GW - 028

Annual DP Report (Part 2 of 16)

2015

Date Reported: 6/16/2015

Hall Environmental Analysis Laboratory, Inc.

Matrix: AQUEOUS

CLIENT: Navajo Refining Company

Project: Quarterly WDW-1, 2, &3 Inj Well

Lab ID: 1505504-001

Client Sample ID: WDW-1,2,&3 Effluent

Collection Date: 5/11/2015 8:20:00 AM

Received Date: 5/12/2015 8:56:00 AM

| Analyses | Result | MDL | RL | Qual | Units | DF | Date Analyzed | Batch ID |
|-------------------------------|--------|-------|--------|------|----------|----|----------------------|----------|
| EPA 8270C: SEMIVOLATILES/MOD | | | | | | | Analyst: SUB | |
| Di-n-butyl phthalate | ND | 10 | 10 | | μg/L | 1 | 5/21/2015 | R26752 |
| Di-n-octyl phthalate | ND | 10 | 10 | | μg/L | 1 | 5/21/2015 | R26752 |
| Fluoranthene | ND | 10 | 10 | | μg/L | 1 | 5/21/2015 | R26752 |
| Fluorene | ND | 10 | 10 | | μg/L | 1 | 5/21/2015 | R26752 |
| Hexachlorobenzene | ND | 1.0 | 1.0 | | µg/L | 1 | 5/21/2015 | R26752 |
| Hexachlorobutadiene | ND | 10 | 10 | | μg/L | 1 | 5/21/2015 | R26752 |
| Hexachlorocyclopentadiene | ND | 10 | 10 | | μg/L | 1 | 5/21/2015 | R26752 |
| Hexachloroethane | ND | 10 | 10 | | μg/L | 1 | 5/21/2015 | R26752 |
| Indeno(1,2,3-cd)pyrene | ND | 5.0 | 5.0 | | μg/L | 1 | 5/21/2015 | R26752 |
| Isophorone | ND | 10 | 10 | | µg/L | 1 | 5/21/2015 | R26752 |
| Naphthalene | ND | 10 | 10 | | μg/L | 1 | 5/21/2015 | R26752 |
| Nitrobenzene | ND | 10 | 10 | | µg/L | 1 | 5/21/2015 | R26752 |
| N-Nitrosodi-n-propylamine | ND | 10 | 10 | | μg/L | 1 | 5/21/2015 | R26752 |
| N-Nitrosodiphenylamine | ND | 2.0 | 2.0 | | μg/L | 1 | 5/21/2015 | R26752 |
| Pentachlorophenol | ND | 10 | 10 | | μg/L | 1 | 5/21/2015 | R26752 |
| Phenanthrene | ND | 10 | 10 | | μg/L | 1 | 5/21/2015 | R26752 |
| Phenol | ND | 5.0 | 5.0 | | μg/L | 1 | 5/21/2015 | R26752 |
| Pyrene | ND | 10 | 10 | | µg/L | 1 | 5/21/2015 | R26752 |
| o-Toluidine | ND | 5.0 | 5.0 | | μg/L | 1 | 5/21/2015 | R26752 |
| Pyridine | ND | 5.0 | 5.0 | | μg/L | 1 | 5/21/2015 | R26752 |
| 1,2,4,5-Tetrachlorobenzene | ND | 10 | 10 | | μg/L | 1 | 5/21/2015 | R26752 |
| Surr: 2,4,6-Tribromophenol | 111 | 0 | 10-123 | | %REC | 1 | 5/21/2015 | R26752 |
| Surr: 2-Fluorobiphenyl | 90.0 | 0 | 19-130 | | %REC | 1 | 5/21/2015 | R26752 |
| Surr: 2-Fluorophenol | 74.4 | 0 | 21-120 | | %REC | 1 | 5/21/2015 | R26752 |
| Surr: Nitrobenzene-d5 | 80.4 | 0 | 25-130 | | %REC | 1 | 5/21/2015 | R26752 |
| Surr: Phenol-d5 | 64.0 | 0 | 10-130 | | %REC | 1 | 5/21/2015 | R26752 |
| Surr: Terphenyl-d14 | 74.8 | 0 | 21-141 | | %REC | 1 | 5/21/2015 | R26752 |
| CORROSIVITY | | | | | | | Analyst: SUB | |
| pH | 7.99 | | | | pH Units | 1 | 5/19/2015 | R26752 |
| IGNITABILITY METHOD 1010 | | | | | | | Analyst: SUB | |
| Ignitability | >200 | 0 | 0 | | °F | 1 | 5/22/2015 | R26752 |
| CYANIDE, REACTIVE | | | | | | | Analyst: SUB | |
| Cyanide, Reactive | ND | 1.00 | 1.00 | | mg/L | 1 | 5/22/2015 | R26752 |
| SULFIDE, REACTIVE | | | | | | | Analyst: SUB | |
| Reactive Sulfide | ND | 1.0 | 1.0 | | mg/L | 1 | 5/21/2015 | R26752 |
| SM2510B: SPECIFIC CONDUCTANCE | | | | | | | Analyst: JRR | |
| Conductivity | 6600 | 0.010 | 0.010 | | µmhos/c | 1 | 5/12/2015 4:15:42 PM | R26154 |
| D 6 1 000 | | | | | 10014 | | | |

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

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
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- R RPD outside accepted recovery limits
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- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

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Lab Order 1505504

Date Reported: 6/16/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: WDW-1,2,&3 Effluent

Project: Quarterly WDW-1, 2, &3 Inj Well

Collection Date: 5/11/2015 8:20:00 AM

Lab ID: 1505504-001

Matrix: AQUEOUS

Received Date: 5/12/2015 8:56:00 AM

| Analyses | Result | MDL | RL | Qual | Units | DF | Date Analyzed | Batch ID |
|-----------------------------|-----------|--------|-------|------|----------|----|-----------------------|----------|
| SM4500-H+B: PH | | | | | | | Analyst: JRR | |
| pH | 7.95 | 0.100 | 1.68 | н | pH units | 1 | 5/12/2015 4:15:42 PM | R26154 |
| SM2320B: ALKALINITY | | | | | | | Analyst: JRR | |
| Bicarbonate (As CaCO3) | 313.4 | 0.9399 | 20.00 | | mg/L CaC | 1 | 5/12/2015 4:15:42 PM | R26154 |
| Carbonate (As CaCO3) | ND | 2.000 | 2.000 | | mg/L CaC | 1 | 5/12/2015 4:15:42 PM | R26154 |
| Total Alkalinity (as CaCO3) | 313.4 | 0.9399 | 20.00 | | mg/L CaC | 1 | 5/12/2015 4:15:42 PM | R26154 |
| SPECIFIC GRAVITY | | | | | | | Analyst: JRR | |
| Specific Gravity | 0.9990 | 0 | 0 | | | 1 | 5/18/2015 11:44:00 AM | R26252 |
| SM2540C MOD: TOTAL DISSOLVE | ED SOLIDS | | | | | | Analyst: JML | |
| Total Dissolved Solids | 4260 | 145 | 200 | * | mg/L | 1 | 5/15/2015 5:40:00 PM | 19225 |

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: TRIP BLANK

Project: Quarterly WDW-1, 2, &3 Inj Well

Collection Date:

Lab ID: 1505504-002

Matrix: TRIP BLANK

Received Date: 5/12/2015 8:56:00 AM

| Analyses | Result | MDL | RL | Qual | Units | DF | Date Analyzed | Batch ID |
|--------------------------------|--------|------|------|------|-------|----|---------------|----------|
| EPA METHOD 8260B: VOLATILES | | | | | | | Analyst: SUB | |
| Acetonitrile | ND | 2.5 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Allyl chloride | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Chloroprene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Cyclohexane | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Diethyl ether | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Diisopropyl ether | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Epichlorohydrin | ND | 5.0 | 5.0 | | μg/L | 1 | 5/21/2015 | R26752 |
| Ethyl acetate | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Ethyl methacrylate | ND | 2.5 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Ethyl tert-butyl ether | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Freon-113 | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Isobutanol | ND | 2.5 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Isopropyl acetate | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Methacrylonitrile | ND | 2.5 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Methyl acetate | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Methyl ethyl ketone | ND | 2.5 | 2.5 | | μg/L | 1 | 5/21/2015 | R26752 |
| Methyl isobutyl ketone | ND | 2.5 | 2.5 | | μg/L | 1 | 5/21/2015 | R26752 |
| Methyl methacrylate | ND | 2.5 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Methylcyclohexane | ND | 1.0 | 1.0 | | μg/L | 1 | 5/21/2015 | R26752 |
| n-Amyl acetate | ND | 0.50 | 0.50 | | µg/L | 1 | 5/21/2015 | R26752 |
| n-Hexane | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Nitrobenzene | ND | 5.0 | 5.0 | | µg/L | 1 | 5/21/2015 | R26752 |
| Pentachloroethane | ND | 5.0 | 5.0 | | μg/L | 1 | 5/21/2015 | R26752 |
| p-isopropyltoluene | ND | 0.50 | 0.50 | | µg/L | 1 | 5/21/2015 | R26752 |
| Propionitrile | ND | 2.5 | 0.50 | | µg/L | 1 | 5/21/2015 | R26752 |
| Tetrahydrofuran | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Benzene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Toluene | ND | 0.50 | 0.50 | | µg/L | 1 | 5/21/2015 | R26752 |
| Ethylbenzene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Methyl tert-butyl ether (MTBE) | ND | 10 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 1,2,4-Trimethylbenzene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 1,3,5-Trimethylbenzene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 1,2-Dichloroethane (EDC) | ND | 0.50 | 0.50 | | µg/L | 1 | 5/21/2015 | R26752 |
| 1,2-Dibromoethane (EDB) | ND | 0.50 | 0.50 | | µg/L | 1 | 5/21/2015 | R26752 |
| Naphthalene | ND | 0.50 | 0.50 | | µg/L | 1. | 5/21/2015 | R26752 |
| Acetone | ND | 2.5 | 2.5 | | µg/L | 1 | 5/21/2015 | R26752 |
| Bromobenzene | ND | 0.50 | 0.50 | | µg/L | 1 | 5/21/2015 | R26752 |
| Bromodichloromethane | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Bromoform | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |

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Date Reported: 6/16/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: TRIP BLANK

Quarterly WDW-1, 2, &3 Inj Well

Collection Date:

Lab ID: 1505504-002

Project:

Matrix: TRIP BLANK

Received Date: 5/12/2015 8:56:00 AM

| Analyses | Result | MDL | RL | Qual | Units | DF | Date Analyzed | Batch ID |
|-----------------------------|--------|------|------|------|--------------|----|---------------|----------|
| EPA METHOD 8260B: VOLATILES | | | | | | | Analyst: SUB | |
| Bromomethane | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Carbon disulfide | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Carbon Tetrachloride | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Chlorobenzene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Chloroethane | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Chloroform | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Chloromethane | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 2-Chlorotoluene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 4-Chlorotoluene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| cis-1,2-DCE | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| cis-1,3-Dichloropropene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 1,2-Dibromo-3-chloropropane | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Dibromochloromethane | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Dibromomethane | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 1,2-Dichlorobenzene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 1,3-Dichlorobenzene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 1,4-Dichlorobenzene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Dichlorodifluoromethane | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 1,1-Dichloroethane | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 1,1-Dichloroethene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 1,2-Dichloropropane | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 1,3-Dichloropropane | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 2,2-Dichloropropane | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 1,1-Dichloropropene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Hexachlorobutadiene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 2-Hexanone | ND | 2.5 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Isopropylbenzene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Methylene Chloride | ND | 2.5 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| n-Butylbenzene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| n-Propylbenzene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| sec-Butylbenzene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Styrene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| tert-Butylbenzene | ND | 0.50 | 0.50 | | µg/L | 1 | 5/21/2015 | R26752 |
| 1,1,1,2-Tetrachloroethane | ND | 0.50 | 0.50 | | μg/ L | 1 | 5/21/2015 | R26752 |
| 1,1,2,2-Tetrachloroethane | ND | 0.50 | 0.50 | | µg/L | 1 | 5/21/2015 | R26752 |
| Tetrachloroethene (PCE) | ND | 0.50 | 0.50 | | µg/L | 1 | 5/21/2015 | R26752 |
| trans-1,2-DCE | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| trans-1,3-Dichloropropene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 1,2,3-Trichlorobenzene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |

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Lab Order 1505504

Date Reported: 6/16/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: TRIP BLANK

Project: Quarterly WDW-1, 2, &3 Inj Well

Collection Date:

Lab ID: 1505504-002

Matrix: TRIP BLANK

Received Date: 5/12/2015 8:56:00 AM

| Analyses | Result | MDL | RL | Qual | Units | DF | Date Analyzed | Batch ID |
|------------------------------|--------|------|--------|------|-------|----|---------------|----------|
| EPA METHOD 8260B: VOLATILES | | | | | | | Analyst: SUB | |
| 1,2,4-Trichlorobenzene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 1,1,1-Trichloroethane | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 1,1,2-Trichloroethane | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Trichloroethene (TCE) | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Trichlorofluoromethane | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 1,2,3-Trichloropropane | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Vinyl chloride | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| mp-Xylenes | ND | 1.0 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| o-Xylene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| tert-Amyl methyl ether | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| tert-Butyl alcohol | ND | 2.5 | 2.5 | | μg/L | 1 | 5/21/2015 | R26752 |
| Acrolein | ND | 2.5 | 10 | | μg/L | 1 | 5/21/2015 | R26752 |
| Acrylonitrile | ND | 2.5 | 10 | | μg/L | 1 | 5/21/2015 | R26752 |
| Bromochloromethane | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 2-Chloroethyl vinyl ether | ND | 0.50 | 1.0 | | μg/L | 1 | 5/21/2015 | R26752 |
| Iodomethane | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| trans-1,4-Dichloro-2-butene | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| Vinyl acetate | ND | 0.50 | 0.50 | | μg/L | 1 | 5/21/2015 | R26752 |
| 1,4-Dioxane | ND | 20 | 20 | | μg/L | 1 | 5/21/2015 | R26752 |
| Surr: 1,2-Dichlorobenzene-d4 | 105 | | 70-130 | | %REC | 1 | 5/21/2015 | R26752 |
| Surr: 4-Bromofluorobenzene | 101 | 0 | 70-130 | | %REC | 1 | 5/21/2015 | R26752 |
| Surr: Toluene-d8 | 102 | 0 | 70-130 | | %REC | 1 | 5/21/2015 | R26752 |

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Hall Environmental Analysis Laboratory, Inc.

WO#:

1505504

16-Jun-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, &3 Inj Well

| Sample ID MB | SampT | ype: ME | BLK | Tes | tCode: E | PA Method | 300.0: Anion | s | | |
|----------------------------------|------------|-----------------|-----------|-------------|----------|-----------|---------------|------|----------|------|
| Client ID: PBW | Batch | 1D: R2 | 6148 | F | RunNo: 2 | 6148 | | | | |
| Prep Date: | Analysis E | ate: 5 / | 12/2015 | 5 | SeqNo: 7 | 75809 | 9 Units: mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Fluoride | ND | 0.10 | | | | | | | | |
| Chloride | ND | 0.50 | | | | | | | | |
| Nitrogen, Nitrite (As N) | ND | 0.10 | | | | | | | | |
| Bromide | ND | 0.10 | | | | | | | | |
| Nitrogen, Nitrate (As N) | ND | 0.10 | | | | | | | | |
| Phosphorus, Orthophosphate (As P | ND | 0.50 | | | | | | | | |
| Sulfate | ND | 0.50 | | | | | | | | |

| Sample ID LCS | SampType: LCS TestCode: EPA Method 300.0: Anions | | | | | | | | | |
|----------------------------------|--|----------|-----------|-------------|----------|----------|-------------|------|----------|------|
| Client ID: LCSW | Batc | h ID: R2 | 6148 | F | RunNo: 2 | 6148 | | | | |
| Prep Date: | Analysis [|)ate: 5/ | 12/2015 | S | SeqNo: 7 | 75815 | Units: mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Fluoride | 0.55 | 0.10 | 0.5000 | 0 | 110 | 90 | 110 | | | |
| Chloride | 4.8 | 0.50 | 5.000 | 0 | 96.6 | 90 | 110 | | | |
| Nitrogen, Nitrite (As N) | 1.0 | 0.10 | 1.000 | 0 | 102 | 90 | 110 | | | |
| Bromide | 2.5 | 0.10 | 2.500 | 0 | 99.3 | 90 | 110 | | | |
| Nitrogen, Nitrate (As N) | 2.6 | 0.10 | 2.500 | 0 | 102 | 90 | 110 | | | |
| Phosphorus, Orthophosphate (As P | 5.1 | 0.50 | 5.000 | 0 | 102 | 90 | 110 | | | |
| Sulfate | 10 | 0.50 | 10.00 | 0 | 99.9 | 90 | 110 | | | |

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- P Sample pH Not In Range
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1505504

16-Jun-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, &3 Inj Well

| Sample ID MB-R26752 | SampT | уре: МЕ | LK | Tes | tCode: El | PA Method | 8260B: VOL. | ATILES | | |
|-----------------------------|------------|------------------|-----------|-------------|-----------|-----------|-------------|--------|----------|------|
| Client ID: PBW | Batch | ID: R2 | 6752 | F | RunNo: 2 | 6752 | | | | |
| Prep Date: | Analysis D | ate: 5/ 2 | 22/2015 | \$ | SeqNo: 7 | 97217 | Units: µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Acetonitrile | ND | 0.50 | | | | | | | | |
| Allyl chloride | ND | 0.50 | | | | | | | | |
| Chloroprene | ND | 0.50 | | | | | | | | |
| Ethyl methacrylate | ND | 0.50 | | | | | | | | |
| Isobutanol | ND | 0.50 | | | | | | | | |
| Methacrylonitrile | ND | 0.50 | | | | | | | | |
| Methyl ethyl ketone | ND | 2.5 | | | | | | | | |
| Methyl isobutyl ketone | ND | 2.5 | | | | | | | | |
| Methyl methacrylate | ND | 0.50 | | | | | | | | |
| Propionitrile | ND | 0.50 | | | | | | | | |
| Benzene | ND | 0.50 | | | | | | | | |
| Toluene | ND | 0.50 | | | | | | | | |
| Ethylbenzene | ND | 0.50 | | | | | | | | |
| 1,2-Dichloroethane (EDC) | ND | 0.50 | | | | | | | | |
| 1,2-Dibromoethane (EDB) | ND | 0.50 | | | | | | | | |
| Acetone | ND | 2.5 | | | | | | | | |
| Bromodichloromethane | ND | 0.50 | | | | | | | | |
| Bromoform | ND | 0.50 | | | | | | | | |
| Bromomethane | ND | 0.50 | | | | | | | | |
| Carbon disulfide | ND | 0.50 | | | | | | | | |
| Carbon Tetrachloride | ND | 0.50 | | | | | | | | |
| Chlorobenzene | ND | 0.50 | | | | | | | | |
| Chloroethane | ND | 0.50 | | | | | | | | |
| Chloroform | ND | 0.50 | | | | | | | | |
| Chloromethane | ND | 0.50 | | | | | | | | |
| cis-1,2-DCE | ND | 0.50 | | | | | | | | |
| cis-1,3-Dichloropropene | ND | 0.50 | | | | | | | | |
| 1,2-Dibromo-3-chloropropane | ND | 0.50 | | | | | | | | |
| Dibromochloromethane | ND | 0.50 | | | | | | | | |
| Dibromomethane | ND | 0.50 | | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.50 | | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.50 | | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.50 | | | | | | | | |
| Dichlorodifluoromethane | ND | 0.50 | | | | | | | | |
| 1,1-Dichloroethane | ND | 0.50 | | | | | | | | |
| 1,1-Dichloroethene | ND | 0.50 | | | | | | | | |
| 1,2-Dichloropropane | ND | 0.50 | | | | | | | | |
| 1,3-Dichloropropane | ND | 0.50 | | | | | | | | |
| 2,2-Dichloropropane | ND | 0.50 | | | | | | | | |
| E-E Divinoroproparie | 140 | 0.50 | | | | | | | | |

Qualifiers:

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

Page 13 of 27

Hall Environmental Analysis Laboratory, Inc.

WO#:

1505504

16-Jun-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, &3 Inj Well

| Sample ID MB-R26752 | SampT | ype: ME | BLK | Tes | tCode: E | PA Method | 8260B: VOL | ATILES | | |
|----------------------------|------------|------------------|-----------|-------------|----------|-----------|-------------|--------|----------|------|
| Client ID: PBW | Batcl | n ID: R2 | 6752 | F | RunNo: 2 | 6752 | | | • | |
| Prep Date: | Analysis E | Date: 5 / | 22/2015 | S | SeqNo: 7 | 97217 | Units: µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| 1,1-Dichloropropene | ND | 0.50 | | | | | | | | |
| 2-Hexanone | ND | 0.50 | | | | | | | | |
| Methylene Chloride | ND | 2.5 | | | | | | | | |
| Styrene | ND | 0.50 | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ND | 0.50 | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | 0.50 | | | | | | | | |
| Tetrachloroethene (PCE) | ND | 0.50 | | | | | | | | |
| trans-1,2-DCE | ND | 0.50 | | | | | | | | |
| trans-1,3-Dichloropropene | ND | 0.50 | | | | | | | | |
| 1,1,1-Trichloroethane | ND | 0.50 | | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.50 | | | | | | | | |
| Trichloroethene (TCE) | ND | 0.50 | | | | | | | | |
| Trichlorofluoromethane | ND | 0.50 | | | | | | | | |
| 1,2,3-Trichloropropane | ND | 0.50 | | | | | | | | |
| Vinyl chloride | ND | 0.50 | | | | | | | | |
| np-Xylenes | ND | 1.0 | | | | | | | | |
| o-Xylene | ND | 0.50 | | | | | | | | |
| Acrolein | ND | 0.50 | | | | | | | | |
| Acrylonitrile | ND | 0.50 | | | | | | | | |
| Bromochloromethane | ND | 0.50 | | | | | | | | |
| odomethane | ND | 0.50 | | | | | | | | |
| rans-1,4-Dichloro-2-butene | ND | 0.50 | | | | | | | | |
| Vinyl acetate | ND | 0.50 | | | | | | | | |

| Sample ID LCS-R26752 | SampT | SampType: LCS TestCode: EPA Method 8260B: VOLATILES | | | | | | | | |
|-------------------------|------------|---|-----------|-------------|----------|----------|-------------|------|----------|------|
| Client ID: LCSW | Batch | ID: R2 | 26752 | F | RunNo: 2 | 6752 | | | | |
| Prep Date: | Analysis D | ate: 5 | /22/2015 | 8 | SeqNo: 7 | 97218 | Units: µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | 9.4 | | 10.00 | 0 | 93.8 | 80 | 120 | | | |
| Toluene | 9.9 | | 10.00 | 0 | 99.0 | 80 | 120 | | | |
| Ethylbenzene | 10 | | 10.00 | 0 | 99.9 | 80 | 120 | | | |
| Chlorobenzene | 9.8 | | 10.00 | 0 | 97.9 | 80 | 120 | | | |
| 1,1-Dichloroethene | 9.7 | | 10.00 | 0 | 96.9 | 80 | 120 | | | |
| Tetrachloroethene (PCE) | 11 | | 10.00 | 0 | 106 | 80 | 120 | | | |
| Trichloroethene (TCE) | 10 | | 10.00 | 0 | 101 | 80 | 120 | | | |
| o-Xylene | 10 | | 10.00 | 0 | 100 | 80 | 120 | | | |

Qualifiers:

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

Page 14 of 27

- P Sample pH Not In Range
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1505504

16-Jun-15

Client: Project: Navajo Refining Company

Quarterly WDW-1, 2, &3 Inj Well

| Sample ID MB-R26752 | SampT | уре: М | BLK | Tes | tCode: El | PA 8270C: | Semivolatiles | /Mod | | |
|-----------------------------|------------|--------|-----------|-------------|-----------|-----------|---------------|------|----------|------|
| Client ID: PBW | Batch | ID: R | 26752 | F | RunNo: 2 | 6752 | | | | • |
| Prep Date: | Analysis D | | | 5 | SeqNo: 7 | 97222 | Units: µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| N-Nitroso-di-n-butylamine | ND | 0.50 | | | | | | | | |
| 1-Methylnaphthalene | ND | 0.50 | | | | | | | | |
| 2,3,4,6-Tetrachlorophenol | ND | 0.50 | | | | | | | | |
| 2,4,5-Trichlorophenol | ND | 0.50 | | | | | | | | |
| 2,4,6-Trichlorophenol | ND | 0.50 | | | | | | | | |
| 2,4-Dichlorophenol | ND | 0.50 | | | | | | | | |
| 2,4-Dimethylphenol | ND | 0.50 | | | | | | | | |
| 2,4-Dinitrophenol | ND | 0.50 | | | | | | | | |
| 2,4-Dinitrotoluene | ND | 0.50 | | | | | | | | |
| 2,6-Dinitrotoluene | ND | 0.50 | | | | | | | | |
| 2-Chloronaphthalene | ND | 0.50 | | | | | | | | |
| 2-Chlorophenol | ND | 0.50 | | | | | | | | |
| 2-Methylnaphthalene | ND | 0.50 | | | | | | | | |
| 2-Methylphenol | ND | 0.50 | | | | | | | | |
| 2-Nitroaniline | ND | 0.50 | | | | | | | | |
| 2-Nitrophenol | ND | 0.50 | | | | | | | | |
| 3,3'-Dichlorobenzidine | ND | 0.50 | | | | | | | | |
| 3-Nitroaniline | ND | 0.50 | | | | | | | | |
| 4,6-Dinitro-2-methylphenol | ND | 0.50 | | | | | | | | |
| 4-Bromophenyl phenyl ether | ND | 0.50 | | | | | | | | |
| 4-Chloro-3-methylphenol | ND | 0.50 | | | | | | | | |
| 4-Chloroaniline | ND | 0.50 | | | | | | | | |
| 4-Chlorophenyl phenyl ether | ND | 0.50 | | | | | | | | |
| 4-Nitroaniline | ND | 0.50 | | | | | | | | |
| 4-Nitrophenol | ND | 0.50 | | | | | | | | |
| Acenaphthene | ND | 0.50 | | | | | | | | |
| Acenaphthylene | ND | 0.50 | | | | | | | | |
| Anthracene | ND | 0.50 | | | | | | | | |
| Benzo(g,h,i)perylene | ND | 0.50 | | | | | | | | |
| Benz(a)anthracene | ND | 0.50 | | | | | | | | |
| Benzo(a)pyrene | ND | 0.50 | | | | | | | | |
| Benzo(b)fluoranthene | ND | 0.50 | | | | | | | | |
| Benzo(k)fluoranthene | ND | 0.50 | | | | | | | | |
| Bis(2-chloroethoxy)methane | ND | 0.50 | | | | | | | | |
| Bis(2-chloroethyl)ether | ND | 0.50 | | | | | | | | |
| Bis(2-chloroisopropyl)ether | ND | 0.50 | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | ND | 0.50 | | | | | | | | |
| Butyl benzyl phthalate | ND | 0.50 | | | | | | | | |
| Carbazole | ND | 0.50 | | | | | | | | |
| - Carbarolo | 140 | 0.00 | | | | | | | | |

Qualifiers:

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

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Hall Environmental Analysis Laboratory, Inc.

WO#:

1505504

16-Jun-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, &3 Inj Well

| Sample ID MB-R26752 | SampT | ype: ME | BLK | Tes | tCode: E | PA 8270C: | Semivolatiles | /Mod | | |
|---------------------------|------------|------------------|-----------|-------------|-----------------|-----------|---------------|------|----------|------|
| Client ID: PBW | Batch | n ID: R2 | 6752 | F | RunNo: 2 | 6752 | | | | |
| Prep Date: | Analysis D |)ate: 5 / | 21/2015 | 8 | SeqNo: 7 | 97222 | Units: µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chrysene | ND | 0.50 | | | | | | | | |
| Dibenz(a,h)anthracene | ND | 0.50 | | | | | | | | |
| Dibenzofuran | ND | 0.50 | | | | | | | | |
| Diethyl phthalate | ND | 0.50 | | | | | | | | |
| Dimethyl phthalate | ND | 0.50 | | | | | | | | |
| Di-n-butyl phthalate | ND | 0.50 | | | | | | | | |
| Di-n-octyl phthalate | ND | 0.50 | | | | | | | | |
| Fluoranthene | ND | 0.50 | | | | | | | | |
| Fluorene | ND | 0.50 | | | | | | | | |
| Hexachlorobenzene | ND | 0.50 | | | | | | | | |
| Hexachlorobutadiene | ND | 0.50 | | | | | | | | |
| Hexachlorocyclopentadiene | ND | 0.50 | | | | | | | | |
| Hexachloroethane | ND | 0.50 | | | | | | | | |
| Indeno(1,2,3-cd)pyrene | ND | 0.50 | | | | | | | | |
| Isophorone | ND | 0.50 | | | | | | | | |
| Naphthalene | ND | 0.50 | | | | | | | | |
| Nitrobenzene | ND | 0.50 | | | | | | | | |
| N-Nitrosodi-n-propylamine | ND | 0.50 | | | | | | | | |
| N-Nitrosodiphenylamine | ND | 0.50 | | | | | | | | |
| Pentachlorophenol | ND | 0.50 | | | | | | | | |
| Phenanthrene | ND | 0.50 | | | | | | | | |
| Phenol | ND | 0.50 | | | | | | | | |
| Pyrene | ND | 0.50 | | | | | | | | |
| Pyridine | ND | 0.50 | | | | | | | | |

| Sample ID LCS-R26752 | SampType: LCS TestCode: EPA 8270C: Semivolatiles/Mod | | | | | | | | | |
|----------------------------|--|---------------|-----------|-------------|----------|----------|-------------|------|----------|------|
| Client ID: LCSW | Batch | ID: R | 26752 | F | RunNo: 2 | 6752 | | | | |
| Prep Date: | Analysis Da | ite: 5 | 5/21/2015 | \$ | SeqNo: 7 | 97223 | Units: µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| 2,4-Dinitrotoluene | 4.6 | | 5.000 | 0 | 93.0 | 49 | 145 | | | |
| 2-Chlorophenol | 4.8 | | 5.000 | 0 | 96.2 | 50 | 131 | | | |
| 4-Chloro-3-methylphenol | 5.4 | | 5.000 | 0 | 108 | 42 | 139 | | ÷ | |
| 4-Nitrophenol | 5.3 | | 5.000 | 0 | 106 | 19 | 137 | | | |
| Acenaphthene | 4.8 | | 5.000 | 0 | 96.6 | 36 | 131 | | | |
| Bis(2-ethylhexyl)phthalate | 5.6 | | 5.000 | . 0 | 113 | 43 | 148 | | | |
| N-Nitrosodi-n-propylamine | 6.1 | | 5.000 | 0 | 122 | 46 | 135 | | | |
| Pentachlorophenol | 5.1 | | 5.000 | 0 | 101 | 22 | 138 | | | |
| Phenol | 4.4 | | 5.000 | 0 | 88.8 | 45 | 134 | | | |

Qualifiers:

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

Page 16 of 27

- P Sample pH Not In Range
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1505504

16-Jun-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, &3 Inj Well

Sample ID LCS-R26752

SampType: LCS

TestCode: EPA 8270C: Semivolatiles/Mod

Client ID:

LCSW

Batch ID: R26752

RunNo: 26752

Units: µg/L

Prep Date:

Analysis Date: 5/21/2015

SeqNo: 797223

Analyte

SPK value SPK Ref Val

%REC 109 HighLimit

%RPD

RPDLimit

Qual

5.000

45

139

Pyrene

5.4

0

Qualifiers:

Value exceeds Maximum Contaminant Level.

Ε Value above quantitation range

Analyte detected below quantitation limits

o RSD is greater than RSDlimit

R RPD outside accepted recovery limits

Spike Recovery outside accepted recovery limits

Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded Н

Not Detected at the Reporting Limit ND

Page 17 of 27

Sample pH Not In Range

Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1505504

16-Jun-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, &3 Inj Well

Sample ID MB-19224

SampType: MBLK

TestCode: EPA Method 7470: Mercury

Client ID:

PBW

Batch ID: 19224

RunNo: 26197

Prep Date:

5/14/2015

Analysis Date: 5/14/2015

SeqNo: 777328

%REC

Units: mg/L

Qual

Analyte

Result PQL

SPK value SPK Ref Val

LowLimit

HighLimit %RPD

RPDLimit

Mercury

ND 0.00020

SampType: LCS

TestCode: EPA Method 7470: Mercury

Client ID: LCSW Batch ID: 19224

RunNo: 26197

Prep Date: 5/14/2015

Sample ID LCS-19224

Analysis Date: 5/14/2015

SeqNo: 777329

Units: mg/L

SPK value SPK Ref Val

%REC

HighLimit

%RPD

Analyte

Result

PQL 0.0051 0.00020 0.005000

102

80 120 **RPDLimit**

Qual

Mercury

Client ID:

Prep Date:

Sample ID LCSD-19224

LCSS02

5/14/2015

SampType: LCSD

0.0051 0.00020

TestCode: EPA Method 7470: Mercury

SeqNo: 777330

101

RunNo: 26197

Units: mg/L

Analyte Mercury

Result

Analysis Date: 5/14/2015

Batch ID: 19224

SPK value SPK Ref Val 0.005000

0

%REC LowLimit

HighLimit %RPD 120 0.438 **RPDLimit**

20

Qual

Qualifiers:

S

Value exceeds Maximum Contaminant Level.

Spike Recovery outside accepted recovery limits

E Value above quantitation range

J Analyte detected below quantitation limits

o RSD is greater than RSDlimit

R RPD outside accepted recovery limits В Analyte detected in the associated Method Blank

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

Sample pH Not In Range

Reporting Detection Limit

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Hall Environmental Analysis Laboratory, Inc.

WO#:

1505504

16-Jun-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, &3 Inj Well

Sample ID MB-19406

SampType: MBLK

TestCode: MERCURY, TCLP

%REC LowLimit

TestCode: MERCURY, TCLP

Client ID:

PBW

Batch ID: 19406

RunNo: 26436

Prep Date: 5/27/2015

Analysis Date: 5/27/2015

SeqNo: 785575

Units: mg/L HighLimit

RPDLimit

Qual

Analyte Mercury

Result **PQL** ND 0.020

SPK value SPK Ref Val

%RPD

%RPD

Result

0.0048

SampType: LCS

Client ID: LCSW

Batch ID: 19406

RunNo: 26436

Units: mg/L

Prep Date: 5/27/2015

Sample ID LCS-19406

Analysis Date: 5/27/2015

SeqNo: 785576

HighLimit

RPDLimit

Qual

Мегсигу

SPK value SPK Ref Val %REC **PQL** 0.020 0.005000

95.3

LowLimit

80

120

Qualifiers:

Value exceeds Maximum Contaminant Level.

Ε Value above quantitation range

Analyte detected below quantitation limits J

o RSD is greater than RSDlimit

RPD outside accepted recovery limits R

Spike Recovery outside accepted recovery limits

Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded Η

Not Detected at the Reporting Limit ND

Page 19 of 27

Sample pH Not In Range

Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1505504

16-Jun-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, &3 Inj Well

| Sample ID MB-19377 Client ID: PBW | • | ype: ME i ID: 19 | | | tCode: El | | 6010B: TCL | P Metals | | |
|-----------------------------------|------------|-----------------------------------|-----------|-------------|-----------|----------|-------------|----------|----------|------|
| Prep Date: 5/26/2015 | Analysis D | ate: 5/ | 27/2015 | 5 | SeqNo: 7 | 85370 | Units: mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Arsenic | ND | 5.0 | | | | | | | | **** |
| Barium | ND | 100 | | | | | | | | |
| Cadmium | ND | 1.0 | | | | | | | | |
| Chromium | ND | 5.0 | | | | | | | | |
| Lead | ND | 5.0 | | | | | | | | |
| Selenium | ND | 1.0 | | | | | | | | |
| Silver | ND | 5.0 | | | | | | | | |

| Sample ID LCS-19377 | SampT | Гуре: LC | s | Tes | tCode: El | PA Method | 6010B: TCLI | P Metals | | |
|----------------------|------------|-----------------|-----------|-------------|-----------|-----------|-------------|----------|----------|------|
| Client ID: LCSW | Batch | h ID: 19 | 377 | F | RunNo: 2 | 6426 | | | | |
| Prep Date: 5/26/2015 | Analysis D |)ate: 5/ | /27/2015 | S | SeqNo: 7 | 85371 | Units: mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Arsenic | 0.49 | 5.0 | 0.5000 | 0 | 98.7 | 80 | 120 | | | J |
| Barium | 0.47 | 100 | 0.5000 | 0 | 94.3 | 80 | 120 | | | J |
| Cadmium | 0.48 | 1.0 | 0.5000 | 0 | 96.3 | 80 | 120 | | | J |
| Chromium | 0.47 | 5.0 | 0.5000 | 0 | 94.2 | 80 | 120 | | | J |
| Lead | 0.46 | 5.0 | 0.5000 | · O | 92.7 | 80 | 120 | | | J |
| Selenium | 0.48 | 1.0 | 0.5000 | 0 | 95.9 | 80 | 120 | | | J |
| Silver | 0.099 | 5.0 | 0.1000 | 0 | 98.7 | 80 | 120 | | | J |

Qualifiers:

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

Page 20 of 27

- P Sample pH Not In Range
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1505504

16-Jun-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, &3 Inj Well

| Sample ID | MB-19377 | Samp | Туре: МЕ | BLK | Tes | tCode: E | PA 6010B: | Total Metals | | | |
|------------|-----------|------------|-----------------|-----------|-------------|----------|-----------|--------------|------|----------|------|
| Client ID: | PBW | Bato | h ID: 19 | 377 | F | RunNo: 2 | 6426 | | | | |
| Prep Date: | 5/26/2015 | Analysis I | Date: 5/ | 27/2015 | S | SeqNo: 7 | 85351 | Units: mg/L | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Aluminum | | ND | 0.020 | | | | | | | | |
| Antimony | | 0.031 | 0.050 | | | | | | | | J |
| Arsenic | | ND | 0.020 | | | | | | | | |
| Barium | | ND | 0.020 | | | | | | | | |
| Beryllium | | ND | 0.0030 | | | | | | | | |
| Cadmium | | ND | 0.0020 | | | | | | | | |
| Calcium | | ND | 1.0 | | | | | | | | |
| Chromium | | ND | 0.0060 | | | | | | | | |
| Cobalt | | ND | 0.0060 | | | | | | | | |
| Copper | | ND | 0.0060 | | | | | | | | |
| Iron | | 0.0083 | 0.050 | | | | | | | | J |
| Lead | * | ND | 0.0050 | | | | | | | | |
| Magnesium | | ND | 1.0 | | | | | | | | |
| Manganese | | ND | 0.0020 | | | | | | | | |
| Nickel | | ND | 0.010 | | | | | | | | |
| Potassium | | ND | 1.0 | | | | | | | | |
| Selenium | | ND | 0.050 | | | | | | | | |
| Silver | | ND | 0.0050 | | | | | | | | |
| Sodium | | ND | 1.0 | | | | | | | | |
| Thallium | | ND | 0.050 | | | | | | | | |
| Vanadium | | ND | 0.050 | | | | | | | | |
| Zinc | | ND | 0.020 | | | | | | | | |

| Sample ID LCS-19377 | Samp | Type: LC | s | TestCode: EPA 6010B: | | | Total Metals | | | |
|----------------------|----------|------------------|-----------|----------------------|-----------|----------|--------------|------|----------|------|
| Client ID: LCSW | Bato | h ID: 19 | 377 | F | RunNo: 20 | 6426 | | | | |
| Prep Date: 5/26/2015 | Analysis | Date: 5 / | 27/2015 | 8 | SeqNo: 7 | 85352 | 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 | 101 | 80 | 120 | | | |
| Antimony | 0.49 | 0.050 | 0.5000 | 0 | 97.9 | 80 | 120 | | | |
| Arsenic | 0.49 | 0.020 | 0.5000 | 0 | 98.7 | 80 | 120 | | | |
| Barium | 0.47 | 0.020 | 0.5000 | 0 | 94.3 | 80 | 120 | | | |
| Beryllium | 0.49 | 0.0030 | 0.5000 | 0 | 97.9 | 80 | 120 | | | |
| Cadmium | 0.48 | 0.0020 | 0.5000 | 0 | 96.3 | 80 | 120 | | | |
| Calcium | 48 | 1.0 | 50.00 | 0 | 96.6 | 80 | 120 | | | |
| Chromium | 0.47 | 0.0060 | 0.5000 | 0 | 94.2 | 80 | 120 | | | |
| Cobalt | 0.46 | 0.0060 | 0.5000 | 0 | 92.4 | 80 | 120 | | | |
| Copper | 0.48 | 0.0060 | 0.5000 | 0 | 95.6 | 80 | 120 | | | |
| Iron | 0.47 | 0.050 | 0.5000 | 0 | 94.1 | 80 | 120 | | | |

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Ε Value above quantitation range
- Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank В
- Holding times for preparation or analysis exceeded Н
- ND Not Detected at the Reporting Limit

Page 21 of 27

- Sample pH Not In Range
- Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1505504

16-Jun-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, &3 Inj Well

| Sample ID LCS-19377 | | Type: LC | | Tes | tCode: El | PA 6010B: | Total Metals | | | |
|----------------------|------------|------------------|-----------|-------------|-----------|-----------|--------------|------|----------|------|
| Client ID: LCSW | Bato | h ID: 19 | 377 | F | RunNo: 2 | 6426 | | | | |
| Prep Date: 5/26/2015 | Analysis I | Date: 5 / | 27/2015 | S | SeqNo: 7 | 85352 | Units: mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Lead | 0.46 | 0.0050 | 0.5000 | 0 | 92.7 | 80 | 120 | | | |
| Magnesium | 48 | 1.0 | 50.00 | 0 | 96.9 | 80 | 120 | | | |
| Manganese | 0.47 | 0.0020 | 0.5000 | 0 | 93.6 | 80 | 120 | | | |
| Nickel | 0.47 | 0.010 | 0.5000 | 0 | 93.1 | 80 | 120 | | | |
| Potassium | 46 | 1.0 | 50.00 | 0 | 93.0 | 80 | 120 | | | |
| Selenium | 0.48 | 0.050 | 0.5000 | 0 | 95.9 | 80 | 120 | | | |
| Silver | 0.099 | 0.0050 | 0.1000 | 0 | 98.7 | 80 | 120 | | | |
| Sodium | 48 | 1.0 | 50.00 | 0 | 96.1 | 80 | 120 | | | |
| Thallium | 0.49 | 0.050 | 0.5000 | 0 | 97.0 | 80 | 120 | | | |
| Vanadium | 0.49 | 0.050 | 0.5000 | 0 | 98.0 | 80 | 120 | | | |
| Zinc | 0.47 | 0.020 | 0.5000 | 0 | 93.5 | 80 | 120 | | | |

| Sample ID | 1505504-001BMS | Samp | Type: MS | 3 | Tes | tCode: El | PA 6010B: | Total Metals | | | |
|------------|------------------|----------|------------------|-----------|-------------|-----------|-----------|--------------|------|----------|------|
| Client ID: | WDW-1,2,&3 Efflu | en Bato | h ID: 19 | 377 | F | RunNo: 2 | 6426 | | | | |
| Prep Date: | 5/26/2015 | Analysis | Date: 5 / | 27/2015 | s | SeqNo: 7 | 85354 | Units: mg/L | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Aluminum | | 1.1 | 0.020 | 0.5000 | 0.4834 | 114 | 75 | 125 | | | |
| Antimony | | 0.51 | 0.050 | 0.5000 | 0 | 103 | 75 | 125 | | | |
| Arsenic | | 0.57 | 0.020 | 0.5000 | 0.04239 | 105 | 75 | 125 | | | |
| Barium | | 0.50 | 0.020 | 0.5000 | 0.01049 | 97.1 | 75 | 125 | | | |
| Beryllium | | 0.49 | 0.0030 | 0.5000 | 0 | 98.5 | 75 | 125 | | | |
| Cadmium | | 0.51 | 0.0020 | 0.5000 | 0 | 102 | 75 | 125 | | | |
| Calcium | | 100 | 1.0 | 50.00 | 51.14 | 97.3 | 75 | 125 | | | |
| Chromium | | 0.48 | 0.0060 | 0.5000 | 0 | 95.4 | 75 | 125 | | | |
| Cobalt | | 0.48 | 0.0060 | 0.5000 | 0.002620 | 96.1 | 75 | 125 | | | |
| Copper | | 0.55 | 0.0060 | 0.5000 | 0.005100 | 110 | 75 | 125 | | | |
| Iron | | 0.80 | 0.050 | 0.5000 | 0.3329 | 92.5 | 75 | 125 | | | |
| Lead | | 0.48 | 0.0050 | 0.5000 | 0 | 95.9 | 75 | 125 | | | |
| Magnesium | | 70 | 1.0 | 50.00 | 19.14 | 101 | 75 | 125 | | | |
| Manganese | | 0.58 | 0.0020 | 0.5000 | 0.1030 | 96.0 | 75 | 125 | | | |
| Nickel | | 0.49 | 0.010 | 0.5000 | 0.01120 | 95.5 | 75 | 125 | | | |
| Selenium | | 0.66 | 0.050 | 0.5000 | 0.1334 | 105 | 75 | 125 | | | |
| Silver | | 0.10 | 0.0050 | 0.1000 | 0 | 104 | 75 | 125 | | | |
| Thallium | | 0.51 | 0.050 | 0.5000 | 0 | 101 | 75 | 125 | | | |
| Vanadium | | 0.51 | 0.050 | 0.5000 | 0.007830 | 101 | 75 | 125 | | | |
| Zinc | | 0.52 | 0.020 | 0.5000 | 0.03044 | 98.1 | 75 | 125 | | | |

Qualifiers:

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

t Detected at the Reporting Limit

Page 22 of 27

P Sample pH Not In Range

RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

0.53

0.53

0.53

0.050

0.050

0.020

0.5000

0.5000

0.5000

WO#:

1505504

16-Jun-15

Client:

Thallium

Zinc

Vanadium

Navajo Refining Company

Project:

Quarterly WDW-1, 2, &3 Inj Well

Sample ID 1505504-001BMSD TestCode: EPA 6010B: Total Metals SampType: MSD Client ID: WDW-1,2,&3 Effluen Batch ID: 19377 RunNo: 26426 Prep Date: 5/26/2015 Analysis Date: 5/27/2015 SeqNo: 785355 Units: mg/L %REC HighLimit %RPD **RPDLimit** Qual Result **PQL** SPK value SPK Ref Val LowLimit Analyte 75 4.31 20 **Aluminum** 1.1 0.020 0.5000 0.4834 123 125 75 125 3.03 20 Antimony 0.53 0.050 0.5000 0 106 75 125 2.76 20 0.58 0.5000 0.04239 108 0.020 Arsenic 3.03 20 75 125 Barium 0.51 0.020 0.5000 0.01049 100 20 0.50 0.0030 0.5000 101 75 125 2.04 Beryllium 125 20 0.0020 0.5000 0 105 75 2.76 0.52 Cadmium 125 2.49 20 97.8 75 0.49 0.0060 0.5000 0 Chromium 20 125 2.48 Cobalt 0.50 0.0060 0.5000 0.002620 98.6 75 125 3.29 20 0.0060 0.5000 0.005100 113 75 0.57 Copper 125 4.06 20 75 99.1 Iron 0.83 0.050 0.5000 0.3329 20 125 2.26 0.49 0.0050 0.5000 0 98.1 75 75 125 1.82 20 Magnesium 71 1.0 50.00 19.14 104 20 125 3.33 0.60 0.0020 0.5000 0.1030 99.9 75 Manganese 20 125 0.50 0.010 0.5000 0.01120 98.0 75 2.50 Nickel 75 125 1.30 20 Selenium 0.67 0.050 0.5000 0.1334 106 75 125 3.31 20 108 Silver 0.11 0.0050 0.1000 0

0

0.007830

0.03044

107

104

101

Qualifiers:

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

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20

20

20

125

125

125

75

75

75

4.89

3.13

2.60

Hall Environmental Analysis Laboratory, Inc.

WO#:

1505504

16-Jun-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, &3 Inj Well

Sample ID MB-R26752

SampType: MBLK

TestCode: CYANIDE, Reactive

LowLimit

Client ID: **PBW**

Batch ID: R26752

RunNo: 26752

Prep Date:

Analysis Date: 5/22/2015

SeqNo: 797254

Units: mg/L HighLimit

Result

%REC

RPDLimit

Qual

Cyanide, Reactive

Analyte

PQL 1.00

SampType: LCS

TestCode: CYANIDE, Reactive

Client ID: LCSW

Sample ID LCS-R26752

Batch ID: R26752

RunNo: 26752

Units: mg/L

Prep Date:

Analysis Date: 5/22/2015

SeqNo: 797255 SPK value SPK Ref Val %REC

HighLimit

%RPD

Analyte

Result

0.5000

SPK value SPK Ref Val

RPDLimit

97.2

80

120

Cyanide, Reactive

0.486

%RPD

Qual

Qualifiers:

Value exceeds Maximum Contaminant Level.

Value above quantitation range Ε

Analyte detected below quantitation limits J

o RSD is greater than RSDlimit

R RPD outside accepted recovery limits

Spike Recovery outside accepted recovery limits

Analyte detected in the associated Method Blank В

Η Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit ND

Sample pH Not In Range

Reporting Detection Limit

Page 24 of 27

Hall Environmental Analysis Laboratory, Inc.

WO#:

1505504

16-Jun-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, &3 Inj Well

Sample ID MB-R26752

SampType: MBLK

TestCode: SULFIDE, Reactive

Client ID: PBW

Batch ID: R26752

RunNo: 26752

Prep Date:

Analysis Date: 5/21/2015

SeqNo: 797257

Units: mg/L

RPDLimit

Qual

Analyte

Result

SPK value SPK Ref Val %REC LowLimit PQL

HighLimit

%RPD

Reactive Sulfide

ND

SPK value SPK Ref Val

TestCode: SULFIDE, Reactive

Client ID: LCSW

Sample ID LCS-R26752

SampType: LCS Batch ID: R26752

Analysis Date: 5/21/2015

PQL

RunNo: 26752

SeqNo: 797258

Units: mg/L

%RPD

Qual

Analyte

Result

0.2000

%REC 90.0

Prep Date:

0.18

LowLimit

HighLimit

70

Reactive Sulfide

130

RPDLimit

Qualifiers:

Value exceeds Maximum Contaminant Level.

Spike Recovery outside accepted recovery limits

Ε Value above quantitation range

Analyte detected below quantitation limits

RSD is greater than RSDlimit 0

RPD outside accepted recovery limits R

Analyte detected in the associated Method Blank В

Holding times for preparation or analysis exceeded Η

Not Detected at the Reporting Limit ND

Sample pH Not In Range

Reporting Detection Limit

Page 25 of 27

Hall Environmental Analysis Laboratory, Inc.

WO#:

1505504

16-Jun-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, &3 Inj Well

Sample ID mb-1

SampType: MBLK

TestCode: SM2320B: Alkalinity

TestCode: SM2320B: Alkalinity

Client ID: PBW

Batch ID: R26154

RunNo: 26154

Prep Date: Analyte

Analysis Date: 5/12/2015

SeqNo: 775904

Units: mg/L CaCO3

PQL Result

SPK value SPK Ref Val %REC LowLimit

Total Alkalinity (as CaCO3)

4.120 20.00

HighLimit %RPD **RPDLimit**

Qual

Sample ID Ics-1

SampType: LCS

Batch ID: R26154

RunNo: 26154

Prep Date:

Client ID: LCSW

Units: mg/L CaCO3

Analysis Date: 5/12/2015

SeqNo: 775905 SPK value SPK Ref Val %REC

HighLimit

%RPD

Analyte

Result

90

Total Alkalinity (as CaCO3)

0

87.40

RPDLimit

PQL 20.00

80.00

109

110

Qual

Qualifiers:

Value exceeds Maximum Contaminant Level.

Value above quantitation range E

J Analyte detected below quantitation limits O RSD is greater than RSDlimit

R RPD outside accepted recovery limits В Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded

ND

Reporting Detection Limit

Not Detected at the Reporting Limit P Sample pH Not In Range

Page 26 of 27

S Spike Recovery outside accepted recovery limits Н

Hall Environmental Analysis Laboratory, Inc.

WO#:

1505504

16-Jun-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, &3 Inj Well

Sample ID MB-19225

SampType: MBLK

TestCode: SM2540C MOD: Total Dissolved Solids

Client ID:

PBW

Batch ID: 19225

PQL

20.0

RunNo: 26231

Prep Date: 5/14/2015

SeqNo: 778508

Units: mg/L

Analyte

Analysis Date: 5/15/2015

RPDLimit

Qual

Total Dissolved Solids

Result ND

SPK value SPK Ref Val %REC LowLimit

HighLimit

%RPD

Sample ID LCS-19225

SampType: LCS

TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: LCSW

Batch ID: 19225

PQL

RunNo: 26231

Units: mg/L

Prep Date: 5/14/2015

Analysis Date: 5/15/2015

SeqNo: 778509

HighLimit

%RPD **RPDLimit** Qual

Analyte

Result

SPK value SPK Ref Val %REC 1000

100

80

Total Dissolved Solids

1000

20.0

LowLimit

120

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Ε Value above quantitation range
- Analyte detected below quantitation limits J
- RSD is greater than RSDlimit 0
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank В
- Н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND
- Sample pH Not In Range
- Reporting Detection Limit

Page 27 of 27



Hali Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109

TEL: 508-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

Sample Log-In Check List

| Bacobind hullata (S) | de | | | | |
|--|----------------|--|--|--|--|
| Received by/date: US 1/2 | 112 | *************************************** | | | |
| Logged By: Ashley Gallegos 5/12/2015 | 6:56:00 AM | | * *********************************** | | |
| Completed By: Ashley Gallegos; 5/12/2015 | 12:36:44 PM | | *** | | 1 000 1 000 1 000 1 000 1 000 1 000 |
| Reviewed By: Oal Mag. 05 | 112/15 | | | | |
| 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 | | | |
| <u>Log In</u> | | | | | |
| 4. Was an attempt made to cool the samples? | | Yes 🔽 | No □ | мП | |
| 5. Were all samples received at a temperature of >0° C t | to 6.0°C | Yes □ | No ☑ | NA [] | |
| 6. Sample(s) in proper container(s)? | | Approved b | <u>yy cilent.</u> No □ | | |
| 7. Sufficient sample volume for indicated test(s)? | | Yes 🔽 | No □ , | a. Anla | |
| B. Are samples (except VOA and ONG) properly preserve | xd? | Yes M | No 🗵 | G2 WILL | |
| 9. Was preservative added to bottles? Metals analysis, added Iml #1 10. VOA vials have zero headspace? | Nos to - | Yes 🗹 001B - fd, Yes 🗷 | No. 18 - acceptable No. 18 | NA 🗆 Ve pH. Held No VOA Viais 🗆 | in Login for Mours CS |
| 11, Were any sample containers received broken? | t's oslidis | Yes 🗆 | No 🗹 | # of preserved bottles checked 2 | North Ca |
| 12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) | | Yes 🔽 | № □ | for pH: | r (12 uhless noted) |
| 13. Are matrices correctly identified on Chain of Custody? | | Yes 🗹 | No □ | Adjusted? | yes |
| 14, is it clear what analyses were requested? | | Yes 🗹 | No 🔲 | Sanda a anadistrans | 100 E |
| 15. Were all holding times able to be met? (If no, notify customer for authorization.) | | Yes 🗹 | No 🗍 | Checked by: | |
| Special Handling (if applicable) | | | | | |
| 16. Was client notified of all discrepancies with this order? | | Yes 🗌 | No □ | NA 🗹 | |
| Person Notified: | Dale T | | | - white more than the contract of the contract and a_{ij} and a_{i | 300 T |
| By Whom: | Via: | eMail 🔲 l | hone 🔲 Fax | ☐ In Person | |
| Regarding: Client Instructions: | | | | | |
| 17. Additional remarks: Sample - OUID (a | U 3 via | (s) and | -002A / 2 | of 2) have | bubbles. Cs |
| 18. Cooler Information | | and the second s | Control of the Control | | |
| | | | | | |

| A A L Y S IS LABORATORY Www.hallerwironmental.com Sood, Tick, PHO C IS 19 196.3 Sood, Tick, Photos Is 1900.5 Sood, Tick, Mg. Na/HO C IR Part Sood Tick Period 82500 Toles attached list 'Wetels') A YOC S/SW-846 Method 82500 A Sood C IR Part Sood Sood Sood Sood Sood Sood Sood Soo |
|--|
| |

If necessary, samples submitted to that Environmental may be subcontracted to other according taboratories. This sinutes as natice of this possecting. Any sub-contracted data will be clearly notated on the analytical report.



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

Quarterly Sample Injection Well Details

Attachment

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|-----------|--------------|
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The HollyFrontier Companies

| Project Name WDW-1,2, & 3 Ortly Inj Well | Samplers Name Elizabeth Salsberry | Samplers Affiliation Navajo Refining Co. LLC | 79/2015 @ 08:57am | End Date and Time 7/9/2015 @ 09:08am |
|--|-----------------------------------|--|--|--------------------------------------|
| Project Name | Samplers Name I | Samplers Affiliation I | Start Date and Time 7/9/2015 @ 08:57am | End Date and Time |

Outfall / Sample Location | Waste water effluent pumps to injection wells.

| | _ | | | | |
|-------------|----------|-------------------------|-------------------------|---|------------------------------|
| | <u> </u> | | | - | One |
| Sample Type | Giab ☑ | Time Weighted Composite | Flow Weighted Composite | | Parts / Sample Intervals One |

| Solid | |
|--------|----------|
| Liquid | <u>-</u> |
| Sludge | |

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| Directly to sample jars | |
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| Sample | |
| of Sample | |
| e of Sampleı | |
| /pe of Sample | |
| Type of Sample | |
| Type of Sampler D | |

☐ P-856 sample point (third from east) ☐ P-857 sample point (fourth from east)

☐ P-849 sample point (first from east) ☐ P-854 sample point (second from east)

| | | L | | | | | | | | | |
|----------------|--|-------------|--------|--------|--|--|------------------|--------|--|---|--|
| | | | | | | Y.e. | Preservatives | | | | |
| | | # of Neat | Neat | | | | | | | | |
| Container Size | Material | Containers | (Name) | T T | NO3 H2 | SO4 | N | a2S203 | ontainers (Name) HCI HNO3 H2SO4 NaOH Na2S2O3 NaHSO4 | Other | Analysis and/or Method Requested |
| 2 | 50.00 | | | | | | | | | 1 | Specific Gravity, HCO3, CO3, Cl, SO4, TDS, |
| • | | C. | × | | | × | | | | | pH, cond.,FI, Cation/anion bal., Br, Eh/40 |
| • | |) | : | - | | | | | | | CFR 136.3 |
| | | | | | | - | | | ************************************** | | VOCs/SW-846 Method 8260C (see attached |
| 2 | | | | | × | | | | | | list 'VOCs') |
| | | | | | | | | | | Market and the first of the control | SVOCs/SW-846 Method 8270D (see |
| ęs) | | ო | | × | | - A | - - - - | | | | attached list 'SVOCs') |
| 4 | | 2 | × | | THE PERSON OF TH | and the second s | | | mental process of the contract | ALAMAN KANAT AND | R,C,I/40 CFR part 261 |
| | THE RESIDENCE AND ADDRESS OF THE PROPERTY OF T | | | | | And the second s | | | | AND | Metals/SW-846 Mthd 6010, 7470 (see |

| | Shipping M | d Temp 45.3 Field pH: 7.62 | Refrigerated | EtC): I emp. / 8.8 ° F Flumidity: 47% Wind Direction. NNE Wind Speed. 10.4 Inpl. Overall Condition. Cera | Id Data (Weather, Observations, Etc). Temp.78.8 °F Humidty: 47% Wind Direction: NNE Wind Speed: 10.4 mph Overall Condition: clear Storage Meth. | Refr |
|--|------------|----------------------------|--------------|--|---|------|
|--|------------|----------------------------|--------------|--|---|------|

| Storage Method | | | | |
|----------------|----|--------------|-------|--|
| Stora | [] | Refrigerated | Other | |

Ca, K, Mg, Na/40 CFR 136.3 TCLP Metals, only /40 CFR Part 261/ SW-846 Method 1311

attached list 'Metals')

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| | ledia | | |
| | β | | |
| | Shipping | D | |
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October 29, 2015

Mr. Carl Chavez, CHMM
NM Energy, Minerals & Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr.
Santa Fe, NM 87505-5472

Certified Mail/Return Receipt 7015 0640 0006 6577 5100

RE: 2015 3rd Quarter Injection Report for Wells WDW-1, WDW-2 and WDW-3, Navajo Refining Company, L.L.C.

Dear Mr. Chavez,

Enclosed, please find the third quarter 2015 sampling results for fluids injected into WDW-1, WDW-2 and WDW-3 and a spread sheet showing various volumes and pressures as required under Permit Condition 2.I.1, Quarterly Reports.

Over the third quarter, the average injection pressure for all three wells was 1381 psig and the average flows were 125 gpm for WDW-1, 158 gpm for WDW-2 and 133 gpm for WDW-3. There were no significant losses from the glycol expansion tanks Well Annulus Monitoring System (WAMS). The quarterly effluent analyses indicated parameters are within permit limits.

This report covers the period from July 1, 2015 to September 30, 2015. We have disposed a total of 1,317,417 barrels of fluid into the three wells during the third quarter of 2015. The volume per well is:

- 396,103 barrels into WDW-1
- 501,110 barrels into WDW-2
- 420,204 barrels into WDW-3

This report is signed and certified in accordance with WQCC section 5101.G. If there are any questions, please call me at 575-748-3311.

Respectfully,

Robert O'Brien

Vice-President & Refinery Manager Navajo Refining Company, L.L.C.

Enc.

Electronic cc (w/enc.):

Environmental File:

R Combs, M Schultz, S Denton

Injection Wells/Reports C-115 & Quarterly/2015/3rd quarter/2015-10-29 3rd QTR Inj. Rpt. for Wells WDW-1,2,3

2015 THIRD QUARTER MONTHLY INJECTION PRESSURES, RATES, AND VOLUMES

| | | | | | | | Average | Maximum | Minimum | | | | | TOTAL |
|--------|----------|----------|----------|---------|---------|---------|-----------|-----------|-----------|---------|---------|------------|------------------------|------------|
| | Average | Maximum | Minimum | Average | Maximum | Minimum | Annular | Annular | Annular | Average | Maximum | Minimum | | CUMULATIVE |
| | Pressure | Pressure | Pressure | Flow | Flow | Flow | Pressure | Pressure | Pressure | Volume | Volume | Volume | Volume | Volume |
| | (bsig) | (psig) | (bsig) | (mdb) | (mdb) | (mdg) | Av (psig) | Mx (psig) | Mn (psig) | (pdq) | (pdq) | (pdq) | (barrels) | (barrels) |
| WDW-1 | | | | | | | | | | | | Previ | Previous Quarter | 36,750,997 |
| Jul-15 | 1,392 | 1,400 | 1,267 | 128 | 131 | 114 | 622 | 998 | 331 | 4,389 | 4,491 | 3,909 | 136,059 | 36,887,056 |
| Aug-15 | 1,389 | 1,400 | 1,152 | 126 | 128 | 26 | 495 | 828 | 134 | 4,320 | 4,389 | 3,326 | 133,695 | 37,020,751 |
| Sep-15 | 1,381 | 1,400 | 1,100 | 123 | 127 | 84 | 598 | 762 | 59 | 4,217 | 4,354 | 2,880 | 126,349 | 37,147,100 |
| WDW-2 | | | | | | | | | | | | Previ | Previous Quarter | 23,766,527 |
| Jul-15 | 1,391 | 1,400 | 1,269 | 149 | 278 | 62 | 252 | 314 | 208 | 5,109 | 9,531 | 2,709 | 158,379 | 23,924,906 |
| Aug-15 | 1,392 | 1,400 | 1,156 | 202 | 293 | 146 | 250 | 379 | 217 | 976'9 | 10,046 | 5,006 | 214,764 | 24,139,670 |
| Sep-15 | 1,369 | 1,400 | 1,110 | 124 | 260 | 59 | 263 | 387 | 226 | 4,251 | 8,914 | 2,023 | 127,967 | 24,267,637 |
| WDW-3 | | | | | | | | | | | | Previ | Previous Quarter | 13,909,125 |
| Jul-15 | 1,373 | 1,390 | 1,265 | 124 | 134 | 75 | 989 | 881 | 200 | 4,251 | 4,594 | 2,571 | 131,781 | 14,040,906 |
| Aug-15 | 1,382 | 1,390 | 1,157 | 119 | 132 | 24 | 849 | 920 | 527 | 4,080 | 4,526 | 823 | 126,544 | 14,167,450 |
| Sep-15 | 1,362 | 1,390 | 1,113 | 157 | 297 | 98 | 780 | 606 | 539 | 5,383 | 10,183 | 2,949 | 161,879 | 14,329,329 |
| | | | | | | | | | | | | Total Inje | Total Injected fluids: | 75,744,066 |

2015 THIRD QUARTER WEEKLY WAMS LEVEL TABLE

| | 7/6/15 | 7/13/15 | 7/6/15 7/13/15 7/20/15 7/27/15 | 7/27/15 | 8/3/15 | 8/10/15 | 8/14/15 | 8/10/15 8/14/15 8/24/15 | 9/1/15 | ⊢ | 9/8/15 9/14/15 9/21/15 9/30/15 | 9/21/15 | 9/30/15 |
|---------|--------|---|--------------------------------|---|--------|---------|---------|-----------------------------|--------|-----|--------------------------------------|---------|---------|
| WDW -11 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| WDW-21 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| WDW-31 | 150 | 155 | 235 | 150* | 170 | 220 | 253 | 130** | 230 | 240 | 254 | 170*** | 240 |
| | | * : : : : : : : : : : : : : : : : : : : | 7. 700000 | Commonto: * Domostod 44E ant ** Domostod 490 and *** Domostod 400 and | 7 6000 | ** | 400 | 3 | | | | | |



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

September 10, 2015

Micki Schultz Navajo Refining Company P.O. Box 159 Artesia, NM 88211-0159

TEL: (575) 746-5281

FAX

RE: Quarterly WDW-1, 2, & 3 Inj Well

OrderNo.: 1507D99

Dear Micki Schultz:

Hall Environmental Analysis Laboratory received 2 sample(s) on 7/31/2015 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,

Andy Freeman

Laboratory Manager

anded

4901 Hawkins NE

Albuquerque, NM 87109



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

Case Narrative

WO#:

1507D99

Date:

9/10/2015

CLIENT:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, & 3 Inj Well

The following compounds were also scanned for by NIST library search and not detected. The detection level for these compounds would be ~ 10 ppb:

Allyl alcohol

t-amyl ethyl ether

Bis(2-chloroethyl)sulfide

Bromoacetone

Chloral hydrate

1-chlorobutane

1-chlorohexane

2-chloroethanol

Crotonaldehyde

Cis-1,4-Dichloro-2butene

1,3-Dichloro-2-propanol

1,2,3,4-Depoxybutane

Ethanol

Ethylene oxide

Malonitrile

Methanol

Methyl acrylate

2-Nitropropane

Paraldehyde

Pentafluorobenzene

2-Pentanone

2-picoline

1-propanol

2-propanol

Propargyl alcohol

Beta-propiolactone

n-propylamine

Lab Order 1507D99

Date Reported: 9/10/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: WDW-1,2,&3 Effluent

Project: Quarterly WDW-1, 2, & 3 Inj Well

Collection Date: 7/30/2015 8:55:00 AM

Lab ID: 1507D

1507D99-001

Received Date: 7/31/2015 8:00:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|-----------------------------------|--------|---------|------|------------|----|-----------------------------|----------------|
| IGNITABILITY METHOD 1010 | | | | | | Analys | st: SUB |
| lgnitability | >200 | 0 | | °F | 1 | 8/11/2015 | R28710 |
| SULFIDE, REACTIVE | | | | | | Analys | st: SUB |
| Reactive Sulfide | 1.4 | 1.0 | | mg/L | 1 | 8/7/2015 | R28710 |
| SPECIFIC GRAVITY | | | | | | Analys | st: JRR |
| Specific Gravity | 0.9967 | 0 | | | 1 | 8/5/2015 3:14:00 PM | R27979 |
| EPA METHOD 300.0: ANIONS | | | | | | Analys | st: LGT |
| Fluoride | 42 | 5.0 | * | mg/L | 50 | 7/31/2015 2:33:11 PM | |
| Chloride | 330 | 25 | | mg/L | 50 | 7/31/2015 2:33:11 PM | |
| Nitrogen, Nitrite (As N) | ND | 0.50 | | mg/L | 5 | 7/31/2015 2:20:46 PM | R27901 |
| Bromide | 1.2 | 0.50 | | mg/L | 5 | 7/31/2015 2:20:46 PM | R27901 |
| Nitrogen, Nitrate (As N) | ND | 0.50 | | mg/L | 5 | 7/31/2015 2:20:46 PM | R27901 |
| Phosphorus, Orthophosphate (As P) | ND | 2.5 | | mg/L | 5 | 7/31/2015 2:20:46 PM | |
| Sulfate | 2200 | 25 | | mg/L | 50 | 7/31/2015 2:33:11 PM | R27901 |
| SM2510B: SPECIFIC CONDUCTANCE | | | | | | Analys | st: JRR |
| Conductivity | 5900 | 0.010 | | µmhos/cm | 1 | 8/6/2015 4:51:43 PM | R28029 |
| SM2320B: ALKALINITY | | | | | | Analys | st: JRR |
| Bicarbonate (As CaCO3) | 392.7 | 20.00 | | mg/L CaCO3 | 1 | 8/6/2015 4:51:43 PM | R28029 |
| Carbonate (As CaCO3) | ND | 2.000 | | mg/L CaCO3 | 1 | 8/6/2015 4:51:43 PM | R28029 |
| Total Alkalinity (as CaCO3) | 392.7 | 20.00 | | mg/L CaCO3 | 1 | 8/6/2015 4:51:43 PM | R28029 |
| SM2540C MOD: TOTAL DISSOLVED SC | DLIDS | | | | | Analys | st: KS |
| Total Dissolved Solids | 3580 | 20.0 | * | mg/L | 1 | 8/5/2015 7 :28:00 PM | 20581 |
| CORROSIVITY | | | | | | Analys | st: SUB |
| рН | 8.31 | 0.100 | | pH Units | 1 | 8/5/2015 | R28710 |
| CYANIDE, REACTIVE | | | | | | Analys | st: SUB |
| Cyanide, Reactive | ND | 1.00 | | mg/L | 1 | 8/13/2015 | R28710 |
| SM4500-H+B: PH | | | | | | Analys | t: JRR |
| рН | 8.17 | 1.68 | Н | pH units | 1 | 8/6/2015 4:51:43 PM | R28029 |
| EPA METHOD 7470: MERCURY | | | | • | | Analys | tr.ILF |
| Mercury | ND | 0.00020 | | mg/L | 1 | 8/4/2015 2:15:41 PM | 20588 |
| MERCURY, TCLP | | 0.00020 | | mg/L | · | Analys | |
| Mercury | 0.078 | 0.020 | | mg/L | 20 | 8/6/2015 1:58:10 PM | 20636 |
| · | 0.070 | 0.020 | | mg/L | 20 | | |
| EPA METHOD 6010B: TCLP METALS | | | | ,, | | - | t: MED |
| Arsenic | ND | 5.0 | | mg/L | 1 | 8/6/2015 9:36:29 AM | 20620 |

Matrix: AQUEOUS

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

- 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 Page 2 of 31
- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1507D99

Date Reported: 9/10/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: WDW-1,2,&3 Effluent

Project: Quarterly WDW-1, 2, & 3 Inj Well

Collection Date: 7/30/2015 8:55:00 AM

Lab ID: 1507D99-001

Matrix: AQUEOUS

Received Date: 7/31/2015 8:00:00 AM

| Analyses | Result | RL Q | ıal Units | DF | Date Analyzed | Batch |
|-------------------------------|-------------|--------|-----------|----|----------------------|--------|
| EPA METHOD 6010B: TCLP METALS | | | | | Analys | t: MED |
| Barium | ND | 100 | mg/L | 1 | 8/6/2015 9:36:29 AM | 20620 |
| Cadmium | ND | 1.0 | mg/L | 1 | 8/6/2015 9:36:29 AM | 20620 |
| Chromium | ND | 5.0 | mg/L | 1 | 8/6/2015 9:36:29 AM | 20620 |
| Lead | ND | 5.0 | mg/L | 1 | 8/6/2015 9:36:29 AM | 20620 |
| Selenium | ND | 1.0 | mg/L | 1 | 8/6/2015 9:36:29 AM | 20620 |
| Silver | ND | 5.0 | mg/L | 1 | 8/6/2015 9:36:29 AM | 20620 |
| EPA 6010B: TOTAL METALS | | | | | Analys | t: MED |
| Aluminum | 1.2 | 0.020 | mg/L | 1 | 8/6/2015 9:44:36 AM | 20620 |
| Antimony | ND | 0.050 | mg/L | 1 | 8/6/2015 9:44:36 AM | 20620 |
| Arsenic | 0.029 | 0.020 | mg/L | 1 | 8/6/2015 9:44:36 AM | 20620 |
| Barium | ND | 0.020 | mg/L | 1 | 8/6/2015 9:44:36 AM | 20620 |
| Beryllium | ND | 0.0030 | mg/L | 1 | 8/6/2015 9:44:36 AM | 20620 |
| Cadmium | ND | 0.0020 | mg/L | 1 | 8/6/2015 9:44:36 AM | 20620 |
| Calcium | 52 / | 1.0 | mg/L | 1 | 8/10/2015 1:25:11 PM | 20675 |
| Chromium | ND | 0.0060 | mg/L | 1 | 8/6/2015 9:44:36 AM | 20620 |
| Cobalt | 0.0085 | 0.0060 | mg/L | 1 | 8/6/2015 9:44:36 AM | 20620 |
| Copper | 0.017 | 0.0060 | mg/L | 1 | 8/6/2015 9:44:36 AM | 20620 |
| Iron | 0.89 | 0.050 | mg/L | 1 | 8/6/2015 9:44:36 AM | 20620 |
| Lead | ND | 0.0050 | mg/L | 1 | 8/6/2015 9:44:36 AM | 20620 |
| Magnesium | 17 | 1.0 | mg/L | 1 | 8/10/2015 1:25:11 PM | 20675 |
| Manganese | 0.10 | 0.0020 | mg/L | 1 | 8/6/2015 9:44:36 AM | 20620 |
| Nickel | 0.021 | 0.010 | mg/L | 1 | 8/6/2015 9:44:36 AM | 20620 |
| Potassium | 77 | 1.0 | mg/L | 1 | 8/10/2015 1:25:11 PM | 20675 |
| Selenium | 0.19 | 0.050 | mg/L | 1 | 8/6/2015 9:44:36 AM | 20620 |
| Silver | ND | 0.0050 | mg/L | 1 | 8/6/2015 9:44:36 AM | 20620 |
| Sodium | 980 | 10 | mg/L | 10 | 8/10/2015 1:27:17 PM | 20675 |
| Thallium | ND | 0.050 | mg/L | 1 | 8/6/2015 9:44:36 AM | 20620 |
| Vanadium | ND | 0.050 | mg/L | 1 | 8/6/2015 9:44:36 AM | 20620 |
| Zinc | 0.31 | 0.020 | mg/L | 1 | 8/6/2015 9:44:36 AM | 20620 |
| EPA METHOD 8260B: VOLATILES | | | | | Analys | t: SUB |
| Acetonitrile | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 |
| Allyl chloride | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 |
| Chloroprene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 |
| Cyclohexane | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 |
| Diethyl ether | ND | 2.5 | μg/L | 1, | 8/11/2015 | R28710 |
| Diisopropyl ether | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 |
| Epichlorohydrin | ND | 25 | μg/L | 1 | 8/11/2015 | R28710 |
| Ethyl acetate | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 |

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

- * 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 Page 3 of 31
- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1507D99

Date Reported: 9/10/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: WDW-1,2,&3 Effluent

Project: Quarterly WDW-1, 2, & 3 Inj Well

Collection Date: 7/30/2015 8:55:00 AM

Lab ID: 1507D99-001

Matrix: AQUEOUS

Received Date: 7/31/2015 8:00:00 AM

| Analyses | Result | RL Qu | al Units | DF | Date Analyzed | Batch |
|--------------------------------|--------|-------|--------------|-----|---------------|------------|
| EPA METHOD 8260B: VOLATILES | | | | | Ana | alyst: SUB |
| Ethyl methacrylate | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Ethyl tert-butyl ether | ND | 2.5 | μg/ L | 1 | 8/11/2015 | R2871 |
| Freon-113 | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Isobutanol | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Isopropyl acetate | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Methacrylonitrile | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Methyl acetate | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Methyl ethyl ketone | 24 | 12 | μg/ L | 1 | 8/11/2015 | R2871 |
| Methyl isobutyl ketone | ND | 12 | μg/ L | 1 | 8/11/2015 | R2871 |
| Methyl methacrylate | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Methylcyclohexane | ND | 5.0 | μg/L | 1 | 8/11/2015 | R2871 |
| n-Amyl acetate | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| n-Hexane | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Nitrobenzene | ND | 25 | μg/L | 1 | 8/11/2015 | R2871 |
| Pentachloroethane | ND | 25 | μg/L | 1. | 8/11/2015 | R2871 |
| p-isopropyltoluene | ND | 2.5 | μg/L | - 1 | 8/11/2015 | R2871 |
| Propionitrile | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Tetrahydrofuran | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Benzene | ND | 2.5 | μg/L | . 1 | 8/11/2015 | R2871 |
| Toluene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Ethylbenzene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R287 |
| Methyl tert-butyl ether (MTBE) | ND | 50 | µg/L | 1 | 8/11/2015 | R2871 |
| 1,2,4-Trimethylbenzene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,3,5-Trimethylbenzene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,2-Dichloroethane (EDC) | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,2-Dibromoethane (EDB) | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Naphthalene | 3,4 | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Acetone | 890 | 12 | μg/L | 1 | 8/11/2015 | R2871 |
| Bromobenzene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Bromodichloromethane | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Bromoform | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Bromomethane | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Carbon disulfide | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Carbon Tetrachloride | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Chlorobenzene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Chloroethane | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Chloroform | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Chloromethane | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| 2-Chlorotoluene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |

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

- 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 Page 4 of 31
- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1507D99

Date Reported: 9/10/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: WDW-1,2,&3 Effluent

Project: Quarterly WDW-1, 2, & 3 Inj Well

Collection Date: 7/30/2015 8:55:00 AM

Lab ID: 1507D99-001

Matrix: AQUEOUS

Received Date: 7/31/2015 8:00:00 AM

| Analyses | Result | RL Qu | al Units | DF | Date Analyzed | Batch |
|-----------------------------|--------|-------|----------|-----|---------------|-----------------|
| EPA METHOD 8260B: VOLATILES | | | | | Anal | yst: SUB |
| 4-Chlorotoluene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 |
| cis-1,2-DCE | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 |
| cis-1,3-Dichloropropene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 |
| 1,2-Dibromo-3-chloropropane | ND | 2.5 | μg/L | . 1 | 8/11/2015 | R28710 |
| Dibromochloromethane | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 |
| Dibromomethane | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,2-Dichlorobenzene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,3-Dichlorobenzene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,4-Dichlorobenzene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Dichlorodifluoromethane | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,1-Dichloroethane | ND | 2.5 | µg/L | 1 | 8/11/2015 | R2871 |
| 1,1-Dichloroethene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,2-Dichloropropane | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,3-Dichloropropane | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| 2,2-Dichloropropane | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,1-Dichloropropene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Hexachlorobutadiene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| 2-Hexanone | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Isopropylbenzene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Methylene Chloride | ND | 12 | μg/L | 1 | 8/11/2015 | R2871 |
| n-Butylbenzene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| n-Propylbenzene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| sec-Butylbenzene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Styrene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| tert-Butylbenzene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,1,1,2-Tetrachloroethane | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,1,2,2-Tetrachloroethane | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Tetrachloroethene (PCE) | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| trans-1,2-DCE | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| trans-1,3-Dichloropropene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,2,3-Trichlorobenzene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,2,4-Trichlorobenzene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,1,1-Trichloroethane | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,1,2-Trichloroethane | ND | 2.5 | μg/L | . 1 | 8/11/2015 | R2871 |
| Trichloroethene (TCE) | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Trichlorofluoromethane | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,2,3-Trichloropropane | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| Vinyl chloride | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 |
| mp-Xylenes | ND | 5.0 | μg/L | 1 | 8/11/2015 | R28710 |

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- 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 Page 5 of 31
- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1507D99

Date Reported: 9/10/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: WDW-1,2,&3 Effluent

Project: Quarterly WDW-1, 2, & 3 Inj Well

Collection Date: 7/30/2015 8:55:00 AM

Lab ID: 1507D99-001

Received Date: 7/31/2015 8:00:00 AM

| Analyses | Result | RL Qu | al Units | DF | Date Analyzed | Batch | |
|------------------------------|--------|--------|--------------|----|---------------|--------------|--|
| EPA METHOD 8260B: VOLATILES | | | | | | Analyst: SUB | |
| o-Xylene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 | |
| tert-Amyl methyl ether | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 | |
| tert-Butyl alcohol | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 | |
| Acrolein | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 | |
| Acrylonitrile | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 | |
| Bromochloromethane | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 | |
| 2-Chloroethyl vinyl ether | ND | 2.5 | μg/L | 1 | 8/11/2015 | R2871 | |
| Iodomethane | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 | |
| trans-1,4-Dichloro-2-butene | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 | |
| Vinyl acetate | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 | |
| 1,4-Dioxane | ND | 100 | μg/L | 1 | 8/11/2015 | R28710 | |
| Surr: 1,2-Dichlorobenzene-d4 | 94.0 | 70-130 | %REC | 1 | 8/11/2015 | R28710 | |
| Surr: 4-Bromofluorobenzene | 96.0 | 70-130 | %REC | 1 | 8/11/2015 | R28710 | |
| Surr: Toluene-d8 | 100 | 70-130 | %REC | 1 | 8/11/2015 | R2871 | |
| EPA 8270C: SEMIVOLATILES/MOD | | | | | A | nalyst: SUB | |
| 1,1-Biphenyl | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 | |
| Atrazine | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 | |
| Benzaldehyde | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 | |
| Caprolactam | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 | |
| N-Nitroso-di-n-butylamine | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 | |
| Acetophenone | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 | |
| 1-Methylnaphthalene | 7.1 | 5.0 | μg/L | 1 | 8/12/2015 | R28710 | |
| 2,3,4,6-Tetrachlorophenol | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 | |
| 2,4,5-Trichlorophenol | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 | |
| 2,4,6-Trichlorophenol | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 | |
| 2,4-Dichlorophenoi | ND | 5.0 | μg/ L | 1 | 8/12/2015 | R28710 | |
| 2,4-Dimethylphenol | 6.7 | 5.0 | μg/L | 1 | 8/12/2015 | R28710 | |
| 2,4-Dinitrophenol | ND | 5.0 | μg/ L | 1 | 8/12/2015 | R28710 | |
| 2,4-Dinitrotoluene | ND | 5.0 | μg/L | -1 | 8/12/2015 | R28710 | |
| 2,6-Dinitrotoluene | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 | |
| 2-Chloronaphthalene | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 | |
| 2-Chlorophenol | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 | |
| 2-Methylnaphthalene | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 | |
| 2-Methylphenol | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 | |
| 2-Nitroaniline | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 | |
| 2-Nitrophenol | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 | |
| 3,3'-Dichlorobenzidine | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 | |
| 3-Nitroaniline | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 | |
| 4,6-Dinitro-2-methylphenol | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 | |

Matrix: AQUEOUS

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

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Η Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND
- R RPD outside accepted recovery limits
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 6 of 31
- P Sample pH Not In Range
- Reporting Detection Limit

Lab Order 1507D99

Date Reported: 9/10/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: WDW-1,2,&3 Effluent

Project: Quarterly WDW-1, 2, & 3 Inj Well

Collection Date: 7/30/2015 8:55:00 AM

Lab ID: 1507D99-001

Matrix: AQUEOUS

Received Date: 7/31/2015 8:00:00 AM

| Analyses | Result | RL Qu | al Units | DF | Date Analyzed | l Batch |
|------------------------------|--------|-------|----------|-----|---------------|--------------|
| EPA 8270C: SEMIVOLATILES/MOD | | | | | Д | Analyst: SUB |
| 4-Bromophenyl phenyl ether | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 |
| 4-Chloro-3-methylphenol | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 |
| 4-Chloroaniline | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 |
| 4-Chlorophenyl phenyl ether | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 |
| 4-Nitroaniline | ND | 5.0 | µg/L | 1 | 8/12/2015 | R28710 |
| 4-Nitrophenol | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 |
| Acenaphthene | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Acenaphthylene | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Anthracene | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Benzo(g,h,i)perylene | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Benz(a)anthracene | ND | 1.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Benzo(a)pyrene | ND | 1.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Benzo(b)fluoranthene | ND | 1.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Benzo(k)fluoranthene | ND | 1.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Bis(2-chloroethoxy)methane | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Bis(2-chloroethyl)ether | ЙD | 5.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Bis(2-chloroisopropyl)ether | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Bis(2-ethylhexyl)phthalate | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Butyl benzyl phthalate | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Carbazole | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Chrysene | ND | 1.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Dibenz(a,h)anthracene | ND | 1.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Dibenzofuran | 5.7 | 5.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Diethyl phthalate | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Dimethyl phthalate | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Di-n-butyl phthalate | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Di-n-octyl phthalate | ND | 5.0 | μg/L | . 1 | 8/12/2015 | R2871 |
| Fluoranthene | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Fluorene | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Hexachlorobenzene | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Hexachlorobutadiene | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Hexachlorocyclopentadiene | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Hexachloroethane | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 |
| Indeno(1,2,3-cd)pyrene | ND | 1.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Isophorone | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Naphthalene | ND | 5.0 | μg/L | 1 | 8/12/2015 | R2871 |
| Nitrobenzene | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 |
| N-Nitrosodi-n-propylamine | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 |
| N-Nitrosodiphenylamine | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 |

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

- * 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 Page 7 of 31
- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1507D99

Date Reported: 9/10/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: WDW-1,2,&3 Effluent

Project: Quarterly WDW-1, 2, & 3 Inj Well

Collection Date: 7/30/2015 8:55:00 AM

Lab ID: 1507D99-001

Received Date: 7/31/2015 8:00:00 AM

| Analyses | Result | RL Q | ual Units | DF | Date Analyze | d Batch |
|------------------------------|--------|--------|-----------|----|--------------|---------------------|
| EPA 8270C: SEMIVOLATILES/MOD | | | | | | Analyst: SUB |
| Pentachlorophenol | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 |
| Phenanthrene | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 |
| Phenol | 5.0 | 5.0 | μg/L | 1 | 8/12/2015 | R28710 |
| Pyrene | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 |
| o-Toluidine | ND | 5.0 | µg/L | 1 | 8/12/2015 | R28710 |
| Pyridine | ND | 5.0 | μg/L | 1 | 8/12/2015 | R28710 |
| 1,2,4,5-Tetrachlorobenzene | ND | 0 | μg/L | 1 | 8/12/2015 | R28710 |
| Surr: 2,4,6-Tribromophenol | 111 | 10-123 | %REC | 1 | 8/12/2015 | R28710 |
| Surr: 2-Fluorobiphenyl | 84.4 | 19-130 | %REC | 1 | 8/12/2015 | R28710 |
| Surr: 2-Fluorophenol | 85.2 | 21-120 | %REC | 1 | 8/12/2015 | R28710 |
| Surr: Nitrobenzene-d5 | 84.0 | 25-130 | %REC | 1 | 8/12/2015 | R28710 |
| Surr: Phenol-d5 | 66.4 | 10-130 | %REC | 1 | 8/12/2015 | R28710 |
| Surr: Terphenyl-d14 | 51.6 | 21-141 | %REC | 1 | 8/12/2015 | R28710 |

Matrix: AQUEOUS

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

- 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 Page 8 of 31
- P. Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1507D99

Date Reported: 9/10/2015

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: TRIP BLANK

Project: Quarterly WDW-1, 2, & 3 Inj Well

CLIENT: Navajo Refining Company

Collection Date:

Lab ID: 1507D99-002

Matrix: TRIP BLANK

Received Date: 7/31/2015 8:00:00 AM

| Analyses | Result | RL Qu | al Units | DF | Date Analyzed | l Batch |
|--------------------------------|--------|-------|--------------|-----|---------------|---------------------|
| EPA METHOD 8260B: VOLATILES | | | | | P | Analyst: SUB |
| Acetonitrile | ND | 0.50 | μg/ L | 1 | 8/11/2015 | R28710 |
| Allyl chloride | ND | 0.50 | μg/ L | 1 | 8/11/2015 | R28710 |
| Chloroprene | ND | 0.50 | μg/ L | 1 | 8/11/2015 | R28710 |
| Cyclohexane | ND | 0.50 | μg/L | . 1 | 8/11/2015 | R28710 |
| Diethyl ether | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Diisopropyl ether | ND | 0.50 | μg/ L | 1 | 8/11/2015 | R28710 |
| Epichlorohydrin | ND | 5.0 | μg/ L | 1 | 8/11/2015 | R28710 |
| Ethyl acetate | ND | 0.50 | μg/ L | 1 | 8/11/2015 | R28710 |
| Ethyl methacrylate | ND | 0.50 | μg/ L | 1 | 8/11/2015 | R28710 |
| Ethyl tert-butyl ether | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Freon-113 | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Isobutanol | ND | 0.50 | μg/ L | 1 | 8/11/2015 | R28710 |
| Isopropyl acetate | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Methacrylonitrile | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Methyl acetate | ND | 0.50 | μg/ L | 1 | 8/11/2015 | R28710 |
| Methyl ethyl ketone | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 |
| Methyl isobutyl ketone | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 |
| Methyl methacrylate | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Methylcyclohexane | ND | 1.0 | μg/L | 1 | 8/11/2015 | R28710 |
| n-Amyl acetate | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| n-Hexane | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Nitrobenzene | ND | 5.0 | μg/L | 1 | 8/11/2015 | R28710 |
| Pentachloroethane | ND | 5.0 | μg/L | 1 | 8/11/2015 | R28710 |
| p-isopropyltoluene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Propionitrile | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Tetrahydrofuran | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Benzene | ND | 0.50 | µg/L | 1. | 8/11/2015 | R28710 |
| Toluene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Ethylbenzene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Methyl tert-butyl ether (MTBE) | ND | 10 | μg/L | 1 | 8/11/2015 | R28710 |
| 1,2,4-Trimethylbenzene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| 1,3,5-Trimethylbenzene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| 1,2-Dichloroethane (EDC) | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| 1,2-Dibromoethane (EDB) | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Naphthalene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Acetone | ND | 2.5 | μg/L | 1 | 8/11/2015 | R28710 |
| Bromobenzene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Bromodichloromethane | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Bromoform | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |

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- * 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 Page 9 of 31
- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1507D99

Date Reported: 9/10/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: TRIP BLANK

Project: Quarterly WDW-1, 2, & 3 Inj Well

Collection Date:

Lab ID:

1507D99-002

Matrix: TRIP BLANK

Received Date: 7/31/2015 8:00:00 AM

| analyses | Result | RL Qu | al Units | DF | Date Analyzed | Batch |
|-----------------------------|--------|--------|----------|-----|---------------|-----------|
| EPA METHOD 8260B: VOLATILES | | | | | Ana | lyst: SUB |
| Bromomethane | ND | 0.50 | μg/L | 1 | 8/11/2015 | R2871 |
| Carbon disulfide | ND | 0.50 | μg/L | 1 | 8/11/2015 | R2871 |
| Carbon Tetrachloride | ND | 0.50 | μg/L | 1 | 8/11/2015 | R2871 |
| Chlorobenzene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R2871 |
| Chloroethane | ND | 0.50 | μg/L | 1 | 8/11/2015 | R2871 |
| Chloroform | ND | 0.50 | μg/L | 1 | 8/11/2015 | R2871 |
| Chloromethane | ND | 0.50 | μg/L | 1 | 8/11/2015 | R2871 |
| 2-Chlorotoluene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R2871 |
| 4-Chlorotoluene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R2871 |
| cis-1,2-DCE | ND | 0.50 | μg/L | 1 | 8/11/2015 | R2871 |
| cis-1,3-Dichloropropene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,2-Dibromo-3-chloropropane | ND | . 0.50 | μg/L | 1 | 8/11/2015 | R2871 |
| Dibromochloromethane | ND | 0.50 | μg/L | 1 | 8/11/2015 | R2871 |
| Dibromomethane | ND | 0.50 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,2-Dichlorobenzene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,3-Dichlorobenzene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,4-Dichlorobenzene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R287 |
| Dichlorodifluoromethane | ND | 0.50 | μg/L | 1 | 8/11/2015 | R287 |
| 1,1-Dichloroethane | ND | 0.50 | μg/L | 1 | 8/11/2015 | R287 |
| -1,1-Dichloroethene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R287 |
| 1,2-Dichloropropane | ND | 0.50 | μg/L | 1 | 8/11/2015 | R287 |
| 1,3-Dichloropropane | ND | 0.50 | μg/L | 1 | 8/11/2015 | R287 |
| 2,2-Dichloropropane | ND | 0.50 | μg/L | . 1 | 8/11/2015 | R287 |
| 1,1-Dichloropropene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R287 |
| Hexachlorobutadiene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R287 |
| 2-Hexanone | ND | 0.50 | μg/L | 1 | 8/11/2015 | R2871 |
| Isopropylbenzene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R287 |
| Methylene Chloride | ND | 2.5 | μg/L | 1 | 8/11/2015 | R287 |
| n-Butylbenzene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R287 |
| n-Propylbenzene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R287 |
| sec-Butylbenzene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R2871 |
| Styrene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R2871 |
| tert-Butylbenzene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R287 |
| 1,1,1,2-Tetrachloroethane | ND | 0.50 | μg/L | 1 | 8/11/2015 | R287 |
| 1,1,2,2-Tetrachloroethane | ND | 0.50 | μg/L | 1 | 8/11/2015 | R287 |
| Tetrachloroethene (PCE) | ND | 0.50 | μg/L | 1 | 8/11/2015 | R287 |
| trans-1,2-DCE | ND | 0.50 | μg/L | 1 | 8/11/2015 | R287 |
| trans-1,3-Dichloropropene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R2871 |
| 1,2,3-Trichlorobenzene | ND | 0.50 | µg/L | 1 | 8/11/2015 | R2871 |

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- * 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 Page 10 of 31
- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1507D99

Date Reported: 9/10/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: TRIP BLANK

Project: Quarterly WDW-1, 2, & 3 Inj Well

Collection Date:

Lab ID: 1507D99-002

Matrix: TRIP BLANK

Received Date: 7/31/2015 8:00:00 AM

| Analyses | Result | RL Qu | al Units | DF | Date Analyz | ed Batch |
|------------------------------|--------|--------|----------|----|-------------|--------------|
| EPA METHOD 8260B: VOLATILES | | | | | | Analyst: SUB |
| 1,2,4-Trichlorobenzene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| 1,1,1-Trichloroethane | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| 1,1,2-Trichloroethane | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Trichloroethene (TCE) | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Trichlorofluoromethane | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| 1,2,3-Trichloropropane | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Vinyl chloride | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| mp-Xylenes | ND | 1.0 | μg/L | 1 | 8/11/2015 | R28710 |
| o-Xylene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| tert-Amyl methyl ether | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| tert-Butyl alcohol | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Acrolein | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Acrylonitrile | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Bromochloromethane | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| 2-Chloroethyl vinyl ether | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Iodomethane | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| trans-1,4-Dichloro-2-butene | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| Vinyl acetate | ND | 0.50 | μg/L | 1 | 8/11/2015 | R28710 |
| 1,4-Dioxane | ND | 20 | μg/L | 1 | 8/11/2015 | R28710 |
| Surr: 1,2-Dichlorobenzene-d4 | 95.6 | 70-130 | %REC | 1 | 8/11/2015 | R28710 |
| Surr: 4-Bromofluorobenzene | 95.2 | 70-130 | %REC | 1 | 8/11/2015 | R28710 |
| Surr: Toluene-d8 | 93.6 | 70-130 | %REC | 1 | 8/11/2015 | R28710 |

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

- * 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 limit Page 11 of 31
- P Sample pH Not In Range
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D99

10-Sep-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, & 3 Inj Well

| Sample ID MB Client ID: PBW | SampType: MBLK Batch ID: R27901 | | | | tCode: El | S | | | | |
|----------------------------------|----------------------------------|------|-----------|---------------|-----------|----------|-------------|------|----------|------|
| Prep Date: | Analysis Date: 7/31/2015 | | | SeqNo: 839136 | | | Units: mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Fluoride | ND | 0.10 | | | | | | | | |
| Chloride | ND | 0.50 | | | | | | | | |
| Nitrogen, Nitrite (As N) | ND | 0.10 | | | | | | | | |
| Bromide | ND | 0.10 | | | | | | | | |
| Nitrogen, Nitrate (As N) | ND | 0.10 | | | | | | | | |
| Phosphorus, Orthophosphate (As P | ND | 0.50 | | | | | | | | |
| Sulfate | ND | 0.50 | | | | | | | | |

| Sample ID LCS | Samn | ype: LC | .6 | Tos | tCode: El | PA Method | 300.0: Anion | | | |
|----------------------------------|------------|------------------|-----------|-------------|-----------|-----------|--------------|------|----------|------|
| Client ID: LCSW | • | n ID: R2 | | | RunNo: 2 | | ood.o. Amon | | | |
| Prep Date: | Analysis [|)ate: 7 / | 31/2015 | 8 | SeqNo: 8 | 39137 | g/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Fluoride | 0.52 | 0.10 | 0.5000 | 0 | 104 | 90 | 110 | | | |
| Chloride | 4.8 | 0.50 | 5.000 | 0 | 95.8 | 90 | 110 | | | |
| Nitrogen, Nitrite (As N) | 0.96 | 0.10 | 1.000 | 0 | 95.9 | 90 | 110 | | | |
| Bromide | 2.5 | 0.10 | 2.500 | 0 | 98.2 | 90 | 110 | | | |
| Nitrogen, Nitrate (As N) | 2.5 | 0.10 | 2.500 | 0 | 101 | 90 | 110 | | | |
| Phosphorus, Orthophosphate (As P | 4.8 | 0.50 | 5.000 | 0 | 95.3 | 90 | 110 | | | |
| Sulfate | 9.8 | 0.50 | 10.00 | 0 | 97.8 | 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
- Sample pH Not In Range
- RL Reporting Detection Limit

Page 12 of 31

Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D99

10-Sep-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, & 3 Inj Well

| Sample ID MB-R28710 | SampT | уре: Мі | BLK | LK TestCode: EPA Method 8260B: VOLATILES | | | | | | |
|--------------------------------|------------|----------|-----------|--|----------|----------|-------------|------|----------|------|
| Client ID: PBW | Batcl | n ID: R2 | 8710 | F | RunNo: 2 | 8710 | | | | |
| Prep Date: | Analysis D | Date: 8 | 11/2015 | S | SeqNo: 8 | 70221 | Units: µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Acetonitrile | ND | 0.50 | | | | | | | | |
| Allyl chloride | ND | 0.50 | | | | | | | | |
| Chloroprene | ND | 0.50 | | | | | | | | |
| Cyclohexane | ND | 0.50 | | | | | | | | |
| Diethyl ether | ND | 0.50 | | | | | | | | |
| Diisopropyl ether | ND | 0.50 | | | | | | | | |
| Epichlorohydrin | ND | 0.50 | | | | | | | | |
| Ethyl acetate | ND | 0.50 | | | | | | | | |
| Ethyl methacrylate | ND | 0.50 | | | | | | | | |
| Ethyl tert-butyl ether | ND | 0.50 | | | | | | | | |
| Freon-113 | ND | 0.50 | | | | | | | | |
| Isobutanol | ND | 5.0 | | | | | | | | |
| Isopropyl acetate | ND | 0.50 | | | | | | | | |
| Methacrylonitrile | ND | 0.50 | | | | | | | | |
| Methyl acetate | ND | 0.50 | | | | | | | | |
| Methyl ethyl ketone | ND | 2.5 | | | | | | | | |
| Methyl isobutyl ketone | ND | 2.5 | | | | | | | | |
| Methyl methacrylate | ND | 0.50 | | | | | | | | |
| Methylcyclohexane | ND | 0.50 | | | | | | | | |
| n-Amyl acetate | ND | 0.50 | | | | | | | | |
| n-Hexane | ND | 0.50 | | | | | | | | |
| Nitrobenzene | ND | 0.50 | | | | | | | | |
| Pentachloroethane | ND | 0.50 | | | | | | | | |
| p-isopropyltoluene | ND | 0.50 | | | | | | , | | |
| Propionitrile | ND | 0.50 | | | | | | | | |
| Tetrahydrofuran | ND | 0.50 | | | | | | | | |
| Benzene | ND | 0.50 | | | | | | | | |
| Toluene | ND | 0.50 | | | | | | | | |
| Ethylbenzene | ND | 0.50 | | | | | | | | |
| Methyl tert-butyl ether (MTBE) | ND | 0.50 | | | | | | | | |
| 1,2,4-Trimethylbenzene | ND | 0.50 | | | | | | | | |
| 1,3,5-Trimethylbenzene | ND | 0.50 | | | | | | | | |
| 1,2-Dichloroethane (EDC) | ND | 0.50 | | | | | | | | |
| 1,2-Dibromoethane (EDB) | ND | 0.50 | | | | | | | | |
| Naphthalene | ND | 0.50 | | | | | | | | |
| Acetone | ND | 2.5 | | | | | | | | |
| Bromobenzene | ND | 0.50 | | | | | | | | |
| Bromodichloromethane | ND | 0.50 | | | | | | | | |
| Bromoform | ND | 0.50 | | | | | | | | |
| Diomolom | ND | 0.50 | | | | | | | | |

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
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- 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

Page 13 of 31

- P Sample pH Not In Range
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D99

10-Sep-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, & 3 Inj Well

| | Campi | ype: MBI | LK | les | TestCode: EPA Method 8260B: VOLATILES | | | | | |
|-----------------------------|------------|----------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Client ID: PBW | Batch | ID: R28 | 3710 | F | RunNo: 2 | 8710 | | | | |
| Prep Date: | Analysis D | ate: 8/1 | 1/2015 | 5 | SeqNo: 8 | 70221 | Units: µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Bromomethane | ND | 0.50 | | | - | | | | | |
| Carbon disulfide | ND | 0.50 | | | | | | | | |
| Carbon Tetrachloride | ND | 0.50 | | | | | | | | |
| Chlorobenzene | ND | 0.50 | | | | | | | | |
| Chloroethane | ND | 0.50 | | | | | | | | |
| Chloroform | ND | 0.50 | | | | | | | | |
| Chloromethane | ND | 0.50 | | | | | | | | |
| 2-Chlorotoluene | ND | 0.50 | | | | | | | | |
| 4-Chlorotoluene | ND | 0.50 | | | | | | | | |
| cis-1,2-DCE | ND | 0.50 | | | | | | | | |
| cis-1,3-Dichloropropene | ND | 0.50 | | | | | | | | |
| 1,2-Dibromo-3-chloropropane | ND | 0.50 | | | | | | | | |
| Dibromochloromethane | ND | 0.50 | | | | | | | | |
| Dibromomethane | ND | 0.50 | | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.50 | | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.50 | | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.50 | | | | | | | | |
| Dichlorodifluoromethane | ND | 0.50 | | | | | | | | |
| 1,1-Dichloroethane | ND | 0.50 | | | | | | | | |
| 1,1-Dichloroethene | ND | 0.50 | | | | | | | | |
| 1,2-Dichloropropane | ND | 0.50 | | | | | | | | |
| 1,3-Dichloropropane | ND | 0.50 | | | | | | | | |
| 2,2-Dichloropropane | ND | 0.50 | | | | | | | | |
| 1,1-Dichloropropene | ND | 0.50 | | | | | | | | |
| Hexachlorobutadiene | ND | 0.50 | | | | | | | | |
| 2-Hexanone | ND | 0.50 | | | | | | | | |
| Isopropylbenzene | ND | 0.50 | | | | | | | | |
| Methylene Chloride | ND | 2.5 | | | | | | | | |
| n-Butylbenzene | ND | 0.50 | | | | | | | | |
| n-Propylbenzene | ND | 0.50 | | | | | | | | |
| sec-Butylbenzene | ND | 0.50 | | | | | | | | |
| Styrene | ND | 0.50 | | | | | | | | |
| tert-Butylbenzene | ND | 0.50 | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ND | 0.50 | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | 0.50 | | | | | | | | |
| Tetrachloroethene (PCE) | ND | 0.50 | | | | | | | | |
| trans-1,2-DCE | ND | 0.50 | | | | | | | | |
| trans-1,3-Dichloropropene | ND ND | 0.50 | | | | | | | | |
| 1,2,3-Trichlorobenzene | ND ND | 0.50 | | | | | | | | |

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
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- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
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- J Analyte detected below quantitation limits

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- P Sample pH Not In Range
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D99

10-Sep-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, & 3 Inj Well

| Sample ID: MB-R28710 | SampT | Гурс: МЕ | BLK | Tes | tCode: | EPA Method | 1 8260B: VOL | ATILES | | |
|-----------------------------|------------|-----------------|-----------|-------------|--------|------------|--------------|--------|----------|------|
| Client ID: PBW | Batch | h ID: R2 | 8710 | F | RunNo: | 28710 | | | | |
| Prep Date: | Analysis D | Date: 8/ | 11/2015 | \$ | SeqNo: | 870221 | Units: µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %RE0 | C LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| 1,2,4-Trichlorobenzene | ND | 0.50 | | | | | | | | |
| 1,1,1-Trichloroethane | ND | 0.50 | | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.50 | | | | | | | | |
| Trichloroethene (TCE) | ND | 0.50 | | | | | | | | |
| Trichlorofluoromethane | ND | 0.50 | | | | | | | | |
| 1,2,3-Trichloropropane | ND | 0.50 | | | | | | | | |
| Vinyl chloride | ND | 0.50 | | | | | | | | |
| mp-Xylenes | ND | 1.0 | | | | | | | | |
| o-Xylene | ND | 0.50 | | | | | | | | |
| tert-Amyl methyl ether | ND | 0.50 | | | | | | | | |
| tert-Butyl alcohol | ND | 0.50 | | | | | | | | |
| Acrolein | ND | 0.50 | | | | | | | | |
| Acrylonitrile | ND | 0.50 | | | | | | | | |
| Bromochloromethane | ND | 0.50 | | | | | | | | |
| 2-Chloroethyl vinyl ether | ND | 0.50 | | | | | | | | |
| lodomethane | ND | 0.50 | | | | | | | | |
| trans-1,4-Dichloro-2-butene | ND | 0.50 | | | | | | | | |
| Vinyl acetate | ND | 0.50 | | | | | | | | |
| 1,4-Dioxane | ND | 0.50 | | | | | | | | |

| Sample ID LCS-R28710 | SampT | ype: LC | s | Tes | tCode: El | ATILES | | | | |
|-------------------------|------------|---------------|-----------|-------------|-----------|----------|-----------|------|----------|------|
| Client ID: LCSW | Batch | 1D: R2 | 8710 | F | RunNo: 2 | 8710 | | | | |
| Prep Date: | Analysis D | ate: 8/ | 11/2015 | S | SeqNo: 8 | 70222 | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | 9.6 | 0 | 10.00 | 0 . | 96.3 | 80 | 120 | | | |
| Toluene | 9.7 | 0 | 10.00 | 0 | 97.3 | 80 | 120 | | | |
| Ethylbenzene | 9.7 | 0 | 10.00 | 0 | 97.3 | 80 | 120 | | | |
| Chlorobenzene | 9.5 | 0 | 10.00 | 0 | 95.2 | 80 | 120 | | | |
| 1,1-Dichloroethene | 9.6 | 0 | 10.00 | 0 | 95.5 | 80 | 120 | | | |
| Tetrachloroethene (PCE) | 9.0 | 0 | 10.00 | 0 | 89.9 | 80 | 120 | | | |
| Trichloroethene (TCE) | 9.4 | 0 | 10.00 | 0 | 93.6 | 80 | 120 | | | |
| o-Xylene | 10 | 0 | 10.00 | 0 | 101 | 80 | 120 | | | |

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
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- ND Not Detected at the Reporting Limit
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- 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
- Page 15 of 31

- P Sample pH Not In Range
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D99

10-Sep-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, & 3 Inj Well

| Sample ID MB-R28710 | SampType: MBLK TestCode: EPA 8270C: Semivolatiles/Mod | | | | | | | | | |
|-----------------------------|---|--------|-----------|-------------|----------|----------|-------------|------|----------|------|
| Client ID: PBW | Batcl | ID: R | 28710 | F | RunNo: 2 | 8710 | | | | |
| Prep Date: | Analysis D | ate: 8 | /12/2015 | | SeqNo: 8 | 70225 | Units: µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| N-Nitroso-di-n-butylamine | ND | 0.50 | | | | | | | | |
| Acetophenone | ND | 5.0 | | | | | | | | |
| 1-Methylnaphthalene | ND | 5.0 | | | | | | | | |
| 2,3,4,6-Tetrachlorophenol | ND | 5.0 | | | | | | | | |
| 2,4,5-Trichlorophenol | ND | 5.0 | | • | | | | | | |
| 2,4,6-Trichlorophenol | ND | 5.0 | | | | | | | | |
| 2,4-Dichlorophenol | ND | 5.0 | | | | | | | | |
| 2,4-Dimethylphenol | ND | 5.0 | | | | | | | | |
| 2,4-Dinitrophenol | ND | 5.0 | | | | | | | | |
| 2,4-Dinitrotoluene | ND | 5.0 | | | | | | | | |
| 2,6-Dinitrotoluene | ND | 5.0 | | | | | | | | |
| 2-Chloronaphthalene | ND | 5.0 | | | | | | | | |
| 2-Chlorophenol | ND | 5.0 | | | | | | | | |
| 2-Methylnaphthalene | ND | 5.0 | | | | | | | | |
| 2-Methylphenol | ND | 5.0 | | | | | | | | |
| 2-Nitroaniline | ND | 5.0 | | | | | | | | |
| 2-Nitrophenol | ND | 5.0 | | | | | | | | |
| 3,3'-Dichlorobenzidine | ND | 5.0 | | | | | | | | |
| 3-Nitroaniline | ND | 5.0 | | | | | | | | |
| 1,6-Dinitro-2-methylphenol | ND | 5.0 | | | | | | | | |
| 1-Bromophenyl phenyl ether | ND | 5.0 | | | | | | | | |
| 4-Chloro-3-methylphenol | ND | 5.0 | | | | | | | | |
| 4-Chloroaniline | ND | 5.0 | | | | | | | | |
| 4-Chlorophenyl phenyl ether | ND | 5.0 | | | | | | | | |
| 4-Nitroaniline | ND | 5.0 | | | | | | | | |
| 4-Nitrophenol | ND | 5.0 | | | | | | | | |
| Acenaphthene | ND | 5.0 | | | | | | | | |
| Acenaphthylene | ND | 5.0 | | | | | | | | |
| Anthracene | ND | 5.0 | | | | | | | | |
| Benzo(g,h,i)perylene | ND | 5.0 | | | | | | | | |
| Benz(a)anthracene | ND | 0.10 | | | | | | | | |
| Benzo(a)pyrene | ND | 0.10 | | | | | | | | |
| Benzo(b)fluoranthene | ND | 0.10 | | | | | | | | |
| Benzo(k)fluoranthene | ND | 0.10 | | | | | | | | |
| Bis(2-chloroethoxy)methane | ND | 5.0 | | | | | | | | |
| Bis(2-chloroethyl)ether | ND | 5.0 | | | | | | | | |
| Bis(2-chloroisopropyl)ether | ND ND | 5.0 | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | ND ND | 5.0 | | | | | | | | |
| | | | | | | | | | | |
| Butyl benzyl phthalate | ND | 5.0 | | | | | | | | |

Qualifiers:

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- D Sample Diluted Due to Matrix
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- 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

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- P Sample pH Not In Range
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D99

10-Sep-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, & 3 Inj Well

| Sample ID MB-R28710 | SampT | Гуре: МЕ | BLK | TestCode: EPA 8270C: Semivolatiles/Mod | | | | | | |
|----------------------------|------------|-----------------|-----------|--|----------|----------|-------------|------|----------|------|
| Client ID: PBW | Batcl | h ID: R2 | 8710 | F | RunNo: 2 | 8710 | | | | |
| Prep Date: | Analysis E | | | S | SeqNo: 8 | 70225 | Units: µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Carbazole | ND | 5.0 | | | | | | | | |
| Chrysene | ND | 0.10 | | | | | | | | |
| Dibenz(a,h)anthracene | ND | 0.10 | | | | | | | | |
| Dibenzofuran | ND | 5.0 | | | | | | | | |
| Diethyl phthalate | ND | 5.0 | | | | | | | | |
| Dimethyl phthalate | ND | 5.0 | | | | | | | | |
| Di-n-butyl phthalate | ND | 5.0 | | | | | | | | |
| Di-n-octyl phthalate | ND | 5.0 | | | | | | | | |
| Fluoranthene | ND | 5.0 | | | | | | | | |
| Fluorene | ND | 5.0 | | | | | | | | |
| Hexachlorobenzene | ND | 1.0 | | | | | | | | |
| Hexachlorobutadiene | ND | 5.0 | | | | | | | | |
| Hexachlorocyclopentadiene | ND | 5.0 | | | | | | | | |
| Hexachloroethane | ND | 5.0 | | | | | | | | |
| Indeno(1,2,3-cd)pyrene | ND | 0.10 | | | | | | | | |
| Isophorone | ND | 5.0 | | | | | | | | |
| Naphthalene | ND | 5.0 | | | | | | | | |
| Nitrobenzene | ND | 5.0 | | | | | | | | |
| N-Nitrosodi-n-propylamine | ND | 5.0 | | | | | | | | |
| N-Nitrosodiphenylamine | ND | 2.0 | | | | | | | | |
| Pentachlorophenol | ND | 5.0 | | | | | | | | |
| Phenanthrene | ND | 1.0 | | , | | | | | | |
| Phenol | ND | 5.0 | | | | | | | | |
| Pyrene | , ND | 2.0 | | | | | | | | |
| o-Toluidine | · ND | 5.0 | | | | | | | | |
| Pyridine | ND | 5.0 | | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | ND | 5.0 | | | | | | | | |

| Sample ID LCS-R28710 | SampT | ype: LC | s | Tes | tCode: El | PA 8270C: | Semivolatiles | /Mod | | |
|----------------------------|------------|---------|-----------|-------------|-----------|-----------|---------------|------|----------|------|
| Client ID: LCSW | Batch | ID: R2 | 8710 | F | RunNo: 2 | 8710 | | | | |
| Prep Date: | Analysis D | ate: 8/ | 12/2015 | S | SeqNo: 8 | 70226 | Units: µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| 2,4-Dinitrotoluene | 5.0 | 0 | 5.000 | 0 | 99.8 | 49 | 134 | | | |
| 2-Chlorophenol | 4.8 | 0 | 5.000 | 0 | 95.4 | 50 | 131 | | | |
| 4-Chloro-3-methylphenol | 5.4 | 0 | 5.000 | 0 | 109 | 42 | 139 | | | |
| 4-Nitrophenol | 5.6 | 0 | 5.000 | 0 | 111 | 19 | 137 | | | |
| Acenaphthene | 5.2 | 0 | 5.000 | 0 | 103 | 36 | 122 | | | |
| Bis(2-ethylhexyl)phthalate | 5.6 | 0 | 5.000 | 0 | 112 | 43 | 142 | | | |

Qualifiers:

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- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits

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- P Sample pH Not In Range
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D99

10-Sep-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, & 3 Inj Well

| Sample ID LCS-R28710 | Sampl | ype: LC | s | Tes | tCode: El | PA 8270C: | Semivolatiles | /Mod | | |
|---------------------------|------------|-----------------|-----------|-------------|-----------|-----------|---------------|------|----------|------|
| Client ID: LCSW | Batcl | n ID: R2 | 8710 | F | RunNo: 2 | 8710 | | | | |
| Prep Date: | Analysis [| Date: 8/ | 12/2015 | S | SeqNo: 8 | 70226 | Units: µg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| N-Nitrosodi-n-propylamine | 5.3 | 0 | 5.000 | 0 | 106 | 46 | 140 | | | |
| Pentachlorophenol | 5.9 | 0 | 5.000 | 0 | 118 | 22 | 138 | | | |
| Phenol | 4.7 | 0 | 5.000 | 0 | 94.6 | 45 | 134 | | | |
| Pyrene | 4.9 | 0 | 5.000 | 0 | 98.0 | 45 | 138 | | | |

Qualifiers:

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- D Sample Diluted Due to Matrix
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- Sample pH Not In Range
- RL Reporting Detection Limit

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Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D99

10-Sep-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, & 3 Inj Well

Sample ID 1507d99-001adup

SampType: DUP

TestCode: SM2510B: Specific Conductance

Client ID:

WDW-1,2,&3 Effluen

Batch ID: R28029

RunNo: 28029

Prep Date:

Analysis Date: 8/6/2015

SeqNo: 843890

Units: µmhos/cm

Analyte

Result

SPK value SPK Ref Val %REC LowLimit

0.354

PQL

HighLimit %RPD

RPDLimit

Qual

20

Conductivity 5900 0.010

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RPD outside accepted recovery limits R

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

E Value above quantitation range

Analyte detected below quantitation limits

Page 19 of 31

Sample pH Not In Range

Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D99 10-Sep-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, & 3 Inj Well

Sample ID MB-20588

SampType: MBLK

TestCode: EPA Method 7470: Mercury

LowLimit

LowLimit

Client ID: **PBW**

Prep Date:

8/4/2015

Batch ID: 20588

RunNo: 27941

Analysis Date: 8/4/2015

SeqNo: 840615

Units: mg/L HighLimit

%RPD

Analyte Mercury

Result **PQL** ND 0.00020

Sample ID LCS-20588

SampType: LCS

TestCode: EPA Method 7470: Mercury

Client ID: LCSW Batch ID: 20588

Result

RunNo: 27941

Prep Date: 8/4/2015

Units: mg/L

Analysis Date: 8/4/2015

SeqNo: 840616

SPK value SPK Ref Val %REC

HighLimit

%RPD **RPDLimit**

RPDLimit

Qual

Qual

Analyte

PQL SPK value SPK Ref Val

80

0.0049 0.00020 0.005000 %REC 98.8

Mercury

120

Qualifiers:

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

Page 20 of 31

- P Sample pH Not In Range
- Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D99 10-Sep-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, & 3 Inj Well

Sample ID MB-20636

Client ID:

SampType: MBLK Batch ID: 20636

PQL

0.020

Batch ID: 20636

Analysis Date: 8/6/2015

TestCode: MERCURY, TCLP

RunNo: 28011

Prep Date: 8/6/2015

PBW

Analysis Date: 8/6/2015

SeqNo: 843195

Units: mg/L

Analyte Mercury

Result ND SPK value SPK Ref Val %REC LowLimit

SPK value SPK Ref Val %REC

HighLimit

%RPD **RPDLimit**

Qual

Sample ID LCS-20636

SampType: LCS

TestCode: MERCURY, TCLP RunNo: 28011

SeqNo: 843196

Units: mg/L

HighLimit

Analyte

Result

80

LowLimit

%RPD

Qual

ND

0.005000

120

Prep Date: 8/6/2015

Client ID: LCSW

PQL 0.020

0

RPDLimit

Mercury

111

Page 21 of 31

Qualifiers:

D

Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit

Value exceeds Maximum Contaminant Level.

Sample Diluted Due to Matrix

В Analyte detected in the associated Method Blank E Value above quantitation range

Analyte detected below quantitation limits

P Sample pH Not In Range

J

Reporting Detection Limit

Η

R

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

Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D99

10-Sep-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, & 3 Inj Well

| Sample ID MB-20620 | SampT | ype: ME | BLK | Tes | tCode: El | PA Method | 6010B: TCLF | Metals | | |
|---------------------|------------|---------------|-----------|-------------|-----------|-----------|-------------|--------|----------|------|
| Client ID: PBW | Batch | 1D: 20 | 620 | F | RunNo: 2 | 7997 | | | | |
| Prep Date: 8/5/2015 | Analysis D | ate: 8/ | 6/2015 | 9 | SeqNo: 8 | 42847 | Units: mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Arsenic | ND | 5.0 | | | | | | | | |
| Barium | ND | 100 | | | | | | | | |
| Cadmium | ND | 1.0 | | | | | | | | |
| Chromium | ND | 5.0 | | | | | | | | |
| Lead | ND | 5.0 | | | | | | | | |
| Selenium | ND | 1.0 | | | | | | | | |
| Silver | ND | 5.0 | | | | | | | | |

| Sample ID LCS-20620 | SampT | ype: LC | s | Tes | tCode: El | PA Method | 6010B: TCLI | P Metals | | |
|---------------------|------------|-----------------|-----------|-------------|-----------|-----------|-------------|----------|----------|------|
| Client ID: LCSW | Batch | ı ID: 20 | 620 | F | RunNo: 2 | 7997 | | | | |
| Prep Date: 8/5/2015 | Analysis D | ate: 8/ | 6/2015 | s | SeqNo: 8 | 42848 | Units: mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Arsenic | ND | 5.0 | 0.5000 | 0 | 95.8 | 80 | 120 | | | |
| Barium | ND | 100 | 0.5000 | 0 | 98.8 | 80 | 120 | | | |
| Cadmium | ND | 1.0 | 0.5000 | 0 | 96.2 | 80 | 120 | | | |
| Chromium | ND | 5.0 | 0.5000 | 0 | 98.4 | 80 | 120 | | | |
| Lead | ND | 5.0 | 0.5000 | 0 | 97.5 | 80 | 120 | | | |
| Selenium | ND | 1.0 | 0.5000 | 0 | 97.8 | 80 | 120 | | | |
| Silver | ND | 5.0 | 0.1000 | n | 97 N | 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

Page 22 of 31

Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D99

10-Sep-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, & 3 Inj Well

| Sample ID MB-20620 | SampT | Гуре: МЕ | BLK | Tes | tCode: I | PA 6010B: | Total Metals | | | |
|---------------------|------------|-------------------|-----------|-------------|----------|-----------|--------------|------|----------|------|
| Client ID: PBW | Batcl | h ID: 20 0 | 620 | F | RunNo: | 27997 | | | | |
| Prep Date: 8/5/2015 | Analysis D | Date: 8/ | 6/2015 | S | eqNo: | 842849 | Units: mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Aluminum | ND | 0.020 | | | | | | | | |
| Antimony | ND | 0.050 | | | | | | | | |
| Arsenic | ND | 0.020 | | | | | | | | |
| Barium | ND | 0.020 | | | | | | | | |
| Beryllium | ND | 0.0030 | | | | | | | | |
| Cadmium | ND | 0.0020 | | | | | | | | |
| Chromium | ND | 0.0060 | | | | | | | | |
| Copper | ND | 0.0060 | | | | | | | | |
| Iron | ND | 0.050 | | | | | | | | |
| Lead | ND | 0.0050 | | | | | | | | |
| Manganese | ND | 0.0020 | | | | | | | | |
| Nickel | ND | 0.010 | | | | | | | | |
| Selenium | ND | 0.050 | | | | | | | | |
| Silver | ND | 0.0050 | | | | | | | | |
| Thallium | ND | 0.050 | | | | | | | | |
| Vanadium | ND | 0.050 | | | | | | | | |
| Zinc | ND | 0.020 | | | | | | | | |

| Sample ID LCS-20620 | Samp | Type: LC | s | Tes | tCode: El | PA 6010B: | Total Metals | | | |
|---------------------|------------|------------------|-----------|-------------|-----------|-----------|--------------|------|----------|------|
| Client ID: LCSW | Bato | h ID: 20 | 620 | F | RunNo: 2 | 7997 | | | | |
| Prep Date: 8/5/2015 | Analysis I | Date: 8 / | 6/2015 | S | SeqNo: 8 | 42850 | Units: mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Aluminum | 0.47 | 0.020 | 0.5000 | 0 | 94.7 | 80 | 120 | | | |
| Antimony | 0.49 | 0.050 | 0.5000 | 0 | 98.3 | 80 | 120 | | | |
| Arsenic | 0.49 | 0.020 | 0.5000 | 0 | 98.5 | 80 | 120 | | | |
| Barium | 0.50 | 0.020 | 0.5000 | 0 | 100 | 80 | 120 | | | |
| Beryllium | 0.50 | 0.0030 | 0.5000 | 0 | 101 | 80 | 120 | | | |
| Cadmium | 0.49 | 0.0020 | 0.5000 | 0 | 97.7 | 80 | 120 | | | |
| Chromium | 0.50 | 0.0060 | 0.5000 | 0 | 100 | 80 | 120 | | | |
| Copper | 0.51 | 0.0060 | 0.5000 | 0 | 103 | 80 | 120 | | | |
| Iron | 0.51 | 0.050 | 0.5000 | 0 | 102 | 80 | 120 | | | |
| Lead | 0.50 | 0.0050 | 0.5000 | 0 | 99.7 | 80 | 120 | | | |
| Manganese | 0.50 | 0.0020 | 0.5000 | . 0 | 101 | 80 | 120 | | | |
| Nickel | 0.51 | 0.010 | 0.5000 | 0 | 101 | 80 | 120 | | | |
| Selenium | 0.49 | 0.050 | 0.5000 | 0 | 97.5 | 80 | 120 | | | |
| Silver | 0.098 | 0.0050 | 0.1000 | 0 | 98.2 | 80 | 120 | | | |
| Thallium | 0.50 | 0.050 | 0.5000 | 0 | 99.1 | 80 | 120 | | | |
| Vanadium | 0.50 | 0.050 | 0.5000 | 0 | 100 | 80 | 120 | | | |
| | | | | | | | | | | |

- * 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
- Page 23 of 31

- P Sample pH Not In Range
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

Qual

1507D99 10-Sep-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, & 3 Inj Well

Sample ID LCS-20620

SampType: LCS

TestCode: EPA 6010B: Total Metals

Client ID:

LCSW

Sample ID 1507D99-001BMS

Batch ID: 20620

PQL

0.020

SPK value SPK Ref Val

0.5000

RunNo: 27997

Prep Date: 8/5/2015

Analysis Date: 8/6/2015

Units: mg/L HighLimit

0.49

SeqNo: 842850 %REC

97.2

120

%RPD

RPDLimit

Analyte Zinc

Result

SampType: MS

TestCode: EPA 6010B: Total Metals

LowLimit

80

Client ID: WDW-1,2,&3 Effluen

Batch ID: 20620

RunNo: 27997

| Prep Date: 8/5/2015 | Analysis | Date: 8/ | 6/2015 | S | SeqNo: 8 | 42864 | Units: mg/L | | | |
|---------------------|----------|----------|-----------|-------------|----------|----------|-------------|------|----------|------|
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Aluminum | 1.7 | 0.020 | 0.5000 | 1.205 | 107 | 75 | 125 | | | |
| Antimony | 0.44 | 0.050 | 0.5000 | . 0 | 88.8 | 75 | 125 | | | |
| Arsenic | 0.49 | 0.020 | 0.5000 | 0.02853 | 92.4 | 75 | 125 | | | |
| Barium | 0.43 | 0.020 | 0.5000 | 0.006150 | 85.7 | 75 | 125 | | | |
| Beryllium | 0.44 | 0.0030 | 0.5000 | 0 | 87.6 | 75 | 125 | | | |
| Cadmium | 0.44 | 0.0020 | 0.5000 | 0 | 87.4 | 75 | 125 | | | |
| Chromium | 0.42 | 0.0060 | 0.5000 | 0.003330 | 84.3 | 75 | 125 | | | |
| Cobalt | 0.43 | 0.0060 | 0.5000 | 0.008460 | 84.7 | 75 | 125 | | | |
| Copper | 0.49 | 0.0060 | 0.5000 | 0.01740 | 93.8 | 75 | 125 | | | |
| Iron | 1.3 | 0.050 | 0.5000 | 0.8854 | 92.2 | 75 | 125 | | | |
| Lead | 0.43 | 0.0050 | 0.5000 | 0 | 85.8 | 75 | 125 | | | |
| Manganese | 0.53 | 0.0020 | 0.5000 | 0.1014 | 84.8 | 75 | 125 | | | |
| Nickel | 0.45 | 0.010 | 0.5000 | 0.02121 | 85.8 | 75 | 125 | | | |
| Selenium | 0.66 | 0.050 | 0.5000 | 0.1944 | 92.2 | 75 | 125 | | | |
| Silver | 0.086 | 0.0050 | 0.1000 | 0 | 85.9 | 75 | 125 | | | |
| Thallium | 0.44 | 0.050 | 0.5000 | 0 | 88.4 | 75 | 125 | | | |
| Vanadium | 0.46 | 0.050 | 0.5000 | 0.01240 | 89.4 | 75 | 125 | | | |
| Zinc | 0.77 | 0.020 | 0.5000 | 0.3098 | 92.1 | 75 | 125 | | | |

Sample ID 1507D99-001BMSD

SampType: MSD

TestCode: EPA 6010B: Total Metals

| Client ID: WDW-1,2,&3 E | ffluen Bato | h ID: 20 | 620 | F | RunNo: 2 | 7997 | | | | |
|-------------------------|--------------------|-----------------|-----------|-------------|----------|----------|-------------|------|----------|------|
| Prep Date: 8/5/2015 | Analysis I | Date: 8/ | 6/2015 | S | SeqNo: 8 | 42865 | Units: mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Aluminum | 1.7 | 0.020 | 0.5000 | 1.205 | 96.2 | 75 | 125 | 3.27 | 20 | |
| Antimony | 0.42 | 0.050 | 0.5000 | 0 | 84.7 | 75 | 125 | 4.66 | 20 | |
| Arsenic | 0.47 | 0.020 | 0.5000 | 0.02853 | 88.6 | 75 | 125 | 4.01 | 20 | |
| Barium | 0.42 | 0.020 | 0.5000 | 0.006150 | 82.9 | 75 | 125 | 3.32 | 20 | |
| Beryllium | 0.43 | 0.0030 | 0.5000 | 0 | 85.0 | 75 | 125 | 3.04 | 20 | |
| Cadmium | 0.43 | 0.0020 | 0.5000 | 0 | 85.0 | 75 | 125 | 2.73 | 20 | |
| Chromium | 0.41 | 0.0060 | 0.5000 | 0.003330 | 82.1 | 75 | 125 | 2.67 | 20 | |
| Cobalt | 0.42 | 0.0060 | 0.5000 | 0.008460 | 82.7 | 75 | 125 | 2.33 | 20 | |
| Copper | 0.47 | 0.0060 | 0.5000 | 0.01740 | 90.7 | 75 | 125 | 3.26 | 20 | |

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- % Recovery outside of range due to dilution or matrix S
- Analyte detected in the associated Method Blank
- Ε Value above quantitation range
- Analyte detected below quantitation limits
- Page 24 of 31

- Sample pH Not In Range
- Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D99

10-Sep-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, & 3 Inj Well

| Sample ID 1507D99-001B | MSD Samp | Type: MS | SD | Tes | tCode: E | PA 6010B: | Total Metals | | | |
|-------------------------|--------------|----------|-----------|-------------|----------|-----------|--------------|-------|----------|------|
| Client ID: WDW-1,2,&3 E | Effluen Bato | h ID: 20 | 620 | F | RunNo: 2 | 27997 | | | | |
| Prep Date: 8/5/2015 | Analysis | Date: 8/ | 6/2015 | 5 | SeqNo: 8 | 342865 | Units: mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Iron | 1.3 | 0.050 | 0.5000 | 0.8854 | 83.8 | 75 | 125 | 3.16 | 20 | |
| Lead | 0.42 | 0.0050 | 0.5000 | 0 | 83.6 | 75 | 125 | 2.58 | 20 | |
| Manganese | 0.51 | 0.0020 | 0.5000 | 0.1014 | 81.7 | 75 | 125 | 2.98 | 20 | |
| Nickel | 0.44 | 0.010 | 0.5000 | 0.02121 | 82.8 | 75 | 125 | 3.38 | 20 | |
| Selenium | 0.64 | 0.050 | 0.5000 | 0.1944 | 88.6 | 75 | 125 | 2.79 | 20 | |
| Silver | 0.083 | 0.0050 | 0.1000 | 0 | 83.2 | 75 | 125 | 3.16 | 20 | |
| Thallium | 0.44 | 0.050 | 0.5000 | 0 | 88.0 | 75 | 125 | 0.497 | 20 | |
| Vanadium | 0.44 | 0.050 | 0.5000 | 0.01240 | 86.5 | 75 | 125 | 3.22 | 20 | |
| Zinc | 0.74 | 0.020 | 0.5000 | 0.3098 | 87.0 | 75 | 125 | 3.34 | 20 | |
| Sample ID MB-20675 | Samp | Type: ME | BLK | Tes | tCode: E | PA 6010B: | Total Metals | | | |
| Client ID: PBW | Bato | h ID: 20 | 675 | F | RunNo: 2 | 28076 | | | | |
| Prep Date: 8/10/2015 | Analysis | Date: 8/ | 10/2015 | 5 | SeqNo: 8 | 345664 | Units: mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Calcium | ND | 1.0 | | | | | | | | |
| Magnesium | ND | 1.0 | | | | | | | | |
| Potassium | ND | 1.0 | | | | | | | | |
| Sodium | ND | 1.0 | | | | | | | | |
| Sample ID LCS-20675 | Samp | Type: LC | :s | Tes | tCode: E | PA 6010B: | Total Metals | | | |

| Sample ID LCS-20675 | SampT | ype: LC | s | Tes | tCode: El | PA 6010B: | Total Metals | | | |
|----------------------|------------|---------------|-----------|-------------|-----------|-----------|--------------|------|----------|------|
| Client ID: LCSW | Batch | 1D: 20 | 675 | F | RunNo: 2 | 8076 | | | | |
| Prep Date: 8/10/2015 | Analysis D | ate: 8/ | 10/2015 | S | SeqNo: 8 | 45665 | Units: mg/L | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Calcium | 51 | 1.0 | 50.00 | 0 | 102 | 80 | 120 | | | |
| Magnesium | 50 | 1.0 | 50.00 | 0 | 100 | 80 | 120 | | | |
| Potassium | 48 | 1.0 | 50.00 | 0 | 95.7 | 80 | 120 | | | |
| Sodium | 49 | 1.0 | 50.00 | 0 | 98.7 | 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

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P Sample pH Not In Range

RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D99

10-Sep-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, & 3 Inj Well

Sample ID 1507d99-001adup

SampType: DUP

TestCode: SM4500-H+B: pH

Client ID:

WDW-1,2,&3 Effluen

Batch ID: R28029

RunNo: 28029

HighLimit

Prep Date:

Analysis Date: 8/6/2015

SeqNo: 843901

SPK value SPK Ref Val %REC LowLimit

Units: pH units

%RPD

RPDLimit

Qual

Analyte

Result PQL

8.15 1.68

рΗ

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits

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- Sample pH Not In Range
- RLReporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

RPDLimit

1507D99

10-Sep-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, & 3 Inj Well

Sample ID MB-R28710

Sample ID LCS-R28710

LCSW

SampType: MBLK

TestCode: CYANIDE, Reactive

Client ID: **PBW**

Batch ID: R28710

RunNo: 28710

Prep Date:

Analysis Date: 8/13/2015

SeqNo: 870230

Units: mg/L

Analyte

Result **PQL**

Qual

Cyanide, Reactive

ND 1.00

SPK value SPK Ref Val %REC LowLimit

SPK value SPK Ref Val

HighLimit

%RPD

SampType: LCS

Batch ID: R28710

PQL

TestCode: CYANIDE, Reactive RunNo: 28710

LowLimit

Units: mg/L

Client ID: Prep Date:

Analysis Date: 8/13/2015

SeqNo: 870231

HighLimit

%RPD **RPDLimit**

Qual

Analyte

Result

0.5000

80

120

Cyanide, Reactive

0.478

%REC 95.6

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Holding times for preparation or analysis exceeded Η

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

% Recovery outside of range due to dilution or matrix

Analyte detected in the associated Method Blank В

E Value above quantitation range

J Analyte detected below quantitation limits Page 27 of 31

Sample pH Not In Range P

Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D99

10-Sep-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, & 3 Inj Well

Sample ID MB-R28710

SampType: MBLK

TestCode: SULFIDE, Reactive

Client ID: PBW

Batch ID: R28710

RunNo: 28710

Prep Date:

Analysis Date: 8/7/2015

SeqNo: 870233

Analyte

Result **PQL**

SPK value SPK Ref Val %REC LowLimit

Units: mg/L HighLimit

Qual

Reactive Sulfide

ND 1.0

Sample ID LCS-R28710

SampType: LCS

TestCode: SULFIDE, Reactive

Prep Date:

Client ID: LCSW

Batch ID: R28710 Analysis Date: 8/7/2015

PQL

RunNo: 28710

%REC

SeqNo: 870234

Units: mg/L

%RPD

Analyte

Result

SPK value SPK Ref Val

LowLimit

HighLimit

%RPD **RPDLimit**

RPDLimit

Qual

0.2000

110

70

Reactive Sulfide

0.22

130

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Holding times for preparation or analysis exceeded Η

Not Detected at the Reporting Limit ND

RPD outside accepted recovery limits R

S % Recovery outside of range due to dilution or matrix Analyte detected in the associated Method Blank

E Value above quantitation range

Analyte detected below quantitation limits

Page 28 of 31

Sample pH Not In Range

Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507D99**

10-Sep-15

Client:

Navajo Refining Company

Project:

Prep Date:

Total Alkalinity (as CaCO3)

Analyte

Quarterly WDW-1, 2, & 3 Inj Well

Analysis Date: 8/6/2015

PQL

20.00

Result

78.64

Sample ID mb-1 SampType: MBLK TestCode: SM2320B: Alkalinity Client ID: PBW Batch ID: R28029 RunNo: 28029 Prep Date: Analysis Date: 8/6/2015 SeqNo: 843850 Units: mg/L CaCO3 Analyte Result POL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Total Alkalinity (as CaCO3) ND 20.00 Sample ID Ics-1 SampType: LCS TestCode: SM2320B: Alkalinity Client ID: LCSW Batch ID: R28029 RunNo: 28029

SeqNo: 843851

LowLimit

90

%REC

98.3

Units: mg/L CaCO3

110

HighLimit

%RPD

%RPD

RPDLimit

RPDLimit

Qual

Qual

Sample ID mb-2 SampType: MBLK TestCode: SM2320B: Alkalinity Client ID: PBW Batch ID: R28029 RunNo: 28029 Prep Date: Analysis Date: 8/6/2015 SeqNo: 843874 Units: mg/L CaCO3 Analyte Result SPK value SPK Ref Val %REC LowLimit %RPD **RPDLimit** Qual HighLimit Total Alkalinity (as CaCO3) ND 20.00

SPK value SPK Ref Val

80.00

 Sample ID
 Ics-2
 SampType:
 LCS
 TestCode:
 SM2320B:
 Alkalinity

 Client ID:
 LCSW
 Batch ID:
 R28029
 RunNo:
 28029

 Prep Date:
 Analysis Date:
 8/6/2015
 SeqNo:
 843875
 Units:
 mg/L CaCO3

 Analyte
 Result
 PQL
 SPK value
 SPK Ref Val
 %REC
 LowLimit
 HighLimit

 Total Alkalinity (as CaCO3)
 79.72
 20.00
 80.00
 0
 99.7
 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

Page 29 of 31

- P Sample pH Not In Range
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D99

10-Sep-15

Client:

Navajo Refining Company

Project:

Quarterly WDW-1, 2, & 3 Inj Well

Sample ID 1507D99-001ADUP

SampType: **DUP**

TestCode: Specific Gravity

Client ID:

WDW-1,2,&3 Effluen

Batch ID: R27979

RunNo: 27979

Prep Date:

Analysis Date: 8/5/2015

SeqNo: 841885

Units:

Analyte

Result

SPK value SPK Ref Val %REC LowLimit

%RPD

RPDLimit

Qual

0

HighLimit

20

0.180

Specific Gravity

PQL 0.9985

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RPD outside accepted recovery limits R

% Recovery outside of range due to dilution or matrix

Analyte detected in the associated Method Blank В

E Value above quantitation range

Analyte detected below quantitation limits

Sample pH Not In Range

Reporting Detection Limit

Page 30 of 31

Hall Environmental Analysis Laboratory, Inc.

WO#:

1507D99

10-Sep-15

Client:

Navajo Refining Company

Project:

Analyte

Quarterly WDW-1, 2, & 3 Inj Well

Sample ID MB-20581

SampType: MBLK

TestCode: SM2540C MOD: Total Dissolved Solids

Client ID:

PBW

Batch ID: 20581

RunNo: 27984

%REC LowLimit

Prep Date: 8/4/2015

Sample ID LCS-20581

Prep Date: 8/4/2015

Analysis Date: 8/5/2015

SeqNo: 842184

Units: mg/L

HighLimit

RPDLimit

Qual

Total Dissolved Solids

Result ND

PQL SPK value SPK Ref Val 20.0

TestCode: SM2540C MOD: Total Dissolved Solids

%RPD

Client ID:

LCSW

SampType: LCS Batch ID: 20581 Analysis Date: 8/5/2015

RunNo: 27984

Units: mg/L

HighLimit

SeqNo: 842185

%RPD **RPDLimit**

Qual

Analyte

SPK value SPK Ref Val %REC

0

101

80

LowLimit

Total Dissolved Solids

Result 1010

20.0

PQL

1000

120

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Holding times for preparation or analysis exceeded Н

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

E Value above quantitation range

Analyte detected below quantitation limits J

Page 31 of 31

P Sample pH Not In Range

Reporting Detection Limit



Holl Environmental Analysis Laboratory 1901 Hawkins NE Albuquerque, NM 87109

TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

Sample Log-In Check List

| | | RcptNo: | |
|-----------------------------|---|---|---|
| | | | day on an area go |
| ıM | July | | |
| M. | And Alles | | decouped his |
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| | isanie niego ir de grade com maioriai ir indicatoria de | C. (2000) (Conserved (1000)) 40 400000000000000000000000000000 | |
| Yes 🗆 | No 🗆 | Not Present 🗸 | |
| Yes 🗹 | No □ | Not Present | |
| Couner | | | |
| | | | |
| Yes 🗹 | No 🗆 | NA 🖂 | |
| Yes 🗹 | No 🗆 | м□ | |
| Yes 🗸 | No 🗆 | | |
| Yes 🗹 | No □ | | |
| Yes 🔽 | No □ | | |
| Yes 🗔 | No 🗸 | NA 🗍 | |
| Yes 🗹 | No 🗆 | No VOA Vials 🗆 | ացը չու որ դել բանվակ բառանն կավատ թար Մույլուն և |
| Yes 🗆 | No 🗹 | # of preserved | ina minima manana m |
| Yes 🔽 | No II | for pH: | Dr (12) Inless noted) |
| Yes 🔽 | No 🗔 | Adjusted? | no |
| Yes 🗹 | No 🔲 | in a contract of the contract | ne |
| Yes 🔽 | No 🗔 | Checked by: | A Section (1997) in a least one was conserved (1997). |
| | | | |
| Yes 🔲 | No 🔲 | NA 🗹 | |
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| ' ☐ eMail ☐ | Phone 🔲 Fax | In Person | |
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| agung sangudib sa tana arab | | and an early decrease are as a liberary device research of which | A Signatura sa sa masa ng mina vigeo s may panganasa. |
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| Client: Navajo Refining Co | ajo Refin | Ing Co. | | C Standar | Rush | a salaman | | . Q | ANALYSIS | | S | 0 | 12 | LABORATORY | > |
| | | | | Project Name: | Ú | | | | www | allenvir | www.hallenvironmental.com | moo | | | |
| Mailing Address: P.O. Box 159 Artesia | dress P.(| C. B0 | | Quarterly W | y WDW-1, 2, & 3 lnj Well | ıj Well | ₹ | 4901 Hawkins NE | ins NE - A | lanbriq | - Albuquerque, NM 87109 | 37.100 | | | |
| NM 88211-0159 | 0159 | | | Project # P | # P O # 167796 | | | Tel. 505-3 | 505-345-3975 | Fax 5 | Fax 505-345-4107 | 20 | | | |
| Phone #: 575-748-3311 | 75-748-3 | 311 | | | | ************************************** | | | | malysi | Analysis Request | | | | |
| email or Fax#. 575-746-5451 | 14 575- | 746-545 | | Project Man | Мападег | | | 00 | (,\$ | 1 | nec — | | | | |
| QA/QC Package □ Standard | р | | □ Level 4 (Full Validation) | Micki Schuff | z / Scott Dente | Micki Schultz / Scott Denton / Mike Holder | Ob/43 | 7 <u>28</u> 60 | ,0108 | E.8E? J | | | | | |
| G G | | | | Sampler. | Elizabeth Salsberry | berry | hd., l Br, l | ysel | PH | CEE | | | | | |
| □ EDD (Type) | (adi | | | | Kyres | □No | CO ''le | N 91 | M S | 01 | | | | | |
| | | | | Sample Ten | Temperature: /, Ç | | Hd q u | 78-/ | 148- | BM | | | ************************************** | | |
| Date | Jae | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL NO. | Spedific Gra SO4, TDS, Cation/anio | (see attach (see attach | R.C.IV40 CP Metals/SW- 7470 (see a | Cs' K' M6' | TCLP Meta | | | | |
| 7/30/15 | යිසි | Liguid | WDW-1, 2, & 3 Effluent | 3 | Neat/H2SO4 | - 00 - | × | | 177 · | | × | | | | |
| 7,30/15 | SSS Liquid | Liquid | WDW.1, 2, & 3 Effluent | + | HNO3 | - (S)- | | | × | × | | | | | |
| 7/30/15 | CAS Liquid | Liguin | WDW-1, 2, & 3 Effluent | 3 | HCL | 78- | × | | | | | | | | |
| 7/30/15 | CASS Liquid | Liquid | WDW-1, 2, & 3 Effluent | N | Neat | 3 | | × | | | | | | | |
| 7/30/15 * DSSS Liquid | 8855 | Liguid | WDW-1, 2, & 3 Effluent | 2 | Neat | う う つ | | | × | | | | | | |
| 7/30/15 | DESS Liquid | Linguid | Trip Blank | 2 | Neat | 188 | × | | | | | | | | |
| 7/30/15 | CESS Liquid | Liquid | Temperature Blank | • | Neat | | | | | | | | | | |
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| | | | | | | | | | | | | | | | |
| Date 7/30/2015 | 10.30 OS.01 | 1 3 2 0 | Reinchished by Elizabeth Balsberry Received by Polacy 2002 2002 2003 | Received by | Party 07/311 | 13415 6800 | Remarks: Send results to Scott Denton, Mike Holder, Micki Schultz, Robert Con and Andrew Contreras. | end resu Contrera | is to Scott [is. | Jenton, | Še H Se H | er, Mick | Schultz | Robert (| Ö |
| <u>.</u> | Time | Reliment | (kg pau | Received by | | | | | | | | | | | |

finecessary, samples authoritied to that Environmental may be subcontracted to other accredited lateratories. This environ as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



Injection Well



| | O Te | Navajo Refining Coopany, LLC 501 E. Main Artesia, NM 88210 (Tel.) 575.748.3311 (Fax) 575.746.5451 | Соврану, 1.1 | Ç | Ous. | Quarterly Sample Details Attachment | terly San Details tachmen | 를 하는 100 H | > | | HOLLYFRONTIER The HollyFrontier Companies | |
|---|--|--|--|--|--|---|--|---|--|--|--|--|
| Project Name VIDW-1.2, & 3 Ortly Inj W Samplers Name Elizabeth Salsberry Samplers Affiliation Navajo Refining Co. 1LC Start Date and Time 7/30/2015 @ 8:50 am End Date and Time 7/30/2015 @ 9:01 am | Project Name WDW-1,2, & 3 Ortly Inj Well Samplers Name Elizabeth Salsberry mplers Affiliation Navajo Refining Co. LLC rt Date, and Time 7/30/2015 @ 8:50 am i Date and Time 7/30/2015 @ 9:01 am | tly Inj Well 20. LLC 0 am | | hamadanadanada faiid | Time W Flow M | Sample Type Crab [2] Time Weighted Composite [1] Flow Weighted Composite [1] Parts / Sample Intervals One | Sample Type Grab Extra Crap Cr | | | | Physical Property Solid □ Liquid □ Sludge □ Type of Sampler Directly to sample jars | |
| Outfall / Sample Location: | | Waste water effluent pumps to injection wells | s to injection | wells. | March de Calendario de Calenda | | -849 sampl | ☐ P-849 sample point (first from east) ☑ P-854 sample point (second from east) | from east) and from east | | P-856 sample point (third from east) P-857 sample point (fourth from east) | |
| | | | | | | Ь | Preservatives | S | | | | |
| Container Size | Material | # of Containers | Neat (None) | HCL | HNO3 | H2SO4 | NaOH | Na2S203 | NaHS04 | Other | Analysis and/or Method Recuested | |
| | in de la cita de la ci | 3 | × | | 1 | × | | <u> </u> | and to delicite the second control of the se | right i bibliste a deletable dell'estable dell'estable dell'estable dell'estable dell'estable dell'estable del | Specific Gravity, HCO3, CO3, CI, SO4, TDS, pH, cond., FI, Cation/anion bal., Br, Eh/40 CFR 136.3 | |
| 2 | Canada de constitución de canada de | - | | | × | | | | | eronioners penn en jede den Referens fedelkendelskal deke fede | VOCs/SW-846 Method 8260C (see attached list 'VOCs') | |
| 3 | min sat i sant a shri shi ka shri shakamalikan shakamala maga sata da shaka shakama | 3 | | × | | | | | | THE REAL PROPERTY OF THE PROPE | SVOCs/SW-846 Method 8270D (see attached list 'SVOCs') | |
| 4 | | 2 | × | | | | | | | AN LES WEST OF THE SPECIAL COST OF THE PROPERTY OF THE SPECIAL COST OST OF THE SPECIAL COST OST OF THE SPECIAL COST OST OST OST OST OST OST OST OST OST | Maraja/SWI 946 Mthd 6040, 2470 feed | |
| ò | and the second constitution of the second constitution of the second constitution of | 2 | × | and the college and about the college of | and an in made to construct the constructions | Age de emplatage i compaño a século interese para se se | Anna de colhe en carramana de carra | to an extended and the second | and the state of t | | metals/swr-646 Mind 60 to, 7470 (see attached list 'Metals') | |
| 9 | | 1 | ×× | | and the state of t | | | | | | Ca, K, Mg, Na/40 CFR 136.3 TCLP Metals, only /40 CFR Part 261/ SW-846 Method 1311 | |
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| 10 | The first of the f | And the second s | ORGANICAL STATES OF THE STATES | | | | | *************************************** | SACTOR OF THE PROPERTY AND THE PROPERTY | 410000000000000000000000000000000000000 | | |
| Field Data (Weather, Observations, Etc) Date and Time | Observations, Etc) | | Temp:75.2 °F Humidity: 69% Wind Direction: North Wind Speed: 10.0 mi Over all Condition:Partly Cloudy | r. 69% W | find Direc | tion: North | Wind Spee | d: 10.0 mi O | ver all Condit | ion:Partly Clc | 450 500 5 | |
| Field Temp. 111.4 F | Field pH 7.90 | 06: | | | | | | | | | Remgerated □ Other □ | |

Shipping Media ice I건 Other IT



February 4, 2016

Mr. Carl Chavez, CHMM
NM Energy, Minerals & Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr.
Santa Fe, NM 87505-5472

Certified Mail/Return Receipt 7015 3010 0000 3143 3111

RE: 2015 4th Quarter Injection Report for Wells WDW-1, WDW-2 and WDW-3, Navajo Refining Company, L.L.C.

Dear Mr. Chavez,

Enclosed, please find the third quarter 2015 sampling results for fluids injected into WDW-1, WDW-2 and WDW-3 and a spread sheet showing various volumes and pressures as required under Permit Condition 2.I.1, Quarterly Reports.

Over the third quarter, the average injection pressure for all three wells was 1361 psig and the average flows were 123 gpm for WDW-1, 91 gpm for WDW-2 and 140 gpm for WDW-3. There were no significant losses from the glycol expansion tanks Well Annulus Monitoring System (WAMS). The quarterly effluent analyses indicated parameters are within permit limits.

This report covers the period from October 1, 2015 to December 31, 2015. We have disposed a total of 1,115,486 barrels of fluid into the three wells during the fourth quarter of 2015. The volume per well is:

- 388,046 barrels into WDW-1
- 287,006 barrels into WDW-2
- 440,434 barrels into WDW-3

This report is signed and certified in accordance with WQCC section 5101.G. If there are any questions, please call me at 575-748-3311.

Respectfully,

Robert O'Brien

Vice-President & Refinery Manager HollyFrontier Navajo Refining LLC

Enc.

Electronic cc (w/enc.): Environmental File:

Environmental File:

1,2,3

R Orosco, R Combs, S Denton

Injection Wells/Reports C-115 & Quarterly/2015/4th quarter/2016-02-05 4th QTR Inj. Rpt. for Wells WDW-

(575) 748-3311 • http://www.hollyfrontier.com