

GW – 028

**Annual DP
Report
(Part 10 of 16)**

2015

Sample Log-In Check List

Client Name: NAVAJO REFINING CO

Work Order Number: 1509214

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 12:54:16 PM

Reviewed By:  6/9/64/15

Alice Emerson

Celine Enner

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 <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 6. Sample(s) in proper container(s)? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 7. Sufficient sample volume for indicated test(s)? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 8. Are samples (except VOA and ONG) properly preserved? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 9. Was preservative added to bottles? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | NA <input type="checkbox"/> |
| 10. VOA vials have zero headspace? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | No VOA Vials <input type="checkbox"/> |
| 11. Were any sample containers received broken? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | |
| 12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 13. Are matrices correctly identified on Chain of Custody? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 14. Is it clear what analyses were requested? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 15. Were all holding times able to be met? (If no, notify customer for authorization.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
- # of preserved bottles checked for pH: 162

Adjusted? 162

Checked by: _____

of preserved bottles checked for pH: 6, 1
(~~2~~) or ~~(12)~~ (unless noted)

Adjusted? ☒ Yes ☐ No

Checked by: *me*



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"/> |
| Parts / Sample Intervals One | |

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

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

| Container | Size | Material | # of Containers | Preservatives | | | | | | | Analysis and/or Method Requested |
|-----------|-------|----------|-----------------|---------------|-----|------|-------|------|---------|--------|----------------------------------|
| | | | | Neat (None) | HCL | HNO3 | H2SO4 | 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 | | | 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 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.

| | | |
|--------------------|---|---|
| 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 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 |

Refer to the QC Summary report and 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: 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 |

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

| | | |
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| | H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| | ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| | 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 |

Refer to the QC Summary report and 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#: 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 | | | |

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|------------|---------|--------|--------------------------|-------------|--|----------|-------------|------|----------|------|
| 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 | | | |

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|------------|--------|--------------------------|-----------|-------------|--|----------|-------------|------|----------|------|
| 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 | | | |

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|------------|---------|--------|--------------------------|-------------|--|----------|-------------|------|----------|------|
| 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 | | | |

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|------------|--------|--------------------------|-----------|-------------|--|----------|-------------|------|----------|------|
| 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

| | | | | | | | | | | |
|------------|--------|----------------|-----------|-------------|--------------------------|----------|-----------|------|----------|------|
| 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

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:

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D Sample Diluted Due to Matrix
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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
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QC SUMMARY REPORT

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WO#: 1509219

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| | | | | | | | | | | |
|--------------------------------|----------|-----|-------------------------|-------------|--|----------|-------------|------|----------|------|
| 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:

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

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J Analyte detected below quantitation limits
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QC SUMMARY REPORT

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WO#: 1509219

06-Oct-15

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| | | | | | | | | | | |
|-------------------------------|--------|----------------|-----------|-------------|----------------------------------|----------|-----------|------|----------|------|
| 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:

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D Sample Diluted Due to Matrix
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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

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| | | | | | | | | | | |
|----------------------------|----------|-----|--------------------------|-------------|----------------------------------|----------|-------------|------|----------|------|
| 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 | | |

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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 | | | | | | | | |

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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 | | | | | | | | |

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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 | | | |

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| | | | | | | | | | | | |
|----------------------|----------|-------|----------------|-------------|------|-----------|-----------------------|------|-------------|------|--|
| 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:

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509219

06-Oct-15

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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

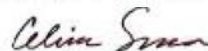
Received by/date: LM 09/04/15

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



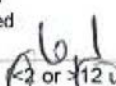



Chain of Custody

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: 
<2 or >12 unless noted)
Adjusted? NO
Checked by: 

Special Handling (if applicable)

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

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

| Cooler No | Temp $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1 | 3.3 | Good | Yes | | | |



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

Monthly RO Reject Sample Details Attachment



| | |
|----------------------|-------------------------|
| Project Name | 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 Method Requested pH, Cl, F, SO4, NO2/NO3, TDS |
|-----------|-------|----------|-----------------|-------------|---------------|------|-------|------|---------|--------|---|
| | | | | | HCL | HNO3 | H2SO4 | NaOH | Na2S2O3 | NaHSO4 | |
| 1 | 500ml | Plastic | 2 | X | | | X | | | | 8015 GRO |
| 2 | 40ml | VOA | 3 | | X | | | | | | 6020 total metals, 7470 Hg |
| 3 | 500ml | Plastic | 1 | | | X | | | | | 6020 Dissolved Metals |
| 4 | 125ml | Plastic | 1 | | | X | | X | | | Cyanide |
| 5 | 500ml | Plastic | 2 | | | X | | | | | Radium 226/228 |
| 6 | 1L | Plastic | 3 | | | | | | | | 8260 see attached list |
| 7 | 40ml | VOA | 2 | | X | | | | | | 8270 see attached list |
| 8 | 1L | Glass | 1 | X | | | | | | | 8082 PCBs |
| 9 | 1L | Glass | 2 | X | | | | | | | 8015 DRO |
| 10 | 40ml | VOA | 2 | X | | | | | | | Radium 226/228 |
| 11 | 40ml | VOA | 2 | | X | | | | | | |

| | |
|--|--|
| 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 |
|--------------------|---------------|

| | |
|----------------|-------------------------------------|
| 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:

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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:

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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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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