0.010	0.005000	0	90.2	50	150			

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602206**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B31999**	RunNo: **31999**
Prep Date:	Analysis Date: **2/8/2016**	SeqNo: **978440** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	106	85	115			
Uranium	0.013	0.00050	0.01250	0	101	85	115			

Sample ID **LLLCS**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B31999**	RunNo: **31999**
Prep Date:	Analysis Date: **2/8/2016**	SeqNo: **978441** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050	0.0005000	0	99.7	50	150			
Selenium	ND	0.0010	0.001000	0	88.9	50	150			
Uranium	ND	0.00050	0.0005000	0	98.6	50	150			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B31999**	RunNo: **31999**
Prep Date:	Analysis Date: **2/8/2016**	SeqNo: **978442** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A32026**	RunNo: **32026**
Prep Date:	Analysis Date: **2/9/2016**	SeqNo: **979375** 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			

Sample ID **LLLCS**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A32026**	RunNo: **32026**
Prep Date:	Analysis Date: **2/9/2016**	SeqNo: **979377** 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	100	50	150			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1602206**
24-Feb-16

Client: Navajo Refining Company
Project: Monthly R.O. Reject

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A32026**	RunNo: **32026**
Prep Date:	Analysis Date: **2/9/2016**	SeqNo: **979379** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602206**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	**MB-23640**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**					
Client ID:	**PBW**	Batch ID:	**23640**	RunNo:	**32041**					
Prep Date:	**2/9/2016**	Analysis Date:	**2/10/2016**	SeqNo:	**979810**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-23640**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**					
Client ID:	**LCSW**	Batch ID:	**23640**	RunNo:	**32041**					
Prep Date:	**2/9/2016**	Analysis Date:	**2/10/2016**	SeqNo:	**979811**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	80	120			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1602206**
24-Feb-16

Client: Navajo Refining Company
Project: Monthly R.O. Reject

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R31977**	RunNo: **31977**
Prep Date:	Analysis Date: **2/5/2016**	SeqNo: **977910** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R31977**	RunNo: **31977**
Prep Date:	Analysis Date: **2/5/2016**	SeqNo: **977911** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.55	0.10	0.5000	0	109	90	110			
Chloride	4.9	0.50	5.000	0	98.1	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	104	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R32274**	RunNo: **32274**
Prep Date:	Analysis Date: **2/18/2016**	SeqNo: **986553** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R32274**	RunNo: **32274**
Prep Date:	Analysis Date: **2/18/2016**	SeqNo: **986554** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	10	0.50	10.00	0	99.6	90	110			

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602206**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	**MB-23604**	SampType:	**MBLK**		TestCode:	**EPA Method 8011/504.1: EDB**				
Client ID:	**PBW**	Batch ID:	**23604**		RunNo:	**31988**				
Prep Date:	**2/8/2016**	Analysis Date:	**2/8/2016**		SeqNo:	**978001**	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-23604**	SampType:	**LCS**		TestCode:	**EPA Method 8011/504.1: EDB**				
Client ID:	**LCSW**	Batch ID:	**23604**		RunNo:	**31988**				
Prep Date:	**2/8/2016**	Analysis Date:	**2/8/2016**		SeqNo:	**978002**	Units:	**µg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.13	0.010	0.1000	0	129	70	130			

Sample ID	**LCSD-23604**	SampType:	**LCSD**		TestCode:	**EPA Method 8011/504.1: EDB**				
Client ID:	**LCSS02**	Batch ID:	**23604**		RunNo:	**31988**				
Prep Date:	**2/8/2016**	Analysis Date:	**2/8/2016**		SeqNo:	**978003**	Units:	**µg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	123	70	130	4.17	20	

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602206**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID **MB-23596**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **23596**	RunNo: **31978**
Prep Date: **2/5/2016**	Analysis Date: **2/8/2016**	SeqNo: **977994** 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	1.0		1.000		100	70	141			

Sample ID **LCS-23596**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **23596**	RunNo: **31978**
Prep Date: **2/5/2016**	Analysis Date: **2/8/2016**	SeqNo: **977995** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.1	1.0	5.000	0	102	52.4	154			
Surr: DNOP	0.49		0.5000		97.8	70	141			

Sample ID **1602206-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **R.O. Reject**	Batch ID: **23596**	RunNo: **31978**
Prep Date: **2/8/2016**	Analysis Date: **2/8/2016**	SeqNo: **978052** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.4	1.0	5.000	0	109	41.3	177			
Surr: DNOP	0.52		0.5000		104	70	141			

Sample ID **1602206-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **R.O. Reject**	Batch ID: **23596**	RunNo: **31978**
Prep Date: **2/8/2016**	Analysis Date: **2/8/2016**	SeqNo: **978077** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.3	1.0	5.000	0	105	-94.6	317	3.46	22.1	
Surr: DNOP	0.50		0.5000		99.3	70	141	0	0	

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1602206**
24-Feb-16

Client: Navajo Refining Company
Project: Monthly R.O. Reject

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R31967**	RunNo: **31967**
Prep Date:	Analysis Date: **2/5/2016**	SeqNo: **977541** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.45	0.050	0.5000	0	90.6	80	120			
Surr: BFB	20		20.00		97.9	49.5	130			

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R31967**	RunNo: **31967**
Prep Date:	Analysis Date: **2/5/2016**	SeqNo: **977542** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	17		20.00		83.7	49.5	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602206**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	**MB-23676**	SampType:	**MBLK**		TestCode:	**EPA Method 8082: PCB's**				
Client ID:	**PBW**	Batch ID:	**23676**		RunNo:	**32193**				
Prep Date:	**2/11/2016**	Analysis Date:	**2/17/2016**		SeqNo:	**984090**	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	3.3		2.500		132	26.1	140			
Surr: Tetrachloro-m-xylene	2.6		2.500		104	15	123			

Sample ID	**LCS-23676**	SampType:	**LCS**		TestCode:	**EPA Method 8082: PCB's**				
Client ID:	**LCSW**	Batch ID:	**23676**		RunNo:	**32193**				
Prep Date:	**2/11/2016**	Analysis Date:	**2/17/2016**		SeqNo:	**984091**	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	57.3	15	131			
Aroclor 1260	4.7	1.0	5.000	0	94.0	15	162			
Surr: Decachlorobiphenyl	2.3		2.500		92.0	26.1	140			
Surr: Tetrachloro-m-xylene	1.6		2.500		65.2	15	123			

Sample ID	**LCSD-23676**	SampType:	**LCSD**		TestCode:	**EPA Method 8082: PCB's**				
Client ID:	**LCSS02**	Batch ID:	**23676**		RunNo:	**32193**				
Prep Date:	**2/11/2016**	Analysis Date:	**2/17/2016**		SeqNo:	**984092**	Units:	**µg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.8	1.0	5.000	0	56.4	15	131	1.55	24.4	
Aroclor 1260	4.5	1.0	5.000	0	90.4	15	162	3.99	28	
Surr: Decachlorobiphenyl	2.2		2.500		87.2	26.1	140	0	0	
Surr: Tetrachloro-m-xylene	1.7		2.500		67.2	15	123	0	0	

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1602206**
24-Feb-16

Client: Navajo Refining Company
Project: Monthly R.O. Reject

Sample ID **rb2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **B31998**	RunNo: **31998**
Prep Date:	Analysis Date: **2/9/2016**	SeqNo: **978345** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602206**

24-Feb-16

Client: Navajo Refining Company
Project: Monthly R.O. Reject

Sample ID **rb2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **B31998**	RunNo: **31998**
Prep Date:	Analysis Date: **2/9/2016**	SeqNo: **978345** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		96.5	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID **100ng lcs2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **B31998**	RunNo: **31998**
Prep Date:	Analysis Date: **2/8/2016**	SeqNo: **978346** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	22	1.0	20.00	0	109	70	130			
Chlorobenzene	22	1.0	20.00	0	110	70	130			

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602206**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID **100ng lcs2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **B31998**	RunNo: **31998**
Prep Date:	Analysis Date: **2/8/2016**	SeqNo: **978346** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	20	1.0	20.00	0	100	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	105	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.6	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		106	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602206**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID **MB-23677**	SampType: **MBLK**	TestCode: **EPA Method 8310: PAHs**
Client ID: **PBW**	Batch ID: **23677**	RunNo: **32189**
Prep Date: **2/11/2016**	Analysis Date: **2/17/2016**	SeqNo: **984104** 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								
Benzo(a)pyrene	ND	0.070								
Surr: Benzo(e)pyrene	9.8		20.00		48.8	33.4	129			

Sample ID **LCS-23677**	SampType: **LCS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSW**	Batch ID: **23677**	RunNo: **32189**
Prep Date: **2/11/2016**	Analysis Date: **2/17/2016**	SeqNo: **984239** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	78	2.0	80.00	0	97.6	54.6	110			
1-Methylnaphthalene	79	2.0	80.20	0	98.2	49.1	116			
2-Methylnaphthalene	79	2.0	80.00	0	98.8	52.5	111			
Benzo(a)pyrene	0.51	0.070	0.5020	0	102	62	107			
Surr: Benzo(e)pyrene	10		20.00		50.0	33.4	129			

Sample ID **LCSD-23677**	SampType: **LCSD**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSS02**	Batch ID: **23677**	RunNo: **32189**
Prep Date: **2/11/2016**	Analysis Date: **2/17/2016**	SeqNo: **984240** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	81	2.0	80.00	0	101	54.6	110	3.55	20	
1-Methylnaphthalene	82	2.0	80.20	0	102	49.1	116	3.43	20	
2-Methylnaphthalene	82	2.0	80.00	0	102	52.5	111	3.47	20	
Benzo(a)pyrene	0.53	0.070	0.5020	0	106	62	107	3.85	20	
Surr: Benzo(e)pyrene	10		20.00		51.4	33.4	129	0		

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602206**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	**MB-23801**	SampType:	**MBLK**	TestCode:	**Total Phenolics by SW-846 9067**					
Client ID:	**PBW**	Batch ID:	**23801**	RunNo:	**32220**					
Prep Date:	**2/18/2016**	Analysis Date:	**2/18/2016**	SeqNo:	**984921**	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-23801**	SampType:	**LCS**	TestCode:	**Total Phenolics by SW-846 9067**					
Client ID:	**LCSW**	Batch ID:	**23801**	RunNo:	**32220**					
Prep Date:	**2/18/2016**	Analysis Date:	**2/18/2016**	SeqNo:	**984922**	Units:	**µg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	23	2.5	20.00	0	113	64.4	135			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1602206**
24-Feb-16

Client: Navajo Refining Company
Project: Monthly R.O. Reject

Sample ID	**MB-R32129**	SampType:	**MBLK**	TestCode:	**EPA 335.4: Total Cyanide Subbed**					
Client ID:	**PBW**	Batch ID:	**R32129**	RunNo:	**32129**					
Prep Date:		Analysis Date:	**2/11/2016**	SeqNo:	**982291**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	ND	0.0100								

Sample ID	**LCS-R32129**	SampType:	**LCS**	TestCode:	**EPA 335.4: Total Cyanide Subbed**					
Client ID:	**LCSW**	Batch ID:	**R32129**	RunNo:	**32129**					
Prep Date:		Analysis Date:	**2/11/2016**	SeqNo:	**982292**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.485		0.5000	0	97.0	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602206**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	**MB-R32295**	SampType:	**MBLK**	TestCode:	**EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed**
Client ID:	**PBW**	Batch ID:	**R32295**	RunNo:	**32295**
Prep Date:		Analysis Date:	**2/16/2016**	SeqNo:	**987217** Units: **pCi/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	-0.078	0.841								
Radium-226 ±	0.357	0.841								
Radium-228	0.165	0.797								
Radium-228 ±	0.36	0.797								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1602206**
24-Feb-16

Client: Navajo Refining Company
Project: Monthly R.O. Reject

Sample ID **MB-23638**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**							
Client ID: **PBW**	Batch ID: **23638**	RunNo: **32048**							
Prep Date: **2/9/2016**	Analysis Date: **2/10/2016**	SeqNo: **979976**	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-23638**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**							
Client ID: **LCSW**	Batch ID: **23638**	RunNo: **32048**							
Prep Date: **2/9/2016**	Analysis Date: **2/10/2016**	SeqNo: **979977**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1030	20.0	1000	0	103	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: NAVAJO REFINING CO Work Order Number: 1602206 RcptNo: 1

Received by/date: JA 02/05/16

Logged By: **Ashley Gallegos** 2/5/2016 10:05:00 AM

Completed By: **Ashley Gallegos** 2/5/2016 11:05:04 AM

Reviewed By: 02/05/16

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: 6 (<2 or >12 unless noted)

Adjusted? NO

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 °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Not Present			

Chain-of-Custody Record

Client: Navajo Refinery

Mailing Address: P.O. Box 159 Artesia,

NM 88211-0159

Phone #: 575-748-3311

email or Fax#: 575-746-5451

QA/QC Package:

X Standard ☐ Level 4 (Full Validation)

☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

X Standard ☐ Rush _____

Project Name:

Monthly R.O. Reject

Project #: P.O. # 167796

Project Manager:

Robert Combs

Sampler: Elizabeth Salsberry

On Ice: X Yes ☐ No

Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No 1602208	8260B:WQCC List VOCs	8270C: WQCC list SVOCs	6010B: WQCC Metals	335.4: Total Cyanide	7470: Mercury	8015: GRO, DRO, ORO	8082: PCBs	Radioactivity (Ra-226+Ra-228)	Sulfate Chloride	Phenols	Fluoride	Nitrate/Nitrite	Total Dissolved Solids	PH	504.1:EDB	Air Bubbles (Y or N)
2/4/16	9:35	liquid	R.O. Reject	2 - 500ml P	1-unpres 1-H2SO4	-001									X		X	X	X	X		Y
2/4/16	9:35	liquid	R.O. Reject	3-40ml VOA	HCL		X															
2/4/16	9:35	liquid	R.O. Reject	1-500ml P	HNO3						X											
2/4/16	9:35	liquid	R.O. Reject	1-125ml P	HNO3				X													
2/4/16	9:35	liquid	R.O. Reject	1-500ml P	NaOH					X												
2/4/16	9:35	liquid	R.O. Reject	2- 1L P	HNO3									X								
2/4/16	9:35	liquid	R.O. Reject	3-40ml VOA	Na2S2O3																X	
2/4/16	9:35	liquid	R.O. Reject	2 - 1L Glass	unpres								X									
2/4/16	9:35	liquid	R.O. Reject	1 - 1L Glass	unpres			X														
2/4/16	9:35	liquid	R.O. Reject	3-40ml VOA	HCl							X										
2/4/16	9:35	liquid	R.O. Reject	1-250mlGlass	unpres							X										
2/4/16	9:35	liquid	R.O. Reject	1 - 1L Glass	H2SO4											X						
2/4/16	9:35	liquid	Trip Blank	2-40ml VOA	HCL	-002																

Date:	Time:	Relinquished by:	Received by:	Date	Time
2/4/16	12:00	Elizabeth Salsberry		02/05/16	1005
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

Metals: As, Al, Ba, B, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Mo, Ni, Se, Ag, U, Zn

VOCs: 1,1,1-Trichloroethane; 1,1,2,2-Tetrachloroethane; 1,1,2,2-Tetrachloroethylene; 1,1,2-Trichloroethane; 1,1,2-Trichloroethylene; 1,1-Dichloroethane; 1,1-Dichloroethene; 1,2-Dibromoethane; 1,2-Dichloroethane; Benzene; Carbon Tetrachloride; Chloroform; Dichloromethane; Ethylbenzene; Toluene; Total Xylenes; Vinyl Chloride

SVOCs: benzo(a)pyrene, phenol, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene

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

Monthly RO Reject Sample Details Attachment

HOLLYFRONTIER
The HollyFrontier Companies

Project Name	Biannual RO Reject
Samplers Name	Elizabeth Salsberry
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	2/4/2016 @ 9:30 a.m.
End Date and Time	2/4/2016 @ 9:45 a.m.

Sample Type	
Grab	☑
Time Weighted Composite	☐
Flow Weighted Composite	☐

Parts / Sample Intervals	One

Physical Property	
Solid	☐
Liquid	☑
Sludge	☐

Type of Sampler	Directly to sample jars

Outfall / Sample Location: ☐ North Field R.O. Reject Discarge ☑ South Field R.O. Reject Discarge

				Preservatives								
Container	Size	Material	# of Containers	Neat (None)	HCL	HNO3	H2SO4	NaOH	Na2S2O3	NaHSO4	Other	Analysis and/or Method Requested
1	500ml	Plastic	2	X			X					pH, Cl, F, S04, NO2/NO3, TDS
2	40ml	VOA	3		X							8015 GRO
3	500ml	Plastic	1			X						6020 total metals, 7470 Hg
4	125ml	Plastic	1			X						6020 Dissolved Metals
5	500ml	Plastic	2					X				Cyanide
6	1L	Plastic	3			X						Radium 226/228
7	40ml	VOA	2		X							8260 see attached list
8	1L	Glass	1	X								8270 see attached list
9	1L	Glass	2	X								8082 PCBs
10	40ml	VOA	2	X								8015 DRO
11	40ml	VOA	2		X							Radium 226/228

Field Data, Weather, Observations, Etc) 2/4/2016 Tmp.32.0 °F, Humidity 51%, Wind Dir. Calm, Wind Speed Calm, Conditions Clear
Date and Time:

Field Temp. 19.7C Field pH 7.34

Storage Method	
Ice	☑
Refrigerated	☐
Other	☐

Shipping Media	
Ice	☑
Other	☐

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

February 24, 2016

Robert Combs

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

RE: Monthly Temporary R.O. Reject OrderNo.: 1602208

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 2/5/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued February 22, 2016.

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

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

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1602208**
Date Reported: **2/24/2016**

CLIENT: Navajo Refining Company
Project: Monthly Temporary R.O. Reject
Lab ID: 1602208-001 **Matrix:** AQUEOUS

Client Sample ID: Temporary R.O. Reject
Collection Date: 2/4/2016 9:20:00 AM
Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS						Analyst: **JLF**	
Arsenic	ND	0.0050		mg/L	5	2/9/2016 7:05:53 PM	C32026
Lead	ND	0.00050		mg/L	1	2/8/2016 8:10:53 PM	B31999
Selenium	0.0055	0.0010		mg/L	1	2/8/2016 8:10:53 PM	B31999
Uranium	0.0031	0.00050		mg/L	1	2/8/2016 8:10:53 PM	B31999
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED						Analyst: **SUB**	
Radium-226	0.755	0.989		pCi/L	1	2/16/2016	R32295
Radium-226 ±	0.667	0.989		pCi/L	1	2/16/2016	R32295
Radium-228	0.583	0.726		pCi/L	1	2/16/2016	R32295
Radium-228 ±	0.38	0.726		pCi/L	1	2/16/2016	R32295
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Fluoride	2.3	0.10		mg/L	1	2/16/2016 9:14:11 PM	R32210
Chloride	62	10		mg/L	20	2/16/2016 9:26:36 PM	R32210
Sulfate	1000	25		mg/L	50	2/16/2016 11:12:24 AM	R32200
Nitrate+Nitrite as N	ND	1.0		mg/L	5	2/16/2016 8:49:22 PM	R32210
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	2040	20.0	*	mg/L	1	2/10/2016 3:47:00 PM	23638
EPA 335.4: TOTAL CYANIDE SUBBED						Analyst: **SUB**	
Cyanide	ND	0.0100		mg/L	1	2/11/2016	R32129
SM4500-H+B: PH						Analyst: **MRA**	
pH	8.05	1.68	H	pH units	1	2/8/2016 3:59:56 PM	R32011
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**	
Aluminum	ND	0.020		mg/L	1	2/24/2016 11:26:24 AM	B32368
Barium	0.039	0.0020		mg/L	1	2/24/2016 11:26:24 AM	B32368
Boron	0.064	0.040		mg/L	1	2/24/2016 11:26:24 AM	B32368
Cadmium	ND	0.0020		mg/L	1	2/24/2016 11:26:24 AM	B32368
Chromium	ND	0.0060		mg/L	1	2/24/2016 11:26:24 AM	B32368
Cobalt	ND	0.0060		mg/L	1	2/24/2016 11:26:24 AM	B32368
Copper	ND	0.0060		mg/L	1	2/24/2016 11:26:24 AM	B32368
Iron	ND	0.020		mg/L	1	2/24/2016 11:26:24 AM	B32368
Manganese	ND	0.0020		mg/L	1	2/24/2016 11:26:24 AM	B32368
Molybdenum	ND	0.0080		mg/L	1	2/24/2016 11:26:24 AM	B32368
Nickel	ND	0.010		mg/L	1	2/24/2016 11:26:24 AM	B32368
Silver	ND	0.0050		mg/L	1	2/24/2016 11:26:24 AM	B32368
Zinc	0.036	0.010		mg/L	1	2/24/2016 11:26:24 AM	B32368
EPA METHOD 245.1: MERCURY						Analyst: **pmf**	
Mercury	ND	0.00020		mg/L	1	2/10/2016 12:07:57 PM	23640

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company
Client Sample ID: Temporary R.O. Reject
Project: Monthly Temporary R.O. Reject
Collection Date: 2/4/2016 9:20:00 AM
Lab ID: 1602208-001 **Matrix:** AQUEOUS **Received Date:** 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **JME**	
1,2-Dibromoethane	ND	0.010		µg/L	1	2/8/2016 1:25:12 PM	23604
EPA METHOD 8082: PCB'S						Analyst: **SCC**	
Aroclor 1016	ND	1.0		µg/L	1	2/17/2016 7:54:09 AM	23676
Aroclor 1221	ND	1.0		µg/L	1	2/17/2016 7:54:09 AM	23676
Aroclor 1232	ND	1.0		µg/L	1	2/17/2016 7:54:09 AM	23676
Aroclor 1242	ND	1.0		µg/L	1	2/17/2016 7:54:09 AM	23676
Aroclor 1248	ND	1.0		µg/L	1	2/17/2016 7:54:09 AM	23676
Aroclor 1254	ND	1.0		µg/L	1	2/17/2016 7:54:09 AM	23676
Aroclor 1260	ND	1.0		µg/L	1	2/17/2016 7:54:09 AM	23676
Surr: Decachlorobiphenyl	54.8	26.1-140		%Rec	1	2/17/2016 7:54:09 AM	23676
Surr: Tetrachloro-m-xylene	33.2	15-123		%Rec	1	2/17/2016 7:54:09 AM	23676
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	2/8/2016 2:56:32 PM	23596
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	2/8/2016 2:56:32 PM	23596
Surr: DNOP	104	70-141		%Rec	1	2/8/2016 2:56:32 PM	23596
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	2/5/2016 5:42:13 PM	R31967
Surr: BFB	85.4	49.5-130		%Rec	1	2/5/2016 5:42:13 PM	R31967
EPA METHOD 8310: PAHS						Analyst: **SCC**	
Naphthalene	ND	2.0		µg/L	1	2/17/2016 10:20:33 AM	23677
1-Methylnaphthalene	ND	2.0		µg/L	1	2/17/2016 10:20:33 AM	23677
2-Methylnaphthalene	ND	2.0		µg/L	1	2/17/2016 10:20:33 AM	23677
Benzo(a)pyrene	ND	0.070		µg/L	1	2/17/2016 10:20:33 AM	23677
Surr: Benzo(e)pyrene	51.0	33.4-129		%Rec	1	2/17/2016 10:20:33 AM	23677
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Toluene	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Ethylbenzene	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Carbon Tetrachloride	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Chloroform	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
1,1-Dichloroethane	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
1,1-Dichloroethene	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Methylene Chloride	ND	3.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company
Client Sample ID: Temporary R.O. Reject
Project: Monthly Temporary R.O. Reject
Collection Date: 2/4/2016 9:20:00 AM
Lab ID: 1602208-001 **Matrix:** AQUEOUS **Received Date:** 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,1,1-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
1,1,2-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Trichloroethene (TCE)	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Vinyl chloride	ND	1.0		µg/L	1	2/9/2016 6:44:04 AM	B31998
Xylenes, Total	ND	1.5		µg/L	1	2/9/2016 6:44:04 AM	B31998
Surr: 1,2-Dichloroethane-d4	90.4	70-130		%Rec	1	2/9/2016 6:44:04 AM	B31998
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	2/9/2016 6:44:04 AM	B31998
Surr: Dibromofluoromethane	97.5	70-130		%Rec	1	2/9/2016 6:44:04 AM	B31998
Surr: Toluene-d8	102	70-130		%Rec	1	2/9/2016 6:44:04 AM	B31998
TOTAL PHENOLICS BY SW-846 9067						Analyst: **SCC**	
Phenolics, Total Recoverable	ND	2.5		µg/L	1	2/18/2016	23801

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company
Client Sample ID: Trip Blank
Project: Monthly Temporary R.O. Reject
Collection Date:
Lab ID: 1602208-002
Matrix: TRIP BLANK
Received Date: 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **JME**	
1,2-Dibromoethane	ND	0.010		µg/L	1	2/8/2016 1:40:14 PM	23604
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	2/5/2016 6:06:58 PM	R31967
Surr: BFB	88.4	49.5-130		%Rec	1	2/5/2016 6:06:58 PM	R31967
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Toluene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Ethylbenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Naphthalene	ND	2.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1-Methylnaphthalene	ND	4.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
2-Methylnaphthalene	ND	4.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Acetone	ND	10		µg/L	1	2/9/2016 7:12:24 AM	B31998
Bromobenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Bromodichloromethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Bromoform	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Bromomethane	ND	3.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
2-Butanone	ND	10		µg/L	1	2/9/2016 7:12:24 AM	B31998
Carbon disulfide	ND	10		µg/L	1	2/9/2016 7:12:24 AM	B31998
Carbon Tetrachloride	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Chlorobenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Chloroethane	ND	2.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Chloroform	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Chloromethane	ND	3.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
2-Chlorotoluene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
4-Chlorotoluene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
cis-1,2-DCE	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Dibromochloromethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Dibromomethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2-Dichlorobenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,3-Dichlorobenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,4-Dichlorobenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company
Client Sample ID: Trip Blank
Project: Monthly Temporary R.O. Reject
Collection Date:
Lab ID: 1602208-002 **Matrix:** TRIP BLANK **Received Date:** 2/5/2016 10:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Dichlorodifluoromethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,1-Dichloroethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,1-Dichloroethene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2-Dichloropropane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,3-Dichloropropane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
2,2-Dichloropropane	ND	2.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,1-Dichloropropene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Hexachlorobutadiene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
2-Hexanone	ND	10		µg/L	1	2/9/2016 7:12:24 AM	B31998
Isopropylbenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
4-Isopropyltoluene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
4-Methyl-2-pentanone	ND	10		µg/L	1	2/9/2016 7:12:24 AM	B31998
Methylene Chloride	ND	3.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
n-Butylbenzene	ND	3.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
n-Propylbenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
sec-Butylbenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Styrene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
tert-Butylbenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
trans-1,2-DCE	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,1,1-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,1,2-Trichloroethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Trichloroethene (TCE)	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Trichlorofluoromethane	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
1,2,3-Trichloropropane	ND	2.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Vinyl chloride	ND	1.0		µg/L	1	2/9/2016 7:12:24 AM	B31998
Xylenes, Total	ND	1.5		µg/L	1	2/9/2016 7:12:24 AM	B31998
Surr: 1,2-Dichloroethane-d4	92.6	70-130		%Rec	1	2/9/2016 7:12:24 AM	B31998
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	1	2/9/2016 7:12:24 AM	B31998
Surr: Dibromofluoromethane	99.5	70-130		%Rec	1	2/9/2016 7:12:24 AM	B31998
Surr: Toluene-d8	101	70-130		%Rec	1	2/9/2016 7:12:24 AM	B31998

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602208**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID **MB-B**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B32368**	RunNo: **32368**
Prep Date:	Analysis Date: **2/24/2016**	SeqNo: **989628** 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-B**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B32368**	RunNo: **32368**
Prep Date:	Analysis Date: **2/24/2016**	SeqNo: **989629** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.52	0.020	0.5000	0	105	85	115			
Barium	0.48	0.0020	0.5000	0	96.9	85	115			
Boron	0.51	0.040	0.5000	0	102	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.6	85	115			
Chromium	0.48	0.0060	0.5000	0	96.4	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.3	85	115			
Copper	0.49	0.0060	0.5000	0	98.6	85	115			
Iron	0.49	0.020	0.5000	0	97.7	85	115			
Manganese	0.48	0.0020	0.5000	0	95.9	85	115			
Molybdenum	0.51	0.0080	0.5000	0	101	85	115			
Nickel	0.47	0.010	0.5000	0	94.0	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.9	85	115			

Sample ID **LLLCS-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B32368**	RunNo: **32368**
Prep Date:	Analysis Date: **2/24/2016**	SeqNo: **989630** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	95.9	50	150			
Barium	0.0021	0.0020	0.002000	0	105	50	150			

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1602208**
24-Feb-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID **LLLCS-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B32368**	RunNo: **32368**
Prep Date:	Analysis Date: **2/24/2016**	SeqNo: **989630** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	ND	0.040	0.04000	0	100	50	150			
Cadmium	ND	0.0020	0.002000	0	85.0	50	150			
Chromium	0.0062	0.0060	0.006000	0	103	50	150			
Cobalt	ND	0.0060	0.006000	0	97.2	50	150			
Copper	0.0064	0.0060	0.006000	0	107	50	150			
Iron	ND	0.020	0.02000	0	90.8	50	150			
Manganese	0.0020	0.0020	0.002000	0	101	50	150			
Molybdenum	0.010	0.0080	0.008000	0	130	50	150			
Nickel	ND	0.010	0.005000	0	101	50	150			
Silver	ND	0.0050	0.005000	0	95.0	50	150			
Zinc	ND	0.010	0.005000	0	90.2	50	150			

Qualifiers:

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602208**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B31999**	RunNo: **31999**
Prep Date:	Analysis Date: **2/8/2016**	SeqNo: **978440** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.026	0.0010	0.02500	0	106	85	115			
Uranium	0.013	0.00050	0.01250	0	101	85	115			

Sample ID **LLLCS**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B31999**	RunNo: **31999**
Prep Date:	Analysis Date: **2/8/2016**	SeqNo: **978441** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050	0.0005000	0	99.7	50	150			
Selenium	ND	0.0010	0.001000	0	88.9	50	150			
Uranium	ND	0.00050	0.0005000	0	98.6	50	150			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B31999**	RunNo: **31999**
Prep Date:	Analysis Date: **2/8/2016**	SeqNo: **978442** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C32026**	RunNo: **32026**
Prep Date:	Analysis Date: **2/9/2016**	SeqNo: **979376** 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	98.5	85	115			

Sample ID **LLLCS**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C32026**	RunNo: **32026**
Prep Date:	Analysis Date: **2/9/2016**	SeqNo: **979378** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	90.1	50	150			

Qualifiers:

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S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602208**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C32026**	RunNo: **32026**
Prep Date:	Analysis Date: **2/9/2016**	SeqNo: **979380** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602208**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	**MB-23640**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**					
Client ID:	**PBW**	Batch ID:	**23640**	RunNo:	**32041**					
Prep Date:	**2/9/2016**	Analysis Date:	**2/10/2016**	SeqNo:	**979810**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-23640**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**					
Client ID:	**LCSW**	Batch ID:	**23640**	RunNo:	**32041**					
Prep Date:	**2/9/2016**	Analysis Date:	**2/10/2016**	SeqNo:	**979811**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602208**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R32200**	RunNo: **32200**
Prep Date:	Analysis Date: **2/16/2016**	SeqNo: **984262** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R32200**	RunNo: **32200**
Prep Date:	Analysis Date: **2/16/2016**	SeqNo: **984263** 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			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R32210**	RunNo: **32210**
Prep Date:	Analysis Date: **2/16/2016**	SeqNo: **984551** 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: **R32210**	RunNo: **32210**
Prep Date:	Analysis Date: **2/16/2016**	SeqNo: **984552** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	99.4	90	110			
Chloride	5.0	0.50	5.000	0	99.0	90	110			
Nitrate+Nitrite as N	3.6	0.20	3.500	0	102	90	110			

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602208**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	**MB-23604**	SampType:	**MBLK**	TestCode:	**EPA Method 8011/504.1: EDB**					
Client ID:	**PBW**	Batch ID:	**23604**	RunNo:	**31988**					
Prep Date:	**2/8/2016**	Analysis Date:	**2/8/2016**	SeqNo:	**978001**	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-23604**	SampType:	**LCS**	TestCode:	**EPA Method 8011/504.1: EDB**					
Client ID:	**LCSW**	Batch ID:	**23604**	RunNo:	**31988**					
Prep Date:	**2/8/2016**	Analysis Date:	**2/8/2016**	SeqNo:	**978002**	Units:	**µg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.13	0.010	0.1000	0	129	70	130			

Sample ID	**LCSD-23604**	SampType:	**LCSD**	TestCode:	**EPA Method 8011/504.1: EDB**					
Client ID:	**LCSS02**	Batch ID:	**23604**	RunNo:	**31988**					
Prep Date:	**2/8/2016**	Analysis Date:	**2/8/2016**	SeqNo:	**978003**	Units:	**µg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.12	0.010	0.1000	0	123	70	130	4.17	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602208**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID **MB-23596**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **23596**	RunNo: **31978**
Prep Date: **2/5/2016**	Analysis Date: **2/8/2016**	SeqNo: **977994** 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	1.0		1.000		100	70	141			

Sample ID **LCS-23596**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **23596**	RunNo: **31978**
Prep Date: **2/5/2016**	Analysis Date: **2/8/2016**	SeqNo: **977995** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.1	1.0	5.000	0	102	52.4	154			
Surr: DNOP	0.49		0.5000		97.8	70	141			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1602208**
24-Feb-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R31967**	RunNo: **31967**
Prep Date:	Analysis Date: **2/5/2016**	SeqNo: **977541** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.45	0.050	0.5000	0	90.6	80	120			
Surr: BFB	20		20.00		97.9	49.5	130			

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R31967**	RunNo: **31967**
Prep Date:	Analysis Date: **2/5/2016**	SeqNo: **977542** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	17		20.00		83.7	49.5	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602208**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	**MB-23676**	SampType:	**MBLK**		TestCode:	**EPA Method 8082: PCB's**				
Client ID:	**PBW**	Batch ID:	**23676**		RunNo:	**32193**				
Prep Date:	**2/11/2016**	Analysis Date:	**2/17/2016**		SeqNo:	**984090**	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	3.3		2.500		132	26.1	140			
Surr: Tetrachloro-m-xylene	2.6		2.500		104	15	123			

Sample ID	**LCS-23676**	SampType:	**LCS**		TestCode:	**EPA Method 8082: PCB's**				
Client ID:	**LCSW**	Batch ID:	**23676**		RunNo:	**32193**				
Prep Date:	**2/11/2016**	Analysis Date:	**2/17/2016**		SeqNo:	**984091**	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	57.3	15	131			
Aroclor 1260	4.7	1.0	5.000	0	94.0	15	162			
Surr: Decachlorobiphenyl	2.3		2.500		92.0	26.1	140			
Surr: Tetrachloro-m-xylene	1.6		2.500		65.2	15	123			

Sample ID	**LCSD-23676**	SampType:	**LCSD**		TestCode:	**EPA Method 8082: PCB's**				
Client ID:	**LCSS02**	Batch ID:	**23676**		RunNo:	**32193**				
Prep Date:	**2/11/2016**	Analysis Date:	**2/17/2016**		SeqNo:	**984092**	Units:	**µg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	2.8	1.0	5.000	0	56.4	15	131	1.55	24.4	
Aroclor 1260	4.5	1.0	5.000	0	90.4	15	162	3.99	28	
Surr: Decachlorobiphenyl	2.2		2.500		87.2	26.1	140	0	0	
Surr: Tetrachloro-m-xylene	1.7		2.500		67.2	15	123	0	0	

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1602208**
24-Feb-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID **rb2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **B31998**	RunNo: **31998**
Prep Date:	Analysis Date: **2/9/2016**	SeqNo: **978345** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602208**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID **rb2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **B31998**	RunNo: **31998**
Prep Date:	Analysis Date: **2/9/2016**	SeqNo: **978345** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		96.5	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID **100ng lcs2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **B31998**	RunNo: **31998**
Prep Date:	Analysis Date: **2/8/2016**	SeqNo: **978346** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	22	1.0	20.00	0	109	70	130			
Chlorobenzene	22	1.0	20.00	0	110	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602208**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID **100ng lcs2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **B31998**	RunNo: **31998**
Prep Date:	Analysis Date: **2/8/2016**	SeqNo: **978346** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	20	1.0	20.00	0	100	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	105	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.6	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		106	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602208**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID **MB-23677**	SampType: **MBLK**	TestCode: **EPA Method 8310: PAHs**
Client ID: **PBW**	Batch ID: **23677**	RunNo: **32189**
Prep Date: **2/11/2016**	Analysis Date: **2/17/2016**	SeqNo: **984104** 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								
Benzo(a)pyrene	ND	0.070								
Surr: Benzo(e)pyrene	9.8		20.00		48.8	33.4	129			

Sample ID **LCS-23677**	SampType: **LCS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSW**	Batch ID: **23677**	RunNo: **32189**
Prep Date: **2/11/2016**	Analysis Date: **2/17/2016**	SeqNo: **984239** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	78	2.0	80.00	0	97.6	54.6	110			
1-Methylnaphthalene	79	2.0	80.20	0	98.2	49.1	116			
2-Methylnaphthalene	79	2.0	80.00	0	98.8	52.5	111			
Benzo(a)pyrene	0.51	0.070	0.5020	0	102	62	107			
Surr: Benzo(e)pyrene	10		20.00		50.0	33.4	129			

Sample ID **LCSD-23677**	SampType: **LCSD**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSS02**	Batch ID: **23677**	RunNo: **32189**
Prep Date: **2/11/2016**	Analysis Date: **2/17/2016**	SeqNo: **984240** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	81	2.0	80.00	0	101	54.6	110	3.55	20	
1-Methylnaphthalene	82	2.0	80.20	0	102	49.1	116	3.43	20	
2-Methylnaphthalene	82	2.0	80.00	0	102	52.5	111	3.47	20	
Benzo(a)pyrene	0.53	0.070	0.5020	0	106	62	107	3.85	20	
Surr: Benzo(e)pyrene	10		20.00		51.4	33.4	129	0		

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602208**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID **MB-23801**	SampType: **MBLK**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **PBW**	Batch ID: **23801**	RunNo: **32220**
Prep Date: **2/18/2016**	Analysis Date: **2/18/2016**	SeqNo: **984921** 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-23801**	SampType: **LCS**	TestCode: **Total Phenolics by SW-846 9067**
Client ID: **LCSW**	Batch ID: **23801**	RunNo: **32220**
Prep Date: **2/18/2016**	Analysis Date: **2/18/2016**	SeqNo: **984922** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	23	2.5	20.00	0	113	64.4	135			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1602208**
24-Feb-16

Client: Navajo Refining Company
Project: Monthly Temporary R.O. Reject

Sample ID	**MB-R32129**	SampType:	**MBLK**	TestCode:	**EPA 335.4: Total Cyanide Subbed**					
Client ID:	**PBW**	Batch ID:	**R32129**	RunNo:	**32129**					
Prep Date:		Analysis Date:	**2/11/2016**	SeqNo:	**982291**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	ND	0.0100								

Sample ID	**LCS-R32129**	SampType:	**LCS**	TestCode:	**EPA 335.4: Total Cyanide Subbed**					
Client ID:	**LCSW**	Batch ID:	**R32129**	RunNo:	**32129**					
Prep Date:		Analysis Date:	**2/11/2016**	SeqNo:	**982292**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide	0.485		0.5000	0	97.0	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602208**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID	**MB-R32295**	SampType:	**MBLK**	TestCode:	**EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed**
Client ID:	**PBW**	Batch ID:	**R32295**	RunNo:	**32295**
Prep Date:		Analysis Date:	**2/16/2016**	SeqNo:	**987217** Units: **pCi/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	-0.078	0.841								
Radium-226 ±	0.357	0.841								
Radium-228	0.165	0.797								
Radium-228 ±	0.36	0.797								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1602208**

24-Feb-16

Client: Navajo Refining Company

Project: Monthly Temporary R.O. Reject

Sample ID **MB-23638**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **23638**	RunNo: **32048**
Prep Date: **2/9/2016**	Analysis Date: **2/10/2016**	SeqNo: **979976** 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-23638**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **23638**	RunNo: **32048**
Prep Date: **2/9/2016**	Analysis Date: **2/10/2016**	SeqNo: **979977** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1030	20.0	1000	0	103	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: NAVAJO REFINING CO Work Order Number: 1602208 RcptNo: 1

Received by/date: JA 02/05/16

Logged By: **Ashley Gallegos** 2/5/2016 10:05:00 AM

Completed By: **Ashley Gallegos** 2/5/2016 11:17:10 AM

Reviewed By: 02/05/16

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: 6 (<2 or >12 unless noted)

Adjusted? No

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 °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Not Present			

Chain-of-Custody Record

Client: Navajo Refinery

Mailing Address: P.O. Box 159 Artesia,

NM 88211-0159

Phone #: 575-748-3311

email or Fax#: 575-746-5451

QA/QC Package:

X Standard ☐ Level 4 (Full Validation)

☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

X Standard ☐ Rush_____

Project Name:

Monthly Temporary R.O. Reject

Project #: P.O. # 167796

Project Manager:

Robert Combs

Sampler: Elizabeth Salsberry

On Ice: X Yes ☐ No

Sample Temperature 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1602208	8260B:WQCC List VOCs	8270C: WQCC list SVOCs	6010B: WQCC Metals	335.4: Total Cyanide	7470: Mercury	8015: GRO, DRO, ORO	8082: PCBs	Radioactivity (Ra-226+Ra-228)	Sulfate Chloride	Phenols	Fluoride	Nitrate/Nitrite	Total Dissolved Solids	PH	504.1:EDB	Air Bubbles (Y or N)
2/4/16	9:20	liquid	Temporary R.O. Reject	2 - 500ml P	1-unpres 1-H2SO4	-001									X		X	X	X	X		Y
2/4/16	9:20	liquid	Temporary R.O. Reject	3-40ml VOA	HCL		X															
2/4/16	9:20	liquid	Temporary R.O. Reject	1-500ml P	HNO3						X											
2/4/16	9:20	liquid	Temporary R.O. Reject	1-125ml P	HNO3				X													
2/4/16	9:20	liquid	Temporary R.O. Reject	1-500ml P	NaOH					X												
2/4/16	9:20	liquid	Temporary R.O. Reject	2- 1L P	HNO3									X								
2/4/16	9:20	liquid	Temporary R.O. Reject	3-40ml VOA	Na2S2O3																X	
2/4/16	9:20	liquid	Temporary R.O. Reject	2 - 1L Glass	unpres								X									
2/4/16	9:20	liquid	Temporary R.O. Reject	1 - 1L Glass	unpres			X														
2/4/16	9:20	liquid	Temporary R.O. Reject	3-40ml VOA	HCl							X										
2/4/16	9:20	liquid	Temporary R.O. Reject	1-250mlGlass	unpres							X										
2/4/16	9:20	liquid	Temporary R.O. Reject	1 - 1L Glass	H2SO4											X						
2/4/16	9:20	liquid	Trip Blank	2-40ml VOA	HCL	-002																

Date	Time	Relinquished by	Received by	Date	Time
2/4/16	12:00	Elizabeth Salsberry		02/05/16	1005
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

Metals: As, Al, Ba, B, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Mo, Ni, Se, Ag, U, Zn

VOCs: 1,1,1-Trichloroethane; 1,1,2,2-Tetrachloroethane; 1,1,2,2-Tetrachloroethylene; 1,1,2-Trichloroethane; 1,1,2-Trichloroethylene; 1,1-Dichloroethane; 1,1-Dichloroethene; 1,2-Dibromoethane; 1,2-Dichloroethane; Benzene; Carbon Tetrachloride; Chloroform; Dichloromethane; Ethylbenzene; Toluene; Total Xylenes; Vinyl Chloride

SVOCs: benzo(a)pyrene, phenol, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene

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

Monthly Temporary RO Reject Sample Details

HOLLYFRONTIER
The HollyFrontier Companies

Project Name	Biannual RO Reject
Samplers Name	Elizabeth Salsberry
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	2/4/2016 @ 9:15 a.m.
End Date and Time	2/4/2016 @ 9:30 a.m.

Sample Type	
Grab	☑
Time Weighted Composite	☐
Flow Weighted Composite	☐

Parts / Sample Intervals	One

Physical Property	
Solid	☐
Liquid	☑
Sludge	☐

Type of Sampler	Directly to sample jars

Outfall / Sample Location ☐ North Field R.O. Reject Discarge ☑ South Field R.O. Reject Discarge

				Preservatives							
Container	Size	Material	# of Containers	Neat (None)	HCL	HNO3	H2SO4	NaOH	Na2S2O3	NaHSO4	Other	Analysis and/or Method Requested
1	500ml	Plastic	2	X			X					pH, Cl, F, S04, NO2/NO3, TDS
2	40ml	VOA	3		X							8015 GRO
3	500ml	Plastic	1			X						6020 total metals, 7470 Hg
4	125ml	Plastic	1			X						6020 Dissolved Metals
5	500ml	Plastic	2					X				Cyanide
6	1L	Plastic	3			X						Radium 226/228
7	40ml	VOA	2		X							8260 see attached list
8	1L	Glass	1	X								8270 see attached list
9	1L	Glass	2	X								8082 PCBs
10	40ml	VOA	2	X								8015 DRO
11	40ml	VOA	2		X							Radium 226/228

Field Data (Weather, Observations, Etc) 2/4/2016 Tmp. 30.2 °F, Humidity 51%, Wind Dir. Calm, Wind Speed Calm, Conditions Clear
Date and Time:

Field Temp. 18.5C Field pH 7.66

Storage Method	
Ice	☑
Refrigerated	☐
Other	☐

Shipping Media	
Ice	☑
Other	☐

ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
REVERSE OSMOSIS DISCHARGE PERMIT MODIFICATION
Artesia Refinery (GW-028)

I. INTRODUCTION

The New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division (OCD) issues this Modification of Discharge Permit GW-028 (GW-028) to HollyFrontier Navajo Refining LLC (Permittee) pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978 §§74-6-1 through 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC.

GW-028 governs, among other things, the discharge of reverse osmosis (RO) reject fluids into "farm fields" (FFs) at the Artesia Refinery (Refinery). The Refinery is located at 501 East Main, Artesia, NM, 88210 in the SE/4 of Section 1, E/2 of Section 8, W/2 of Section 9, N/2 of Section 12, Township 17 South, Range 26 East, NMPM, Eddy County.

Due to the increased processing capacity of the Refinery and the corresponding increased demand for water at the Refinery, use of the portable RO unit has increased over time. GW-028 currently allows a total of 10,000 barrels per day of combined RO reject water to be discharged via pipeline into the two FFs. The authorization for the disposal of RO reject water into the FFs will cease on or before October 21, 2016.

Groundwater potentially affected by the discharge occurs at a depth of approximately 25 feet below ground surface with a total dissolved solids (TDS) concentration of approximately 2,500 mg/L. Based on analysis of the RO reject fluids to date, Boron, Chloride, Fluoride, Manganese, Sulfate, Nitrate, Selenium, TDS, and Uranium are potential contaminants of concern. Under GW-028, the Permittee is required to investigate the ground water beneath the FFs to determine what impact to ground water quality has occurred as a result of the discharge of RO fluid.

On May 22, 2015, the Permittee submitted a modification application to increase the maximum RO reject fluids discharge in the FFs from 10,000 barrels per day to 20,000 barrels per day; 2) to operate a third RO unit at the Refinery; and 3) to update the refinery crude oil processing capacity to 105,000 barrels/day. On July 1, 2015, OCD determined the application to be administratively complete. Pursuant to 20.6.2.3108 NMAC, the Permittee provided public notice of the application. After a technical review of the application, OCD prepared a proposed decision and provided public notice. OCD proposed to approve an increase to the discharge to the FFs from 10,000 barrels per day to 15,000 barrels per day and proposed other conditions for GW-028. The only comments submitted to OCD on the proposed decision were from the Permittee.

Based on OCD's review of the application, the comments received, and the technical information submitted pursuant to GW-028, OCD enters the following findings and approves the following modifications to GW-028.

II. FINDINGS.

OCD has reviewed the application along with additional technical information in the permit file. In issuing this Modification, OCD finds:

1. The Permittee has requested to increase the maximum discharge of RO reject fluids to the FFs allowed under GW-028. GW-028 currently allows a discharge of RO reject fluids to the FFs but requires the Permittee to cease the discharge on or before October 21, 2016. GW-028 also requires the Permittee to conduct a site investigation to determine the impact to soils and ground water quality within and beneath the FFs.

2. The Permittee has increased and may increase further the capacity of the Refinery. As a result, the total wastewater volume generated at the Refinery has and may continue to increase. The Permittee has added a third RO unit at the Refinery and is reviewing options to more efficiently manage, treat, store, and/or dispose the Refinery wastewater and to replace the current discharge into the FFs with other disposition options.

3. An increase in the maximum RO reject fluid discharge volume allowed under GW-028 will be approved due to the increased production of wastewater at the Refinery and due to the controls on the discharges under GW-028. The discharge will be into the FFs where the current permitted discharge is located and where the Permittee is undertaking an investigation into the potential impacts of the discharges on soil and groundwater. Based on historic discharge amounts, the new discharge limit will be a maximum of 15,000 barrels per day.

4. Based on the increase in the discharge limit, and on enforcement actions for the failure to report exceedances of the discharge limit, GW-028 will be modified to increase the frequency of water quality sampling for the discharges and increase the frequency of reporting both the sampling results and the daily discharge flow measurements.

5. Pursuant to the requirements of GW-028, the Permittee has completed (a) the RO Reject Fields Hydrogeologic and Water Quality Evaluation Memo, (b) the Reverse Osmosis Reject Water Discharge Fields Investigation Final Report, and (c) the Background Groundwater Investigation Report (collectively, "site investigation reports"). Based upon OCD's preliminary review of the site investigation reports, OCD has determined that soils and groundwater within and below the FFs have potentially been affected by the historic discharge of RO reject fluids. The Permittee is required to complete the delineation of any potential vadose zone and groundwater contamination associated with the FFs.

6. Proper public notice of the Modification has been given, the permit modification fee has been paid and all other requirements necessary for the issuance of the Modification have been met.

III. PERMIT MODIFICATION

The following changes to Permit Conditions 1.A, 1.B, 4.A, 4.B and 6.C of GW-028 and new Permit Condition 4.C are approved:

1.A PERMITTEE AND PERMITTED FACILITY: The Director of the Oil Conservation Division (OCD) of the Energy, Minerals and Natural Resources Department issues Discharge Permit GW-028 (Discharge Permit) to HollyFrontier Navajo Refining LLC (Permittee) located at 501 E. Main, Artesia, New Mexico 88210, to operate the Artesia Refinery (Facility) located in the SE/4 of Section 1, E/2 of Section 8, W/2 of Section 9, N/2 of Section 12, Township 17 South, Range 26 East, NMPM, Eddy County. The refinery is located northeast of the intersection of Highway 285 and Highway 82, in Artesia, New Mexico.

The Permittee refines crude oil and processes natural gas at its Facility. The Facility refines and processes up to 115,000 barrels per day of crude oil and other feed stocks. The Permittee's Facility discharges a maximum of 15,000 barrels per day of reverse osmosis reject fluids to the surface at the Facility's two farms. The Permittee is abating ground water and vadose zone contamination at the Facility. Ground water that may be affected by a spill, leak, or accidental discharge occurs at a depth of approximately 25 feet below ground surface with a total dissolved solids concentration of approximately 2,500 mg/L.

1.B SCOPE OF PERMIT: OCD has been granted authority to administer the Water Quality Act (Chapter 74, Article 6 NMSA 1978) as it applies to refineries by statute and by delegation from the Water Quality Control Commission pursuant to Section 74-6-4(E) NMSA 1978.

The Water Quality Act and the rules issued under that Act protect ground water and surface water of the State of New Mexico by providing that, unless otherwise allowed by rule, no person shall cause or allow effluent or leachate to discharge so that it may move directly or indirectly into ground water unless such discharge is pursuant to an approved discharge permit (See WQCC Regulations: 20.6.2.3104 NMAC and 20.6.2.3106 NMAC).

This Discharge Permit authorizes the Permittee to discharge a maximum of 15.000 barrels per day of reverse osmosis reject fluids at the Permittee's two farms. This Discharge Permit does not authorize any treatment of, or on-site disposal of, any materials, product, by-product, or oil field waste including, but not limited to, the on-site disposal of lube oil, glycol, antifreeze, filters, elemental sulfur, washdown water, contaminated soil, and cooling tower blowdown water.

This Discharge Permit does not convey any property rights of any sort nor any exclusive privilege, and does not authorize any injury to persons or property, any invasion of other private rights, or any infringement of state, federal, or local laws, rules or regulations.

The Permittee shall operate in accordance with the Discharge Permit conditions to comply with the Water Quality Act and the rules issued pursuant to that Act, so that neither a hazard to public health nor undue risk to property will result (See 20.6.2.3109C NMAC); so that no discharge will cause or may cause any stream standard to be violated (See 20.6.2.3109H(2) NMAC); so that no discharge of any water contaminant will result in a hazard to public health (See 20.6.2.3109H(3) NMAC); and, so that the numerical standards specified in ~~of~~ 20.6.2.3103 NMAC are not exceeded.

4.A Discharge Volume: The Permittee is authorized to discharge a maximum of 15,000 barrels per day of reverse osmosis reject fluids to the surface at the Permittee's two farms. Discharge to Eagle Draw is prohibited. This authorization will expire no later than October 21, 2016, or when the proposed new Class I injection well is operationally capable of

accepting this waste stream, whichever occurs first.

4.B **Sampling and Analysis:** The Permittee shall collect and analyze samples of the discharge as follows:

1. The Permittee shall sample and analyze for all constituents listed in 20.6.2.3103A, B, and C NMAC at least quarterly by collecting grab samples at the points of discharge for both the permanent reverse osmosis units, the portable reverse osmosis unit, and any other installed RO units with discharges into the farm fields.

2. The Permittee shall sample and analyze using the methods specified in the Permittee's FWGWMP.

3. The Permittee shall retain all sampling and analytical QA/QC for four years.

4. On a daily basis, the Permittee shall monitor and record the discharge locations and flow rate and volumes from each reverse osmosis unit that produces a reject fluid that is discharged into the farm fields.

5. The Permittee shall report the analytical results for all discharge samples collected in a monitoring period.

6. The Permittee shall ensure the sampling and flow measurements are representative of the volume and nature of each discharge.

7. The Permittee shall submit all sample data, analytical results, and flow measurements in its annual report. In addition, the Permittee shall submit a monthly report, due on the fifteenth day of the following month, which includes the daily discharge flow measurements in that month and any sample results received that month.

4.C **Reporting of Discharge Limit Violation:** The Permittee shall report to OCD by electronic mail, on the first business day of each week, any exceedance of the daily discharge limit provided in Permit Condition 4.A, that occurred during the prior calendar week.

6.C **REQUIREMENT TO CEASE ALL DISCHARGE OF REVERSE OSMOSIS REJECT FLUIDS TO THE SURFACE AT THE TWO FARMS.** The Permittee shall cease all discharges of reverse osmosis reject fluids (a maximum of 15,000 barrels per day) and/or any other waste discharges to the surface on or before October 21, 2016, or when the proposed new Class I injection well is operationally capable of accepting this waste stream, whichever occurs first.

EFFECTIVE DATE:

David R. Catanach
Division Director,
New Mexico Oil Conservation Division

HOLLYFRONTIER.

April 14, 2016

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: Discharge Permit GW-028
Monthly Report – March 2016 Reporting Period

Dear Sirs:

In accordance with Condition 4.B.7 of Discharge Permit GW-028 (the Permit), the HollyFrontier Navajo Refining LLC (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 March 2016 monthly report, for the period of March 1-31, 2016, under the Permit.

Specifically, this report covers the March 2016 reporting period and includes the following data and information as required by Condition 4.B.7:

collected on March 3, 2016.

r the RO reject fluid is monitored from the two
on a daily basis. Daily discharge rates and volumes
mporary RO unit operated through March 2016, and
ith the permanent unit, as authorized by OCD on

f Condition 4.B.1 of the Permit, samples were
manent units and temporary unit on March 3, 2016.
listed in sections 20.6.2.3103A, B, and C of the New
g the methods specified in Navajo's Facility Wide
. The corresponding analytical results are provided

- Analytical results of a discharge sample

Flow rates, volumes, and discharge locations fo
permanent RO units and the temporary RO unit
are provided in Attachment 1. (Note that the te
will be replaced in the second quarter of 2016 w
April 1, 2016.)

To satisfy the quarterly sampling requirement o
collected for the RO reject streams from the per
The samples were analyzed for the constituents
Mexico Administrative Code (NMAC) and usin
Groundwater Monitoring Program (FWGWMP)
in Attachment 2.

Navajo is committed to proactively meeting the requirements of the Permit 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: Analytical Lab Report

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

Attachment 1
Daily Discharge Flow Rates and Volumes

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)		
	GPM SOUTH	GPM NORTH	GPM	BBL/DAY	GPM	BBL/DAY	BBL
3/1/2016	79	109	188	6434	119	4080	10,514
3/2/2016	76	108	184	6293	66	2280	8,573
3/3/2016	74	108	181	6217	116	3969	10,186
3/4/2016	95	103	198	6788	124	4261	11,049
3/5/2016	92	108	200	6862	126	4309	11,171
3/6/2016	91	110	201	6897	125	4291	11,188
3/7/2016	93	108	201	6887	120	4120	11,007
3/8/2016	90	110	200	6855	125	4281	11,136
3/9/2016	84	110	194	6656	123	4220	10,876
3/10/2016	79	107	187	6397	122	4183	10,580
3/11/2016	75	109	184	6316	122	4183	10,499
3/12/2016	76	105	180	6180	128	4392	10,572
3/13/2016	76	107	182	6249	64	2197	8,446
3/14/2016	85	108	193	6611	95	3269	9,880
3/15/2016	86	87	173	5944	128	4392	10,336
3/16/2016	91	107	197	6771	112	3849	10,620
3/17/2016	94	105	199	6832	63	2172	9,004
3/18/2016	90	105	195	6698	97	3333	10,031
3/19/2016	88	101	189	6466	126	4322	10,788
3/20/2016	92	94	186	6363	127	4363	10,726
3/21/2016	92	103	195	6686	127	4354	11,040
3/22/2016	92	94	186	6385	130	4458	10,843
3/23/2016	93	94	187	6413	132	4512	10,925
3/24/2016	90	101	191	6545	130	4441	10,986
3/25/2016	92	95	188	6430	135	4639	11,069
3/26/2016	94	94	188	6432	140	4800	11,232
3/27/2016	92	100	192	6591	133	4547	11,138
3/28/2016	94	87	182	6230	129	4417	10,647
3/29/2016	92	105	197	6741	128	4405	11,146
3/30/2016	59	72	132	4509	132	4541	9,050
3/31/2016	71	82	153	5236	133	4550	9,786

Attachment 2
Analytical Lab Report