

GW – 028

**2015 Annual Discharge
Permit Report**

PART 10 OF 16

March 2016



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

Monthly Temporary RO Reject Sample Details



Project Name	Biannual RO Reject
Samplers Name	Elizabeth Salisbury
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	9/3/2015 @ 8:45
End Date and Time	8/3/2015 @ 9:05

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

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

Type of Sampler Directly to sample jars

Parts / Sample Intervals One

Outfall / Sample Location: ☐ North Field R.O. Reject Discharge ☒ South Field R.O. Reject Discharge

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

Field Data (Weather, Observations, Etc): 9/3/2015 Temp. 77.0 °F, Humidity 47% Wind Dir. NNW, Wind Speed 5.8 mph, Conditions Clear

Date and Time:

Field Temp. 25.3°C

Field pH 7.70

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

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



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

October 06, 2015

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

RE: Monthly R.O. Reject

OrderNo.: 1509219

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 9/4/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509219

Date Reported: 10/6/2015

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly R.O. Reject

Collection Date: 9/3/2015 9:10:00 AM

Lab ID: 1509219-001

Matrix: AQUEOUS

Received Date: 9/4/2015 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	ND	0.0050		mg/L	5	9/18/2015 5:45:40 PM	D28981
Lead	ND	0.00050		mg/L	1	9/18/2015 4:47:06 PM	D28981
Selenium	0.0079	0.0010		mg/L	1	9/18/2015 4:47:06 PM	D28981
Uranium	0.0060	0.00050		mg/L	1	9/18/2015 4:47:06 PM	D28981
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	2.57	0.768		pCi/L	1	9/28/2015	R29271
Radium-226 ±	0.954	0.768		pCi/L	1	9/28/2015	R29271
Radium-228	0.751	0.621		pCi/L	1	9/28/2015	R29271
Radium-228 ±	0.362	0.621		pCi/L	1	9/28/2015	R29271
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	2.9	2.0		mg/L	20	9/4/2015 11:24:48 PM	R28686
Chloride	260	10		mg/L	20	9/4/2015 11:24:48 PM	R28686
Nitrogen, Nitrate (As N)	1.7	0.10		mg/L	1	9/4/2015 11:12:24 PM	R28686
Sulfate	1800	25		mg/L	50	9/15/2015 12:20:17 AM	R28852
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3440	20.0	*	mg/L	1	9/10/2015 5:38:00 PM	21204
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	9/11/2015	R29271
SM4500-H+B: PH							Analyst: JRR
pH	7.91	1.68	H	pH units	1	9/8/2015 6:28:53 PM	R28726
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	9/10/2015 3:13:49 PM	B28759
Barium	0.058	0.0020		mg/L	1	9/10/2015 3:13:49 PM	B28759
Boron	0.093	0.040		mg/L	1	9/10/2015 3:13:49 PM	B28759
Cadmium	ND	0.0020		mg/L	1	9/10/2015 3:13:49 PM	B28759
Chromium	0.0070	0.0060		mg/L	1	9/11/2015 3:52:52 PM	A28781
Cobalt	ND	0.0060		mg/L	1	9/11/2015 3:52:52 PM	A28781
Copper	ND	0.0060		mg/L	1	9/10/2015 3:13:49 PM	B28759
Iron	ND	0.020		mg/L	1	9/10/2015 3:13:49 PM	B28759
Manganese	ND	0.0020		mg/L	1	9/11/2015 3:52:52 PM	A28781
Molybdenum	ND	0.0080		mg/L	1	9/11/2015 3:52:52 PM	A28781
Nickel	ND	0.010		mg/L	1	9/10/2015 3:13:49 PM	B28759
Silver	ND	0.0050		mg/L	1	9/10/2015 3:13:49 PM	B28759
Zinc	0.021	0.010		mg/L	1	9/11/2015 3:52:52 PM	A28781
EPA METHOD 245.1: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	9/15/2015 4:16:45 PM	21298

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509219

Date Reported: 10/6/2015

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly R.O. Reject

Collection Date: 9/3/2015 9:10:00 AM

Lab ID: 1509219-001

Matrix: AQUEOUS

Received Date: 9/4/2015 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	9/9/2015 3:02:31 PM	21198
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	9/11/2015 11:45:50 AM	21192
Aroclor 1221	ND	1.0		µg/L	1	9/11/2015 11:45:50 AM	21192
Aroclor 1232	ND	1.0		µg/L	1	9/11/2015 11:45:50 AM	21192
Aroclor 1242	ND	1.0		µg/L	1	9/11/2015 11:45:50 AM	21192
Aroclor 1248	ND	1.0		µg/L	1	9/11/2015 11:45:50 AM	21192
Aroclor 1254	ND	1.0		µg/L	1	9/11/2015 11:45:50 AM	21192
Aroclor 1260	ND	1.0		µg/L	1	9/11/2015 11:45:50 AM	21192
Surr: Decachlorobiphenyl	52.8	17.7-151		%REC	1	9/11/2015 11:45:50 AM	21192
Surr: Tetrachloro-m-xylene	41.2	20.6-151		%REC	1	9/11/2015 11:45:50 AM	21192
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	9/9/2015 5:52:34 PM	21183
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	9/9/2015 5:52:34 PM	21183
Surr: DNOP	115	72-136		%REC	1	9/9/2015 5:52:34 PM	21183
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	9/10/2015 2:07:41 PM	R28761
Surr: BFB	91.3	57.8-137		%REC	1	9/10/2015 2:07:41 PM	R28761
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	9/11/2015 8:39:09 AM	21193
1-Methylnaphthalene	ND	2.0		µg/L	1	9/11/2015 8:39:09 AM	21193
2-Methylnaphthalene	ND	2.0		µg/L	1	9/11/2015 8:39:09 AM	21193
Benzo(a)pyrene	ND	0.070		µg/L	1	9/11/2015 8:39:09 AM	21193
Surr: Benzo(e)pyrene	49.1	37.2-136		%REC	1	9/11/2015 8:39:09 AM	21193
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
Toluene	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
Ethylbenzene	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
Carbon Tetrachloride	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
Chloroform	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
1,1-Dichloroethane	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
1,1-Dichloroethene	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
Methylene Chloride	ND	3.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705

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

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

Analytical Report

Lab Order 1509219

Date Reported: 10/6/2015

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly R.O. Reject

Collection Date: 9/3/2015 9:10:00 AM

Lab ID: 1509219-001

Matrix: AQUEOUS

Received Date: 9/4/2015 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: BCN	
1,1,1-Trichloroethane	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
1,1,2-Trichloroethane	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
Trichloroethene (TCE)	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
Vinyl chloride	ND	1.0		µg/L	1	9/8/2015 8:43:58 PM	R28705
Xylenes, Total	ND	1.5		µg/L	1	9/8/2015 8:43:58 PM	R28705
Surr: 1,2-Dichloroethane-d4	98.1	70-130		%REC	1	9/8/2015 8:43:58 PM	R28705
Surr: 4-Bromofluorobenzene	99.2	70-130		%REC	1	9/8/2015 8:43:58 PM	R28705
Surr: Dibromofluoromethane	101	70-130		%REC	1	9/8/2015 8:43:58 PM	R28705
Surr: Toluene-d8	94.9	70-130		%REC	1	9/8/2015 8:43:58 PM	R28705
TOTAL PHENOLICS BY SW-846 9067						Analyst: SCC	
Phenolics, Total Recoverable	ND	2.5		µg/L	1	9/30/2015	21585

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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509219

Date Reported: 10/6/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly R.O. Reject

Collection Date:

Lab ID: 1509219-002

Matrix: TRIP BLANK

Received Date: 9/4/2015 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	9/10/2015 2:33:01 PM	R28761
Surr: BFB	90.7	57.8-137		%REC	1	9/10/2015 2:33:01 PM	R28761
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Toluene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Ethylbenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Naphthalene	ND	2.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1-Methylnaphthalene	ND	4.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
2-Methylnaphthalene	ND	4.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Acetone	ND	10		µg/L	1	9/8/2015 9:12:38 PM	R28705
Bromobenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Bromodichloromethane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Bromoform	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Bromomethane	ND	3.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
2-Butanone	ND	10		µg/L	1	9/8/2015 9:12:38 PM	R28705
Carbon disulfide	ND	10		µg/L	1	9/8/2015 9:12:38 PM	R28705
Carbon Tetrachloride	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Chlorobenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Chloroethane	ND	2.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Chloroform	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Chloromethane	ND	3.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
2-Chlorotoluene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
4-Chlorotoluene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
cis-1,2-DCE	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Dibromochloromethane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Dibromomethane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,2-Dichlorobenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,3-Dichlorobenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,4-Dichlorobenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Dichlorodifluoromethane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,1-Dichloroethane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,1-Dichloroethene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705

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	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509219

Date Reported: 10/6/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly R.O. Reject

Collection Date:

Lab ID: 1509219-002

Matrix: TRIP BLANK

Received Date: 9/4/2015 10:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
1,2-Dichloropropane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,3-Dichloropropane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
2,2-Dichloropropane	ND	2.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,1-Dichloropropene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Hexachlorobutadiene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
2-Hexanone	ND	10		µg/L	1	9/8/2015 9:12:38 PM	R28705
Isopropylbenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
4-Isopropyltoluene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
4-Methyl-2-pentanone	ND	10		µg/L	1	9/8/2015 9:12:38 PM	R28705
Methylene Chloride	ND	3.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
n-Butylbenzene	ND	3.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
n-Propylbenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
sec-Butylbenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Styrene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
tert-Butylbenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
trans-1,2-DCE	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,1,1-Trichloroethane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,1,2-Trichloroethane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Trichloroethene (TCE)	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Trichlorofluoromethane	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Vinyl chloride	ND	1.0		µg/L	1	9/8/2015 9:12:38 PM	R28705
Xylenes, Total	ND	1.5		µg/L	1	9/8/2015 9:12:38 PM	R28705
Surr: 1,2-Dichloroethane-d4	93.5	70-130		%REC	1	9/8/2015 9:12:38 PM	R28705
Surr: 4-Bromofluorobenzene	96.2	70-130		%REC	1	9/8/2015 9:12:38 PM	R28705
Surr: Dibromofluoromethane	97.9	70-130		%REC	1	9/8/2015 9:12:38 PM	R28705
Surr: Toluene-d8	95.0	70-130		%REC	1	9/8/2015 9:12:38 PM	R28705

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	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	LCSW		Batch ID: B28759			RunNo: 28759				
Prep Date:	Analysis Date: 9/10/2015			SeqNo: 871972		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.50	0.020	0.5000	0	99.8	85	115			
Barium	0.49	0.0020	0.5000	0	98.9	85	115			
Boron	0.53	0.040	0.5000	0	105	85	115			
Cadmium	0.51	0.0020	0.5000	0	102	85	115			
Copper	0.47	0.0060	0.5000	0	94.2	85	115			
Iron	0.53	0.020	0.5000	0	107	85	115			
Nickel	0.48	0.010	0.5000	0	95.4	85	115			
Silver	0.089	0.0050	0.1000	0	88.8	85	115			

Sample ID	LLLCS		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: B28759		RunNo: 28759					
Prep Date:			Analysis Date: 9/10/2015		SeqNo: 871973		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	104	50	150			
Barium	ND	0.0020	0.002000	0	90.0	50	150			
Boron	ND	0.040	0.04000	0	95.7	50	150			
Cadmium	ND	0.0020	0.002000	0	93.5	50	150			
Copper	ND	0.0060	0.006000	0	98.2	50	150			
Iron	0.021	0.020	0.02000	0	105	50	150			
Nickel	ND	0.010	0.005000	0	119	50	150			
Silver	ND	0.0050	0.005000	0	86.0	50	150			

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID: B28759			RunNo: 28759					
Prep Date:		Analysis Date: 9/10/2015			SeqNo: 871977		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								
Copper	ND	0.0060								
Iron	ND	0.020								
Nickel	ND	0.010								
Silver	ND	0.0050								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: A28781		RunNo: 28781					
Prep Date:			Analysis Date: 9/11/2015		SeqNo: 872822		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.49	0.0060	0.5000	0	98.4	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.7	85	115			
Manganese	0.46	0.0020	0.5000	0	92.4	85	115			
Molybdenum	0.50	0.0080	0.5000	0	99.3	85	115			
Zinc	0.49	0.010	0.5000	0	97.9	85	115			

Sample ID	LLLCS		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: A28781		RunNo: 28781					
Prep Date:			Analysis Date: 9/11/2015		SeqNo: 872823		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	ND	0.0060	0.006000	0	82.5	50	150			
Cobalt	ND	0.0060	0.006000	0	86.0	50	150			
Manganese	ND	0.0020	0.002000	0	93.0	50	150			
Molybdenum	ND	0.0080	0.008000	0	53.8	50	150			
Zinc	ND	0.010	0.005000	0	103	50	150			

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID: A28781			RunNo: 28781					
Prep Date:		Analysis Date: 9/11/2015			SeqNo: 872843		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Zinc	ND	0.010								

Sample ID	1509219-001IMS		SampType: MS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	R.O. Reject		Batch ID: A28781		RunNo: 28781					
Prep Date:			Analysis Date: 9/11/2015		SeqNo: 873693		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.47	0.0060	0.5000	0.006970	93.0	70	130			
Cobalt	0.46	0.0060	0.5000	0.004610	91.3	70	130			
Manganese	0.46	0.0020	0.5000	0.0006400	92.4	70	130			
Molybdenum	0.45	0.0080	0.5000	0	89.3	70	130			
Zinc	0.48	0.010	0.5000	0.02073	92.3	70	130			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	1509219-001IMSD	SampType:	MSD	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	R.O. Reject	Batch ID:	A28781	RunNo:	28781					
Prep Date:		Analysis Date:	9/11/2015	SeqNo:	873697	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.46	0.0060	0.5000	0.006970	90.9	70	130	2.26	20	
Cobalt	0.45	0.0060	0.5000	0.004610	88.4	70	130	3.15	20	
Manganese	0.45	0.0020	0.5000	0.0006400	89.8	70	130	2.77	20	
Molybdenum	0.43	0.0080	0.5000	0	86.5	70	130	3.20	20	
Zinc	0.47	0.010	0.5000	0.02073	89.6	70	130	2.86	20	

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

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: D28981		RunNo: 28981					
Prep Date:			Analysis Date: 9/18/2015		SeqNo: 879547		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	94.7	85	115			
Lead	0.012	0.00050	0.01250	0	94.8	85	115			
Selenium	0.023	0.0010	0.02500	0	91.9	85	115			
Uranium	0.012	0.00050	0.01250	0	94.9	85	115			

Sample ID	LLCS		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: D28981		RunNo: 28981					
Prep Date:			Analysis Date: 9/18/2015		SeqNo: 879551		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	92.1	50	150			
Lead	0.00052	0.00050	0.0005000	0	104	50	150			
Selenium	ND	0.0010	0.001000	0	95.2	50	150			
Uranium	ND	0.00050	0.0005000	0	99.7	50	150			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: D28981			RunNo: 28981					
Prep Date:		Analysis Date: 9/18/2015			SeqNo: 879555		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-21298	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	21298	RunNo:	28872					
Prep Date:	9/15/2015	Analysis Date:	9/15/2015	SeqNo:	875782	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-21298	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	21298	RunNo:	28872					
Prep Date:	9/15/2015	Analysis Date:	9/15/2015	SeqNo:	875785	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0048	0.00020	0.005000	0	95.4	80	120			

Sample ID	1509219-001HMS	SampType:	MS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	R.O. Reject	Batch ID:	21298	RunNo:	28872					
Prep Date:	9/15/2015	Analysis Date:	9/15/2015	SeqNo:	875801	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0046	0.00020	0.005000	0	91.4	75	125			

Sample ID	1509219-001HMSD	SampType:	MSD	TestCode:	EPA Method 245.1: Mercury					
Client ID:	R.O. Reject	Batch ID:	21298	RunNo:	28872					
Prep Date:	9/15/2015	Analysis Date:	9/15/2015	SeqNo:	875802	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0047	0.00020	0.005000	0	93.5	75	125	2.30	20	

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

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:	R28686	RunNo:	28686					
Prep Date:		Analysis Date:	9/4/2015	SeqNo:	869229	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:	R28686	RunNo:	28686					
Prep Date:		Analysis Date:	9/4/2015	SeqNo:	869230	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Fluoride	0.49	0.10	0.5000	0	97.5	90	110			
Chloride	4.9	0.50	5.000	0	98.5	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:	R28852	RunNo:	28852					
Prep Date:		Analysis Date:	9/14/2015	SeqNo:	875093	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Sulfate	ND	0.50								
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Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R28852	RunNo:	28852					
Prep Date:		Analysis Date:	9/14/2015	SeqNo:	875094	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Sulfate	9.8	0.50	10.00	0	98.4	90	110			
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Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-21198	SampType:	MBLK	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	PBW	Batch ID:	21198	RunNo:	28723					
Prep Date:	9/9/2015	Analysis Date:	9/9/2015	SeqNo:	870483	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-21198	SampType:	LCS	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	LCSW	Batch ID:	21198	RunNo:	28723					
Prep Date:	9/9/2015	Analysis Date:	9/9/2015	SeqNo:	870484	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.078	0.010	0.1000	0	78.0	70	130			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-21183		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	PBW		Batch ID:	21183		RunNo:	28717				
Prep Date:	9/8/2015		Analysis Date:	9/9/2015		SeqNo:	870900		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		102	72	136			

Sample ID	LCS-21183			SampType:	LCS			TestCode:	EPA Method 8015M/D: Diesel Range			
Client ID:	LCSW			Batch ID:	21183			RunNo:	28717			
Prep Date:	9/8/2015			Analysis Date:	9/9/2015			SeqNo:	870912		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	0.52		0.5000		104	72	136			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R28761	RunNo:	28761					
Prep Date:		Analysis Date:	9/10/2015	SeqNo:	872128	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		90.2	57.8	137			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R28761	RunNo:	28761					
Prep Date:		Analysis Date:	9/10/2015	SeqNo:	872129	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	98.9	80	120			
Surr: BFB	19		20.00		94.5	57.8	137			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-21192		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 21192		RunNo: 28758					
Prep Date:	9/9/2015		Analysis Date: 9/11/2015		SeqNo: 872597		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.0								
Aroclor 1221	ND	1.0								
Aroclor 1232	ND	1.0								
Aroclor 1242	ND	1.0								
Aroclor 1248	ND	1.0								
Aroclor 1254	ND	1.0								
Aroclor 1260	ND	1.0								
Surr: Decachlorobiphenyl	1.6		2.500		62.8	17.7	151			
Surr: Tetrachloro-m-xylene	1.3		2.500		50.4	20.6	151			

Sample ID	LCS-21192		SampType:	LCS		TestCode:	EPA Method 8082: PCB's				
Client ID:	LCSW		Batch ID:	21192		RunNo:	28758				
Prep Date:	9/9/2015		Analysis Date:	9/11/2015		SeqNo:	873603		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Aroclor 1016	2.2	1.0	5.000	0	44.8	9.01	142				
Aroclor 1260	3.3	1.0	5.000	0	65.3	25.6	164				
Surr: Decachlorobiphenyl	1.4		2.500		58.0	17.7	151				
Surr: Tetrachloro-m-xylene	1.3		2.500		52.0	20.6	151				

Sample ID	LCSD-21192		SampType:	LCSD		TestCode:	EPA Method 8082: PCB's				
Client ID:	LCSS02		Batch ID:	21192		RunNo:	28758				
Prep Date:	9/9/2015		Analysis Date:	9/11/2015		SeqNo:	873604		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Aroclor 1016	2.0	1.0	5.000	0	39.0	9.01	142	13.7	26.9		
Aroclor 1260	3.0	1.0	5.000	0	59.2	25.6	164	9.84	29.1		
Surr: Decachlorobiphenyl	1.3		2.500		53.2	17.7	151	0	0		
Surr: Tetrachloro-m-xylene	1.1		2.500		42.8	20.6	151	0	0		

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R28705			RunNo: 28705					
Prep Date:		Analysis Date: 9/8/2015			SeqNo: 870016		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	24	1.0	20.00	0	120	70	130			
Toluene	23	1.0	20.00	0	115	70	130			
Chlorobenzene	22	1.0	20.00	0	109	70	130			
1,1-Dichloroethene	26	1.0	20.00	0	129	70	130			
Trichloroethene (TCE)	22	1.0	20.00	0	110	70	130			
Surr: 1,2-Dichloroethane-d4	9.3		10.00		92.8	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		95.1	70	130			
Surr: Dibromofluoromethane	9.7		10.00		97.4	70	130			
Surr: Toluene-d8	9.2		10.00		92.1	70	130			

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R28705			RunNo: 28705					
Prep Date:		Analysis Date: 9/8/2015			SeqNo: 870017		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID rb		SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID: PBW		Batch ID: R28705			RunNo: 28705					
Prep Date:		Analysis Date: 9/8/2015			SeqNo: 870017		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R28705	RunNo:	28705					
Prep Date:		Analysis Date:	9/8/2015	SeqNo:	870017	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.0	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		95.8	70	130			
Surr: Dibromofluoromethane	9.4		10.00		93.7	70	130			
Surr: Toluene-d8	9.5		10.00		94.9	70	130			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-21193		SampType:	MBLK		TestCode:	EPA Method 8310: PAHs				
Client ID:	PBW		Batch ID:	21193		RunNo:	28760				
Prep Date:	9/9/2015		Analysis Date:	9/11/2015		SeqNo:	872124		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	7.7		20.00		38.7	37.2	136				

Sample ID	LCS-21193		SampType: LCS		TestCode: EPA Method 8310: PAHs					
Client ID:	LCSW		Batch ID: 21193		RunNo: 28760					
Prep Date:	9/9/2015		Analysis Date: 9/11/2015		SeqNo: 872224		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	60	2.0	80.00	0	74.8	57.8	83.9			
1-Methylnaphthalene	60	2.0	80.20	0	75.2	43.5	88.5			
2-Methylnaphthalene	60	2.0	80.00	0	74.6	34.2	94.5			
Benzo(a)pyrene	0.38	0.070	0.5020	0	75.7	56.3	98.6			
Surr: Benzo(e)pyrene	9.9		20.00		49.3	37.2	136			

Sample ID	LCSD-21193		SampType: LCSD		TestCode: EPA Method 8310: PAHs					
Client ID:	LCSS02		Batch ID: 21193		RunNo: 28760					
Prep Date:	9/9/2015		Analysis Date: 9/11/2015		SeqNo: 872225		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	59	2.0	80.00	0	73.6	57.8	83.9	1.55	20	
1-Methylnaphthalene	59	2.0	80.20	0	73.8	43.5	88.5	1.94	20	
2-Methylnaphthalene	58	2.0	80.00	0	72.8	34.2	94.5	2.46	20	
Benzo(a)pyrene	0.37	0.070	0.5020	0	73.7	56.3	98.6	2.67	20	
Surr: Benzo(e)pyrene	9.3		20.00		46.4	37.2	136	0		

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-21585	SampType:	MBLK	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	PBW	Batch ID:	21585	RunNo:	29183					
Prep Date:	9/30/2015	Analysis Date:	9/30/2015	SeqNo:	886370	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-21585	SampType:	LCS	TestCode:	Total Phenolics by SW-846 9067					
Client ID:	LCSW	Batch ID:	21585	RunNo:	29183					
Prep Date:	9/30/2015	Analysis Date:	9/30/2015	SeqNo:	886371	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics, Total Recoverable	17	2.5	20.00	0	83.6	64.4	135			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-R29271		SampType:	MBLK		TestCode:	EPA 335.4: Total Cyanide Subbed				
Client ID:	PBW		Batch ID:	R29271		RunNo:	29271				
Prep Date:			Analysis Date:	9/11/2015		SeqNo:	889329	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	ND	0.0100									

Sample ID	LCS-R29271			SampType:	LCS		TestCode:	EPA 335.4: Total Cyanide Subbed			
Client ID:	LCSW			Batch ID:	R29271		RunNo:	29271			
Prep Date:				Analysis Date:	9/11/2015		SeqNo:	889330	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide	0.462		0.5000	0	92.4	90	110				

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-R29271		SampType: MBLK		TestCode: EPA 903.1: Ra 226 and EPA 904.0: Ra 228-Subbed					
Client ID:	PBW		Batch ID: R29271		RunNo: 29271					
Prep Date:			Analysis Date: 9/28/2015		SeqNo: 889332		Units: pCi/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Radium-226	0.461	0.612								
Radium-226 ±	0.431	0.612								
Radium-228	0.202	0.549								
Radium-228 ±	0.259	0.549								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

Client: Navajo Refining Company

Project: Monthly R.O. Reject

Sample ID	MB-21204		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	21204		RunNo:	28757				
Prep Date:	9/9/2015		Analysis Date:	9/10/2015		SeqNo:	871932		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-21204		SampType:	LCS		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	LCSW		Batch ID:	21204		RunNo:	28757				
Prep Date:	9/9/2015		Analysis Date:	9/10/2015		SeqNo:	871933		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.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

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

Sample Log-In Check List

Client Name: NAVAJO REFINING CO

Work Order Number: 1509219

RcptNo: 1

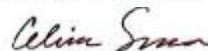
Received by/date: LM 09/04/15

Logged By: Celina Sessa 9/4/2015 10:20:00 AM

Completed By: Celina Sessa 9/4/2015 1:36:01 PM

Reviewed By:  09/04/15





Chain of Custody

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

Log In

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

of preserved bottles checked for pH: 06/12
(<2 or >12 unless noted)
Adjusted? NO
Checked by: mg

Special Handling (if applicable)

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

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

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.3	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 R.O. Reject

Project #: P.O. # 167796

Project Manager:

Robert Combs

Sampler: Elizabeth Salsberry

On Ice: X Yes ☐ No

Sample Temperature: 3.3

Sample Request ID

Container Type and #

Preservative Type

HEAL No.

1509219

-001

1-unpres H2SO4

2 - 500ml P

3-40ml VOA HCL

1-500ml P HNO3

1-125ml P HNO3

1-500ml P NaOH

2- 1L P HNO3

3-40ml VOA Na2S2O3

2 - 1L Glass unpres

1 - 1L Glass unpres

3-40ml VOA HCL

1-250ml Glass unpres

1 - 1L Glass H2SO4

2-40ml VOA HCL

Received by: *Elizabeth Salsberry*

Received by: *Elizabeth Salsberry*

Date: 9/3/15

Date: 10/30

Time: 9:10

Time: 10:30

Relinquished by: *Elizabeth Salsberry*

Relinquished by: *Elizabeth Salsberry*

Time: 9:10

Time: 10:30

Relinquished by: *Elizabeth Salsberry*

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Time: 9:10

Time: 10:30



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

Monthly RO Reject Sample Details Attachment



Project Name	Biannual RO Reject
Samplers Name	Elizabeth Salisbury
Samplers Affiliation	Navajo Refining Co. LLC
Start Date and Time	9/3/2015 @ 9:06
End Date and Time	8/3/2015 @ 9:20

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

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

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

Container	Size	Material	# of Containers	Neat (None)	Preservatives						Analysis and/or Method Requested
					HCL	HNO3	H2SO4	NaOH	Na2S2O3	NaHSO4	
1	500ml	Plastic	2	X			X				pH, Cl, F, SO4, 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		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):	9/3/2015 Tmp. 78.6 °F, Humidity 44%, Wind Dir. North, Wind Speed 8.1 mph, Conditions Clear
Date and Time:	

Field Temp. 25.5°C	Field pH 7.72
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Storage Method	
Ice	<input checked="" type="checkbox"/>
Refrigerated	<input type="checkbox"/>
Other	<input type="checkbox"/>

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



November 13, 2015

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

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

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

Dear Sirs:

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

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

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

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

Daily RO Reject Fluid Discharge Flow Measurements

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

Stipulated Penalties

In accordance with Exhibit A, Paragraph 1 of the Order, Navajo submitted the GW-028 discharge permit modification request on May 22, 2015, prior to 30 days from April 27, 2015, the date of the Order. Therefore, for the entire October 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 October 1 through October 31.
- \$500 per day for each daily RO reject fluid discharge volume that exceeds 15,000 barrels from October 1 through October 31.

Navajo has calculated a penalty of \$2,800 for October 2015. The daily discharge volume exceeded the 10,000 barrels/day (bbl/day) limit, but was under 15,000 barrels total, on 28 days in October. 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 October 7, 2015. The analytical lab report for these samples is provided in Attachment 3.

Updates Regarding Treatment and Disposal of RO Reject Fluid

As described in the Order, Navajo is working to enhance its water management system and reduce the total volume of RO reject fluid that is discharged pursuant to its groundwater discharge permit. Navajo is currently preparing a permit modification request to Discharge Permit GW-028 for 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 of RO reject fluid.

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

Sincerely,



Scott M. Denton
Environmental Manager

Enclosures:

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

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

Attachment 1
Daily Discharge Flow Rates

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

	Permanent RO Units				Temporary Unit		Daily Discharge Volume
	Metered Data		Combined RO Reject Discharge (Calculated)		Total RO Reject Discharge (Calculated from Log Data)		
	GPM	GPM	GPM	BBL/DAY	GPM	BBL/DAY	BBL
	SOUTH	NORTH					
10/1/2015	125	102	227	7,783	75	2570	10,353
10/2/2015	114	103	217	7,440	118	4060	11,500
10/3/2015	112	59	171	5,863	89	3041	8,904
10/4/2015	146	136	282	9,669	67	2287	11,956
10/5/2015	151	136	287	9,840	0	0	9,840
10/6/2015	154	126	280	9,600	72	2484	12,084
10/7/2015	157	121	278	9,531	46	1589	11,120
10/8/2015	158	131	289	9,909	0	7	9,916
10/9/2015	159	133	292	10,011	8	290	10,301
10/10/2015	155	128	283	9,703	10	353	10,056
10/11/2015	149	122	271	9,291	21	722	10,013
10/12/2015	153	114	267	9,154	55	1881	11,035
10/13/2015	154	125	279	9,566	53	1800	11,366
10/14/2015	153	108	261	8,949	53	1810	10,759
10/15/2015	159	128	287	9,840	57	1971	11,811
10/16/2015	162	136	298	10,217	58	1989	12,206
10/17/2015	153	124	277	9,497	56	1930	11,427
10/18/2015	158	128	286	9,806	48	1646	11,452
10/19/2015	157	122	279	9,566	60	2064	11,630
10/20/2015	158	124	282	9,669	61	2081	11,750
10/21/2015	156	123	279	9,566	63	2149	11,715
10/22/2015	155	115	270	9,257	56	1919	11,176
10/23/2015	156	117	273	9,360	57	1951	11,311
10/24/2015	155	117	272	9,326	58	2004	11,330
10/25/2015	156	122	278	9,531	60	2045	11,576
10/26/2015	160	127	287	9,840	61	2081	11,921
10/27/2015	158	138	296	10,149	62	2111	12,260
10/28/2015	160	126	286	9,806	48	1646	11,452
10/29/2015	141	148	289	9,909	49	1680	11,589
10/30/2015	147	146	293	10,046	51	1745	11,791
10/31/2015	148	141	289	9,909	51	1759	11,668

Attachment 2
Stipulated Penalty Calculation

Calculation of Stipulated Penalties - November 2015

Order Section III., Paragraph Number	Penalty	Payment per day	No. of Days (per violation)	Amount
2.b.i	Exceedance of the 10,000 barrel per day RO reject fluid discharge volume limit specified in Discharge Permit GW-028:	--	--	--
2.b.i.1	- Prior to Navajo submitting a discharge permit modification application	\$1,000		\$0
2.b.i.2	- If the daily volume is between 10,000 and 15,000 barrels after Navajo submits discharge permit modification application	\$100	28	\$2,800
2.b.i.2	- If the daily volume exceeds 15,000 barrels after Navajo submits discharge permit modification application	\$500		\$0
2.b.ii	Failure to conduct sampling as required in Exhibit A of Order	\$2,000		\$0
2.b.iii	Failure to timely submit any report or notifications as required in Exhibit A of Order	\$1,000		\$0
2.b.iv	Failure to record the daily discharge flow from the permanent and the temporary RO units	\$1,000		\$0
Total Amount:				\$2,800

Attachment 3
Analytical Lab Report



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

November 02, 2015

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

RE: Monthly RO Reject

OrderNo.: 1510410

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 10/8/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510410

Date Reported: 11/2/2015

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly RO Reject

Collection Date: 10/7/2015 9:35:00 AM

Lab ID: 1510410-001

Matrix: AQUEOUS

Received Date: 10/8/2015 9:07:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	ND	0.0050		mg/L	5	10/20/2015 6:34:09 PM	B29683
Lead	ND	0.00050		mg/L	1	10/20/2015 3:59:03 PM	B29683
Selenium	0.0066	0.0010		mg/L	1	10/20/2015 3:59:03 PM	B29683
Uranium	0.0050	0.00050		mg/L	1	10/20/2015 3:59:03 PM	B29683
EPA 903.1: RA 226 AND EPA 904.0: RA 228-SUBBED							Analyst: SUB
Radium-226	0.991	0.658		pCi/L	1	10/21/2015	R29838
Radium-226 ±	0.6	0.658		pCi/L	1	10/21/2015	R29838
Radium-228	0.579	0.666		pCi/L	1	10/21/2015	R29838
Radium-228 ±	0.357	0.666		pCi/L	1	10/21/2015	R29838
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	3.3	2.0		mg/L	20	10/8/2015 9:28:28 PM	R29414
Chloride	270	10		mg/L	20	10/8/2015 9:28:28 PM	R29414
Sulfate	1600	25		mg/L	50	10/20/2015 1:03:49 AM	R29666
Nitrate+Nitrite as N	1.4	1.0		mg/L	5	10/20/2015 1:28:39 AM	R29666
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3290	20.0	*	mg/L	1	10/12/2015 3:12:00 PM	21779
EPA 335.4: TOTAL CYANIDE SUBBED							Analyst: SUB
Cyanide	ND	0.0100		mg/L	1	10/20/2015	R29838
SM4500-H+B: PH							Analyst: MRA
pH	7.79	1.68	H	pH units	1	10/9/2015 2:16:27 PM	R29457
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Aluminum	ND	0.020		mg/L	1	10/15/2015 5:30:04 PM	C29574
Barium	0.054	0.0020		mg/L	1	10/13/2015 9:14:53 PM	B29512
Boron	0.10	0.040		mg/L	1	10/13/2015 9:14:53 PM	B29512
Cadmium	ND	0.0020		mg/L	1	10/13/2015 9:14:53 PM	B29512
Chromium	ND	0.0060		mg/L	1	10/13/2015 9:14:53 PM	B29512
Cobalt	ND	0.0060		mg/L	1	10/13/2015 9:14:53 PM	B29512
Copper	ND	0.0060		mg/L	1	10/13/2015 9:14:53 PM	B29512
Iron	ND	0.020		mg/L	1	10/14/2015 8:21:34 PM	C29542
Manganese	ND	0.0020		mg/L	1	10/13/2015 9:14:53 PM	B29512
Molybdenum	ND	0.0080		mg/L	1	10/13/2015 9:14:53 PM	B29512
Nickel	ND	0.010		mg/L	1	10/13/2015 9:14:53 PM	B29512
Silver	ND	0.0050		mg/L	1	10/13/2015 9:14:53 PM	B29512
Zinc	0.020	0.010		mg/L	1	10/30/2015 2:13:20 PM	A29914
EPA METHOD 245.1: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	10/15/2015 12:43:15 PM	21848

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510410

Date Reported: 11/2/2015

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly RO Reject

Collection Date: 10/7/2015 9:35:00 AM

Lab ID: 1510410-001

Matrix: AQUEOUS

Received Date: 10/8/2015 9:07:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	10/15/2015 3:18:03 PM	21803
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	1.0		µg/L	1	10/15/2015 1:42:00 AM	21811
Aroclor 1221	ND	1.0		µg/L	1	10/15/2015 1:42:00 AM	21811
Aroclor 1232	ND	1.0		µg/L	1	10/15/2015 1:42:00 AM	21811
Aroclor 1242	ND	1.0		µg/L	1	10/15/2015 1:42:00 AM	21811
Aroclor 1248	ND	1.0		µg/L	1	10/15/2015 1:42:00 AM	21811
Aroclor 1254	ND	1.0		µg/L	1	10/15/2015 1:42:00 AM	21811
Aroclor 1260	ND	1.0		µg/L	1	10/15/2015 1:42:00 AM	21811
Surr: Decachlorobiphenyl	78.0	17.7-151		%REC	1	10/15/2015 1:42:00 AM	21811
Surr: Tetrachloro-m-xylene	74.4	20.6-151		%REC	1	10/15/2015 1:42:00 AM	21811
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/12/2015 4:51:13 PM	21793
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	10/12/2015 4:51:13 PM	21793
Surr: DNOP	127	72-136		%REC	1	10/12/2015 4:51:13 PM	21793
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/9/2015 3:46:02 PM	R29422
Surr: BFB	89.3	57.8-137		%REC	1	10/9/2015 3:46:02 PM	R29422
EPA METHOD 8310: PAHS							Analyst: SCC
Naphthalene	ND	2.0		µg/L	1	10/14/2015 4:04:15 PM	21812
1-Methylnaphthalene	ND	2.0		µg/L	1	10/14/2015 4:04:15 PM	21812
2-Methylnaphthalene	ND	2.0		µg/L	1	10/14/2015 4:04:15 PM	21812
Benzo(a)pyrene	ND	0.070		µg/L	1	10/14/2015 4:04:15 PM	21812
Surr: Benzo(e)pyrene	88.6	37.2-136		%REC	1	10/14/2015 4:04:15 PM	21812
EPA METHOD 8260B: VOLATILES							Analyst: AG
Benzene	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
Toluene	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
Ethylbenzene	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
Carbon Tetrachloride	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
Chloroform	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
1,1-Dichloroethane	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
1,1-Dichloroethene	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
Methylene Chloride	ND	3.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510410

Date Reported: 11/2/2015

CLIENT: Navajo Refining Company

Client Sample ID: R.O. Reject

Project: Monthly RO Reject

Collection Date: 10/7/2015 9:35:00 AM

Lab ID: 1510410-001

Matrix: AQUEOUS

Received Date: 10/8/2015 9:07:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: AG	
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
Vinyl chloride	ND	1.0		µg/L	1	10/8/2015 6:03:57 PM	R29397
Xylenes, Total	ND	1.5		µg/L	1	10/8/2015 6:03:57 PM	R29397
Surr: 1,2-Dichloroethane-d4	88.5	70-130		%REC	1	10/8/2015 6:03:57 PM	R29397
Surr: 4-Bromofluorobenzene	106	70-130		%REC	1	10/8/2015 6:03:57 PM	R29397
Surr: Dibromofluoromethane	96.9	70-130		%REC	1	10/8/2015 6:03:57 PM	R29397
Surr: Toluene-d8	103	70-130		%REC	1	10/8/2015 6:03:57 PM	R29397
TOTAL PHENOLICS BY SW-846 9067						Analyst: SCC	
Phenolics, Total Recoverable	ND	2.5		µg/L	1	10/20/2015	21920

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510410

Date Reported: 11/2/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly RO Reject

Collection Date:

Lab ID: 1510410-002

Matrix: TRIP BLANK

Received Date: 10/8/2015 9:07:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB							Analyst: JME
1,2-Dibromoethane	ND	0.010		µg/L	1	10/15/2015 3:32:00 PM	21803
EPA METHOD 8260B: VOLATILES							Analyst: AG
Benzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Toluene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Ethylbenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Naphthalene	ND	2.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1-Methylnaphthalene	ND	4.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
2-Methylnaphthalene	ND	4.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Acetone	ND	10		µg/L	1	10/8/2015 6:32:41 PM	R29397
Bromobenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Bromodichloromethane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Bromoform	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Bromomethane	ND	3.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
2-Butanone	ND	10		µg/L	1	10/8/2015 6:32:41 PM	R29397
Carbon disulfide	ND	10		µg/L	1	10/8/2015 6:32:41 PM	R29397
Carbon Tetrachloride	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Chlorobenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Chloroethane	ND	2.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Chloroform	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Chloromethane	ND	3.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
2-Chlorotoluene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
4-Chlorotoluene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
cis-1,2-DCE	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Dibromochloromethane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Dibromomethane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,1-Dichloroethane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,1-Dichloroethene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,2-Dichloropropane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510410

Date Reported: 11/2/2015

CLIENT: Navajo Refining Company

Client Sample ID: Trip Blank

Project: Monthly RO Reject

Collection Date:

Lab ID: 1510410-002

Matrix: TRIP BLANK

Received Date: 10/8/2015 9:07:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: AG
1,3-Dichloropropane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
2,2-Dichloropropane	ND	2.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,1-Dichloropropene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Hexachlorobutadiene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
2-Hexanone	ND	10		µg/L	1	10/8/2015 6:32:41 PM	R29397
Isopropylbenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
4-Isopropyltoluene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
4-Methyl-2-pentanone	ND	10		µg/L	1	10/8/2015 6:32:41 PM	R29397
Methylene Chloride	ND	3.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
n-Butylbenzene	ND	3.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
n-Propylbenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
sec-Butylbenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Styrene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
tert-Butylbenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
trans-1,2-DCE	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Trichlorofluoromethane	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Vinyl chloride	ND	1.0		µg/L	1	10/8/2015 6:32:41 PM	R29397
Xylenes, Total	ND	1.5		µg/L	1	10/8/2015 6:32:41 PM	R29397
Surr: 1,2-Dichloroethane-d4	93.5	70-130		%REC	1	10/8/2015 6:32:41 PM	R29397
Surr: 4-Bromofluorobenzene	105	70-130		%REC	1	10/8/2015 6:32:41 PM	R29397
Surr: Dibromofluoromethane	96.7	70-130		%REC	1	10/8/2015 6:32:41 PM	R29397
Surr: Toluene-d8	102	70-130		%REC	1	10/8/2015 6:32:41 PM	R29397

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	PBW		Batch ID:	B29512		RunNo:	29512			
Prep Date:			Analysis Date:	10/13/2015		SeqNo:	897649		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Silver	ND	0.0050								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	LCSW		Batch ID:	B29512		RunNo:	29512			
Prep Date:			Analysis Date:	10/13/2015		SeqNo:	897650		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	103	85	115			
Boron	0.51	0.040	0.5000	0	103	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.7	85	115			
Chromium	0.51	0.0060	0.5000	0	101	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.3	85	115			
Copper	0.48	0.0060	0.5000	0	95.9	85	115			
Manganese	0.47	0.0020	0.5000	0	94.9	85	115			
Molybdenum	0.51	0.0080	0.5000	0	102	85	115			
Nickel	0.48	0.010	0.5000	0	95.9	85	115			
Silver	0.10	0.0050	0.1000	0	103	85	115			

Sample ID	LLLCS		SampType:	LCSLL		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	BatchQC		Batch ID:	B29512		RunNo:	29512			
Prep Date:			Analysis Date:	10/13/2015		SeqNo:	897651		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020	0.002000	0	91.0	50	150			
Boron	ND	0.040	0.04000	0	98.5	50	150			
Cadmium	0.0026	0.0020	0.002000	0	128	50	150			
Chromium	0.0077	0.0060	0.006000	0	128	50	150			
Cobalt	0.0061	0.0060	0.006000	0	102	50	150			
Copper	0.0087	0.0060	0.006000	0	144	50	150			
Manganese	0.0023	0.0020	0.002000	0	116	50	150			
Molybdenum	0.014	0.0080	0.008000	0	178	50	150			S

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LLLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	B29512	RunNo:	29512					
Prep Date:		Analysis Date:	10/13/2015	SeqNo:	897651	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	ND	0.010	0.005000	0	100	50	150			
Silver	ND	0.0050	0.005000	0	87.6	50	150			

Sample ID	MB-C	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	C29542	RunNo:	29542					
Prep Date:		Analysis Date:	10/14/2015	SeqNo:	898765	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020								

Sample ID	LCS-C	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	C29542	RunNo:	29542					
Prep Date:		Analysis Date:	10/14/2015	SeqNo:	898766	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.49	0.020	0.5000	0	98.8	85	115			

Sample ID	LLLCS-C	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	C29542	RunNo:	29542					
Prep Date:		Analysis Date:	10/14/2015	SeqNo:	898767	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020	0.02000	0	97.4	50	150			

Sample ID	MB-C	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	C29574	RunNo:	29574					
Prep Date:		Analysis Date:	10/15/2015	SeqNo:	900085	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								

Sample ID	LCS-C	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	C29574	RunNo:	29574					
Prep Date:		Analysis Date:	10/15/2015	SeqNo:	900086	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.51	0.020	0.5000	0	103	85	115			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LLLCS-C	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	C29574	RunNo:	29574					
Prep Date:		Analysis Date:	10/15/2015	SeqNo:	900087	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	102	50	150			

Sample ID	MB-A	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	A29914	RunNo:	29914					
Prep Date:		Analysis Date:	10/30/2015	SeqNo:	911188	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	ND	0.010								

Sample ID	LCS-A	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	A29914	RunNo:	29914					
Prep Date:		Analysis Date:	10/30/2015	SeqNo:	911189	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.49	0.010	0.5000	0	98.0	85	115			

Sample ID	LLLCS-A	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	A29914	RunNo:	29914					
Prep Date:		Analysis Date:	10/30/2015	SeqNo:	911190	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	ND	0.010	0.005000	0	70.2	50	150			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: B29683		RunNo: 29683					
Prep Date:			Analysis Date: 10/20/2015		SeqNo: 903929		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.024	0.0010	0.02500	0	95.2	85	115			
Lead	0.012	0.00050	0.01250	0	98.6	85	115			
Selenium	0.023	0.0010	0.02500	0	90.5	85	115			
Uranium	0.012	0.00050	0.01250	0	96.7	85	115			

Sample ID	LLCS		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: B29683		RunNo: 29683					
Prep Date:			Analysis Date: 10/20/2015		SeqNo: 903932		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	96.3	50	150			
Lead	0.00051	0.00050	0.0005000	0	102	50	150			
Selenium	ND	0.0010	0.001000	0	88.7	50	150			
Uranium	ND	0.00050	0.0005000	0	99.8	50	150			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: B29683			RunNo: 29683					
Prep Date:		Analysis Date: 10/20/2015			SeqNo: 903934		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-21848	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	21848	RunNo:	29565					
Prep Date:	10/14/2015	Analysis Date:	10/15/2015	SeqNo:	899831	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-21848	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	21848	RunNo:	29565					
Prep Date:	10/14/2015	Analysis Date:	10/15/2015	SeqNo:	899832	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	104	80	120			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R29414	RunNo:	29414					
Prep Date:		Analysis Date:	10/8/2015	SeqNo:	894692	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								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R29414	RunNo:	29414					
Prep Date:		Analysis Date:	10/8/2015	SeqNo:	894693	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.53	0.10	0.5000	0	106	90	110			
Chloride	4.8	0.50	5.000	0	96.4	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R29666	RunNo:	29666					
Prep Date:		Analysis Date:	10/19/2015	SeqNo:	903381	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	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:	R29666	RunNo:	29666					
Prep Date:		Analysis Date:	10/19/2015	SeqNo:	903382	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.9	0.50	10.00	0	99.1	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	100	90	110			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-21803	SampType:	MBLK	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	PBW	Batch ID:	21803	RunNo:	29577					
Prep Date:	10/12/2015	Analysis Date:	10/15/2015	SeqNo:	900397	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-21803	SampType:	LCS	TestCode:	EPA Method 8011/504.1: EDB					
Client ID:	LCSW	Batch ID:	21803	RunNo:	29577					
Prep Date:	10/12/2015	Analysis Date:	10/15/2015	SeqNo:	900399	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	112	70	130			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-21793	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range					
Client ID:	PBW	Batch ID:	21793	RunNo:	29489					
Prep Date:	10/12/2015	Analysis Date:	10/12/2015	SeqNo:	896837	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	1.3		1.000		128	72	136			

Sample ID	LCS-21793	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW	Batch ID:	21793	RunNo:	29489					
Prep Date:	10/12/2015	Analysis Date:	10/12/2015	SeqNo:	896840	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	107	52.4	154			
Surr: DNOP	0.55		0.5000		110	72	136			

Sample ID	1510410-001BMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range					
Client ID:	R.O. Reject	Batch ID:	21793	RunNo:	29489					
Prep Date:	10/12/2015	Analysis Date:	10/12/2015	SeqNo:	896858	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	5.5	1.0	5.000	0	109	41.3	177			
Surr: DNOP	0.57		0.5000		113	72	136			

Sample ID	1510410-001BMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range					
Client ID:	R.O. Reject	Batch ID:	21793	RunNo:	29489					
Prep Date:	10/12/2015	Analysis Date:	10/12/2015	SeqNo:	896861	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	5.7	1.0	5.000	0	114	-94.6	317	4.71	22.1	
Surr: DNOP	0.59		0.5000		117	72	136	0	0	

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R29422	RunNo:	29422					
Prep Date:		Analysis Date:	10/9/2015	SeqNo:	895544	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.1	57.8	137			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R29422	RunNo:	29422					
Prep Date:		Analysis Date:	10/9/2015	SeqNo:	895545	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.47	0.050	0.5000	0	93.6	80	120			
Surr: BFB	19		20.00		93.0	57.8	137			

Sample ID	1510410-001AMS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	R.O. Reject	Batch ID:	R29422	RunNo:	29422					
Prep Date:		Analysis Date:	10/9/2015	SeqNo:	895547	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.2	70	130			
Surr: BFB	19		20.00		95.6	57.8	137			

Sample ID	1510410-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	R.O. Reject	Batch ID:	R29422	RunNo:	29422					
Prep Date:		Analysis Date:	10/9/2015	SeqNo:	895548	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.6	70	130	0.433	20	
Surr: BFB	19		20.00		96.6	57.8	137	0	0	

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	MB-21811		SampType: MBLK		TestCode: EPA Method 8082: PCB's					
Client ID:	PBW		Batch ID: 21811		RunNo: 29529					
Prep Date:	10/13/2015		Analysis Date: 10/14/2015		SeqNo: 899307		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	2.1		2.500		85.2	17.7	151			
Surr: Tetrachloro-m-xylene	2.1		2.500		82.8	20.6	151			

Sample ID	LCS-21811			SampType:	LCS		TestCode:	EPA Method 8082: PCB's			
Client ID:	LCSW			Batch ID:	21811		RunNo:	29529			
Prep Date:	10/13/2015			Analysis Date:	10/14/2015		SeqNo:	899308		Units:	µg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Aroclor 1016	2.9	1.0	5.000	0	58.9	9.01	142				
Aroclor 1260	4.2	1.0	5.000	0	83.5	25.6	164				
Surr: Decachlorobiphenyl	1.8		2.500		74.0	17.7	151				
Surr: Tetrachloro-m-xylene	1.8		2.500		74.0	20.6	151				

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510410

02-Nov-15

Client: Navajo Refining Company

Project: Monthly RO Reject

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R29397			RunNo: 29397					
Prep Date:		Analysis Date: 10/8/2015			SeqNo: 894163		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	113	70	130			
Toluene	21	1.0	20.00	0	106	70	130			
Chlorobenzene	21	1.0	20.00	0	103	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	113	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.1	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R29397			RunNo: 29397					
Prep Date:		Analysis Date: 10/8/2015			SeqNo: 894164		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

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H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
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B Analyte detected in the associated Method Blank
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J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit