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ENFORCEMENT

2015 - Present

Chavez, Carl J, EMNRD

From: Brancard, Bill, EMNRD
Sent: Friday, November 06, 2015 2:49 PM
To: Denise McWatters; Denton, Scott (Scott.Denton@HollyFrontier.com); Holder, Mike (Michael.Holder@hollyfrontier.com)
Cc: Catanach, David, EMNRD; Griswold, Jim, EMNRD; Chavez, Carl J, EMNRD
Subject: Navajo Refinery ACO 2013-001

Ladies and Gentlemen:

Pursuant to the Amended and Supplemental Agreed Compliance Order 2013-001 (dated November 14, 2013) ("ACO"), Navajo Refinery submitted its Quarterly Report for the third quarter of 2015 on October 30, 2015. OCD has reviewed the report. Since the selenium results have been below the limit for four consecutive quarters, and Navajo has met all the other requirements of the ACO, the ACO is hereby terminated. Operations at the facility remain subject to the terms of the discharge permits and other orders.

We do note, as you are aware, that the selenium removal efficiency at the SeRT unit has declined over the past 6 months (Table 3 of the Quarterly Report). The selenium levels at the injection well sampling point remain well below the regulatory limits, and OCD recently approved upgrades to the selenium removal system.

We would like to thank Navajo Refinery for their diligence in pursuing and achieving compliance with standards. We look forward to working with you to advance other projects at the Refinery.

Bill Brancard

General Counsel
Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe NM 87505
505.476.3210
Bill.brancard@state.nm.us

Chavez, Carl J, EMNRD

From: Denton, Scott <Scott.Denton@HollyFrontier.com>
Sent: Friday, October 30, 2015 11:10 AM
To: Catanach, David, EMNRD; Chavez, Carl J, EMNRD
Cc: Holder, Mike; Anna.Hanley@CH2M.com; Denton, Scott; Coons, Christina (Christie); Combs, Robert
Subject: Quarterly Progress Report
Attachments: 2015-10-30 OCD Order Jul-Aug-Sep 2015 Quarterly Progress Report.pdf

David & Carl,

Please find attached a copy of the quarterly report required by Condition 9 of Exhibit A of the Amended and Supplemental Agreed Order between Navajo Refining Company (NRC) & OCD (Dated November 14, 2013).

Please don't hesitate to call with any questions and thanks for your assistance in this matter.

Thanks,

SMD

Scott M. Denton
Environmental Manager

The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
575-746-5487 (o)
970-581-7268 (c)

Scott.Denton@HollyFrontier.com

HOLLYFRONTIER.

October 30, 2015

Mr. David Catanach
Mr. Carl Chavez
Oil Conservation Division
New Mexico Energy, Minerals & Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505
Re: ACOW-6

Certified Mail/Return Receipt
7015 0640 0006 6577 5490

RE: Navajo Refining Company, L.L.C. / Artesia Refinery
Third Quarter 2015 Quarterly Interim Progress Report
OCD Order No. WQA-OCD-CO-2013-001

Dear Sirs:

This quarterly progress report is submitted pursuant to Paragraph 9 of Exhibit A to the Amended and Supplemental Agreed Compliance Order No. WQA-OCD-CO-2013-001, dated November 15, 2013 (the "Order"). Specifically, Paragraph 9 requires that Navajo provide to the Oil Conservation Division (OCD) a quarterly interim progress report detailing the status and timeline for actions taken by Navajo during the preceding quarter under the Order. The quarterly progress report shall be due the first business day of the second month following the end of the quarter and shall include the following:

a) A summary of all the results of sampling required pursuant to Paragraph 1 of Exhibit A to the Order, and copies of all supporting laboratory data;
b) A summary of the results of any optional sampling taken during the preceding calendar quarter (copies of laboratory data for such optional sampling shall be provided to OCD upon request); and
c) The calculation of stipulated penalties required under Section III, Paragraph 2 of the Order.

This is the Third Quarter 2015 progress report, detailing the actions taken during the preceding calendar quarter comprised of July, August, and September 2015, and due on the first business day of the second month following the end of the quarter (i.e., November 2, 2015). This report also includes the final analytical results through October 19, 2015 and the actions taken through October 23, 2015. Progress report submittal frequency was altered from monthly to quarterly following submission of the November 2014 monthly report per the Third Amendment to the Agreed Compliance Order WQA-OCD-CO-2013-001, dated November 19, 2014, except as otherwise provided at Paragraph 9 of Amended Exhibit A. Under Paragraph 6 of Section I (Findings and Determinations) of the Third Amendment to Amended and Supplemental Agreed Compliance Order, dated November 19, 2014, no further quarterly sampling or progress reports are required under the

Order. Also, under the terms of Paragraph 6, the Order will terminate upon OCD's receipt of this Quarterly Report.[1]

Status and Timeline for Actions Taken by Navajo

Since October 15, 2013, when Navajo refinery identified a potential violation of the toxicity characteristic leaching procedure (TCLP) selenium limit of 1 milligram per liter (mg/L) (the "Se Limit"), it has provided prompt notifications to the OCD via telephone and submission of C-141 Forms, with a copy to the New Mexico Environment Department's (NMED) Hazardous Waste Bureau. A list of these notifications for each potential selenium measurement above the Se Limit is provided in Table 1. To date, Navajo has also complied with the reporting requirements of the Order, including submission of the results of required sampling within three (3) business days of receipt of final data and submittal of various reports (except as otherwise referenced at footnote 1, below), as follows:[2]

- The interim progress report was submitted on November 21, 2013 pursuant to Paragraph 10 of Exhibit A to the Order;
- The November 2013 progress report was submitted on December 2, 2013 pursuant to Paragraph 9;
- The review of selenium sampling data report was submitted on December 4, 2013 pursuant to Paragraph 11;
- The summary of technical evaluation for short-term remedy selection report was submitted on December 13, 2013 pursuant to Paragraph 12;
- The December 2013 progress report was submitted on January 2, 2014 pursuant to Paragraph 9;
- The January 2014 progress report was submitted on February 3, 2014 pursuant to Paragraph 9;
- The February 2014 progress report was submitted on March 3, 2014 pursuant to Paragraph 9;
- The March 2014 progress report was submitted on April 1, 2014 pursuant to Paragraph 9;
- The April 2014 progress report was submitted on May 1, 2014 pursuant to Paragraph 9;
- The May 2014 progress report was submitted on June 2, 2014 pursuant to Paragraph 9;
- The June 2014 progress report was submitted on July 1, 2014 pursuant to Paragraph 9;
- The July 2014 progress report was submitted on August 1, 2014 pursuant to Paragraph 9;
- The August 2014 progress report was submitted on September 2, 2014 pursuant to Paragraph 9;
- The notice of compliance with Se Limit was submitted on September 15, 2014 pursuant to Paragraph 13;

[1] This Paragraph confirms that if Navajo a) timely tests the injection fluid for the quarters beginning January, April, and July 2015, b) timely reports the results in the quarterly report and c) the results are below the Se Limit for each test, all of which have now been satisfied, then the Order will terminate upon OCD receipt of the quarterly report for the third quarter of 2015. After the termination of the Order, injection of non-hazardous wastewater at the wells shall continue to be subject to the terms and conditions of the OCD UIC Permits.

[2] *See* Letter from Dan Crawford, P.G., Environmental Manager, Navajo, to Director, OCD, August 21, 2014, and Letter from Michael G. McKee, Vice President and Refinery Manager, Navajo, to Director, OCD, November 19, 2014 (regarding stipulated penalty payments for a small number of missed deadlines).

- The notice of selection of long-term option for addressing selenium concentrations in wastewater was submitted on September 30, 2014 pursuant to Paragraph 15;
- The September 2014 progress report was submitted on October 1, 2014 pursuant to Paragraph 9;
- The October 2014 progress report was submitted on November 3, 2014 pursuant to Paragraph 9;
- The November 2014 progress report was submitted on December 1, 2014 pursuant to Paragraph 9;
- The Fourth Quarter 2014 progress report was submitted on February 2, 2015 pursuant to Paragraph 9;
- The First Quarter 2015 progress report was submitted on May 1, 2015 pursuant to Paragraph 9;
- The Second Quarter 2015 progress report was submitted on August 3, 2015 pursuant to Paragraph 9.

Table 1: Summary of Potential Selenium Violation Notifications made to the OCD

Sample Date	Selenium Concentration (mg/L)		Verbal Notification to OCD	Form C-141 Submittal Date
	TCLP Selenium	Total Selenium		
September 27, 2013	1.24	1.6	October 15, 2013	October 21, 2013
October 15, 2013	1.24	1.49	October 20, 2013	October 21, 2013
October 31, 2013	1.23	0.996	November 5, 2013	November 11, 2013
November 1, 2013[1]	1.13	0.974	November 6, 2013	November 13, 2013
November 4, 2013	1.1	0.98	November 6, 2013	November 13, 2013
November 5, 2013	1.2	0.51	November 7, 2013	November 14, 2013

[1] As explained in Navajo's C-141 report, the corresponding discharge for this sampling event occurred on November 2, 2013.

In response to these selenium results, the Artesia Refinery took immediate action to reduce the amount of selenium in the discharge. These actions included evaluating the Refinery's process and operations, implementing an extensive selenium sampling program, temporarily reducing production rates, temporarily changing the crude slate, shutting down units to evaluate their impacts on selenium levels, and adding reverse osmosis (RO) reject wastewater upstream of the wastewater treatment system, which are described in earlier progress reports. Navajo also aggressively pursued short-term selenium control strategies which are detailed in its report of December 13, 2013 summarizing the technical evaluation for short-term remedy selection. As described in Navajo's September 30, 2014 notice to OCD, Navajo also selected use of the existing 100 gpm SeRT® unit, without modification, as its long-term option for reducing selenium concentrations in wastewater. (Other long-term options that had been under consideration included the potential design and installation of a 200 gpm SeRT® unit and the modification of the existing 100 gpm SeRT® unit).[3] An updated timeline of the activities to support these solutions is provided below.

[3] As explained at page 14, below, based on additional operating experience, Navajo has now initiated the design of certain improvements pertaining to the SeRT® Unit to enhance operational flexibility and to help ensure the robustness of selenium reduction.

October 30-31, 2013

- Met in Artesia to kick off process engineering by CH2M HILL for selenium reduction via SeRT® (Selenium Removal Technology) process and other WWTP upgrades.
- Negotiated an expedited project schedule with CH2M HILL to design and build a 200 gpm SeRT® Unit within 6 to 8 months.
- Reviewed feasibility of implementing Iron Co-precipitation of selenite via ferric chloride addition as a possible short-term selenium reduction technology.

November 5, 2013

- Met with Phillips 66 in California to kick off license and technology agreement for SeRT® process.

November 7, 2013

- Inquired with Valero about potential purchase of an idle 100 gpm SeRT® unit. (Relocation of this existing unit was at that time expected to put a portion of the long-term selenium removal technology in place within an estimated 3 to 4 months. As explained in Navajo's September 30, 2014 notice, Navajo selected the 100 gpm SeRT® unit as its long-term option for reducing selenium concentrations in wastewater.)

November 12, 2013

- Reached agreement for purchase of the idle SeRT® equipment from the Valero Wilmington Refinery.
- Hired a relocation contractor to mark the unit for removal.

November 14, 2013

- Made arrangements to test the feasibility of ferric chloride injection to reduce selenium in wastewater effluent, with the performance of parallel testing onsite at the Refinery and at the CH2M HILL laboratory.

November 18, 2013

- Oversaw dismantling of idle SeRT® Unit at the Valero refinery.
- Scheduled to begin moving SeRT® equipment by December 2, 2013.
- Sited tie-ins and existing piping and equipment at the Navajo Refinery for use in both short- and long-term SeRT® installations.
- Confirmed via jar tests that ferric chloride injection will precipitate selenite from water and, therefore, is anticipated to result in a significant reduction in selenium TCLP levels in the Refinery's discharge at the injection wells.

November 19-22, 2013

- Completed engineering for ferric chloride injection; relevant equipment and ferric chloride ordered.

November 21, 2013

- Agreed to licensing terms with Phillips 66 on use of SeRT® technology.

November 26, 2013

- Completed installation of the equipment necessary to conduct a full-scale trial of the Iron Co-precipitation process.

November 27, 2013

- Commenced full-scale trial of Iron Co-precipitation process at a dose of 100 mg/L of ferric chloride.

November 29, 2013

- Halted the full-scale trial of Iron Co-precipitation process due to restriction in wastewater flow through the Walnut Shell Filter unit located downstream of the DAF.

December 2, 2013

- Installed foundations for the 100 gpm SeRT® unit.

December 4, 2013

- Obtained interim OCD approval under Paragraph 13 of Exhibit A to the Order for the use of Iron Co-precipitation and SeRT® as remedies.
- Prepared new bench-scale test plan to provide operating guidelines for Iron Co-precipitation chemical dosing rates.
- Refinery began processing Western Canadian Select (WCS) crude again.

December 5, 2013

- Commenced extensive additional jar testing for the Iron Co-Precipitation process. The goal was to test various combinations of dosages of ferric chloride and two substances that are part of normal operation of the DAF – a coagulant and flocculent.

December 6, 2013

- Restarted full-scale Iron Co-Precipitation trial with a reduced ferric chloride dose of 20 mg/L to examine impacts on the Walnut Shell Filter.

December 9, 2013

- Equipment components for the 100 gpm trial SeRT® unit began to arrive.

December 16, 2013

- Increased ferric chloride dose for full-scale Iron Co-Precipitation trial from 20 mg/L to 50 mg/L.
- Obtained OCD approval under Paragraph 13 of Exhibit A to the Order for the use of Iron Co-precipitation and SeRT® as remedies, subject to the submittal of dates for milestones and deadlines.

December 27, 2013

- Started biweekly sample collection at various locations in the trial Iron Co-Precipitation process.

January 4, 2014

- Restarted Hydrocracker Unit.

January 17, 2014

- Mechanical completion of the 100 gpm trial SeRT® unit.

January 20, 2014

- Commissioning of the 100 gpm trial SeRT® unit.

January 30, 2014

- Refinery resumed normal production rate.

February 1, 2014

- Started 100 gpm trial SeRT® unit.
- Completed sample collection for Iron Co-Precipitation trial and converted Iron Co-Precipitation trial to continuous, full-scale operation. The trial results are summarized in Table 2 below and show an average total selenium removal efficiency of 73%.

Table 2: Selenium Measurements Collected During the Iron Co-Precipitation Trial (mg/L)

		T-805 Eff.		DAF Eff.		Walnut Filter Eff.		Tank 809 Eff.		Removal Efficiency
DATE	Laboratory	Total Se	TCLP Se	Total Se	TCLP Se	Total Se	TCLP Se	Total Se	TCLP Se	on Total Se
12/27/2013	Hall Environmental	1.1	0.30	0.38	0.30	0.37	0.31	0.38	0.34	66%
12/30/2013	Hall Environmental	1.6	0.37	0.63	0.35	0.43	0.34	-	-	73%
1/6/2014	Hall Environmental	1.2	0.17	0.34	0.18	0.27	0.20	-	-	78%
1/9/2014	Hall Environmental	1.8	0.14	0.42	0.21	0.43	0.25	-	-	76%
1/13/2014	Hall Environmental	2.1	0.34	0.41	0.33	0.37	0.35	-	-	82%
1/16/2014	Hall Environmental	1.6	0.18	0.25	0.22	0.20	0.20	-	-	88%
1/20/2014	Hall Environmental	1.0	0.55	0.75	0.57	0.54	0.55	-	-	46%
1/23/2014	Hall Environmental	1.4	0.18	0.24	0.19	0.21	0.20	-	-	85%
1/27/2014	Hall Environmental	1.2	0.43	0.55	0.58	0.51	0.51	-	-	58%
1/30/2014	Hall Environmental	1.0	0.26	0.30	0.27	0.23	0.29	-	-	77%

February 13, 2014

- Completed process engineering of full capacity permanent SeRT® unit.

March 20, 2014

- Achieved stable operation of 100 gpm trial SeRT unit.

March 31, 2014

- Confirmed that selenium reduction is being achieved by the 100 gpm trial SeRT® unit. The results of sampling conducted through October 19, 2015 are summarized in Table 3 below and show an average total selenium removal efficiency of 88.0%. On September 30, 2014, this unit was selected as Navajo's long-term option for reducing selenium concentrations in wastewater, as explained in Navajo's notice to OCD of that same date.

Table 3: Selenium Measurements Collected During the 100 gpm Trial SeRT® Unit

		Flow to SeRT	SeRT Influent		SeRT Effluent		Removal Efficiency
		-	Total Se	TCLP Se	Total Se	TCLP Se	On Total Se
DATE	Laboratory	(gpm)	(ppm)	(ppm)	(ppm)	(ppm)	-
2/10/2014	Hall Environmental	75	5.20	-	0.31	-	94%
2/12/2014	Hall Environmental	85	6.50	-	0.60	-	91%
2/13/2014	Hall Environmental	85	6.00	6.50	0.81	0.83	87%
2/17/2014	Hall Environmental	100	6.60	8.30	1.20	1.70	82%
2/19/2014	Hall Environmental	85	7.20	7.50	1.20	1.30	83%
2/20/2014	Hall Environmental	98	7.00	7.50	1.40	1.70	80%
2/24/2014	Hall Environmental	102	7.00	6.90	1.50	1.70	79%
2/26/2014	Hall Environmental	102	6.60	5.70	1.50	1.40	77%
2/27/2014	Hall Environmental	104	5.80	6.20	0.46	0.50	92%
3/3/2014	Hall Environmental	104	5.60	5.60	0.49	0.57	91%
3/5/2014	Hall Environmental	106	5.70	5.40	0.56	0.61	90%
3/6/2014	Hall Environmental	115	5.40	5.40	0.44	0.52	92%
3/10/2014	Hall Environmental	115	5.30	5.70	0.19	0.23	96%
3/12/2014	Hall Environmental	113	5.20	5.10	0.21	0.23	96%
3/13/2014	Hall Environmental	115	5.00	5.30	0.14	0.16	97%
3/17/2014	Hall Environmental	120	4.40	4.80	0.14	0.19	97%
3/19/2014	Hall Environmental	110	3.90	4.30	0.17	0.20	96%
3/20/2014	Hall Environmental	84	4.40	4.80	0.11	0.11	98%
3/24/2014	Hall Environmental	100	4.70	5.40	0.22	0.28	95%
3/27/2014	Hall Environmental	94	3.90	-	0.12	-	97%
3/31/2014	Hall Environmental	112	4.40	-	0.15	-	97%
4/3/2014	Hall Environmental	125	3.60	-	0.12	-	97%
4/7/2014	Hall Environmental	110	4.70	-	0.13	-	97%
4/10/2014	Hall Environmental	130	4.10	-	0.14	-	97%
4/14/2014	Hall Environmental	108	3.90	-	0.16	-	96%
4/17/2014	Hall Environmental	125	4.00	-	0.14	-	97%
4/21/2014	Hall Environmental	105	3.00	-	0.13	-	96%
4/24/2014	Hall Environmental	115	3.50	-	0.25	-	93%
4/28/2014	Hall Environmental	110	3.40	-	0.13	-	96%
5/1/2014	Hall Environmental	70	3.60	-	0.09	-	98%

		Flow to SeRT	SeRT Influent		SeRT Effluent		Removal Efficiency
		-	Total Se	TCLP Se	Total Se	TCLP Se	On Total Se
DATE	Laboratory	(gpm)	(ppm)	(ppm)	(ppm)	(ppm)	-
5/5/2014	Hall Environmental	55	3.40	-	0.05	-	99%
5/8/2014	Hall Environmental	50	3.20	-	0.06	-	98%
5/12/2014	Hall Environmental	50	3.40	-	0.07	-	98%
5/15/2014	Hall Environmental	50	3.60	-	0.07	-	98%
5/19/2014	Hall Environmental	50	3.40	-	0.10	-	97%
5/22/2014	Hall Environmental	95	2.80	-	0.15	-	95%
5/27/2014	Hall Environmental	60	2.90	-	0.08	-	97%
5/29/2014	Hall Environmental	60	3.20	-	0.11	-	97%
6/2/2014	Hall Environmental	64	3.30	-	0.07	-	98%
6/5/2014	Hall Environmental	51	3.10	-	0.09	-	97%
6/9/2014	Hall Environmental	50	3.30	-	0.06	-	98%
6/12/2014	Hall Environmental	60	3.10	-	0.13	-	96%
6/16/2014	Hall Environmental	120	3.30	-	0.54	-	84%
6/19/2014	Hall Environmental	130	3.10	-	0.40	-	87%
6/23/2014	Hall Environmental	130	3.90	-	0.47	-	88%
6/26/2014	Hall Environmental	118	3.00	-	0.30	-	90%
7/1/2014	Hall Environmental	101	2.30	-	0.14	-	94%
7/3/2014	Hall Environmental	115	2.20	-	0.12	-	95%
7/7/2014	Hall Environmental	106	2.70	-	0.17	-	94%
7/14/2014	Hall Environmental	125	3.20	-	<0.05	-	98%
7/17/2014	Hall Environmental	92	2.70	-	0.07	-	97%
7/21/2014	Hall Environmental	120	2.70	-	0.23	-	91%
7/24/2014	Hall Environmental	80	2.80	-	0.14		95%
7/28/2014	Hall Environmental	114	2.50	-	0.28		89%
7/31/2014	Hall Environmental	118	3.50	-	0.32	-	91%
8/4/2014	Hall Environmental	96	3.30	-	0.06	-	98%
8/7/2014	Hall Environmental	125	3.00	-	0.04	-	99%
8/11/2014	Hall Environmental	100	2.80	-	0.04	-	99%
8/15/2014	Hall Environmental	100	3.60	-	0.04	-	99%
8/21/2014	Hall Environmental	100	3.10	-	0.04	-	99%
8/25/2014	Hall Environmental	100	1.60	-	0.03	-	98%
8/28/2014[1]	Hall Environmental	105	2.60	-	<0.05	-	98%
9/2/2014	Hall Environmental	105	3.90	-	0.04	-	99%
9/4/2014	Hall Environmental	105	3.90	-	0.03	-	99%
9/8/2014	Hall Environmental	95	4.60	-	0.06	-	99%
9/11/2014	Hall Environmental	90	4.20	-	0.03	-	99%
9/15/2014	Hall Environmental	90	4.40	-	0.04	-	99%
9/18/2014	Hall Environmental	100	5.00	-	0.04	-	99%

		Flow to SeRT	SeRT Influent		SeRT Effluent		Removal Efficiency
		-	Total Se	TCLP Se	Total Se	TCLP Se	On Total Se
DATE	Laboratory	(gpm)	(ppm)	(ppm)	(ppm)	(ppm)	-
9/22/2014	Hall Environmental	61	5.30	-	0.04	-	99%
9/25/2014	Hall Environmental	90	6.10	-	0.12	-	98%
9/29/2014	Hall Environmental	90	6.40	-	0.07	-	99%
10/2/2014	Hall Environmental	95	6.50	-	0.05	-	99%
10/6/2014	Hall Environmental	100	8.60	-	0.09	-	99%
10/9/2014	Hall Environmental	88	8.90	-	0.11	-	99%
10/13/2014	Hall Environmental	100	7.30	-	0.10	-	99%
10/16/2014	Hall Environmental	115	6.30	-	0.11	-	98%
10/20/2014	Hall Environmental	115	5.10	-	0.13	-	97%
10/23/2014	Hall Environmental	100	4.40	-	0.09	-	98%
10/27/2014	Hall Environmental	105	2.50	-	0.06	-	98%
10/30/2014	Hall Environmental	90	3.70	-	0.04	-	99%
11/3/2014	Hall Environmental	100	3.20	-	0.03	-	99%
11/6/2014	Hall Environmental	100	3.50	-	0.03	-	99%
11/10/2014	Hall Environmental	110	2.70	-	0.05	-	98%
11/13/2014	Hall Environmental	110	3.30	-	0.06	-	98%
11/17/2014	Hall Environmental	100	3.30	-	0.03	-	99%
11/24/2014	Hall Environmental	90	3.50	-	0.04	-	99%
11/26/2014	Hall Environmental	100	3.50	-	0.39	-	89%
12/1/2014	Hall Environmental	100	3.80	-	1.10	-	71%
12/2/2014	Hall Environmental	100	3.90	-	1.10	-	72%
12/8/2014	Hall Environmental	100	4.00	-	1.50	-	63%
12/10/2014	Hall Environmental	100	5.20	-	0.37	-	93%
12/11/2014	Hall Environmental	100	5.20	-	0.35	-	93%
12/12/2014	Hall Environmental	100	2.20	-	0.12	-	95%
12/15/2014	Hall Environmental	90	5.10	-	0.10	-	98%
12/18/2014	Hall Environmental	90	4.20	-	0.05	-	99%
12/22/2014	Hall Environmental	95	3.70	-	0.07	-	98%
12/29/2014	Hall Environmental	100	3.60	-	0.10	-	97%
1/2/2015	Hall Environmental	95	3.20	-	0.09	-	97%
1/5/2015	Hall Environmental	70	3.90	-	0.08	-	98%
1/8/2015	Hall Environmental	85	3.50	-	0.07	-	98%
1/12/2015	Hall Environmental	84	3.50	-	<0.050	-	99%
1/15/2015	Hall Environmental	72	2.80	-	1.40	-	50%
1/19/2015	Hall Environmental	82	2.50	-	0.09	-	96%
1/22/2015	Hall Environmental	87	2.00	-	0.56	-	72%
1/26/2015	Hall Environmental	67	1.80	-	< 0.017	-	99%
1/29/2015	Hall Environmental	53	1.80	-	0.02	-	99%

		Flow to SeRT	SeRT Influent		SeRT Effluent		Removal Efficiency
		-	Total Se	TCLP Se	Total Se	TCLP Se	On Total Se
DATE	Laboratory	(gpm)	(ppm)	(ppm)	(ppm)	(ppm)	-
2/2/2015	Hall Environmental	70	2.20	-	0.02	-	99%
2/5/2015	Hall Environmental	105	1.80	-	0.16	-	91%
2/9/2015	Hall Environmental	85	2.50	-	0.05	-	98%
2/12/2015	Hall Environmental	110	2.00	-	0.17	-	92%
2/16/2015	Hall Environmental	110	1.90	-	0.04	-	98%
2/19/2015	Hall Environmental	104	2.10	-	0.04	-	98%
2/23/2015	Hall Environmental	81	2.80	-	0.08	-	97%
2/26/2015	Hall Environmental	97	2.20	-	0.16	-	93%
3/2/2015	Hall Environmental	100	2.60	-	0.27	-	90%
3/5/2015	Hall Environmental	83	2.90	-	0.19	-	93%
3/9/2015	Hall Environmental	107	3.10	-	0.22	-	93%
3/12/2015	Hall Environmental	115	3.00	-	0.25	-	92%
3/16/2015	Hall Environmental	105	2.90	-	0.26	-	91%
3/19/2015	Hall Environmental	99	2.80	-	0.14	-	95%
3/23/2015	Hall Environmental	83	2.90	-	0.07	-	98%
3/26/2015	Hall Environmental	90	2.70	-	0.06	-	98%
3/30/2015	Hall Environmental	90	2.60	-	0.05	-	98%
4/2/2015	Hall Environmental	90	2.50	-	0.04	-	98%
4/6/2015	Hall Environmental	90	2.50	-	0.06	-	98%
4/9/2015	Hall Environmental	90	2.60	-	0.04	-	98%
4/13/2015	Hall Environmental	90	2.90	-	0.05	-	98%
4/16/2015	Hall Environmental	110	2.60	-	0.08	-	97%
4/20/2015	Hall Environmental	110	2.80	-	0.08	-	97%
4/24/2015	Hall Environmental	80	2.10	-	0.12	-	94%
4/27/2015	Hall Environmental	100	2.00	-	0.99	-	51%
4/30/2015	Hall Environmental	100	2.70	-	0.40	-	85%
5/4/2015	Hall Environmental	100	2.40	-	0.42	-	83%
5/7/2015	Hall Environmental	100	2.20	-	0.36	-	84%
5/11/2015	Hall Environmental	115	2.90	-	0.35	-	88%
5/12/2015	Hall Environmental	115	2.60	-	0.33	-	87%
5/14/2015	Hall Environmental	95	2.80	-	0.32	-	89%
5/18/2015	Hall Environmental	105	3.00	-	0.36	-	88%
5/21/2015	Hall Environmental	110	3.20	-	0.41	-	87%
5/26/2015	Hall Environmental	115	3.60	-	0.50	-	86%
5/28/2015	Hall Environmental	105	2.80	-	0.33	-	88%
6/1/2015	Hall Environmental	105	3.20	-	0.42	-	87%
6/4/2015	Hall Environmental	100	3.20	-	0.39	-	88%
6/8/2015	Hall Environmental	100	2.80	-	0.37	-	87%

		Flow to SeRT	SeRT Influent		SeRT Effluent		Removal Efficiency
		-	Total Se	TCLP Se	Total Se	TCLP Se	On Total Se
DATE	Laboratory	(gpm)	(ppm)	(ppm)	(ppm)	(ppm)	-
6/11/2015	Hall Environmental	105	2.70	-	0.30	-	89%
6/15/2015	Hall Environmental	110	2.70	-	0.45	-	83%
6/18/2015	Hall Environmental	100	3.40	-	0.39	-	89%
6/22/2015	Hall Environmental	100	3.10	-	0.47	-	85%
6/25/2015	Hall Environmental	110	3.00	-	0.59	-	80%
6/29/2015	Hall Environmental	120	3.00	-	0.62	-	79%
7/1/2015	Hall Environmental	110	3.10	-	0.49	-	84%
7/6/2015	Hall Environmental	110	3.10	-	0.66	-	79%
7/9/2015	Hall Environmental	105	2.50	-	0.70	-	72%
7/13/2015	Hall Environmental	110	2.30	-	0.66	-	71%
7/16/2015	Hall Environmental	110	1.80	-	0.76	-	58%
7/20/2015	Hall Environmental	100	0.90	-	0.76	-	16%
7/23/2015	Hall Environmental	110	2.80	-	0.62	-	78%
7/27/2015	Hall Environmental	110	3.80	-	0.97	-	74%
7/30/2015	Hall Environmental	110	4.20	-	0.99	-	76%
8/3/2015	Hall Environmental	120	3.30	-	0.86	-	74%
8/6/2015	Hall Environmental	120	3.50	-	0.88	-	75%
8/10/2015	Hall Environmental	125	3.50	-	0.71	-	80%
8/13/2015	Hall Environmental	115	3.40	-	0.97	-	71%
8/17/2015	Hall Environmental	120	3.50	-	0.77	-	78%
8/20/2015	Hall Environmental	130	2.80	-	0.91	-	68%
8/24/2015	Hall Environmental	120	3.40	-	0.78	-	77%
8/27/2015	Hall Environmental	110	3.70	-	0.81	-	78%
8/31/2015	Hall Environmental	110	3.50	-	1.30	-	63%
9/3/2015	Hall Environmental	120	3.40	-	1.10	-	68%
9/8/2015	Hall Environmental	125	3.40	-	1.60	-	53%
9/10/2015	Hall Environmental	125	3.30	-	1.40	-	58%
9/14/2015	Hall Environmental	125	3.70	-	1.60	-	57%
9/17/2015	Hall Environmental	125	3.80	-	2.00	-	47%
9/21/2015	Hall Environmental	125	3.30	-	1.70	-	48%
9/24/2015	Hall Environmental	125	3.50	-	1.90	-	46%
9/28/2015	Hall Environmental	110	2.90	-	1.20	-	59%
10/1/2015	Hall Environmental	125	3.00	-	1.30	-	57%
10/5/2015	Hall Environmental	110	2.90	-	1.40	-	52%
10/8/2015	Hall Environmental	105	2.50	-	0.82	-	67%
10/12/2015	Hall Environmental	130	3.10	-	1.00	-	68%
10/15/2015	Hall Environmental	110	2.80	-	1.00	-	64%

		Flow to SeRT	SeRT Influent		SeRT Effluent		Removal Efficiency
		-	Total Se	TCLP Se	Total Se	TCLP Se	On Total Se
DATE	Laboratory	(gpm)	(ppm)	(ppm)	(ppm)	(ppm)	-
10/19/2015	Hall Environmental	130	3.50	-	1.70	-	51%

[1] The sampling event on August 28, 2014 showed a SeRT Influent concentration of <0.05 ppm and a SeRT Effluent concentration of 2.60 ppm. Samples were likely either switched in the field before being labeled, or mislabeled. Table 3 shows the correct concentration associated with each location.

April 1, 2014

- Required sampling from this point forward reduced to a quarterly basis per Condition 1(c) of Exhibit A to the Order.

April 22, 2014

- First Amendment to Exhibit A signed by Navajo and OCD.

June 1 to 2, 2014

- Navajo temporarily stopped injection while doing the Pressure Fall Off Tests (PFOTs) and Mechanical Integrity Testing (MIT) for Well 1.[4]

June 2, 2014

- Navajo submitted a minor permit modification requested by OCD for the installation of the SeRT® & ICP units at the Artesia Refinery.

June 24, 2014

- OCD approved the modification request submitted on June 2.

June 30 to July 2, 2014

- Navajo temporarily stopped injection while doing the PFOTs and MIT for Well 2.[4]

July 7-9, 2014

- Used SeRT® media was replaced by new media. The media change-out started on July 7, 2014 and was completed on July 9, 2014. The unit was brought on-line on July 10, 2014. The pH probes were also replaced.

August 11, 2014

- Met with OCD to discuss amending Exhibit A to clarify reporting and sampling in connection with cessation of well injection per Navajo's July 25, 2014 letter.

August 25-28, 2014

- Navajo temporarily stopped injection for PFOTs and MIT for Well 3.[4]

September 3 and 8, 2014

- Second Amendment to Exhibit A signed by OCD and Navajo.

[4] Pressure Fall Off tests and Mechanical Integrity Testing are unrelated to selenium concentrations in the wastewater injected at the wells.

September 15, 2014

- Notice of Compliance with Selenium Limit submitted to OCD.

September 30, 2014

- Notice of selection of long-term option for addressing selenium concentrations in wastewater submitted to OCD.

November 19, 2014

- Third Amendment to Exhibit A signed by OCD and Navajo.
- Navajo paid OCD the stipulated penalty of $26,000 for late submission of October 1, 2014 quarterly sampling results.

February 5, 2015

- Navajo started the design of planned improvements pertaining to the SeRT® Unit. The goal of this project is to add operational flexibility and to help ensure the robustness of selenium reduction. Additional detail is provided below.

April 21, 2015

- SeRT® Unit taken offline for media change.

April 23, 2015

- SeRT® Unit returned to service following media change.

July 8, 2015

- Notice of planned improvements pertaining to the SeRT® Unit submitted to OCD.

July 15, 2015

- Navajo received approval from OCD for the planned improvements pertaining to the SeRT® Unit and proceeded with implementation.

October 15, 2015

- Injection to underground injection control wells ceased due to a break in the Ferric Chloride System chemical line. Operations ceased injection while the line was repaired. Samples were collected prior to ceasing discharge and prior to resuming. Prompt notification to OCD was provided via email dated October 16, 2015 per Paragraphs 1(d), 7 and 8 of the Third Amended Exhibit A to the Order. Lab results were provided to OCD via email dated October 23, 2015 and are also included in Attachment B. Results were below the Se Limit.

As noted in the February 2014 monthly interim progress report submitted on March 3, 2014, Navajo will consider discontinuing ferric chloride injection based on the performance of the 100 gpm

SeRT® unit. Also, as noted above, on September 30, 2014, Navajo submitted to OCD its notice of selection of long-term option for selenium reduction pursuant to Paragraph 15 of Exhibit A to the Order. Navajo selected the existing SeRT® unit based on its proven effectiveness in reducing selenium concentrations (now, as of the October 19, 2015 sample, at an average total selenium removal efficiency of 88.0%) and Navajo's record of compliance with the Se Limit using this technology.

At the time of its September 30, 2014 notice, Navajo did not anticipate modifications to the SeRT® Unit, and so selected the existing unit, without modification, as its long-term selenium reduction option. As explained in its September 30th notice, however, Navajo specifically reserved the right to modify the SeRT® Unit in the future should changes become necessary based on wastewater effluent characteristics, refinery operational needs or other circumstances. Although the existing SeRT® unit has been performing well, Navajo believes that, based on its operating experience, certain improvements will enhance operational flexibility and help to ensure the effectiveness of selenium reduction.

Accordingly, Navajo provided notification and engineering detail for the SeRT® process improvement work via the submission of a notification letter to OCD dated July 8, 2015. Note that the existing SeRT® equipment will not itself be materially changed; nor will the improvements cause an increase (or decrease) in flow to the SeRT® Unit. Navajo received approval from OCD on July 15, 2015 for the planned improvements to the SeRT® Unit and proceeded with implementation.

In addition to the status and timeline of actions taken by Navajo, this monthly report includes the requirements of items a-c of Paragraph 9 of Exhibit A to the Order, as follows.

a) *A summary of all the results of sampling required pursuant to Paragraph 1, above, and copies of all supporting laboratory data.*

A summary of the results of sampling collected pursuant to Paragraph 1 of Exhibit A to the Order are provided in Table 4. This table includes only those samples collected at the OCD-approved Sample Location (location shown in Attachment A) on the first business day of each week after the effective date of the Order up to April 1, 2014.[5] The April 1, 2014 sampling event constituted the fourth consecutive monthly sample below the 1.0 mg/L limit and, therefore, pursuant to Condition 1(c) of Exhibit A to the Order, sampling is being conducted on a quarterly basis on the first business day of the quarter. The Fourth Quarter 2014 quarterly sample was taken on October 1, 2014, the First Quarter 2015 quarterly sample was taken on January 2, 2015, the Second Quarter 2015 quarterly sample was taken on April 1, 2015, and the Third Quarter 2015 quarterly sample was taken on July 1, 2015. The lab report for the Third Quarter 2015 quarterly sample was submitted with the Second Quarter 2015 progress report.

Under Paragraph 6 of Section I (Findings and Determinations) of the Third Amendment to Amended and Supplemental Agreed Compliance Order, dated November 19, 2014, no further quarterly

[5] Certain additional monitoring is also included in Table 4.

sampling is required under the Order. Note that there have been no non-compliant sampling events since issuance of the Order on November 14, 2013.

As described in the December 4, 2013 review of selenium sampling data report, CH2M HILL made certain recommendations to modify sample preparation and processing in order to decrease variability in sampling analysis procedures and analytical instrumentation configurations used by Navajo's contract laboratories. Specifically, Hall Environmental implemented the following procedural modifications starting December 9, 2013, among certain other earlier changes:

1. Filtrations for TCLP analysis by EPA Method 1311 are now made using a 0.7 micron glass fiber filter.
2. An acid matrix of 6% nitric acid and 5% hydrochloric acid is now used in accordance with EPA Method 3010.
3. Calibration standards and quality control samples are now prepared using the same acid matrix (6% nitric acid and 5% hydrochloric acid).
4. An internal standard of yttrium or scandium is now used in all samples. If the recovery of the internal standard exceeds 120%, the samples are to be screened for a native presence of the internal standard. If the samples natively contain the target internal standard, an alternate internal standard is to be utilized.
5. The same preparation batches and analytical batches are now used for digestion and analysis of TCLP and total selenium samples. Ideally, a sample is analyzed for total selenium and is then analyzed for TCLP selenium immediately afterwards to reduce variations due to instrument calibration, instrument drift, or digestate age.
6. All spectra for samples are now reviewed to verify that there are no optical interferences and that peaks are being correctly integrated.
7. All split samples are now analyzed using the same acid digestion and analytical methods to ensure data comparability.

Table 4: Selenium Measurements Collected Pursuant to Paragraph 1 of Exhibit A to the Order (mg/L)

DATE	Sampling Location	Laboratory	Method	TCLP Selenium (mg/L)	
				Split Samples	Average[2]
10/24/2013[1]	T-801 Effluent	ALS Environmental	SW1311/ 6020	0.82	0.78
		Hall Environmental	EPA 6010B	0.74	
10/28/2013[1]	T-801 Effluent	Hall Environmental	EPA 6010B	0.98	0.98
11/4/2013[1]	Injection Well Effluent Sampling Point	Hall Environmental	EPA 6010B	1.10	1.10
11/11/2013[1]	Injection Well Effluent Sampling Point	Hall Environmental	EPA 6010B	0.088	0.088
11/18/2013	Injection Well Effluent Sampling Point	Hall Environmental	EPA 6010B	0.78	0.78
11/25/2013	T-801 Effluent to Wells	Hall Environmental	EPA 6010B	0.75	0.75
12/2/2013	T-836 Effluent to Wells	Hall Environmental	EPA 6010B	0.88	0.88
12/9/2013[3]	T-801 Effluent to Wells	Hall Environmental	EPA 6010B	0.38	0.38
12/16/2013	T-801 Effluent to Wells	Hall Environmental	EPA 6010B	0.35	0.35

DATE	Sampling Location	Laboratory	Method	TCLP Selenium (mg/L)	
				Split Samples	Average[2]
12/23/2013	T-836 Effluent to Wells	Hall Environmental	EPA 6010B	0.27	0.27
12/30/2013	T-836 Effluent to Wells	Hall Environmental	EPA 6010B	0.33	0.33
1/6/2014	T-836 Effluent to Wells	Hall Environmental	EPA 6010B	0.23	0.23
1/13/2014	T-801 Effluent to Wells	Hall Environmental	EPA 6010B	0.31	0.31
1/20/2014	T-836 Effluent to Wells	Hall Environmental	EPA 6010B	0.51	0.51
1/27/2014	T-801 Effluent to Wells	Hall Environmental	EPA 6010B	0.49	0.49
2/3/2014	T-836 Effluent to Wells	Hall Environmental	EPA 6010B	0.56	0.56
2/10/2014	T-836 Effluent to Wells	Hall Environmental	EPA 6010B	0.20	0.20
2/17/2014	T-801 Effluent to Wells	Hall Environmental	EPA 6010B	0.20	0.20
2/24/2014	T-801 Effluent to Wells	Hall Environmental	EPA 6010B	0.28	0.28
3/3/2014	T-801 Effluent to Wells	Hall Environmental	EPA 6010B	0.14	0.14
3/10/2014	T-836 Effluent to Wells	Hall Environmental	EPA 6010B	0.05	0.05
3/13/2014	T-836 Effluent to Wells	Hall Environmental	EPA 6010B	0.08	0.08
3/17/2014	T-801 Effluent to Wells	Hall Environmental	EPA 6010B	0.05	0.05
3/24/2014	T-801 Effluent to Wells	Hall Environmental	EPA6010B	0.15	0.15
4/1/2014[4]	**T-801 Effluent to Wells**	**Hall Environmental**	**EPA6010B**	**0.08**	**0.08**
7/3/2014[4]	**T-801 Effluent to Wells**	**Hall Environmental**	**EPA6010B**	**< 0.027**	**< 0.027**
10/1/2014[4]	**T-836 Effluent to Wells**	**Hall Environmental**	**EPA6010B**	**0.04**	**0.04**
1/2/2015[4]	**T-801 Effluent to Wells**	**Hall Environmental**	**EPA6010B**	**< 0.027**	**< 0.027**
4/1/2015[4]	**T-801 Effluent to Wells**	**Hall Environmental**	**EPA6010B**	**< 0.027**	**< 0.027**
7/1/2015[4]	**T-836 Effluent to Wells**	**Hall Environmental**	**EPA6010B**	**0.12**	**0.12**

[1]Samples collected per the requirements of the Agreed Compliance Order No. WQA-OCD-CO-2013-001 signed on October 24, 2013.
[2]For split samples.
[3]Digestion procedure and sample processing altered as described above.
[4]Required sampling conducted on a quarterly basis per Condition 1(c) of Exhibit A to the Order – accentuated as requested by Carl Chavez on April 30, 2014.

b) A summary of the results of any optional sampling taken during the preceding calendar month (copies of laboratory data for such optional sampling shall be provided to OCD upon request).

A summary of all of the TCLP selenium concentrations measured at the OCD-approved Sample Location and at the effluent of treatment tanks T-801 and T-836 is provided in Attachment C. All of the TCLP selenium measurements for all refinery sample locations are provided in Attachment D, and all of the total selenium measurements for all refinery sample locations are provided in Attachment E. The data provided in all of these attachments is for sampling performed during the months of October 2013, November 2013, December 2013, calendar year 2014, and calendar year 2015 through October 19, 2015.

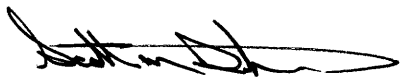
c) The calculation of stipulated penalties required under Section III, Paragraph 2 of the Order.

As of the most recent sampling event, there are no new reported exceedances of the Se Limit. On November 20, 2013 Navajo submitted payment of the penalty of $26,000 established in the Order for

prior reported selenium concentrations above the Se Limit. As explained in Navajo's July 25, 2014 letter to OCD, Navajo was unable to conduct quarterly sampling on July 1, because there was no injection at the wells on that day due to PFOTs and mechanical integrity testing. Quarterly sampling was not conducted until July 3, 2014, after the discharge to the wells resumed, a delay of two days. Also, Navajo was one day late in submitting the results of its quarterly selenium sampling to OCD, which were required to be submitted by July 17, and were instead submitted on July 18, 2014. Per the stipulated penalty schedule at Section III, Paragraph 2 of the Order, Navajo calculated a stipulated penalty of $5,000.[6] This sum was paid by letter dated August 21, 2014. Navajo was also late in submitting the results of its October 1, 2014 quarterly selenium sampling to OCD, which were received on October 6, 2014, and conservatively assumed to be required to be submitted by October 8. They were instead submitted on November 3, and as a result, were 26 days late. Based on this, and per the stipulated penalty schedule at Section III, Paragraph 2 of the Order, Navajo calculated a stipulated penalty of $26,000.[8] This sum was paid by letter dated November 19, 2014. Navajo took preventive steps to help ensure timely quarterly sampling and reporting of corresponding sample results.

If you have any questions, please do not hesitate to contact me at (575) 746-5487 or scott.denton@hollyfrontier.com. Thank you for your assistance in this matter.

Sincerely,



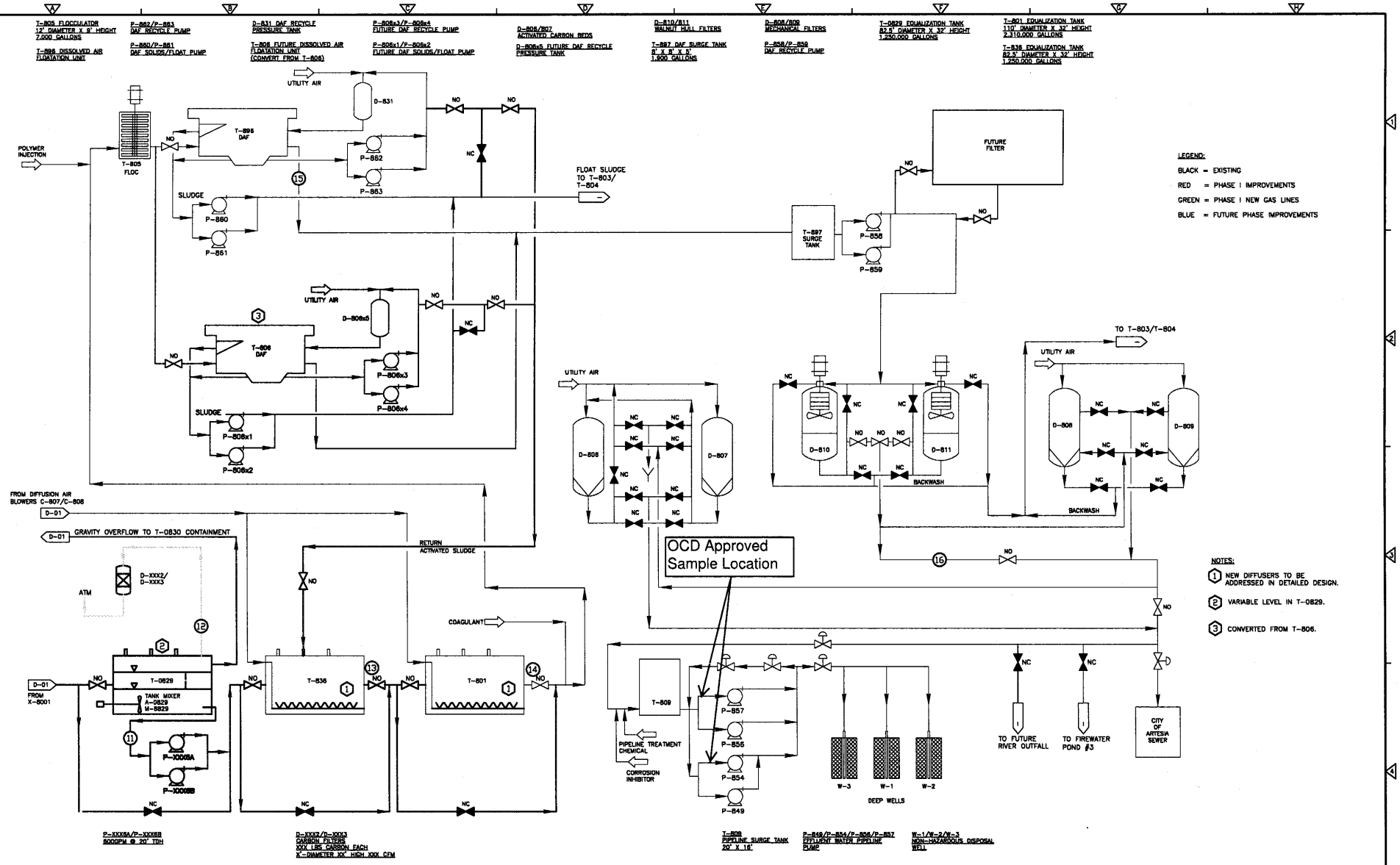
Scott M. Denton
Environmental Manager

Navajo Refining Company, L.L.C.

[6] Per Order Section III, Paragraph (2)(b)(4), for failure to conduct timely sampling, $2,000 per day X 2 days = $4,000; per Order Section III, Paragraph (2)(b)(5), for failure to timely submit any report or notification, $1,000 per day X 1 day = $1,000.

[8] Per Order Section III, Paragraph (2)(b)(5), for failure to timely submit any report or notification, $1,000 per day X 26 days = $26,000.

Attachment A:
OCD-Approved Sample Location



REV. NO.	DATE	DRWN	CHKD	REMARKS
5	01/12	DH	JDC	ISSUED FOR PHA REVIEW
4	12/9	RM	JDC	CHANGED PER 12/07/10 REVIEW MEETING
3	12/6	RM	JDC	CHANGED PER 11/30/10 REVIEW MEETING
2	11/3			CHANGED DURING CLIENT REVIEW MEETING
1	10/26			CHANGED PER CLIENT 10/28/10

DESIGNED BY: J. CAMANN
DRAWN BY: R. MOORE
SHEET CHK'D BY: K. GREENFELDER
CROSS CHK'D BY: M. CARBALLA
APPROVED BY: X
DATE: DECEMBER 2010

CDM
Camp Dresser & McKee
3050 Post Oak Boulevard, Suite 300
Houston, Texas 77056
Tel: (713) 423-7300 Fax: (713) 840-0172
TBPE Firm Registration No. F-3043
consulting • engineering • construction • operations

NAVAJO REFINERY
ARTESIA, NEW MEXICO
PHASE I WWTP

PROCESS FLOW DIAGRAM
PHASE I - WASTEWATER TREATMENT PLANT IMPROVEMENTS - SHEET 2
EQUALIZATION TANK TO DISCHARGE

PROJECT NO. 90538-79019
FILE NAME: G001PFD
SHEET NO. D-02

DWG: S:\90538\79019\00-EXHIBITS\DPH G001PFD-ALT.dwg USER: moorere
DATE: Jan 13, 2011 8:35am XREFS:CDM_2234 79019-223480R

Attachment B:
Laboratory Reports for Samples Collected Pursuant to
Paragraph 1 of Exhibit A to the Order

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

October 23, 2015

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

RE: Wastewater Effluent Sample Grab Scott D. OrderNo.: 1510831

Dear Scott Denton:

Hall Environmental Analysis Laboratory received 2 sample(s) on 10/17/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers 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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order: **1510831**
Date Reported: **10/23/2015**

CLIENT: Navajo Refining Company
Project: Wastewater Effluent Sample Grab Scott D.
Lab Order: 1510831

Lab ID: 1510831-001
Client Sample ID: WWT T-809
Collection Date: 10/15/2015 6:35:00 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: TCLP METALS							Analyst: **MED**	
Selenium	0.22	0.019	0.050		mg/L	1	10/22/2015 4:48:26 PM	21978
EPA 6010B: TOTAL METALS							Analyst: **MED**	
Selenium	0.22	0.017	0.050		mg/L	1	10/22/2015 4:28:11 PM	21972

Lab ID: 1510831-002
Client Sample ID: FCCWWT
Collection Date: 10/15/2015 3:25:00 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: TCLP METALS							Analyst: **MED**	
Selenium	0.14	0.019	0.050		mg/L	1	10/22/2015 4:59:20 PM	21978
EPA 6010B: TOTAL METALS							Analyst: **MED**	
Selenium	0.21	0.083	0.25	J	mg/L	5	10/22/2015 4:26:11 PM	21972

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

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#: **1510831**

23-Oct-15

Client: Navajo Refining Company

Project: Wastewater Effluent Sample Grab Scott D.

Sample ID	**1510831-002BMS**	SampType:	**MS**		TestCode:	**EPA Method 6010B: TCLP Metals**				
Client ID:	**FCCWWT**	Batch ID:	**21978**		RunNo:	**29736**				
Prep Date:	**10/22/2015**	Analysis Date:	**10/22/2015**		SeqNo:	**905653**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.72	0.050	0.5000	0.1396	116	75	125			

Sample ID	**1510831-002BMSD**	SampType:	**MSD**		TestCode:	**EPA Method 6010B: TCLP Metals**				
Client ID:	**FCCWWT**	Batch ID:	**21978**		RunNo:	**29736**				
Prep Date:	**10/22/2015**	Analysis Date:	**10/22/2015**		SeqNo:	**905654**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.68	0.050	0.5000	0.1396	109	75	125	4.86	20	

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
Selenium	ND	1.0								

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
Selenium	0.53	1.0	0.5000	0	107	80	120			J

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#: **1510831**

23-Oct-15

Client: Navajo Refining Company

Project: Wastewater Effluent Sample Grab Scott D.

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
Selenium	ND	0.050								

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
Selenium	0.49	0.050	0.5000	0	98.4	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: NAVAJO REFINING CO Work Order Number: 1510831 RcptNo: 1

Received by/date: AT 10/17/15

Logged By: Lindsay Mangin 10/17/2015 12:10:00 PM

Completed By: Lindsay Mangin 10/19/2015 7:36:43 AM

Reviewed By: AT 10/19/15

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° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☒	AT 10/19/15
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH 2 (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? See below
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by AT 10/19/15

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: Samples poured off & preserved in lab w/ 1mL HNO3 for acceptable pH for total Se analysis / AT 10/19/15

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.4	Good	Yes			

Chain-of-Custody Record

Client: Navajo Refining Co.	Turn-Around Time: ☐ Standard X Rush_ ASAP (TURN FAST)
	Project Name: Waste Water Effluent Sample Grab Scott D.
Mailing Address: P O Box 159 Artesia, NM 88211-0159	Project #: P.O. # 167796
Phone #: 575-748-3311	
email or Fax#: 575-746-5451	Project Manager: Scott Denton / Mike Holder
QA/QC Package: ☒ Standard ☐ Level 4 (Full Validation)	Sampler: NAVAJO- BYRON
Accreditation: ☐ NELAP ☐ Other_____	On Ice: ☒ Yes ☐ No
☐ EDD (Type) _____	Sample Temperature: 3.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1510831	Analysis Request: Total Se by EPA Method 6010B	Analysis Request: TCLP Selenium (Se) / Lead
10-15-15	1635	Liquid	Influent T-903	1-500ml GLASS	2mL HNO3	-001	X	X
10-15-15	1530	Liquid	Effluent T	1-1000ml GLAS	4mL HNO3	-002	X	X

Date:	Time:	Relinquished by:	Received by:	Date	Time
10-16-15	1300	Toby Green	Clara Acree	10/17/15	1210
Date:	Time:	Relinquished by:	Received by	Date	Time

Remarks. Send results to Scott Denton, Mike Holder, Micki Schultz, Robert Combs and Andrew Contreras.

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly noted on the analytical r

Attachment C:
Additional Monitoring Performed at the Injection Well Effluent Sampling Location and Treatment Tanks T-801 and T-836

Attachment C Table 1: TCLP Selenium Measurements Collected from the Injection Well Effluent Sampling Location, Tank T-801, and Tank T-836 Effluent (mg/L), EPA Method SW1311/6020/6010

DATE	Sampling Location	Split Samples (mg/L)				Average (mg/L)
		Laboratory	TCLP Selenium Concentration	Laboratory	TCLP Selenium Concentration	TCLP Selenium Concentration
9/27/2013	Injection Well Effluent Sampling Point	ALS	1.24	-	-	1.24
10/15/2013	Injection Well Effluent Sampling Point	ALS	1.24	-	-	1.24
10/20/2013	T-801 Effluent	Hall	0.85	ALS	0.803	0.83
10/20/2013	T-836 Effluent	Hall	0.91	ALS	0.888	0.90
10/22/2013	T-801 Effluent	Hall	0.75	ALS	0.708	0.73
10/22/2013	T-836 Effluent	Hall	0.65	ALS	0.823	0.74
10/23/2013	T-801 Effluent	Hall	0.79	ALS	0.835	0.81
10/23/2013	T-836 Effluent	Hall	0.75	ALS	0.831	0.79
10/24/2013	T-801 Effluent	Hall	0.74	ALS	0.821	0.78
10/24/2013	T-836 Effluent	Hall	0.58	ALS	0.648	0.61
10/25/2013	T-801 Effluent	Hall	0.79	-	-	0.79
10/25/2013	T-836 Effluent	Hall	0.71	-	-	0.71
10/26/2013	T-801 Effluent	Hall	0.81	-	-	0.81
10/26/2013	T-836 Effluent	Hall	0.83	-	-	0.83
10/27/2013	T-801 Effluent	Hall	0.95	-	-	0.95
10/27/2013	T-836 Effluent	Hall	0.75	-	-	0.75
10/28/2013	T-801 Effluent	Hall	0.98	-	-	0.98
10/28/2013	T-836 Effluent	Hall	0.84	-	-	0.84
10/29/2013	T-801 Effluent	Hall	0.99	Cardinal	0.98	0.99
10/29/2013	T-836 Effluent	Hall	0.94	Cardinal	0.97	0.95
10/30/2013	T-801 Effluent	Hall	0.83	Cardinal	0.88	0.85
10/30/2013	T-836 Effluent	Hall	0.88	Cardinal	0.90	0.89
10/31/2013	Injection Well Effluent Sampling Point	Hall	1.20	-	-	1.20
10/31/2013	T-801 Effluent	Hall	0.80	Cardinal	1.09	0.95
10/31/2013	T-836 Effluent	Hall	1.20	Cardinal	1.26	1.23
11/1/2013	T-801 Effluent	Hall	0.89	Cardinal	0.94	0.92
11/1/2013	T-836 Effluent	Hall	1.10	Cardinal	1.16	1.13
11/2/2013	No Sample	-	-	-	-	-
11/3/2013	No Sample	-	-	-	-	-
11/4/2013	Injection Well Effluent Sampling Point	Hall	1.10	-	-	1.10
11/4/2013	T-801 Effluent	Hall	0.74	-	-	0.74
11/4/2013	T-836 Effluent	Hall	0.98	-	-	0.98
11/5/2013	Injection Well Effluent Sampling Point	Hall	1.20	-	-	1.20

DATE	Sampling Location	Split Samples (mg/L)				Average (mg/L)
		Laboratory	TCLP Selenium Concentration	Laboratory	TCLP Selenium Concentration	TCLP Selenium Concentration
11/5/2013	T-801 Effluent	Hall	1.20			1.20
11/6/2013	T-836 Effluent	Hall	0.73	-	-	0.73
11/7/2013	T-801 Effluent	Hall	0.95	-	-	0.95
11/7/2013	T-836 Effluent	Hall	1.10			1.10
11/8/2013	T-801 Effluent	Hall	0.78	-	-	0.78
11/8/2013	T-836 Effluent	Hall	1.20			1.20
11/9/2013	T-836 Effluent	Hall	1.1	-	-	1.10
11/10/2013	T-836 Effluent	Hall	1.1	-	-	1.10
11/11/2013	Injection Well Effluent Sampling Point	Hall	0.088	-	-	0.09
11/11/2013	T-836 Effluent	Hall	1.100			1.10
11/12/2013	No Sample	-	-	-	-	-
11/13/2013	No Sample	-	-	-	-	-
11/14/2013[2]	T-836 Effluent	Hall	1.0	-	-	0.99
11/15/2013	No Sample	-	-	-	-	-
11/16/2013	Injection Well Effluent Sampling Point	Hall	<0.1 (ND)	-	-	-
11/17/2013	Injection Well Effluent Sampling Point	Hall	0.96	-	-	0.96
11/18/2013	Injection Well Effluent Sampling Point	Hall	0.78	-	-	0.78
11/18/2013	T-836 Effluent	Hall	1.00	-	-	1.00
11/19/2013	T-836 Effluent to Wells	Hall	0.95	-	-	0.95
11/20/2013	Injection Well Effluent Sampling Point	Hall	0.76	-	-	0.76
11/21/2013	T-801 Effluent to Wells	Hall	0.73	-	-	0.73
11/22/2013	T-836 Effluent to Wells	Hall	0.80	-	-	0.80
11/23/2013	T-801 Effluent to Wells	Hall	0.75	-	-	0.75
11/24/2013[1]	T-836 Effluent to Wells	Hall	0.84	-	-	0.84
11/25/2013	T-801 Effluent to Wells	Hall	0.75	-	-	0.75
11/26/2013	T-836 Effluent to Wells	Hall	0.72	-	-	0.72
11/27/2013	T-801 Effluent to Wells	Hall	0.69	-	-	0.69
11/28/2013	T-836 Effluent to Wells	Hall	0.80	-	-	0.80
11/29/2013	T-801 Effluent to Wells	Hall	0.75	-	-	0.75
11/30/2013	T-801 Effluent to Wells	Hall	0.76	-	-	0.76
12/2/2013	Injection Well Effluent Sampling Point	Hall	0.88	-	-	0.88
12/2/2013	T-836 Effluent to Wells	Hall	0.76	-	-	0.76
12/2/2013	T-801 Effluent to Wells	Hall	0.83	-	-	0.83
12/5/2013	T-836 Effluent to Wells	Hall	0.47	-	-	0.47

DATE	Sampling Location	Split Samples (mg/L)				Average (mg/L)
		Laboratory	TCLP Selenium Concentration	Laboratory	TCLP Selenium Concentration	TCLP Selenium Concentration
12/9/2013[3]	T-801 Effluent to Wells	Hall	0.38	-	-	0.38
12/12/2013	Effluent to Wells	Hall	0.56	-	-	0.56
12/16/2013	T-801 Effluent to Wells	Hall	0.35	-	-	0.35
12/19/2013	T-801 Effluent to Wells	Hall	0.24	-	-	0.24
12/23/2013	T-836 Effluent to Wells	Hall	0.27	-	-	0.27
12/26/2013	T-801 Effluent to Wells	Hall	0.27	-	-	0.27
12/30/2013	T-836 Effluent to Wells	Hall	0.33	-	-	0.33
1/6/2014	T-836 Effluent to Wells	Hall	0.23	-	-	0.23
1/9/2014	T-801 Effluent to Wells	Hall	0.29	-	-	0.29
1/13/2014	T-801 Effluent to Wells	Hall	0.31	-	-	0.31
1/16/2014	T-801 Effluent to Wells	Hall	0.24	-	-	0.24
1/20/2014	T-836 Effluent to Wells	Hall	0.51	-	-	0.51
1/23/2014	T-836 Effluent to Wells	Hall	0.23	-	-	0.23
1/27/2014	T-801 Effluent to Wells	Hall	0.49	-	-	0.49
1/30/2014	T-836 Effluent to wells	Hall	0.27	-	-	0.27
2/3/2014	T-836 Effluent to wells	Hall	0.56	-	-	0.56
2/6/2014	T-836 Effluent to wells	Hall	0.40	-	-	0.40
2/10/2014	T-836 Effluent to wells	Hall	0.20	-	-	0.20
2/17/2014	T-801 Effluent to wells	Hall	0.20	-	-	0.20
2/24/2014	T-801 Effluent to wells	Hall	0.28	-	-	0.28
3/3/2014	T-801 Effluent to Wells	Hall	0.14	-	-	0.14
3/10/2014	T-836 Effluent to Wells	Hall	0.05	-	-	0.05
3/13/2014	T-836 Effluent to Wells	Hall	0.08	-	-	0.08
3/17/2014	T-801 Effluent to Wells	Hall	0.05	-	-	0.05
3/24/2014	T-801 Effluent to Wells	Hall	0.15	-	-	0.15
4/1/2014[4]	T-801 Effluent to Wells	Hall	0.08	-	-	0.08
6/19/2014	T-801 Effluent to Wells	Hall	<0.10	-	-	<0.10
7/3/2014[4]	T-801 Effluent to Wells	Hall	< 0.027	-	-	< 0.027
7/22/2014	T-801 Effluent to Wells	Hall	<0.027	-	-	<0.027
8/25/2014	T-836 Effluent to Wells	Hall	<0.027	-	-	<0.027
8/28/2014	T-836 Effluent to Wells	Hall	<0.027	-	-	<0.027
10/1/2014[4]	T-836 Effluent to Wells	Hall	0.04	-	-	0.04
11/3/2014	T-836 Effluent to Wells	Hall	0.10	-	-	0.10
11/6/2014	T-836 Effluent to Wells	Hall	<0.20	-	-	<0.20
1/2/2015[4]	T-801 Effluent to Wells	Hall	< 0.027	-	-	< 0.027
2/23/2015	T-801 Effluent to Wells	Hall	0.03	-	-	0.03
4/1/2015[4]	T-801 Effluent to Wells	Hall	<0.027	-	-	< 0.027
7/1/2015[4]	T-836 Effluent to Wells	Hall	0.12	-	-	0.12

DATE	Sampling Location	Split Samples (mg/L)				Average (mg/L)
		Laboratory	TCLP Selenium Concentration	Laboratory	TCLP Selenium Concentration	TCLP Selenium Concentration
10/12/2015	T-836 Effluent to Wells	Hall	0.22	-	-	0.22
10/15/2015[5]	T-836 Effluent to Wells, T-801 Effluent to Wells	Hall	0.22, 0.14	-	-	-

Gray Shading = Sampling performed when the tanks were not discharging to the injection wells.

Note: Samples labeled as "T-801 Effluent to Wells" or "T-836 Effluent to Wells" were collected from the OCD-approved sample location

[1] Date of the Agreed Compliance Order No. WQA-OCD-CO-2013-001 signed on October 24, 2013.

[2] Date of the Supplemental Agreed Compliance Order No. WQA-OCD-CO-2013-001, signed on November 14, 2013.

[3] Digestion procedure and sample processing altered as described in the text above based upon the December 4, 2013 CH2M HILL review of selenium sampling data report.

[4] Required sampling conducted on a quarterly basis per Exhibit A, Condition 1(c) of the Order.

[5] Injection to underground injection control wells ceased due to a break in the Ferric Chloride System chemical line on October 15, 2015. Operations ceased injection while the line was repaired. Two samples were collected, one prior to ceasing discharge (from T-836) and one prior to resuming (from T-801). Prompt notification to OCD was provided via email dated October 16, 2015 per Paragraphs 1(d), 7 and 8 of the Third Amended Exhibit A to the Order. Lab results were provided to OCD via email dated October 23, 2015 and are also included in Attachment B.

Attachment D:
Additional TCLP Selenium Monitoring Performed at the Navajo Refinery

Attachment D Table 1: TCLP Selenium Measurements Collected from all Navajo Refinery Sampling Locations from November 1, 2013 through October 19, 2015; EPA Method SW1311/6020/6010, mg/L

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	OAF Eff.	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-801		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)		T-829	Unit #45 Sour Water (W-2421)		Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator		DAF Bin#S. Brotheres 24	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Result	Ave*	Result	Result	
9/27/2013	ALS Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.24	-	-	-	-	-	-	-	-	-	-	1310034
10/15/2013	ALS Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.24	-	-	-	-	-	-	-	-	-	-	1310767
10/20/2013	Hall Environmental	5.80		-		1.60		-	-	-	<0.1 (ND)		-	-	-		-	0.85		0.91		0.90	0.90	0.90	-	-		-	-		-	-		-	-	1310A04
10/20/2013	ALS Environmental	4.92	5.36	-	-	1.90	1.75	-	-	-	0.24	0.24	-	-	-	-	-	0.80	0.83	0.89	0.90	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	1310959
10/22/2013	Hall Environmental	3.60		-		1.60		-	-	-	<1.0 (ND)		-	-	0.39		-	0.75		0.65		0.74	0.74	0.74	-	0.46		-	-		-	-		-	-	1310A71
10/22/2013	ALS Environmental	1.15	2.38	-	-	1.52	1.56	-	-	-	0.13	0.13	-	-	0.46	0.43	-	0.71	0.73	0.82	0.74	0.00	0.00	0.00	-	0.53	0.50	-	-	-	-	-	-	-	-	13101021
10/23/2013	Hall Environmental	5.20		-		1.40		-	-	-	<1.0 (ND)		-	-	0.39		-	0.79		0.75		0.79	0.79	0.79	-	0.43		-	-		-	-		<1.0 (ND)	-	1310B47 1310B48
10/23/2013	ALS Environmental	4.88	5.04	-	-	1.07	1.24	-	-	-	0.07	0.07	-	-	0.38	0.39	-	0.84	0.81	0.83	0.79	0.00	0.00	0.00	-	0.41	0.42	-	-	-	-	-	-	0.07	-	13101089 13101196
10/24/2013	Hall Environmental	5.00		-		-		-	-	-	<0.1 (ND)		-	-	0.11		-	0.74		0.58		0.61	0.61	0.61	-	0.39		-	-		-	-		-	-	1310C06
10/24/2013	ALS Environmental	5.03	5.02	-	-	-	-	-	-	-	0.10	0.10	-	-	<0.05 0 (ND)	0.11	-	0.82	0.78	0.65	0.61	0.00	0.00	0.00	-	0.37	0.38	-	-	-	-	-	-	-	-	13101164
10/25/2013	Hall Environmental	5.30	5.30	4.20	4.20	1.20	1.20	-	-	-	9.20	9.20	-	-	1.60	1.60	-	0.79	0.79	0.71	0.71	0.71	0.71	0.71	-	0.39	0.39	-	-	-	-	-	-	-	-	1310C53
10/26/2013	Hall Environmental	4.70	4.70	3.80	3.80	0.86	0.86	-	-	-	12.00	12.00	-	-	1.30	1.30	-	0.81	0.81	0.83	0.83	0.83	0.83	0.83	-	0.31	0.31	-	-	-	-	-	-	-	-	1310C58
10/27/2013	Hall Environmental	4.90	4.90	3.80	3.80	0.93	0.93	-	-	-	12.00	12.00	-	-	0.70	0.70	-	0.95	0.95	0.75	0.75	0.75	0.75	0.75	-	0.33	0.33	-	-	-	-	-	-	-	-	1310C60
10/28/2013	Hall Environmental	4.50	4.50	3.80	3.80	0.98	0.98	-	-	-	11.00	11.00	-	-	<0.1 (ND)	<0.1 (ND)	-	0.98	0.98	0.84	0.84	0.84	0.84	0.84	-	0.33	0.33	-	-	-	-	-	-	-	-	1310D18
10/29/2013	Hall Environmental	4.90		3.80		1.10		-	-	-	10.00		-	-	<0.2 (ND)		-	0.99		0.94		0.95	0.95	0.95	-	0.37		-	-		-	-		-	-	1310D78
10/29/2013	Cardinal Laboratories	4.01	4.46	3.08	3.44	0.81	0.96	-	-	-	9.42	9.71	-	-	<0.20 2 (ND)	-	-	0.98	0.99	0.97	0.95	0.00	0.00	0.00	-	0.58	0.48	-	-	-	-	-	-	-	-	H302620
10/30/2013	Hall Environmental	3.70		3.70		1.20		-	-	-	14.00		-	-	<0.2 (ND)		-	0.83		0.88		0.89	0.89	0.89	-	0.40		-	1.70		-	3.30		-	-	1310E22 1210E23
10/30/2013	Cardinal Laboratories	3.03	3.37	3.33	3.52	0.77	0.99	-	-	-	11.30	12.65	-	-	<1.0 (ND)	-	-	0.88	0.85	0.90	0.89	0.00	0.00	0.00	-	0.38	0.39	-	1.28	1.49	-	1.77	2.54	-	-	H302639
10/31/2013	Hall Environmental	4.00		4.00		0.99		-	-	-	14.00		-	-	<1.0 (ND)		-	0.80		1.20		1.23	1.23	1.23	1.20	0.33		-	3.30		-	4.00		-	-	1310E78 1310E81 1311035
10/31/2013	Cardinal Laboratories	3.15	3.58	3.18	3.59	0.76	0.87	-	-	-	10.30	12.15	-	-	<1.0 (ND)	-	-	1.09	0.95	1.26	1.23	0.00	0.00	0.00	-	0.40	0.36	-	2.38	2.84	-	1.50	2.75	-	-	H302652
11/1/2013	Hall Environmental	4.00		4.10		1.30		-	-	-	14.00		-	-	0.60		-	0.89		1.10		1.13	1.13	1.13	-	0.40		-	2.90		-	3.10		-	-	1311033 1311034
11/1/2013	Cardinal Laboratories	3.46	3.73	3.33	3.72	0.86	1.08	-	-	-	14.20	14.10	-	-	0.51	0.55	-	0.94	0.92	1.16	1.13	0.00	0.00	0.00	-	0.46	0.43	-	1.23	2.07	-	2.85	2.98	-	-	H302670
11/4/2013	Hall Environmental	3.40	3.40	3.60	3.60	-	-	-	-	-	-	-	-	-	-	-	0.42	0.74	0.74	0.98	0.98	0.98	0.98	0.98	1.10	-	-	-	-	-	-	-	-	-	-	1311082
11/5/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.20	1.20	-	-	-	-	-	1.20	-	-	-	-	-	-	-	-	-	-	1311156 1311209
11/6/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.73	0.73	0.73	0.73	0.73	-	-	-	-	-	-	-	-	-	-	-	1311209
11/7/2013	Hall Environmental	3.60	3.60	4.10	4.10	-	-	-	-	-	-	-	-	-	-	-	0.41	0.95	0.95	1.10	1.10	1.10	1.10	1.10	-	-	-	-	-	-	-	-	-	-	-	1311286
11/8/2013	Hall Environmental	3.80	3.80	3.80	3.80	-	-	-	-	-	-	-	-	-	0.42	0.42	-	0.78	0.78	1.20	1.20	1.20	1.20	1.20	-	-	-	-	-	-	-	-	-	-	<0.1 (ND)	1311362 1311336
11/9/2013	Hall Environmental	3.60	3.60	3.30	3.30	-	-	-	-	-	-	-	-	-	-	-	0.43	-	-	1.10	1.10	1.10	1.10	1.10	-	-	-	-	-	-	-	-	-	-	-	1311362

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	OAF Eff.	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-801		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)		T-829	Unit #45 Sour Water (W-2421)		Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator		DAF Bin#S. Brotheres 24	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Result	Ave*	Result	Result	
11/10/2013	Hall Environmental	3.70	3.70	4.10	4.10	-	-	-	-	-	-	-	-	-	-	-	0.20	-	-	1.10	1.10	1.10	1.10	1.10	-	-	-	-	-	-	-	-	-	-	-	1311363
11/11/2013	Hall Environmental	2.60	2.60	-	-	-	-	-	-	-	-	-	-	-	-	-	0.19	-	-	1.10	1.10	1.10	1.10	1.10	0.09	0.41	0.41	0.74	-	-	-	-	-	-	-	1311402
11/14/2013	Hall Environmental	2.60	2.60	2.60	2.60	-	-	-	-	-	-	-	-	-	-	-	0.21	-	-	0.99	0.99	0.99	0.99	0.99	-	-	-	-	-	-	-	-	-	-	-	1311625
11/16/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1 (ND)	-	-	-	-	-	-	-	-	-	-	1311693
11/17/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.96	-	-	-	-	-	-	-	-	-	-	1311694
11/18/2013	Hall Environmental	3.40	3.40	3.40	3.40	-	-	-	-	-	-	-	-	-	-	-	0.51	-	-	1.00	1.00	1.00	1.00	1.00	0.78	-	-	-	-	-	-	-	-	-	-	1311743 1311742
11/19/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.95	-	-	-	-	-	-	-	-	-	-	1311802
11/20/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.76	-	-	-	-	-	-	-	-	-	-	1311893
11/21/2013	Hall Environmental	3.60	3.60	3.50	-	-	-	-	-	-	-	-	-	-	-	-	0.43	0.63	0.63	0.86	0.86	0.86	0.86	0.86	0.73	-	-	-	-	-	-	-	-	-	-	1311970 1311971
11/22/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.80	-	-	-	-	-	-	-	-	-	-	1311A38
11/23/2013	Hall Environmental	3.80	3.80	3.60	3.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.75	-	-	-	-	-	-	-	-	-	-	1311A50
11/24/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.84	-	-	-	-	-	-	-	-	-	-	1311B06
11/25/2013	Hall Environmental	4.20	4.20	4.10	4.10	0.07	0.07	-	-	-	-	-	-	-	-	-	0.46	0.46	-	0.74	0.74	0.74	0.74	0.74	0.75	-	-	-	3.30	3.30	6.00	-	-	-	-	1311B06 1311B05
11/26/2013	Hall Environmental	3.70	3.70	4.00	4.00	1.00	1.00	-	-	-	10.00	10.00	-	-	-	-	-	-	-	-	-	-	-	-	0.72	0.50	0.50	-	-	-	-	-	-	-	-	1311B34
11/27/2013	Hall Environmental	3.80	3.80	3.60	3.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.69	-	-	-	-	-	-	-	-	-	-	1311B96 1311B97
11/28/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.80	-	-	-	-	-	-	-	-	-	-	1311B99
11/29/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.75	-	-	-	-	-	-	-	-	-	-	1311C00
11/30/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.76	-	-	-	-	-	-	-	-	-	-	1312001
12/2/2013	Hall Environmental	3.90	3.90	3.80	3.80	-	-	-	-	-	9.40	9.40	-	-	-	-	0.48	0.83	0.83	0.76	0.76	0.76	0.76	0.76	0.88	-	-	-	-	-	-	-	-	-	-	1312046 1312047
12/5/2013	Hall Environmental	-	-	3.10	3.10	-	-	-	-	-	0.52	0.52	0.43	0.87	-	-	-	-	-	-	-	-	-	-	0.47	-	-	-	-	-	-	-	-	-	-	1312225 1312228
12/9/2013	Hall Environmental	3.10	3.10	3.00	3.00	-	-	-	-	-	7.40	7.40	1.60	2.20	-	-	-	-	-	-	-	-	-	-	0.38	0.28	0.28	-	-	-	-	-	-	-	-	1312315 1312316
12/12/2013	Hall Environmental	3.70	3.70	3.80	3.80	-	-	-	-	-	12.00	12.00	0.41	1.10	-	-	-	-	-	-	-	-	-	-	0.56	0.26	0.26	-	-	-	-	-	-	-	-	1312548
12/16/2013	Hall Environmental	4.60	4.60	4.40	4.40	-	-	-	-	-	11.00	11.00	1.60	3.10	-	-	-	-	-	-	-	-	-	-	0.35	0.23	0.23	-	-	-	-	-	-	-	-	1312686 1312687
12/19/2013	Hall Environmental	4.20	4.20	4.10	4.10	-	-	-	-	-	7.90	7.90	1.60	1.90	-	-	-	0.11	0.11	-	-	-	-	-	0.24	0.35	0.35	-	-	-	-	-	-	-	-	1312960
12/23/2013	Hall Environmental	5.00	5.00	4.80	4.80	-	-	-	-	-	17.00	17.00	2.00	2.30	-	-	-	-	-	0.10	0.10	-	-	-	0.27	0.32	0.32	-	-	-	-	-	-	<0.5	<0.5	1312B14 1312B16
12/26/2013	Hall Environmental	6.10	6.10	6.00	6.00	-	-	-	-	-	3.20	3.20	2.60	3.30	-	-	-	0.55	0.55	-	-	-	-	-	0.27	0.28	0.28	-	-	-	-	-	-	-	-	1312B62 1312B63
12/27/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.30	0.30	0.31	0.34	-	-	-	-	-	-	-	-	-	-	1312C01

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	OAF Eff.	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-801		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)		T-829	Unit #45 Sour Water (W-2421)		Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator		DAF Bin#S. Brotheres 24	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Result	Ave*	Result	Result	
12/30/2013	Hall Environmental	3.90	3.90	5.70	5.70	-	-	-	-	-	15.00	15.00	1.80	2.60	-	-	-	-	-	0.88	0.88	0.37	0.35	0.34	0.33	-	-	-	-	-	-	-	-	-	-	1312C57 1312C58
1/6/2014	Hall Environmental	5.80	5.80	6.00	6.00	-	-	-	-	-	0.19	0.19	3.20	3.30	-	-	-	-	-	0.56	0.56	0.17	0.18	0.20	0.23	-	-	-	-	-	-	-	-	-	-	1401138 1401126
1/9/2014	Hall Environmental	5.90	5.90	5.80	5.80	-	-	-	-	-	17.00	17.00	1.20	2.90	-	-	-	-	-	-	-	0.14	0.21	0.25	0.29	-	-	-	-	-	-	-	-	-	-	1401363 1401360
1/13/2014	Hall Environmental	5.40	5.40	5.70	5.70	-	-	-	-	-	18.00	18.00	1.50	3.00	-	-	-	-	-	1.00	1.00	0.34	0.33	0.35	0.31	-	-	-	-	-	-	-	-	-	-	1401507 1401508
1/16/2014	Hall Environmental	4.50	4.50	4.50	4.50	-	-	-	-	-	0.17	0.17	2.20	3.60	-	-	-	0.64	0.64	-	-	0.18	0.22	0.20	0.24	-	-	-	-	-	-	-	-	-	-	1401682 1401683 1401684
1/20/2014	Hall Environmental	5.50	5.50	5.20	5.20	-	-	-	-	-	0.10	0.10	2.50	3.00	-	-	-	-	-	0.71	0.71	0.55	0.57	0.55	0.51	-	-	-	-	-	-	-	-	-	-	1401811 1401813
1/23/2014	Hall Environmental	4.90	4.90	5.00	5.00	-	-	-	-	-	0.09	0.09	1.70	2.40	-	-	-	-	-	0.72	0.72	0.18	0.19	0.20	0.23	-	-	-	-	-	-	-	-	-	-	1401980 1401981
1/27/2014	Hall Environmental	4.30	4.30	4.20	4.20	-	-	-	-	-	10.00	10.00	1.40	2.00	-	-	-	0.15	0.15	-	-	0.43	0.58	0.51	0.49	-	-	-	-	-	-	-	-	-	-	1401A61 1401A62
1/30/2014	Hall Environmental	4.30	4.30	4.50	4.50	-	-	-	-	-	9.40	9.40	2.20	2.80	-	-	-	-	-	0.47	0.47	0.26	0.27	0.29	0.27	-	-	-	-	-	-	-	-	-	-	1401C00 1401C01
2/3/2014	Hall Environmental	5.20	5.20	5.10	5.10	-	-	-	-	-	17.00	17.00	0.22	0.16	-	-	-	-	-	0.66	0.66	0.63	0.66	0.66	0.56	-	-	-	-	-	-	-	-	-	-	1402076 1402075
2/6/2014	Hall Environmental	6.30	6.30	6.20	6.20	-	-	-	-	-	15.00	15.00	0.19	0.29	-	-	-	0.60	0.60	-	-	0.49	0.45	0.43	0.40	-	-	-	-	-	-	-	-	-	-	1402232 1402233
2/10/2014	Hall Environmental	5.70	5.70	5.70	5.70	-	-	-	-	-	0.14	0.14	0.25	0.38	-	-	-	-	-	0.37	-	0.28	0.28	0.27	0.20	-	-	-	-	-	-	-	-	-	-	1402326 1402324
2/13/2014	Hall Environmental	-	-	-	-	0.58	0.58	6.50	6.70	0.83	-	-	-	-	-	-	-	-	-	-	-	-	<0.10	-	-	-	-	-	-	-	-	-	-	-	-	1402512 1402513
2/17/2014	Hall Environmental	-	-	-	-	1.20	1.20	8.30	-	1.70	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-	0.20	-	-	-	-	-	-	-	-	-	-	1402624 1402626
2/19/2014	Hall Environmental	-	-	-	-	-	-	7.50	-	1.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1402814
2/20/2014	Hall Environmental	-	-	-	-	-	-	7.50	-	1.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1402815
2/24/2014	Hall Environmental	-	-	-	-	0.35	0.35	6.90	-	1.70	-	-	-	-	-	-	-	-	-	-	-	-	0.28	-	0.28	-	-	-	-	-	-	-	-	-	-	1402904 1402903
2/26/2014	Hall Environmental	-	-	-	-	-	-	5.70	-	1.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1402A79
2/27/2014	Hall Environmental	-	-	-	-	-	-	6.20	-	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1402A78

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	OAF Eff.	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-801		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)		T-829	Unit #45 Sour Water (W-2421)		Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator		DAF Bin#S. Brotheres 24	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Result	Ave*	Result	Result	
3/3/2014	Hall Environmental	-	-	-	-	0.24	0.24	5.60	-	0.57	-	-	-	-	-	-	-	-	-	-	-	-	0.12	-	0.14	-	-	-	-	-	-	-	-	-	1403030 1403032
3/5/2014	Hall Environmental	-	-	-	-	-	-	5.40	-	0.61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1403250
3/6/2014	Hall Environmental	-	-	-	-	-	-	5.40	-	0.52	-	-	-	-	-	-	-	-	-	-	-	0.082	-	-	-	-	-	-	-	-	-	-	-	-	1403248 1403249
3/10/2014	Hall Environmental	-	-	-	-	-	-	5.70	-	0.23	-	-	-	-	-	-	-	-	-	-	-	0.044	0.048	-	0.046	-	-	-	-	-	-	-	-	-	1403331 1403332 1403333
3/12/2014	Hall Environmental	-	-	-	-	-	-	5.10	-	0.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1403558
3/13/2014	Hall Environmental	-	-	-	-	0.87	0.87	5.30	-	0.16	-	-	-	-	-	-	-	-	-	-	-	0.085	0.099	-	0.079	-	-	-	-	-	-	-	-	-	1403561 1403562 1403559 1403563
3/17/2014	Hall Environmental	-	-	-	-	0.26	0.26	4.80	-	0.19	-	-	-	-	-	-	-	-	-	-	-	0.088	0.076	-	0.052	-	-	-	-	-	-	-	-	-	1403702 1403703 1403704 1403705
3/19/2014	Hall Environmental	-	-	-	-	-	-	4.30	-	0.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1403872
3/20/2014	Hall Environmental	-	-	-	-	-	-	4.80	-	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1403870
3/24/2014	Hall Environmental	-	-	-	-	0.25	0.25	5.40	-	0.28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.150	-	-	-	-	-	-	-	-	-	1403966 1403967 1403968
4/1/2014	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.076	-	-	-	-	-	-	-	-	-	1404085
6/19/2014	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10	-	-	-	-	-	-	-	-	-	1406935
7/3/2014	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.027	-	-	-	-	-	-	-	-	-	1407271
7/22/2014	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.027	-	-	-	-	-	-	-	-	-	1407A42
8/25/2014	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.027	-	-	-	-	-	-	-	-	-	1408D15
8/28/2014	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.027	-	-	-	-	-	-	-	-	-	1408F33
10/1/2014	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.036	-	-	-	-	-	-	-	-	-	1410094
11/3/2014	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10	-	-	-	-	-	-	-	-	-	1411054
11/6/2014	Hall	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.20	-	-	-	-	-	-	-	-	-	1411288

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	OAF Eff.	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-801		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)		T-829	Unit #45 Sour Water (W-2421)		Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator		DAF Bin#S. Brotheres 24	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Result	Ave*	Result	Result	
	Environmental																																			
1/2/2015	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.027	-	-	-	-	-	-	-	-	-	-	1501149
2/23/2015	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.034	-	-	-	-	-	-	-	-	-	-	1502959
4/1/2015	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.027	-	-	-	-	-	-	-	-	-	-	1504137
7/1/2015	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.12	-	-	-	-	-	-	-	-	-	-	1507104
10/12/2015	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-	-	-	-	-	-	-	-	-	-	1510598
10/15/2015 [1]	Hall Environmental			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22, 0.14	-	-	-	-	-	-	-	-	-	-	1510831

*Average of the split samples. If one result was not detected, the detected value is estimated to be the average.

[1] Injection to underground injection control wells ceased due to a break in the Ferric Chloride System chemical line on October 15, 2015. Operations ceased injection while the line was repaired. Two samples were collected, one prior to ceasing discharge and one prior to resuming. Prompt notification to OCD was provided via email dated October 16, 2015 per Paragraphs 1(d), 7 and 8 of the Third Amended Exhibit A to the Order. Lab results were provided to OCD via email dated October 23, 2015 and are also included in Attachment B.

Attachment E:
Additional Total Selenium Monitoring Performed at the Navajo Refinery

Attachment E Table 1: Total Selenium Measurements Collected from all Navajo Refinery Sampling Locations from November 1, 2013 through October 19, 2015; EPA Method 200.7/200.8, mg/L

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-801		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)	T-829	Unit #45 Sour Water (W-2421)	Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
10/15/2013	ALS Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.49	-	-	-	-	-	-	1310768
10/20/2013	Hall Environmental	4.10		-		1.50		-	-	0.21		-	-	-		-	0.87		0.90		-	-	-	-	-	-	-	-	-	-	1310A04
10/20/2013	ALS Environmental	5.14	4.62	-	-	1.88	1.69	-	-	0.25	0.23	-	-	-	-	-	1.02	0.95	1.06	0.98	-	-	-	-	-	-	-	-	-	-	1310959
10/22/2013	Hall Environmental	0.47		-		0.62		-	-	0.07		-	-	0.31		-	0.87		0.73		-	-	-	-	0.39	-	-	-	-	-	1310A71
10/22/2013	ALS Environmental	2.31	1.39	-	-	0.79	0.71	-	-	0.13	0.10	-	-	0.39	0.35	-	0.93	0.90	0.84	0.79	-	-	-	-	0.59	-	-	-	-	-	13101021
10/23/2013	Hall Environmental	2.50		-		0.58		-	-	0.10		-	-	0.33		-	0.88		0.77		-	-	-	-	0.32	-	-	-	-	-	1310B48
10/23/2013	ALS Environmental	2.50	2.50	-	-	0.54	0.56	-	-	0.16	0.13	-	-	0.52	0.42	-	0.92	0.90	0.88	0.82	-	-	-	-	0.37	-	-	-	-	-	13101089
10/24/2013	Hall Environmental	2.30		-		-		-	-	0.07		-	-	1.10		-	0.91		0.78		-	-	-	-	0.33	-	-	-	-	-	1310C06
10/24/2013	ALS Environmental	4.77	3.54	-	-	-	-	-	-	0.10	0.09	-	-	1.83	1.47	-	1.11	1.01	0.92	0.85	-	-	-	-	0.53	-	-	-	-	-	13101164
10/25/2013	Hall Environmental	1.60	1.60	1.90	1.90	0.13	0.13	-	-	5.10	5.10	-	-	1.20	1.20	-	0.92	0.92	1.00	1.00	-	-	-	-	0.27	-	0.05	-	-	-	1310C53 1310C55
10/26/2013	Hall Environmental	2.20	2.20	2.30	2.30	0.32	0.32	-	-	8.70	8.70	-	-	0.94	0.94	-	0.91	0.91	1.10	1.10	-	-	-	-	0.24	-	0.03	-	0.03	-	1310C57 1310C58
10/27/2013	Hall Environmental	2.50	2.50	2.40	2.40	0.27	0.27	-	-	9.50	9.50	-	-	0.54	0.54	-	1.10	1.10	1.20	1.20	-	-	-	-	0.26	-	0.05	-	0.05	-	1310C59 1310C60
10/28/2013	Hall Environmental	2.40	2.40	2.30	2.30	0.08	0.08	-	-	6.60	6.60	-	-	0.05	0.05	-	0.91	0.91	0.85	0.85	-	-	-	-	0.21	-	0.08	-	0.08	-	1310D18 1310D21
10/29/2013	Hall Environmental	2.20		2.30		0.22		-	-	3.40		-	-	0.15		-	0.84		1.10		-	-	-	-	1.40	-	0.09	-	0.23	-	1310D78 1310D79
10/29/2013	Cardinal Laboratories	1.92	2.06	2.47	2.39	0.22	0.22	-	-	5.38	4.39	-	-	<0.041 1 (ND)	0.15	-	0.63	0.74	0.91	1.00	-	-	-	-	0.51	-	0.01	-	<0.0041 (ND)	-	H302620
10/30/2013	Hall Environmental	2.20		2.20		0.10		-	-	5.40		-	-	0.11		-	0.98		0.95		-	-	-	-	0.26	-	0.05	-	0.25	-	1310E22 1210E23
10/30/2013	Cardinal Laboratories	2.14	2.17	2.52	2.36	0.21	0.15	-	-	8.23	6.82	-	-	<0.1 (ND)	0.11	-	0.61	0.80	0.90	0.92	-	-	-	-	0.24	-	2.15	-	2.67	-	H302639
10/31/2013	Hall Environmental	2.20		2.30		0.39		-	-	1.50		-	-	0.06		-	1.20		1.20		-	-	-	0.88	0.29	-	0.13	-	0.14	-	1310E78 1310E81 1311035
10/31/2013	Cardinal Laboratories	2.86	2.53	2.98	2.64	0.32	0.36	-	-	4.24	2.87	-	-	<0.1 (ND)	0.06	-	0.65	0.93	0.79	0.996	-	-	-	-	0.29	-	2.51	-	2.99	-	H302652
11/1/2013	Hall Environmental	1.70		2.00		0.21		-	-	3.90		-	-	0.31		-	0.97		1.10		-	-	-	-	0.28	-	0.30	-	0.37	-	1311033 1311034
11/1/2013	Cardinal Laboratories	1.96	1.83	2.53	2.27	0.18	0.20	-	-	5.36	4.63	-	-	0.33	0.32	-	0.62	0.79	0.85	0.97	-	-	-	-	0.24	-	2.58	-	2.92	-	H302670
11/4/2013	Hall Environmental	2.10	2.10	2.40	2.40	-	-	-	-	-	-	-	-	-	-	0.10	1.10	1.10	0.66	0.66	-	-	-	0.98	-	-	-	-	-	-	1311082
11/5/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.84	0.84	-	-	-	-	-	0.51	-	-	-	-	-	-	1311156 1311209
11/6/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.00	1.00	-	-	-	-	-	-	-	-	-	-	1311209
11/7/2013	Hall Environmental	2.10	2.10	2.00	2.00	-	-	-	-	-	-	-	-	-	-	0.13	1.10	1.10	1.00	1.00	-	-	-	-	-	-	-	-	-	-	1311286
11/8/2013	Hall Environmental	1.50	1.50	1.80	1.80	-	-	-	-	-	-	-	-	0.21	0.21	-	0.91	0.91	0.59	0.59	-	-	-	-	-	-	-	-	-	0.011	1311362 1311336
11/9/2013	Hall Environmental	1.90	1.90	1.70	1.70	-	-	-	-	-	-	-	-	-	-	0.13	-	-	0.96	0.96	-	-	-	-	-	-	-	-	-	-	1311362

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-801		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)	T-829	Unit #45 Sour Water (W-2421)	Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
11/10/2013	Hall Environmental	2.00	2.00	1.80	1.80	-	-	-	-	-	-	-	-	0.13	-	-	1.20	1.20	-	-	-	-	-	-	-	-	-	-	-	-	1311363
11/11/2013	Hall Environmental	1.70	1.70	-	-	-	-	-	-	-	-	-	-	0.14	-	-	0.95	0.95	-	-	-	-	-	0.08	0.22	0.38	-	-	-	-	1311402
11/12/2013	CH2M HILL ASL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.37	1.37	-	-	-	-	-	-	-	-	-	-	-	-	M3259
11/14/2013	Hall Environmental	1.60	1.60	1.60	1.60	-	-	-	-	-	-	-	-	0.15	-	-	1.10	1.10	-	-	-	-	-	-	-	-	-	-	-		1311625
11/16/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08	-	-	-	-	-	-	1311693
11/17/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.88	-	-	-	-	-		1311694
11/18/2013	Hall Environmental	2.70	2.70	2.80	2.80	-	-	-	-	-	-	-	-	0.43	-	-	0.72	0.72	-	-	-	-	-	0.59	-	-	-	-	-	-	1311743 1311742
11/19/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.87	-	-	-	-	-	-	1311802
11/20/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.64	-	-	-	-	-	-	1311893
11/21/2013	Hall Environmental	3.30	3.30	3.30	3.30	-	-	-	-	-	-	-	-	0.36	0.65	0.65	0.66	0.66	-	-	-	-	-	0.68	-	-	-	-	-	-	1311970 1311971
11/22/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.78	-	-	-	-	-	-	1311A38
11/23/2013	Hall Environmental	0.86	0.86	1.10	1.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-	-	-	-	-	-	1311A50
11/24/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.67	-	-	-	-	-	-	13118O6
11/25/2013	Hall Environmental	3.30	3.30	3.10	3.10	1.90	1.90	-	-	-	-	-	-	0.50	0.50	-	0.66	0.66	-	-	-	-	-	0.59	-	-	2.20	1.20	-	-	13118O6 13118O5
11/26/2013	Hall Environmental	2.10	2.10	3.20	3.20	0.39	0.39	-	-	-	-	7.90	7.90	-	-	-	-	-	-	-	-	-	-	0.66	0.43	-	-	-	-	-	1311B34
11/27/2013	Hall Environmental	2.90	2.90	2.80	2.80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.61	-	-	-	-	-	-	1311B96 1311B97
11/28/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.68	-	-	-	-	-	-	1311B99
11/29/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.64	-	-	-	-	-	-	1311C00
11/30/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.70	-	-	-	-	-	-	1312001
12/2/2013	Hall Environmental	3.20	3.20	3.20	3.20	-	-	-	-	-	-	7.50	7.50	-	-	-	-	-	0.37	0.63	0.63	0.82	0.82	0.77	-	-	-	-	-	-	1312046 1312047
12/5/2013	Hall Environmental	-	-	2.30	2.30	-	-	-	-	-	-	0.36	0.36	0.27	0.67	-	-	-	-	-	-	-	-	0.52	-	-	-	-	-	-	1312225 1312228
12/9/2013	Hall Environmental	3.00	3.00	3.10	3.10	-	-	-	-	-	-	9.90	9.90	1.50	2.20	-	-	-	-	-	-	-	-	0.37	0.38	0.38	-	-	-	-	1312315 1312316
12/12/2013	Hall Environmental	3.70	3.70	3.40	3.40	-	-	-	-	-	-	11.00	11.00	0.44	0.91	-	-	-	-	-	-	-	-	0.55	0.39	0.39	-	-	-	-	1312548
12/16/2013	Hall Environmental	4.20	4.20	4.20	4.20	-	-	-	-	-	-	9.40	9.40	1.80	2.50	-	-	-	-	-	-	-	-	0.43	0.37	0.37	-	-	-		1312686 1312687
12/19/2013	Hall Environmental	3.90	3.90	3.90	3.90	-	-	-	-	-	-	6.40	6.40	1.50	1.70	-	-	0.99	0.99	-	-	-	-	0.24	0.43	0.43	-	-	-	-	1312960
12/23/2013	Hall Environmental	4.80	4.80	4.60	4.60	-	-	-	-	-	-	14.00	14.00	1.40	2.10	-	-	-	-	-	1.10	1.10	-	0.27	0.41	0.41	-	-	-	-	1312814 1312816
12/26/2013	Hall Environmental	5.80	5.80	5.70	5.70	-	-	-	-	-	-	3.00	3.00	2.60	3.00	-	-	1.30	1.30	-	-	-	-	0.38	0.33	0.33	-	-	-	-	1312862 1312863
12/27/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.10	0.38	0.37	0.38	-	-	-	-	-	-	1312C01
12/30/2013	Hall	3.90	3.90	5.90	5.90	-	-	-	-	-	-	7.30	7.30	0.97	2.30	-	-	-	-	-	1.60	0.63	0.43	0.33	-	-	-	-	-	-	1312C57

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-801		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)	T-829	Unit #45 Sour Water (W-2421)	Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
	Environmental																														1312C58
1/6/2014	Hall Environmental	5.40	5.40	5.70	5.70	-	-	-	-	<0.45	<0.45	3.00	4.50	-	-	-	-	-	1.00	1.00	1.20	0.34	0.27	0.30	-	-	-	-	-	-	1401138 1401126
1/9/2014	Hall Environmental	5.60	5.60	5.60	5.60	-	-	-	-	16.00	16.00	2.00	2.90	-	-	-	-	-	-	-	1.80	0.42	0.43	0.43	-	-	-	-	-	-	1401363 1401360
1/13/2014	Hall Environmental	4.00	4.00	5.30	5.30	-	-	-	-	18.00	18.00	1.10	2.70	-	-	-	-	-	1.20	1.20	2.10	0.41	0.37	0.35	-	-	-	-	-	-	1401507 1401508
1/16/2014	Hall Environmental	3.70	3.70	3.20	3.20	-	-	-	-	<5.00	<5.00	2.30	3.40	-	-	-	3.70	3.70	-	-	1.60	0.25	0.20	0.26	-	-	-	-	-	-	1401682 1401683 1401684
1/20/2014	Hall Environmental	4.80	4.80	4.90	4.90	-	-	-	-	<4.50	<4.50	2.50	2.90	-	-	-	-	-	1.60	1.60	1.00	0.75	0.54	0.51	-	-	-	-	-	-	1401811 1401813
1/23/2014	Hall Environmental	4.60	4.60	4.00	4.00	-	-	-	-	<0.22	<0.22	1.70	2.20	-	-	-	-	-	0.68	0.68	1.40	0.24	0.21	0.23	-	-	-	-	-	-	1401980 1401981
1/27/2014	Hall Environmental	4.00	4.00	4.20	4.20	-	-	-	-	17.00	17.00	1.80	2.00	-	-	-	1.90	1.90	-	-	1.20	0.55	0.51	0.52	-	-	-	-	-	-	1401A61 1401A62
1/30/2014	Hall Environmental	4.20	4.20	4.30	4.30	-	-	-	-	9.50	9.50	2.10	3.20	-	-	-	-	-	0.81	0.81	0.98	0.30	0.23	0.27	-	-	-	-	-	-	1401C00 1401C01
2/3/2014	Hall Environmental	5.40	5.40	5.00	5.00	-	-	-	-	16.00	16.00	0.23	0.19	-	-	-		-	1.20	1.20	1.10	0.60	0.59	0.64	-	-	-	-	-	-	1402076 1402075
2/6/2014	Hall Environmental	5.70	5.70	5.90	5.90	-	-	-	-	16.00	16.00	0.18	0.28	-	-	-	1.00	1.00	-	-	1.30	0.45	0.42	0.42	-	-	-	-	-	-	1402232 1402233
2/10/2014	Hall Environmental	5.30	5.30	5.70	5.70	-	-	5.20	0.31	0.048	0.048	0.25	0.45	-	-	-	-	-	0.36	0.36	0.58	0.26	0.24	0.26	-	-	-	-	-	-	1402326 1402324 1402325
2/12/2014	Hall Environmental	-	-	-	-	-	-	6.50	0.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1402490
2/13/2014	Hall Environmental	-	-	-	-	0.55	0.55	6.00	0.81	-	-	-	-	-	-	-	-	-	-	-	-	0.087	-	-	-	-	-	-	-	-	1402512 1402513
2/17/2014	Hall Environmental	-	-	-	-	1.20	1.20	6.60	1.20	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-	0.20	-	-	-	-	-	-	1402613 1402624 1402626
2/19/2014	Hall Environmental	-	-	-	-	-	-	7.20	1.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1402814
2/20/2014	Hall Environmental	-	-	-	-	-	-	7.00	1.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1402815
2/24/2014	Hall Environmental	-	-	-	-	0.38	0.38	7.00	1.50	-	-	-	-	-	-	-	-	-	-	-	-	0.27	-	0.27	-	-	-	-	-	-	1402902 1402903 1402904
2/26/2014	Hall Environmental	-	-	-	-	-	-	6.60	1.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1402A79
2/27/2014	Hall Environmental	-	-	-	-	-	-	5.80	0.46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1402A78
3/3/2014	Hall Environmental	-	-	-	-	0.31	0.31	5.60	0.49	-	-	-	-	-	-	-	-	-	-	-	-	0.12	-	0.12	-	-	-	-	-	-	1403030 1403032
3/5/2014	Hall Environmental	-	-	-	-	-	-	5.70	0.56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1403250
3/6/2014	Hall Environmental	-	-	-	-	-	-	5.40	0.44	-	-	-	-	-	-	-	-	-	-	-	0.24	-	-	-	-	-	-	-	-	-	1403248 1403249
3/10/2014	Hall Environmental	-	-	-	-	-	-	5.30	0.19	-	-	-	-	-	-	-	-	-	-	-	0.16	0.067	-	0.067	-	-	-	-	-	-	1403331 1403332 1403333
3/12/2014	Hall Environmental	-	-	-	-	-	-	5.20	0.21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1403558
3/13/2014	Hall Environmental	-	-	-	-	0.84	0.84	5.00	0.14	-	-	-	-	-	-	-	-	-	-	-	0.17	0.095	-	0.091	-	-	-	-	-	-	1403561 1403562

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-801		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)	T-829	Unit #45 Sour Water (W-2421)	Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
																															1403559 1403563
3/17/2014	Hall Environmental	-	-	-	-	0.50	0.50	4.40	0.14	-	-	-	-	-	-	-	-	-	-	-	<0.28	0.096	-	0.081	-	-	-	-	-	-	1403702 1403703 1403704 1403705
3/19/2014	Hall Environmental	-	-	-	-			3.90	0.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1403872
3/20/2014	Hall Environmental	-	-	-	-			4.40	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1403870
3/24/2014	Hall Environmental	-	-	-	-	0.61	0.61	4.70	0.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.12	-	-	-	-	-	-	1403966 1403967 1403968
3/27/2014	Hall Environmental	-	-	-	-	-	-	3.90	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1403B40
3/31/2014	Hall Environmental	-	-	-	-	-	-	4.40	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1403C50
4/1/2014	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.076	-	-	-	-	-	-	1404085
4/3/2014	Hall Environmental	-	-	-	-	-	-	3.60	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1404180
4/7/2014	Hall Environmental	-	-	-	-	-	-	4.70	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1404270
4/10/2014	Hall Environmental	-	-	-	-	-	-	4.10	0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1404505
4/14/2014	Hall Environmental	-	-	-	-	-	-	3.90	0.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1404611
4/17/2014	Hall Environmental	-	-	-	-	-	-	4.00	0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1404826
4/21/2014	Hall Environmental	-	-	-	-	-	-	3.00	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1404884
4/24/2014	Hall Environmental	-	-	-	-	-	-	3.50	0.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1404A30
4/28/2014	Hall Environmental	-	-	-	-	-	-	3.40	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1404B38
5/1/2014	Hall Environmental	-	-	-	-	-	-	3.60	0.088	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1405036
5/5/2014	Hall Environmental	-	-	-	-	-	-	3.40	0.046	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1405142
5/8/2014	Hall Environmental	-	-	-	-	-	-	3.20	0.062	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1405348
5/12/2014	Hall Environmental	-	-	-	-	-	-	3.40	0.074	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1405453
5/15/2014	Hall Environmental	-	-	-	-	-	-	3.60	0.068	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1405688
5/19/2014	Hall Environmental	-	-	-	-	-	-	3.40	0.095	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1405784
5/22/2014	Hall Environmental	-	-	-	-	-	-	2.80	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1405983
5/27/2014	Hall Environmental	-	-	-	-	-	-	2.90	0.077	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1405B03
5/29/2014	Hall Environmental	-	-	-	-	-	-	3.20	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1405C46
6/2/2014	Hall Environmental	-	-	-	-	-	-	3.30	0.073	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1406018
6/5/2014	Hall	-	-	-	-	-	-	3.10	0.085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1406247

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-801		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)	T-829	Unit #45 Sour Water (W-2421)	Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
	Environmental																														
6/9/2014	Hall Environmental	-	-	-	-	-	-	3.30	0.062	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1406376
6/12/2014	Hall Environmental	-	-	-	-	-	-	3.10	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1406576
6/16/2014	Hall Environmental	-	-	-	-	-	-	3.30	0.54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1406694
6/19/2014	Hall Environmental	-	-	-	-	-	-	3.10	0.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.069	-	-	-	-	-	1406934
6/23/2014	Hall Environmental	-	-	-	-	-	-	3.90	0.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1406A48
6/26/2014	Hall Environmental	-	-	-	-	-	-	3.00	0.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1406C44
7/1/2014	Hall Environmental	-	-	-	-	-	-	2.30	0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1407055
7/3/2014	Hall Environmental							2.20	0.12															0.02						1407222 1407224
7/7/2014	Hall Environmental	-	-	-	-	-	-	2.70	0.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1407272
7/10/2014	Hall Environmental	-	-	-	-	-	-	pH 6.0 pH 5.0 pH 4.0 pH 3.5	3.2 2.10 0.21 0.18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1407494
7/14/2014	Hall Environmental	-	-	-	-	-	-	3.20	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1407602
7/17/2014	Hall Environmental	-	-	-	-	-	-	2.70	0.068	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1407867
7/21/2014	Hall Environmental	-	-	-	-	-	-	2.70	0.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1407986
7/24/2014	Hall Environmental	-	-	-	-	-	-	2.80	0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1407C14
7/28/2014	Hall Environmental	-	-	-	-	-	-	2.50 3.60	0.28 0.072	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1407D22 1408919
7/31/2014	Hall Environmental	-	-	-	-	-	-	3.50	0.32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1408014
8/4/2014	Hall Environmental	-	-	-	-	-	-	3.30	0.059	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1408159
8/7/2014	Hall Environmental	-	-	-	-	-	-	3.00	0.043	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1408413
8/11/2014	Hall Environmental	-	-	-	-	-	-	2.80	0.035	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1408469
8/15/2014	Hall Environmental	-	-	-	-	-	-	3.60	0.037	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1408846
8/21/2014	Hall Environmental	-	-	-	-	-	-	3.10	0.036	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1408B70
8/25/2014	Hall Environmental	-	-	-	-	-	-	1.60	0.032	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.018	-	-	-	-	-	1408D14 1408D15
8/28/2014[1]	Hall Environmental	-	-	-	-	-	-	2.60	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.014	-	-	-	-	-	1408F25 1408F33
9/2/2014	Hall Environmental	-	-	-	-	-	-	3.90	0.038	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1409074
9/4/2014	Hall Environmental	-	-	-	-	-	-	3.90	0.025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1409240
9/8/2014	Hall Environmental	-	-	-	-	-	-	4.60	0.057	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1409352
9/11/2014	Hall	-	-	-	-	-	-	4.20	0.033	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1409592

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-801		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)	T-829	Unit #45 Sour Water (W-2421)	Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
	Environmental																														
9/15/2014	Hall Environmental	-	-	-	-	-	-	4.40	0.037	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1409711
9/18/2014	Hall Environmental	-	-	-	-	-	-	5.00	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1409962
9/22/2014	Hall Environmental	-	-	-	-	-	-	5.30	0.044	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1409B00
9/25/2014	Hall Environmental	-	-	-	-	-	-	6.10	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1409D32
9/29/2014	Hall Environmental	-	-	-	-	-	-	6.40	0.072	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1409F12
10/1/2014	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.020	-	-	-	-	-	-	1410094
10/2/2014	Hall Environmental	-	-	-	-	-	-	6.50	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1410152
10/6/2014	Hall Environmental	-	-	-	-	-	-	8.60	0.086	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1410276
10/9/2014	Hall Environmental	-	-	-	-	-	-	8.90	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1410515
10/13/2014	Hall Environmental	-	-	-	-	-	-	7.30	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1410614
10/16/2014	Hall Environmental	-	-	-	-	-	-	6.30	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1410843
10/20/2014	Hall Environmental	-	-	-	-	-	-	5.10	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1410A24
10/23/2014	Hall Environmental	-	-	-	-	-	-	4.40	0.089	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1410B61
10/27/2014	Hall Environmental	-	-	-	-	-	-	2.50	0.058	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1410C49
10/30/2014	Hall Environmental	-	-	-	-	-	-	3.70	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1410E23
11/3/2014	Hall Environmental	-	-	-	-	-	-	3.20	0.028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.081	-	-	-	-	-	-	1411055 1411054
11/6/2014	Hall Environmental	-	-	-	-	-	-	3.50	0.033	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1411274
11/10/2014	Hall Environmental	-	-	-	-	-	-	2.70	0.046	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1411371
11/13/2014	Hall Environmental	-	-	-	-	-	-	3.30	0.055	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1411551
11/17/2014	Hall Environmental	-	-	-	-	-	-	3.30	0.028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1411680
11/24/2014	Hall Environmental	-	-	-	-	-	-	3.50	0.043	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1411A62
11/26/2014	Hall Environmental	-	-	-	-	-	-	3.50	0.39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412005
12/1/2014	Hall Environmental	-	-	-	-	-	-	3.80	1.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412052
12/4/2014	Hall Environmental	-	-	-	-	-	-	3.90	1.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412314
12/8/2014	Hall Environmental	-	-	-	-	-	-	4.00	1.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412470
12/10/2014	Hall Environmental	-	-	-	-	-	-	5.20	0.37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412531
12/11/2014	Hall Environmental	-	-	-	-	-	-	5.20	0.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412611
12/12/2014	Hall	-	-	-	-	-	-	2.20	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412643

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-801		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)	T-829	Unit #45 Sour Water (W-2421)	Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
	Environmental																														1412649
12/15/2014	Hall Environmental	-	-	-	-	-	-	5.10	0.097	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412728
12/18/2014	Hall Environmental	-	-	-	-	-	-	4.20	0.051	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412975
12/22/2014	Hall Environmental	-	-	-	-	-	-	3.70	0.072	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412A80
12/29/2014	Hall Environmental	-	-	-	-	-	-	3.60	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412B58
1/2/2015	Hall Environmental	-	-	-	-	-	-	3.20	0.091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.029	-	-	-	-	-	-	1501017, 1501149
1/5/2015	Hall Environmental	-	-	-	-	-	-	3.90	0.075	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1501143
1/8/2015	Hall Environmental	-	-	-	-	-	-	3.50	0.072	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1501309
1/12/2015	Hall Environmental	-	-	-	-	-	-	3.50	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1501385
1/15/2015	Hall Environmental	-	-	-	-	-	-	2.80	1.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1501537
1/19/2015	Hall Environmental	-	-	-	-	-	-	2.50	0.090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1501623
1/22/2015	Hall Environmental	-	-	-	-	-	-	2.00	0.56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1501876
1/26/2015	Hall Environmental	-	-	-	-	-	-	1.80	< 0.017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1501905
1/29/2015	Hall Environmental	-	-	-	-	-	-	1.80	0.023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1501A68
2/2/2015	Hall Environmental	-	-	-	-	-	-	2.20	0.023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1502060
2/5/2015	Hall Environmental	-	-	-	-	-	-	1.80	0.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1502267
2/9/2015	Hall Environmental	-	-	-	-	-	-	2.50	0.054	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1502369
2/12/2015	Hall Environmental	-	-	-	-	-	-	2.00	0.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1502610
2/16/2015	Hall Environmental	-	-	-	-	-	-	1.90	0.036	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1502685
2/19/2015	Hall Environmental	-	-	-	-	-	-	2.10	0.038	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1502917
2/23/2015	Hall Environmental	-	-	-	-	-	-	2.80	0.082	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.038	-	-	-	-	-	-	1502957, 1502959
2/26/2015	Hall Environmental	-	-	-	-	-	-	2.20	0.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1502B38
3/2/2015	Hall Environmental	-	-	-	-	-	-	2.60	0.27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1503056
3/5/2015	Hall Environmental	-	-	-	-	-	-	2.90	0.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1503248
3/9/2015	Hall Environmental	-	-	-	-	-	-	3.10	0.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1503353
3/12/2015	Hall Environmental	-	-	-	-	-	-	3.00	0.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1503563
3/16/2015	Hall Environmental	-	-	-	-	-	-	2.90	0.26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1503677
3/19/2015	Hall Environmental	-	-	-	-	-	-	2.80	0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1503920
3/23/2015	Hall	-	-	-	-	-	-	2.90	0.067	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1503A22

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-801		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)	T-829	Unit #45 Sour Water (W-2421)	Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
	Environmental																														
3/26/2015	Hall Environmental	-	-	-	-	-	-	2.70	0.059	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1503C81
3/30/2015	Hall Environmental	-	-	-	-	-	-	2.60	0.049	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1503D69
4/1/2015	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.025	-	-	-	-	-	1504137
4/2/2015	Hall Environmental	-	-	-	-	-	-	2.50	0.038	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1504136
4/6/2015	Hall Environmental	-	-	-	-	-	-	2.50	0.062	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1504215
4/9/2015	Hall Environmental	-	-	-	-	-	-	2.60	0.044	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1504461
4/13/2015	Hall Environmental	-	-	-	-	-	-	2.90	0.046	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1504596
4/16/2015	Hall Environmental	-	-	-	-	-	-	2.60	0.075	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1504760
4/20/2015	Hall Environmental	-	-	-	-	-	-	2.80	0.076	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1504861
4/24/2015	Hall Environmental	-	-	-	-	-	-	2.10	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1504B71
4/27/2015	Hall Environmental	-	-	-	-	-	-	2.00	0.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1504B70
4/30/2015	Hall Environmental	-	-	-	-	-	-	2.70	0.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1505015
5/4/2015	Hall Environmental	-	-	-	-	-	-	2.40	0.42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1505136
5/7/2015	Hall Environmental	-	-	-	-	-	-	2.20	0.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1505369
5/11/2015	Hall Environmental	-	-	-	-	-	-	2.90	0.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1505480
5/12/2015	Hall Environmental	-	-	-	-	-	-	2.60	0.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1505560
5/14/2015	Hall Environmental	-	-	-	-	-	-	2.80	0.32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1505695
5/18/2015	Hall Environmental	-	-	-	-	-	-	3.00	0.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1505821
5/21/2015	Hall Environmental	-	-	-	-	-	-	3.20	0.41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1505A08
5/26/2015	Hall Environmental	-	-	-	-	-	-	3.60	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1505B23
5/28/2015	Hall Environmental	-	-	-	-	-	-	2.80	0.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1505C55
6/1/2015	Hall Environmental	-	-	-	-	-	-	3.20	0.42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1506061
6/4/2015	Hall Environmental	-	-	-	-	-	-	3.20	0.39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1506262
6/8/2015	Hall Environmental	-	-	-	-	-	-	2.80	0.37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1506350
6/11/2015	Hall Environmental	-	-	-	-	-	-	2.70	0.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1506617
6/15/2015	Hall Environmental	-	-	-	-	-	-	2.70	0.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1506721
6/18/2015	Hall Environmental	-	-	-	-	-	-	3.40	0.39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1506928
6/22/2015	Hall	-	-	-	-	-	-	3.10	0.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1506A32

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		Wet Gas Scrubber Purge (D-250)		SeRT Eff.	SeRT Feed	Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-801		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)	T-829	Unit #45 Sour Water (W-2421)	Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
	Environmental																														
6/25/2015	Hall Environmental	-	-	-	-	-	-	-	-	3.00	0.59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1506C56
6/29/2015	Hall Environmental	-	-	-	-	-	-	-	-	3.00	0.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1506E18
7/1/2015	Hall Environmental	-	-	-	-	-	-	-	-	3.10	0.49	-	-	-	-	-	-	-	-	-	-	-	-	0.13	-	-	-	-	-	-	1507105, 1507104
7/6/2015	Hall Environmental	-	-	-	-	-	-	-	-	3.10	0.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1507217
7/9/2015	Hall Environmental	-	-	-	-	-	-	-	-	2.50	0.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1507421
7/13/2015	Hall Environmental	-	-	-	-	-	-	-	-	2.30	0.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1507554
7/16/2015	Hall Environmental	-	-	-	-	-	-	-	-	1.80	0.76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1507786
7/20/2015	Hall Environmental	-	-	-	-	-	-	-	-	0.90	0.76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1507973
7/23/2015	Hall Environmental	-	-	-	-	-	-	-	-	2.80	0.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1507C40
7/27/2015	Hall Environmental	-	-	-	-	-	-	-	-	3.80	0.97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1507C45
7/30/2015	Hall Environmental	-	-	-	-	-	-	-	-	4.20	0.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1507D91
8/3/2015	Hall Environmental	-	-	-	-	-	-	-	-	3.30	0.86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1508290
8/6/2015	Hall Environmental	-	-	-	-	-	-	-	-	3.50	0.88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1508289
8/10/2015	Hall Environmental	-	-	-	-	-	-	-	-	3.50	0.71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1508413
8/13/2015	Hall Environmental	-	-	-	-	-	-	-	-	3.40	0.97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1508687
8/17/2015	Hall Environmental	-	-	-	-	-	-	-	-	3.50	0.77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1508824
8/20/2015	Hall Environmental	-	-	-	-	-	-	-	-	2.80	0.91	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1508A61
8/24/2015	Hall Environmental	-	-	-	-	-	-	-	-	3.40	0.78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1508B93
8/27/2015	Hall Environmental	-	-	-	-	-	-	-	-	3.70	0.81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1508D78
8/31/2015	Hall Environmental	-	-	-	-	-	-	-	-	3.50	1.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1509006
9/3/2015	Hall Environmental	-	-	-	-	-	-	-	-	3.40	1.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1509224
9/8/2015	Hall Environmental	-	-	-	-	-	-	-	-	3.40	1.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1509476
9/10/2015	Hall Environmental	-	-	-	-	-	-	-	-	3.30	1.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1509477
9/14/2015	Hall Environmental	-	-	-	-	-	-	-	-	3.70	1.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1509624
9/17/2015	Hall Environmental	-	-	-	-	-	-	-	-	3.80	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1509863
9/21/2015	Hall Environmental	-	-	-	-	-	-	-	-	3.30	1.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1509978
9/24/2015	Hall Environmental	-	-	-	-	-	-	-	-	3.50	1.90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1509C00
9/28/2015	Hall	-	-	-	-	-	-	-	-	-	2.90	1.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1509D57

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-801		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)	T-829	Unit #45 Sour Water (W-2421)	Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
	Environmental																														
10/1/2015	Hall Environmental	-	-	-	-	-	-	3.00	1.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1510066
10/5/2015	Hall Environmental	-	-	-	-	-	-	2.90	1.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1510217
10/8/2015	Hall Environmental	-	-	-	-	-	-	2.50	0.82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1510473
10/12/2015	Hall Environmental	-	-	-	-	-	-	3.10	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.23	-	-	-	-	-	-	1510591, 1510598
10/15/2015 [2]	Hall Environmental	-	-	-	-	-	-	2.80	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22, 0.21	-	-	-	-	-	-	1510792, 1510831
10/19/2015	Hall Environmental	-	-	-	-	-	-	3.50	1.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1510907

*Average of the split samples. If one result was not detected, the detected value is estimated to be the average.

[1] The sampling event on August 28, 2014 showed a SeRT Influent concentration of <0.05 ppm and a SeRT Effluent concentration of 2.60 ppm. Samples were likely a) switched in the field before being labeled, or b) were mislabeled. This table shows the correct concentration associated with each location.

[2] Injection to underground injection control wells ceased due to a break in the Ferric Chloride System chemical line on October 15, 2015. Operations ceased injection while the line was repaired. Two samples were collected, one prior to ceasing discharge and one prior to resuming. Prompt notification to OCD was provided via email dated October 16, 2015 per Paragraphs 1(d), 7 and 8 of the Third Amended Exhibit A to the Order. Lab results were provided to OCD via email dated October 23, 2015 and are also included in Attachment B.

Chavez, Carl J, EMNRD

From: Denton, Scott <Scott.Denton@HollyFrontier.com>
Sent: Friday, October 23, 2015 4:25 PM
To: Chavez, Carl J, EMNRD; Griswold, Jim, EMNRD
Cc: Holder, Mike; Denton, Scott
Subject: RE: Injection Well Notice ------ Lab Data
Attachments: 151023 Selenium Results for WDW Injection 10-15-15.pdf

Carl & Jim,

Attached is the Laboratory Data for the samples collected last week. Though the samples ID's were labelled differently, we have confirmed that they were taken an the approved sample location. The results were below the discharge limit.

Let me know if you have any questions and have a great weekend.

Regards,

SMD

Scott M. Denton
Environmental Manager

The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
575-746-5487 (o)
970-581-7268 (c)

Scott.Denton@HollyFrontier.com

From: Denton, Scott
Sent: Friday, October 16, 2015 3:15 PM
To: Carl Chavez (carlj.chavez@state.nm.us); Jim Griswold (Jim.Griswold@state.nm.us)
Cc: Holder, Mike; Denton, Scott
Subject: Injection Well Notice

Jim & Carl,

As set forth in Paragraphs 1(d), 7 and 8 of the Third Amended Exhibit A to Order No. WQA-OCD-CO-2013-001, Navajo is providing notice that injection to the underground injection control wells ceased yesterday at 3:15 PM. The Ferric Chloride System experienced a break in the chemical line. As a precautionary measure, Operations ceased injection while the line was repaired. Repairs were promptly made, and water injection to the wells resumed at 4:51 PM. A sample prior to ceasing discharge and a sample after resuming discharge were collected. The samples will be analyzed next week and reported as required under the Order. Also, the small amount of ferric chloride that spilled to the ground as a result of the line break (approximately 2.5 gallons) was cleaned up shortly after the incident.

Let me know if you have any questions. Have a great weekend.

Regards,

SMD

Scott M. Denton
Environmental Manager

The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
575-746-5487 (o)
970-581-7268 (c)

Scott.Denton@HollyFrontier.com

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

October 23, 2015

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

RE: Wastewater Effluent Sample Grab Scott D. OrderNo.: 1510831

Dear Scott Denton:

Hall Environmental Analysis Laboratory received 2 sample(s) on 10/17/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers 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: **1510831**
Date Reported: **10/23/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company
Project: Wastewater Effluent Sample Grab Scott D.
Lab Order: 1510831

Lab ID: 1510831-001 **Collection Date:** 10/15/2015 6:35:00 ~~AM~~ PM
Client Sample ID: WWT T-809 **Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: TCLP METALS							Analyst: **MED**	
Selenium	0.22	0.019	0.050		mg/L	1	10/22/2015 4:48:26 PM	21978
EPA 6010B: TOTAL METALS							Analyst: **MED**	
Selenium	0.22	0.017	0.050		mg/L	1	10/22/2015 4:28:11 PM	21972

Lab ID: 1510831-002 **Collection Date:** 10/15/2015 3:25:00 PM
Client Sample ID: FCCWWT **Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: TCLP METALS							Analyst: **MED**	
Selenium	0.14	0.019	0.050		mg/L	1	10/22/2015 4:59:20 PM	21978
EPA 6010B: TOTAL METALS							Analyst: **MED**	
Selenium	0.21	0.083	0.25	J	mg/L	5	10/22/2015 4:26:11 PM	21972

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#: **1510831**

23-Oct-15

Client: Navajo Refining Company

Project: Wastewater Effluent Sample Grab Scott D.

Sample ID	**1510831-002BMS**	SampType:	**MS**		TestCode:	**EPA Method 6010B: TCLP Metals**				
Client ID:	**FCCWWT**	Batch ID:	**21978**		RunNo:	**29736**				
Prep Date:	**10/22/2015**	Analysis Date:	**10/22/2015**		SeqNo:	**905653**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.72	0.050	0.5000	0.1396	116	75	125			

Sample ID	**1510831-002BMSD**	SampType:	**MSD**		TestCode:	**EPA Method 6010B: TCLP Metals**				
Client ID:	**FCCWWT**	Batch ID:	**21978**		RunNo:	**29736**				
Prep Date:	**10/22/2015**	Analysis Date:	**10/22/2015**		SeqNo:	**905654**	Units:	**mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.68	0.050	0.5000	0.1396	109	75	125	4.86	20	

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
Selenium	ND	1.0								

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
Selenium	0.53	1.0	0.5000	0	107	80	120			J

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#: **1510831**

23-Oct-15

Client: Navajo Refining Company

Project: Wastewater Effluent Sample Grab Scott D.

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
Selenium	ND	0.050								

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
Selenium	0.49	0.050	0.5000	0	98.4	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: NAVAJO REFINING CO Work Order Number: 1510831 Rcpt No: 1

Received by/date: AT 10/17/15

Logged By: Lindsay Mangin 10/17/2015 12:10:00 PM

Completed By: Lindsay Mangin 10/19/2015 7:36:43 AM

Reviewed By: AG 10/19/15

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° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☒	AT 10/19/15
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 2 (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? see below
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by AT 10/19/15

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: Samples poured off & preserved in lab w/ 1mL HNO3 for acceptable pH for total Se analysis / AT 10/19/15

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.4	Good	Yes			

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Client: Navajo Refining Co.

Mailing Address: P.O. Box 159 Artesia,

NM 88211-0159

Phone #: 575-748-3311

email or Fax#: 575-746-5451

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation:
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush_ ASAP (TURNED)

Project Name:
Waste Water Effluent Sample Grab Scott D.

Project #: P.O. # 167796

Project Manager:
Scott Denton / Mike Holder

Sampler: NAVAJO- BYRON

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.4

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1510831	Total Se by EPA Method 6010B	TCLP Selenium 1311/1310
10-15-15	6:35 P	Liquid	INLET T-803	1-500ml GLASS	2mL HNO3	-001	X	X
10-15-15	15:20	Liquid	EFF INLET	1-1000ml GLAS	4mL HNO3	-002	X	X

BEFORE AFTER

Date:	Time	Relinquished by	Received by	Date	Time
10-16-15	1300	Koby Green		10/17/15	1210
Date:	Time:	Relinquished by:	Received by	Date	Time

Remarks: Send results to Scott Denton, Mike Holder, Micki Schultz, Robert Combs and Andrew Contreras.

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly noted on the analytical r

HOLLYFRONTIER

June 4, 2015

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

Certified Mail/Return Receipt
7014 3490 0000 6858 7583

RE: Navajo Refining Company, L.L.C. WDW-4 Class 1 Permit Proof of Public Notices

Dear Mr. Chavez,

In accordance with the Public Notice requirements for OCD Class I Permits, 20.6.2.3108.D, NMAC, the following proof of public notices are attached: (1) certified mail receipts for notices to the landowners of record of properties within 1/3 of a mile of WDW-4, (2) affidavits of publication of public notices in English and Spanish in a local newspaper, and (3) photographs of posted notices in English and Spanish on the property and at the intersection of the nearest local roads bounding the property. The landowner of record of the site itself is the State of New Mexico, and landowners within 1/3 of a mile from the WDW-4 property are the Bureau of Land Management and Shallow Valley Land Co. L.L.C.

If there are questions regarding this submittal, please contact Micki Schultz at 575-746-5281 or micki.schultz@hollyfrontier.com.

Respectfully,

Scott M Denton
Environmental Manager
Navajo Refining Company L.L.C.

Electronic cc (w/enc.): S. Denton, R Combs, M Schultz
Environmental File: Injection Wells/Permit Applications/WDW-4/Public Notice/Class I

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ARTESIA, NM 88210 USPS

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Sent To: Commissioner of Public Lands
Street, Apt. No. or PO Box No: New Mexico State Land Office
City, State, ZIP+4: 310 Old Santa Fe Trail
Santa Fe, NM 87501

PS Form 3800

EAW

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ARTESIA, NM 88210 USPS

Postmark Here

Sent To: Shallow Valley Land Co. L.L.C.
Street, Apt. No.; or PO Box No.: Wendall Iverson
City, State, ZIP+4: P.O.Box 205
Midland, TX 79702

PS Form 3800

EAW

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ARTESIA, NM 88210 USPS

Sent To: Bureau of Land Management
Street, Apt. No.; or PO Box No.: 620 E. Greene St.
City, State, ZIP+4: Carlsbad, NM 88220

PS Form 3800

EAW

SENDER: COMPLETE THIS SECTION

- **Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.**
- **Print your name and address on the reverse so that we can return the card to you.**
- **Attach this card to the back of the mailpiece, or on the front if space permits.**

1. Article Addressed to:

Bureau of Land Management
620 E. Greene St.
Carlsbad, NM 88220

EAW

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X S Soules ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* S Soules C. Date of Delivery 5-7-15

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Transfer from service la* 7008 1300 0001 9164 2602

PS Form 3811, July 2013 Domestic Return Receipt

Affidavit of Publication

No.

State of New Mexico

County of Eddy:

Danny Scott

being duly s sworn sayes that she is the **Publisher**

of the Artesia Daily Press, a daily newspaper of General circulation, published in English at Artesia, said county and state, and that the hereto attached

Display Notice

was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for

1 Consecutive weeks/day on the same day as follows:

First Publication	May 7, 2015
Second Publication	
Third Publication	
Fourth Publication	
Fifth Publication	
Sixth Publication	

Subscribed and sworn before me this

3rd day of June 2015

OFFICIAL SEAL
Latisha Romine
NOTARY PUBLIC-STATE OF NEW MEXICO

My commission expires 5/12/2019

Latisha Romine

Latisha Romine

Notary Public, Eddy County, New Mexico

Copy of Publication:

PUBLIC NOTICE
CORRECTED

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

In accordance with 20.6.2.3108.F NMAC, Navajo Refining Company, L.L.C. hereby gives public notice of its application to the New Mexico Oil Conservation Division (OCD) for a discharge permit to inject treated non-hazardous waste water effluent from the refinery's on-site wastewater treatment plant into a Class I (nonhazardous) injection well WDW-4. The WDW-4 is located in the SE/4, NE/4 of Section 28, Township 17 South, Range 27 East, NMPM, Eddy County, New Mexico. The WDW-4 is located approximately 7.5 miles SE of the intersection of I-285 and Hwy 82 (Artesia Refinery) or approximately 2.5 miles SE of the intersection of Hwy 82 and CR-201. The Artesia Refinery is located at 501 E. Main Street, Artesia, New Mexico.

Waste water from the refinery is generated from the treatment of waters from the processing of crude oil, including the removal of water entrained in crude oil, the washing of crude oil to remove salts and sediment, water used for heating and cooling during refining, boiler blowdown, and stormwater collected from process portions of the refinery.

Underground injection at WDW-4 occurs within the Middle - Lower Devonian "Dolomite" Formation within the injection interval from 10,200 to 10,700 feet (log depth). The injection rate into WDW-4 will not exceed 500 gpm and the maximum allowable surface injection pressure of 2040 psig. The injected refinery waste water quality is approximately 3,400 mg/L total dissolved solids (TDS). Formation fluids within the permitted injection interval exceed 10,000 mg/L TDS. Groundwater is first encountered in the area of WDW-4 at a depth range of approximately 50 to 150 feet below land surface. The groundwater quality ranges from about 1,500 to 2,200 mg/L TDS.

Persons interested in obtaining further information, submitting comments, or requesting to be on a facility-specific mailing list for future notices may contact the Environmental Bureau Chief of the New Mexico Oil Conservation Division.

Comments and inquiries on regulations should be directed to:

Director
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
Telephone: (505) 476-3440

When corresponding, please reference the name of the applicant and the well name.

Affidavit of Publication

No.

State of New Mexico

County of Eddy:

Danny Scott

being duly s sworn sayes that she is the **Publisher**

of the Artesia Daily Press, a daily newspaper of General circulation, published in English at Artesia, said county and state, and that the hereto attached

Display Notice

was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for

1 Consecutive weeks/day on the same day as follows:

First Publication May 7, 2015

Second Publication

Third Publication

Fourth Publication

Fifth Publication

Sixth Publication

Subscribed and sworn before me this

3rd day of June 2015

OFFICIAL SEAL
Latisha Romine
NOTARY PUBLIC-STATE OF NEW MEXICO

My commission exp. 5/12/2019

Latisha Romine

Notary Public, Eddy County, New Mexico

Copy of Publication:

AVISO PUBLICO
CORREGIDO

ESTADO DE NUEVO MEXICO
DEPARTMENTO DE ENERGIA, MINERALES Y RECURSOS NATURALES
DIVISION DE CONSERVACION DE PETROLEO,

Por medio de la presente, Navajo Company anuncia que de conformidad con los requisitos de las regulaciones de la Comisión de Control de Calidad del Agua de Nuevo México 20.6.2.3108.F NMAC, a la División de Conservación del Petróleo de Nuevo México (NMOCD). Departamento del Medio Ambiente, un permiso de descarga para la inyección aguas residuales de la planta Artesia de Navajo Refining Company, en el pozo de inyección de denominación WDW-4. El pozo WDW-4 esta localizado en SE/4, NE/4 de Sección 28, Municipio 17 sur, Condado Eddy, Nuevo México. El WDW-4 está localizado aproximadamente a 7.5 millas SE de la intersección de I-285 y Hwy 82 (Refinería Artesia), o aproximadamente 2.5 millas SE de Hwy. 82 y CR-201. La Refinería Artesia se encuentra ubicada en 501 E. Main Street, Artesia, Nuevo México.

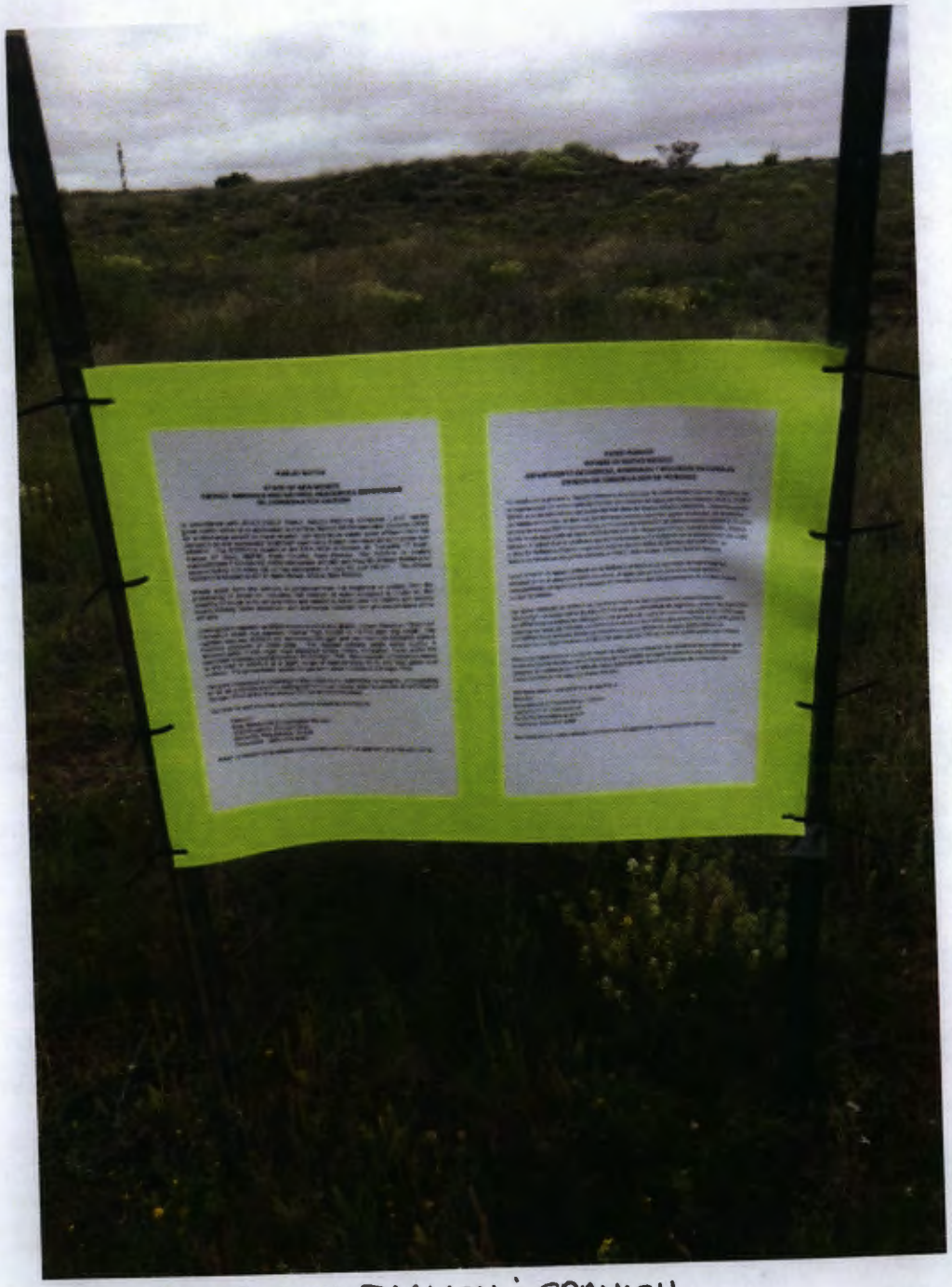
La generación de aguas residuals de la Refinería Artesia es el resultado del agua que se encuentran en al abastecimiento de crudo, el agua que se usa para el enfriamiento y calentamiento, el agua que se usa para retirar las sales del abastecimiento de crudo, y para purgar la caldera.

Las aguas residuals de WDW-4 se injectarán hacia las formaciones de Lower Devonian "Dolomite", ubicadas entre 10,200 y 10,700 pies (produndidad de registro). La tasa de inyección de WDW-4 no excederá los 500 gpm a una presión de inyección que no excederá los 2040 psig. Estas aguas residuals tendrán un contendido de total de sólidos disueltos (TDS) de 3,400 partes por millón. En el área en donde se encuentra el pozo (WDW-4), el agua subterránea se encuentra a una profundidad de 50 a 150 pies con un TDS de 1,500 a 2,200 partes por millón.

Personas interesadas en obtener mayores informes, presentar sus comentarios o solicitar que se les incluya en las listas de direcciones de una planta en especial para futuros avisos pueden ponerse en contacto con el Jefe del Departamento del Medio Ambiente de la División de Conservación de Petróleo de Nuevo México.

Por favor enviar comentarios y preguntas a:
Director
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
Teléfono: (505) 476-3440

Por favor incluir como referencia el nombre del applicante y denominación del pozo.



NOTICES IN ENGLISH & SPANISH

NOTICE ON SITE

↑
NOTICE ON SITE

↑
NOTICE AT ROAD

Chavez, Carl J, EMNRD

From: Denton, Scott <Scott.Denton@HollyFrontier.com>
Sent: Wednesday, April 08, 2015 3:53 PM
To: Dawson, Scott, EMNRD; Chavez, Carl J, EMNRD
Cc: Coons, Christina (Christie); O'Brien, Robert (Bob) K.; Holder, Mike
Subject: Quarterly Selenium Results
Attachments: Rpt_1504137_Final_v1.pdf

Scott & Carl,

Attached is the laboratory report on the effluent selenium sampling conducted on April 1, 2015 and summarized below.

Total Effluent Se = 0.025 mg/L

TCLP Effluent Se = ND mg/L

Selenium sampling is conducted on a quarterly basis on the first business day of the quarter per Exhibit A Condition 1(c) to the Amended and Supplemented Order dated November 14, 2013 The next scheduled sampling date will be Wednesday, July 1, 2015. Please let me know if you have a different interpretation or if you have any questions or comments. Thanks again for your assistance in this matter.

Regards,

Scott

Scott M. Denton
Environmental Manager

The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
575-746-5487

Scott.Denton@HollyFrontier.com

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

April 08, 2015

Mike Holder

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

RE: Quarterly WW Effluent Monitoring OrderNo.: 1504137

Dear Mike Holder:

Hall Environmental Analysis Laboratory received 2 sample(s) on 4/3/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company
Client Sample ID: Effluent to Wells (location #6)
Project: Quarterly WW Effluent Monitoring
Collection Date: 4/1/2015 10:30:00 AM
Lab ID: 1504137-001
Matrix: AQUEOUS
Received Date: 4/3/2015 9:22:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 6010B: TOTAL METALS							Analyst: **ELS**	
Selenium	0.025	0.017	0.050	J	mg/L	1	4/4/2015 11:33:27 AM	18524

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
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
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company
Client Sample ID: Effluent to Wells (location #6)
Project: Quarterly WW Effluent Monitoring
Collection Date: 4/1/2015 10:30:00 AM
Lab ID: 1504137-002
Matrix: AQUEOUS
Received Date: 4/3/2015 9:22:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Selenium	ND	0.027	0.050		mg/L	1	4/4/2015 11:34:42 AM	18524

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
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
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504137**

08-Apr-15

Client: Navajo Refining Company

Project: Quarterly WW Effluent Monitoring

Sample ID	**MB-18524**	SampType:	**MBLK**	TestCode:	**EPA 6010B: Total Metals**					
Client ID:	**PBW**	Batch ID:	**18524**	RunNo:	**25294**					
Prep Date:	**4/3/2015**	Analysis Date:	**4/4/2015**	SeqNo:	**747889**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	ND	0.050								

Sample ID	**LCS-18524**	SampType:	**LCS**	TestCode:	**EPA 6010B: Total Metals**					
Client ID:	**LCSW**	Batch ID:	**18524**	RunNo:	**25294**					
Prep Date:	**4/3/2015**	Analysis Date:	**4/4/2015**	SeqNo:	**747890**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.50	0.050	0.5000	0	100	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
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
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: NAVAJO REFINING CO Work Order Number: 1504137 RcptNo: 1

Received by/date: 04/03/15

Logged By: Lindsay Mangin 4/3/2015 9:22:00 AM

Completed By: Lindsay Mangin 4/3/2015 9:51:32 AM

Reviewed By: 04/03/15

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

# of preserved bottles checked for pH: 1
(<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 °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	14.9	Good	Yes			

Chain-of-Custody Record

Client: Navajo Refining Co.

Mailing Address: P.O. Box 159 Artesia,

NM 88211-0159

Phone #: 575-748-3311

email or Fax#: 575-746-5451

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

☐ Standa ☐ Rush Next Day

Project Name:

Quarterly WW Effluent Monitoring

Project #: P.O. # 167796

Project Manager:

Mike Holder / Dan Crawford

Sampler:

On Ice: ☑ Yes ☐ No

Sample Temperature: 14.9

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No 1504137	Total Se by EPA Method 6010B	TCLP Selenium 1311/6010
4-1-15	10:30	Liquid	Effluent to Wells (location #6)	1 Plastic	HNO3	-001	X	
4-1-15	10:30	Liquid	Effluent to Wells (location #6)	1 Plastic	Neat	-002		X

Date:	Time:	Relinquished by:	Received by:	Date	Time
4-1-15	11:30	James Potts		04/03/15	0922
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: Required to test on the first business day of each month.

(1) Totals method 6010
(2) TCLP 1311/6010

Chavez, Carl J, EMNRD

From: Coons, Christina (Christie) <Christina.Coons@HollyFrontier.com>
Sent: Monday, February 02, 2015 4:24 PM
To: Dawson, Scott, EMNRD; Chavez, Carl J, EMNRD
Cc: Holder, Mike; Stone, Brian
Subject: Quarterly Progress Report
Attachments: OCD Order Oct-Nov-Dec 2014 Quarterly Progress Report.pdf

Scott & Carl,

Please find attached a copy of the quarterly report required by Condition 9 of Exhibit A of the Amended and Supplemental Agreed Order between Navajo Refining Company (NRC) & OCD (Dated November 14, 2013). The original hardcopy is going out today via certified mail. Please don't hesitate to call me with any questions and thanks for your assistance in this matter.

Thanks,

Christie Coons
Environmental Administrative Assistant
Navajo Refining Company, LLC
P.O. Box 159
Artesia, NM 88211-0159
Desk 575-746-5488
Cell 575-616-1801
Main 575-748-3311

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HOLLYFRONTIER.

February 2, 2015

Mr. Scott Dawson
Mr. Carl Chavez
Oil Conservation Division
New Mexico Energy, Minerals & Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505
Re: ACOW-6

Certified Mail/Return Receipt
7014 1200 0000 1832 3488

RE: Navajo Refining Company, L.L.C. / Artesia Refinery
Fourth Quarter 2014 Quarterly Interim Progress Report
OCD Order No. WQA-OCD-CO-2013-001

Dear Sirs:

This quarterly progress report is submitted pursuant to Paragraph 9 of Exhibit A to the Amended and Supplemental Agreed Compliance Order No. WQA-OCD-CO-2013-001, dated November 15, 2013 (the "Order"). Specifically, Paragraph 9 requires that Navajo provide to the Oil Conservation Division (OCD) a quarterly interim progress report detailing the status and timeline for actions taken by Navajo during the preceding quarter under the Order. The quarterly progress report shall be due the first business day of the second month following the end of the quarter and shall include the following:

a) A summary of all the results of sampling required pursuant to Paragraph 1 of Exhibit A to the Order, and copies of all supporting laboratory data;
b) A summary of the results of any optional sampling taken during the preceding calendar month (copies of laboratory data for such optional sampling shall be provided to OCD upon request); and
c) The calculation of stipulated penalties required under Section III, Paragraph 2 of the Order.

This is the Fourth Quarter 2014 progress report, detailing the actions taken during the preceding calendar quarter comprised of October 2014, November 2014, and December 2014, and due on the first business day of the second month following the end of the quarter (i.e., February 2, 2015). This report also includes the final analytical results as of January 19, 2015, and the actions taken through approximately January 19, 2015. Progress report submittal frequency has been altered from monthly to quarterly following submission of the November 2014 monthly report per the Third Amendment to the Agreed Compliance Order WQA-OCD-CO-2013-001, dated November 19, 2014, except as otherwise provided at Paragraph 9 of Amended Exhibit A. The next progress report will be submitted by May 1, 2015, addressing actions taken during first quarter 2015.

Status and Timeline for Actions Taken by Navajo

Since October 15, 2013, when Navajo refinery identified a potential violation of the toxicity characteristic leaching procedure (TCLP) selenium limit of 1 milligram per liter (mg/L) (the "Se Limit"), it has provided prompt notifications to the OCD via telephone and submission of C-141

Forms, with a copy to the New Mexico Environment Department's (NMED) Hazardous Waste Bureau. A list of these notifications for each potential selenium measurement above the Se Limit is provided in Table 1. To date, Navajo has also complied with the reporting requirements of the Order, including submission of the results of required sampling within three (3) business days of receipt of final data and submittal of various reports (except as otherwise referenced at footnote 1, below), as follows:[1]

- The interim progress report was submitted on November 21, 2013 pursuant to Paragraph 10 of Exhibit A to the Order;
- The November 2013 progress report was submitted on December 2, 2013 pursuant to Paragraph 9;
- The review of selenium sampling data report was submitted on December 4, 2013 pursuant to Paragraph 11;
- The summary of technical evaluation for short-term remedy selection report was submitted on December 13, 2013 pursuant to Paragraph 12;
- The December 2013 progress report was submitted on January 2, 2014 pursuant to Paragraph 9;
- The January 2014 progress report was submitted on February 3, 2014 pursuant to Paragraph 9;
- The February 2014 progress report was submitted on March 3, 2014 pursuant to Paragraph 9;
- The March 2014 progress report was submitted on April 1, 2014 pursuant to Paragraph 9;
- The April 2014 progress report was submitted on May 1, 2014 pursuant to Paragraph 9;
- The May 2014 progress report was submitted on June 2, 2014 pursuant to Paragraph 9;
- The June 2014 progress report was submitted on July 1, 2014 pursuant to Paragraph 9;
- The July 2014 progress report was submitted on August 1, 2014 pursuant to Paragraph 9;
- The August 2014 progress report was submitted on September 2, 2014 pursuant to Paragraph 9;
- The notice of compliance with Se Limit was submitted on September 15, 2014 pursuant to Paragraph 13;
- The notice of selection of long-term option for addressing selenium concentrations in wastewater was submitted on September 30, 2014 pursuant to Paragraph 15;
- The September 2014 progress report was submitted on October 1, 2014 pursuant to Paragraph 9;
- The October 2014 progress report was submitted on November 3, 2014 pursuant to Paragraph 9;
- The November 2014 progress report was submitted on December 1, 2014 pursuant to Paragraph 9.

[1] *See* Letter from Dan Crawford, P.G., Environmental Manager, Navajo, to Director, OCD, August 21, 2014, and Letter from Michael G. McKee, Vice President and Refinery Manager, Navajo, to Director, OCD, November 19, 2014 (regarding stipulated penalty payments for a small number of missed deadlines).

Table 1: Summary of Potential Selenium Violation Notifications made to the OCD

Sample Date	Selenium Concentration (mg/L)		Verbal Notification to OCD	Form C-141 Submittal Date
	TCLP Selenium	Total Selenium		
September 27, 2013	1.24	1.6	October 15, 2013	October 21, 2013
October 15, 2013	1.24	1.49	October 20, 2013	October 21, 2013
October 31, 2013	1.23	0.996	November 5, 2013	November 11, 2013
November 1, 2013[1]	1.13	0.974	November 6, 2013	November 13, 2013
November 4, 2013	1.1	0.98	November 6, 2013	November 13, 2013
November 5, 2013	1.2	0.51	November 7, 2013	November 14, 2013

[1] As explained in Navajo's C-141 report, the corresponding discharge for this sampling event occurred on November 2, 2013.

In response to these selenium results, the Artesia Refinery took immediate action to reduce the amount of selenium in the discharge. These actions included evaluating the Refinery's process and operations, implementing an extensive selenium sampling program, temporarily reducing production rates, temporarily changing the crude slate, shutting down units to evaluate their impacts on selenium levels, and adding reverse osmosis (RO) reject wastewater upstream of the wastewater treatment system, which are described in earlier progress reports. Navajo has also aggressively pursued short-term selenium control strategies which are detailed in its report of December 13, 2013 summarizing the technical evaluation for short-term remedy selection. As described in Navajo's September 30, 2014 notice to OCD, Navajo has also now selected use of the existing 100 gpm SeRT® unit, without modification, as its long-term option for reducing selenium concentrations in wastewater. (Other long-term options that had been under consideration included the potential design and installation of a 200 gpm SeRT® unit and the modification of the existing 100 gpm SeRT® unit). An updated timeline of the activities to support these solutions is provided below.

October 30-31, 2013

- Met in Artesia to kick off process engineering by CH2M HILL for selenium reduction via SeRT® (Selenium Removal Technology) process and other WWTP upgrades.
- Negotiated an expedited project schedule with CH2M HILL to design and build a 200 gpm SeRT® Unit within 6 to 8 months.
- Reviewed feasibility of implementing Iron Co-precipitation of selenite via ferric chloride addition as a possible short-term selenium reduction technology.

November 5, 2013

- Met with Phillips 66 in California to kick off license and technology agreement for SeRT® process.

November 7, 2013

- Inquired with Valero about potential purchase of an idle 100 gpm SeRT® unit. (Relocation of this existing unit was at that time expected to put a portion of the long-term selenium removal technology in place within an estimated 3 to 4 months. As explained in Navajo's September 30, 2014 notice, Navajo has now selected the 100 gpm SeRT® unit as its long-term option for reducing selenium concentrations in wastewater.)

November 12, 2013

- Reached agreement for purchase of the idle SeRT® equipment from the Valero Wilmington Refinery.
- Hired a relocation contractor to mark the unit for removal.

November 14, 2013

- Made arrangements to test the feasibility of ferric chloride injection to reduce selenium in wastewater effluent, with the performance of parallel testing onsite at the Refinery and at the CH2M HILL laboratory.

November 18, 2013

- Oversaw dismantling of idle SeRT® Unit at the Valero refinery.
- Scheduled to begin moving SeRT® equipment by December 2, 2013.
- Sited tie-ins and existing piping and equipment at the Navajo Refinery for use in both short- and long-term SeRT® installations.
- Confirmed via jar tests that ferric chloride injection will precipitate selenite from water and, therefore, is anticipated to result in a significant reduction in selenium TCLP levels in the Refinery's discharge at the injection wells.

November 19-22, 2013

- Completed engineering for ferric chloride injection; relevant equipment and ferric chloride ordered.

November 21, 2013

- Agreed to licensing terms with Phillips 66 on use of SeRT® technology.

November 26, 2013

- Completed installation of the equipment necessary to conduct a full-scale trial of the Iron Co-precipitation process.

November 27, 2013

- Commenced full-scale trial of Iron Co-precipitation process at a dose of 100 mg/L of ferric chloride.

November 29, 2013

- Halted the full-scale trial of Iron Co-precipitation process due to restriction in wastewater flow through the Walnut Shell Filter unit located downstream of the DAF.

December 2, 2013

- Installed foundations for the 100 gpm SeRT® unit.

December 4, 2013

- Obtained interim OCD approval under Paragraph 13 of Exhibit A to the Order for the use of Iron Co-precipitation and SeRT® as remedies.

- Prepared new bench-scale test plan to provide operating guidelines for Iron Co-precipitation chemical dosing rates.
- Refinery began processing Western Canadian Select (WCS) crude again.

December 5, 2013

- Commenced extensive additional jar testing for the Iron Co-Precipitation process. The goal was to test various combinations of dosages of ferric chloride and two substances that are part of normal operation of the DAF – a coagulant and flocculent.

December 6, 2013

- Restarted full-scale Iron Co-Precipitation trial with a reduced ferric chloride dose of 20 mg/L to examine impacts on the Walnut Shell Filter.

December 9, 2013

- Equipment components for the 100 gpm trial SeRT® unit began to arrive.

December 16, 2013

- Increased ferric chloride dose for full-scale Iron Co-Precipitation trial from 20 mg/L to 50 mg/L.
- Obtained OCD approval under Paragraph 13 of Exhibit A to the Order for the use of Iron Co-precipitation and SeRT® as remedies, subject to the submittal of dates for milestones and deadlines.

December 27, 2013

- Started biweekly sample collection at various locations in the trial Iron Co-Precipitation process.

January 4, 2014

- Restarted Hydrocracker Unit.

January 17, 2014

- Mechanical completion of the 100 gpm trial SeRT® unit.

January 20, 2014

- Commissioning of the 100 gpm trial SeRT® unit.

January 30, 2014

- Refinery resumed normal production rate.

February 1, 2014

- Started 100 gpm trial SeRT® unit.
- Completed sample collection for Iron Co-Precipitation trial and converted Iron Co-Precipitation trial to continuous, full-scale operation. The trial results are summarized in Table 2 below and show an average total selenium removal efficiency of 73%.

Table 2: Selenium Measurements Collected During the Iron Co-Precipitation Trial (mg/L)

		T-805 Eff.		DAF Eff.		Walnut Filter Eff.		Tank 809 Eff.		Removal Efficiency
DATE	Laboratory	Total Se	TCLP Se	Total Se	TCLP Se	Total Se	TCLP Se	Total Se	TCLP Se	on Total Se
12/27/2013	Hall Environmental	1.1	0.30	0.38	0.30	0.37	0.31	0.38	0.34	66%
12/30/2013	Hall Environmental	1.6	0.37	0.63	0.35	0.43	0.34	-	-	73%
1/6/2014	Hall Environmental	1.2	0.17	0.34	0.18	0.27	0.20	-	-	78%
1/9/2014	Hall Environmental	1.8	0.14	0.42	0.21	0.43	0.25	-	-	76%
1/13/2014	Hall Environmental	2.1	0.34	0.41	0.33	0.37	0.35	-	-	82%
1/16/2014	Hall Environmental	1.6	0.18	0.25	0.22	0.20	0.20	-	-	88%
1/20/2014	Hall Environmental	1.0	0.55	0.75	0.57	0.54	0.55	-	-	46%
1/23/2014	Hall Environmental	1.4	0.18	0.24	0.19	0.21	0.20	-	-	85%
1/27/2014	Hall Environmental	1.2	0.43	0.55	0.58	0.51	0.51	-	-	58%
1/30/2014	Hall Environmental	1.0	0.26	0.30	0.27	0.23	0.29	-	-	77%

February 13, 2014

- Completed process engineering of full capacity permanent SeRT® unit.

March 20, 2014

- Achieved stable operation of 100 gpm trial SeRT unit.

March 31, 2014

- Confirmed that selenium reduction is being achieved by the 100 gpm trial SeRT® unit. The results through January 19, 2015 are summarized in Table 3 below and show an average total selenium removal efficiency of 94.2%. On September 30, 2014, this unit was selected as Navajo's long-term option for reducing selenium concentrations in wastewater, as explained in Navajo's notice to OCD of that same date.

Table 3: Selenium Measurements Collected During the 100 gpm Trial SeRT® Unit

		Flow to SeRT	SeRT Influent		SeRT Effluent		Removal Efficiency
		-	Total Se	TCLP Se	Total Se	TCLP Se	On Total Se
DATE	Laboratory	(gpm)	(ppm)	(ppm)	(ppm)	(ppm)	-
2/10/2014	Hall Environmental	75	5.20	-	0.31	-	94%
2/12/2014	Hall Environmental	85	6.50	-	0.60	-	91%
2/13/2014	Hall Environmental	85	6.00	6.50	0.81	0.83	87%
2/17/2014	Hall Environmental	100	6.60	8.30	1.20	1.70	82%
2/19/2014	Hall Environmental	85	7.20	7.50	1.20	1.30	83%

		Flow to SeRT	SeRT Influent		SeRT Effluent		Removal Efficiency
		-	Total Se	TCLP Se	Total Se	TCLP Se	On Total Se
DATE	Laboratory	(gpm)	(ppm)	(ppm)	(ppm)	(ppm)	-
2/20/2014	Hall Environmental	98	7.00	7.50	1.40	1.70	80%
2/24/2014	Hall Environmental	102	7.00	6.90	1.50	1.70	79%
2/26/2014	Hall Environmental	102	6.60	5.70	1.50	1.40	77%
2/27/2014	Hall Environmental	104	5.80	6.20	0.46	0.50	92%
3/3/2014	Hall Environmental	104	5.60	5.60	0.49	0.57	91%
3/5/2014	Hall Environmental	106	5.70	5.40	0.56	0.61	90%
3/6/2014	Hall Environmental	115	5.40	5.40	0.44	0.52	92%
3/10/2014	Hall Environmental	115	5.30	5.70	0.19	0.23	96%
3/12/2014	Hall Environmental	113	5.20	5.10	0.21	0.23	96%
3/13/2014	Hall Environmental	115	5.00	5.30	0.14	0.16	97%
3/17/2014	Hall Environmental	120	4.40	4.80	0.14	0.19	97%
3/19/2014	Hall Environmental	110	3.90	4.30	0.17	0.20	96%
3/20/2014	Hall Environmental	84	4.40	4.80	0.11	0.11	98%
3/24/2014	Hall Environmental	100	4.70	5.40	0.22	0.28	95%
3/27/2014	Hall Environmental	94	3.90	-	0.12	-	97%
3/31/2014	Hall Environmental	112	4.40	-	0.15	-	97%
4/3/2014	Hall Environmental	125	3.60	-	0.12	-	97%
4/7/2014	Hall Environmental	110	4.70	-	0.13	-	97%
4/10/2014	Hall Environmental	130	4.10	-	0.14	-	97%
4/14/2014	Hall Environmental	108	3.90	-	0.16	-	96%
4/17/2014	Hall Environmental	125	4.00	-	0.14	-	97%
4/21/2014	Hall Environmental	105	3.00	-	0.13	-	96%
4/24/2014	Hall Environmental	115	3.50	-	0.25	-	93%
4/28/2014	Hall Environmental	110	3.40	-	0.13	-	96%
5/1/2014	Hall Environmental	70	3.60	-	0.09	-	98%
5/5/2014	Hall Environmental	55	3.40	-	0.05	-	99%
5/8/2014	Hall Environmental	50	3.20	-	0.06	-	98%
5/12/2014	Hall Environmental	50	3.40	-	0.07	-	98%
5/15/2014	Hall Environmental	50	3.60	-	0.07	-	98%
5/19/2014	Hall Environmental	50	3.40	-	0.10	-	97%
5/22/2014	Hall Environmental	95	2.80	-	0.15	-	95%
5/27/2014	Hall Environmental	60	2.90	-	0.08	-	97%
5/29/2014	Hall Environmental	60	3.20	-	0.11	-	97%
6/2/2014	Hall Environmental	64	3.30	-	0.07	-	98%
6/5/2014	Hall Environmental	51	3.10	-	0.09	-	97%
6/9/2014	Hall Environmental	50	3.30	-	0.06	-	98%
6/12/2014	Hall Environmental	60	3.10	-	0.13	-	96%
6/16/2014	Hall Environmental	120	3.30	-	0.54	-	84%

		Flow to SeRT	SeRT Influent		SeRT Effluent		Removal Efficiency
		-	Total Se	TCLP Se	Total Se	TCLP Se	On Total Se
DATE	Laboratory	(gpm)	(ppm)	(ppm)	(ppm)	(ppm)	-
6/19/2014	Hall Environmental	130	3.10	-	0.40	-	87%
6/23/2014	Hall Environmental	130	3.90	-	0.47	-	88%
6/26/2014	Hall Environmental	118	3.00	-	0.30	-	90%
7/1/2014	Hall Environmental	101	2.30	-	0.14	-	94%
7/3/2014	Hall Environmental	115	2.20	-	0.12	-	95%
7/7/2014	Hall Environmental	106	2.70	-	0.17	-	94%
7/14/2014	Hall Environmental	125	3.20	-	<0.05	-	98%
7/17/2014	Hall Environmental	92	2.70	-	0.07	-	97%
7/21/2014	Hall Environmental	120	2.70	-	0.23	-	91%
7/24/2014	Hall Environmental	80	2.80	-	0.14		95%
7/28/2014	Hall Environmental	114	2.50	-	0.28		89%
7/31/2014	Hall Environmental	118	3.50	-	0.32	-	91%
8/4/2014	Hall Environmental	96	3.30	-	0.06	-	98%
8/7/2014	Hall Environmental	125	3.00	-	0.04	-	99%
8/11/2014	Hall Environmental	100	2.80	-	0.04	-	99%
8/15/2014	Hall Environmental	100	3.60	-	0.04	-	99%
8/21/2014	Hall Environmental	100	3.10	-	0.04	-	99%
8/25/2014	Hall Environmental	100	1.60	-	0.03	-	98%
8/28/2014[1]	Hall Environmental	105	2.60	-	<0.05	-	98%
9/2/2014	Hall Environmental	105	3.90	-	0.04	-	99%
9/4/2014	Hall Environmental	105	3.90	-	0.03	-	99%
9/8/2014	Hall Environmental	95	4.60	-	0.06	-	99%
9/11/2014	Hall Environmental	90	4.20	-	0.03	-	99%
9/15/2014	Hall Environmental	90	4.40	-	0.04	-	99%
9/18/2014	Hall Environmental	100	5.00	-	0.04	-	99%
9/22/2014	Hall Environmental	61	5.30	-	0.04	-	99%
9/25/2014	Hall Environmental	90	6.10	-	0.12	-	98%
9/29/2014	Hall Environmental	90	6.40	-	0.07	-	99%
10/2/2014	Hall Environmental	95	6.50	-	0.05	-	99%
10/6/2014	Hall Environmental	100	8.60	-	0.09	-	99%
10/9/2014	Hall Environmental	88	8.90	-	0.11	-	99%
10/13/2014	Hall Environmental	100	7.30	-	0.10	-	99%
10/16/2014	Hall Environmental	115	6.30	-	0.11	-	98%
10/20/2014	Hall Environmental	115	5.10	-	0.13	-	97%
10/23/2014	Hall Environmental	100	4.40	-	0.09	-	98%
10/27/2014	Hall Environmental	105	2.50	-	0.06	-	98%
10/30/2014	Hall Environmental	90	3.70	-	0.04	-	99%
11/3/2014	Hall Environmental	100	3.20	-	0.03	-	99%

		Flow to SeRT	SeRT Influent		SeRT Effluent		Removal Efficiency
		-	Total Se	TCLP Se	Total Se	TCLP Se	On Total Se
DATE	Laboratory	(gpm)	(ppm)	(ppm)	(ppm)	(ppm)	-
11/6/2014	Hall Environmental	100	3.50	-	0.03	-	99%
11/10/2014	Hall Environmental	110	2.70	-	0.05	-	98%
11/13/2014	Hall Environmental	110	3.30	-	0.06	-	98%
11/17/2014	Hall Environmental	100	3.30	-	0.03	-	99%
11/24/2014	Hall Environmental	90	3.50	-	0.04	-	99%
11/26/2014	Hall Environmental	100	3.50	-	0.39	-	89%
12/1/2014	Hall Environmental	100	3.80	-	1.10	-	71%
12/2/2014	Hall Environmental	100	3.90	-	1.10	-	72%
12/8/2014	Hall Environmental	100	4.00	-	1.50	-	63%
12/10/2014	Hall Environmental	100	5.20	-	0.37	-	93%
12/11/2014	Hall Environmental	100	5.20	-	0.35	-	93%
12/12/2014	Hall Environmental	100	2.20	-	0.12	-	95%
12/15/2014	Hall Environmental	90	5.10	-	0.10	-	98%
12/18/2014	Hall Environmental	90	4.20	-	0.05	-	99%
12/22/2014	Hall Environmental	95	3.70	-	0.07	-	98%
12/29/2014	Hall Environmental	100	3.60	-	0.10	-	97%
1/2/2015	Hall Environmental	95	3.20	-	0.09	-	97%
1/5/2015	Hall Environmental	70	3.90	-	0.08	-	98%
1/8/2015	Hall Environmental	85	3.50	-	0.07	-	98%
1/12/2015	Hall Environmental	84	3.50	-	<0.050	-	99%
1/15/2015	Hall Environmental	72	2.80	-	1.40	-	50%
1/19/2015	Hall Environmental	82	2.50	-	0.09	-	96%

[1] The sampling event on August 28, 2014 showed a SeRT Influent concentration of <0.05 ppm and a SeRT Effluent concentration of 2.60 ppm. Samples were likely either switched in the field before being labeled, or mislabeled. Table 3 shows the correct concentration associated with each location.

April 1, 2014

- Required sampling from this point forward reduced to a quarterly basis per Condition 1(c) of Exhibit A to the Order.

April 22, 2014

- First Amendment to Exhibit A signed by Navajo and OCD.

June 2, 2014

- Navajo submitted a minor permit modification requested by OCD for the installation of the SeRT® & ICP units at the Artesia Refinery.

June 24, 2014

- OCD approved the modification request submitted on June 2.

June 1 to 2, 2014

- Navajo temporarily stopped injection while doing the Pressure Fall Off Tests (PFOTs) and Mechanical Integrity Testing (MIT) for Well 1.[2]

June 30 to July 2, 2014

- Navajo temporarily stopped injection while doing the PFOTs and MIT for Well 2.[2]

July 7-9, 2014

- Used SeRT® media was replaced by new media. The media change-out started on July 7, 2014 and was completed on July 9, 2014. The unit was brought on-line on July 10, 2014. The pH probes were also replaced.

August 11, 2014

- Met with OCD to discuss amending Exhibit A to clarify reporting and sampling in connection with cessation of well injection per Navajo's July 25, 2014 letter.

August 25-28, 2014

- Navajo temporarily stopped injection for PFOTs and MIT for Well 3.[2]

September 3 and 8, 2014

- Second Amendment to Exhibit A signed by OCD and Navajo.

September 15, 2014

- Notice of Compliance with Selenium Limit submitted to OCD.

September 30, 2014

- Notice of selection of long-term option for addressing selenium concentrations in wastewater submitted to OCD.

November 19, 2014

- Third Amendment to Exhibit A signed by OCD and Navajo.
- Navajo paid OCD the stipulated penalty of $26,000 for late submission of October 1, 2014 quarterly sampling results.

As noted in the February 2014 monthly interim progress report submitted on March 3, 2014, Navajo will consider discontinuing ferric chloride injection based on the performance of the 100 gpm SeRT® unit. Also, as noted above, on September 30, 2014, Navajo submitted to OCD its notice of selection of long-term option for selenium reduction pursuant to Paragraph 15 of Exhibit A to the Order. Navajo selected the existing SeRT® unit, without modification, based on its proven effectiveness in reducing selenium concentrations (now, as of the January 19, 2015 sample, at an

[2] Pressure Fall Off tests and Mechanical Integrity Testing are unrelated to selenium concentrations in the wastewater injected at the wells.

average total selenium removal efficiency of 94.2%) and Navajo's record of compliance with the Se Limit using this technology.[3]

In addition to the status and timeline of actions taken by Navajo, this monthly report includes the requirements of items a-c of Paragraph 9 of Exhibit A to the Order, as follows.

a) A summary of all the results of sampling required pursuant to Paragraph 1, above, and copies of all supporting laboratory data.

A summary of the results of sampling collected pursuant to Paragraph 1 of Exhibit A to the Order are provided in Table 4. This table includes only those samples collected at the OCD-approved Sample Location (location shown in Attachment A) on the first business day of each week after the effective date of the Order up to April 1, 2014. The April 1 sampling event constituted the fourth consecutive monthly sample below the 1.0 mg/L limit and, therefore, pursuant to Condition 1(c) of Exhibit A to the Order, sampling is being conducted on a quarterly basis on the first business day of the quarter. The 4th quarter 2014 quarterly sample was taken on October 1, 2014 and the 1st quarter 2015 quarterly sample was taken on Friday, January 2, 2015. The next quarterly sample is scheduled to be taken on Wednesday, April 1, 2015. There have been no non-compliant sampling events since issuance of the Order on November 14, 2013. Additional monitoring is also presented in Table 4. As noted above, since the November monthly progress report, the 1st quarter 2015 sample was taken pursuant to Paragraph 1(c) of Exhibit A to the Order on January 2, 2015, and the lab report for the January 2, 2015 quarterly sample can be found in Attachment B. (The laboratory report for the October 1, 2014 quarterly sampling event was submitted with the October monthly progress report.)

As described in the December 4, 2013 review of selenium sampling data report, CH2M HILL made certain recommendations to modify sample preparation and processing in order to decrease variability in sampling analysis procedures and analytical instrumentation configurations used by Navajo's contract laboratories. Specifically, Hall Environmental implemented the following procedural modifications starting December 9, 2013, among certain other earlier changes:

1. Filtrations for TCLP analysis by EPA Method 1311 are now made using a 0.7 micron glass fiber filter.
2. An acid matrix of 6% nitric acid and 5% hydrochloric acid is now used in accordance with EPA Method 3010.
3. Calibration standards and quality control samples are now prepared using the same acid matrix (6% nitric acid and 5% hydrochloric acid).
4. An internal standard of yttrium or scandium is now used in all samples. If the recovery of the internal standard exceeds 120%, the samples are to be screened for a native presence of the internal standard. If the samples natively contain the target internal standard, an alternate internal standard is to be utilized.
5. The same preparation batches and analytical batches are now used for digestion and analysis of TCLP and total selenium samples. Ideally, a sample is analyzed for total selenium and is

[3] As explained in the September 30th notice, Navajo reserves the right to modify the current SeRT® unit in the future should changes become necessary based on wastewater effluent characteristics, refinery operational needs or other circumstances.

then analyzed for TCLP selenium immediately afterwards to reduce variations due to instrument calibration, instrument drift, or digestate age.

6. All spectra for samples are now reviewed to verify that there are no optical interferences and that peaks are being correctly integrated.
7. All split samples are now analyzed using the same acid digestion and analytical methods to ensure data comparability.

Table 4: Selenium Measurements Collected Pursuant to Paragraph 1 of Exhibit A to the Order (mg/L)

DATE	Sampling Location	Laboratory	Method	TCLP Selenium (mg/L)	
				Split Samples	Average[2]
10/24/2013[1]	T-801 Effluent	ALS Environmental	SW1311/ 6020	0.82	0.78
		Hall Environmental	EPA 6010B	0.74	
10/28/2013[1]	T-801 Effluent	Hall Environmental	EPA 6010B	0.98	0.98
11/4/2013[1]	Injection Well Effluent Sampling Point	Hall Environmental	EPA 6010B	1.10	1.10
11/11/2013[1]	Injection Well Effluent Sampling Point	Hall Environmental	EPA 6010B	0.088	0.088
11/18/2013	Injection Well Effluent Sampling Point	Hall Environmental	EPA 6010B	0.78	0.78
11/25/2013	T-801 Effluent to Wells	Hall Environmental	EPA 6010B	0.75	0.75
12/2/2013	T-836 Effluent to Wells	Hall Environmental	EPA 6010B	0.88	0.88
12/9/2013[3]	T-801 Effluent to Wells	Hall Environmental	EPA 6010B	0.38	0.38
12/16/2013	T-801 Effluent to Wells	Hall Environmental	EPA 6010B	0.35	0.35
12/23/2013	T-836 Effluent to Wells	Hall Environmental	EPA 6010B	0.27	0.27
12/30/2013	T-836 Effluent to Wells	Hall Environmental	EPA 6010B	0.33	0.33
1/6/2014	T-836 Effluent to Wells	Hall Environmental	EPA 6010B	0.23	0.23
1/13/2014	T-801 Effluent to Wells	Hall Environmental	EPA 6010B	0.31	0.31
1/20/2014	T-836 Effluent to Wells	Hall Environmental	EPA 6010B	0.51	0.51
1/27/2014	T-801 Effluent to Wells	Hall Environmental	EPA 6010B	0.49	0.49
2/3/2014	T-836 Effluent to Wells	Hall Environmental	EPA 6010B	0.56	0.56
2/10/2014	T-836 Effluent to Wells	Hall Environmental	EPA 6010B	0.20	0.20
2/17/2014	T-801 Effluent to Wells	Hall Environmental	EPA 6010B	0.20	0.20
2/24/2014	T-801 Effluent to Wells	Hall Environmental	EPA 6010B	0.28	0.28
3/3/2014	T-801 Effluent to Wells	Hall Environmental	EPA 6010B	0.14	0.14
3/10/2014	T-836 Effluent to Wells	Hall Environmental	EPA 6010B	0.05	0.05
3/13/2014	T-836 Effluent to Wells	Hall Environmental	EPA 6010B	0.08	0.08
3/17/2014	T-801 Effluent to Wells	Hall Environmental	EPA 6010B	0.05	0.05
3/24/2014	T-801 Effluent to Wells	Hall Environmental	EPA6010B	0.15	0.15
4/1/2014[4]	**T-801 Effluent to Wells**	**Hall Environmental**	**EPA6010B**	**0.08**	**0.08**
7/3/2014[4]	**T-801 Effluent to Wells**	**Hall Environmental**	**EPA6010B**	**< 0.027**	**< 0.027**
10/1/2014[4]	**T-836 Effluent to Wells**	**Hall Environmental**	**EPA6010B**	**0.04**	**0.04**
1/2/2015[4]	**T-801 Effluent to Wells**	**Hall Environmental**	**EPA6010B**	**< 0.027**	**< 0.027**

[1]Samples collected per the requirements of the Agreed Compliance Order No. WQA-OCD-CO-2013-001 signed on October 24, 2013.
[2]For split samples.
[3]Digestion procedure and sample processing altered as described above.
[4]Required sampling conducted on a quarterly basis per Condition 1(c) of Exhibit A to the Order – accentuated as requested by Carl Chavez on April 30, 2014.

b) *A summary of the results of any optional sampling taken during the preceding calendar month (copies of laboratory data for such optional sampling shall be provided to OCD upon request).*

A summary of all of the TCLP selenium concentrations measured at the OCD-approved Sample Location and at the effluent of treatment tanks T-801 and T-836 is provided in Attachment C. All of the TCLP selenium measurements for all refinery sample locations are provided in Attachment D, and all of the total selenium measurements for all refinery sample locations are provided in Attachment E. The data provided in all of these attachments is for sampling performed during the months of October 2013, November 2013, December 2013, and calendar year 2014 through January 19, 2015.

c) *The calculation of stipulated penalties required under Section III, Paragraph 2 of the Order.*

As of the most recent sampling event, there are no new reported exceedances of the Se Limit. On November 20, 2013 Navajo submitted payment of the penalty of $26,000 established in the Order for prior reported selenium concentrations above the Se Limit. As explained in Navajo's July 25, 2014 letter to OCD, Navajo was unable to conduct quarterly sampling on July 1, because there was no injection at the wells on that day due to PFOTs and mechanical integrity testing. Quarterly sampling was not conducted until July 3, 2014, after the discharge to the wells resumed, a delay of two days. Also, Navajo was one day late in submitting the results of its quarterly selenium sampling to OCD, which were required to be submitted by July 17, and were instead submitted on July 18, 2014. Per the stipulated penalty schedule at Section III, Paragraph 2 of the Order, Navajo calculated a stipulated penalty of $5,000.[4] This sum was paid by letter dated August 21, 2014. Navajo was also late in submitting the results of its October 1, 2014 quarterly selenium sampling to OCD, which were received on October 6, 2014, and conservatively assumed to be required to be submitted by October 8. They were instead submitted on November 3, and as a result, were 26 days late. Based on this, and per the stipulated penalty schedule at Section III, Paragraph 2 of the Order, Navajo calculated a stipulated penalty of $26,000.[5] This sum was paid by letter dated November 19, 2014. Navajo is taking preventive steps to help ensure timely quarterly sampling and reporting of corresponding sample results.

[4] Per Order Section III, Paragraph (2)(b)(4), for failure to conduct timely sampling, $2,000 per day X 2 days = $4,000; per Order Section III, Paragraph (2)(b)(5), for failure to timely submit any report or notification, $1,000 per day X 1 day = $1,000.
[5] Per Order Section III, Paragraph (2)(b)(5), for failure to timely submit any report or notification, $1,000 per day X 26 days = $26,000.

If you have any questions, please do not hesitate to contact me at (575) 308-1511 or brian.stone@hollyfrontier.com. Thank you for your assistance in this matter and we will continue to work closely with you as we resolve the issues associated with selenium concentrations.

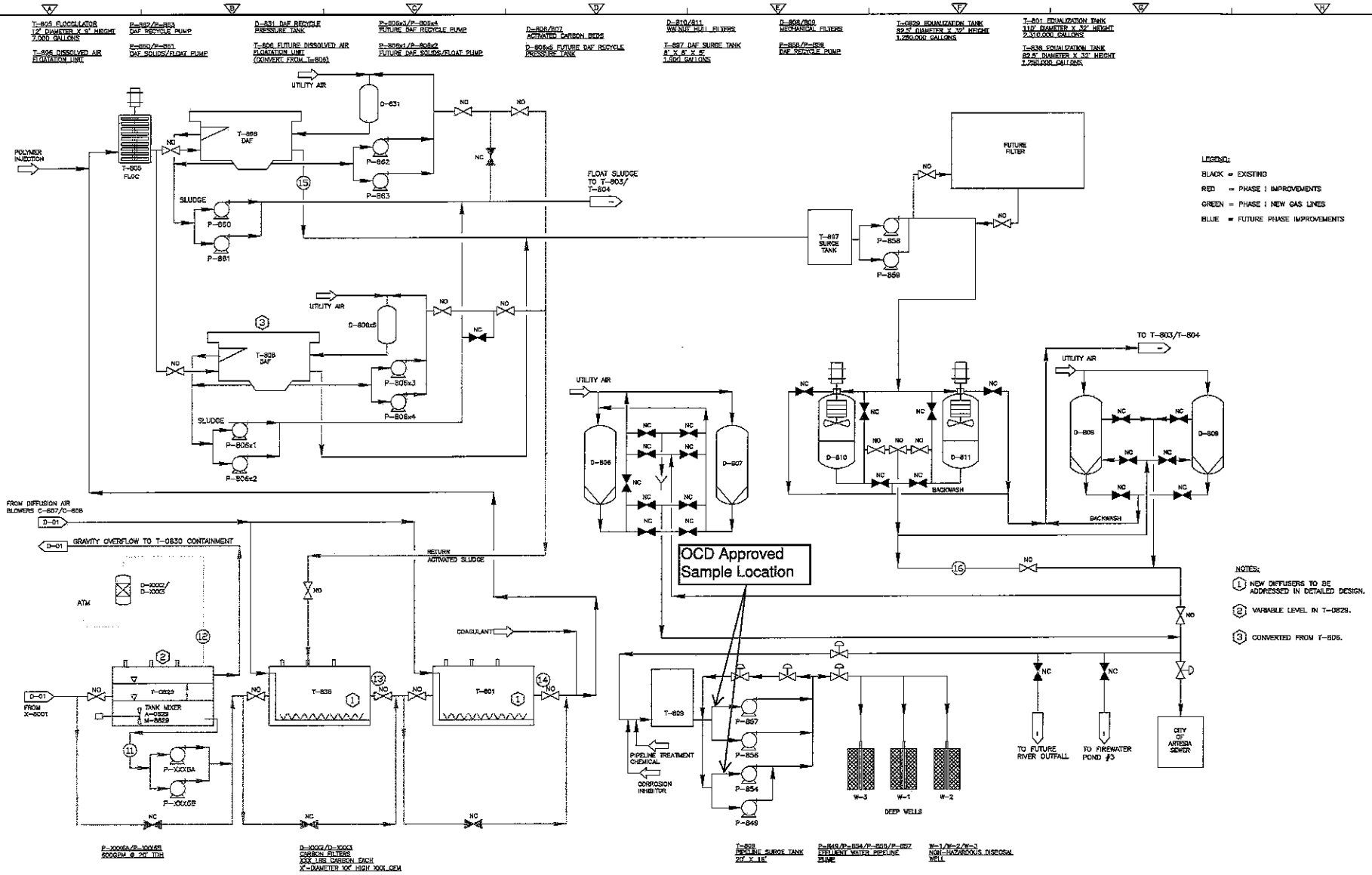
Sincerely,

BM Stone

Brian Stone
Environmental Specialist

Navajo Refining Company, L.L.C.

Attachment A:
OCD-Approved Sample Location



REV. NO.	DATE	DRWN	CHKD	REMARKS
5	01/12	DH	JDC	ISSUED FOR PHA REVIEW
4	12/6	RM	JDC	CHANGED PER 12/07/10 REVIEW MEETING
3	11/6	RM	JDC	CHANGED PER 11/30/10 REVIEW MEETING
2	11/3			CHANGED DURING CLIENT REVIEW MEETING
1	10/26			CHANGED PER CLIENT 10/26/10

DESIGNED BY: J. CAMANN
DRAWN BY: R. MOORE
SHEET CHK'D BY: K. GREENFIELDH
CROSS CHK'D BY: M. CARBALLA
APPROVED BY: X
DATE: DECEMBER 2010

CDM
Camp Dresser & McKee
9050 Pool Oak Boulevard, Suite 300
Houston, Texas 77055
Tel: (713) 423-7500 Fax: (713) 840-9173
TBPE Firm Registration No. F-3043
consulting • engineering • construction • operations

NAVAJO REFINERY
ARTESIA, NEW MEXICO
PHASE I WWTP

PROCESS FLOW DIAGRAM PHASE I - WASTEWATER TREATMENT PLANT IMPROVEMENTS - SHEET 2 EQUALIZATION TANK TO DISCHARGE

PROJECT NO. 90538-79019
FILE NAME: G001PFD
SHEET NO.
D-02

DWG: S:\90538\79019\00-EXHIBITS\DPH G001PFD-ALT.dwg USER: moorere
DATE: Jan 13, 2011 8:35am XREFS:CDM_2234 79019-2234BDR

Attachment B:
Laboratory Reports for Samples Collected Pursuant to
Paragraph 1 of Exhibit A to the Order

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

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

January 12, 2015

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

RE: Quarterly WW Effluent Monitoring OrderNo.: 1501149

Dear Mike Holder:

Hall Environmental Analysis Laboratory received 1 sample(s) on 1/7/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers 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 **1501149**
Date Reported: **1/12/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company
Project: Quarterly WW Effluent Monitoring
Lab ID: 1501149-001 **Matrix:** AQUEOUS

Client Sample ID: Effluent to Wells (location #6)
Collection Date: 1/2/2015 8:30:00 AM
Received Date: 1/7/2015 9:45:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Selenium	ND	0.027	0.050		mg/L	1	1/8/2015 6:21:27 AM	17109
EPA 6010B: TOTAL METALS							Analyst: **ELS**	
Selenium	0.029	0.014	0.050	J	mg/L	1	1/8/2015 6:19:37 AM	17109

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
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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501149**

12-Jan-15

Client: Navajo Refining Company

Project: Quarterly WW Effluent Monitoring

Sample ID **MB-17109**	SampType: **MBLK**	TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **PBW**	Batch ID: **17109**	RunNo: **23522**
Prep Date: **1/7/2015**	Analysis Date: **1/8/2015**	SeqNo: **694945** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	ND	1.0								

Sample ID **LCS-17109**	SampType: **LCS**	TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **LCSW**	Batch ID: **17109**	RunNo: **23522**
Prep Date: **1/7/2015**	Analysis Date: **1/8/2015**	SeqNo: **694946** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.48	1.0	0.5000	0	95.3	80	120			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501149**

12-Jan-15

Client: Navajo Refining Company

Project: Quarterly WW Effluent Monitoring

Sample ID	**MB-17109**	SampType: **MBLK**			TestCode: **EPA 6010B: Total Metals**					
Client ID:	**PBW**	Batch ID: **17109**			RunNo: **23522**					
Prep Date:	**1/7/2015**	Analysis Date: **1/8/2015**			SeqNo: **694914**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	ND	0.050								

Sample ID	**LCS-17109**	SampType: **LCS**			TestCode: **EPA 6010B: Total Metals**					
Client ID:	**LCSW**	Batch ID: **17109**			RunNo: **23522**					
Prep Date:	**1/7/2015**	Analysis Date: **1/8/2015**			SeqNo: **694915**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.48	0.050	0.5000	0	95.3	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: NAVAJO REFINING COM Work Order Number: 1501149 RcptNo: 1

Received by/date: CS 01/07/15

Logged By: Lindsay Mangin 1/7/2015 9:45:00 AM

Completed By: Lindsay Mangin 1/7/2015 10:26:15 AM

Reviewed By: JB 01/07/15

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?	FedEx		

Log In

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

# of preserved bottles checked for pH: 1
(<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 °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Client: Navajo Refining Co.

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

Phone #: 575-748-3311

email or Fax#: 575-746-5451

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)
☐ Other
☐ EDD (Type)

☐ Standard ☐ Rush Next Day

Project Name: Quarterly WW Effluent Monitoring

Project #: P.O. # 167796

Project Manager: Mike Holder / Dan Crawford

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0°C

HEAL No. 1501419

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	Total Se by EPA Method 6010B	TCLP Selenium 1311/6010
1/2/15	8:30	Liquid	Effluent to Wells (location #6)	1 Plastic	HNO3	-001	X	
		Liquid	Effluent to Wells (location #6)	1 Plastic	Neat	-002		X

Analysis Request

Relinquished by: James Potts — Date: 1/2/15 Time: 12:00

Received by: Date Time

Relinquished by: Date: Time:

Received by: Date: 01/07/15 Time: 0945

Remarks: Required to test on the first business day of each month.

(1) Totals method 6010
(2) TCLP 1311/6010

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any subcontracted data will be clearly notated on the analytical report.

Attachment C:
Additional Monitoring Performed at the Injection Well Effluent Sampling Location and Treatment Tanks T-801 and T-836

Attachment C Table 1: TCLP Selenium Measurements Collected from the Injection Well Effluent Sampling Location, Tank T-801, and Tank T-836 Effluent (mg/L), EPA Method SW1311/6020/6010

DATE	Sampling Location	Split Samples (mg/L)				Average (mg/L)
		Laboratory	TCLP Selenium Concentration	Laboratory	TCLP Selenium Concentration	TCLP Selenium Concentration
9/27/2013	Injection Well Effluent Sampling Point	ALS	1.24	-	-	1.24
10/15/2013	Injection Well Effluent Sampling Point	ALS	1.24	-	-	1.24
10/20/2013	T-801 Effluent	Hall	0.85	ALS	0.803	0.83
10/20/2013	T-836 Effluent	Hall	0.91	ALS	0.888	0.90
10/22/2013	T-801 Effluent	Hall	0.75	ALS	0.708	0.73
10/22/2013	T-836 Effluent	Hall	0.65	ALS	0.823	0.74
10/23/2013	T-801 Effluent	Hall	0.79	ALS	0.835	0.81
10/23/2013	T-836 Effluent	Hall	0.75	ALS	0.831	0.79
10/24/2013	T-801 Effluent	Hall	0.74	ALS	0.821	0.78
10/24/2013	T-836 Effluent	Hall	0.58	ALS	0.648	0.61
10/25/2013	T-801 Effluent	Hall	0.79	-	-	0.79
10/25/2013	T-836 Effluent	Hall	0.71	-	-	0.71
10/26/2013	T-801 Effluent	Hall	0.81	-	-	0.81
10/26/2013	T-836 Effluent	Hall	0.83	-	-	0.83
10/27/2013	T-801 Effluent	Hall	0.95	-	-	0.95
10/27/2013	T-836 Effluent	Hall	0.75	-	-	0.75
10/28/2013	T-801 Effluent	Hall	0.98	-	-	0.98
10/28/2013	T-836 Effluent	Hall	0.84	-	-	0.84
10/29/2013	T-801 Effluent	Hall	0.99	Cardinal	0.98	0.99
10/29/2013	T-836 Effluent	Hall	0.94	Cardinal	0.97	0.95
10/30/2013	T-801 Effluent	Hall	0.83	Cardinal	0.88	0.85
10/30/2013	T-836 Effluent	Hall	0.88	Cardinal	0.90	0.89
10/31/2013	Injection Well Effluent Sampling Point	Hall	1.20	-	-	1.20
10/31/2013	T-801 Effluent	Hall	0.80	Cardinal	1.09	0.95
10/31/2013	T-836 Effluent	Hall	1.20	Cardinal	1.26	1.23
11/1/2013	T-801 Effluent	Hall	0.89	Cardinal	0.94	0.92
11/1/2013	T-836 Effluent	Hall	1.10	Cardinal	1.16	1.13
11/2/2013	No Sample	-	-	-	-	-
11/3/2013	No Sample	-	-	-	-	-
11/4/2013	Injection Well Effluent Sampling Point	Hall	1.10	-	-	1.10
11/4/2013	T-801 Effluent	Hall	0.74	-	-	0.74
11/4/2013	T-836 Effluent	Hall	0.98	-	-	0.98
11/5/2013	Injection Well Effluent Sampling Point	Hall	1.20	-	-	1.20

DATE	Sampling Location	Split Samples (mg/L)				Average (mg/L)
		Laboratory	TCLP Selenium Concentration	Laboratory	TCLP Selenium Concentration	TCLP Selenium Concentration
11/5/2013	T-801 Effluent	Hall	1.20			1.20
11/6/2013	T-836 Effluent	Hall	0.73	-	-	0.73
11/7/2013	T-801 Effluent	Hall	0.95	-	-	0.95
11/7/2013	T-836 Effluent	Hall	1.10			1.10
11/8/2013	T-801 Effluent	Hall	0.78			0.78
11/8/2013	T-836 Effluent	Hall	1.20			1.20
11/9/2013	T-836 Effluent	Hall	1.1	-	-	1.10
11/10/2013	T-836 Effluent	Hall	1.1	-	-	1.10
11/11/2013	Injection Well Effluent Sampling Point	Hall	0.088	-	-	0.09
11/11/2013	T-836 Effluent	Hall	1.100			1.10
11/12/2013	No Sample	-	-	-	-	-
11/13/2013	No Sample	-	-	-	-	-
11/14/2013[2]	T-836 Effluent	Hall	1.0	-	-	0.99
11/15/2013	No Sample	-	-	-	-	-
11/16/2013	Injection Well Effluent Sampling Point	Hall	<0.1 (ND)	-	-	-
11/17/2013	Injection Well Effluent Sampling Point	Hall	0.96	-	-	0.96
11/18/2013	Injection Well Effluent Sampling Point	Hall	0.78	-	-	0.78
11/18/2013	T-836 Effluent	Hall	1.00	-	-	1.00
11/19/2013	T-836 Effluent to Wells	Hall	0.95	-	-	0.95
11/20/2013	Injection Well Effluent Sampling Point	Hall	0.76	-	-	0.76
11/21/2013	T-801 Effluent to Wells	Hall	0.73	-	-	0.73
11/22/2013	T-836 Effluent to Wells	Hall	0.80	-	-	0.80
11/23/2013	T-801 Effluent to Wells	Hall	0.75	-	-	0.75
11/24/2013[1]	T-836 Effluent to Wells	Hall	0.84	-	-	0.84
11/25/2013	T-801 Effluent to Wells	Hall	0.75	-	-	0.75
11/26/2013	T-836 Effluent to Wells	Hall	0.72	-	-	0.72
11/27/2013	T-801 Effluent to Wells	Hall	0.69	-	-	0.69
11/28/2013	T-836 Effluent to Wells	Hall	0.80	-	-	0.80
11/29/2013	T-801 Effluent to Wells	Hall	0.75	-	-	0.75
11/30/2013	T-801 Effluent to Wells	Hall	0.76	-	-	0.76
12/2/2013	Injection Well Effluent Sampling Point	Hall	0.88	-	-	0.88
12/2/2013	T-836 Effluent to Wells	Hall	0.76	-	-	0.76
12/2/2013	T-801 Effluent to Wells	Hall	0.83	-	-	0.83
12/5/2013	T-836 Effluent to Wells	Hall	0.47	-	-	0.47

DATE	Sampling Location	Split Samples (mg/L)				Average (mg/L)
		Laboratory	TCLP Selenium Concentration	Laboratory	TCLP Selenium Concentration	TCLP Selenium Concentration
12/9/2013[3]	T-801 Effluent to Wells	Hall	0.38	-	-	0.38
12/12/2013	Effluent to Wells	Hall	0.56	-	-	0.56
12/16/2013	T-801 Effluent to Wells	Hall	0.35	-	-	0.35
12/19/2013	T-801 Effluent to Wells	Hall	0.24	-	-	0.24
12/23/2013	T-836 Effluent to Wells	Hall	0.27	-	-	0.27
12/26/2013	T-801 Effluent to Wells	Hall	0.27	-	-	0.27
12/30/2013	T-836 Effluent to Wells	Hall	0.33	-	-	0.33
1/6/2014	T-836 Effluent to Wells	Hall	0.23	-	-	0.23
1/9/2014	T-801 Effluent to Wells	Hall	0.29	-	-	0.29
1/13/2014	T-801 Effluent to Wells	Hall	0.31	-	-	0.31
1/16/2014	T-801 Effluent to Wells	Hall	0.24	-	-	0.24
1/20/2014	T-836 Effluent to Wells	Hall	0.51	-	-	0.51
1/23/2014	T-836 Effluent to Wells	Hall	0.23	-	-	0.23
1/27/2014	T-801 Effluent to Wells	Hall	0.49	-	-	0.49
1/30/2014	T-836 Effluent to wells	Hall	0.27	-	-	0.27
2/3/2014	T-836 Effluent to wells	Hall	0.56	-	-	0.56
2/6/2014	T-836 Effluent to wells	Hall	0.40	-	-	0.40
2/10/2014	T-836 Effluent to wells	Hall	0.20	-	-	0.20
2/17/2014	T-801 Effluent to wells	Hall	0.20	-	-	0.20
2/24/2014	T-801 Effluent to wells	Hall	0.28	-	-	0.28
3/3/2014	T-801 Effluent to Wells	Hall	0.14	-	-	0.14
3/10/2014	T-836 Effluent to Wells	Hall	0.05	-	-	0.05
3/13/2014	T-836 Effluent to Wells	Hall	0.08	-	-	0.08
3/17/2014	T-801 Effluent to Wells	Hall	0.05	-	-	0.05
3/24/2014	T-801 Effluent to Wells	Hall	0.15	-	-	0.15
4/1/2014[4]	T-801 Effluent to Wells	Hall	0.08	-	-	0.08
6/19/2014	T-801 Effluent to Wells	Hall	<0.10	-	-	<0.10
7/3/2014[4]	T-801 Effluent to Wells	Hall	< 0.027	-	-	< 0.027
7/22/2014	T-801 Effluent to Wells	Hall	<0.027	-	-	<0.027
8/25/2014	T-836 Effluent to Wells	Hall	<0.027	-	-	<0.027
8/28/2014	T-836 Effluent to Wells	Hall	<0.027	-	-	<0.027
10/1/2014[4]	T-836 Effluent to Wells	Hall	0.04	-	-	0.04
11/3/2014	T-836 Effluent to Wells	Hall	0.10	-	-	0.10
11/6/2014	T-836 Effluent to Wells	Hall	<0.20	-	-	<0.20
1/2/2015[4]	T-801 Effluent to Wells	Hall	< 0.027	-	-	< 0.027

Gray Shading: Sampling performed when the tanks were not discharging to the injection wells

Note: Samples labeled as "T-801 Effluent to Wells" or "T-836 Effluent to Wells" were collected from the OCD-approved sample location.

[1] Date of the Agreed Compliance Order No. WQA-OCD-CO-2013-001 signed on October 24, 2013.

[2] Date of the Supplemental Agreed Compliance Order No. WQA-OCD-CO-2013-001, signed on November 14, 2013.
[3]Digestion procedure and sample processing altered as described in the text above based upon the December 4, 2013 CH2M HILL review of selenium sampling data report.
[4]Required sampling conducted on a quarterly basis per Exhibit A, Condition 1(c) of the Order.

Attachment D:
Additional TCLP Selenium Monitoring Performed at the Navajo Refinery

Attachment D Table 1: TCLP Selenium Measurements Collected from all Navajo Refinery Sampling Locations from November 1, 2013 through January 19, 2015; EPA Method SW1311/6020/6010, mg/L

DATE	Laboratory	SWS Bottoms (W-534)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	DAF Eff.	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API Inlet		API Outlet	T-801		T-856		T-605 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-930)		T-929	Unit #45 Sour Water (W-2421)		Unit #4 Overhead Stripper	Unit #34 MHC Cold Separator		DAF Binks, Brothers 34	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Result	Ave*	Result	Result	
9/27/2013	ALS Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.24	-	-	-	-	-	-	-	-	-	1310094
10/15/2013	ALS Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.24	-	-	-	-	-	-	-	-	-	1310767
10/20/2013	Hall Environmental	5.80		-		1.60		-	-	-	<0.1 (ND)		-	-	-		-	0.85		0.91		0.90	0.90	0.90	-	-		-	-		-	-		-	-	1310A04
10/20/2013	ALS Environmental	4.92	5.36	-	-	1.90	1.75	-	-	-	0.24	0.24	-	-	-	-	-	0.80	0.83	0.89	0.90	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	1310959
10/22/2013	Hall Environmental	3.60		-		1.60		-	-	-	<1.0 (ND)		-	-	0.39		-	0.75		0.65		0.74	0.74	0.74	-	0.46		-	-		-	-		-	-	1310A71
10/22/2013	ALS Environmental	1.15	2.38	-	-	1.52	1.56	-	-	-	0.13	0.13	-	-	0.46	0.43	-	0.71	0.73	0.82	0.74	0.00	0.00	0.00	-	0.53	0.50	-	-	-	-	-	-	-	-	13101021
10/23/2013	Hall Environmental	5.20		-		1.40		-	-	-	<1.0 (ND)		-	-	0.39		-	0.79		0.75		0.79	0.79	0.79	-	0.43		-	-		-	-		<1.0 (ND)	-	1310847 1310848
10/23/2013	ALS Environmental	4.88	5.04	-	-	1.07	1.24	-	-	-	0.07	0.07	-	-	0.38	0.39	-	0.84	0.81	0.83	0.79	0.00	0.00	0.00	-	0.41	0.42	-	-	-	-	-	-	0.07	-	13101085 13101196
10/24/2013	Hall Environmental	5.00		-		-		-	-	-	<0.1 (ND)		-	-	0.11		-	0.74		0.58		0.61	0.61	0.61	-	0.39		-	-		-	-		-	-	1310C06
10/24/2013	ALS Environmental	5.03	5.02	-	-	-	-	-	-	-	0.10	0.10	-	-	<0.05 0 (ND)	0.11	-	0.82	0.78	0.65	0.61	0.00	0.00	0.00	-	0.37	0.38	-	-	-	-	-	-	-	-	13101164
10/25/2013	Hall Environmental	5.30	5.30	4.20	4.20	1.20	1.20	-	-	-	9.20	9.20	-	-	1.60	1.60	-	0.79	0.79	0.71	0.71	0.71	0.71	0.71	-	0.39	0.39	-	-	-	-	-	-	-	-	1310C53
10/26/2013	Hall Environmental	4.70	4.70	3.80	3.80	0.86	0.86	-	-	-	12.00	12.00	-	-	1.30	1.30	-	0.81	0.81	0.83	0.83	0.83	0.83	0.83	-	0.31	0.31	-	-	-	-	-	-	-	-	1310C58
10/27/2013	Hall Environmental	4.90	4.90	3.80	3.80	0.93	0.93	-	-	-	12.00	12.00	-	-	0.70	0.70	-	0.95	0.95	0.75	0.75	0.75	0.75	0.75	-	0.33	0.33	-	-	-	-	-	-	-	-	1310C60
10/28/2013	Hall Environmental	4.50	4.50	3.80	3.80	0.98	0.98	-	-	-	11.00	11.00	-	-	<0.1 (ND)	<0.1 (ND)	-	0.98	0.98	0.84	0.84	0.84	0.84	0.84	-	0.33	0.33	-	-	-	-	-	-	-	-	1310D18
10/29/2013	Hall Environmental	4.90		3.80		1.10		-	-	-	10.00		-	-	<0.2 (ND)		-	0.99		0.94		0.95	0.95	0.95	-	0.37		-	-		-	-		-	-	1310D78
10/29/2013	Cardinal Laboratories	4.01	4.46	3.08	3.44	0.81	0.96	-	-	-	9.42	9.71	-	-	<0.20 2 (ND)	-	-	0.98	0.99	0.97	0.95	0.00	0.00	0.00	-	0.58	0.48	-	-	-	-	-	-	-	-	H302620
10/30/2013	Hall Environmental	3.70		3.70		1.20		-	-	-	14.00		-	-	<0.2 (ND)		-	0.83		0.88		0.89	0.89	0.89	-	0.40		-	1.70		-	3.30		-	-	1310E22 1210E23
10/30/2013	Cardinal Laboratories	3.03	3.37	3.33	3.52	0.77	0.99	-	-	-	11.30	12.05	-	-	<1.0 (ND)	-	-	0.88	0.85	0.90	0.89	0.00	0.00	0.00	-	0.38	0.39	-	1.28	1.49	-	1.77	2.54	-	-	H302689
10/31/2013	Hall Environmental	4.00		4.00		0.99		-	-	-	14.00		-	-	<1.0 (ND)		-	0.80		1.20		1.23	1.23	1.23	1.20	0.33		-	3.30		-	4.00		-	-	1310E78 1310E81 1311085
10/31/2013	Cardinal Laboratories	3.15	3.58	3.18	3.59	0.76	0.87	-	-	-	10.30	12.15	-	-	<1.0 (ND)	-	-	1.09	0.95	1.26	1.23	0.00	0.00	0.00	-	0.40	0.36	-	2.38	2.84	-	1.50	2.75	-	-	H302652
11/1/2013	Hall Environmental	4.00		4.10		1.30		-	-	-	14.00		-	-	0.60		-	0.89		1.10		1.13	1.13	1.13	-	0.40		-	2.90		-	3.10		-	-	1311033 1311034
11/1/2013	Cardinal Laboratories	3.46	3.73	3.33	3.72	0.85	1.08	-	-	-	14.20	14.10	-	-	0.51	0.55	-	0.94	0.92	1.16	1.13	0.00	0.00	0.00	-	0.46	0.43	-	1.23	2.07	-	2.85	2.98	-	-	H302670
11/4/2013	Hall Environmental	3.40	3.40	3.60	3.60	-	-	-	-	-	-	-	-	-	-	-	0.42	0.74	0.74	0.98	0.98	0.98	0.98	0.98	1.10	-	-	-	-	-	-	-	-	-	-	1311082
11/5/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.20	1.20	-	-	-	-	-	1.20	-	-	-	-	-	-	-	-	-	-	1311155 1311209
11/6/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.73	0.73	0.73	0.73	0.73	-	-	-	-	-	-	-	-	-	-	-	1311209
11/7/2013	Hall Environmental	3.60	3.60	4.10	4.10	-	-	-	-	-	-	-	-	-	-	-	0.41	0.95	0.95	1.10	1.10	1.10	1.10	1.10	-	-	-	-	-	-	-	-	-	-	-	1311286
11/8/2013	Hall Environmental	3.80	3.80	3.80	3.80	-	-	-	-	-	-	-	-	-	0.42	0.42	-	0.78	0.78	1.20	1.20	1.20	1.20	1.20	-	-	-	-	-	-	-	-	-	-	<0.1 (ND)	1311362 1311336
11/9/2013	Hall Environmental	3.60	3.60	3.30	3.30	-	-	-	-	-	-	-	-	-	-	-	0.43	-	-	1.10	1.10	1.10	1.10	1.10	-	-	-	-	-	-	-	-	-	-	-	1311362

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-28)		Desalter Effluent (W-7)		SeRT Feed	DAF Eff.	SeRT Eff.	Wet Gas Scrubber Purge (D-258)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-601		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-630)		T-629	Unit 845 Sour Water (W-2422)		Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator		DAF Eff#5. Brothers 24	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Result	Ave*	Result	Result	
11/10/2013	Hall Environmental	3.70	3.70	4.10	4.10	-	-	-	-	-	-	-	-	-	-	-	0.20	-	-	1.10	1.10	1.10	1.10	1.10	-	-	-	-	-	-	-	-	-	-	-	1311363
11/11/2013	Hall Environmental	2.60	2.60	-	-	-	-	-	-	-	-	-	-	-	-	-	0.19	-	-	1.10	1.10	1.10	1.10	1.10	0.09	0.41	0.41	0.74	-	-	-	-	-	-	-	1311402
11/14/2013	Hall Environmental	2.60	2.60	2.60	2.60	-	-	-	-	-	-	-	-	-	-	-	0.21	-	-	0.99	0.99	0.99	0.99	0.99	-	-	-	-	-	-	-	-	-	-	-	1312625
11/16/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1 (ND)	-	-	-	-	-	-	-	-	-	-	1311693
11/17/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.96	-	-	-	-	-	-	-	-	-	-	1311694
11/18/2013	Hall Environmental	3.40	3.40	3.40	3.40	-	-	-	-	-	-	-	-	-	-	-	0.51	-	-	1.00	1.00	1.00	1.00	1.00	0.78	-	-	-	-	-	-	-	-	-	-	1311743 1311742
11/19/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.95	-	-	-	-	-	-	-	-	-	-	1311802
11/20/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.76	-	-	-	-	-	-	-	-	-	-	1311893
11/21/2013	Hall Environmental	3.60	3.60	3.50	-	-	-	-	-	-	-	-	-	-	-	-	0.43	0.63	0.63	0.86	0.86	0.86	0.86	0.86	0.73	-	-	-	-	-	-	-	-	-	-	1311970 1311971
11/22/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.80	-	-	-	-	-	-	-	-	-	-	1311A38
11/23/2013	Hall Environmental	3.80	3.80	3.60	3.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.75	-	-	-	-	-	-	-	-	-	-	1311A50
11/24/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.84	-	-	-	-	-	-	-	-	-	-	1311B06
11/25/2013	Hall Environmental	4.20	4.20	4.10	4.10	0.07	0.07	-	-	-	-	-	-	-	-	-	0.46	0.46	-	0.74	0.74	0.74	0.74	0.74	0.75	-	-	-	3.30	3.30	6.00	-	-	-	-	1311B06 1311B05
11/26/2013	Hall Environmental	3.70	3.70	4.00	4.00	1.00	1.00	-	-	-	10.00	10.00	-	-	-	-	-	-	-	-	-	-	-	-	0.72	0.50	0.50	-	-	-	-	-	-	-	-	1311B34
11/27/2013	Hall Environmental	3.80	3.80	3.60	3.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.69	-	-	-	-	-	-	-	-	-	-	1311B96 1311B97
11/28/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.80	-	-	-	-	-	-	-	-	-	-	1311B99
11/29/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.75	-	-	-	-	-	-	-	-	-	-	1311C00
11/30/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.76	-	-	-	-	-	-	-	-	-	-	1312001
12/2/2013	Hall Environmental	3.90	3.90	3.80	3.80	-	-	-	-	-	9.40	9.40	-	-	-	-	0.48	0.83	0.83	0.76	0.76	0.76	0.76	0.76	0.88	-	-	-	-	-	-	-	-	-	-	1312046 1312047
12/5/2013	Hall Environmental	-	-	3.10	3.10	-	-	-	-	-	0.52	0.52	0.43	0.87	-	-	-	-	-	-	-	-	-	-	0.47	-	-	-	-	-	-	-	-	-	-	1312225 1312228
12/9/2013	Hall Environmental	3.10	3.10	3.00	3.00	-	-	-	-	-	7.40	7.40	1.60	2.20	-	-	-	-	-	-	-	-	-	-	0.38	0.28	0.28	-	-	-	-	-	-	-	-	1312515 1312516
12/12/2013	Hall Environmental	3.70	3.70	3.80	3.80	-	-	-	-	-	12.00	12.00	0.41	1.10	-	-	-	-	-	-	-	-	-	-	0.56	0.26	0.26	-	-	-	-	-	-	-	-	1312548
12/16/2013	Hall Environmental	4.60	4.60	4.40	4.40	-	-	-	-	-	11.00	11.00	1.60	3.10	-	-	-	-	-	-	-	-	-	-	0.35	0.23	0.23	-	-	-	-	-	-	-	-	1312686 1312687
12/19/2013	Hall Environmental	4.20	4.20	4.10	4.10	-	-	-	-	-	7.90	7.90	1.60	1.90	-	-	-	0.11	0.11	-	-	-	-	-	0.24	0.35	0.35	-	-	-	-	-	-	-	-	1312960
12/23/2013	Hall Environmental	5.00	5.00	4.80	4.80	-	-	-	-	-	17.00	17.00	2.00	2.30	-	-	-	-	-	0.10	0.10	-	-	-	0.27	0.32	0.32	-	-	-	-	-	-	<0.5	<0.5	1312814 1312816
12/26/2013	Hall Environmental	6.10	6.10	6.00	6.00	-	-	-	-	-	9.20	9.20	2.60	3.30	-	-	-	0.55	0.55	-	-	-	-	-	0.27	0.28	0.28	-	-	-	-	-	-	-	-	1312862 1312863
12/27/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.30	0.30	0.31	0.34	-	-	-	-	-	-	-	-	-	-	1312C01

DATE	Laboratory	SWS Bottoms (W-824)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	OAF Eff.	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-150)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-801		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)		T-829	Unit 845 Sour Water (W-2421)		Unit 44 Overhead Stripper	Unit 834 MHC Cold Separator		DAF Eliminator Brothers 24	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Result	Ave*	Result	Result	
12/30/2013	Hall Environmental	3.90	3.90	5.70	5.70	-	-	-	-	-	15.00	15.00	1.80	2.60	-	-	-	-	-	0.88	0.88	0.37	0.35	0.34	0.33	-	-	-	-	-	-	-	-	-	1312C57 1312C58
1/6/2014	Hall Environmental	5.80	5.80	6.00	6.00	-	-	-	-	-	0.19	0.19	3.20	3.30	-	-	-	-	-	0.56	0.56	0.17	0.18	0.20	0.23	-	-	-	-	-	-	-	-	-	1401138 1401126
1/9/2014	Hall Environmental	5.90	5.90	5.80	5.80	-	-	-	-	-	17.00	17.00	1.20	2.90	-	-	-	-	-	-	-	0.14	0.21	0.25	0.29	-	-	-	-	-	-	-	-	-	1401363 1401360
1/13/2014	Hall Environmental	5.40	5.40	5.70	5.70	-	-	-	-	-	18.00	18.00	1.50	3.00	-	-	-	-	-	1.00	1.00	0.34	0.33	0.35	0.31	-	-	-	-	-	-	-	-	-	1401507 1401508
1/16/2014	Hall Environmental	4.50	4.50	4.50	4.50	-	-	-	-	-	0.17	0.17	2.20	3.60	-	-	-	0.64	0.64	-	-	0.18	0.22	0.20	0.24	-	-	-	-	-	-	-	-	-	1401682 1401683 1401684
1/20/2014	Hall Environmental	5.50	5.50	5.20	5.20	-	-	-	-	-	0.10	0.10	2.50	3.00	-	-	-	-	-	0.71	0.71	0.55	0.57	0.55	0.51	-	-	-	-	-	-	-	-	-	1401811 1401813
1/23/2014	Hall Environmental	4.90	4.90	5.00	5.00	-	-	-	-	-	0.09	0.09	1.70	2.40	-	-	-	-	-	0.72	0.72	0.18	0.19	0.20	0.23	-	-	-	-	-	-	-	-	-	1401980 1401981
1/27/2014	Hall Environmental	4.30	4.30	4.20	4.20	-	-	-	-	-	10.00	10.00	1.40	2.00	-	-	-	0.15	0.15	-	-	0.43	0.58	0.51	0.49	-	-	-	-	-	-	-	-	-	1401A61 1401A62
1/30/2014	Hall Environmental	4.30	4.30	4.50	4.50	-	-	-	-	-	9.40	9.40	2.20	2.80	-	-	-	-	-	0.47	0.47	0.26	0.27	0.29	0.27	-	-	-	-	-	-	-	-	-	1401C00 1401C01
2/3/2014	Hall Environmental	5.20	5.20	5.10	5.10	-	-	-	-	-	17.00	17.00	0.22	0.16	-	-	-	-	-	0.66	0.66	0.63	0.66	0.56	0.56	-	-	-	-	-	-	-	-	-	1402076 1402075
2/6/2014	Hall Environmental	6.30	6.30	6.20	6.20	-	-	-	-	-	15.00	15.00	0.19	0.29	-	-	-	0.60	0.60	-	-	0.49	0.45	0.43	0.40	-	-	-	-	-	-	-	-	-	1402232 1402233
2/10/2014	Hall Environmental	5.70	5.70	5.70	5.70	-	-	-	-	-	0.14	0.14	0.25	0.38	-	-	-	-	-	0.37	-	0.28	0.28	0.27	0.20	-	-	-	-	-	-	-	-	-	1402326 1402324
2/13/2014	Hall Environmental	-	-	-	-	0.58	0.58	6.50	6.70	0.83	-	-	-	-	-	-	-	-	-	-	-	-	<0.10	-	-	-	-	-	-	-	-	-	-	-	1402512 1402513
2/17/2014	Hall Environmental	-	-	-	-	1.20	1.20	8.30	-	1.70	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-	0.20	-	-	-	-	-	-	-	-	-	1402624 1402626
2/19/2014	Hall Environmental	-	-	-	-	-	-	7.50	-	1.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1402814
2/20/2014	Hall Environmental	-	-	-	-	-	-	7.50	-	1.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1402815
2/24/2014	Hall Environmental	-	-	-	-	0.35	0.35	6.90	-	1.70	-	-	-	-	-	-	-	-	-	-	-	-	0.28	-	0.28	-	-	-	-	-	-	-	-	-	1402904 1402903
2/26/2014	Hall Environmental	-	-	-	-	-	-	5.70	-	1.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1402A79
2/27/2014	Hall Environmental	-	-	-	-	-	-	6.20	-	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1402A78

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	OAF Eff.	SeRT Eff.	Wet Gas Scrubber Purge (D-950)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API Inlet		API Outlet	T-801		T-896		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)		T-829	Unit 645 Sour Water (W-2421)		Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator		DAF Emrs. Brotheres 2A	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Result	Ave*	Result	Result	
3/3/2014	Hall Environmental	-	-	-	-	0.24	0.24	5.60	-	0.57	-	-	-	-	-	-	-	-	-	-	-	-	0.12	-	0.14	-	-	-	-	-	-	-	-	-	1403030 1403032
3/5/2014	Hall Environmental	-	-	-	-	-	-	5.40	-	0.61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1403250
3/6/2014	Hall Environmental	-	-	-	-	-	-	5.40	-	0.52	-	-	-	-	-	-	-	-	-	-	-	0.082	-	-	-	-	-	-	-	-	-	-	-	-	1403248 1403249
3/10/2014	Hall Environmental	-	-	-	-	-	-	5.70	-	0.23	-	-	-	-	-	-	-	-	-	-	-	0.044	0.048	-	0.046	-	-	-	-	-	-	-	-	-	1403331 1403332 1403333
3/12/2014	Hall Environmental	-	-	-	-	-	-	5.10	-	0.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1403558
3/13/2014	Hall Environmental	-	-	-	-	0.87	0.87	5.30	-	0.16	-	-	-	-	-	-	-	-	-	-	-	0.085	0.099	-	0.079	-	-	-	-	-	-	-	-	-	1403561 1403562 1403559 1403563
3/17/2014	Hall Environmental	-	-	-	-	0.26	0.26	4.80	-	0.19	-	-	-	-	-	-	-	-	-	-	-	0.088	0.076	-	0.052	-	-	-	-	-	-	-	-	-	1403702 1403708 1403704 1403705
3/19/2014	Hall Environmental	-	-	-	-	-	-	4.30	-	0.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1403872
3/20/2014	Hall Environmental	-	-	-	-	-	-	4.80	-	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1403870
3/24/2014	Hall Environmental	-	-	-	-	0.25	0.25	5.40	-	0.28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.150	-	-	-	-	-	-	-	-	-	1403966 1403967 1403968
4/1/2014	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.076	-	-	-	-	-	-	-	-	-	1404085
6/19/2014	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10	-	-	-	-	-	-	-	-	-	1406935
7/3/2014	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.027	-	-	-	-	-	-	-	-	-	1407271
7/22/2014	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.027	-	-	-	-	-	-	-	-	-	1407A42
8/25/2014	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.027	-	-	-	-	-	-	-	-	-	1408D15
8/28/2014	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.027	-	-	-	-	-	-	-	-	-	1408F33
10/1/2014	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.036	-	-	-	-	-	-	-	-	-	1410094
11/3/2014	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10	-	-	-	-	-	-	-	-	-	1411054

DATE	Laboratory	SWS Bottoms (W-834)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	OAF Eff.	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-601		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)		T-829	Unit 845 Sour Water (W-2421)		Unit 44 Overhead Stripper	Unit 834 MHC Cold Separator		DAF Eff. Brothers 24	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Result	Ave*	Result	Result	
11/6/2014	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.20	-	-	-	-	-	-	-	-	-	-	141288
1/2/2015	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.027	-	-	-	-	-	-	-	-	-	-	1501149

*Average of the split samples. If one result was not detected, the detected value is estimated to be the average.

Attachment E:
Additional Total Selenium Monitoring Performed at the Navajo Refinery

Attachment E Table 1: Total Selenium Measurements Collected from all Navajo Refinery Sampling Locations from November 1, 2013 through January 19, 2015; EPA Method 200.7/200.8, mg/L

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeKT Feed	SeKT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-801		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)	T-829	Unit #45 Sour Water (W-2421)	Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
10/15/2013	ALS Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.49	-	-	-	-	-	-	1310768
10/20/2013	Hall Environmental	4.10		-		1.50		-	-	0.21		-	-	-		-	0.87		0.90		-	-	-	-	-	-	-	-	-	-	1310A04
10/20/2013	ALS Environmental	5.14	4.62	-	-	1.88	1.69	-	-	0.25	0.23	-	-	-	-	-	1.02	0.95	1.06	0.98	-	-	-	-	-	-	-	-	-	-	1310959
10/22/2013	Hall Environmental	0.47		-		0.62		-	-	0.07		-	-	0.31		-	0.87		0.79		-	-	-	-	0.39	-	-	-	-	-	1310A71
10/22/2013	ALS Environmental	2.31	1.39	-	-	0.79	0.71	-	-	0.13	0.10	-	-	0.39	0.35	-	0.93	0.90	0.84	0.79	-	-	-	-	0.59	-	-	-	-	-	13101021
10/23/2013	Hall Environmental	2.50		-		0.58		-	-	0.10		-	-	0.33		-	0.88		0.77		-	-	-	-	0.32	-	-	-	-	-	1310B48
10/23/2013	ALS Environmental	2.50	2.50	-	-	0.54	0.56	-	-	0.16	0.13	-	-	0.52	0.42	-	0.92	0.90	0.88	0.82	-	-	-	-	0.37	-	-	-	-	-	13101089
10/24/2013	Hall Environmental	2.30		-		-		-	-	0.07		-	-	1.10		-	0.91		0.78		-	-	-	-	0.33	-	-	-	-	-	1310C06
10/24/2013	ALS Environmental	4.77	3.54	-	-	-	-	-	-	0.10	0.09	-	-	1.83	1.47	-	1.11	1.01	0.92	0.85	-	-	-	-	0.53	-	-	-	-	-	13101164
10/25/2013	Hall Environmental	1.60	1.60	1.90	1.90	0.13	0.13	-	-	5.10	5.10	-	-	1.20	1.20	-	0.92	0.92	1.00	1.00	-	-	-	-	0.27	-	0.05	-	-	-	1310C53 1310C55
10/26/2013	Hall Environmental	2.20	2.20	2.30	2.30	0.32	0.32	-	-	8.70	8.70	-	-	0.94	0.94	-	0.91	0.91	1.10	1.10	-	-	-	-	0.24	-	0.03	-	0.03	-	1310C57 1310C58
10/27/2013	Hall Environmental	2.50	2.50	2.40	2.40	0.27	0.27	-	-	9.50	9.50	-	-	0.54	0.54	-	1.10	1.10	1.20	1.20	-	-	-	-	0.26	-	0.05	-	0.05	-	1310C59 1310C60
10/28/2013	Hall Environmental	2.40	2.40	2.30	2.30	0.08	0.08	-	-	6.60	6.60	-	-	0.05	0.05	-	0.91	0.91	0.85	0.85	-	-	-	-	0.21	-	0.08	-	0.08	-	1310D18 1310D21
10/29/2013	Hall Environmental	2.20		2.30		0.22		-	-	8.40		-	-	0.15		-	0.84		1.10		-	-	-	-	1.40	-	0.09	-	0.23	-	1310D78 1310D79
10/29/2013	Cardinal Laboratories	1.92	2.06	2.47	2.39	0.22	0.22	-	-	5.38	4.39	-	-	<0.041 1 (ND)	0.15	-	0.63	0.74	0.91	1.00	-	-	-	-	0.51	-	0.01	-	<0.0041 (ND)	-	H302620
10/30/2013	Hall Environmental	2.20		2.20		0.10		-	-	5.40		-	-	0.11		-	0.98		0.95		-	-	-	-	0.26	-	0.05	-	0.25	-	1310E22 1210E23
10/30/2013	Cardinal Laboratories	2.14	2.17	2.52	2.36	0.21	0.15	-	-	8.23	6.82	-	-	<0.1 (ND)	0.11	-	0.61	0.80	0.90	0.92	-	-	-	-	0.24	-	2.15	-	2.67	-	H302639
10/31/2013	Hall Environmental	2.20		2.30		0.39		-	-	1.50		-	-	0.06		-	1.20		1.20		-	-	-	0.88	0.29	-	0.13	-	0.14	-	1310E78 1310E81 1311035
10/31/2013	Cardinal Laboratories	2.86	2.53	2.98	2.64	0.32	0.36	-	-	4.24	2.87	-	-	<0.1 (ND)	0.06	-	0.65	0.93	0.79	0.996	-	-	-	-	0.29	-	2.51	-	2.99	-	H302652
11/1/2013	Hall Environmental	1.70		2.00		0.21		-	-	3.90		-	-	0.31		-	0.97		1.10		-	-	-	-	0.28	-	0.30	-	0.37	-	1311033 1311034
11/1/2013	Cardinal Laboratories	1.96	1.83	2.53	2.27	0.18	0.20	-	-	5.36	4.63	-	-	0.33	0.32	-	0.62	0.79	0.85	0.97	-	-	-	-	0.24	-	2.58	-	2.92	-	H302670
11/4/2013	Hall Environmental	2.10	2.10	2.40	2.40	-	-	-	-	-	-	-	-	-	-	0.10	1.10	1.10	0.66	0.66	-	-	-	0.98	-	-	-	-	-	-	1311082
11/5/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.94	0.94	-	-	-	-	-	0.51	-	-	-	-	-	-	1311156 1311209
11/6/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.00	1.00	-	-	-	-	-	-	-	-	-	-	1311209
11/7/2013	Hall Environmental	2.10	2.10	2.00	2.00	-	-	-	-	-	-	-	-	-	-	0.13	1.10	1.10	1.00	1.00	-	-	-	-	-	-	-	-	-	-	1311286
11/8/2013	Hall Environmental	1.50	1.50	1.80	1.80	-	-	-	-	-	-	-	-	0.21	0.21	-	0.91	0.91	0.59	0.59	-	-	-	-	-	-	-	-	-	0.011	1311362 1311336
11/9/2013	Hall Environmental	1.90	1.90	1.70	1.70	-	-	-	-	-	-	-	-	-	-	0.13	-	-	0.96	0.96	-	-	-	-	-	-	-	-	-	-	1311362

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API Inlet		API Outlet	T-801		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-650)	T-829	Unit #45 Sour Water (W-2421)	Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
11/10/2013	Hall Environmental	2.00	2.00	1.80	1.80	-	-	-	-	-	-	-	-	-	-	0.13	-	-	1.20	1.20	-	-	-	-	-	-	-	-	-	-	1311363
11/11/2013	Hall Environmental	1.70	1.70	-	-	-	-	-	-	-	-	-	-	-	-	0.14	-	-	0.95	0.95	-	-	-	0.08	0.22	0.38	-	-	-	-	1311402
11/12/2013	CH2M HILL ASL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.37	1.37	-	-	-	-	-	-	-	-	-	-	M3259
11/14/2013	Hall Environmental	1.60	1.60	1.60	1.60	-	-	-	-	-	-	-	-	-	-	0.15	-	-	1.10	1.10	-	-	-	-	-	-	-	-	-	-	1311625
11/16/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08	-	-	-	-	-	-	1311698
11/17/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.88	-	-	-	-			1311694
11/18/2013	Hall Environmental	2.70	2.70	2.80	2.80	-	-	-	-	-	-	-	-	-	-	0.43	-	-	0.72	0.72	-	-	-	0.59	-	-	-	-	-	-	1311743 1311742
11/19/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.87	-	-	-	-	-	-	1311802
11/20/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.64	-	-	-	-	-	-	1311893
11/21/2013	Hall Environmental	3.30	3.30	3.30	3.30	-	-	-	-	-	-	-	-	-	-	0.36	0.65	0.65	0.66	0.66	-	-	-	0.68	-	-	-	-	-	-	1311970 1311971
11/22/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.78	-	-	-	-	-	-	1311A38
11/23/2013	Hall Environmental	0.86	0.86	1.10	1.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-	-	-	-	-	-	1311A50
11/24/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.67	-	-	-	-	-	-	1311B06
11/25/2013	Hall Environmental	3.30	3.30	3.10	3.10	1.90	1.90	-	-	-	-	-	-	-	-	0.50	0.50	-	0.66	0.66	-	-	-	0.59	-	-	2.20	1.20	-	-	1311B06 1311B05
11/26/2013	Hall Environmental	2.10	2.10	3.20	3.20	0.39	0.39	-	-	7.90	7.90	-	-	-	-	-	-	-	-	-	-	-	-	0.66	0.43	-	-	-	-	-	1311B34
11/27/2013	Hall Environmental	2.90	2.90	2.80	2.80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.61	-	-	-	-	-	-	1311B96 1311B97
11/28/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.68	-	-	-	-	-	-	1311B99
11/29/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.64	-	-	-	-	-	-	1311C00
11/30/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.70	-	-	-	-	-	-	1312001
12/2/2013	Hall Environmental	3.20	3.20	3.20	3.20	-	-	-	-	7.50	7.50	-	-	-	-	0.37	0.63	0.63	0.82	0.82	-	-	-	0.77	-	-	-	-	-	-	1312046 1312047
12/5/2013	Hall Environmental	-	-	2.30	2.30	-	-	-	-	0.36	0.36	0.27	0.67	-	-	-	-	-	-	-	-	-	-	0.52	-	-	-	-	-	-	1312225 1312228
12/9/2013	Hall Environmental	3.00	3.00	3.10	3.10	-	-	-	-	9.90	9.90	1.50	2.20	-	-	-	-	-	-	-	-	-	-	0.37	0.38	0.38	-	-	-	-	1312315 1312316
12/12/2013	Hall Environmental	3.70	3.70	3.40	3.40	-	-	-	-	11.00	11.00	0.44	0.91	-	-	-	-	-	-	-	-	-	-	0.55	0.39	0.39	-	-	-	-	1312548
12/16/2013	Hall Environmental	4.20	4.20	4.20	4.20	-	-	-	-	9.40	9.40	1.80	2.50	-	-	-	-	-	-	-	-	-	-	0.43	0.37	0.37					1312686 1312687
12/19/2013	Hall Environmental	3.90	3.90	3.90	3.90	-	-	-	-	6.40	6.40	1.50	1.70	-	-	-	0.99	0.99	-	-	-	-	-	0.24	0.43	0.43	-	-	-	-	1312960
12/23/2013	Hall Environmental	4.80	4.80	4.60	4.60	-	-	-	-	14.00	14.00	1.40	2.10	-	-	-	-	-	1.10	1.10	-	-	-	0.27	0.41	0.41	-	-	-	-	1312814 1312816
12/26/2013	Hall Environmental	5.80	5.80	5.70	5.70	-	-	-	-	8.00	8.00	2.60	3.00	-	-	-	1.30	1.30	-	-	-	-	-	0.38	0.33	0.33	-	-	-	-	1312862 1312863
12/27/2013	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.10	0.38	0.37	0.38	-	-	-	-	-	-	1312C01
12/30/2013	Hall Environmental	3.90	3.90	5.90	5.90	-	-	-	-	7.30	7.30	0.97	2.30	-	-	-	-	-	0.88	0.88	1.60	0.63	0.43	0.33	-	-	-	-	-	-	1312C57 1312C58

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-801		T-896		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)	T-829	Unit #45 Sour Water (W-2421)	Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
1/6/2014	Hall Environmental	5.40	5.40	5.70	5.70	-	-	-	-	<0.45	<0.45	3.00	4.50	-	-	-	-	-	1.00	1.00	1.20	0.34	0.27	0.30	-	-	-	-	-	-	1401138 1401126
1/9/2014	Hall Environmental	5.60	5.60	5.60	5.60	-	-	-	-	16.00	16.00	2.00	2.90	-	-	-	-	-	-	-	1.80	0.42	0.43	0.43	-	-	-	-	-	-	1401368 1401360
1/13/2014	Hall Environmental	4.00	4.00	5.30	5.30	-	-	-	-	18.00	18.00	1.10	2.70	-	-	-	-	-	1.20	1.20	2.10	0.41	0.37	0.35	-	-	-	-	-	-	1401507 1401508
1/16/2014	Hall Environmental	3.70	3.70	3.20	3.20	-	-	-	-	<5.00	<5.00	2.30	3.40	-	-	-	3.70	3.70	-	-	1.60	0.25	0.20	0.26	-	-	-	-	-	-	1401682 1401683 1401684
1/20/2014	Hall Environmental	4.80	4.80	4.90	4.90	-	-	-	-	<4.50	<4.50	2.50	2.90	-	-	-	-	-	1.60	1.60	1.00	0.75	0.54	0.51	-	-	-	-	-	-	1401811 1401813
1/23/2014	Hall Environmental	4.60	4.60	4.00	4.00	-	-	-	-	<0.22	<0.22	1.70	2.20	-	-	-	-	-	0.68	0.68	1.40	0.24	0.21	0.23	-	-	-	-	-	-	1401980 1401981
1/27/2014	Hall Environmental	4.00	4.00	4.20	4.20	-	-	-	-	17.00	17.00	1.80	2.00	-	-	-	1.90	1.90	-	-	1.20	0.55	0.51	0.52	-	-	-	-	-	-	1401A61 1401A51
1/30/2014	Hall Environmental	4.20	4.20	4.30	4.30	-	-	-	-	9.50	9.50	2.10	3.20	-	-	-	-	-	0.81	0.81	0.98	0.30	0.23	0.27	-	-	-	-	-	-	1401C00 1401C01
2/3/2014	Hall Environmental	5.40	5.40	5.00	5.00	-	-	-	-	16.00	16.00	0.23	0.19	-	-	-		-	1.20	1.20	1.10	0.60	0.59	0.64	-	-	-	-	-	-	1402075 1402075
2/6/2014	Hall Environmental	5.70	5.70	5.90	5.90	-	-	-	-	16.00	16.00	0.18	0.28	-	-	-	1.00	1.00	-	-	1.30	0.45	0.42	0.42	-	-	-	-	-	-	1402232 1402233
2/10/2014	Hall Environmental	5.30	5.30	5.70	5.70	-	-	5.20	0.31	0.048	0.048	0.25	0.45	-	-	-	-	-	0.36	0.36	0.58	0.26	0.24	0.26	-	-	-	-	-	-	1402326 1402324 1402325
2/12/2014	Hall Environmental	-	-	-	-	-	-	6.50	0.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1402490
2/13/2014	Hall Environmental	-	-	-	-	0.55	0.55	6.00	0.81	-	-	-	-	-	-	-	-	-	-	-	-	0.087	-	-	-	-	-	-	-	-	1402512 1402513
2/17/2014	Hall Environmental	-	-	-	-	1.20	1.20	6.60	1.20	-	-	-	-	-	-	-	-	-	-	-	-	0.22	-	0.20	-	-	-	-	-	-	1402613 1402624 1402626
2/19/2014	Hall Environmental	-	-	-	-	-	-	7.20	1.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1402814
2/20/2014	Hall Environmental	-	-	-	-	-	-	7.00	1.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1402815
2/24/2014	Hall Environmental	-	-	-	-	0.38	0.38	7.00	1.50	-	-	-	-	-	-	-	-	-	-	-	-	0.27	-	0.27	-	-	-	-	-	-	1402902 1402903 1402904
2/26/2014	Hall Environmental	-	-	-	-	-	-	6.60	1.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1402A79
2/27/2014	Hall Environmental	-	-	-	-	-	-	5.80	0.46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1402A78
3/3/2014	Hall Environmental	-	-	-	-	0.31	0.31	5.60	0.49	-	-	-	-	-	-	-	-	-	-	-	-	0.12	-	0.12	-	-	-	-	-	-	1403080 1403082
3/5/2014	Hall Environmental	-	-	-	-	-	-	5.70	0.56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1403250
3/6/2014	Hall Environmental	-	-	-	-	-	-	5.40	0.44	-	-	-	-	-	-	-	-	-	-	-	0.24	-	-	-	-	-	-	-	-	-	1403248 1403249
3/10/2014	Hall Environmental	-	-	-	-	-	-	5.30	0.19	-	-	-	-	-	-	-	-	-	-	-	0.16	0.067	-	0.067	-	-	-	-	-	-	1403331 1403332 1403333
3/12/2014	Hall Environmental	-	-	-	-	-	-	5.20	0.21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1403558
3/13/2014	Hall Environmental	-	-	-	-	0.84	0.84	5.00	0.14	-	-	-	-	-	-	-	-	-	-	-	0.17	0.095	-	0.091	-	-	-	-	-	-	1403561 1403562 1403559 1403563

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-801		T-836		T-865 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)	T-829	Unit #45 Sour Water (W-2421)	Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
3/17/2014	Hall Environmental	-	-	-	-	0.50	0.50	4.40	0.14	-	-	-	-	-	-	-	-	-	-	-	<0.28	0.096	-	0.081	-	-	-	-	-	-	1403702 1403703 1403704 1403705
3/19/2014	Hall Environmental	-	-	-	-			3.90	0.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1403872
3/20/2014	Hall Environmental	-	-	-	-			4.40	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1403870
3/24/2014	Hall Environmental	-	-	-	-	0.61	0.61	4.70	0.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.12	-	-	-	-	-	-	1403966 1403967 1403968
3/27/2014	Hall Environmental	-	-	-	-	-	-	3.80	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1403840
3/31/2014	Hall Environmental	-	-	-	-	-	-	4.40	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1403C50
4/1/2014	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.076	-	-	-	-	-	-	1404085
4/3/2014	Hall Environmental	-	-	-	-	-	-	3.60	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1404180
4/7/2014	Hall Environmental	-	-	-	-	-	-	4.70	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1404270
4/10/2014	Hall Environmental	-	-	-	-	-	-	4.10	0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1404503
4/14/2014	Hall Environmental	-	-	-	-	-	-	3.90	0.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1404611
4/17/2014	Hall Environmental	-	-	-	-	-	-	4.00	0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1404825
4/21/2014	Hall Environmental	-	-	-	-	-	-	3.00	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1404884
4/24/2014	Hall Environmental	-	-	-	-	-	-	3.50	0.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1404A30
4/28/2014	Hall Environmental	-	-	-	-	-	-	3.40	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1404898
5/1/2014	Hall Environmental	-	-	-	-	-	-	3.60	0.088	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1405036
5/5/2014	Hall Environmental	-	-	-	-	-	-	3.40	0.046	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1405142
5/8/2014	Hall Environmental	-	-	-	-	-	-	3.20	0.052	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1405348
5/12/2014	Hall Environmental	-	-	-	-	-	-	3.40	0.074	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1405453
5/15/2014	Hall Environmental	-	-	-	-	-	-	3.60	0.068	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1405688
5/19/2014	Hall Environmental	-	-	-	-	-	-	3.40	0.095	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1405784
5/22/2014	Hall Environmental	-	-	-	-	-	-	2.80	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1405983
5/27/2014	Hall Environmental	-	-	-	-	-	-	2.90	0.077	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1405B03
5/29/2014	Hall Environmental	-	-	-	-	-	-	3.20	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1405C46
6/2/2014	Hall Environmental	-	-	-	-	-	-	3.30	0.073	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1406018
6/5/2014	Hall Environmental	-	-	-	-	-	-	3.10	0.085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1406247

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	SeRT Eff.	Wet Gas Scrubber Pump (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API Inlet		API Outlet	T-801		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)	T-829	Unit 165 Sour Water (W-2421)	Unit 44 Overhead Stripper	Unit 154 MHC Cold Separator	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
6/9/2014	Hall Environmental	-	-	-	-	-	-	3.30	0.062	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1406376
6/12/2014	Hall Environmental	-	-	-	-	-	-	3.10	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1406576
6/16/2014	Hall Environmental	-	-	-	-	-	-	3.30	0.54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1406894
6/19/2014	Hall Environmental	-	-	-	-	-	-	3.10	0.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.069	-	-	-	-	-	-	1406934
6/23/2014	Hall Environmental	-	-	-	-	-	-	3.90	0.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1406A48
6/26/2014	Hall Environmental	-	-	-	-	-	-	3.00	0.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1406C44
7/1/2014	Hall Environmental	-	-	-	-	-	-	2.30	0.14	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1407055
7/3/2014	Hall Environmental							2.20	0.12															0.02							1407222 1407224
7/7/2014	Hall Environmental	-	-	-	-	-	-	2.70	0.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1407272
7/10/2014	Hall Environmental	-	-	-	-	-	-	pH 6.0 pH 5.0 pH 4.0 pH 3.5	3.2 2.10 0.21 0.18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1407494
7/14/2014	Hall Environmental	-	-	-	-	-	-	3.20	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1407602
7/17/2014	Hall Environmental	-	-	-	-	-	-	2.70	0.068	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1407867
7/21/2014	Hall Environmental	-	-	-	-	-	-	2.70	0.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1407986
7/24/2014	Hall Environmental	-	-	-	-	-	-	2.80	0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1407C14
7/28/2014	Hall Environmental	-	-	-	-	-	-	2.50 3.60	0.28 0.072	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1407D22 1408919
7/31/2014	Hall Environmental	-	-	-	-	-	-	3.50	0.32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1408014
8/4/2014	Hall Environmental	-	-	-	-	-	-	3.30	0.059	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1408159
8/7/2014	Hall Environmental	-	-	-	-	-	-	3.00	0.043	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1408413
8/11/2014	Hall Environmental	-	-	-	-	-	-	2.80	0.035	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1408469
8/15/2014	Hall Environmental	-	-	-	-	-	-	3.60	0.037	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1408846
8/21/2014	Hall Environmental	-	-	-	-	-	-	3.10	0.036	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1408870
8/25/2014	Hall Environmental	-	-	-	-	-	-	1.60	0.032	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.018	-	-	-	-	-	-	1408D14 1408D15
8/28/2014[1]	Hall Environmental	-	-	-	-	-	-	2.60	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.014	-	-	-	-	-	-	1408F25 1408F33
9/2/2014	Hall Environmental	-	-	-	-	-	-	3.90	0.038	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1409074
9/4/2014	Hall Environmental	-	-	-	-	-	-	3.90	0.025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1409240
9/8/2014	Hall Environmental	-	-	-	-	-	-	4.60	0.057	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1409352
9/11/2014	Hall Environmental	-	-	-	-	-	-	4.20	0.033	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1409592

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-25)		Desalter Effluent (W-7)		SeRT Feed	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API-Inlet		API Outlet	T-801		T-836		T-805 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)	T-829	Unit 945 Sour Water (W-2421)	Unit 44 Overhead Stripper	Unit #34 MHC Cold Separator	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
9/15/2014	Hall Environmental	-	-	-	-	-	-	4.40	0.037	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1409711
9/18/2014	Hall Environmental	-	-	-	-	-	-	5.00	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1409962
9/22/2014	Hall Environmental	-	-	-	-	-	-	5.30	0.044	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1409800
9/25/2014	Hall Environmental	-	-	-	-	-	-	6.10	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1409D32
9/29/2014	Hall Environmental	-	-	-	-	-	-	6.40	0.072	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1409F12
10/1/2014	Hall Environmental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.020	-	-	-	-	-	-	1410094
10/2/2014	Hall Environmental	-	-	-	-	-	-	6.50	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1410152
10/6/2014	Hall Environmental	-	-	-	-	-	-	8.60	0.086	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1410276
10/9/2014	Hall Environmental	-	-	-	-	-	-	8.90	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1410515
10/13/2014	Hall Environmental	-	-	-	-	-	-	7.30	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1410614
10/16/2014	Hall Environmental	-	-	-	-	-	-	6.30	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1410843
10/20/2014	Hall Environmental	-	-	-	-	-	-	5.10	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1410A24
10/23/2014	Hall Environmental	-	-	-	-	-	-	4.40	0.089	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1410B61
10/27/2014	Hall Environmental	-	-	-	-	-	-	2.50	0.058	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1410C49
10/30/2014	Hall Environmental	-	-	-	-	-	-	3.70	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1410E23
11/3/2014	Hall Environmental	-	-	-	-	-	-	3.20	0.028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.081	-	-	-	-	-	-	1411055 1411054
11/6/2014	Hall Environmental	-	-	-	-	-	-	3.50	0.033	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1411274
11/10/2014	Hall Environmental	-	-	-	-	-	-	2.70	0.046	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1411371
11/13/2014	Hall Environmental	-	-	-	-	-	-	3.30	0.055	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1411551
11/17/2014	Hall Environmental	-	-	-	-	-	-	3.30	0.028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1411680
11/24/2014	Hall Environmental	-	-	-	-	-	-	3.50	0.043	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1411A62
11/26/2014	Hall Environmental	-	-	-	-	-	-	3.50	0.39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412005
12/1/2014	Hall Environmental	-	-	-	-	-	-	3.80	1.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412052
12/4/2014	Hall Environmental	-	-	-	-	-	-	3.90	1.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412314
12/8/2014	Hall Environmental	-	-	-	-	-	-	4.00	1.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412470
12/10/2014	Hall Environmental	-	-	-	-	-	-	5.20	0.37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412531
12/11/2014	Hall Environmental	-	-	-	-	-	-	5.20	0.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412611
12/12/2014	Hall Environmental	-	-	-	-	-	-	2.20	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412643 1412649

DATE	Laboratory	SWS Bottoms (W-634)		SWS Bottoms (W-20)		Desalter Effluent (W-7)		SeRT Feed	SeRT Eff.	Wet Gas Scrubber Purge (D-250)		Desalter Outlet (D-130)	Desalter Outlet (D-2101)	API Inlet		API Outlet	T-601		T-636		T-905 Eff.	DAF Eff.	Walnut Filter Eff.	Injection Wells	Storm Tank (T-830)	T-829	Unit #45 Sour Water (W-2421)	Unit 44 Overhead Stripper	Unit #54 MHC Cold Separator	RO Reject	Lab Report
		Result	Ave*	Result	Ave*	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Result	Ave*	Result	Result	Ave*	Result	Ave*	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	
12/15/2014	Hall Environmental	-	-	-	-	-	-	5.10	0.097	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412728
12/18/2014	Hall Environmental	-	-	-	-	-	-	4.20	0.051	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412975
12/22/2014	Hall Environmental	-	-	-	-	-	-	3.70	0.072	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412A80
12/29/2014	Hall Environmental	-	-	-	-	-	-	3.60	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1412858
1/2/2015	Hall Environmental	-	-	-	-	-	-	3.20	0.091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.029	-	-	-	-	-	-	1501017, 1501149
1/5/2015	Hall Environmental	-	-	-	-	-	-	3.90	0.075	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1501143
1/8/2015	Hall Environmental	-	-	-	-	-	-	3.50	0.072	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1501309
1/12/2015	Hall Environmental	-	-	-	-	-	-	3.50	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1501385
1/15/2015	Hall Environmental	-	-	-	-	-	-	2.80	1.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1501537
1/19/2015	Hall Environmental	-	-	-	-	-	-	2.50	0.090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1501623

*Average of the split samples. If one result was not detected, the detected value is estimated to be the average.

[1] The sampling event on August 28, 2014 showed a SeRT Influent concentration of <0.05 ppm and a SeRT Effluent concentration of 2.60 ppm. Samples were likely a) switched in the field before being labeled, or b) were mislabeled. This table shows the correct concentration associated with each location.

Chavez, Carl J, EMNRD

From: Stone, Brian <Brian.Stone@HollyFrontier.com>
Sent: Tuesday, January 13, 2015 11:11 AM
To: Dawson, Scott, EMNRD; Chavez, Carl J, EMNRD
Cc: Holder, Mike; Coons, Christina (Christie)
Subject: 1/2/2015 Effluent Se Results
Attachments: Rpt_1501149_Final_v1.pdf

Scott/Carl – attached are the effluent selenium results for January 2, 2015.

For 1/2/15:

Total Effluent Se = 0.029 mg/L

TCLP Effluent Se = ND mg/L

Selenium sampling is conducted on a quarterly basis on the first business day of the quarter per Exhibit A Condition 1(c) to the Amended and Supplemented Order dated November 14, 2013 The next scheduled sampling date will be Wednesday, April 1, 2015. Please let me know if you have a different interpretation or if you have any questions or comments. Thanks again for your assistance in this matter.

Brian Stone
Environmental Specialist
Navajo Refining Company, L.L.C.
501 E Main Street
Artesia, NM 88210
(575) 746-5294 (office)
(575) 308-1511 (cell)

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

January 12, 2015

Mike Holder

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

RE: Quarterly WW Effluent Monitoring OrderNo.: 1501149

Dear Mike Holder:

Hall Environmental Analysis Laboratory received 1 sample(s) on 1/7/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company
Client Sample ID: Effluent to Wells (location #6)
Project: Quarterly WW Effluent Monitoring
Collection Date: 1/2/2015 8:30:00 AM
Lab ID: 1501149-001 **Matrix:** AQUEOUS **Received Date:** 1/7/2015 9:45:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: TCLP METALS							Analyst: **ELS**	
Selenium	ND	0.027	0.050		mg/L	1	1/8/2015 6:21:27 AM	17109
EPA 6010B: TOTAL METALS							Analyst: **ELS**	
Selenium	0.029	0.014	0.050	J	mg/L	1	1/8/2015 6:19:37 AM	17109

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
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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501149**

12-Jan-15

Client: Navajo Refining Company

Project: Quarterly WW Effluent Monitoring

Sample ID	**MB-17109**	SampType:	**MBLK**	TestCode:	**EPA Method 6010B: TCLP Metals**					
Client ID:	**PBW**	Batch ID:	**17109**	RunNo:	**23522**					
Prep Date:	**1/7/2015**	Analysis Date:	**1/8/2015**	SeqNo:	**694945**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	ND	1.0								

Sample ID	**LCS-17109**	SampType:	**LCS**	TestCode:	**EPA Method 6010B: TCLP Metals**					
Client ID:	**LCSW**	Batch ID:	**17109**	RunNo:	**23522**					
Prep Date:	**1/7/2015**	Analysis Date:	**1/8/2015**	SeqNo:	**694946**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.48	1.0	0.5000	0	95.3	80	120			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1501149**

12-Jan-15

Client: Navajo Refining Company

Project: Quarterly WW Effluent Monitoring

Sample ID	**MB-17109**	SampType:	**MBLK**	TestCode:	**EPA 6010B: Total Metals**					
Client ID:	**PBW**	Batch ID:	**17109**	RunNo:	**23522**					
Prep Date:	**1/7/2015**	Analysis Date:	**1/8/2015**	SeqNo:	**694914**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	ND	0.050								

Sample ID	**LCS-17109**	SampType:	**LCS**	TestCode:	**EPA 6010B: Total Metals**					
Client ID:	**LCSW**	Batch ID:	**17109**	RunNo:	**23522**					
Prep Date:	**1/7/2015**	Analysis Date:	**1/8/2015**	SeqNo:	**694915**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.48	0.050	0.5000	0	95.3	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: NAVAJO REFINING COM Work Order Number: 1501149 RcptNo: 1

Received by/date: CS 01/07/15

Logged By: **Lindsay Mangin** 1/7/2015 9:45:00 AM

Completed By: **Lindsay Mangin** 1/7/2015 10:26:15 AM

Reviewed By: 01/07/15

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?	FedEx		

Log In

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

# of preserved bottles checked for pH: 1
(<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 °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Client: Navajo Refining Co.

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

Phone #: 575-748-3311

email or Fax#: 575-746-5451

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)
☐ Other
☐ EDD (Type)

Turn Around Time:
☐ Standa ☐ Rush Next Day

Project Name: Quarterly WW Effluent Monitoring

Project #: P.O. # 167796

Project Manager: Mike Holder / Dan Crawford

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0°C

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1501149	Total Se by EPA Method 6010B	TCLP Selenium 1311/6010
1/2/15	8:30	Liquid	Effluent to Wells (location #6)	1 Plastic	HNO3	-001	X	
		Liquid	Effluent to Wells (location #6)	1 Plastic	Neat	-001		X

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Date	Time
1/2/15	12:00	James Potts	Celina Sosa	01/07/15	0945
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: Required to test on the first business day of each month.

(1) Totals method 6010
(2) TCLP 1311/6010

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.