

**GW – 028**

**Annual DP  
Report  
(Part 3 of 16)**

**2015**

2015 FOURTH QUARTER MONTHLY INJECTION PRESSURES, RATES, AND VOLUMES

	Average Pressure (psig)	Maximum Pressure (psig)	Minimum Pressure (psig)	Average Flow (gpm)	Maximum Flow (gpm)	Minimum Flow (gpm)	Average Annular Pressure Av (psig)	Maximum Annular Pressure Mx (psig)	Minimum Annular Pressure Mn (psig)	Average Volume (bpd)	Maximum Volume (bpd)	Minimum Volume (bpd)	Volume (barrels)	TOTAL CUMULATIVE Volume (barrels)
<b>WDW-1</b>													Previous Quarter	37,147,100
Oct-15	1,379	1,400	1,234	124	129	95	480	837	305	4,251	4,423	3,257	131,794	37,278,894
Nov-15	1,376	1,400	1,252	121	128	94	335	447	91	4,149	4,389	3,223	124,457	37,403,351
Dec-15	1,342	1,400	1,256	124	256	99	398	661	193	4,251	8,777	3,394	131,794	37,535,146
<b>WDW-2</b>													Previous Quarter	24,267,637
Oct-15	1,378	1,234	1,252	102	181	59	467	769	248	3,497	6,206	2,023	108,411	24,376,048
Nov-15	1,376	1,400	1,252	92	100	54	341	787	217	3,154	3,429	1,851	94,629	24,470,677
Dec-15	1,326	1,400	1,253	79	99	55	281	345	209	2,709	3,394	1,886	83,966	24,554,643
<b>WDW-3</b>													Previous Quarter	14,329,329
Oct-15	1,370	1,390	1,233	141	769	52	855	1,006	708	4,834	26,366	1,783	149,863	14,479,192
Nov-15	1,369	1,390	1,252	143	151	110	857	983	686	4,903	5,177	3,771	147,086	14,626,278
Dec-15	1,334	1,390	1,255	135	151	108	812	965	715	4,629	5,177	3,703	143,486	14,769,763
<b>Total Injected fluids:</b>														<b>76,859,552</b>

## 2015 FOURTH QUARTER WEEKLY WAMS LEVEL TABLE

	10/6/15	10/12/15	10/19/15	10/26/15	11/2/15	11/9/15	11/16/15	11/23/15	11/30/15	12/7/15	12/14/16	12/16/15	12/21/15	12/28/15
WDW-1 <sup>1</sup>	100	100	155**	150	150	150	145	145	145	145	145		145	Inaccessible
WDW-2 <sup>1</sup>	100	100	150**	150	145	145	150	150	150	150	150		150	Inaccessible
WDW-3 <sup>1</sup>	255*	170	250	310***	150	250	130****	150	200	245	255	300*****	145	Inaccessible
Comments: * Removed 130 gal. ** Added 55 gal. glycol *** Removed 255 gal. **** Removed 180 gal. ***** Removed 200 gal.														

<sup>1</sup> Graduated tank gauged weekly in the field. Reading is in gallons.

WDW-1 is Mewbourne

WDW-2 is Chukka

WDW-3 is Gaines



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

November 24, 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.: 1510908

Dear Micki Schultz:

Hall Environmental Analysis Laboratory received 2 sample(s) on 10/20/2015 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](http://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  
4901 Hawkins NE  
Albuquerque, NM 87109



## Analytical Report

Lab Order 1510908

Date Reported: 11/24/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

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

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

Collection Date: 10/19/2015 7:40:00 AM

Lab ID: 1510908-001

Matrix: AQUEOUS

Received Date: 10/20/2015 8:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>IGNITABILITY METHOD 1010</b>							Analyst: SUB
Ignitability	>200	0		°F	1	10/23/2015	R30423
<b>SULFIDE, REACTIVE</b>							Analyst: SUB
Reactive Sulfide	ND	1.0		mg/L	1	10/23/2015	R30423
<b>SPECIFIC GRAVITY</b>							Analyst: JRR
Specific Gravity	0.9991	0			1	10/20/2015 1:22:00 PM	R29675
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: LGT
Fluoride	5.5	0.50	*	mg/L	5	10/20/2015 2:08:09 PM	R29684
Chloride	520	50		mg/L	100	10/27/2015 11:24:40 PM	R29842
Bromide	0.72	0.50		mg/L	5	10/20/2015 2:08:09 PM	R29684
Phosphorus, Orthophosphate (As P)	ND	10	H	mg/L	20	11/7/2015 4:57:03 AM	A30103
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	11/3/2015 11:53:29 PM	R29992
Sulfate	2700	50		mg/L	100	10/27/2015 11:24:40 PM	R29842
Nitrate+Nitrite as N	ND	1.0		mg/L	5	10/30/2015 11:15:10 AM	R29930
<b>SM2510B: SPECIFIC CONDUCTANCE</b>							Analyst: JRR
Conductivity	6800	0.010		µmhos/cm	1	10/20/2015 2:13:12 PM	R29677
<b>SM2320B: ALKALINITY</b>							Analyst: JRR
Bicarbonate (As CaCO <sub>3</sub> )	296.6	20.00		mg/L CaCO <sub>3</sub>	1	10/20/2015 2:13:12 PM	R29677
Carbonate (As CaCO <sub>3</sub> )	ND	2.000		mg/L CaCO <sub>3</sub>	1	10/20/2015 2:13:12 PM	R29677
Total Alkalinity (as CaCO <sub>3</sub> )	296.6	20.00		mg/L CaCO <sub>3</sub>	1	10/20/2015 2:13:12 PM	R29677
<b>SM2540C MOD: TOTAL DISSOLVED SOLIDS</b>							Analyst: KS
Total Dissolved Solids	4880	100	*D	mg/L	1	10/23/2015 11:44:00 AM	21952
<b>CORROSIVITY</b>							Analyst: SUB
pH	7.63			pH Units	1	10/26/2015	R30423
<b>CYANIDE, REACTIVE</b>							Analyst: SUB
Cyanide, Reactive	ND	1.00		mg/L	1	10/28/2015	R30423
<b>SM4500-H+B: PH</b>							Analyst: JRR
pH	7.75	1.68	H	pH units	1	10/20/2015 2:13:12 PM	R29677
<b>EPA METHOD 7470: MERCURY</b>							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	10/21/2015 3:48:07 PM	21960
<b>MERCURY, TCLP</b>							Analyst: DBD
Mercury	ND	0.020		mg/L	1	11/3/2015 4:41:03 PM	22145
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: MED
Arsenic	ND	5.0		mg/L	1	10/22/2015 5:15:45 PM	21978

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

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

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

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Received Date: 10/20/2015 8:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: MED
Barium	ND	100		mg/L	1	10/22/2015 5:15:45 PM	21978
Cadmium	ND	1.0		mg/L	1	10/22/2015 5:15:45 PM	21978
Chromium	ND	5.0		mg/L	1	10/22/2015 5:15:45 PM	21978
Lead	ND	5.0		mg/L	1	10/22/2015 5:15:45 PM	21978
Selenium	ND	1.0		mg/L	1	10/22/2015 5:15:45 PM	21978
Silver	ND	5.0		mg/L	1	10/22/2015 5:15:45 PM	21978
<b>EPA 6010B: TOTAL METALS</b>							Analyst: MED
Aluminum	0.57	0.040		mg/L	2	10/22/2015 4:50:43 PM	21972
Antimony	ND	0.10		mg/L	2	10/22/2015 4:50:43 PM	21972
Arsenic	ND	0.040		mg/L	2	10/22/2015 4:50:43 PM	21972
Barium	ND	0.040		mg/L	2	10/22/2015 4:50:43 PM	21972
Beryllium	ND	0.0060		mg/L	2	10/22/2015 4:50:43 PM	21972
Cadmium	ND	0.0040		mg/L	2	10/22/2015 4:50:43 PM	21972
Calcium	65	2.0		mg/L	2	10/22/2015 4:50:43 PM	21972
Chromium	ND	0.012		mg/L	2	10/22/2015 4:50:43 PM	21972
Cobalt	ND	0.012		mg/L	2	10/22/2015 4:50:43 PM	21972
Copper	0.016	0.012		mg/L	2	10/22/2015 4:50:43 PM	21972
Iron	0.45	0.10		mg/L	2	10/22/2015 4:50:43 PM	21972
Lead	ND	0.010		mg/L	2	10/22/2015 4:50:43 PM	21972
Magnesium	20	2.0		mg/L	2	10/22/2015 4:50:43 PM	21972
Manganese	0.089	0.0040		mg/L	2	10/22/2015 4:50:43 PM	21972
Nickel	ND	0.020		mg/L	2	10/22/2015 4:50:43 PM	21972
Potassium	28	2.0		mg/L	2	10/22/2015 4:50:43 PM	21972
Selenium	0.27	0.10		mg/L	2	10/22/2015 4:50:43 PM	21972
Silver	ND	0.010		mg/L	2	10/22/2015 4:50:43 PM	21972
Sodium	1400	50		mg/L	50	10/22/2015 4:46:39 PM	21972
Thallium	ND	0.10		mg/L	2	10/22/2015 4:50:43 PM	21972
Vanadium	ND	0.10		mg/L	2	10/22/2015 4:50:43 PM	21972
Zinc	ND	0.040		mg/L	2	10/22/2015 4:50:43 PM	21972
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: SUB
Acetonitrile	ND	2.0		µg/L	1	11/2/2015	R30423
Allyl chloride	ND	2.0		µg/L	1	11/2/2015	R30423
Chloroprene	ND	2.0		µg/L	1	11/2/2015	R30423
Cyclohexane	ND	2.0		µg/L	1	11/2/2015	R30423
Diethyl ether	ND	0.50		µg/L	1	11/2/2015	R30423
Diisopropyl ether	ND	2.0		µg/L	1	11/2/2015	R30423
Epichlorohydrin	ND	5.0		µg/L	1	11/2/2015	R30423
Ethyl acetate	ND	2.0		µg/L	1	11/2/2015	R30423

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EPA METHOD 8260B: VOLATILES							Analyst: SUB
Ethyl methacrylate	ND	2.0		µg/L	1	11/2/2015	R30423
Ethyl tert-butyl ether	ND	2.0		µg/L	1	11/2/2015	R30423
Freon-113	ND	2.0		µg/L	1	11/2/2015	R30423
Isobutanol	ND	2.0		µg/L	1	11/2/2015	R30423
Isopropyl acetate	ND	2.0		µg/L	1	11/2/2015	R30423
Methacrylonitrile	ND	2.0		µg/L	1	11/2/2015	R30423
Methyl acetate	ND	2.0		µg/L	1	11/2/2015	R30423
Methyl ethyl ketone	ND	2.5		µg/L	1	11/2/2015	R30423
Methyl isobutyl ketone	ND	2.5		µg/L	1	11/2/2015	R30423
Methyl methacrylate	ND	2.0		µg/L	1	11/2/2015	R30423
Methylcyclohexane	ND	2.0		µg/L	1	11/2/2015	R30423
n-Amyl acetate	ND	2.0		µg/L	1	11/2/2015	R30423
n-Hexane	ND	0.50		µg/L	1	11/2/2015	R30423
Nitrobenzene	ND	5.0		µg/L	1	11/2/2015	R30423
Pentachloroethane	ND	5.0		µg/L	1	11/2/2015	R30423
p-Isopropyltoluene	ND	0.50		µg/L	1	11/2/2015	R30423
Propionitrile	ND	2.0		µg/L	1	11/2/2015	R30423
Tetrahydrofuran	ND	2.0		µg/L	1	11/2/2015	R30423
Benzene	ND	0.50		µg/L	1	11/2/2015	R30423
Toluene	ND	0.50		µg/L	1	11/2/2015	R30423
Ethylbenzene	ND	0.50		µg/L	1	11/2/2015	R30423
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	1	11/2/2015	R30423
1,2,4-Trimethylbenzene	ND	0.50		µg/L	1	11/2/2015	R30423
1,3,5-Trimethylbenzene	ND	0.50		µg/L	1	11/2/2015	R30423
1,2-Dichloroethane (EDC)	ND	0.50		µg/L	1	11/2/2015	R30423
1,2-Dibromoethane (EDB)	ND	0.50		µg/L	1	11/2/2015	R30423
Naphthalene	ND	0.50		µg/L	1	11/2/2015	R30423
Acetone	ND	2.5		µg/L	1	11/2/2015	R30423
Bromobenzene	ND	0.50		µg/L	1	11/2/2015	R30423
Bromodichloromethane	ND	0.50		µg/L	1	11/2/2015	R30423
Bromoform	ND	0.50		µg/L	1	11/2/2015	R30423
Bromomethane	ND	0.50		µg/L	1	11/2/2015	R30423
Carbon disulfide	ND	0.50		µg/L	1	11/2/2015	R30423
Carbon Tetrachloride	ND	0.50		µg/L	1	11/2/2015	R30423
Chlorobenzene	ND	0.50		µg/L	1	11/2/2015	R30423
Chloroethane	ND	0.50		µg/L	1	11/2/2015	R30423
Chloroform	ND	0.50		µg/L	1	11/2/2015	R30423
Chloromethane	ND	0.50		µg/L	1	11/2/2015	R30423
2-Chlorotoluene	ND	0.50		µg/L	1	11/2/2015	R30423

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

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

## Analytical Report

Lab Order 1510908

Date Reported: 11/24/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

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

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

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Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: SUB
4-Chlorotoluene	ND	0.50		µg/L	1	11/2/2015	R30423
cis-1,2-DCE	ND	0.50		µg/L	1	11/2/2015	R30423
cis-1,3-Dichloropropene	ND	0.50		µg/L	1	11/2/2015	R30423
1,2-Dibromo-3-chloropropane	ND	0.50		µg/L	1	11/2/2015	R30423
Dibromochloromethane	ND	0.50		µg/L	1	11/2/2015	R30423
Dibromomethane	ND	0.50		µg/L	1	11/2/2015	R30423
1,2-Dichlorobenzene	ND	0.50		µg/L	1	11/2/2015	R30423
1,3-Dichlorobenzene	ND	0.50		µg/L	1	11/2/2015	R30423
1,4-Dichlorobenzene	ND	0.50		µg/L	1	11/2/2015	R30423
Dichlorodifluoromethane	ND	0.50		µg/L	1	11/2/2015	R30423
1,1-Dichloroethane	ND	0.50		µg/L	1	11/2/2015	R30423
1,1-Dichloroethene	ND	0.50		µg/L	1	11/2/2015	R30423
1,2-Dichloropropane	ND	0.50		µg/L	1	11/2/2015	R30423
1,3-Dichloropropane	ND	0.50		µg/L	1	11/2/2015	R30423
2,2-Dichloropropane	ND	0.50		µg/L	1	11/2/2015	R30423
1,1-Dichloropropene	ND	0.50		µg/L	1	11/2/2015	R30423
Hexachlorobutadiene	ND	0.50		µg/L	1	11/2/2015	R30423
2-Hexanone	ND	0.50		µg/L	1	11/2/2015	R30423
Isopropylbenzene	ND	0.50		µg/L	1	11/2/2015	R30423
Methylene Chloride	ND	2.5		µg/L	1	11/2/2015	R30423
n-Butylbenzene	ND	0.50		µg/L	1	11/2/2015	R30423
n-Propylbenzene	ND	0.50		µg/L	1	11/2/2015	R30423
sec-Butylbenzene	ND	0.50		µg/L	1	11/2/2015	R30423
Styrene	ND	0.50		µg/L	1	11/2/2015	R30423
tert-Butylbenzene	ND	0.50		µg/L	1	11/2/2015	R30423
1,1,1,2-Tetrachloroethane	ND	0.50		µg/L	1	11/2/2015	R30423
1,1,2,2-Tetrachloroethane	ND	0.50		µg/L	1	11/2/2015	R30423
Tetrachloromethane (PCE)	ND	0.50		µg/L	1	11/2/2015	R30423
trans-1,2-DCE	ND	0.50		µg/L	1	11/2/2015	R30423
trans-1,3-Dichloropropene	ND	0.50		µg/L	1	11/2/2015	R30423
1,2,3-Trichlorobenzene	ND	0.50		µg/L	1	11/2/2015	R30423
1,2,4-Trichlorobenzene	ND	0.50		µg/L	1	11/2/2015	R30423
1,1,1-Trichloroethane	ND	0.50		µg/L	1	11/2/2015	R30423
1,1,2-Trichloroethane	ND	0.50		µg/L	1	11/2/2015	R30423
Trichloroethene (TCE)	ND	0.50		µg/L	1	11/2/2015	R30423
Trichlorofluoromethane	ND	0.50		µg/L	1	11/2/2015	R30423
1,2,3-Trichloropropane	ND	0.50		µg/L	1	11/2/2015	R30423
Vinyl chloride	ND	0.50		µg/L	1	11/2/2015	R30423
mp-Xylenes	ND	1.0		µg/L	1	11/2/2015	R30423

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<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: SUB
o-Xylene	ND	0.50		µg/L	1	11/2/2015	R30423
tert-Amyl methyl ether	ND	2.0		µg/L	1	11/2/2015	R30423
tert-Butyl alcohol	ND	0.50		µg/L	1	11/2/2015	R30423
Acrolein	ND	2.0		µg/L	1	11/2/2015	R30423
Acrylonitrile	ND	2.0		µg/L	1	11/2/2015	R30423
Bromochloromethane	ND	0.50		µg/L	1	11/2/2015	R30423
2-Chloroethyl vinyl ether	ND	2.0		µg/L	1	11/2/2015	R30423
Iodomethane	ND	0.50		µg/L	1	11/2/2015	R30423
trans-1,4-Dichloro-2-butene	ND	0.50		µg/L	1	11/2/2015	R30423
Vinyl acetate	ND	2.0		µg/L	1	11/2/2015	R30423
1,4-Dioxane	ND	20		µg/L	1	11/2/2015	R30423
Surr: 1,2-Dichlorobenzene-d4	111	70-130		%REC	1	11/2/2015	R30423
Surr: 4-Bromofluorobenzene	106	70-130		%REC	1	11/2/2015	R30423
Surr: Toluene-d8	104	70-130		%REC	1	11/2/2015	R30423
<b>EPA 8270C: SEMIVOLATILES/MOD</b>							Analyst: SUB
1,1-Biphenyl	ND	2.0		µg/L	1	10/30/2015	R30423
Atrazine	ND	2.0		µg/L	1	10/30/2015	R30423
Benzaldehyde	3.6	2.0		µg/L	1	10/30/2015	R30423
Caprolactam	ND	2.0		µg/L	1	10/30/2015	R30423
N-Nitroso-di-n-butylamine	ND	2.0		µg/L	1	10/30/2015	R30423
Acetophenone	ND	5.0		µg/L	1	10/30/2015	R30423
1-Methylnaphthalene	ND	5.0		µg/L	1	10/30/2015	R30423
2,3,4,6-Tetrachlorophenol	ND	5.0		µg/L	1	10/30/2015	R30423
2,4,5-Trichlorophenol	ND	5.0		µg/L	1	10/30/2015	R30423
2,4,6-Trichlorophenol	ND	5.0		µg/L	1	10/30/2015	R30423
2,4-Dichlorophenol	ND	5.0		µg/L	1	10/30/2015	R30423
2,4-Dimethylphenol	ND	5.0		µg/L	1	10/30/2015	R30423
2,4-Dinitrophenol	ND	5.0		µg/L	1	10/30/2015	R30423
2,4-Dinitrotoluene	ND	5.0		µg/L	1	10/30/2015	R30423
2,6-Dinitrotoluene	ND	5.0		µg/L	1	10/30/2015	R30423
2-Chloronaphthalene	ND	5.0		µg/L	1	10/30/2015	R30423
2-Chlorophenol	ND	5.0		µg/L	1	10/30/2015	R30423
2-Methylnaphthalene	ND	5.0		µg/L	1	10/30/2015	R30423
2-Methylphenol	ND	5.0		µg/L	1	10/30/2015	R30423
2-Nitroaniline	ND	5.0		µg/L	1	10/30/2015	R30423
2-Nitrophenol	ND	5.0		µg/L	1	10/30/2015	R30423
3,3'-Dichlorobenzidine	ND	5.0		µg/L	1	10/30/2015	R30423
3-Nitroaniline	ND	5.0		µg/L	1	10/30/2015	R30423
4,6-Dinitro-2-methylphenol	ND	5.0		µg/L	1	10/30/2015	R30423

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

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

## Analytical Report

Lab Order 1510908

Date Reported: 11/24/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

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

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

Collection Date: 10/19/2015 7:40:00 AM

Lab ID: 1510908-001

Matrix: AQUEOUS

Received Date: 10/20/2015 8:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 8270C: SEMIVOLATILES/MOD							Analyst: SUB
4-Bromophenyl phenyl ether	ND	5.0		µg/L	1	10/30/2015	R30423
4-Chloro-3-methylphenol	ND	5.0		µg/L	1	10/30/2015	R30423
4-Chloroaniline	ND	5.0		µg/L	1	10/30/2015	R30423
4-Chlorophenyl phenyl ether	ND	5.0		µg/L	1	10/30/2015	R30423
4-Nitroaniline	ND	5.0		µg/L	1	10/30/2015	R30423
4-Nitrophenol	ND	5.0		µg/L	1	10/30/2015	R30423
Acenaphthene	ND	5.0		µg/L	1	10/30/2015	R30423
Acenaphthylene	ND	5.0		µg/L	1	10/30/2015	R30423
Anthracene	ND	5.0		µg/L	1	10/30/2015	R30423
Benzo(g,h,i)perylene	ND	5.0		µg/L	1	10/30/2015	R30423
Benz(a)anthracene	ND	0.10		µg/L	1	10/30/2015	R30423
Benzo(a)pyrene	ND	0.10		µg/L	1	10/30/2015	R30423
Benzo(b)fluoranthene	ND	0.10		µg/L	1	10/30/2015	R30423
Benzo(k)fluoranthene	ND	0.10		µg/L	1	10/30/2015	R30423
Bis(2-chloroethoxy)methane	ND	5.0		µg/L	1	10/30/2015	R30423
Bis(2-chloroethyl)ether	ND	5.0		µg/L	1	10/30/2015	R30423
Bis(2-chloroisopropyl)ether	ND	5.0		µg/L	1	10/30/2015	R30423
Bis(2-ethylhexyl)phthalate	ND	5.0		µg/L	1	10/30/2015	R30423
Butyl benzyl phthalate	ND	5.0		µg/L	1	10/30/2015	R30423
Carbazole	ND	5.0		µg/L	1	10/30/2015	R30423
Chrysene	ND	0.10		µg/L	1	10/30/2015	R30423
Dibenz(a,h)anthracene	ND	0.10		µg/L	1	10/30/2015	R30423
Dibenzofuran	ND	5.0		µg/L	1	10/30/2015	R30423
Diethyl phthalate	ND	5.0		µg/L	1	10/30/2015	R30423
Dimethyl phthalate	ND	5.0		µg/L	1	10/30/2015	R30423
Di-n-butyl phthalate	ND	5.0		µg/L	1	10/30/2015	R30423
Di-n-octyl phthalate	ND	5.0		µg/L	1	10/30/2015	R30423
Fluoranthene	ND	5.0		µg/L	1	10/30/2015	R30423
Fluorene	ND	5.0		µg/L	1	10/30/2015	R30423
Hexachlorobenzene	ND	1.0		µg/L	1	10/30/2015	R30423
Hexachlorobutadiene	ND	5.0		µg/L	1	10/30/2015	R30423
Hexachlorocyclopentadiene	ND	5.0		µg/L	1	10/30/2015	R30423
Hexachloroethane	ND	5.0		µg/L	1	10/30/2015	R30423
Indeno(1,2,3-cd)pyrene	ND	0.10		µg/L	1	10/30/2015	R30423
Isophorone	ND	5.0		µg/L	1	10/30/2015	R30423
Naphthalene	ND	5.0		µg/L	1	10/30/2015	R30423
Nitrobenzene	ND	5.0		µg/L	1	10/30/2015	R30423
N-Nitrosodi-n-propylamine	ND	5.0		µg/L	1	10/30/2015	R30423
N-Nitrosodiphenylamine	ND	2.0		µg/L	1	10/30/2015	R30423

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

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

**Analytical Report**

Lab Order 1510908

Date Reported: 11/24/2015

**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:** 10/19/2015 7:40:00 AM**Lab ID:** 1510908-001**Matrix:** AQUEOUS**Received Date:** 10/20/2015 8:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA 8270C: SEMIVOLATILES/MOD</b>							Analyst: SUB
Pentachlorophenol	ND	5.0		µg/L	1	10/30/2015	R30423
Phenanthrene	ND	5.0		µg/L	1	10/30/2015	R30423
Phenol	ND	5.0		µg/L	1	10/30/2015	R30423
Pyrene	ND	5.0		µg/L	1	10/30/2015	R30423
o-Toluidine	ND	2.0		µg/L	1	10/30/2015	R30423
Pyridine	ND	5.0		µg/L	1	10/30/2015	R30423
1,2,4,5-Tetrachlorobenzene	ND	5.0		µg/L	1	10/30/2015	R30423
Surr: 2,4,6-Tribromophenol	104	10-123		%REC	1	10/30/2015	R30423
Surr: 2-Fluorobiphenyl	90.8	19-130		%REC	1	10/30/2015	R30423
Surr: 2-Fluorophenol	70.2	21-120		%REC	1	10/30/2015	R30423
Surr: Nitrobenzene-d5	85.6	25-130		%REC	1	10/30/2015	R30423
Surr: Phenol-d5	121	10-130		%REC	1	10/30/2015	R30423
Surr: Terphenyl-d14	44.4	21-141		%REC	1	10/30/2015	R30423

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

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

## Analytical Report

Lab Order 1510908

Date Reported: 11/24/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: TRIP BLANK

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

Collection Date:

Lab ID: 1510908-002

Matrix: TRIP BLANK

Received Date: 10/20/2015 8:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: SUB
Acetonitrile	ND	0.50		µg/L	1	11/2/2015	R30423
Allyl chloride	ND	0.50		µg/L	1	11/2/2015	R30423
Chloroprene	ND	0.50		µg/L	1	11/2/2015	R30423
Cyclohexane	ND	0.50		µg/L	1	11/2/2015	R30423
Diethyl ether	ND	0.50		µg/L	1	11/2/2015	R30423
Diisopropyl ether	ND	0.50		µg/L	1	11/2/2015	R30423
Epichlorohydrin	ND	5.0		µg/L	1	11/2/2015	R30423
Ethyl acetate	ND	0.50		µg/L	1	11/2/2015	R30423
Ethyl methacrylate	ND	0.50		µg/L	1	11/2/2015	R30423
Ethyl tert-butyl ether	ND	0.50		µg/L	1	11/2/2015	R30423
Freon-113	ND	0.50		µg/L	1	11/2/2015	R30423
Isobutanol	ND	0.50		µg/L	1	11/2/2015	R30423
Isopropyl acetate	ND	0.50		µg/L	1	11/2/2015	R30423
Methacrylonitrile	ND	0.50		µg/L	1	11/2/2015	R30423
Methyl acetate	ND	0.50		µg/L	1	11/2/2015	R30423
Methyl ethyl ketone	ND	2.5		µg/L	1	11/2/2015	R30423
Methyl isobutyl ketone	ND	2.5		µg/L	1	11/2/2015	R30423
Methyl methacrylate	ND	0.50		µg/L	1	11/2/2015	R30423
Methylcyclohexane	ND	1.0		µg/L	1	11/2/2015	R30423
n-Amyl acetate	ND	0.50		µg/L	1	11/2/2015	R30423
n-Hexane	ND	0.50		µg/L	1	11/2/2015	R30423
Nitrobenzene	ND	5.0		µg/L	1	11/2/2015	R30423
Pentachloroethane	ND	5.0		µg/L	1	11/2/2015	R30423
p-Isopropyltoluene	ND	0.50		µg/L	1	11/2/2015	R30423
Propionitrile	ND	0.50		µg/L	1	11/2/2015	R30423
Tetrahydrofuran	ND	0.50		µg/L	1	11/2/2015	R30423
Benzene	ND	0.50		µg/L	1	11/2/2015	R30423
Toluene	ND	0.50		µg/L	1	11/2/2015	R30423
Ethylbenzene	ND	0.50		µg/L	1	11/2/2015	R30423
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	1	11/2/2015	R30423
1,2,4-Trimethylbenzene	ND	0.50		µg/L	1	11/2/2015	R30423
1,3,5-Trimethylbenzene	ND	0.50		µg/L	1	11/2/2015	R30423
1,2-Dichloroethane (EDC)	ND	0.50		µg/L	1	11/2/2015	R30423
1,2-Dibromoethane (EDB)	ND	0.50		µg/L	1	11/2/2015	R30423
Naphthalene	ND	0.50		µg/L	1	11/2/2015	R30423
Acetone	ND	2.5		µg/L	1	11/2/2015	R30423
Bromobenzene	ND	0.50		µg/L	1	11/2/2015	R30423
Bromodichloromethane	ND	0.50		µg/L	1	11/2/2015	R30423
Bromoform	ND	0.50		µg/L	1	11/2/2015	R30423

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

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



## Analytical Report

Lab Order 1510908

Date Reported: 11/24/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: TRIP BLANK

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

Collection Date:

Lab ID: 1510908-002

Matrix: TRIP BLANK

Received Date: 10/20/2015 8:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: SUB
Bromomethane	ND	0.50		µg/L	1	11/2/2015	R30423
Carbon disulfide	ND	0.50		µg/L	1	11/2/2015	R30423
Carbon Tetrachloride	ND	0.50		µg/L	1	11/2/2015	R30423
Chlorobenzene	ND	0.50		µg/L	1	11/2/2015	R30423
Chloroethane	ND	0.50		µg/L	1	11/2/2015	R30423
Chloroform	ND	0.50		µg/L	1	11/2/2015	R30423
Chloromethane	ND	0.50		µg/L	1	11/2/2015	R30423
2-Chlorotoluene	ND	0.50		µg/L	1	11/2/2015	R30423
4-Chlorotoluene	ND	0.50		µg/L	1	11/2/2015	R30423
cis-1,2-DCE	ND	0.50		µg/L	1	11/2/2015	R30423
cis-1,3-Dichloropropene	ND	0.50		µg/L	1	11/2/2015	R30423
1,2-Dibromo-3-chloropropane	ND	0.50		µg/L	1	11/2/2015	R30423
Dibromochloromethane	ND	0.50		µg/L	1	11/2/2015	R30423
Dibromomethane	ND	0.50		µg/L	1	11/2/2015	R30423
1,2-Dichlorobenzene	ND	0.50		µg/L	1	11/2/2015	R30423
1,3-Dichlorobenzene	ND	0.50		µg/L	1	11/2/2015	R30423
1,4-Dichlorobenzene	ND	0.50		µg/L	1	11/2/2015	R30423
Dichlorodifluoromethane	ND	0.50		µg/L	1	11/2/2015	R30423
1,1-Dichloroethane	ND	0.50		µg/L	1	11/2/2015	R30423
1,1-Dichloroethene	ND	0.50		µg/L	1	11/2/2015	R30423
1,2-Dichloropropane	ND	0.50		µg/L	1	11/2/2015	R30423
1,3-Dichloropropane	ND	0.50		µg/L	1	11/2/2015	R30423
2,2-Dichloropropane	ND	0.50		µg/L	1	11/2/2015	R30423
1,1-Dichloropropene	ND	0.50		µg/L	1	11/2/2015	R30423
Hexachlorobutadiene	ND	0.50		µg/L	1	11/2/2015	R30423
2-Hexanone	ND	0.50		µg/L	1	11/2/2015	R30423
Isopropylbenzene	ND	0.50		µg/L	1	11/2/2015	R30423
Methylene Chloride	ND	2.5		µg/L	1	11/2/2015	R30423
n-Butylbenzene	ND	0.50		µg/L	1	11/2/2015	R30423
n-Propylbenzene	ND	0.50		µg/L	1	11/2/2015	R30423
sec-Butylbenzene	ND	0.50		µg/L	1	11/2/2015	R30423
Styrene	ND	0.50		µg/L	1	11/2/2015	R30423
tert-Butylbenzene	ND	0.50		µg/L	1	11/2/2015	R30423
1,1,1,2-Tetrachloroethane	ND	0.50		µg/L	1	11/2/2015	R30423
1,1,2,2-Tetrachloroethane	ND	0.50		µg/L	1	11/2/2015	R30423
Tetrachloroethene (PCE)	ND	0.50		µg/L	1	11/2/2015	R30423
trans-1,2-DCE	ND	0.50		µg/L	1	11/2/2015	R30423
trans-1,3-Dichloropropene	ND	0.50		µg/L	1	11/2/2015	R30423
1,2,3-Trichlorobenzene	ND	0.50		µg/L	1	11/2/2015	R30423

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

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

## Analytical Report

Lab Order 1510908

Date Reported: 11/24/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: TRIP BLANK

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

Collection Date:

Lab ID: 1510908-002

Matrix: TRIP BLANK

Received Date: 10/20/2015 8:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: SUB
1,2,4-Trichlorobenzene	ND	0.50		µg/L	1	11/2/2015	R30423
1,1,1-Trichloroethane	ND	0.50		µg/L	1	11/2/2015	R30423
1,1,2-Trichloroethane	ND	0.50		µg/L	1	11/2/2015	R30423
Trichloroethene (TCE)	ND	0.50		µg/L	1	11/2/2015	R30423
Trichlorofluoromethane	ND	0.50		µg/L	1	11/2/2015	R30423
1,2,3-Trichloropropane	ND	0.50		µg/L	1	11/2/2015	R30423
Vinyl chloride	ND	0.50		µg/L	1	11/2/2015	R30423
mp-Xylenes	ND	1.0		µg/L	1	11/2/2015	R30423
o-Xylene	ND	0.50		µg/L	1	11/2/2015	R30423
tert-Amyl methyl ether	ND	0.50		µg/L	1	11/2/2015	R30423
tert-Butyl alcohol	ND	0.50		µg/L	1	11/2/2015	R30423
Acrolein	ND	0.50		µg/L	1	11/2/2015	R30423
Acrylonitrile	ND	0.50		µg/L	1	11/2/2015	R30423
Bromochloromethane	ND	0.50		µg/L	1	11/2/2015	R30423
2-Chloroethyl vinyl ether	ND	0.50		µg/L	1	11/2/2015	R30423
Iodomethane	ND	0.50		µg/L	1	11/2/2015	R30423
trans-1,4-Dichloro-2-butene	ND	0.50		µg/L	1	11/2/2015	R30423
Vinyl acetate	ND	0.50		µg/L	1	11/2/2015	R30423
1,4-Dioxane	ND	20		µg/L	1	11/2/2015	R30423
Surr: 1,2-Dichlorobenzene-d4	108	70-130		%REC	1	11/2/2015	R30423
Surr: 4-Bromofluorobenzene	105	70-130		%REC	1	11/2/2015	R30423
Surr: Toluene-d8	102	70-130		%REC	1	11/2/2015	R30423

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

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1510908

24-Nov-15

**Client:** Navajo Refining Company  
**Project:** Quarterly WDW-1, 2, & 3 Inj Well

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R29842	RunNo:	29842					
Prep Date:		Analysis Date:	10/27/2015	SeqNo:	908890	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R29842	RunNo:	29842					
Prep Date:		Analysis Date:	10/27/2015	SeqNo:	908891	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	97.0	90	110			
Sulfate	9.8	0.50	10.00	0	98.3	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R29930	RunNo:	29930					
Prep Date:		Analysis Date:	10/30/2015	SeqNo:	911773	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	ND	0.20								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R29930	RunNo:	29930					
Prep Date:		Analysis Date:	10/30/2015	SeqNo:	911774	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.4	0.20	3.500	0	96.6	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R29992	RunNo:	29992					
Prep Date:		Analysis Date:	11/3/2015	SeqNo:	913762	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R29992	RunNo:	29992					
Prep Date:		Analysis Date:	11/3/2015	SeqNo:	913763	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P	5.0	0.50	5.000	0	99.1	90	110			

### Qualifiers:

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

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510908

24-Nov-15

Client: Navajo Refining Company  
Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID	MB	SampType	MBLK	TestCode	EPA Method 300.0: Anions					
Client ID	PBW	Batch ID	A30103	RunNo	30103					
Prep Date		Analysis Date	11/6/2015	SeqNo	916979	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P)	ND	0.50								

Sample ID	LCS	SampType	LCS	TestCode	EPA Method 300.0: Anions					
Client ID	LCSW	Batch ID	A30103	RunNo	30103					
Prep Date		Analysis Date	11/6/2015	SeqNo	916980	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P)	5.0	0.50	5.000	0	99.3	90	110			

## Qualifiers:

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

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510908

24-Nov-15

Client: Navajo Refining Company  
Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID	MB-R30423	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R30423	RunNo:	30423					
Prep Date:		Analysis Date:	11/2/2015	SeqNo:	928381	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl ethyl ketone	ND	2.5								
Methyl isobutyl ketone	ND	2.5								
p-isopropyltoluene	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								
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								

## Qualifiers:

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

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510908

24-Nov-15

Client: Navajo Refining Company  
Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID	MB-R30423	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R30423	RunNo:	30423					
Prep Date:		Analysis Date:	11/2/2015	SeqNo:	928381	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.50								
Hexachlorobutadiene	ND	0.50								
2-Hexanone	ND	2.5								
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	0.50								
1,2,3-Trichlorobenzene	ND	0.50								
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	0.50								
o-Xylene	ND	0.50								
Acrylonitrile	ND	0.50								
Bromochloromethane	ND	0.50								

Sample ID	LCS-R30423	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R30423	RunNo:	30423					
Prep Date:		Analysis Date:	11/2/2015	SeqNo:	928382	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	9.2	0	10.00	0	92.1	80	120			
Toluene	9.6	0	10.00	0	96.5	80	120			
Ethylbenzene	9.7	0	10.00	0	96.9	80	120			
Chlorobenzene	9.5	0	10.00	0	94.7	80	120			
1,1-Dichloroethene	10	0	10.00	0	102	80	120			
Tetrachloroethene (PCE)	9.9	0	10.00	0	99.4	80	120			

## Qualifiers:

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

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510908

24-Nov-15

Client: Navajo Refining Company  
Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID	LCS-R30423		SampType:	LCS		TestCode:	EPA Method 8260B: VOLATILES			
Client ID:	LCSW		Batch ID:	R30423		RunNo:	30423			
Prep Date:			Analysis Date:	11/2/2015		SeqNo:	928382		Units: µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Trichloroethene (TCE)	10	0	10.00	0	102	80	120			
o-Xylene	10	0	10.00	0	105	80	120			

## Qualifiers:

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510908

24-Nov-15

Client: Navajo Refining Company  
Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID	MB-R30423	SampType:	MBLK	TestCode:	EPA 8270C: Semivolatiles/Mod					
Client ID:	PBW	Batch ID:	R30423	RunNo:	30423					
Prep Date:		Analysis Date:	10/30/2015	SeqNo:	928385	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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								
4,6-Dinitro-2-methylphenol	ND	5.0								
4-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	5.0								
Bis(2-ethylhexyl)phthalate	ND	5.0								
Butyl benzyl phthalate	ND	5.0								
Carbazole	ND	5.0								

## Qualifiers:

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

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



# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510908

24-Nov-15

**Client:** Navajo Refining Company  
**Project:** Quarterly WDW-1, 2, & 3 Inj Well

Sample ID: <b>MB-R30423</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA 8270C: Semivolatiles/Mod</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R30423</b>	RunNo: <b>30423</b>								
Prep Date:	Analysis Date: <b>10/30/2015</b>	SeqNo: <b>928385</b>	Units: <b>µg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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	5.0								
o-Toluidine	ND	2.0								
Pyridine	ND	5.0								
1,2,4,5-Tetrachlorobenzene	ND	5.0								

Sample ID: <b>LCS-R30423</b>	SampType: <b>LCS</b>	TestCode: <b>EPA 8270C: Semivolatiles/Mod</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R30423</b>	RunNo: <b>30423</b>								
Prep Date:	Analysis Date: <b>10/30/2015</b>	SeqNo: <b>928386</b>	Units: <b>µg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	4.8	0	5.000	0	95.6	49	134			
2-Chlorophenol	4.7	0	5.000	0	94.4	50	31			S
4-Chloro-3-methylphenol	4.8	0	5.000	0	95.4	42	139			
4-Nitrophenol	3.2	0	5.000	0	65.0	19	137			
Acenaphthene	5.2	0	5.000	0	105	36	122			
Bis(2-ethylhexyl)phthalate	5.9	0	5.000	0	118	43	142			
N-Nitrosodi-n-propylamine	4.7	0	5.000	0	94.4	46	140			

## Qualifiers:

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

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510908

24-Nov-15

Client: Navajo Refining Company  
Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID	LCS-R30423		SampType: LCS		TestCode: EPA 8270C: Semivolatiles/Mod					
Client ID:	LCSW		Batch ID: R30423		RunNo: 30423					
Prep Date:			Analysis Date: 10/30/2015		SeqNo: 928386		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Pentachlorophenol	4.8	0	5.000	0	95.4	22	138			
Phenol	4.5	0	5.000	0	90.8	45	134			
Pyrene	4.6	0	5.000	0	92.2	45	138			

## Qualifiers:

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510908

24-Nov-15

**Client:** Navajo Refining Company  
**Project:** Quarterly WDW-1, 2, & 3 Inj Well

Sample ID	MB-21960	SampType:	MBLK	TestCode:	EPA Method 7470: Mercury					
Client ID:	PBW	Batch ID:	21960	RunNo:	29703					
Prep Date:	10/21/2015	Analysis Date:	10/21/2015	SeqNo:	904542	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-21960	SampType:	LCS	TestCode:	EPA Method 7470: Mercury					
Client ID:	LCSW	Batch ID:	21960	RunNo:	29703					
Prep Date:	10/21/2015	Analysis Date:	10/21/2015	SeqNo:	904543	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.3	80	120			

## Qualifiers:

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510908

24-Nov-15

Client: Navajo Refining Company  
Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID	MB-22145	SampType:	MBLK	TestCode:	MERCURY, TCLP					
Client ID:	PBW	Batch ID:	22145	RunNo:	29977					
Prep Date:	11/3/2015	Analysis Date:	11/3/2015	SeqNo:	913123	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020								

Sample ID	LCS-22145	SampType:	LCS	TestCode:	MERCURY, TCLP					
Client ID:	LCSW	Batch ID:	22145	RunNo:	29977					
Prep Date:	11/3/2015	Analysis Date:	11/3/2015	SeqNo:	913124	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020	0.005000	0	101	80	120			

## Qualifiers:

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1510908

24-Nov-15

**Client:** Navajo Refining Company  
**Project:** Quarterly WDW-1, 2, & 3 Inj Well

Sample ID	MB-21978	SampType:	MBLK	TestCode:	EPA Method 6010B: TCLP Metals					
Client ID:	PBW	Batch ID:	21978	RunNo:	29736					
Prep Date:	10/22/2015	Analysis Date:	10/22/2015	SeqNo:	905688	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-21978	SampType: LCS		TestCode: EPA Method 6010B: TCLP Metals						
Client ID:	LCSW	Batch ID: 21978		RunNo: 29736						
Prep Date:	10/22/2015	Analysis Date: 10/22/2015		SeqNo: 905689			Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0	0.5000	0	107	80	120			
Barium	ND	100	0.5000	0	100	80	120			
Cadmium	ND	1.0	0.5000	0	102	80	120			
Chromium	ND	5.0	0.5000	0	100	80	120			
Lead	ND	5.0	0.5000	0	101	80	120			
Selenium	ND	1.0	0.5000	0	107	80	120			
Silver	ND	5.0	0.1000	0	101	80	120			

### Qualifiers:

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

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510908

24-Nov-15

Client: Navajo Refining Company  
Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID	MB-21972	SampType:	MBLK	TestCode:	EPA 6010B: Total Metals					
Client ID:	PBW	Batch ID:	21972	RunNo:	29736					
Prep Date:	10/21/2015	Analysis Date:	10/22/2015	SeqNo:	905617	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								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.050								
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-21972		SampType: LCS		TestCode: EPA 6010B: Total Metals					
Client ID:	LCSW		Batch ID: 21972		RunNo: 29736					
Prep Date:	10/21/2015		Analysis Date: 10/22/2015		SeqNo: 905618		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.52	0.020	0.5000	0	103	80	120			
Antimony	0.52	0.050	0.5000	0	103	80	120			
Arsenic	0.51	0.020	0.5000	0	101	80	120			
Barium	0.49	0.020	0.5000	0	97.9	80	120			
Beryllium	0.51	0.0030	0.5000	0	103	80	120			
Cadmium	0.50	0.0020	0.5000	0	99.2	80	120			
Calcium	49	1.0	50.00	0	97.9	80	120			
Chromium	0.49	0.0060	0.5000	0	97.6	80	120			
Cobalt	0.48	0.0060	0.5000	0	95.3	80	120			
Copper	0.51	0.0060	0.5000	0	102	80	120			
Iron	0.49	0.050	0.5000	0	97.9	80	120			

## Qualifiers:

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

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1510908

24-Nov-15

Client: Navajo Refining Company

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

Sample ID	LCS-21972		SampType: LCS		TestCode: EPA 6010B: Total Metals					
Client ID:	LCSW		Batch ID: 21972		RunNo: 29736					
Prep Date:	10/21/2015		Analysis Date: 10/22/2015		SeqNo: 905618		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.49	0.0050	0.5000	0	97.9	80	120			
Magnesium	50	1.0	50.00	0	99.1	80	120			
Manganese	0.48	0.0020	0.5000	0	96.9	80	120			
Nickel	0.48	0.010	0.5000	0	95.8	80	120			
Potassium	47	1.0	50.00	0	94.3	80	120			
Selenium	0.49	0.050	0.5000	0	98.4	80	120			
Silver	0.099	0.0050	0.1000	0	99.2	80	120			
Sodium	49	1.0	50.00	0	98.4	80	120			
Thallium	0.51	0.050	0.5000	0	103	80	120			
Vanadium	0.51	0.050	0.5000	0	102	80	120			
Zinc	0.48	0.020	0.5000	0	95.3	80	120			

Sample ID	1510908-001BMS	SampType:	MS	TestCode:	EPA 6010B: Total Metals					
Client ID:	WDW-1,2,&3 Effluen	Batch ID:	21972	RunNo:	29736					
Prep Date:	10/21/2015	Analysis Date:	10/22/2015	SeqNo:	905634	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	1.2	0.040	0.5000	0.5719	126	75	125			S
Antimony	0.60	0.10	0.5000	0	120	75	125			
Arsenic	0.63	0.040	0.5000	0	126	75	125			S
Barium	0.54	0.040	0.5000	0.01050	106	75	125			
Beryllium	0.55	0.0060	0.5000	0	110	75	125			
Cadmium	0.56	0.0040	0.5000	0	111	75	125			
Calcium	120	2.0	50.00	65.14	113	75	125			
Chromium	0.52	0.012	0.5000	0	105	75	125			
Cobalt	0.53	0.012	0.5000	0	106	75	125			
Copper	0.62	0.012	0.5000	0.01570	121	75	125			
Iron	0.99	0.10	0.5000	0.4468	110	75	125			
Lead	0.55	0.010	0.5000	0	110	75	125			
Magnesium	74	2.0	50.00	19.57	110	75	125			
Manganese	0.62	0.0040	0.5000	0.08908	106	75	125			
Nickel	0.54	0.020	0.5000	0	108	75	125			
Potassium	85	2.0	50.00	27.55	115	75	125			
Selenium	0.86	0.10	0.5000	0.2670	118	75	125			
Silver	0.11	0.010	0.1000	0	112	75	125			
Thallium	0.58	0.10	0.5000	0	115	75	125			
Vanadium	0.57	0.10	0.5000	0.01404	110	75	125			
Zinc	0.59	0.040	0.5000	0.03952	110	75	125			

### Qualifiers:

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

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1510908

24-Nov-15

Client: Navajo Refining Company

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

Sample ID	1510908-001BMSD		SampType: MSD		TestCode: EPA 6010B: Total Metals					
Client ID:	WDW-1,2,&3 Effluen		Batch ID: 21972		RunNo: 29736					
Prep Date:	10/21/2015		Analysis Date: 10/22/2015		SeqNo: 905635		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	1.1	0.040	0.5000	0.5719	115	75	125	4.76	20	
Antimony	0.54	0.10	0.5000	0	108	75	125	10.5	20	
Arsenic	0.59	0.040	0.5000	0	118	75	125	6.26	20	
Barium	0.51	0.040	0.5000	0.01050	99.5	75	125	6.53	20	
Beryllium	0.50	0.0060	0.5000	0	101	75	125	8.90	20	
Cadmium	0.52	0.0040	0.5000	0	104	75	125	6.55	20	
Calcium	110	2.0	50.00	65.14	88.0	75	125	11.0	20	
Chromium	0.49	0.012	0.5000	0	98.8	75	125	5.80	20	
Cobalt	0.50	0.012	0.5000	0	99.8	75	125	6.05	20	
Copper	0.58	0.012	0.5000	0.01570	112	75	125	7.19	20	
Iron	0.90	0.10	0.5000	0.4468	91.6	75	125	9.48	20	
Lead	0.51	0.010	0.5000	0	102	75	125	7.39	20	
Magnesium	69	2.0	50.00	19.57	99.3	75	125	7.30	20	
Manganese	0.58	0.0040	0.5000	0.08908	98.6	75	125	6.53	20	
Nickel	0.51	0.020	0.5000	0	101	75	125	6.22	20	
Potassium	77	2.0	50.00	27.55	98.0	75	125	10.6	20	
Selenium	0.80	0.10	0.5000	0.2670	108	75	125	6.07	20	
Silver	0.10	0.010	0.1000	0	102	75	125	8.73	20	
Thallium	0.54	0.10	0.5000	0	107	75	125	7.22	20	
Vanadium	0.53	0.10	0.5000	0.01404	103	75	125	6.69	20	
Zinc	0.55	0.040	0.5000	0.03952	103	75	125	6.44	20	

### Qualifiers:

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

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



# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510908

24-Nov-15

**Client:** Navajo Refining Company  
**Project:** Quarterly WDW-1, 2, & 3 Inj Well

Sample ID	MB-R30423	SampType:	MBLK	TestCode:	CYANIDE, Reactive					
Client ID:	PBW	Batch ID:	R30423	RunNo:	30423					
Prep Date:		Analysis Date:	10/28/2015	SeqNo:	928390	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide, Reactive	ND	1.00								

Sample ID	LCS-R30423	SampType:	LCS	TestCode:	CYANIDE, Reactive					
Client ID:	LCSW	Batch ID:	R30423	RunNo:	30423					
Prep Date:		Analysis Date:	10/28/2015	SeqNo:	928391	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide, Reactive	0.478		0.5000	0	95.6	80	120			

## Qualifiers:

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

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510908

24-Nov-15

Client: Navajo Refining Company  
Project: Quarterly WDW-1, 2, & 3 Inj Well

Sample ID	MB-R30423	SampType	MBLK	TestCode	SULFIDE, Reactive					
Client ID	PBW	Batch ID	R30423	RunNo	30423					
Prep Date		Analysis Date	10/23/2015	SeqNo	928393	Units	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Reactive Sulfide	ND	1.0								

Sample ID	LCS-R30423	SampType	LCS	TestCode	SULFIDE, Reactive					
Client ID	LCSW	Batch ID	R30423	RunNo	30423					
Prep Date		Analysis Date	10/23/2015	SeqNo	928394	Units	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Reactive Sulfide	0.20		0.2000	0	100	70	130			

## Qualifiers:

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D Sample Diluted Due to Matrix  
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ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510908

24-Nov-15

**Client:** Navajo Refining Company  
**Project:** Quarterly WDW-1, 2, & 3 Inj Well

Sample ID	mb-1	SampType:	MBLK		TestCode:	SM2320B: Alkalinity				
Client ID:	PBW	Batch ID:	R29677		RunNo:	29677				
Prep Date:		Analysis Date:	10/20/2015		SeqNo:	904176	Units:	mg/L CaCO3		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	lcs-1		SampType: LCS		TestCode: SM2320B: Alkalinity					
Client ID:	LCSW		Batch ID: R29677		RunNo: 29677					
Prep Date:			Analysis Date: 10/20/2015		SeqNo: 904177		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.04	20.00	80.00	0	96.3	90	110			

## Qualifiers:

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510908

24-Nov-15

**Client:** Navajo Refining Company  
**Project:** Quarterly WDW-1, 2, & 3 Inj Well

Sample ID	1510908-001ADUP	SampType:	DUP	TestCode:	Specific Gravity					
Client ID:	WDW-1,2,&3 Effluen	Batch ID:	R29675	RunNo:	29675					
Prep Date:		Analysis Date:	10/20/2015	SeqNo:	903627	Units:				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Specific Gravity	1.000	0						0.0900	20	

## Qualifiers:

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510908

24-Nov-15

**Client:** Navajo Refining Company  
**Project:** Quarterly WDW-1, 2, & 3 Inj Well

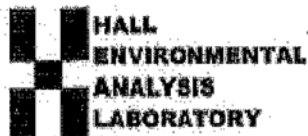
Sample ID	MB-21952	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	21952	RunNo:	29751					
Prep Date:	10/21/2015	Analysis Date:	10/23/2015	SeqNo:	906219	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-21952	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	21952	RunNo:	29751					
Prep Date:	10/21/2015	Analysis Date:	10/23/2015	SeqNo:	906220	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1030	20.0	1000	0	103	80	120			

## Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
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



Hall Environmental Analysis Laboratory  
3901 Harkiss NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: NAVAJO REFINING CO

Work Order Number: 1510908

ReptNo: 1

Received by/date:

SA 10/20/15

Logged By: Lindsay Mangin

10/20/2015 8:55:00 AM

*July Mago*

Completed By: Lindsay Mangin

10/20/2015 9:15:21 AM

*July Mago*

Reviewed By:

SA 10/20/15

### Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

### Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ?

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☒

No ☐

No VOA Vials ☐

11. Were any sample containers received broken?

Yes ☐

No ☒

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

(If no, notify customer for authorization.)

# of preserved bottles checked for pH: 2, 3  
( $<2$  or  $>12$  unless noted)  
Adjusted? no  
Checked by: CS

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date:

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.4	Good	Yes			





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

## Injection Well Quarterly Sample Details Attachment



**HOLLYFRONTIER**

The HollyFrontier Companies

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

Type of Sampler: Directly to sample jars

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

Part 7 Sample Intervals: One

Project Name	WDM 1, 2, & 3 Only in Well
Sample Name	Elizabeth Safety
Sample Location	Navajo Refining Co. LLC
Start Date and Time	10/18/2015 07:40am
End Date and Time	10/19/2015 07:40am

Old Well / Sample Location	Waste water effluent pumps to injection wells
Pumps sample point (first from east)	<input type="checkbox"/>
Pumps sample point (second from east)	<input type="checkbox"/>

Container	Size	Material	# of Containers	Notes	HCL	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> SO <sub>3</sub>	NaHSO <sub>4</sub>	Other	Analysis and/or Method Requested
1	3		3	X			X					Specific Gravity, HCO <sub>3</sub> , CO <sub>3</sub> , Cl, SO <sub>4</sub> , TDS, pH, cond. F, Cation/anion bal., Br, Et/40 CFR 136.3
2			1			X						VOCs/SW-846 Method 8260C (see attached list VOCs)
3			3		X							SVOCs/SW-846 Method 8270D (see attached list SVOCs)
4			2	X								R.C. 140 CFR part 261
5			2	X								Metals/SW-846 Method 6010, 7470 (see attached list Metals)
6			2	X								Cd, K, Mg, Na/40 CFR 136.3
7			1	X								TCLP Metals, only 40 CFR part 261/SW-846 Method 1311
8												
9												
10												

Field Date (Weather, Observations, Etc.)	10/19/2015 Temp: 55.4 F, Humidity: 100%, Wind Direction: South, Wind Speed: 5 mph, Condition: Clear
Date and Time	
Field Temp: 42.0	Field pH: 7.34

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

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



## District I

P. O. Box 1980, Hobbs, NM 88241-1980

## District II

P. O. Drawer DD, Artesia, NM 88211-0719

## District III

1000 Rio Brazos, Aztec, NM 84710

State of New Mexico  
Energy, Minerals & Natural Resources Department

## OIL CONSERVATION DIVISION

P. O. Box 6429

Santa Fe, NM 87505

## OPERATOR'S MONTHLY REPORT

Form C-115 First Page

Revised October 17, 1993

Instruction on Reverse Side

1 ☐ Amended Report

2 Operator NAVAJO REFINING CO										3 OGRID: 15694				4 Month/Year 1/2015			
501 E MAIN PO BOX 159, ARTESIA, N.M. 88210														6 Page 1			
		INJECTION		PRODUCTION				DISPOSITION OF OIL, GAS, AND WATER									
7 <u>POOL NO. AND NAME</u> Property No. and Name Well No. & U-L-S-T-R API No.		8 C O D E 1	9 Volume	10 Pressure	11 C O D E 2	12 Barrels of Oil/conden- sate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	16 C O D E 3	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	22 C O D E 4	23 Oil on hand at end of month
96918 NAVAJO PERMO-PENN 023592 WDW 30-015-27592 30-015-20894		D	132,986	1,393	W												
		D	122,685	1,393	W												
78890 ILLINOIS CAMP:MORROW NORTH 023592 WDW #003 30-015-26575		D	131,757	1,384	W												

I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

24

Signature

Printed Name &amp; Title

Micki Schultz  
Environmental Specialist

Date

2/9/2015

Phone Number

575-748-3311

District I  
P. O. Box 1980, Hobbs, NM 88241-1980

District II  
P. O. Drawer DD, Artesia, NM 88211-0719

District III  
1000 Rio Brazos, Aztec, NM 84710

State of New Mexico  
Energy, Minerals & Natural Resources Department

**OIL CONSERVATION DIVISION**

P. O. Box 6429  
Santa Fe, NM 87505

**OPERATOR'S MONTHLY REPORT**

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Revised October 17, 1993  
Instruction on Reverse Side

1 ☐ Amended Report

2 Operator NAVAJO REFINING CO										3 OGRID: 15694			4 Month/Year 2/2015				
501 E MAIN PO BOX 159, ARTESIA, N.M. 88210										6 Page 1							
		INJECTION		PRODUCTION				DISPOSITION OF OIL, GAS, AND WATER									
7 <u>POOL NO. AND NAME</u> Property No. and Name Well No. & U-L-S-T-R API No.		8 C O D E 1	9 Volume	10 Pressure	11 C O D E 2	12 Barrels of Oil/conden- sate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	16 C O D E 3	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	22 C O D E 4	23 Oil on hand at end of month
<u>96918 NAVAJO PERMO-PENN</u> 023592 WDW 30-015-27592 30-015-20894  <u>78890 ILLINOIS CAMP:MORROW NORTH</u> 023592 WDW #003 30-015-26575		D	118,968	1,383	W												
		D	108,866	1,383	W												
		D	111,941	1,362	W												

I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

24

Signature

Printed Name & Title

Micki Schultz  
Environmental Specialist

Date

3/9/2015

Phone Number

575-748-3311

District I  
P. O. Box 1980, Hobbs, NM 88241-1980

District II  
P. O. Drawer DD, Artesia, NM 88211-0719

District III  
1000 Rio Brazos, Aztec, NM 84710

State of New Mexico  
Energy, Minerals & Natural Resources Department

**OIL CONSERVATION DIVISION**

P. O. Box 6429  
Santa Fe, NM 87505

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2 Operator NAVAJO REFINING CO										3 OGRID: 15694			4 Month/Year 3/2015				
501 E MAIN PO BOX 159, ARTESIA, N.M. 88210										6 Page 1							
		INJECTION		PRODUCTION				DISPOSITION OF OIL, GAS, AND WATER									
7 <u>POOL NO. AND NAME</u> Property No. and Name Well No. & U-L-S-T-R API No.		8 C O D E 1	9 Volume	10 Pressure	11 C O D E 2	12 Barrels of Oil/conden- sate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	16 C O D E 3	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	22 C O D E 4	23 Oil on hand at end of month
96918 NAVAJO PERMO-PENN 023592 WDW 30-015-27592 30-015-20894		D	130,953	1,383	W												
		D	121,907	1,383	W												
78890 ILLINOIS CAMP:MORROW NORTH 023592 WDW #003 30-015-26575		D	133,166	1,374	W												

I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

24

Signature

Printed Name & Title

Micki Schultz  
Environmental Specialist

Date

4/7/2015

Phone Number

575-748-3311

## District I

P. O. Box 1980, Hobbs, NM 88241-1980

## District II

P. O. Drawer DD, Artesia, NM 88211-0719

## District III

1000 Rio Brazos, Aztec, NM 84710

State of New Mexico  
Energy, Minerals & Natural Resources Department

## OIL CONSERVATION DIVISION

P. O. Box 6429

Santa Fe, NM 87505

## OPERATOR'S MONTHLY REPORT

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Revised October 17, 1993

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1 ☐ Amended Report

2 Operator NAVAJO REFINING CO										3 OGRID: 15694				4 Month/Year 4/2015			
501 E MAIN PO BOX 159, ARTESIA, N.M. 88210										6 Page 1							
		INJECTION		PRODUCTION				DISPOSITION OF OIL, GAS, AND WATER									
7 <u>POOL NO. AND NAME</u> Property No. and Name Well No. & U-L-S-T-R API No.		8 C O D E 1	9 Volume	10 Pressure	11 C O D E 2	12 Barrels of Oil/conden- sate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	16 C O D E 3	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	22 C O D E 4	23 Oil on hand at end of month
96918 NAVAJO PERMO-PENN 023592 WDW 30-015-27592 30-015-20894		D	124,144	1,350	W												
		D	115,053	1,365	W												
		D	129,740	1,364	W												
78890 ILLINOIS CAMP:MORROW NORTH 023592 WDW #003 30-015-26575																	

I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

24

Signature

Printed Name &amp; Title

Micki Schultz  
Environmental Specialist

Date

5/7/2015

Phone Number

575-748-3311

District I  
P. O. Box 1980, Hobbs, NM 88241-1980

District II  
P. O. Drawer DD, Artesia, NM 88211-0719

District III  
1000 Rio Brazos, Aztec, NM 84710

State of New Mexico  
Energy, Minerals & Natural Resources Department  
**OIL CONSERVATION DIVISION**  
P. O. Box 6429  
Santa Fe, NM 87505  
**OPERATOR'S MONTHLY REPORT**

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Revised October 17, 1993  
Instruction on Reverse Side  
1 ☐ Amended Report

2 Operator NAVAJO REFINING CO										3 OGRID: 15694				4 Month/Year 5/2015			
501 E MAIN PO BOX 159, ARTESIA, N.M. 88210										6 Page 1							
		INJECTION		PRODUCTION				DISPOSITION OF OIL, GAS, AND WATER									
7 <u>POOL NO. AND NAME</u> Property No. and Name Well No. & U-L-S-T-R API No.		8 C O D E 1	9 Volume	10 Pressure	11 C O D E 2	12 Barrels of Oil/conden- sate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	16 C O D E 3	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	22 C O D E 4	23 Oil on hand at end of month
96918 NAVAJO PERMO-PENN 023592 WDW 30-015-27592 30-015-20894		D	137,792	1,393	W												
		D	124,679	1,389	W												
78890 ILLINOIS CAMP:MORROW NORTH 023592 WDW #003 30-015-26575		D	129,153	1,359	W												

I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

24

Signature

Printed Name & Title

Micki Schultz  
Environmental Specialist

Date

6/5/2015

Phone Number

575-748-3311

## District I

P. O. Box 1980, Hobbs, NM 88241-1980

## District II

P. O. Drawer DD, Artesia, NM 88211-0719

## District III

1000 Rio Brazos, Aztec, NM 84710

State of New Mexico  
Energy, Minerals & Natural Resources Department

## OIL CONSERVATION DIVISION

P. O. Box 6429

Santa Fe, NM 87505

## OPERATOR'S MONTHLY REPORT

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Revised October 17, 1993

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1 ☐ Amended Report

2 Operator NAVAJO REFINING CO										3 OGRID: 15694				4 Month/Year 6/2015			
501 E MAIN PO BOX 159, ARTESIA, N.M. 88210														6 Page 1			
		INJECTION		PRODUCTION				DISPOSITION OF OIL, GAS, AND WATER									
7 <u>POOL NO. AND NAME</u> Property No. and Name Well No. & U-L-S-T-R API No.		8 C O D E 1	9 Volume	10 Pressure	11 C O D E 2	12 Barrels of Oil/conden- sate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	16 C O D E 3	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	22 C O D E 4	23 Oil on hand at end of month
<u>96918 NAVAJO PERMO-PENN</u> 023592 WDW 30-015-27592 30-015-20894  <u>78890 ILLINOIS CAMP:MORROW NORTH</u> 023592 WDW #003 30-015-26575		D	133,424	1,398	W												
		D	124,945	1,399	W												
		D	132,203	1,379	W												

I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

24

Signature

Printed Name &amp; Title

Micki Schultz  
Environmental Specialist

Date

7/5/2015

Phone Number

575-748-3311



District I  
P. O. Box 1980, Hobbs, NM 88241-1980

District II  
P. O. Drawer DD, Artesia, NM 88211-0719

District III  
1000 Rio Brazos, Aztec, NM 84710

State of New Mexico  
Energy, Minerals & Natural Resources Department  
**OIL CONSERVATION DIVISION**  
P. O. Box 6429  
Santa Fe, NM 87505  
**OPERATOR'S MONTHLY REPORT**

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Instruction on Reverse Side  
1 ☐ Amended Report

2 Operator NAVAJO REFINING CO										3 OGRID: 15694				4 Month/Year 7/2015			
501 E MAIN PO BOX 159, ARTESIA, N.M. 88210														6 Page 1			
		INJECTION		PRODUCTION				DISPOSITION OF OIL, GAS, AND WATER									
<u>7</u> <b>POOL NO. AND NAME</b> Property No. and Name Well No. & U-L-S-T-R API No.		8 C O D E 1	9 Volume	10 Pressure	11 C O D E 2	12 Barrels of Oil/conden- sate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	16 C O D E 3	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	22 C O D E 4	23 Oil on hand at end of month
<u>96918 NAVAJO PERMO-PENN</u> 023592 WDW 30-015-27592 30-015-20894  <u>78890 ILLINOIS CAMP:MORROW NORTH</u> 023592 WDW #003 30-015-26575		D	135,690	1,392	W												
		D	158,617	1,391	W												
		D	132,187	1,373	W												

I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

24

Signature

Printed Name & Title

Micki Schultz  
Environmental Specialist

Date

8/12/2015

Phone Number

575-748-3311

## District I

P. O. Box 1980, Hobbs, NM 88241-1980

## District II

P. O. Drawer DD, Artesia, NM 88211-0719

## District III

1000 Rio Brazos, Aztec, NM 84710

State of New Mexico  
Energy, Minerals & Natural Resources Department

## OIL CONSERVATION DIVISION

P. O. Box 6429

Santa Fe, NM 87505

## OPERATOR'S MONTHLY REPORT

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1 ☐ Amended Report

2 Operator NAVAJO REFINING CO										3 OGRID: 15694				4 Month/Year 8/2015			
501 E MAIN PO BOX 159, ARTESIA, N.M. 88210														6 Page 1			
		INJECTION		PRODUCTION				DISPOSITION OF OIL, GAS, AND WATER									
7 <u>POOL NO. AND NAME</u> Property No. and Name Well No. & U-L-S-T-R API No.		8 C O D E 1	9 Volume	10 Pressure	11 C O D E 2	12 Barrels of Oil/conden- sate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	16 C O D E 3	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	22 C O D E 4	23 Oil on hand at end of month
96918 NAVAJO PERMO-PENN 023592 WDW 30-015-27592 30-015-20894		D	133,695	1,389	W												
		D	214,764	1,392	W												
		D	126,544	1,381	W												
78890 ILLINOIS CAMP:MORROW NORTH 023592 WDW #003 30-015-26575																	

I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

24

Signature

Printed Name &amp; Title

Micki Schultz  
Environmental Specialist

Date

9/14/2015

Phone Number

575-748-3311



## District I

P. O. Box 1980, Hobbs, NM 88241-1980

## District II

P. O. Drawer DD, Artesia, NM 88211-0719

## District III

1000 Rio Brazos, Aztec, NM 84710

State of New Mexico  
Energy, Minerals & Natural Resources Department

## OIL CONSERVATION DIVISION

P. O. Box 6429

Santa Fe, NM 87505

## OPERATOR'S MONTHLY REPORT

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Revised October 17, 1993

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1 ☐ Amended Report

2 Operator NAVAJO REFINING CO										3 OGRID: 15694				4 Month/Year 9/2015			
501 E MAIN PO BOX 159, ARTESIA, N.M. 88210														6 Page 1			
		INJECTION		PRODUCTION				DISPOSITION OF OIL, GAS, AND WATER									
7 <u>POOL NO. AND NAME</u> Property No. and Name Well No. & U-L-S-T-R API No.		8 C O D E 1	9 Volume	10 Pressure	11 C O D E 2	12 Barrels of Oil/conden- sate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	16 C O D E 3	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	22 C O D E 4	23 Oil on hand at end of month
96918 NAVAJO PERMO-PENN 023592 WDW 30-015-27592 30-015-20894		D	126,349	1,381	W												
		D	127,967	1,369	W												
		D	161,879	1,362	W												
78890 ILLINOIS CAMP:MORROW NORTH 023592 WDW #003 30-015-26575																	

I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

24

Signature

Printed Name &amp; Title

Micki Schultz  
Environmental Specialist

Date

10/12/2015

Phone Number

575-748-3311

District I

P. O. Box 1980, Hobbs, NM 88241-1980

District II

P. O. Drawer DD, Artesia, NM 88211-0719

District III

1000 Rio Brazos, Aztec, NM 84710

State of New Mexico  
Energy, Minerals & Natural Resources Department

## OIL CONSERVATION DIVISION

P. O. Box 6429

Santa Fe, NM 87505

## OPERATOR'S MONTHLY REPORT

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Revised October 17, 1993

Instruction on Reverse Side

1 ☐ Amended Report

2 Operator NAVAJO REFINING CO										3 OGRID: 15694				4 Month/Year 10/2015			
501 E MAIN PO BOX 159, ARTESIA, N.M. 88210														6 Page 1			
		INJECTION		PRODUCTION				DISPOSITION OF OIL, GAS, AND WATER									
7 <u>POOL NO. AND NAME</u> Property No. and Name Well No. & U-L-S-T-R API No.		8 C O D E 1	9 Volume	10 Pressure	11 C O D E 2	12 Barrels of Oil/conden- sate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	16 C O D E 3	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	22 C O D E 4	23 Oil on hand at end of month
96918 NAVAJO PERMO-PENN 023592 WDW 30-015-27592 30-015-20894		D	131,332	1,378	W												
		D	107,845	1,378	W												
78890 ILLINOIS CAMP:MORROW NORTH 023592 WDW #003 30-015-26575		D	150,328	1,369	W												

I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

24

Signature

Printed Name &amp; Title

Micki Schultz  
Environmental Specialist

Date

11/6/2015

Phone Number

575-748-3311

## District I

P. O. Box 1980, Hobbs, NM 88241-1980

## District II

P. O. Drawer DD, Artesia, NM 88211-0719

## District III

1000 Rio Brazos, Aztec, NM 84710

State of New Mexico  
Energy, Minerals & Natural Resources Department

## OIL CONSERVATION DIVISION

P. O. Box 6429

Santa Fe, NM 87505

## OPERATOR'S MONTHLY REPORT

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Revised October 17, 1993

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1 ☐ Amended Report

2 Operator NAVAJO REFINING CO										3 OGRID: 15694			4 Month/Year 11/2015				
501 E MAIN PO BOX 159, ARTESIA, N.M. 88210										6 Page 1							
		INJECTION		PRODUCTION				DISPOSITION OF OIL, GAS, AND WATER									
7 <u>POOL NO. AND NAME</u> Property No. and Name Well No. & U-L-S-T-R API No.		8 C O D E 1	9 Volume	10 Pressure	11 C O D E 2	12 Barrels of Oil/conden- sate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	16 C O D E 3	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	22 C O D E 4	23 Oil on hand at end of month
<u>96918 NAVAJO PERMO-PENN</u> 023592 WDW 30-015-27592 30-015-20894  <u>78890 ILLINOIS CAMP:MORROW NORTH</u> 023592 WDW #003 30-015-26575		D	124,530	1,376	W												
		D	94,793	1,376	W												
		D	147,493	1,369	W												

I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

24

Signature

Printed Name &amp; Title

Micki Schultz  
Environmental Specialist

Date

12/7/2015

Phone Number

575-748-3311

District I

P. O. Box 1980, Hobbs, NM 88241-1980

District II

P. O. Drawer DD, Artesia, NM 88211-0719

District III

1000 Rio Brazos, Aztec, NM 84710

State of New Mexico  
Energy, Minerals & Natural Resources Department

## OIL CONSERVATION DIVISION

P. O. Box 6429

Santa Fe, NM 87505

## OPERATOR'S MONTHLY REPORT

Form C-115 First Page

Revised October 17, 1993

Instruction on Reverse Side

1 ☐ Amended Report

2 Operator NAVAJO REFINING CO								3 OGRID: 15694				4 Month/Year 11/2015					
501 E MAIN PO BOX 159, ARTESIA, N.M. 88210								6 Page 1									
		INJECTION		PRODUCTION				DISPOSITION OF OIL, GAS, AND WATER									
7 <b>POOL NO. AND NAME</b> Property No. and Name Well No. & U-L-S-T-R API No.		8 C O D E 1	9 Volume	10 Pressure	11 C O D E 2	12 Barrels of Oil/conden- sate produced	13 Barrels of water produced	14 MCF Gas Produced	15 Days Prod- uced	16 C O D E 3	17 Point of Disposition	18 Gas BTU or Oil API Gravity	19 Oil on hand at beginning of month	20 Volume (Bbls/mcf)	21 Transporter Ogrid	22 C O D E 4	23 Oil on hand at end of month
96918 NAVAJO PERMO-PENN 023592 WDW 30-015-27592 30-015-20894		D	126,349	1,342	W												
		D	127,967	1,326	W												
78890 ILLINOIS CAMP;MORROW NORTH 023592 WDW #003 30-015-26575		D	161,879	1,334	W												

I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

24

Signature

Printed Name &amp; Title

Micki Schultz  
Environmental Specialist

Date

12/7/2015

Phone Number

575-748-3311

**B.2     Treated Wastewater to Artesia  
POTW**

Cooling Tower Blowdown to City	Y-11 GPM	Y-1 GPM	Total GPM	WWT to POTW GPM
2/1/14	56	41	97	2.6
2/2/14	56	41	96	0.0
2/3/14	57	41	98	0.0
2/4/14	50	42	92	0.0
2/5/14	63	42	104	2.1
2/6/14	45	42	87	0.0
2/7/14	47	43	89	2.6
2/8/14	53	43	96	0.0
2/9/14	52	41	94	0.0
2/10/14	57	44	101	0.0
2/11/14	47	45	92	0.0
2/12/14	50	44	94	0.0
2/13/14	51	44	95	0.0
2/14/14	47	44	91	0.0
2/15/14	55	43	98	2.7
2/16/14	55	43	98	3.8
2/17/14	56	39	96	3.8
2/18/14	66	35	101	3.7
2/19/14	63	35	98	4.0
2/20/14	64	34	98	1.5
2/21/14	74	33	107	1.4
2/22/14	70	34	104	0.0
2/23/14	67	37	104	2.2
2/24/14	75	43	118	2.8
2/25/14	95	46	141	3.2
2/26/14	95	45	140	1.4
2/27/14	71	46	117	4.3
2/28/14	67	46	113	3.7
3/1/14	61	45	106	5.6
3/2/14	95	45	140	5.0
3/3/14	95	43	138	5.6
3/4/14	71	42	113	5.9
3/5/14	95	42	137	2.8
3/6/14	71	42	112	0.7

Cooling Tower Blowdown to City	Y-11 GPM	Y-1 GPM	Total GPM	WWT to POTW GPM
3/7/14	66	42	108	4.4
3/8/14	95	45	140	0.6
3/9/14	93	45	138	4.9
3/10/14	66	45	110	4.5
3/11/14	64	45	109	6
3/12/14	95	44	139	4.1
3/13/14	60	44	104	1.2
3/14/14	54	45	99	3
3/15/14	66	39	106	0
3/16/14	85	37	122	3.7
3/17/14	46	44	90	0
3/18/14	52	43	95	2.6
3/19/14	83	44	127	0
3/20/14	46	44	90	3.3
3/21/14	43	43	86	5.4
3/22/14	58	43	101	1.5
3/23/14	92	43	135	0
3/24/14	48	44	92	0
3/25/14	64	43	107	0
3/26/14	35	42	77	5.4
3/27/14	13	42	54	7.2
3/28/14	37	42	79	6.6
3/29/14	46	43	89	9.5
3/30/14	33	42	75	7.5
3/31/14	33	39	71	4.5
4/1/14	38	38	75	0.6
4/2/14	28	37	64	0
4/3/14	25	36	62	7.3
4/4/14	53	36	89	9.3
4/5/14	37	14	51	8.2
4/6/14	46	12	58	3.6
4/7/14	56	38	94	0
4/8/14	42	38	80	0
4/9/14	35	37	72	0
4/10/14	16	33	49	0

Cooling Tower Blowdown to City	Y-11 GPM	Y-1 GPM	Total GPM	WWT to POTW GPM
4/11/14	33	32	64	0
4/12/14	24	31	55	0
4/13/14	5	32	37	0
4/14/14	95	31	126	0
4/15/14	42	31	73	0
4/16/14	32	31	63	0
4/17/14	44	30	74	0
4/18/14	28	30	58	0
4/19/14	17	30	47	0
4/20/14	24	30	54	3.8
4/21/14	17	28	45	8.7
4/22/14	0	28	28	9.6
4/23/14	0	24	24	7.8
4/24/14	0	24	24	0
4/25/14	2	23	25	0
4/26/14	0	13	13	0
4/27/14	16	31	46	2
4/28/14	50	46	95	4.6
4/29/14	80	47	128	1.2
4/30/14	79	47	127	3.9
5/1/14	59	48	106	0
5/2/14	45	48	92	6.6
5/3/14	28	48	76	2.8
5/4/14	18	48	66	0
5/5/14	0	23	24	3.3
5/6/14	4	33	37	0
5/7/14	7	32	39	3.8
5/8/14	48	43	91	5.1
5/9/14	45	46	91	0
5/10/14	40	46	86	0
5/11/14	13	46	59	0
5/12/14	53	49	102	0
5/13/14	85	47	132	8.8
5/14/14	55	47	102	4.5
5/15/14	37	47	84	4.7



Cooling Tower Blowdown to City	Y-11 GPM	Y-1 GPM	Total GPM	WWT to POTW GPM
5/16/14	25	48	73	0
5/17/14	26	48	74	0
5/18/14	14	48	62	5.4
5/19/14	11	48	59	0.6
5/20/14	16	48	64	0
5/21/14	19	48	67	0
5/22/14	33	48	81	3.4
5/23/14	58	47	106	13.4
5/24/14	66	48	114	9.7
5/25/14	47	48	95	6.1
5/26/14	51	45	97	0
5/27/14	38	43	81	0
5/28/14	23	44	67	0
5/29/14	26	43	69	0
5/30/14	20	43	63	2.2
5/31/14	29	44	73	3.1
6/1/14	14	43	57	6.6
6/2/14	28	45	73	0
6/3/14	20	47	67	7.9
6/4/14	28	47	75	8.9
6/5/14	30	47	77	9.9
6/6/14	34	47	81	5.5
6/7/14	48	47	95	0
6/8/14	80	48	128	0
6/9/14	87	48	135	0
6/10/14	60	47	107	0
6/11/14	45	48	93	7.1
6/12/14	49	47	96	7.7
6/13/14	37	48	85	6.8
6/14/14	17	48	64	10.1
6/15/14	24	46	70	10.6
6/16/14	38	44	82	11.5
6/17/14	49	44	93	11.4
6/18/14	58	49	107	2
6/19/14	69	55	124	0

Cooling Tower Blowdown to City	Y-11 GPM	Y-1 GPM	Total GPM	WWT to POTW GPM
6/20/14	48	46	95	10.7
6/21/14	52	46	98	10.4
6/22/14	40	46	86	4.1
6/23/14	67	46	113	5.5
6/24/14	72	50	122	0
6/25/14	60	46	106	0
6/26/14	41	46	87	0
6/27/14	22	45	67	0
6/28/14	28	43	71	0
6/29/14	30	41	71	0
6/30/14	52	42	95	0
7/1/14	95	46	141	0
7/2/14	95	44	139	0
7/3/14	87	42	129	0
7/4/14	70	41	111	0
7/5/14	59	39	98	0
7/6/14	92	40	132	0
7/7/14	62	39	101	0
7/8/14	43	36	79	0
7/9/14	0	31	31	0
7/10/14	0	31	31	0
7/11/14	0	31	31	0
7/12/14	0	31	31	0
7/13/14	1	29	29	0
7/14/14	14	28	42	0
7/15/14	34	28	62	0
7/16/14	25	26	51	0
7/17/14	9	24	33	0
7/18/14	17	26	43	0
7/19/14	4	27	31	0
7/20/14	29	23	52	0
7/21/14	48	26	74	0
7/22/14	95	29	124	0
7/23/14	95	30	125	0
7/24/14	94	30	124	0

Cooling Tower Blowdown to City	Y-11 GPM	Y-1 GPM	Total GPM	WWT to POTW GPM
7/25/14	87	29	116	0
7/26/14	82	27	110	0
7/27/14	95	20	115	0
7/28/14	89	22	111	0
7/29/14	91	24	115	0
7/30/14	91	23	114	0
7/31/14	95	23	118	0
8/1/14	95	23	118	0
8/2/14	92	20	112	0
8/3/14	71	18	89	0
8/4/14	48	18	66	0
8/5/14	49	18	67	0
8/6/14	46	19	65	0
8/7/14	64	22	86	0
8/8/14	79	23	102	0
8/9/14	79	22	101	0
8/10/14	72	22	94	0
8/11/14	80	20	100	0
8/12/14	63	19	82	0
8/13/14	42	18	60	0
8/14/14	52	18	70	0
8/15/14	59	17	76	0
8/16/14	62	17	79	0
8/17/14	55	15	70	0
8/18/14	45	9	54	0
8/19/14	36	8	44	0
8/20/14	39	9	48	0
8/21/14	62	24	86	0
8/22/14	88	41	129	0
8/23/14	53	45	98	0
8/24/14	42	49	91	0
8/25/14	66	49	115	0
8/26/14	74	49	123	0
8/27/14	78	49	127	0
8/28/14	55	49	104	0

Cooling Tower Blowdown to City	Y-11 GPM	Y-1 GPM	Total GPM	WWT to POTW GPM
8/29/14	62	49	111	0
8/30/14	43	49	92	0
8/31/14	37	49	86	0
9/1/14	27	49	76	0
9/2/14	33	49	82	0
9/3/14	22	49	71	0
9/4/14	33	49	82	0
9/5/14	76	49	125	0
9/6/14	95	49	144	0
9/7/14	88	49	137	0
9/8/14	40	49	89	0
9/9/14	24	49	73	0
9/10/14	27	49	76	0
9/11/14	47	49	96	0
9/12/14	88	48	136	0
9/13/14	94	48	142	0
9/14/14	79	48	127	0
9/15/14	43	49	92	0
9/16/14	34	49	83	0
9/17/14	34	49	83	0
9/18/14	35	49	84	0
9/19/14	55	49	104	0
9/20/14	38	49	86	0
9/21/14	56	49	104	0
9/22/14	64	48	112	0
9/23/14	33	48	82	0
9/24/14	37	48	85	0
9/25/14	41	48	89	0
9/26/14	33	48	81	0
9/27/14	26	48	74	0
9/28/14	18	48	66	0
9/29/14	13	48	62	0
9/30/14	19	48	67	0
10/1/14	36	48	84	0
10/2/14	36	48	85	0

Cooling Tower Blowdown to City	Y-11 GPM	Y-1 GPM	Total GPM	WWT to POTW GPM
10/3/14	52	48	100	0
10/4/14	37	48	85	0
10/5/14	41	48	89	0
10/6/14	43	47	90	0
10/7/14	37	47	84	0
10/8/14	37	47	84	1.3
10/9/14	9	47	56	1.3
10/10/14	77	51	128	2.5
10/11/14	54	48	102	3
10/12/14	13	48	61	2.8
10/13/14	39	49	88	3
10/14/14	42	49	91	2.6
10/15/14	41	49	90	2.7
10/16/14	36	49	85	2.8
10/17/14	31	49	80	2.8
10/18/14	44	46	90	1.6
10/19/14	35	49	84	0
10/20/14	29	49	78	0
10/21/14	22	49	71	1.6
10/22/14	0	49	49	0.1
10/23/14	11	49	60	0
10/24/14	26	49	75	0
10/25/14	18	49	67	0
10/26/14	18	49	67	2.8
10/27/14	6	49	55	2.7
10/28/14	68	49	117	0
10/29/14	47	49	96	0
10/30/14	49	49	98	0.8
10/31/14	51	49	100	2.8
11/1/14	41	48	89	1.7
11/2/14	23	49	72	1.7
11/3/14	34	47	81	2.8
11/4/14	93	45	138	3
11/5/14	87	45	132	1
11/6/14	70	42	112	0.2

Cooling Tower Blowdown to City	Y-11 GPM	Y-1 GPM	Total GPM	WWT to POTW GPM
11/7/14	49	40	89	2.8
11/8/14	47	44	91	1
11/9/14	34	42	76	0.8
11/10/14	11	42	53	2.3
11/11/14	88	45	133	0
11/12/14	95	48	143	2.9
11/13/14	94	39	133	2.6
11/14/14	69	44	113	2.9
11/15/14	45	42	87	3
11/16/14	87	49	136	2.6
11/17/14	77	52	129	2.9
11/18/14	71	45	116	2.8
11/19/14	64	41	105	2.8
11/20/14	46	52	98	3
11/21/14	31	44	75	2.8
11/22/14	29	43	72	2.8
11/23/14	27	45	72	3
11/24/14	27	47	74	0.5
11/25/14	33	45	78	2
11/26/14	26	43	69	0.8
11/27/14	22	47	69	1.1
11/28/14	23	49	72	0.3
11/29/14	18	43	61	0.9
11/30/14	18	44	62	2.8
12/1/14	0	45	45	2.8
12/2/14	11	46	57	0.4
12/3/14	24	45	69	0.0
12/4/14	95	43	138	0.0
12/5/14	86	47	133	0.0
12/6/14	33	40	73	0.0
12/7/14	0	45	45	2.0
12/8/14	0	47	47	2.8
12/9/14	0	44	44	2.7
12/10/14	0	44	44	1.9
12/11/14	0	43	43	0.8

Cooling Tower Blowdown to City	Y-11 GPM	Y-1 GPM	Total GPM	WWT to POTW GPM	
12/12/14	0	40	40	1.7	
12/13/14	0	43	43	3.0	
12/14/14	0	39	39	1.2	
12/15/14	0	44	44	2.3	
12/16/14	0	44	44	2.7	
12/17/14	0	40	40	0.9	
12/18/14	0	44	44	1.9	
12/19/14	0	44	44	0.0	
12/20/14	0	39	39	0.0	
12/21/14	0	40	40	2.2	
12/22/14	0	49	49	1.9	
12/23/14	0	43	43	2.0	
12/24/14	0	37	37	3.7	
12/25/14	0	45	45	2.6	
12/26/14	0	50	50	1.6	
12/27/14	0	42	42	2.0	
12/28/14	0	37	37	1.0	
12/29/14	0	43	43	0.8	
12/30/14	0	44	44	2.7	
12/31/14	0	80	80	2.6	
1/1/15	0	76	76	2.8	4032
1/2/15	0	22	22	2.6	3744
1/3/15	0	39	39	2.8	4032
1/4/15	0	41	41	0.8	1152
1/5/15	0	47	47	1.8	2592
1/6/15	0	46	46	1.5	2160
1/7/15	0	44	44	1.1	1584
1/8/15	0	42	42	1.4	2016
1/9/15	0	43	43	0.5	720
1/10/15	0	51	51	2.8	4032
1/11/15	2	49	51	1.5	2160
1/12/15	0	19	19	1.1	1584
1/13/15	0	26	26	0.5	720
1/14/15	0	28	28	2.7	3888
1/15/15	0	24	24	2.9	4176

Cooling Tower Blowdown to City	Y-11 GPM	Y-1 GPM	Total GPM	WWT to POTW GPM		
1/16/15	0	23	23	33120	2.4	3456
1/17/15	0	23	23	33120	2.7	3888
1/18/15	0	25	25	36000	2.7	3888
1/19/15	1	24	25	36000	2.8	4032
1/20/15	0	25	25	36000	2.8	4032
1/21/15	0	24	24	34560	2.8	4032
1/22/15	0	0	0	0	2.8	4032
1/23/15	0	0	0	0	1.2	1728
1/24/15	0	0	0	0	2.7	3888
1/25/15	0	0	0	0	2.8	4032
1/26/15	1	0	1	1440	2.8	4032
1/27/15	10	0	10	14400	2.5	3600
1/28/15	11	0	11	15840	2.8	4032
1/29/15	0	0	0	0	2.5	3600
1/30/15	0	0	0	0	3.0	4320
1/31/15	0	0	0	0	2.8	4032
2/1/15	0	0	0	0	2.6	3744
2/2/15	3	0	3	4320	2.5	3600
2/3/15	24	0	24	34560	2.8	4032
2/4/15	24	0	24	34560	2.8	4032
2/5/15	10	0	10	14400	0.6	864
2/6/15	36	0	36	51840	2.9	4176
2/7/15	51	0	51	73440	2.5	3600
2/8/15	52	0	52	74880	1.0	1440
2/9/15	37	15	52	74880	1.4	2016
2/10/15	38	14	52	74880	0.7	1008
2/11/15	1	15	16	23040	1.9	2736
2/12/15	4	18	22	31680	0.6	864
2/13/15	29	13	42	60480	0.0	0
2/14/15	41	13	54	77760	0.0	0
2/15/15	45	12	57	82080	0.0	0
2/16/15	0	11	11	15840	0.0	0
2/17/15	5	11	16	23040	1.7	2448
2/18/15	36	12	48	69120	2.8	4032
2/19/15	43	11	55	78494.92048	3.0	4320



Cooling Tower Blowdown to City	Y-11 GPM	Y-1 GPM	Total GPM	WWT to POTW GPM	
2/20/15	44	11	55	79338.89381	2.2
2/21/15	95	11	106	153020.8772	1.7
2/22/15	81	12	92	132990.6247	2.8
2/23/15	67	13	80	115200	2.6
2/24/15	70	23	93	133920	2.7
2/25/15	78	12	90	129600	2.7
2/26/15	59	12	71	102240	2.8
2/27/15	45	12	56	81281.82414	3.0
2/28/15	47	11	58	83604.79921	2.8
3/1/15	50	11	61	88224.14654	2.8
3/2/15	49	11	60	86400	3.0
3/3/15	49	11	60	86400	1.5
3/4/15	57	13	70	100800	2.1
3/5/15	58	27	85	122400	2.8
3/6/15	47	36	83	119520	2.8
3/7/15	41	33	74	106560	2.7
3/8/15	38	31	69	99360	3.0
3/9/15	35	30	65	93600	3.0
3/10/15	50	34	84	120960	0.5
3/11/15	59	36	95	136800	0.4
3/12/15	58	36	94	135360	2.9
3/13/15	60	33	93	133920	1.3
3/14/15	60	30	90	129600	2.5
3/15/15	61	29	90	129600	3.0
3/16/15	61	27	88	126720	3.0
3/17/15	62	27	89	128160	0.4
3/18/15	70	4	74	106560	0.4
3/19/15	61	31	92	132480	0.0
3/20/15	64	31	95	136800	0.9
3/21/15	62	40	102	146880	0.6
3/22/15	62	40	102	146880	2.5
3/23/15	61	41	102	146880	2.9
3/24/15	60	41	101	145440	2.5
3/25/15	57	41	98	141120	0.1
3/26/15	56	41	97	139680	1.4

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864  
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4176  
3600  
144  
2016