

GW - 028

C-141s
(2)

Chavez, Carl J, EMNRD

From: Combs, Robert <Robert.Combs@HollyFrontier.com>
Sent: Thursday, April 07, 2016 10:01 PM
To: Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV
Cc: Denton, Scott; Orosco, Richard
Subject: 2016-04-04 Asphalt spill at Artesia
Attachments: 2016-04-04 Initial C-141 Asphalt spill.pdf

Carl and Leona,

Please see the attached initial C-141 report form corresponding to an asphalt spill that occurred on April 4, 2016. As mentioned in the report, the cleanup is underway and a final C-141 form will follow with all supporting documentation.

If you have any questions or would like to discuss, please let me know.

Thanks,
Robert

Robert Combs
Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Form C-141
Revised August 8, 2011

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	HollyFrontier Navajo Refining LLC	Contact	Robert Combs
Address	501 E. Main St, Artesia, NM 88210	Telephone No.	575-746-5382
Facility Name	Artesia Refinery	Facility Type	Petroleum Refinery
Surface Owner	Mineral Owner	API No.	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
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Latitude 32°50'37.19"N Longitude 104°23'46.50"W

NATURE OF RELEASE

Type of Release	Asphalt	Volume of Release	< 10 bbl	Volume Recovered	0 bbl
Source of Release	Rail loading area – West loading rack	Date and Hour of Occurrence	04/04/2016 at approx. 10:00 pm	Date and Hour of Discovery	04/04/2016 at approx. 10:10 pm
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?			
By Whom?	Date and Hour				
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

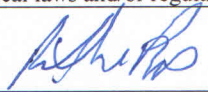
On April 4, 2016, it was reported that two rail cars had been overtopped and caused the release of less than 10 bbls of asphalt. Operator error was the cause of the spill. When the operator noticed the spill, he immediately shut down the transfer pump and closed the valve to the railcar. The impacted area is located along the rail loading racks in two areas on either side of the loading rack.

Describe Area Affected and Cleanup Action Taken.*

The spill was contained in the rail loading area. The spilled material hardened quickly which limited the extent of the spill area. The loading area is covered by gravel, which collected much of the asphalt and limited contact to soil. Cleanup of the asphalt/gravel in the area is underway and the impacted material will be disposed at a non-hazardous disposal facility.

A final C-141 including photos and waste disposal information will follow.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION		
Printed Name: Robert Combs	Approved by Environmental Specialist:		
Title: Environmental Specialist	Approval Date:	Expiration Date:	
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 04/07/2016	Phone: 575-308-2718		

* Attach Additional Sheets If Necessary



SUSANA MARTINEZ
Governor
JOHN A. SANCHEZ
Lieutenant Governor

**NEW MEXICO
ENVIRONMENT DEPARTMENT**

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.env.nm.gov



RYAN FLYNN
Cabinet Secretary
BUTCH TONGATE
Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

April 8, 2016

Mr. Scott M. Denton
Environmental Manager
HollyFrontier Navajo Refining, LLC
P.O. Box 159
Artesia, New Mexico 88211-0159

**RE: RESPONSE
TANK 815 RELEASE RESPONSE REPORT, JANUARY 2016
HOLLYFRONTIER NAVAJO REFINING, LLC - ARTESIA REFINERY
EPA ID# NMD048918817
HWB-NRC-MISC**

Dear Mr. Denton:

The New Mexico Environment Department (NMED) has received HollyFrontier Navajo Refining, LLC - Artesia Refinery's (the Permittee) *Tank 815 Release Response Report* (Report), dated January 28, 2016. On April 16, 2015, the Permittee notified NMED and the New Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division (OCD) that the sump located adjacent to Tank 815 had overflowed and that a water/diesel mixture from the sump had been released inside the containment area of the North Colony Landfarm (NCL), a hazardous waste management unit (HWMU).

Three roll-off containers were filled with excavated soil from the southeast quadrant of the containment area and one representative soil sample was collected from each roll-off container in May 2015 and submitted to a laboratory to characterize the soil for disposal. Historically, K048, K049, K051, and K052 listed RCRA hazardous wastes were applied to the NCL. The Permittee requested a "no longer contained-in" determination from NMED to allow the excavated soil to be managed as nonhazardous waste; however, NMED reviewed the Permittee's request and determined that the excavated soil was a hazardous waste and denied the Permittee's request for a "no longer contained-in" determination because it did not meet applicable Land Disposal

Restrictions (LDR) standards. On January 29, 2016, NMED received the Permittee's Report. NMED considers the Report to be incomplete and provides the following comments:

Comment 1

In the *Remedial Actions* section, page 2 of the Report, the Permittee describes the saturated soil removal activities. Excavated soil was placed in three roll-off bins and soil from each bin was characterized for disposal. After the excavation activities were completed, the area was backfilled and graded with soil from an off-site source. It is important to note that this release occurred in a HWMU and is therefore subject to the requirements of the December 2010 Post-Closure Care Permit. Revise the Report to include the following information:

- a. Explain in the Report what caused the sump to overflow and the steps taken to prevent future releases at the sump.
- b. The Report stated that 12 inches of soil was removed from the release area, but it was not clear if the soil was saturated to a depth of 12 inches. Provide the depth of saturation and, if the depth of saturation was greater than 12 inches, explain why only 12 inches was removed from the release area.
- c. Explain why soil confirmation samples were not collected in the release area and how it was determined that the extent of contamination was defined.
- d. Provide dimensions of the release area and the volume of contaminated soil removed from excavation activities.

Comment 2


As stated in Comment 1c, the Permittee did not collect soil confirmation samples at Tank 815 located in the NCL; therefore, the Permittee has not demonstrated that all soils containing DRO at concentrations greater than the soil screening level (SSL) were removed. The Permittee must collect at least four confirmation samples from the soils at the new fill/soil interface in the release area and analyze the samples for DRO (and SVOCs if DRO is greater than 3,000 mg/kg [Industrial/Occupational Exposure for Diesel#2/crankcase oil from December 2014 *Risk Assessment Guidance for Investigations and Remediation*]). Provide the analytical data with the revised Report by **June 17, 2016**. In addition, during a phone call between NMED and the Permittee on April 4, 2016, the Permittee expressed concerns about coming in contact with or removing the waste beneath the secondary containment cover of the NCL during soil confirmation sampling. At this time, if waste is encountered during soil confirmation sampling activities, the Permittee must segregate the clean fill from the underlying waste. The waste and contaminated cover material can be characterized separately for appropriate disposal. For future removal activities involving the NCL, the Permittee must contact NMED so that appropriate measures can be discussed prior to beginning work at the site.

Mr. Denton
April 8, 2016
Page 3 of 3

The Permittee must address all comments and submit the revised Report with the confirmation sample analytical data results from the soil confirmation samples to NMED by **June 17, 2016**.

If you have any questions regarding this letter, please contact Leona Tsinnajinnie of my staff at (505) 476-6057.

Sincerely,



John E. Kieling
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
N. Dhawan, NMED HWB
K. Van Horn, NMED HWB
L. Tsinnajinnie, NMED HWB
C. Chavez, NMEMNRD OCD
R. Combs, HollyFrontier Navajo Refining, LLC - Artesia Refinery
P. Kruger, AMEC Foster Wheeler
L. King, EPA 6PD-N

File: Reading and NRC 2016, HWB-NRC-MISC



January 28, 2016

Mr. Carl Chavez
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Mr. John Kieling
Chief, Hazardous Waste Bureau
New Mexico Environmental Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505

**RE: Final Release Report for April 2015 Tank 815 Release
HollyFrontier Navajo, L.L.C., Artesia Refinery
Discharge Permit GW-028; RCRA Permit No. NMD048918817**

Dear Mr. Chavez and Mr. Kieling:

Enclosed is the final C-141 form and the *Tank 815 Release Response Report* for the April 16, 2015 release. The release response report documents the actions taken immediately following the release as well as the remediation and waste disposal activities. This release report is being submitted in both hard copy and electronic format.

If you have any questions or comments regarding this request, please feel free to contact me at 575-746-5487 or Robert Combs at 575-746-5382.

Sincerely,

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

c: Robert Combs

January 28, 2016

Mr. Scott Denton
Dr. Robert Combs
HollyFrontier Navajo Refining LLC
501 East Main Street
Artesia, New Mexico 88210

Tank 815 Release Response Report

Dear Scott and Robert:

Amec Foster Wheeler has prepared this release response report to describe activities that have occurred to address a reported release of diesel from the Tank 815 water draw sump at the Navajo Refining Company, LLC (NRC) refinery located in Artesia, New Mexico (Figure 1). This letter documents the release response and remedial actions associated with the April 16, 2015 release.

Release

On April 16, 2015, an overflow of a water and diesel mixture from the water draw sump at Tank 815 was observed. The water draw valve was immediately closed upon discovery of the overflow, and a vacuum truck was used to recover free liquids from the area. Approximately 30 barrels of free liquid was recovered from the release area and the sump and was returned to the crude process. The exact volume of liquids released from the sump is unknown, but was reported as greater than 25 barrels based on the volume of liquid recovered.

Notification

Sections 1.5.13, 3.2.3.a.g, and 4.7.4 of the Post-Closure Care Permit (PCC Permit) issued by the New Mexico Environment Department (NMED) Hazardous Waste Bureau (HWB) require notification of a release. Section 1.5.13 requires verbal notification within 24 hours in the event that a release may endanger public drinking water supplies or could threaten the environment or human health outside the refinery, and requires written notification within five calendar days. Section 3.2.3.a.g specifically requires notification within 24 hours of a release from Tank 815. Section 4.7.4 requires notification of a new release from an existing solid waste management unit (SWMU) be reported within 15 days. Tank 815 is located within the North Colony Landfarm (NCL) which is listed as SWMU 6 in the PCC Permit (Figure 2).

Section 2.D.1 of the Discharge Permit GW-028 issued by the New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division (OCD) for the refinery requires oral notification of a release within twenty-four hours. Section 2.D.2 of the Discharge Permit requires written notification within one week of the identification of a release.

NRC personnel verbally reported the release to the NMED HWB and the OCD on April 16, 2015. Written notification was provided to both agencies on April 21, 2015 using an initial C-141 report. A copy of the initial C-141 report is provided in Attachment A. Thus, the initial reporting requirements of both the PCC Permit and the Discharge Permit have been met.

Remedial Actions

In order to maintain appropriate cover for the NCL, the saturated soil in the vicinity of the release was excavated and was placed into three covered, lined rolloff containers. Soil was excavated to a depth of no more than 12 inches below the ground surface. Once the excavation was completed, the area was backfilled with clean soil from an off-site source and graded to match the surrounding area. Figure 3 shows the extent of the affected area and photographs from before and after the excavation was performed are provided in Attachment B.

Waste Characterization and Disposal

One representative composite sample of the excavated soil was collected from each of the rolloff containers and analyzed for constituents of concern. The analytical results from each of the three samples were compared to the concentrations used to define a waste as characteristically hazardous under the Toxicity Characteristic. The analytical results were also compared to the land disposal restriction treatment standards for the listed wastes that were historically treated within the NCL and to the alternative standards for soils containing those listed wastes. Table 1 provides the waste characterization analytical results and the standards used for these comparisons.

NRC requested an extension from NMED HWB for the 90-day storage period for the soils placed in the rolloffs on July 15, 2015. At that time, the characterization of the soils was still being evaluated and the soil was considered potentially a hazardous waste. NMED HWB granted a one-time 30-day extension, dated July 16, 2015, for the stored soils while the characterization was evaluated. Copies of the letters are provided in Attachment C.

On July 23, 2015, NRC submitted a letter to the NMED HWB stating that the excavated soil would be disposed of at an authorized Resource Conservation and Recovery Act (RCRA) Subtitle C treatment, storage, and disposal facility (TSDF) as a conservative measure. However, because the samples indicated that the soil is not characteristically hazardous and all of the sample concentrations were below the land disposal restrictions for soils, NRC requested that the soils in the rolloffs be designated as non-hazardous under a “no longer contained-in” determination. The NMED HWB denied the request in a response letter dated August 4, 2015. Copies of the letters are provided in Attachment C.

The three rolloffs of excavated soil were transported to U.S. Ecology, Inc. in Robstown, Texas on August 14, 2015. A copy of the completed hazardous waste manifests documenting the disposal of the excavated soils as hazardous waste are provided in Attachment D.

Conclusion

The remedial response to the April 16, 2015 release of a water and diesel mixture from the water draw sump for Tank 815 has been completed. Saturated soil was excavated from the release area and disposed of off-site at an approved TSDF. The excavated area was backfilled with clean soil and graded to match the surrounding areas of the NCL. No further remedial actions are recommended at this time. A final C-141 report has been prepared and included as Attachment E to this letter.

Should you have any questions or comments, please feel free to contact me at 713.929.5674.

Sincerely,



Pamela R. Krueger
Senior Associate

Enclosures:

Table

Figures

Attachment A: Initial C-141

Attachment B: Photographs

Attachment C: Correspondence

Attachment D: Waste Manifests

Attachment E: Final C-141

Tables

Table 1 - Waste Soil Characterization Analytical Results
Tank 815
Navajo Refining Company, Artesia, New Mexico

Analyte	Toxicity Characteristic Limit (mg/L)	Hazardous Waste Treatment Standards (mg/kg)				Alternative Treatment Standards for Soils (mg/kg)				Analytical Results		
		K048	K049	K051	K052	K048	K049	K051	K052	S. Bro 25	S. Bro 53	S. Bro 49
Semivolatile Organic Compounds (mg/kg)												
2,4-Dimethylphenol	--	--	NA	--	NA	--	NA	--	NA	<18.5	<3.81	<38.1
Acenaphthene	--	--	--	NA	--	--	--	NA	--	1.25 J	0.168 J	0.845 J
Anthracene	--	--	3.4	3.4	--	--	34	34	--	0.552 J	0.262 J	1.35 J
Benz(a)anthracene	--	--	--	3.4	3.4	--	--	34	34	0.246 J	0.634	2.63 J
Benzo(a)pyrene	--	3.4	3.4	3.4	--	34	34	34	--	<1.83	0.488 J	2.13 J
bis(2-Ethylhexyl) phthalate	--	28	28	28	--	280	280	280	--	<18.5	<3.81	<38.1
Carbon disulfide	--	--	NA	--	--	--	NA	--	--	not analyzed	not analyzed	not analyzed
Chrysene	--	3.4	3.4	3.4	--	34	34	34	--	0.395 J	0.662	6.86
Di-n-butyl phthalate	--	28	--	28	--	280	--	280	--	<18.5	<3.81	<38.1
Fluorene	--	NA	--	NA	--	NA	--	NA	--	2.2	0.290 J	0.994 J
m-Cresol (3-methylphenol)	--	--	--	--	5.6	--	--	--	56	<18.5	<3.81	<38.1
Naphthalene	--	5.6	5.6	5.6	5.6	56	56	56	56	2.03	0.160 J	<3.77
o-Cresol (2-methylphenol)	--	--	--	--	5.6	--	--	--	56	<18.5	<3.81	<38.1
p-Cresol (4-methylphenol)	--	--	--	--	5.6	--	--	--	56	<18.5	<3.81	<38.1
Phenanthrene	--	5.6	5.6	5.6	5.6	56	56	56	56	0.996 J	0.896	3.87
Phenol	--	6.2	6.2	6.2	6.2	62	62	62	62	<18.5	<3.81	<38.1
Pyrene	--	8.2	8.2	8.2	--	82	82	82	--	1.82 J	1.59	10.4
TCLP Volatile Organic Compounds (mg/L)												
1,1-Dichloroethene	0.7	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
1,2-Dichloroethane	0.5	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
2-Butanone	200	--	--	--	--	--	--	--	--	<0.50	<0.50	<0.50
Benzene	0.5	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
Carbon tetrachloride	0.5	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
Chlorobenzene	100	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
Chloroform	6	--	--	--	--	--	--	--	--	<0.25	<0.25	<0.25
Tetrachloroethene	0.7	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
Trichloroethene	0.5	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
Vinyl Chloride	0.2	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
TCLP Semivolatile Organic Compounds (mg/L)												
1,4-Dichlorobenzene	7.5	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
2,4,5-Trichlorophenol	400	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
2,4,6-Trichlorophenol	2	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
2,4-Dinitrotoluene	0.13	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
Cresols, Total	200	--	--	--	--	--	--	--	--	<0.20	<0.20	<0.20
Hexachlorobenzene	0.13	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
Hexachlorobutadiene	0.5	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
Hexachloroethane	3	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
Nitrobenzene	2	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
Pentachlorophenol	100	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
Pyridine	5	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10

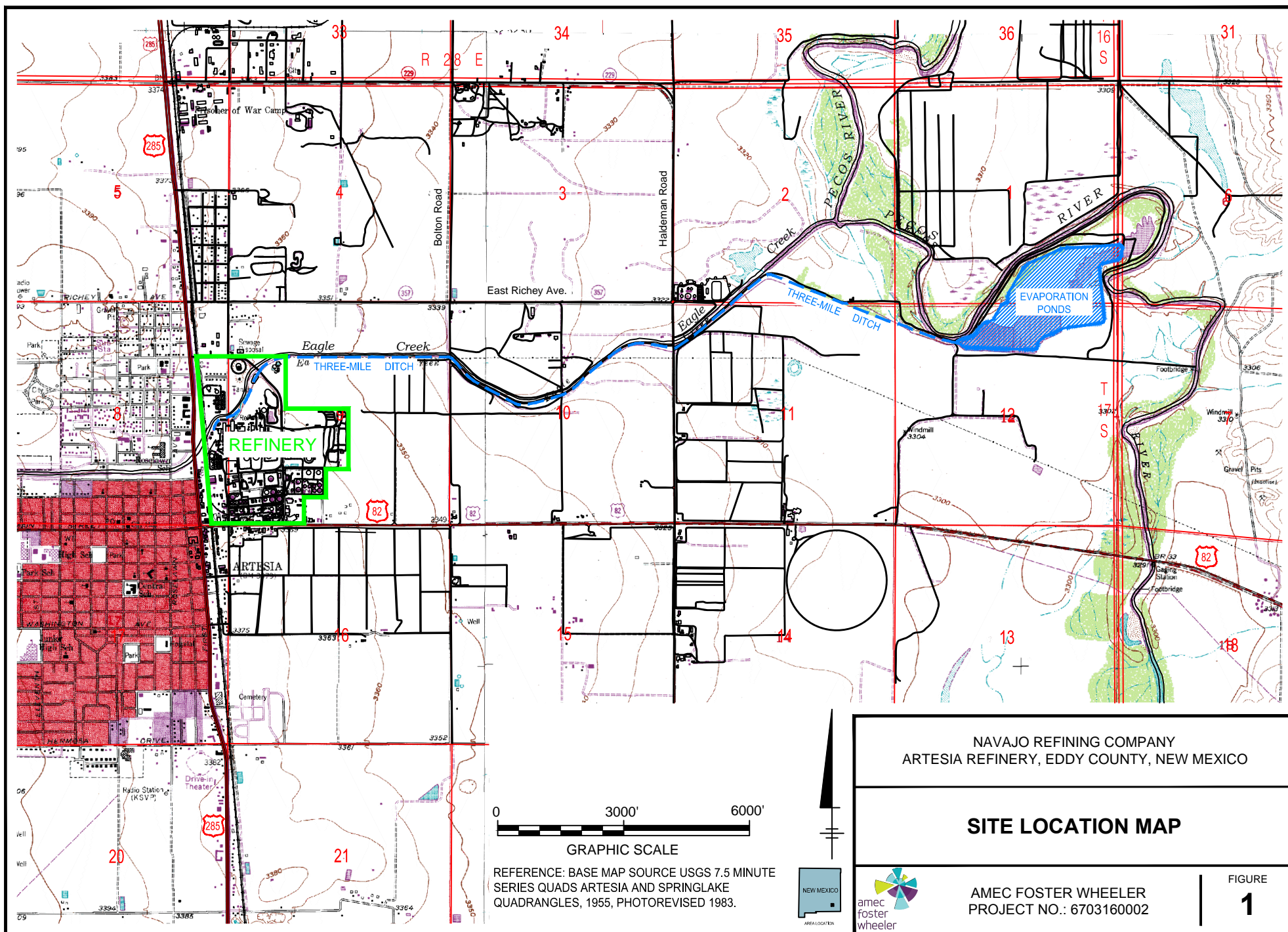
Table 1 - Waste Soil Characterization Analytical Results
Tank 815
Navajo Refining Company, Artesia, New Mexico

Analyte	Toxicity Characteristic Limit (mg/L)	Hazardous Waste Treatment Standards (mg/kg)				Alternative Treatment Standards for Soils (mg/kg)				Analytical Results		
		K048	K049	K051	K052	K048	K049	K051	K052	S. Bro 25	S. Bro 53	S. Bro 49
TCLP Metals (mg/L)												
Arsenic	5	--	--	--	--	--	--	--	--	<0.450	<0.450	<0.450
Barium	100	--	--	--	--	--	--	--	--	<1.40	<1.40	<1.40
Cadmium	1	--	--	--	--	--	--	--	--	<0.450	<0.450	<0.450
Chromium	5	0.6	0.6	0.6	0.6	6	6	6	6	<0.450	<0.450	<0.450
Lead	5	--	--	--	--	--	--	--	--	<0.450	<0.450	<0.450
Mercury	0.2	--	--	--	--	--	--	--	--	<0.0100	<0.0100	<0.0100
Nickel	--	11	11	11	11	110	110	110	110	<0.450	<0.450	<0.450
Selenium	1	--	--	--	--	--	--	--	--	<0.450	<0.450	<0.450
Silver	5	--	--	--	--	--	--	--	--	<0.450	<0.450	<0.450
Total Metals (mg/kg)												
Total Lead	--	NA	NA	NA	NA	NA	NA	NA	NA	20.9	13.1	40.2
Total Petroleum Hydrocarbons (mg/kg)												
Diesel Range Organics	--	--	--	--	--	--	--	--	--	30,000	5,260	9,610

Notes and Abbreviations:

- Analyte is not listed as characteristically hazardous or as an analyte associated with the listed waste.
- < x = Sample result was not detected with reporting limit value of x.
- B = The indicated compound was found in the associated method blank as well as the laboratory samples.
- J = Estimated value below the lowest calibration point.
- mg/kg = milligrams per kilogram
- mg/L = milligrams per liter
- NA = Analyte identified in 40 CFR 268.40 as associated with the waste code, but standard listed as "not applicable for non-wastewater forms"

Figures





LEGEND



NORTH COLONY LANDFARM (NCL) AREA



APRIL 2015 RELEASE EXTENT

0 25 50 100 150 200



SCALE IN FEET



NAVAJO REFINING COMPANY
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

TANK 815 RELEASE EXTENT



AMEC FOSTER WHEELER
PROJECT NO.: 6703160002

Figure
3

Attachment A
Initial C-141 Form

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Navajo Refining Company, L.L.C.	Contact: Robert Combs
Address: 501 E. Main St., Artesia, NM 88210	Telephone No.: 575-746-5382
Facility Name: Navajo Refining Company, L.L.C.	Facility Type: Petroleum Refinery

Surface Owner: Navajo Refining Company, L.L.C.	Mineral Owner N/A	API No. N/A
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
-------------	---------	----------	-------	---------------	------------------	---------------	----------------	--------

Latitude Longitude

NATURE OF RELEASE


Type of Release: finished diesel/water	Volume of Release: > 25 bbls	Volume Recovered: 30 bbls
Source of Release: water draw/sump at T-815	Date and Hour of Occurrence: 04/16/15, Unknown time	Date and Hour of Discovery: 04/16/15 6:30 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? NM Oil Conservation Division Santa Fe- Left message to Carl Chavez NMED Hazardous Waste Bureau - Left message to Leona Tsinnajinnie	
By Whom? R. Combs	Date and Hour 04/16/15 ~13:00 - 15:00	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*
The water collection sump from T-815 overflowed during routine dewatering of the tank. The water draw valve was immediately closed upon discovery and a vacuum truck was sent to recover any free liquids. The recovered liquids were returned to the crude process. The cause of the incident is under investigation.

Describe Area Affected and Cleanup Action Taken.*
Pooled liquids removed by vacuum truck and absorbent pads were used to remove remaining hydrocarbons. Removal of the impacted soil from the spill will be collected in roll-off bins and characterized for disposal. Any additional corrective actions will be presented in a Final C-141 report including analytical reports, map markups, photos, and waste characterization and disposal records.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Robert Combs	Approved by Environmental Specialist:	
Title: Environmental Specialist	Approval Date:	Expiration Date:
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 4/21/15 Phone: 575-746-5382		

* Attach Additional Sheets If Necessary

Attachment B Photographs



Photo 1: View of extent of release to north of the water draw sump. View is to the northwest, April 17, 2015.



Photo 2: View of extent of release to south of the water draw sump. View is to the south, April 17, 2015.



Photo 3: View of piping south of water draw sump. View is to the west, April 17, 2015.



Photo 4: View of area surrounding water draw sump after excavation and backfill. View is to the northwest, June 24, 2015.



Photo 5: View of piping south of water draw sump after excavation and backfill. View is to the west, June 24, 2015.



Photo x: View of southeastern corner of NCL, south of the water draw sump, after excavation and backfill. View is to the south-southwest, June 24, 2015.

Attachment C Correspondence



July 15, 2015

Mr. John Kieling
Chief, Hazardous Waste Bureau
New Mexico Environmental Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505

Certified Mail/Return Receipt
7015 0640 0006 9944 5680

**RE: Extension Request for 90-day Storage Period
Navajo Refining Company, L.L.C., Artesia Refinery
RCRA Permit No. NMD048918817**

Dear Mr. Kieling:

Navajo Refining Company (NRC) reported an overflow of a water/diesel mixture from the sump located adjacent to Tank 815 within the North Colony Landfarm (NCL) to the New Mexico Environment Department (NMED) on April 16, 2015, as required by the Resource Conservation and Recovery Act (RCRA) Post-Closure Care Permit (Permit). The release was also reported to the New Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division (OCD), as required by NRC's discharge permit (GW-028). The release occurred during a routine water draw from the bottom of the tank, and affected a portion of the southeast quadrant of the Tank 815 containment area.

In order to maintain appropriate cover for the NCL, the stained and saturated soil in the vicinity of the release was excavated and was placed into three covered, lined roll-off containers. Representative samples of the soil were collected from each roll-off bin and analytical data will be used to characterize the soil, for which NRC intends to request a "no longer contained-in" determination from NMED. The excavation was backfilled with clean soil to maintain the cover of the NCL. The excavated soils were containerized beginning on April 17, 2015 and, thus, the 90-day maximum temporary storage period for potentially hazardous soils is imminent.

NRC respectfully requests NMED's immediate approval of a 90-day accumulation period extension, allowed by 40 CFR 262.34 (b), as incorporated by references at NMAC 20.4.1.300. We believe that this one-time extension will provide adequate time for NMED's review and action on our "no longer contained-in" determination for the excavated soils.

If you have any questions or comments regarding this request, please feel free to contact me at 575-746-5487 or Robert Combs at 575-746-5382.

Sincerely,

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

c: Robert Combs, NRC
Micki Schultz, NRC



SUSANA MARTINEZ
Governor
JOHN A. SANCHEZ
Lieutenant Governor

**NEW MEXICO
ENVIRONMENT DEPARTMENT**

**2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.env.nm.gov**



RYAN FLYNN
Cabinet Secretary
BUTCH TONGATE
Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

July 16, 2015

Scott M. Denton
Environmental Manager
Navajo Refining Company, L.L.C.
P.O. Box 159
Artesia, New Mexico 88211-0159

**RE: APPROVAL
EXTENSION REQUEST FOR 90-DAY STORAGE PERIOD
NAVAJO REFINING COMPANY, L.L.C. - ARTESIA REFINERY
EPA ID NO. NMD048918817
HWB-NRC-MISC**

Dear Mr. Denton:

The New Mexico Environment Department (NMED) has received the Navajo Refining Company, L.L.C., Artesia Refinery's (the Permittee) *Extension Request for 90-Day Storage Period* (letter) dated July 15, 2015. On April 16, 2015, the Permittee reported an overflow of water/diesel mixture from the sump located adjacent to Tank 815 within the North Colony Landfarm (NCL), a hazardous waste management unit (HWMU). The release occurred during a routine water draw from the bottom of the tank, and affected a portion of the southeast quadrant of the Tank 815 containment area. Excavated soil from the site was placed in three lined roll-off containers on April 17, 2015 and samples were collected from each roll-off to characterize the soil. The Permittee is approaching the 90-day time limit and is requesting NMED's immediate approval of an extension to the 90-day period allowable by 40 CFR 262.34(b), as incorporated by reference at NMAC 20.4.1.300. This one-time extension will provide additional time to temporarily store the potentially hazardous excavated soils on site and allow the Permittee to prepare a request for a "no longer contained-in" determination. NMED hereby approves the Permittee's extension request for an additional 30 days and must submit the "no longer contained-in" request as soon as possible.

S. Denton
July 16, 2015
Page 2 of 2

If you have any questions regarding this letter, please contact Leona Tsinnajinnie of my staff at (505) 476-6057.

Sincerely,



John E. Kieling
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
N. Dhawan, NMED HWB
K. VanHorn, NMED HWB
L. Tsinnajinnie, NMED HWB
M. Holder, Navajo Refining Company, L.L.C.
R. Combs, NRC, Artesia Refinery
P. Krueger, ARCADIS

File: Reading File and NRC 2015, HWB-NRC-MISC



July 23, 2015

Mr. John Kieling
Chief, Hazardous Waste Bureau
New Mexico Environmental Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505

**RE: Characterization of Soil Excavated from Tank 815 Release
Navajo Refining Company, L.L.C., Artesia Refinery
RCRA Permit No. NMD048918817**

Dear Mr. Kieling:

Navajo Refining Company (NRC) reported an overflow of a water/diesel mixture from the sump located adjacent to Tank 815 within the North Colony Landfarm (NCL) to the New Mexico Environment Department (NMED) on April 16, 2015, as required by the Resource Conservation and Recovery Act (RCRA) Post-Closure Care Permit (Permit). The release was also reported to the New Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division (OCD), as required by the refinery's discharge permit (GW-028). The release occurred during a routine water draw from the bottom of the tank, and affected a portion of the southeast quadrant of the Tank 815 containment area.

In order to maintain appropriate cover for the NCL, the saturated soil in the vicinity of the release was excavated and was placed into three covered, lined roll-off containers (currently containing approximately 12 cubic yards per container). One representative sample (composite) of the excavated soil was collected from each of the roll-off containers and analyzed for constituents of concern. Table 1 provides a summary of the analytical results from the samples and compares the results to the concentrations for defining a waste as characteristically hazardous under the Toxicity Characteristic. Table 1 also provides a comparison of the analytical results to the land disposal restriction treatment standards for the listed wastes that were historically treated within the NCL, and the alternative standards for soils containing those listed wastes. A copy of the laboratory report is included as an attachment to this letter.

As demonstrated in Table 1, none of the concentrations reported for the constituents of concern in the samples exceeded the characteristically hazardous (toxicity) concentrations or the land disposal restriction treatment standards for soils. The sample collected from roll-off bin S. Bro 49 contained two constituents—chrysene and pyrene—at concentrations of 6.86 mg/kg and 10.4 mg/kg, respectively, above the relevant hazardous waste treatment standards for K048, K049 and K051 wastes (40 CFR 268.40, Table "Treatment Standards for Hazardous Waste," non-wastewater form).

As a conservatively protective measure, NRC plans to dispose of the contents of all three roll-off bins at an authorized RCRA Subtitle C treatment, storage, and disposal facility (TSDF). Based

upon the analytical characterization data and profile to be provided, the TSDF will process the material to remove organics prior to land disposal. However, because the samples indicate that the soil is not characteristically hazardous (toxicity) and all of the sample concentrations were below the land disposal restrictions treatment standards for soils, NRC requests that the soils in the three containers be designated as non-hazardous waste under a "no longer contained-in" determination. This designation will not affect NRC's decision to protectively manage the soils through off-site treatment and disposal, but NMED's action on our "no longer contained-in determination request" will affect the hazardous materials designation on a RCRA manifest.

If you have any questions or comments regarding this request, please feel free to contact me at 575-746-5487 or Robert Combs at 575-746-5382.

Sincerely,



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

Enclosures

c: Robert Combs, NRC
Micki Schultz, NRC
Pam Krueger, ARCADIS
Leslie Barras, TRC

Table 1 - Waste Soil Characterization Analytical Results
Tank 815
Navajo Refining Company, Artesia, New Mexico

Analyte	Toxicity Characteristic Limit (mg/L)	Hazardous Waste Treatment Standards (mg/kg)				Alternative Treatment Standards for Soils (mg/kg)				Analytical Results		
		K048	K049	K051	K052	K048	K049	K051	K052	S. Bro 25	S. Bro 53	S. Bro 49
Semivolatile Organic Compounds (mg/kg)												
2,4-Dimethylphenol	--	--	NA	--	NA	--	NA	--	NA	<18.5	<3.81	<38.1
Acenaphthene	--	--	--	NA	--	--	--	NA	--	1.25 J	0.168 J	0.845 J
Anthracene	--	--	3.4	3.4	--	--	34	34	--	0.552 J	0.262 J	1.35 J
Benz(a)anthracene	--	--	--	3.4	3.4	--	--	34	34	0.246 J	0.634	2.63 J
Benzo(a)pyrene	--	3.4	3.4	3.4	--	34	34	34	--	<1.83	0.488 J	2.13 J
bis(2-Ethylhexyl) phthalate	--	28	28	28	--	280	280	280	--	<18.5	<3.81	<38.1
Carbon disulfide	--	--	NA	--	--	--	NA	--	--	not analyzed	not analyzed	not analyzed
Chrysene	--	3.4	3.4	3.4	--	34	34	34	--	0.395 J	0.662	6.86
Di-n-butyl phthalate	--	28	--	28	--	280	--	280	--	<18.5	<3.81	<38.1
Fluorene	--	NA	--	NA	--	NA	--	NA	--	2.2	0.290 J	0.994 J
m-Cresol (3-methylphenol)	--	--	--	--	5.6	--	--	--	56	<18.5	<3.81	<38.1
Naphthalene	--	5.6	5.6	5.6	5.6	56	56	56	56	2.03	0.160 J	<3.77
o-Cresol (2-methylphenol)	--	--	--	--	5.6	--	--	--	56	<18.5	<3.81	<38.1
p-Cresol (4-methylphenol)	--	--	--	--	5.6	--	--	--	56	<18.5	<3.81	<38.1
Phenanthrene	--	5.6	5.6	5.6	5.6	56	56	56	56	0.996 J	0.896	3.87
Phenol	--	6.2	6.2	6.2	6.2	62	62	62	62	<18.5	<3.81	<38.1
Pyrene	--	8.2	8.2	8.2	--	82	82	82	--	1.82 J	1.59	10.4
TCLP Volatile Organic Compounds (mg/L)												
1,1-Dichloroethene	0.7	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
1,2-Dichloroethane	0.5	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
2-Butanone	200	--	--	--	--	--	--	--	--	<0.50	<0.50	<0.50
Benzene	0.5	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
Carbon tetrachloride	0.5	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
Chlorobenzene	100	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
Chloroform	6	--	--	--	--	--	--	--	--	<0.25	<0.25	<0.25
Tetrachloroethene	0.7	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
Trichloroethene	0.5	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
Vinyl Chloride	0.2	--	--	--	--	--	--	--	--	<0.050	<0.050	<0.050
TCLP Semivolatile Organic Compounds (mg/L)												
1,4-Dichlorobenzene	7.5	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
2,4,5-Trichlorophenol	400	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
2,4,6-Trichlorophenol	2	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
2,4-Dinitrotoluene	0.13	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
Cresols, Total	200	--	--	--	--	--	--	--	--	<0.20	<0.20	<0.20
Hexachlorobenzene	0.13	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
Hexachlorobutadiene	0.5	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
Hexachloroethane	3	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
Nitrobenzene	2	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
Pentachlorophenol	100	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10
Pyridine	5	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.10

Table 1 - Waste Soil Characterization Analytical Results
Tank 815
Navajo Refining Company, Artesia, New Mexico

Analyte	Toxicity Characteristic Limit (mg/L)	Hazardous Waste Treatment Standards (mg/kg)				Alternative Treatment Standards for Soils (mg/kg)				Analytical Results		
		K048	K049	K051	K052	K048	K049	K051	K052	S. Bro 25	S. Bro 53	S. Bro 49
TCLP Metals (mg/L)												
Arsenic	5	--	--	--	--	--	--	--	--	<0.450	<0.450	<0.450
Barium	100	--	--	--	--	--	--	--	--	<1.40	<1.40	<1.40
Cadmium	1	--	--	--	--	--	--	--	--	<0.450	<0.450	<0.450
Chromium	5	0.6	0.6	0.6	0.6	6	6	6	6	<0.450	<0.450	<0.450
Lead	5	--	--	--	--	--	--	--	--	<0.450	<0.450	<0.450
Mercury	0.2	--	--	--	--	--	--	--	--	<0.0100	<0.0100	<0.0100
Nickel	--	11	11	11	11	110	110	110	110	<0.450	<0.450	<0.450
Selenium	1	--	--	--	--	--	--	--	--	<0.450	<0.450	<0.450
Silver	5	--	--	--	--	--	--	--	--	<0.450	<0.450	<0.450
Total Metals (mg/kg)												
Total Lead	--	NA	NA	NA	NA	NA	NA	NA	NA	20.9	13.1	40.2
Total Petroleum Hydrocarbons (mg/kg)												
Diesel Range Organics	--	--	--	--	--	--	--	--	--	30,000	5,260	9,610

Notes and Abbreviations:

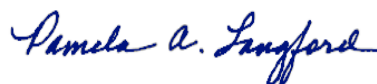
- Analyte is not listed as characteristically hazardous or as an analyte associated with the listed waste.
- < x = Sample result was not detected with reporting limit value of x.
- B = The indicated compound was found in the associated method blank as well as the laboratory samples.
- J = Estimated value below the lowest calibration point.
- mg/kg = milligrams per kilogram
- mg/L = milligrams per liter
- NA = Analyte identified in 40 CFR 268.40 as associated with the waste code, but standard listed as "not applicable for non-wastewater forms"

ARCADIS US - TX

Sample Delivery Group: L763904
Samples Received: 05/08/2015
Project Number: TX001155.0000
Description: Navajo Refining Company - Artesia, NM

Report To: Pam Krueger
2929 Briarpark Dr., Suite 300
Houston, TX 77042

Entire Report Reviewed By:



Pam Langford

Pam Langford

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



¹Cp: Cover Page	1
²Tc: Table of Contents	2
³Ss: Sample Summary	3
⁴Cn: Case Narrative	5
⁵Sr: Sample Results	6
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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



TANK 815 S. BRO 25 L763904-01 Waste

			Collected by I. Castro	Collected date/time 05/07/15 09:10	Received date/time 05/08/15 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Mercury by Method 7470A	WG788910	1	05/14/15 21:17	05/15/15 06:53	ESC
Metals (ICP) by Method 6010B	WG789056	1	05/15/15 20:28	05/17/15 14:37	JDG
Preparation by Method 1311	WG788648	1	05/13/15 15:58	05/13/15 15:59	BG
Preparation by Method 1311	WG788704	1	05/14/15 14:41	05/14/15 14:42	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG789017	1	05/14/15 21:09	05/15/15 14:48	ADF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG789393	1	05/17/15 09:45	05/17/15 09:45	MCB

¹ Cp

² Tc

³ Ss

⁴ Cn

TANK 815 S. BRO 53 L763904-02 Waste

			Collected by I. Castro	Collected date/time 05/07/15 09:25	Received date/time 05/08/15 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Mercury by Method 7470A	WG788910	1	05/14/15 21:17	05/15/15 07:00	ESC
Metals (ICP) by Method 6010B	WG789056	1	05/15/15 20:28	05/17/15 14:41	JDG
Preparation by Method 1311	WG788648	1	05/13/15 15:58	05/13/15 15:59	BG
Preparation by Method 1311	WG788704	1	05/14/15 14:41	05/14/15 14:42	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG789017	1	05/14/15 21:09	05/15/15 15:58	ADF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG789393	1	05/17/15 10:44	05/17/15 10:44	MCB

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

TANK 815 S. BRO 49 L763904-03 Waste

			Collected by I. Castro	Collected date/time 05/07/15 09:40	Received date/time 05/08/15 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Mercury by Method 7470A	WG788952	1	05/14/15 21:57	05/15/15 09:23	ESC
Metals (ICP) by Method 6010B	WG789055	1	05/15/15 23:32	05/17/15 13:39	JDG
Preparation by Method 1311	WG788648	1	05/13/15 15:58	05/13/15 15:59	BG
Preparation by Method 1311	WG788704	1	05/14/15 14:41	05/14/15 14:42	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG789017	1	05/14/15 21:09	05/15/15 16:21	ADF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG789393	1	05/17/15 11:04	05/17/15 11:04	MCB

TRIP BLANK L763904-04 GW

			Collected by I. Castro	Collected date/time 05/07/15 00:00	Received date/time 05/08/15 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG787918	1	05/17/15 08:15	05/17/15 08:15	MCB

TANK 815 S. BRO 25 L763904-05 Solid

			Collected by I. Castro	Collected date/time 05/07/15 09:10	Received date/time 05/08/15 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Metals (ICP) by Method 6010B	WG788480	1	05/12/15 18:27	05/13/15 12:35	LTB
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG788184	50	05/11/15 18:23	05/12/15 20:21	KMF
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG788415	100	05/12/15 18:02	05/13/15 14:40	CLG
Total Solids by Method 2540 G-2011	WG788085	1	05/11/15 13:39	05/12/15 09:21	MEL

TANK 815 S. BRO 53 L763904-06 Solid

			Collected by I. Castro	Collected date/time 05/07/15 09:25	Received date/time 05/08/15 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Metals (ICP) by Method 6010B	WG788480	1	05/12/15 18:27	05/13/15 12:40	LTB
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG788184	10	05/11/15 18:23	05/12/15 19:58	KMF
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG788184	20	05/11/15 18:23	05/13/15 20:02	KMF
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG788415	20	05/12/15 18:02	05/13/15 11:35	CLG
Total Solids by Method 2540 G-2011	WG788085	1	05/11/15 13:39	05/12/15 09:21	MEL



TANK 815 S. BRO 49 L763904-07 Solid

Collected by
I. CastroCollected date/time
05/07/15 09:40Received date/time
05/08/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Metals (ICP) by Method 6010B	WG788480	1	05/12/15 18:27	05/13/15 12:44	LTB
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG788184	100	05/11/15 18:23	05/12/15 20:44	KMF
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG788184	200	05/11/15 18:23	05/13/15 19:38	KMF
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG788415	200	05/12/15 18:02	05/13/15 14:50	CLG
Total Solids by Method 2540 G-2011	WG788085	1	05/11/15 13:39	05/12/15 09:21	MEL

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Pam Langford

Pam Langford
Technical Service Representative

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Preparation by Method 1311

	Result	Qualifier	Prep date / time	Batch
Analyte				
TCLP ZHE Extraction	-		5/14/2015 2:41:09 PM	WG788704
TCLP Extraction	-		5/13/2015 3:58:54 PM	WG788648

Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Analyte	mg/l		mg/l	mg/l			
Mercury	ND		0.0100	0.20	1	05/15/2015 06:53	WG788910

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Analyte	mg/l		mg/l	mg/l			
Arsenic	ND		0.450	5	1	05/17/2015 14:37	WG789056
Barium	ND		1.40	100	1	05/17/2015 14:37	WG789056
Cadmium	ND		0.450	1	1	05/17/2015 14:37	WG789056
Chromium	ND		0.450	5	1	05/17/2015 14:37	WG789056
Lead	ND		0.450	5	1	05/17/2015 14:37	WG789056
Nickel	ND		0.450		1	05/17/2015 14:37	WG789056
Selenium	ND		0.450	1	1	05/17/2015 14:37	WG789056
Silver	ND		0.450	5	1	05/17/2015 14:37	WG789056

Volatile Organic Compounds (GC/MS) by Method 8260B

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	ug/l		ug/l	ug/l			
Benzene	U		16.5	50.0	1	05/17/2015 09:45	WG789393
Carbon tetrachloride	U		16.5	50.0	1	05/17/2015 09:45	WG789393
Chlorobenzene	U		16.5	50.0	1	05/17/2015 09:45	WG789393
Chloroform	U		82.5	250	1	05/17/2015 09:45	WG789393
1,2-Dichloroethane	U		16.5	50.0	1	05/17/2015 09:45	WG789393
1,1-Dichloroethene	U		16.5	50.0	1	05/17/2015 09:45	WG789393
2-Butanone (MEK)	U		165	500	1	05/17/2015 09:45	WG789393
Tetrachloroethene	U		16.5	50.0	1	05/17/2015 09:45	WG789393
Trichloroethene	U		16.5	50.0	1	05/17/2015 09:45	WG789393
Vinyl chloride	U		16.5	50.0	1	05/17/2015 09:45	WG789393
(S) Toluene-d8	101			88.5-111		05/17/2015 09:45	WG789393
(S) Dibromofluoromethane	97.8			78.3-121		05/17/2015 09:45	WG789393
(S) a,a,a-Trifluorotoluene	102			85.0-114		05/17/2015 09:45	WG789393
(S) 4-Bromofluorobenzene	104			71.0-126		05/17/2015 09:45	WG789393

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Analyte	mg/l		mg/l	mg/l			
1,4-Dichlorobenzene	ND		0.100	7.50	1	05/15/2015 14:48	WG789017
2,4-Dinitrotoluene	ND		0.100	0.13	1	05/15/2015 14:48	WG789017
Hexachlorobenzene	ND		0.100	0.13	1	05/15/2015 14:48	WG789017
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	05/15/2015 14:48	WG789017
Hexachloroethane	ND		0.100	3	1	05/15/2015 14:48	WG789017
Nitrobenzene	ND		0.100	2	1	05/15/2015 14:48	WG789017
Pyridine	ND		0.100	5	1	05/15/2015 14:48	WG789017
3&4-Methyl Phenol	ND		0.100	400	1	05/15/2015 14:48	WG789017
2-Methylphenol	ND		0.100	200	1	05/15/2015 14:48	WG789017
Pentachlorophenol	ND		0.100	100	1	05/15/2015 14:48	WG789017
2,4,5-Trichlorophenol	ND		0.100	400	1	05/15/2015 14:48	WG789017
2,4,6-Trichlorophenol	ND		0.100	2	1	05/15/2015 14:48	WG789017
(S) 2-Fluorophenol	35.9			10.0-77.9		05/15/2015 14:48	WG789017



Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
(S) Phenol-d5	23.7		5.00-70.1	67		05/15/2015 14:48	WG789017
(S) Nitrobenzene-d5	48.2		21.8-123	120		05/15/2015 14:48	WG789017
(S) 2-Fluorobiphenyl	51.2		29.5-131	122		05/15/2015 14:48	WG789017
(S) 2,4,6-Tribromophenol	75.5		11.2-130	148		05/15/2015 14:48	WG789017
(S) p-Terphenyl-d14	58.4		29.3-137	149		05/15/2015 14:48	WG789017

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Preparation by Method 1311

	Result	Qualifier	Prep date / time	Batch
Analyte				
TCLP Extraction	-		5/13/2015 3:58:54 PM	WG788648
TCLP ZHE Extraction	-		5/14/2015 2:41:09 PM	WG788704

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Analyte	mg/l		mg/l	mg/l			
Mercury	ND		0.0100	0.20	1	05/15/2015 07:00	WG788910

6 Qc

7 Gl

8 Al

9 Sc

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Analyte	mg/l		mg/l	mg/l			
Arsenic	ND		0.450	5	1	05/17/2015 14:41	WG789056
Barium	ND		1.40	100	1	05/17/2015 14:41	WG789056
Cadmium	ND		0.450	1	1	05/17/2015 14:41	WG789056
Chromium	ND		0.450	5	1	05/17/2015 14:41	WG789056
Lead	ND		0.450	5	1	05/17/2015 14:41	WG789056
Nickel	ND		0.450		1	05/17/2015 14:41	WG789056
Selenium	ND		0.450	1	1	05/17/2015 14:41	WG789056
Silver	ND		0.450	5	1	05/17/2015 14:41	WG789056

Volatile Organic Compounds (GC/MS) by Method 8260B

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	ug/l		ug/l	ug/l			
Benzene	U		16.5	50.0	1	05/17/2015 10:44	WG789393
Carbon tetrachloride	U		16.5	50.0	1	05/17/2015 10:44	WG789393
Chlorobenzene	U		16.5	50.0	1	05/17/2015 10:44	WG789393
Chloroform	U		82.5	250	1	05/17/2015 10:44	WG789393
1,2-Dichloroethane	U		16.5	50.0	1	05/17/2015 10:44	WG789393
1,1-Dichloroethene	U		16.5	50.0	1	05/17/2015 10:44	WG789393
2-Butanone (MEK)	U		165	500	1	05/17/2015 10:44	WG789393
Tetrachloroethene	U		16.5	50.0	1	05/17/2015 10:44	WG789393
Trichloroethene	U		16.5	50.0	1	05/17/2015 10:44	WG789393
Vinyl chloride	U		16.5	50.0	1	05/17/2015 10:44	WG789393
(S) Toluene-d8	101			88.5-111		05/17/2015 10:44	WG789393
(S) Dibromofluoromethane	97.1			78.3-121		05/17/2015 10:44	WG789393
(S) a,a,a-Trifluorotoluene	101			85.0-114		05/17/2015 10:44	WG789393
(S) 4-Bromofluorobenzene	103			71.0-126		05/17/2015 10:44	WG789393

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Analyte	mg/l		mg/l	mg/l			
1,4-Dichlorobenzene	ND		0.100	7.50	1	05/15/2015 15:58	WG789017
2,4-Dinitrotoluene	ND		0.100	0.13	1	05/15/2015 15:58	WG789017
Hexachlorobenzene	ND		0.100	0.13	1	05/15/2015 15:58	WG789017
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	05/15/2015 15:58	WG789017
Hexachloroethane	ND		0.100	3	1	05/15/2015 15:58	WG789017
Nitrobenzene	ND		0.100	2	1	05/15/2015 15:58	WG789017
Pyridine	ND		0.100	5	1	05/15/2015 15:58	WG789017
3&4-Methyl Phenol	ND		0.100	400	1	05/15/2015 15:58	WG789017
2-Methylphenol	ND		0.100	200	1	05/15/2015 15:58	WG789017
Pentachlorophenol	ND		0.100	100	1	05/15/2015 15:58	WG789017
2,4,5-Trichlorophenol	ND		0.100	400	1	05/15/2015 15:58	WG789017
2,4,6-Trichlorophenol	ND		0.100	2	1	05/15/2015 15:58	WG789017
(S) 2-Fluorophenol	45.0			10.0-77.9		05/15/2015 15:58	WG789017



Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
(S) Phenol-d5	31.7		5.00-70.1	67		05/15/2015 15:58	WG789017
(S) Nitrobenzene-d5	59.1		21.8-123	120		05/15/2015 15:58	WG789017
(S) 2-Fluorobiphenyl	63.0		29.5-131	122		05/15/2015 15:58	WG789017
(S) 2,4,6-Tribromophenol	81.8		11.2-130	148		05/15/2015 15:58	WG789017
(S) p-Terphenyl-d14	65.4		29.3-137	149		05/15/2015 15:58	WG789017

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Preparation by Method 1311

	Result	Qualifier	Prep date / time	Batch
Analyte				
TCLP Extraction	-		5/13/2015 3:58:54 PM	WG788648
TCLP ZHE Extraction	-		5/14/2015 2:41:09 PM	WG788704

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Analyte	mg/l		mg/l	mg/l			
Mercury	ND		0.0100	0.20	1	05/15/2015 09:23	WG788952

6 Qc

7 Gl

8 Al

9 Sc

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Analyte	mg/l		mg/l	mg/l			
Arsenic	ND		0.450	5	1	05/17/2015 13:39	WG789055
Barium	ND		1.40	100	1	05/17/2015 13:39	WG789055
Cadmium	ND		0.450	1	1	05/17/2015 13:39	WG789055
Chromium	ND		0.450	5	1	05/17/2015 13:39	WG789055
Lead	ND		0.450	5	1	05/17/2015 13:39	WG789055
Nickel	ND		0.450		1	05/17/2015 13:39	WG789055
Selenium	ND		0.450	1	1	05/17/2015 13:39	WG789055
Silver	ND		0.450	5	1	05/17/2015 13:39	WG789055

Volatile Organic Compounds (GC/MS) by Method 8260B

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	ug/l		ug/l	ug/l			
Benzene	U		16.5	50.0	1	05/17/2015 11:04	WG789393
Carbon tetrachloride	U		16.5	50.0	1	05/17/2015 11:04	WG789393
Chlorobenzene	U		16.5	50.0	1	05/17/2015 11:04	WG789393
Chloroform	U		82.5	250	1	05/17/2015 11:04	WG789393
1,2-Dichloroethane	U		16.5	50.0	1	05/17/2015 11:04	WG789393
1,1-Dichloroethene	U		16.5	50.0	1	05/17/2015 11:04	WG789393
2-Butanone (MEK)	U		165	500	1	05/17/2015 11:04	WG789393
Tetrachloroethene	U		16.5	50.0	1	05/17/2015 11:04	WG789393
Trichloroethene	U		16.5	50.0	1	05/17/2015 11:04	WG789393
Vinyl chloride	U		16.5	50.0	1	05/17/2015 11:04	WG789393
(S) Toluene-d8	100			88.5-111		05/17/2015 11:04	WG789393
(S) Dibromofluoromethane	97.9			78.3-121		05/17/2015 11:04	WG789393
(S) a,a,a-Trifluorotoluene	101			85.0-114		05/17/2015 11:04	WG789393
(S) 4-Bromofluorobenzene	104			71.0-126		05/17/2015 11:04	WG789393

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
Analyte	mg/l		mg/l	mg/l			
1,4-Dichlorobenzene	ND		0.100	7.50	1	05/15/2015 16:21	WG789017
2,4-Dinitrotoluene	ND		0.100	0.13	1	05/15/2015 16:21	WG789017
Hexachlorobenzene	ND		0.100	0.13	1	05/15/2015 16:21	WG789017
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	05/15/2015 16:21	WG789017
Hexachloroethane	ND		0.100	3	1	05/15/2015 16:21	WG789017
Nitrobenzene	ND		0.100	2	1	05/15/2015 16:21	WG789017
Pyridine	ND		0.100	5	1	05/15/2015 16:21	WG789017
3&4-Methyl Phenol	ND		0.100	400	1	05/15/2015 16:21	WG789017
2-Methylphenol	ND		0.100	200	1	05/15/2015 16:21	WG789017
Pentachlorophenol	ND		0.100	100	1	05/15/2015 16:21	WG789017
2,4,5-Trichlorophenol	ND		0.100	400	1	05/15/2015 16:21	WG789017
2,4,6-Trichlorophenol	ND		0.100	2	1	05/15/2015 16:21	WG789017
(S) 2-Fluorophenol	38.2			10.0-77.9		05/15/2015 16:21	WG789017



Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
(S) Phenol-d5	25.7		5.00-70.1	67		05/15/2015 16:21	WG789017
(S) Nitrobenzene-d5	51.2		21.8-123	120		05/15/2015 16:21	WG789017
(S) 2-Fluorobiphenyl	53.5		29.5-131	122		05/15/2015 16:21	WG789017
(S) 2,4,6-Tribromophenol	69.8		11.2-130	148		05/15/2015 16:21	WG789017
(S) p-Terphenyl-d14	55.3		29.3-137	149		05/15/2015 16:21	WG789017

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.330	1.00	1	05/17/2015 08:15	WG787918
Carbon tetrachloride	U		0.380	1.00	1	05/17/2015 08:15	WG787918
Chloroform	U		0.320	5.00	1	05/17/2015 08:15	WG787918
1,2-Dibromoethane	U		0.380	1.00	1	05/17/2015 08:15	WG787918
1,1-Dichloroethane	U		0.260	1.00	1	05/17/2015 08:15	WG787918
1,2-Dichloroethane	U		0.360	1.00	1	05/17/2015 08:15	WG787918
1,1-Dichloroethene	U		0.400	1.00	1	05/17/2015 08:15	WG787918
Ethylbenzene	U		0.380	1.00	1	05/17/2015 08:15	WG787918
Methylene Chloride	U		1.00	5.00	1	05/17/2015 08:15	WG787918
1,1,1,2-Tetrachloroethane	U		0.380	1.00	1	05/17/2015 08:15	WG787918
1,1,2,2-Tetrachloroethane	U		0.130	1.00	1	05/17/2015 08:15	WG787918
Toluene	U		0.780	5.00	1	05/17/2015 08:15	WG787918
1,1,1-Trichloroethane	U		0.319	1.00	1	05/17/2015 08:15	WG787918
1,1,2-Trichloroethane	U		0.380	1.00	1	05/17/2015 08:15	WG787918
Vinyl chloride	U		0.260	1.00	1	05/17/2015 08:15	WG787918
o-Xylene	U		0.340	1.00	1	05/17/2015 08:15	WG787918
m&p-Xylene	U		0.720	2.00	1	05/17/2015 08:15	WG787918
Xylenes, Total	U		1.10	3.00	1	05/17/2015 08:15	WG787918
(S) Toluene-d8	99.8			88.5-111		05/17/2015 08:15	WG787918
(S) Dibromofluoromethane	93.5			78.3-121		05/17/2015 08:15	WG787918
(S) 4-Bromofluorobenzene	101			71.0-126		05/17/2015 08:15	WG787918

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	90.1		1	05/12/2015 09:21	WG788085

Metals (ICP) by Method 6010B

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	20.9		0.210	0.555	1	05/13/2015 12:35	WG788480

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH (GC/FID) High Fraction	30000		85.0	444	100	05/13/2015 14:40	WG788415
(S) o-Terphenyl	0.000	X		50.0-150		05/13/2015 14:40	WG788415

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzo(a)pyrene	U		0.300	1.83	50	05/12/2015 20:21	WG788184
Naphthalene	2.03		0.490	1.83	50	05/12/2015 20:21	WG788184
2,4-Dimethylphenol	U		2.70	18.5	50	05/12/2015 20:21	WG788184
Acenaphthene	1.25	J	0.360	1.83	50	05/12/2015 20:21	WG788184
Anthracene	0.552	J	0.360	1.83	50	05/12/2015 20:21	WG788184
Benzo(A)Anthracene	0.246	J	0.230	1.83	50	05/12/2015 20:21	WG788184
Bis(2-Ethylhexyl)phthalate	U		0.660	18.5	50	05/12/2015 20:21	WG788184
Chrysene	0.395	J	0.310	1.83	50	05/12/2015 20:21	WG788184
Di-n-butyl phthalate	U		0.600	18.5	50	05/12/2015 20:21	WG788184
Fluorene	2.20		0.380	1.83	50	05/12/2015 20:21	WG788184
3&4-Methyl Phenol	U		0.430	18.5	50	05/12/2015 20:21	WG788184
2-Methylphenol	U		0.540	18.5	50	05/12/2015 20:21	WG788184
Phenanthrene	0.996	J	0.290	1.83	50	05/12/2015 20:21	WG788184
Phenol	U		0.390	18.5	50	05/12/2015 20:21	WG788184
Pyrene	1.82	J	0.690	1.83	50	05/12/2015 20:21	WG788184
(S) 2-Fluorophenol	74.2	X		21.1-116		05/12/2015 20:21	WG788184
(S) Phenol-d5	92.5	X		26.3-121		05/12/2015 20:21	WG788184
(S) Nitrobenzene-d5	163	X		21.9-129		05/12/2015 20:21	WG788184
(S) 2-Fluorobiphenyl	89.1	X		34.9-129		05/12/2015 20:21	WG788184
(S) 2,4,6-Tribromophenol	89.2	X		21.6-142		05/12/2015 20:21	WG788184
(S) p-Terphenyl-d14	114	X		21.5-128		05/12/2015 20:21	WG788184

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	87.4		1	05/12/2015 09:21	WG788085

Metals (ICP) by Method 6010B

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	13.1		0.220	0.572	1	05/13/2015 12:40	WG788480

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH (GC/FID) High Fraction	5260		17.0	91.5	20	05/13/2015 11:35	WG788415
(S) o-Terphenyl	0.000	X		50.0-150		05/13/2015 11:35	WG788415

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzo(a)pyrene	0.488	J	0.120	0.755	20	05/13/2015 20:02	WG788184
Naphthalene	0.160	J	0.100	0.378	10	05/12/2015 19:58	WG788184
2,4-Dimethylphenol	U		0.540	3.81	10	05/12/2015 19:58	WG788184
Acenaphthene	0.168	J	0.0730	0.378	10	05/12/2015 19:58	WG788184
Anthracene	0.262	J	0.0720	0.378	10	05/12/2015 19:58	WG788184
Benzo(A)Anthracene	0.634		0.0490	0.378	10	05/12/2015 19:58	WG788184
Bis(2-Ethylhexyl)phthalate	U		0.140	3.81	10	05/12/2015 19:58	WG788184
Chrysene	0.662		0.0640	0.378	10	05/12/2015 19:58	WG788184
Di-n-butyl phthalate	U		0.120	3.81	10	05/12/2015 19:58	WG788184
Fluorene	0.290	J	0.0780	0.378	10	05/12/2015 19:58	WG788184
3&4-Methyl Phenol	U		0.0890	3.81	10	05/12/2015 19:58	WG788184
2-Methylphenol	U		0.110	3.81	10	05/12/2015 19:58	WG788184
Phenanthrene	0.896		0.0610	0.378	10	05/12/2015 19:58	WG788184
Phenol	U		0.0800	3.81	10	05/12/2015 19:58	WG788184
Pyrene	1.59		0.140	0.378	10	05/12/2015 19:58	WG788184
(S) 2-Fluorophenol	77.5			21.1-116		05/12/2015 19:58	WG788184
(S) Phenol-d5	79.1			26.3-121		05/12/2015 19:58	WG788184
(S) Nitrobenzene-d5	114			21.9-129		05/12/2015 19:58	WG788184
(S) 2-Fluorobiphenyl	77.3			34.9-129		05/12/2015 19:58	WG788184
(S) 2,4,6-Tribromophenol	91.2			21.6-142		05/12/2015 19:58	WG788184
(S) p-Terphenyl-d14	87.7			21.5-128		05/12/2015 19:58	WG788184

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	87.4		1	05/12/2015 09:21	WG788085

Metals (ICP) by Method 6010B

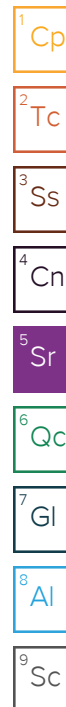
Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	40.2		0.220	0.572	1	05/13/2015 12:44	WG788480

Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH (GC/FID) High Fraction	9610		170	915	200	05/13/2015 14:50	WG788415
(S) o-Terphenyl	0.000	X		50.0-150		05/13/2015 14:50	WG788415

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result (dry)	Qualifier	MDL	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzo(a)pyrene	2.13	J	1.20	7.55	200	05/13/2015 19:38	WG788184
Naphthalene	U		1.00	3.77	100	05/12/2015 20:44	WG788184
2,4-Dimethylphenol	U		5.40	38.1	100	05/12/2015 20:44	WG788184
Acenaphthene	0.845	J	0.730	3.77	100	05/12/2015 20:44	WG788184
Anthracene	1.35	J	0.720	3.77	100	05/12/2015 20:44	WG788184
Benzo(A)Anthracene	2.63	J	0.490	3.77	100	05/12/2015 20:44	WG788184
Bis(2-Ethylhexyl)phthalate	U		1.40	38.1	100	05/12/2015 20:44	WG788184
Chrysene	6.86		0.640	3.77	100	05/12/2015 20:44	WG788184
Di-n-butyl phthalate	U		1.20	38.1	100	05/12/2015 20:44	WG788184
Fluorene	0.994	J	0.780	3.77	100	05/12/2015 20:44	WG788184
3&4-Methyl Phenol	U		0.890	38.1	100	05/12/2015 20:44	WG788184
2-Methylphenol	U		1.10	38.1	100	05/12/2015 20:44	WG788184
Phenanthrene	3.87		0.610	3.77	100	05/12/2015 20:44	WG788184
Phenol	U		0.800	38.1	100	05/12/2015 20:44	WG788184
Pyrene	10.4		1.40	3.77	100	05/12/2015 20:44	WG788184
(S) 2-Fluorophenol	69.5	X		21.1-116		05/12/2015 20:44	WG788184
(S) Phenol-d5	71.0	X		26.3-121		05/12/2015 20:44	WG788184
(S) Nitrobenzene-d5	126	X		21.9-129		05/12/2015 20:44	WG788184
(S) 2-Fluorobiphenyl	86.6	X		34.9-129		05/12/2015 20:44	WG788184
(S) 2,4,6-Tribromophenol	83.2	X		21.6-142		05/12/2015 20:44	WG788184
(S) p-Terphenyl-d14	140	X		21.5-128		05/12/2015 20:44	WG788184





Method Blank (MB)

(MB) 05/12/15 09:20

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Total Solids	0.000900			

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L763908-02 Original Sample (OS) • Duplicate (DUP)

(OS) 05/12/15 09:21 • (DUP) 05/12/15 09:22

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Total Solids	79.1	78.0	1	1.44		5

Laboratory Control Sample (LCS)

(LCS) 05/12/15 09:20

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) 05/15/15 06:34

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury	U		0.0033	0.0100

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/15/15 06:36 • (LCSD) 05/15/15 06:38

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Mercury	0.0300	0.0295	0.0284	98	95	80-120			4	20

L763935-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/15/15 06:40 • (MS) 05/15/15 06:42 • (MSD) 05/15/15 06:44

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0294	0.0299	98	100	1	75-125			2	20

L764413-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/15/15 06:47 • (MS) 05/15/15 06:49 • (MSD) 05/15/15 06:51

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0239	0.0288	80	96	1	75-125			18	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) 05/15/15 09:06

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury	U		0.0033	0.0100

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/15/15 09:12 • (LCSD) 05/15/15 09:14

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Mercury	0.0300	0.0289	0.0284	96	95	80-120			2	20

L763928-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/15/15 09:17 • (MS) 05/15/15 09:19 • (MSD) 05/15/15 09:21

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0289	0.0289	96	96	1	75-125			0	20



Method Blank (MB)

(MB) 05/13/15 10:24

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Lead	U		0.19	0.500

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/13/15 10:28 • (LCSD) 05/13/15 10:32

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Lead	100	104	108	104	108	80-120			4	20

L763845-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/13/15 10:37 • (MS) 05/13/15 10:50 • (MSD) 05/13/15 11:09

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lead	100	3.93	102	107	98	103	1	75-125			5	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) 05/17/15 13:06

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.149	0.450
Barium	U		0.446	1.35
Cadmium	U		0.149	0.450
Chromium	U		0.149	0.450
Lead	U		0.149	0.450
Nickel	U		0.149	0.450
Selenium	U		0.149	0.450
Silver	U		0.149	0.450

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/17/15 13:10 • (LCSD) 05/17/15 13:16

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	9.00	9.21	9.10	102	101	80-120			1	20
Barium	9.00	9.47	9.40	105	104	80-120			1	20
Cadmium	9.00	9.39	9.30	104	103	80-120			1	20
Chromium	9.00	9.48	9.50	105	106	80-120			0	20
Lead	9.00	9.42	9.34	105	104	80-120			1	20
Nickel	9.00	9.19	9.10	102	101	80-120			1	20
Selenium	9.00	9.70	9.52	108	106	80-120			2	20
Silver	9.00	9.47	9.43	105	105	80-120			0	20

L763928-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/17/15 13:21 • (MS) 05/17/15 13:30 • (MSD) 05/17/15 13:34

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	9.00	ND	9.49	9.55	105	106	1	75-125			1	20
Barium	9.00	2.58	11.7	11.6	102	101	1	75-125			1	20
Cadmium	9.00	ND	9.60	9.53	107	106	1	75-125			1	20
Chromium	9.00	0.00831	9.26	9.12	103	101	1	75-125			1	20
Lead	9.00	0.0154	9.41	9.32	104	103	1	75-125			1	20
Nickel	9.00	0.00105	9.25	9.19	103	102	1	75-125			1	20
Selenium	9.00	0.00165	10.2	10.1	113	112	1	75-125			0	20
Silver	9.00	ND	9.62	9.53	107	106	1	75-125			1	20



Method Blank (MB)

(MB) 05/17/15 13:43

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.149	0.450
Barium	U		0.446	1.35
Cadmium	U		0.149	0.450
Chromium	U		0.149	0.450
Lead	U		0.149	0.450
Nickel	U		0.149	0.450
Selenium	U		0.149	0.450
Silver	U		0.149	0.450

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/17/15 13:59 • (LCSD) 05/17/15 14:04

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	9.00	9.66	9.46	107	105	80-120			2	20
Barium	9.00	9.82	9.61	109	107	80-120			2	20
Cadmium	9.00	9.74	9.52	108	106	80-120			2	20
Chromium	9.00	9.67	9.47	107	105	80-120			2	20
Lead	9.00	9.65	9.44	107	105	80-120			2	20
Selenium	9.00	10.2	9.94	113	110	80-120			2	20
Silver	9.00	9.74	9.52	108	106	80-120			2	20

L764199-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/17/15 14:08 • (MS) 05/17/15 14:17 • (MSD) 05/17/15 14:23

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	9.00	0.0209	9.91	9.96	110	110	1	75-125			1	20
Barium	9.00	1.16	10.7	10.6	106	105	1	75-125			1	20
Cadmium	9.00	ND	9.84	9.76	109	108	1	75-125			1	20
Chromium	9.00	0.00609	9.50	9.41	106	105	1	75-125			1	20
Lead	9.00	ND	9.53	9.42	106	105	1	75-125			1	20
Nickel	9.00	0.0629	9.56	9.48	106	105	1	75-125			1	20
Selenium	9.00	0.0407	10.6	10.6	118	117	1	75-125			0	20
Silver	9.00	ND	9.97	9.86	111	110	1	75-125			1	20



Method Blank (MB)

(MB) 05/17/15 06:17

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000331	0.00100
Carbon tetrachloride	U		0.000379	0.00100
Chloroform	U		0.000324	0.00500
1,2-Dibromoethane	U		0.000381	0.00100
1,1-Dichloroethane	U		0.000259	0.00100
1,2-Dichloroethane	U		0.000361	0.00100
1,1-Dichloroethene	U		0.000398	0.00100
Ethylbenzene	U		0.000384	0.00100
Methylene Chloride	U		0.00100	0.00500
1,1,1,2-Tetrachloroethane	U		0.000385	0.00100
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100
Toluene	U		0.000780	0.00500
1,1,1-Trichloroethane	U		0.000319	0.00100
1,1,2-Trichloroethane	U		0.000383	0.00100
Vinyl chloride	U		0.000259	0.00100
Xylenes, Total	U		0.00106	0.00300
o-Xylene	U		0.000341	0.00100
m&p-Xylenes	U		0.000719	0.00200
(S) Toluene-d8	98.6			88.5-111
(S) Dibromofluoromethane	93.1			78.3-121
(S) 4-Bromofluorobenzene	99.0			71.0-126

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/17/15 05:07 • (LCSD) 05/17/15 05:25

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0220	0.0217	87.8	86.7	74.8-121			1.27	20
Carbon tetrachloride	0.0250	0.0241	0.0241	96.5	96.4	70.2-123			0.0800	20
Chloroform	0.0250	0.0218	0.0217	87.3	86.9	76.0-121			0.470	20
1,2-Dibromoethane	0.0250	0.0261	0.0260	104	104	76.6-121			0.160	20
1,1-Dichloroethane	0.0250	0.0228	0.0229	91.2	91.4	70.7-126			0.230	20
1,2-Dichloroethane	0.0250	0.0232	0.0236	92.8	94.2	68.8-124			1.55	20
1,1-Dichloroethene	0.0250	0.0229	0.0221	91.5	88.4	67.8-129			3.52	20
Ethylbenzene	0.0250	0.0253	0.0247	101	99.0	78.8-122			2.22	20
Methylene Chloride	0.0250	0.0192	0.0182	76.9	72.6	70.3-120			5.69	20
1,1,1,2-Tetrachloroethane	0.0250	0.0263	0.0260	105	104	74.2-124			1.21	20
1,1,2,2-Tetrachloroethane	0.0250	0.0268	0.0269	107	108	70.7-122			0.110	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/17/15 05:07 • (LCSD) 05/17/15 05:25

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Toluene	0.0250	0.0228	0.0233	91.1	93.1	79.7-116			2.23	20
1,1,1-Trichloroethane	0.0250	0.0226	0.0235	90.3	94.0	73.2-123			4.00	20
1,1,2-Trichloroethane	0.0250	0.0250	0.0251	100	100	77.7-118			0.350	20
Vinyl chloride	0.0250	0.0223	0.0211	89.3	84.5	65.9-128			5.52	20
Xylenes, Total	0.0750	0.0761	0.0764	101	102	78.7-121			0.360	20
o-Xylene	0.0250	0.0258	0.0258	103	103	77.6-122			0.0300	20
m&p-Xylenes	0.0500	0.0503	0.0506	101	101	78.8-121			0.530	20
(S) Toluene-d8				99.7	101	88.5-111				
(S) Dibromofluoromethane				97.8	94.6	78.3-121				
(S) 4-Bromofluorobenzene				99.2	96.7	71.0-126				

L763891-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/17/15 08:32 • (MS) 05/17/15 08:50 • (MSD) 05/17/15 09:07

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	ND	0.0195	0.0212	78.1	84.7	1	54.3-133			8.13	20
Carbon tetrachloride	0.0250	ND	0.0227	0.0233	90.7	93.4	1	55.7-134			2.86	20
Chloroform	0.0250	ND	0.0192	0.0207	76.7	83.0	1	63.0-129			7.91	20
1,2-Dibromoethane	0.0250	ND	0.0226	0.0262	90.4	105	1	67.1-125			15.0	20
1,1-Dichloroethane	0.0250	ND	0.0207	0.0221	82.8	88.5	1	58.5-132			6.65	20
1,2-Dichloroethane	0.0250	ND	0.0206	0.0225	82.4	90.1	1	60.0-126			8.91	20
1,1-Dichloroethene	0.0250	ND	0.0211	0.0222	84.4	88.9	1	51.1-140			5.22	20.2
Ethylbenzene	0.0250	ND	0.0233	0.0260	93.2	104	1	61.4-133			11.1	20
Methylene Chloride	0.0250	ND	0.0159	0.0171	63.7	68.2	1	58.1-122			6.93	20
1,1,1,2-Tetrachloroethane	0.0250	ND	0.0236	0.0252	94.4	101	1	64.0-128			6.73	20
1,1,2,2-Tetrachloroethane	0.0250	ND	0.0252	0.0265	101	106	1	56.0-132			4.85	22.2
Toluene	0.0250	ND	0.0206	0.0233	82.2	93.2	1	61.4-130			12.5	20
1,1,1-Trichloroethane	0.0250	ND	0.0215	0.0224	86.0	89.5	1	58.7-134			3.93	20
1,1,2-Trichloroethane	0.0250	ND	0.0234	0.0259	93.7	104	1	66.3-125			10.0	20
Vinyl chloride	0.0250	ND	0.0197	0.0210	78.9	83.9	1	47.8-137			6.23	20
Xylenes, Total	0.0750	ND	0.0700	0.0780	93.3	104	1	63.3-131			10.9	20
o-Xylene	0.0250	ND	0.0233	0.0256	93.2	103	1	63.3-130			9.58	20
m&p-Xylenes	0.0500	ND	0.0467	0.0524	93.4	105	1	61.7-133			11.5	20
(S) Toluene-d8					98.7	98.7		88.5-111				
(S) Dibromofluoromethane					98.4	93.9		78.3-121				
(S) 4-Bromofluorobenzene					99.1	100		71.0-126				

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Cp

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Tc

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Ss

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Qc

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Method Blank (MB)

(MB) 05/17/15 09:26

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0165	0.0500
Carbon tetrachloride	U		0.0165	0.0500
Chlorobenzene	U		0.0165	0.0500
Chloroform	U		0.0825	0.250
1,2-Dichloroethane	U		0.0165	0.0500
1,1-Dichloroethene	U		0.0165	0.0500
2-Butanone (MEK)	U		0.165	0.500
Tetrachloroethene	U		0.0165	0.0500
Trichloroethene	U		0.0165	0.0500
Vinyl chloride	U		0.0165	0.0500
(S) Toluene-d8	101			88.5-111
(S) Dibromofluoromethane	98.4			78.3-121
(S) a,a,a-Trifluorotoluene	101			85.0-114
(S) 4-Bromofluorobenzene	103			71.0-126

¹Cp

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Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/17/15 06:53 • (LCSD) 05/17/15 07:12

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0226	0.0252	90.4	101	74.8-121			11.0	20
Carbon tetrachloride	0.0250	0.0235	0.0262	94.0	105	70.2-123			10.9	20
Chlorobenzene	0.0250	0.0229	0.0255	91.5	102	78.1-119			10.7	20
Chloroform	0.0250	0.0231	0.0257	92.5	103	76.0-121			10.7	20
1,2-Dichloroethane	0.0250	0.0236	0.0264	94.5	105	68.8-124			10.9	20
1,1-Dichloroethene	0.0250	0.0237	0.0267	94.7	107	67.8-129			12.2	20
2-Butanone (MEK)	0.125	0.119	0.132	95.1	106	55.0-149			10.6	20
Tetrachloroethene	0.0250	0.0229	0.0257	91.7	103	72.6-126			11.4	20
Trichloroethene	0.0250	0.0229	0.0253	91.7	101	77.7-118			9.78	20
Vinyl chloride	0.0250	0.0254	0.0284	101	113	65.9-128			11.2	20
(S) Toluene-d8				101	101	88.5-111				
(S) Dibromofluoromethane				99.8	98.8	78.3-121				
(S) a,a,a-Trifluorotoluene				101	101	85.0-114				
(S) 4-Bromofluorobenzene				102	102	71.0-126				



L763904-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/17/15 09:45 • (MS) 05/17/15 10:05 • (MSD) 05/17/15 10:25

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.25	ND	1.06	1.17	84.7	93.4	1	54.3-133			9.86	20
Carbon tetrachloride	1.25	ND	1.05	1.17	84.0	93.7	1	55.7-134			11.0	20
Chlorobenzene	1.25	ND	1.06	1.18	85.0	94.8	1	67.0-125			10.9	20.3
Chloroform	1.25	ND	1.08	1.20	86.5	96.1	1	63.0-129			10.4	20
1,2-Dichloroethane	1.25	ND	1.10	1.22	87.9	97.9	1	60.0-126			10.8	20
1,1-Dichloroethene	1.25	ND	1.09	1.19	86.9	95.4	1	51.1-140			9.29	20.2
2-Butanone (MEK)	6.25	ND	5.08	5.67	81.2	90.7	1	22.4-138			11.0	27
Tetrachloroethene	1.25	ND	1.05	1.17	84.3	93.3	1	53.0-139			10.1	20
Trichloroethene	1.25	ND	1.05	1.17	83.8	93.5	1	44.1-149			10.9	20
Vinyl chloride	1.25	ND	1.18	1.28	94.3	102	1	47.8-137			8.31	20
(S) Toluene-d8					101	102		88.5-111				
(S) Dibromofluoromethane					99.7	98.9		78.3-121				
(S) a,a,a-Trifluorotoluene					101	102		85.0-114				
(S) 4-Bromofluorobenzene					102	101		71.0-126				

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Cp

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Tc

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Cn

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Method Blank (MB)

(MB) 05/13/15 09:57

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	97.2			50.0-150

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Cp

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Tc

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Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/13/15 10:07 • (LCSD) 05/13/15 10:17

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) High Fraction	60.0	51.6	51.1	86.0	85.2	50.0-150			0.860	20
(S) o-Terphenyl				87.8	89.9	50.0-150				



Method Blank (MB)

(MB) 05/12/15 11:15

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00642	0.0330
Anthracene	U		0.00632	0.0330
Benzo(a)anthracene	U		0.00428	0.0330
Benzo(a)pyrene	U		0.00548	0.0330
Chrysene	U		0.00555	0.0330
Fluorene	U		0.00682	0.0330
Naphthalene	U		0.00889	0.0330
Phenanthrene	U		0.00528	0.0330
Bis(2-ethylhexyl)phthalate	U		0.0120	0.333
Di-n-butyl phthalate	U		0.0109	0.333
Pyrene	U		0.0123	0.0330
2-Methylphenol	U		0.00986	0.333
3&4-Methyl Phenol	U		0.00783	0.333
2,4-Dimethylphenol	U		0.0471	0.333
Phenol	U		0.00695	0.333
(S) Nitrobenzene-d5	70.2			21.9-129
(S) 2-Fluorobiphenyl	73.9			34.9-129
(S) p-Terphenyl-d14	70.1			21.5-128
(S) Phenol-d5	72.7			26.3-121
(S) 2-Fluorophenol	68.9			21.1-116
(S) 2,4,6-Tribromophenol	74.8			21.6-142

¹Cp

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⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/12/15 10:28 • (LCSD) 05/12/15 10:51

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.667	0.493	0.506	74.0	75.8	48.9-107			2.44	20
Anthracene	0.667	0.528	0.529	79.1	79.4	52.0-112			0.320	20
Benzo(a)anthracene	0.667	0.530	0.515	79.4	77.2	52.3-106			2.86	20
Benzo(a)pyrene	0.667	0.532	0.526	79.7	78.9	51.9-106			1.01	20
Chrysene	0.667	0.507	0.499	76.0	74.7	54.4-110			1.69	20
Fluorene	0.667	0.512	0.524	76.7	78.5	51.1-109			2.35	20
Naphthalene	0.667	0.464	0.473	69.6	71.0	43.4-103			2.02	20
Phenanthrene	0.667	0.502	0.511	75.2	76.6	51.6-107			1.76	20
Bis(2-ethylhexyl)phthalate	0.667	0.513	0.508	76.9	76.1	48.1-116			1.09	20.5
Di-n-butyl phthalate	0.667	0.506	0.512	75.9	76.8	49.7-113			1.22	20
Pyrene	0.667	0.541	0.517	81.2	77.5	47.1-108			4.55	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/12/15 10:28 • (LCSD) 05/12/15 10:51

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
2-Methylphenol	0.667	0.448	0.468	67.2	70.1	42.4-100			4.23	20
3&4-Methyl Phenol	0.667	0.512	0.534	76.7	80.0	50.5-115			4.17	20
2,4-Dimethylphenol	0.667	0.472	0.470	70.8	70.4	42.2-110			0.520	20
Phenol	0.667	0.467	0.478	70.0	71.7	41.5-106			2.41	20
(S) Nitrobenzene-d5				72.6	72.7	21.9-129				
(S) 2-Fluorobiphenyl				77.3	78.0	34.9-129				
(S) p-Terphenyl-d14				74.3	69.3	21.5-128				
(S) Phenol-d5				72.3	73.2	26.3-121				
(S) 2-Fluorophenol				70.5	69.7	21.1-116				
(S) 2,4,6-Tribromophenol				88.7	87.8	21.6-142				

L764231-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/12/15 15:41 • (MS) 05/12/15 16:05 • (MSD) 05/12/15 16:28

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.667	ND	0.529	0.511	79.2	76.7	1	32.2-134			3.30	27.3
Anthracene	0.667	ND	0.538	0.528	80.7	79.2	1	32.3-137			1.87	28.4
Benzo(a)anthracene	0.667	ND	0.531	0.515	79.6	77.3	1	33.3-124			3.00	29
Benzo(a)pyrene	0.667	ND	0.528	0.523	79.1	78.4	1	28.2-128			0.950	28.4
Chrysene	0.667	ND	0.499	0.486	74.8	72.9	1	36.3-129			2.58	28
Fluorene	0.667	ND	0.542	0.525	81.3	78.8	1	34.0-133			3.15	27.1
Naphthalene	0.667	ND	0.489	0.480	73.3	71.9	1	36.4-121			1.94	27.2
Phenanthrene	0.667	ND	0.517	0.510	77.5	76.4	1	30.8-137			1.49	26.5
Bis(2-ethylhexyl)phthalate	0.667	ND	0.525	0.510	78.7	76.5	1	21.8-141			2.85	35.2
Di-n-butyl phthalate	0.667	0.00527	0.532	0.526	78.9	78.0	1	32.2-133			1.12	25.9
Pyrene	0.667	ND	0.529	0.496	79.4	74.3	1	24.1-130			6.53	29.9
2-Methylphenol	0.667	ND	0.474	0.466	71.1	69.9	1	30.3-118			1.70	25.1
3&4-Methyl Phenol	0.667	ND	0.546	0.538	81.9	80.6	1	33.3-141			1.52	25.7
2,4-Dimethylphenol	0.667	ND	0.504	0.498	75.5	74.7	1	12.3-149			1.09	32.3
Phenol	0.667	ND	0.490	0.490	73.5	73.5	1	25.1-130			0.0200	29.6
(S) Nitrobenzene-d5					76.5	76.3		21.9-129				
(S) 2-Fluorobiphenyl					82.2	79.8		34.9-129				
(S) p-Terphenyl-d14					69.7	67.5		21.5-128				
(S) Phenol-d5					73.9	73.8		26.3-121				
(S) 2-Fluorophenol					75.3	74.1		21.1-116				
(S) 2,4,6-Tribromophenol					91.6	91.8		21.6-142				

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Cp

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Tc

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Qc

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Gl

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Sc



Method Blank (MB)

(MB) 05/15/15 11:20

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
1,4-Dichlorobenzene	U		0.0330	0.100
2,4-Dinitrotoluene	U		0.0330	0.100
Hexachlorobenzene	U		0.0330	0.100
Hexachloro-1,3-butadiene	U		0.0330	0.100
Hexachloroethane	U		0.0330	0.100
Nitrobenzene	U		0.0330	0.100
Pyridine	U		0.0330	0.100
2-Methylphenol	U		0.0330	0.100
3&4-Methyl Phenol	U		0.0330	0.100
Pentachlorophenol	U		0.0330	0.100
2,4,5-Trichlorophenol	U		0.0330	0.100
2,4,6-Trichlorophenol	U		0.0330	0.100
(S) Nitrobenzene-d5	60.7			21.8-123
(S) 2-Fluorobiphenyl	59.3			29.5-131
(S) p-Terphenyl-d14	59.9			29.3-137
(S) Phenol-d5	30.3			5.00-70.1
(S) 2-Fluorophenol	45.1			10.0-77.9
(S) 2,4,6-Tribromophenol	73.3			11.2-130

¹ Cp

² Tc

³ Ss

⁴ Cn

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⁶ Qc

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⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/15/15 10:10 • (LCSD) 05/15/15 10:33

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.0500	0.0222	0.0253	44.4	50.6	21.0-89.4			13.1	32.6
2,4-Dinitrotoluene	0.0500	0.0333	0.0371	66.5	74.2	31.2-105			11.0	22
Hexachlorobenzene	0.0500	0.0365	0.0402	73.0	80.5	38.5-116			9.77	20.1
Hexachloro-1,3-butadiene	0.0500	0.0254	0.0295	50.8	59.0	16.1-104			14.9	31.2
Hexachloroethane	0.0500	0.0207	0.0246	41.3	49.2	16.5-89.8			17.4	30.7
Nitrobenzene	0.0500	0.0299	0.0313	59.8	62.5	31.4-106			4.55	25.7
Pyridine	0.0500	0.0112	0.0121	22.5	24.1	13.5-58.9			7.10	32.5
2-Methylphenol	0.0500	0.0259	0.0279	51.8	55.9	26.4-86.9			7.61	26.5
3&4-Methyl Phenol	0.0500	0.0293	0.0312	58.6	62.4	27.9-92.0			6.34	27
Pentachlorophenol	0.0500	0.0340	0.0391	67.9	78.2	10.0-97.4			14.1	35.1
2,4,5-Trichlorophenol	0.0500	0.0356	0.0390	71.3	78.0	34.9-112			9.09	23.9
2,4,6-Trichlorophenol	0.0500	0.0361	0.0404	72.1	80.7	29.8-107			11.2	24.1
(S) Nitrobenzene-d5				56.6	59.6	21.8-123				
(S) 2-Fluorobiphenyl				59.6	62.1	29.5-131				



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/15/15 10:10 • (LCSD) 05/15/15 10:33

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
(S) p-Terphenyl-d14				53.7	59.2	29.3-137				
(S) Phenol-d5				31.3	32.6	5.00-70.1				
(S) 2-Fluorophenol				43.9	46.4	10.0-77.9				
(S) 2,4,6-Tribromophenol				84.0	95.6	11.2-130				

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Cp

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Tc

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Ss

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Cn

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Sr

L763904-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/15/15 14:48 • (MS) 05/15/15 15:11 • (MSD) 05/15/15 15:35

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.500	ND	0.258	0.255	51.6	50.9	1	14.0-104			1.30	36.4
2,4-Dinitrotoluene	0.500	ND	0.342	0.401	68.5	80.1	1	16.2-135			15.7	20.6
Hexachlorobenzene	0.500	ND	0.379	0.435	75.8	87.0	1	31.9-135			13.8	20
Hexachloro-1,3-butadiene	0.500	ND	0.291	0.285	58.1	57.1	1	15.7-109			1.85	37.6
Hexachloroethane	0.500	ND	0.244	0.238	48.9	47.5	1	10.4-105			2.84	40
Nitrobenzene	0.500	ND	0.309	0.329	61.8	65.8	1	23.1-121			6.35	29
Pyridine	0.500	ND	0.124	0.127	24.8	25.4	1	10.0-77.8			2.61	38.8
2-Methylphenol	0.500	ND	0.262	0.289	52.4	57.8	1	10.0-133			9.89	40
3&4-Methyl Phenol	0.500	ND	0.293	0.321	58.6	64.1	1	17.4-100			9.10	27.7
Pentachlorophenol	0.500	ND	0.415	0.495	83.0	98.9	1	10.0-108			17.6	40
2,4,5-Trichlorophenol	0.500	ND	0.365	0.418	73.0	83.6	1	30.6-120			13.5	33.8
2,4,6-Trichlorophenol	0.500	ND	0.378	0.433	75.6	86.7	1	19.1-114			13.7	29.9
(S) Nitrobenzene-d5					58.4	64.6		21.8-123				
(S) 2-Fluorobiphenyl					61.8	68.0		29.5-131				
(S) p-Terphenyl-d14					55.8	63.0		29.3-137				
(S) Phenol-d5					29.4	31.9		5.00-70.1				
(S) 2-Fluorophenol					42.8	47.2		10.0-77.9				
(S) 2,4,6-Tribromophenol					90.1	108		11.2-130				

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Qc

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Gl

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Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
J	Estimated value.
X	Surrogate recovery outside the control limit.

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee ¹⁴	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

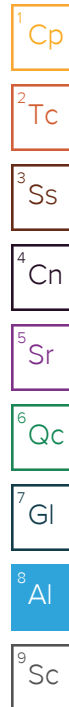
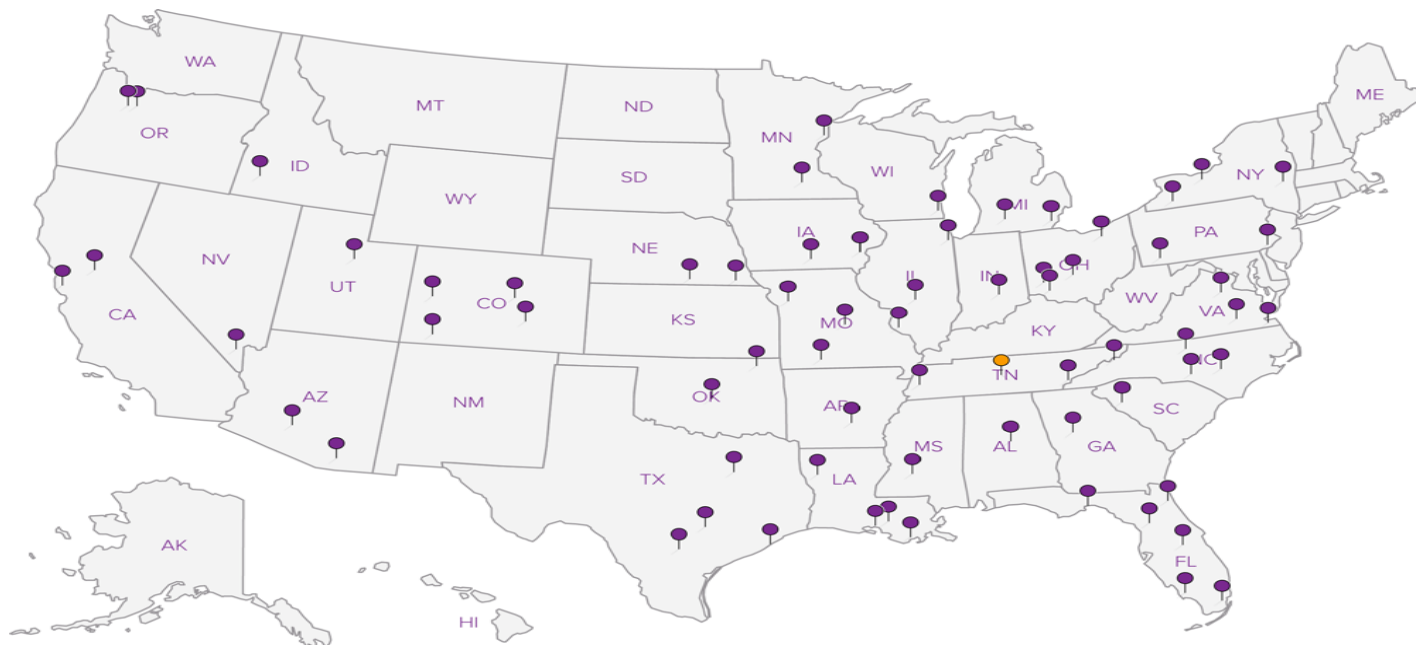
¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
Canada	1461.01	DOD	1461.01
EPA–Crypto	TN00003	USDA	S-67674

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



2929 Briarpark Dr., Suite 300
Houston, TX 77042

Attn: Accounts Payable
630 Plaza Drive, Suite 600
Highlands Ranch, CO 80129

Email To: @arcadis-us.com

City/State
Collected: Arteria / NM

Client Project #
~~TX000836-3008-30004~~
TX00055.0000

Lab Project #
ARCADHTX-NAVAJO

Site/Facility ID #

P.O. #

Rush? (Lab MUST Be Notified)

Date Results Needed

Immediately
Packed on Ice N ☐ Y ☒

_____ Same Day	200%
_____ Next Day	100%
_____ Two Day	50%
_____ Three Day	25%

Email? ☐ No ☒ Yes
FAX? ☐ No ☐ Yes

No.	of	Ctr
-----	----	-----

[illegible]

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

Remarks: Full TCLP includes (TCLP metals, TCLP VOCs, TCLP SVOCs, TPH DRO) 636110

pH _____ Temp _____

Flow _____ Other _____

Relinquished by : (Signature)

Date: 5/7/15	Time: 10:45
--------------	-------------

Received by: (Signature)

Samples returned via: ☐ UPS

☒ FedEx ☐ Courier ☐ _____

Relinquished by : (Signature)

Date:	Time:
-------	-------

Received by: (Signature)

Temp: °C Bottles Received:

Relinquished by : (Signature)

Date:	Time:
-------	-------

Received for lab by: (Signature)

Date: _____ Time: _____

Hold #

Condition: (lab use only)

COC Seal Intact: Y N ☒ NA

pH Checked:	NCF:
-------------	------



SUSANA MARTINEZ
Governor
JOHN A. SANCHEZ
Lieutenant Governor

**NEW MEXICO
ENVIRONMENT DEPARTMENT**

**2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.env.nm.gov**



RYAN FLYNN
Cabinet Secretary
BUTCH TONGATE
Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

August 4, 2015

Mr. Scott M. Denton
Environmental Manager
Navajo Refining Company, L.L.C.
P.O. Box 159
Artesia, New Mexico 88211-0159

**RE: DENIAL
“NO LONGER CONTAINED-IN” DETERMINATION FOR
CHARACTERIZATION OF SOIL EXCAVATED FROM TANK 815 RELEASE
NAVAJO REFINING COMPANY, L.L.C., ARTESIA REFINERY
EPA ID# NMD048918817
HWB-NRC-MISC**

Dear Mr. Denton:

The New Mexico Environment Department (NMED) has received Navajo Refining Company, L.L.C., Artesia Refinery's (the Permittee) *Characterization of Soil Excavated from Tank 815 Release*, dated July 23, 2015. On April 16, 2015, the Permittee notified NMED and the New Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division (OCD) that the sump located adjacent to Tank 815 had overflowed and that a water/diesel mixture from the sump had been released inside the containment area of the North Colony Landfarm (NCL), a hazardous waste management unit (HWMU).

Three roll-off containers were filled with excavated soil from the southeast quadrant of the containment area and one representative soil sample was collected from each roll-off container in May 2015 and submitted to a laboratory to characterize the soil for disposal. Historically, K048, K049, K051, and K052 listed RCRA hazardous wastes were applied to the NCL. Based on the analytical results of the soil samples, the Permittee is requesting a “no longer contained-in” determination from NMED to allow the excavated soil to be managed as nonhazardous waste.

The excavated soil meets New Mexico's residential soil screening levels (SSLs) for all analytes with the exception of benzo(a)anthracene and benzo(a)pyrene. However, benzo(a)anthracene and benzo(a)pyrene are below the industrial SSLs. Although the excavated soil is not a characteristically hazardous waste per 40 CFR Part 261 Subpart C, it is a K-Listed waste because chrysene and pyrene exceed the hazardous constituent standards as defined in Part 268.2(i) of the Land Disposal Restriction (LDR) Treatment Standards listed in 40 CFR Part 268.40 and the Universal Treatment Standards listed in 40 CFR Part 268.48 regulatory limits.

NMED has reviewed the Permittee's request and has determined that the excavated soil is a hazardous waste and does not meet applicable LDR standards. NMED hereby denies the Permittee's request for a "no longer contained-in" determination and must manage the excavated soil as hazardous waste and dispose of the excavated soil at an appropriate facility.

If you have any questions regarding this letter, please contact Leona Tsinnajinnie of my staff at (505) 476-6057.

Sincerely,

A handwritten signature in blue ink, appearing to read "John E. Kielling" with a stylized flourish at the end.

John E. Kielling
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
N. Dhawan, NMED HWB
K. Van Horn, NMED HWB
L. Tsinnajinnie, NMED HWB
C. Chavez, NMEMNRD OCD
M. Holder, Navajo Refining Company, L.L.C.
R. Combs, Navajo Refining Company, L.L.C., Artesia Refinery
P. Kruger, ARCADIS
L. King, EPA 6PD-N

File: Reading and NRC 2015, HWB-NRC-MISC

Attachment D Waste Manifests

Smart Move #295

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number NMD048918817	2. Page 1 of 1	3. Emergency Response Phone 800-424-9300	4. Manifest Tracking Number 008302034 JJK			
5. Generator's Name and Mailing Address Navajo Refining Co., L.L.C. (Artesia) P.O. Box 159 Artesia, NM 88211-0159 Generator's Phone: 575-748-3311			Generator's Site Address (if different than mailing address) Navajo Refining Co., L.L.C. 501 E. Main Artesia, NM 88210					
6. Transporter 1 Company Name Fluid Transports, INC				U.S. EPA ID Number TXD988057931				
7. Transporter 2 Company Name Fluid Transport				U.S. EPA ID Number TXD988057931				
8. Designated Facility Name and Site Address U.S. Ecology Texas, Inc. 3277 County Road 69 Robstown, TX 78380 USA Facility's Phone: 800-242-3209-116				U.S. EPA ID Number TXD069452340				
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit WL/Vol.	13. Waste Codes		
		No.	Type					
X	1. RQ, NA3077, Hazardous Waste, Solid, N.O.S., 9, PG III (K048, K049, K051 & K052 Impacted Soil)	1	CM	27580	P	K048	K049	K051
	2.					K052	OUT	489H
	3.							
	4.							
14. Special Handling Instructions and Additional Information 1. 090091916-0 ERG# 171 Chemtrec Cust# CCN15402 Material passed TCLP but may contain legacy K listed wastes Unit 8 Tank 815 NCL Impacted Soil Bln WL 7840 Bln # 53								
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.								
Generator's/Offoror's Printed/Typed Name 3 same Cardenas				Signature 3 same Cardenas		Month Day Year 5 14 15		
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____								
17. Transporter Acknowledgment of Receipt of Materials								
Transporter 1 Printed/Typed Name Michael Jones				Signature Michael Jones		Month Day Year 5 14 15		
Transporter 2 Printed/Typed Name Steve Brooker				Signature Steve Brooker		Month Day Year 8 17 15		
18. Discrepancy								
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection								
Manifest Reference Number: _____								
18b. Alternate Facility (or Generator)						U.S. EPA ID Number		
Facility's Phone: _____								
18c. Signature of Alternate Facility (or Generator)						Month Day Year		
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)								
1. H039		2.		3.		4.		
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a								
Printed/Typed Name Robert Gutrain				Signature Robert Gutrain		Month Day Year 8 18 15		

TRUCK # 75

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number NMD048918817	2. Page 1 of 1	3. Emergency Response Phone 800-424-9300	4. Manifest Tracking Number 008302035 JJK		
5. Generator's Name and Mailing Address Navajo Refining Co., L.L.C. (Artesia) P.O. Box 159 Artesia, NM 88211-0159			Generator's Site Address (if different than mailing address) Navajo Refining Co., L.L.C. 501 E. Main Artesia, NM 88210				
Generator's Phone: 575-748-3311							
6. Transporter 1 Company Name Fluid Transports, INC			U.S. EPA ID Number TXD088057931				
7. Transporter 2 Company Name			U.S. EPA ID Number				
8. Designated Facility Name and Site Address U.S. Ecology Texas, Inc. 3277 County Road 69 Robstown, TX 78380 USA			U.S. EPA ID Number TXD089452340				
Facility's Phone: 800-242-3209-116							
9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, NA3077, Hazardous Waste, Solid, N.O.S., 9, PG III (K048, K049, K051 & K052 Impacted Soil)		/ CM		9.860	P	K048 K049 K051 K052 OUT 480H S
	2.						
	3.						
	4.						
14. Special Handling Instructions and Additional Information 1. 090091916-0 ERG# 171 Chemtrec Cust# CCN15402 Material passed TCLP but may contain legacy K listed wastes Unit 8 Tank 815 NCL Impacted Soil Bin Wt. 2,920 Bin # 25							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offor's Printed/Typed Name Dennis Cardenas			Signature Dennis Cardenas			Month Day Year 8/14/15	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Transporter signature (for exports only): Date leaving U.S.:							
17. Transporter Acknowledgment of Receipt of Materials							
Transporter 1 Printed/Typed Name Cary Johnson			Signature Cary Johnson			Month Day Year 8/14/15	
Transporter 2 Printed/Typed Name			Signature			Month Day Year	
18. Discrepancy							
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection							
Manifest Reference Number:							
18b. Alternate Facility (or Generator) U.S. EPA ID Number							
Facility's Phone:							
18c. Signature of Alternate Facility (or Generator) Month Day Year							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. H039		2.		3.		4.	
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name Robert Gitter			Signature Robert Gitter			Month Day Year 8/14/15	

255

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number NMD048918817	2. Page 1 of 1	3. Emergency Response Phone 800-424-9300	4. Manifest Tracking Number 008302033 JJK		
5. Generator's Name and Mailing Address Navajo Refining Co., L.L.C. (Artesia) P.O. Box 159 Artesia, NM 88211-0159 Generator's Phone: 575-748-3311			Generator's Site Address (if different than mailing address) Navajo Refining Co., L.L.C. 501 E. Main Artesia, NM 88210				
6. Transporter 1 Company Name Fluid Transports, INC			U.S. EPA ID Number TXD988057931				
7. Transporter 2 Company Name Fluid Transports, Inc			U.S. EPA ID Number TXD988057931				
8. Designated Facility Name and Site Address U.S. Ecology Texas, Inc. 3277 County Road 69 Robstown, TX 78380 USA Facility's Phone: 800-242-3209-116			U.S. EPA ID Number TXD069452340				
9a. HM X	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)) 1. RQ, NA3077, Hazardous Waste, Solid, N.O.S., 9, PG III (K048, K049, K051 & K052 Impacted Soil)		10. Containers No. 1 Type CM		11. Total Quantity 18,900	12. Unit WL/Vol. P	13. Waste Codes K048 K049 K051 K052 OUT 489H
14. Special Handling Instructions and Additional Information 1. 090091916-0 ERG# 171 Chemtrec Cust# CCN15402 Material passed TCLP but may contain legacy K listed wastes Unit 8 Tank 815 NCL Impacted Soil Bln # 7,900 Bln # 49							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offendor's Printed/Typed Name DEANIE CORDEAS			Signature DEANIE CORDEAS		Month Day Year 8 15 15		
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Transporter signature (for exports only): _____ Date leaving U.S.: _____							
TRANSPORTER	17. Transporter Acknowledgment of Receipt of Materials						
	Transporter 1 Printed/Typed Name Florentino Saavedra		Signature [Signature]		Month Day Year 15 14 15		
	Transporter 2 Printed/Typed Name Ruben Villa		Signature [Signature]		Month Day Year 10 19 15		
DESIGNATED FACILITY	18. Discrepancy						
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
	Manifest Reference Number: _____						
	18b. Alternate Facility (or Generator)				U.S. EPA ID Number		
	Facility's Phone: _____						
	18c. Signature of Alternate Facility (or Generator)				Month Day Year		
	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)						
	1. H039		2.		3.		
	20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a						
	Printed/Typed Name Adrian Villal		Signature [Signature]		Month Day Year 18 20 15		

Attachment E
Final C-141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Form C-141
Revised August 8, 2011

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: Navajo Refining Company, L.L.C.	Contact: Robert Combs	
Address: 501 E. Main St., Artesia, NM 88210	Telephone No.: 575-746-5382	
Facility Name: Navajo Refining Company, L.L.C.	Facility Type: Petroleum Refinery	
Surface Owner: Navajo Refining Company, L.L.C.	Mineral Owner N/A	API No. N/A


LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
-------------	---------	----------	-------	---------------	------------------	---------------	----------------	--------

Latitude 32.852260° / Longitude -104.395653°

NATURE OF RELEASE

Type of Release: finished diesel/water	Volume of Release: > 25 bbls	Volume Recovered: 30 bbls
Source of Release: water draw/sump at T-815	Date and Hour of Occurrence: 04/16/15, Unknown time	Date and Hour of Discovery: 04/16/15 6:30 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? NM Oil Conservation Division Santa Fe- Left message to Carl Chavez NMED Hazardous Waste Bureau - Left message to Leona Tsinnajinnie	
By Whom? R. Combs	Date and Hour 04/16/15 ~13:00 - 15:00	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	
If a Watercourse was Impacted, Describe Fully.* N/A		
Describe Cause of Problem and Remedial Action Taken.* The water collection sump from T-815 overflowed during routine dewatering of the tank. The water draw valve was immediately closed upon discovery and a vacuum truck was sent to recover any free liquids. The recovered liquids were returned to the crude process.		
Describe Area Affected and Cleanup Action Taken.* Pooled liquids were removed by vacuum truck and absorbent pads were used to remove remaining hydrocarbons. Stained soil was removed to a depth of approximately 12 inches and was placed into three covered, lined roll-off containers. The excavated area was backfilled with clean soil from an off-site source and graded to match the surrounding area. Representative samples were collected from each roll-off container for waste characterization. Removal of the impacted soil from the spill will be collected in roll-off bins and characterized for disposal. The three roll-off bins were transported to U.S. Ecology, Inc. in Robstown, Texas and disposed as hazardous waste.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		

Signature: 	<u>OIL CONSERVATION DIVISION</u>	
Printed Name: Robert Combs	Approved by Environmental Specialist:	
Title: Environmental Specialist	Approval Date:	Expiration Date:
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 1/28/16 Phone: 575-746-5382		

* Attach Additional Sheets If Necessary

Chavez, Carl J, EMNRD

From: Combs, Robert <Robert.Combs@HollyFrontier.com>
Sent: Friday, January 08, 2016 4:24 PM
To: Chavez, Carl J, EMNRD
Cc: Denton, Scott; Tsinnajinnie, Leona, NMENV
Subject: Update on Hydrocarbons to surface of Eagle Draw Part 1 of 2
Attachments: 2016-01-08 Update on Hydrocarbons to surface of Eagle Draw 1 of 2.pdf

Carl,

On behalf of Scott Denton, please see the attached report that was prepared based on your comments to our initial notification. We have included surface sample results as well as a local monitor well (MW-55), a comparison table to present analytical results, precipitation data, and groundwater elevations for select wells in the area (NMED-HWB request). The submittal is in two parts; this email will be followed by the second portion. I will upload these to the OCD FTP server and send the path to you.

Please let me know if you have any questions or would like to discuss further.

Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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January 8, 2016

Submitted by electronic mail

Mr. Carl Chavez, Environmental Engineer
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: C-141 Report on Seepage into Eagle Draw
Discharge Permit GW-028

Dear Mr. Chavez:

On November 17, 2015, Navajo Refining Company, L.L.C. (Navajo) notified the Oil Conservation Division (OCD) and the New Mexico Environment Department (NMED) Hazardous Waste Bureau (HWB) by telephone that Refinery personnel had observed evidence of the seepage of dark liquids through cracks in a concreted portion of the bank of Eagle Draw within the Refinery. Navajo also notified the National Response Center of this seepage the same day.

This report summarizes Navajo's actions taken to date regarding the seepage, including the measures summarized in your electronic mail of November 17, 2015, and proposed actions based upon our evaluation regarding the likely source of the seepage. Form C-141 is re-provided as Attachment A.

Refinery Setting

The location of the observed seepage along the bank of Eagle Draw is in the northwestern portion of the Refinery. Recovery well (RW) 17 is located on the west side of Eagle Draw, and due north of the observed seepage, and monitor well (MW)-55 is further to the northeast. The area of the seepage is within the Refinery's fenced boundaries. Attachment B provides Figure 1, which is the location of the seepage in relation to an overall Refinery map.

Actions Taken

At the time the incident was internally reported, Environmental Department personnel went out to inspect the seepage to develop an immediate course of action. There was no odor to the seepage itself, but the liquids expressing through cracks in the concrete sidewall appeared to be dark and featured entrained particulate matter. Absorbents were applied in order to remove as much stained material as possible. Although there was no sheen on the surface water in the Draw, field screening of ambient air over the surface water was conducted, but did not indicate

the presence of hydrogen sulfide or benzene. Notwithstanding the lack of hydrocarbon odor in the seepage or sheen on the water in the Draw, Navajo protectively placed oil absorbent booms downstream of the observed seepage locations, and booms will be replaced as needed.

Three water samples were collected on November 19, 2015 at the locations shown in Figure 2 (Attachment C). Two of the samples were collected from surface water: sample location ED01-111915 was very near the point where the seepage was observed within Eagle Draw, downstream of the confluence with Clark Draw. The second surface sample, ED02-111915, was collected further downstream within Eagle Draw east of Navajo Road, within the Refinery's fenceline.¹ At OCD's request for comparison purposes, a sample was also collected from monitoring well MW-55 (see Figure 2, Attachment C), which is screened from 13.7 to 23.7 feet below ground surface. The three samples, plus a trip blank for volatile organic compounds (VOC) analysis, were shipped overnight to a certified laboratory for analysis of the constituents requested by OCD (total petroleum hydrocarbons, general chemistry, VOCs, BTEX, and the eight RCRA metals).

The full set of analytes, associated screening levels, and analytical results are summarized in Table 1 (Attachment D), and a copy of the laboratory report (and the contractor's field notes) is provided as Attachment E. (The lab report erroneously identifies surface water sample ED02-111915 as "ED-1111915," as indicated by the markup on the report.) The lab report was also provided to you via electronic mail on December 21, 2015.

The analytical results from the groundwater sample and the two surface water samples were compared to the following screening levels:

- Upper tolerance limit (UTL) calculated for background concentrations of general chemistry parameters and mercury (from Navajo's background groundwater investigation report submitted to OCD and NMED in September 2015);
- Lower of the New Mexico Water Quality Control Commission (WQCC) Water Quality Standard (WQS) provided in 20.6.2.3103 New Mexico Administrative Code (NMAC) or the United States Environmental Protection Agency (USEPA) Maximum Contaminant Level (MCL) for metals (other than mercury) and VOCs.
- TPH screening level provided in the 2012 version of the HWB risk assessment guidance document for TPH DRO and TPH ORO.
- Human Health Surface Water Quality Standards (SWQS)
- Aquatic Life SWQS

As Table 1 (Attachment D) indicates, the water quality of the two surface water samples is affected primarily by total petroleum hydrocarbons (TPH): Diesel Range Organics (DRO) and Oil Range Organics (ORO), even more so than levels in MW-55. The TPH and VOCs in ED02-

¹The coordinates of the ED01-111915 sample area are latitude 32.852356 and longitude 104.393864, while those of the ED02-111915 sample are latitude 32.852972 and longitude 104.393347.

111955, the downstream surface water sample, are significantly lower than the sample collected nearest the seep, indicating that degradation of these compounds is occurring.

- MW-55: The reported concentration of TPH DRO exceeds the TPH screening level in the sample collected from MW-55. All other constituents of concern (COCs) were either not detected or were reported at concentrations below the screening levels.
- ED01-111955: The reported concentrations of TPH DRO and TPH ORO both exceed the TPH screening level in the sample collected closest to the observed seep. The reported concentrations of arsenic and benzene exceed the EPA MCLs in the sample collected closest to the observed seep. The reported concentration of benzene exceeds the aquatic life chronic SWQS. All other COCs were either not detected or were reported at concentrations below the screening levels.
- ED02-111955: The reported concentrations of TPH DRO and TPH ORO both exceed the TPH screening level in the sample collected on the downstream side of Navajo Road. The reported concentration of potassium exceeds the background UTL in this sample. All other COCs were either not detected or were reported at concentrations below the screening levels.

Evaluation and Recommendations

Navajo has observed higher than normal groundwater levels in the monitoring wells located in the northern portion of the Artesia Refinery during the past two years, most likely due to heavier than normal rainfall in the region during this period. Attachments F and G present the historic precipitation data for the area and ground elevation trends. We believe that impacted groundwater associated with a solid waste management unit and/or an area of contamination, which is being monitored and, in some cases, recovered through implementation of the Facility-Wide Ground Water Monitoring Program (FWGWMP), is the seepage liquid. The constituents of concern measured in the surface water samples appear to be consistent generally with results of recent FWGWMP events for the adjacent wells and recovery trenches.

In addition to the actions taken thus far, we propose the following:

- Conduct weekly inspections of the seepage area for the month of January 2016 to visually examine for additional seepage and potential sheens on surface water in Eagle Draw.
- As needed, apply absorbents to recover/remove any seepage.
- Ensure that booms are ready and serviceable to put into use in surface waters in Eagle Draw, as needed.
- Take and record water level elevations in RW-17A and RW-17G on a weekly basis during the month of January 2016 in order to evaluate fluctuations in levels in comparison to weather.

- Operate RW-7 and RW-8 consistently during the month of January 2016 in order to reduce groundwater elevations.
- Repair the concrete fissures in this specific locale of Eagle Draw.

Should you have any questions about this notification report, please do not hesitate to contact me at (575) 746-5487 or scott.denton@hollyfrontier.com.

Sincerely,



Scott M. Denton
Environmental Manager

c: Robert A. Combs, Artesia Refinery, Environmental Specialist
Leona Tsinnajinnie, NMED HWB

Enclosures:

Attachment A – Form C-141
Attachment B – Figure 1 (Location of Seepage within the Refinery)
Attachment C – Figure 2 (Locations of November 19, 2015 Samples)
Attachment D – Table 1 (Analytical Results and Comparison Standards)
Attachment E – Analytical Lab Report with Contractor Field Notes
Attachment F – Precipitation Data January 2011 – November 2015
Attachment G – GW Level Trends

Attachment A
Form C-141
(Previously provided to OCD)

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Navajo Refining Company, L.L.C.	Contact	Robert Combs
Address	501 E. Main St. Artesia, NM 88210	Telephone No.	575-746-5382
Facility Name	Navajo Refining Company, L.L.C. Artesia	Facility Type	Refinery

Surface Owner	Mineral Owner	API No.
---------------	---------------	---------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
-------------	---------	----------	-------	---------------	------------------	---------------	----------------	--------

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release: Visible evidence of hydrocarbons from groundwater expressed at the ground surface due to elevated water table.	Volume of Release approximately < 1 gallon	Volume Recovered: N/A, Absorbent material applied to recover/remove hydrocarbon staining from groundwater extrusion onto concrete.
Source of Release Impacted groundwater	Date and Hour of Occurrence 12/2/15 Unknown hour	Date and Hour of Discovery 12/2/15@11:40 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? National Response Center at 11:50 am OCD Santa Fe office at 4:50 pm	
By Whom? Gabriela Combs/Robert Combs	Date and Hour please see above	
Was a Watercourse Reached? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, Volume Impacting the Watercourse. < 1 gallon	

If a Watercourse was Impacted, Describe Fully.*

A small area of stained concrete located at the base of Clark Draw and Eagle Draw.


Describe Cause of Problem and Remedial Action Taken.* A hydrocarbon stained area was discovered by Refinery personnel in the base of Clark Draw on 12/2/15. There is not an active release of hydrocarbons from Refinery operations. There is no hydrocarbon sheen present in the water. The impacts of groundwater extrusion are being addressed by removal of hydrocarbons from the concrete with absorbent materials. Absorbent booms were installed downstream as a precautionary measure to prevent the potential for residual hydrocarbons to impact any flowing conditions in the waterway that may arise while the remedial action described below is being implemented.

Describe Area Affected and Cleanup Action Taken.*

The stained area was confined to small, specific areas of the concrete. The adjacent recovery trench will be monitored routinely for evidence of phase separated hydrocarbons; if present, a vacuum truck will be used for the next several days to remove any product collected in the adjacent monitoring well.

A final C-141 report will be submitted to OCD and HWB once corrective actions, sample results, etc. are complete.

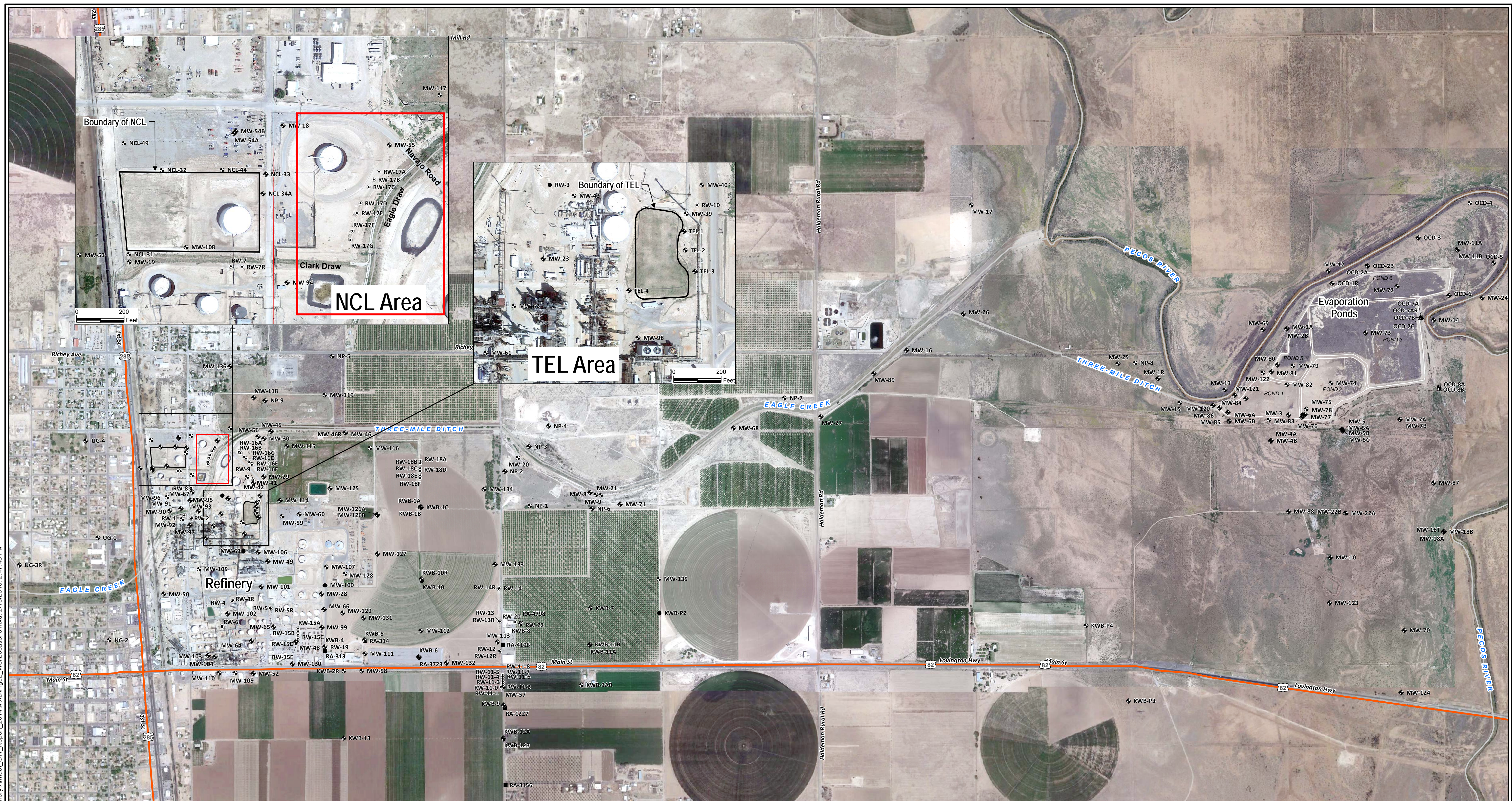
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 		OIL CONSERVATION DIVISION	
Printed Name: Robert Combs		Approved by Environmental Specialist:	
Title: Environmental Specialist		Approval Date:	Expiration Date:
E-mail Address: robert.combs@hollyfrontier.com		Conditions of Approval:	Attached <input type="checkbox"/>
Date: 12/8/15	Phone: 575-746-5382		

* Attach Additional Sheets If Necessary

Attachment B

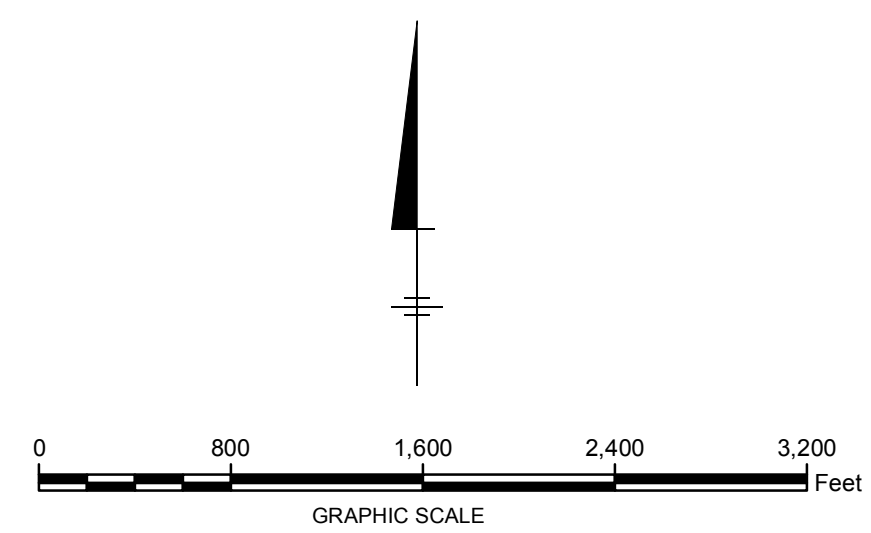
Figure 1 – Location of seepage within the Refinery



CITY: SF DIV/GROUP: ENV/IM DB: K ERNST LD: K SCHNEBELE PIC: PM: P KRUEGER TM: TR:
Project (Project #) TX000836 0004 0004
Path: Z:\GISPROJECTS_ENV\NavajoRefining\AresiaRefinery\Annual_GW_Report_2014\MXD\Fig02_WellLocations.mxd: 2/10/2015: 2:47:43 PM

LEGEND:

-  MONITORING WELL
-  RECOVERY WELL
-  IRRIGATION WELL
-  ABANDONED WELL
-  SAMPLING SITE



NAVAJO REFINING COMPANY
ARTESIA , NEW MEXICO
EAGLE DRAW EVALUATION

SAMPLING SITE MAP



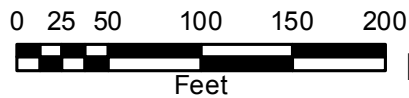
Design & Consultancy
for natural and
built assets

FIGURE





1

Attachment C

Figure 2 – Locations of November 19, 2015 Samples



Legend

-  Monitoring Well
-  Recovery Well
-  SURFACE WATER SAMPLES
-  Area Containing Stains



NAVAJO REFINING COMPANY
ARTESIA, NEW MEXICO
EAGLE DRAW EVALUATION

SAMPLE LOCATIONS NEAR EAGLE DRAW

Chavez, Carl J, EMNRD

From: Combs, Robert <Robert.Combs@HollyFrontier.com>
Sent: Friday, January 08, 2016 4:24 PM
To: Chavez, Carl J, EMNRD
Cc: Denton, Scott; Tsinnajinnie, Leona, NMENV
Subject: Update on Hydrocarbons to surface of Eagle Draw Part 1 of 2
Attachments: 2016-01-08 Update on Hydrocarbons to surface of Eagle Draw 1 of 2.pdf

Carl,

On behalf of Scott Denton, please see the attached report that was prepared based on your comments to our initial notification. We have included surface sample results as well as a local monitor well (MW-55), a comparison table to present analytical results, precipitation data, and groundwater elevations for select wells in the area (NMED-HWB request). The submittal is in two parts; this email will be followed by the second portion. I will upload these to the OCD FTP server and send the path to you.

Please let me know if you have any questions or would like to discuss further.

Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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Attachment D

Table 1 – Analytical Results and Comparison Standards

Table 1. Analytical Results and Comparison Standards

Analyte	CGWSL	CGWSL Source	Human Health SWQS	Source	Aquatic Life SWQS	Source	MW-55	ED01-111915	ED02-1111915
							11/19/2015	11/19/2015	11/19/2015
General Chemistry (mg/L)									
Calcium	1030	Background	--		--		□□□ □	□□□	3□□
Chloride	5930	Background	6,000	notes	--		225	580	452
Fluoride	2.95	Background	--		--		2.02	1.22	1.49
Nitrate/Nitrite	15.1	Background	132	LW	--		4.39	< 0.0197	0.041 J
Potassium	8.75	Background	--		--		0.989 J	5.59	9.33
Sodium	4300	Background	--		--		173 4	250	258
Sulfate	4410	Background	3,000	notes	--		2020	745	1470
TDS	16700	Background	14,000	notes	--		3480	2910	1890
Dissolved Metals (mg/L)									
Arsenic	0.01	EPA MCL	0.009	HH-OO	0.15	AL - Cr	0.00553	0.0159	0.00785
Barium	1	WQCC HH	2	DWS	--		0.0105	0.0882	0.063
Cadmium	0.005	EPA MCL	0.01	Irr	0.00028	AL - Cr	< 0.00016	< 0.00016	< 0.00016
Chromium	0.05	WQCC HH	0.1	Irr	0.042	AL - Cr	0.00186 J	0.00109 J	0.00104 J
Lead	0.015	EPA MCL	0.1	LW	0.001	AL - Cr	0.000389 J	0.00143 J	0.00114 J
Mercury	0.0044	Background	0.01	LW	0.00077	AL - Cr	< 0.000049	< 0.000049	< 0.000049
Selenium	0.05	WQCC HH	0.05	LW	0.005	AL - Cr	0.00845	0.000532 J	0.00642
Silver	0.05	WQCC HH	--		0.001	AL - Ac	< 0.00031	< 0.00031	< 0.00031
Total Petroleum Hydrocarbons (mg/L)									
GRO	--	--	--		--		< 0.0314	1.38	0.0469 J
DRO	0.2	NMED TPH	--		--		0.356	7.21	2.19
ORO	0.2	NMED TPH	--		--		0.108	1.16	0.621
Volatile Organic Carbons (mg/L)									
Benzene	0.005	EPA MCL	0.51	HH-OO	--		< 0.00019	0.188	0.00285
Toluene	0.75	WQCC HH	15	HH-OO	--		< 0.00018	0.0192	0.000574 J
Ethylbenzene	0.7	EPA MCL	2.1	HH-OO	--		< 0.00016	0.0158	0.000669
Xylenes	0.62	WQCC HH	--		--		0.0013 J	0.131	0.00147 J

Notes:
The selected NMED surface water quality standards are based on the following designated uses, if available. Domestic water supply criteria are only used if there are no other criteria available.
PERENNIAL WATERS - All perennial unclassified waters of the state.
A. Designated Uses: warmwater aquatic life, livestock watering, wildlife habitat and primary contact.
B. Criteria: the use-specific criteria in 20.6.4.900 NMAC are applicable to the designated uses.
Hardness-dependent criteria for metals are based on a hardness of 50 mg/L.
For TDS, sulfate and chloride the criteria for the Pecos River Basin were used for comparison purposes:
PECOS RIVER BASIN - The main stem of the Pecos river from the headwaters of Brantley reservoir upstream to Salt creek (near Acme), perennial reaches of the Rio Peñasco downstream from state highway 24 near Dunken, perennial reaches of the Rio Hondo and its tributaries below Bonney canyon and perennial reaches of the Rio Felix.
A. Designated Uses: irrigation, livestock watering, wildlife habitat, secondary contact and warmwater aquatic life.
Criteria: At all flows above 50 cfs: TDS 14,000 mg/L or less, sulfate 3,000 mg/L or less and chloride 6,000 mg/L or less.

- HH-OO

Irr

LW

DWS

AL - Cr

AL - Ac
- human health-organism only

irrigation

livestock watering

domestic water supply

aquatic life - chronic

aquatic life - acute

Attachment E

Analytical Lab Report with Contractor Field Notes

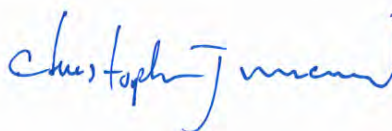
Contact: Ron Wood, ARCADIS 713-953-4840

ARCADIS US - TX

Sample Delivery Group: L802348
Samples Received: 11/20/2015
Project Number: TX001155.0001.00003
Description: Navajo Refining Company - Artesia, NM

Report To: Pam Krueger
2929 Briarpark Dr., Suite 300
Houston, TX 77042

Entire Report Reviewed By:



Chris McCord
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



¹Cp: Cover Page	1
²Tc: Table of Contents	2
³Ss: Sample Summary	3
⁴Cn: Case Narrative	4
⁵Sr: Sample Results	5
MW-55 L802348-01	5
ED01-111915 L802348-02	6
ED-1111915 ← L802348-03	7
TRIP BLANK L802348-04	8
⁶Qc: Quality Control Summary	9
Gravimetric Analysis by Method 2540 C-2011	9
Wet Chemistry by Method 353.2	10
Wet Chemistry by Method 9056MOD	12
Mercury by Method 7470A	14
Metals (ICPMS) by Method 6020	15
Volatile Organic Compounds (GC) by Method 8015/8021/8021B	17
Semi-Volatile Organic Compounds (GC) by Method 8015	19
⁷Gl: Glossary of Terms	20
⁸Al: Accreditations & Locations	21
⁹Sc: Chain of Custody	22

¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

should be
ED02-111915

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



MW-55 L802348-01 GW

				Collected by	Collected date/time	Received date/time	
					11/19/15 10:30	11/20/15 09:00	¹ Cp
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst		
Gravimetric Analysis by Method 2540 C-2011	WG831418	1	11/25/15 16:40	11/25/15 17:16	MF		² Tc
Mercury by Method 7470A	WG830678	1	11/21/15 17:20	11/22/15 11:03	BRJ		³ Ss
Metals (ICPMS) by Method 6020	WG831296	1	11/24/15 09:18	11/24/15 14:44	JDG		⁴ Cn
Semi-Volatile Organic Compounds (GC) by Method 8015	WG830634	1	11/20/15 23:39	11/21/15 18:18	BJF		⁵ Sr
Volatile Organic Compounds (GC) by Method 8015/8021	WG830660	1	11/22/15 18:45	11/22/15 18:45	HJF		⁶ Qc
Wet Chemistry by Method 353.2	WG832327	1	11/30/15 16:19	11/30/15 16:19	ASK		⁷ Gl
Wet Chemistry by Method 9056MOD	WG830779	1	11/24/15 15:13	11/24/15 15:13	DJD		⁸ Al
Wet Chemistry by Method 9056MOD	WG830779	50	11/24/15 15:59	11/24/15 15:59	DJD		⁹ Sc

ED01-111915 L802348-02 GW

				Collected by	Collected date/time	Received date/time	
					11/19/15 12:45	11/20/15 09:00	¹ Cp
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst		
Gravimetric Analysis by Method 2540 C-2011	WG831418	1	11/25/15 16:40	11/25/15 17:16	MF		² Tc
Mercury by Method 7470A	WG830678	1	11/21/15 17:20	11/22/15 11:06	BRJ		³ Ss
Metals (ICPMS) by Method 6020	WG831296	1	11/24/15 09:18	11/24/15 15:54	JDG		⁴ Cn
Semi-Volatile Organic Compounds (GC) by Method 8015	WG830634	1	11/20/15 23:39	11/21/15 18:35	BJF		⁵ Sr
Semi-Volatile Organic Compounds (GC) by Method 8015	WG830634	5	11/20/15 23:39	11/25/15 08:23	JNS		⁶ Qc
Volatile Organic Compounds (GC) by Method 8015/8021	WG830660	1	11/22/15 19:10	11/22/15 19:10	HJF		⁷ Gl
Wet Chemistry by Method 353.2	WG832327	1	11/30/15 16:21	11/30/15 16:21	ASK		⁸ Al
Wet Chemistry by Method 9056MOD	WG830779	1	11/24/15 15:28	11/24/15 15:28	DJD		⁹ Sc
Wet Chemistry by Method 9056MOD	WG830779	50	11/24/15 16:16	11/24/15 16:16	DJD		

ED-111915 L802348-03 GW

				Collected by	Collected date/time	Received date/time	
					11/19/15 13:10	11/20/15 09:00	¹ Cp
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst		
Gravimetric Analysis by Method 2540 C-2011	WG831418	1	11/25/15 16:40	11/25/15 17:16	MF		² Tc
Mercury by Method 7470A	WG830678	1	11/21/15 17:20	11/22/15 11:08	BRJ		³ Ss
Metals (ICPMS) by Method 6020	WG831296	1	11/24/15 09:18	11/24/15 16:01	JDG		⁴ Cn
Semi-Volatile Organic Compounds (GC) by Method 8015	WG830634	1	11/20/15 23:39	11/21/15 18:53	BJF		⁵ Sr
Volatile Organic Compounds (GC) by Method 8015/8021	WG830660	1	11/22/15 19:35	11/22/15 19:35	HJF		⁶ Qc
Wet Chemistry by Method 353.2	WG832327	1	11/30/15 16:22	11/30/15 16:22	ASK		⁷ Gl
Wet Chemistry by Method 9056MOD	WG830779	1	11/24/15 15:43	11/24/15 15:43	DJD		⁸ Al
Wet Chemistry by Method 9056MOD	WG830779	50	11/24/15 16:31	11/24/15 16:31	DJD		⁹ Sc

TRIP BLANK L802348-04 GW

				Collected by	Collected date/time	Received date/time	
					11/19/15 13:10	11/20/15 09:00	¹ Cp
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst		
Volatile Organic Compounds (GC) by Method 8021B	WG830660	1	11/22/15 17:29	11/22/15 17:29	BMB		



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris McCord
Technical Service Representative

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	3480000		2820	10000	1	11/25/2015 17:16	WG831418

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Nitrate-Nitrite	4390		19.7	100	1	11/30/2015 16:19	WG832327

Wet Chemistry by Method 9056MOD

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	225000		2600	50000	50	11/24/2015 15:59	WG830779
Fluoride	2020		9.90	100	1	11/24/2015 15:13	WG830779
Sulfate	2020000		3870	250000	50	11/24/2015 15:59	WG830779

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Mercury,Dissolved	U		0.0490	0.200	1	11/22/2015 11:03	WG830678

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Arsenic,Dissolved	5.53		0.250	2.00	1	11/24/2015 14:44	WG831296
Barium,Dissolved	10.5		0.360	5.00	1	11/24/2015 14:44	WG831296
Cadmium,Dissolved	U		0.160	1.00	1	11/24/2015 14:44	WG831296
Calcium,Dissolved	447000	<u>4</u>	46.0	1000	1	11/24/2015 14:44	WG831296
Chromium,Dissolved	1.86	<u>J</u>	0.540	2.00	1	11/24/2015 14:44	WG831296
Lead,Dissolved	0.389	<u>J</u>	0.240	2.00	1	11/24/2015 14:44	WG831296
Potassium,Dissolved	989	<u>J</u>	37.0	1000	1	11/24/2015 14:44	WG831296
Selenium,Dissolved	8.45		0.380	2.00	1	11/24/2015 14:44	WG831296
Silver,Dissolved	U		0.310	2.00	1	11/24/2015 14:44	WG831296
Sodium,Dissolved	173000	<u>4</u>	110	1000	1	11/24/2015 14:44	WG831296

Volatile Organic Compounds (GC) by Method 8015/8021/8021B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.190	0.500	1	11/22/2015 18:45	WG830660
Toluene	U		0.180	5.00	1	11/22/2015 18:45	WG830660
Ethylbenzene	U		0.160	0.500	1	11/22/2015 18:45	WG830660
Total Xylene	1.30	<u>J</u>	0.510	1.50	1	11/22/2015 18:45	WG830660
TPH (GC/FID) Low Fraction	U		31.4	100	1	11/22/2015 18:45	WG830660
(S) a,a,a-Trifluorotoluene(FID)	94.9			62.0-128		11/22/2015 18:45	WG830660
(S) a,a,a-Trifluorotoluene(PID)	101			55.0-122		11/22/2015 18:45	WG830660

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
C10-C28 Diesel Range	356		22.2	100	1	11/21/2015 18:18	WG830634
C28-C40 Oil Range	108		11.8	100	1	11/21/2015 18:18	WG830634
(S) o-Terphenyl	107			50.0-150		11/21/2015 18:18	WG830634



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	2910000		2820	10000	1	11/25/2015 17:16	WG831418

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Nitrate-Nitrite	U		19.7	100	1	11/30/2015 16:21	WG832327

Wet Chemistry by Method 9056MOD

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	580000		2600	50000	50	11/24/2015 16:16	WG830779
Fluoride	1220		9.90	100	1	11/24/2015 15:28	WG830779
Sulfate	745000		3870	250000	50	11/24/2015 16:16	WG830779

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Mercury,Dissolved	U		0.0490	0.200	1	11/22/2015 11:06	WG830678

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Arsenic,Dissolved	15.9		0.250	2.00	1	11/24/2015 15:54	WG831296
Barium,Dissolved	88.2		0.360	5.00	1	11/24/2015 15:54	WG831296
Cadmium,Dissolved	U		0.160	1.00	1	11/24/2015 15:54	WG831296
Calcium,Dissolved	420000		46.0	1000	1	11/24/2015 15:54	WG831296
Chromium,Dissolved	1.09	J	0.540	2.00	1	11/24/2015 15:54	WG831296
Lead,Dissolved	1.43	J	0.240	2.00	1	11/24/2015 15:54	WG831296
Potassium,Dissolved	5590		37.0	1000	1	11/24/2015 15:54	WG831296
Selenium,Dissolved	0.532	J	0.380	2.00	1	11/24/2015 15:54	WG831296
Silver,Dissolved	U		0.310	2.00	1	11/24/2015 15:54	WG831296
Sodium,Dissolved	250000		110	1000	1	11/24/2015 15:54	WG831296

Volatile Organic Compounds (GC) by Method 8015/8021/8021B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	188		0.190	0.500	1	11/22/2015 19:10	WG830660
Toluene	19.2		0.180	5.00	1	11/22/2015 19:10	WG830660
Ethylbenzene	15.8		0.160	0.500	1	11/22/2015 19:10	WG830660
Total Xylene	131		0.510	1.50	1	11/22/2015 19:10	WG830660
TPH (GC/FID) Low Fraction	1380		31.4	100	1	11/22/2015 19:10	WG830660
(S) a,a,a-Trifluorotoluene(FID)	97.6			62.0-128		11/22/2015 19:10	WG830660
(S) a,a,a-Trifluorotoluene(PID)	104			55.0-122		11/22/2015 19:10	WG830660

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
C10-C28 Diesel Range	7210		111	500	5	11/25/2015 08:23	WG830634
C28-C40 Oil Range	1160		11.8	100	1	11/21/2015 18:35	WG830634
(S) o-Terphenyl	120			50.0-150		11/21/2015 18:35	WG830634



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	1890000		2820	10000	1	11/25/2015 17:16	WG831418

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Nitrate-Nitrite	41.0	J	19.7	100	1	11/30/2015 16:22	WG832327

Wet Chemistry by Method 9056MOD

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	452000		2600	50000	50	11/24/2015 16:31	WG830779
Fluoride	1490		9.90	100	1	11/24/2015 15:43	WG830779
Sulfate	1470000		3870	250000	50	11/24/2015 16:31	WG830779

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Mercury,Dissolved	U		0.0490	0.200	1	11/22/2015 11:08	WG830678

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Arsenic,Dissolved	7.85		0.250	2.00	1	11/24/2015 16:01	WG831296
Barium,Dissolved	63.0		0.360	5.00	1	11/24/2015 16:01	WG831296
Cadmium,Dissolved	U		0.160	1.00	1	11/24/2015 16:01	WG831296
Calcium,Dissolved	377000		46.0	1000	1	11/24/2015 16:01	WG831296
Chromium,Dissolved	1.04	J	0.540	2.00	1	11/24/2015 16:01	WG831296
Lead,Dissolved	1.14	J	0.240	2.00	1	11/24/2015 16:01	WG831296
Potassium,Dissolved	9330		37.0	1000	1	11/24/2015 16:01	WG831296
Selenium,Dissolved	6.42		0.380	2.00	1	11/24/2015 16:01	WG831296
Silver,Dissolved	U		0.310	2.00	1	11/24/2015 16:01	WG831296
Sodium,Dissolved	258000		110	1000	1	11/24/2015 16:01	WG831296

Volatile Organic Compounds (GC) by Method 8015/8021/8021B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	2.85		0.190	0.500	1	11/22/2015 19:35	WG830660
Toluene	0.574	J	0.180	5.00	1	11/22/2015 19:35	WG830660
Ethylbenzene	0.669		0.160	0.500	1	11/22/2015 19:35	WG830660
Total Xylene	1.47	J	0.510	1.50	1	11/22/2015 19:35	WG830660
TPH (GC/FID) Low Fraction	46.9	J	31.4	100	1	11/22/2015 19:35	WG830660
(S) a,a,a-Trifluorotoluene(FID)	94.5			62.0-128		11/22/2015 19:35	WG830660
(S) a,a,a-Trifluorotoluene(PID)	99.6			55.0-122		11/22/2015 19:35	WG830660

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
C10-C28 Diesel Range	2190		22.2	100	1	11/21/2015 18:53	WG830634
C28-C40 Oil Range	621		11.8	100	1	11/21/2015 18:53	WG830634
(S) o-Terphenyl	107			50.0-150		11/21/2015 18:53	WG830634



Volatile Organic Compounds (GC) by Method 8015/8021/8021B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.190	0.500	1	11/22/2015 17:29	WG830660
Toluene	U		0.180	5.00	1	11/22/2015 17:29	WG830660
Ethylbenzene	U		0.160	0.500	1	11/22/2015 17:29	WG830660
Total Xylene	U		0.510	1.50	1	11/22/2015 17:29	WG830660
(S) o,o,o-Trifluorotoluene(PID) 101				55.0-122		11/22/2015 17:29	WG830660

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) 11/25/15 17:16

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Dissolved Solids	U		2.82	10.0

L802348-01 Original Sample (OS) • Duplicate (DUP)

(OS) 11/25/15 17:16 • (DUP) 11/25/15 17:16

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Dissolved Solids	3480	3590	1	3.26		5

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/25/15 17:16 • (LCSD) 11/25/15 17:16

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Dissolved Solids	8800	8720	8610	99.1	97.8	85.0-115			1.27	5

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc



Method Blank (MB)

(MB) 11/30/15 16:08

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Nitrate-Nitrite	U		0.0197	0.100

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L802348-01 Original Sample (OS) • Duplicate (DUP)

(OS) 11/30/15 16:19 • (DUP) 11/30/15 16:20

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Nitrate-Nitrite	4.39	4.34	1	1.00		20

L802480-01 Original Sample (OS) • Duplicate (DUP)

(OS) 11/30/15 16:36 • (DUP) 11/30/15 16:37

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Nitrate-Nitrite	0.162	0.157	1	3.00		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/30/15 16:11 • (LCSD) 11/30/15 16:12

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Nitrate-Nitrite	5.00	4.73	4.82	95.0	96.0	90.0-110			2.00	20

L802392-01 Original Sample (OS) • Matrix Spike (MS)

(OS) 11/30/15 16:23 • (MS) 11/30/15 16:24

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/l	mg/l	mg/l	%		%	
Nitrate-Nitrite	5.00	1.93	6.97	101	1	90.0-110	



L802480-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/30/15 16:39 • (MS) 11/30/15 16:40 • (MSD) 11/30/15 16:41

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Nitrate-Nitrite	5.00	6.08	11.0	11.0	98.0	98.0	1	90.0-110			0.000	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) 11/24/15 07:42

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	0.0916		0.0519	1.00
Fluoride	U		0.0099	0.100
Sulfate	U		0.0774	5.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L801979-01 Original Sample (OS) • Duplicate (DUP)

(OS) 11/24/15 10:51 • (DUP) 11/24/15 11:06

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	79.7	79.7	10	0		20
Fluoride	0.491	0.496	10	1		20
Sulfate	422	422	10	0		20

L802323-07 Original Sample (OS) • Duplicate (DUP)

(OS) 11/24/15 14:26 • (DUP) 11/24/15 14:42

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	36.4	36.4	10	0		20
Fluoride	0.261	0.248	10	5		20
Sulfate	110	109	10	0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/24/15 07:58 • (LCSD) 11/24/15 08:13

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloride	40.0	39.8	39.9	100	100	90-110			0	20
Fluoride	8.00	7.98	7.99	100	100	90-110			0	20
Sulfate	40.0	40.1	40.2	100	100	90-110			0	20



L801999-04 Original Sample (OS) • Matrix Spike (MS)

(OS) 11/24/15 11:21 • (MS) 11/24/15 11:37

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	5.00	378	862	97	10	80-120	
Fluoride	0.500	0.668	50.8	100	10	80-120	
Sulfate	5.00	207	691	97	10	80-120	

L802323-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/24/15 13:40 • (MS) 11/24/15 13:55 • (MSD) 11/24/15 14:11

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	5.00	17.2	509	509	98	98	10	80-120			0	20
Fluoride	0.500	0.424	50.7	50.9	101	101	10	80-120			0	20
Sulfate	5.00	539	1030	1030	97	97	10	80-120			0	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) 11/22/15 10:19

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury,Dissolved	U		0.000049	0.000200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/22/15 10:22 • (LCSD) 11/22/15 10:24

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Mercury,Dissolved	0.00300	0.00260	0.00245	87	82	80-120			6	20

L802534-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/22/15 10:46 • (MS) 11/22/15 10:48 • (MSD) 11/22/15 10:51

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury,Dissolved	0.00300	0.00000972	0.00281	0.00285	93	95	1	75-125			2	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) 11/24/15 15:33

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic,Dissolved	U		0.00025	0.00200
Barium,Dissolved	U		0.00036	0.00500
Cadmium,Dissolved	U		0.00016	0.00100
Calcium,Dissolved	U		0.046	1.00
Chromium,Dissolved	0.000714		0.00054	0.00200
Lead,Dissolved	0.000284		0.00024	0.00200
Potassium,Dissolved	0.0441		0.037	1.00
Selenium,Dissolved	U		0.00038	0.00200
Silver,Dissolved	U		0.00031	0.00200
Sodium,Dissolved	U		0.11	1.00

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/24/15 14:39 • (LCSD) 11/24/15 14:41

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic,Dissolved	0.0500	0.0528	0.0503	106	101	80-120			5	20
Barium,Dissolved	0.0500	0.0490	0.0501	98	100	80-120			2	20
Cadmium,Dissolved	0.0500	0.0556	0.0519	111	104	80-120			7	20
Calcium,Dissolved	5.00	4.91	5.19	98	104	80-120			6	20
Chromium,Dissolved	0.0500	0.0530	0.0517	106	103	80-120			3	20
Lead,Dissolved	0.0500	0.0507	0.0503	101	101	80-120			1	20
Potassium,Dissolved	5.00	4.87	4.97	97	99	80-120			2	20
Selenium,Dissolved	0.0500	0.0506	0.0509	101	102	80-120			1	20
Silver,Dissolved	0.0500	0.0510	0.0511	102	102	80-120			0	20
Sodium,Dissolved	5.00	5.34	5.68	107	114	80-120			6	20

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/24/15 14:44 • (MS) 11/24/15 14:53 • (MSD) 11/24/15 14:55

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic,Dissolved	0.0500	0.00553	0.0603	0.0619	110	113	1	75-125			3	20
Barium,Dissolved	0.0500	0.0105	0.0589	0.0601	97	99	1	75-125			2	20
Cadmium,Dissolved	0.0500	0.0000293	0.0546	0.0559	109	112	1	75-125			2	20



[L802348-01,02,03](#)

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/24/15 14:44 • (MS) 11/24/15 14:53 • (MSD) 11/24/15 14:55

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Calcium,Dissolved	5.00	447	437	438	0	0	1	75-125	4	4	0	20
Chromium,Dissolved	0.0500	0.00186	0.0507	0.0504	98	97	1	75-125			0	20
Potassium,Dissolved	5.00	0.989	5.49	5.45	90	89	1	75-125			1	20
Lead,Dissolved	0.0500	0.000389	0.0483	0.0490	96	97	1	75-125			1	20
Selenium,Dissolved	0.0500	0.00845	0.0591	0.0591	101	101	1	75-125			0	20
Silver,Dissolved	0.0500	0.000110	0.0490	0.0493	98	98	1	75-125			1	20
Sodium,Dissolved	5.00	173	173	176	0	55	1	75-125	4	4	2	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) 11/22/15 17:03

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000190	0.000500
Toluene	0.000458		0.000180	0.00500
Ethylbenzene	U		0.000160	0.000500
Total Xylene	U		0.000510	0.00150
TPH (GC/FID) Low Fraction	U		0.0314	0.100
(S) a,a,a-Trifluorotoluene(FID)	95.4			62.0-128
(S) a,a,a-Trifluorotoluene(PID)	101			55.0-122

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/22/15 15:00 • (LCSD) 11/22/15 15:25

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.0487	0.0487	97.5	97.4	70.0-130			0.0400	20
Toluene	0.0500	0.0452	0.0446	90.4	89.2	70.0-130			1.40	20
Ethylbenzene	0.0500	0.0471	0.0467	94.3	93.4	70.0-130			0.940	20
Total Xylene	0.150	0.142	0.141	95.0	93.8	70.0-130			1.29	20
(S) a,a,a-Trifluorotoluene(PID)				101	101	55.0-122				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/22/15 15:49 • (LCSD) 11/22/15 16:14

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	5.60	5.89	102	107	67.0-132			5.09	20
(S) a,a,a-Trifluorotoluene(FID)				105	105	62.0-128				

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/22/15 18:45 • (MS) 11/22/15 22:32 • (MSD) 11/22/15 22:57

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	ND	0.0472	0.0487	94.5	97.5	1	57.2-131			3.14	20
Toluene	0.0500	ND	0.0431	0.0443	86.2	88.6	1	63.7-134			2.73	20
Ethylbenzene	0.0500	ND	0.0454	0.0469	90.9	93.8	1	67.5-135			3.23	20



L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/22/15 18:45 • (MS) 11/22/15 22:32 • (MSD) 11/22/15 22:57

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Total Xylene	0.150	0.00130	0.136	0.140	90.0	92.4	1	65.9-138			2.62	20
(S) a,a,a-Trifluorotoluene(PID)					99.6	99.7		55.0-122				

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/22/15 18:45 • (MS) 11/22/15 23:22 • (MSD) 11/22/15 23:47

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	ND	5.22	5.70	94.8	104	1	50.0-143			8.97	20
(S) a,a,a-Trifluorotoluene(FID)					97.1	98.4		62.0-128				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc



Method Blank (MB)

(MB) 11/21/15 17:08

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
C10-C28 Diesel Range	U		0.0222	0.100
C28-C40 Oil Range	U		0.0118	0.100
(S) o-Terphenyl	110			50.0-150

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/21/15 17:26 • (LCSD) 11/21/15 17:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	1.50	1.46	1.43	97.2	95.3	70.0-130			1.95	20
(S) o-Terphenyl				117	109	50.0-150				



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
4	The sample concentration was greater than 4 times the spike value.
J	Estimated value.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee ¹⁴	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

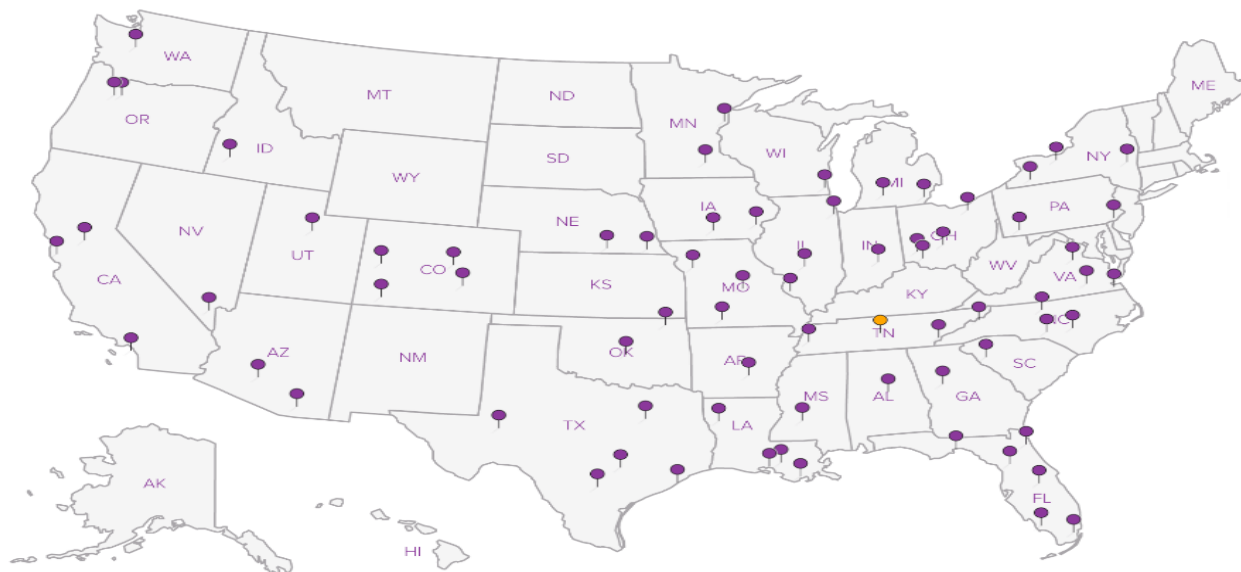
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



ARCADIS US - TX

2929 Briarpark Dr.
Suite 300
Houston, TX 77042

Report to:
Pam Krueger

Project Description: Navajo Refining Company - Artesia, NM

Phone: 713-953-4800
Fax:

Collected by (print):

Collected by (signature):

Immediately Packed on Ice N Y

Billing Information:
Attn: Accounts Payable
630 Plaza Drive, Suite 600
Highlands Ranch, CO 80129

Email To: pam.krueger@arcadis.com

City/State Collected:
Lab Project # ARCADHTX-NAVAJORUSH
P.O. #

Date Results Needed
Email? No X Yes
FAX? No Yes
No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEX 40mlAmb-HCl	Cl, F, SO4 125mlHDPE-NoPres	DROOROLVI 40mlAmb-HCl-BT	Dissolved Metals 500mlHDPE-NoPres	GRO 40mlAmb HCl	NO2NO3 250mlHDPE-H2SO4	TDS 250mlHDPE-NoPres	Total Metals
MW-55	6	GW	—	11/19/15	1030	12	X	X	X	X	X	X	X	X
ED01-111915	6	GW	—	11/19/15	1245	12	X	X	X	X	X	X	X	X
ED01-111915	6	GW	—	11/19/15	1310	12	X	X	X	X	X	X	X	X
		GW				11	X	X	X	X	X	X	X	X
Trip Blank	—	—	—	—	—	1	X							

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

Remarks: Dissolved Metals = M6020RCRA8-D + CADG, KDG, NADG

Hold Metals until word from Pam Krueger

Relinquished by: (Signature)	Date: 11/19/15	Time: 1345	Received by: (Signature)	Samples returned via: <input checked="" type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/>
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.8 °C Bottles Received: 37
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 11/20/15 Time: 0940

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

ESC
L.A.B S.C.I.E.N.C.E.S

YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mount Juliet, TN 37122
Phone: 615-758-5850
Phone: 800-767-5859
Fax: 615-758-5859



L# 302378
D081
Acctnum: ARCADHTX
Template: T107511
Prelogin: P531474
TSR: 526 - Chris McCord
PB: 11-1818
Shipped via: FedEx Priority

Rem./Contaminant Sample # (lab only)

	01
	02
	03
	04

pH Temp
Flow Other

652919073789

Hold #

Condition: (lab use only) 7F

COC Seal Intact: Y N NA

pH Checked: NCF

11/19/15

Eagle Draw Surface Sampling

Weather: Sunny, 50s

Personnel: R. Wood

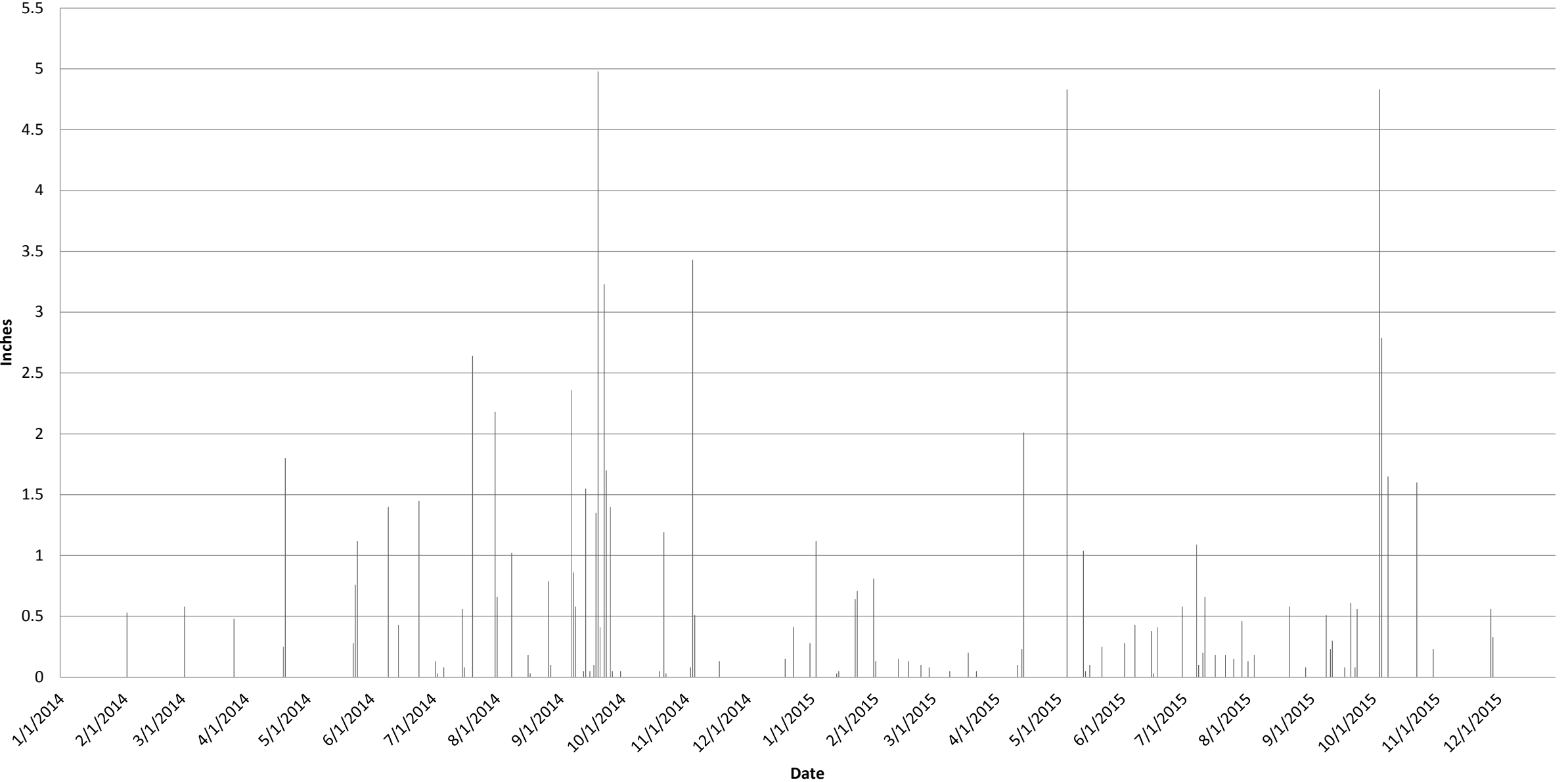
- 0700 Arrived onsite. Attempted to get badge waiver but safety does not issue waivers for background checks anymore
- 0745 R. Combs spoke w/ safety and informed me that Domingo could escort me into Refinery
- 0830 Met Domingo @ Warehouse to gather equipment
- 0925 Arrived @ MW-55 to begin sampling
1030 - Sample time
- 1045 Left area to go find bottleware from ESC
- 1115 Could not locate sample bottles. Broke for lunch
- 1210 Arrived back onsite. Stopped FedEx driver to collect sample bottles.
- 1230 Arrived back @ Eagle Draw
- 1245 Collected ED01-11/19/15
- Taken from surface water on the east side of Eagle Draw
South of Navajo Rd
- 1310 Collected ED02-11/19/15
- Taken from surface water on the west side of Eagle Draw
east ^{side} ~~11/19/15~~ north of Navajo Rd.
- 1330 Started packing samples
- 1345 Dropped samples off @ FedEx building
- 1420 Offsite

Final

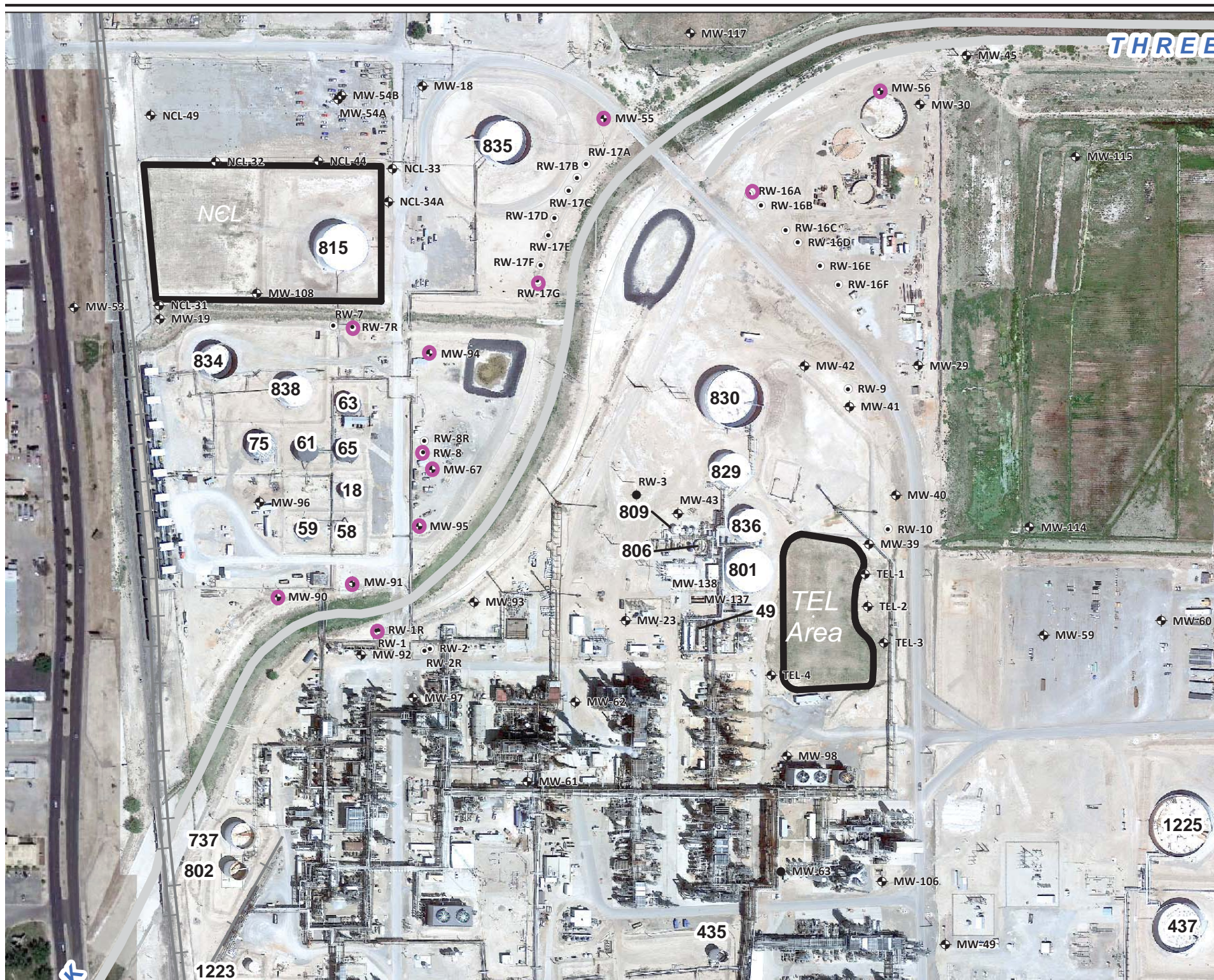
Attachment F
Precipitation Data January 2011 – November 2015

Precipitation

(January 2014 – Present)



Attachment G
GW Level Trends



RW-1/RW-1R



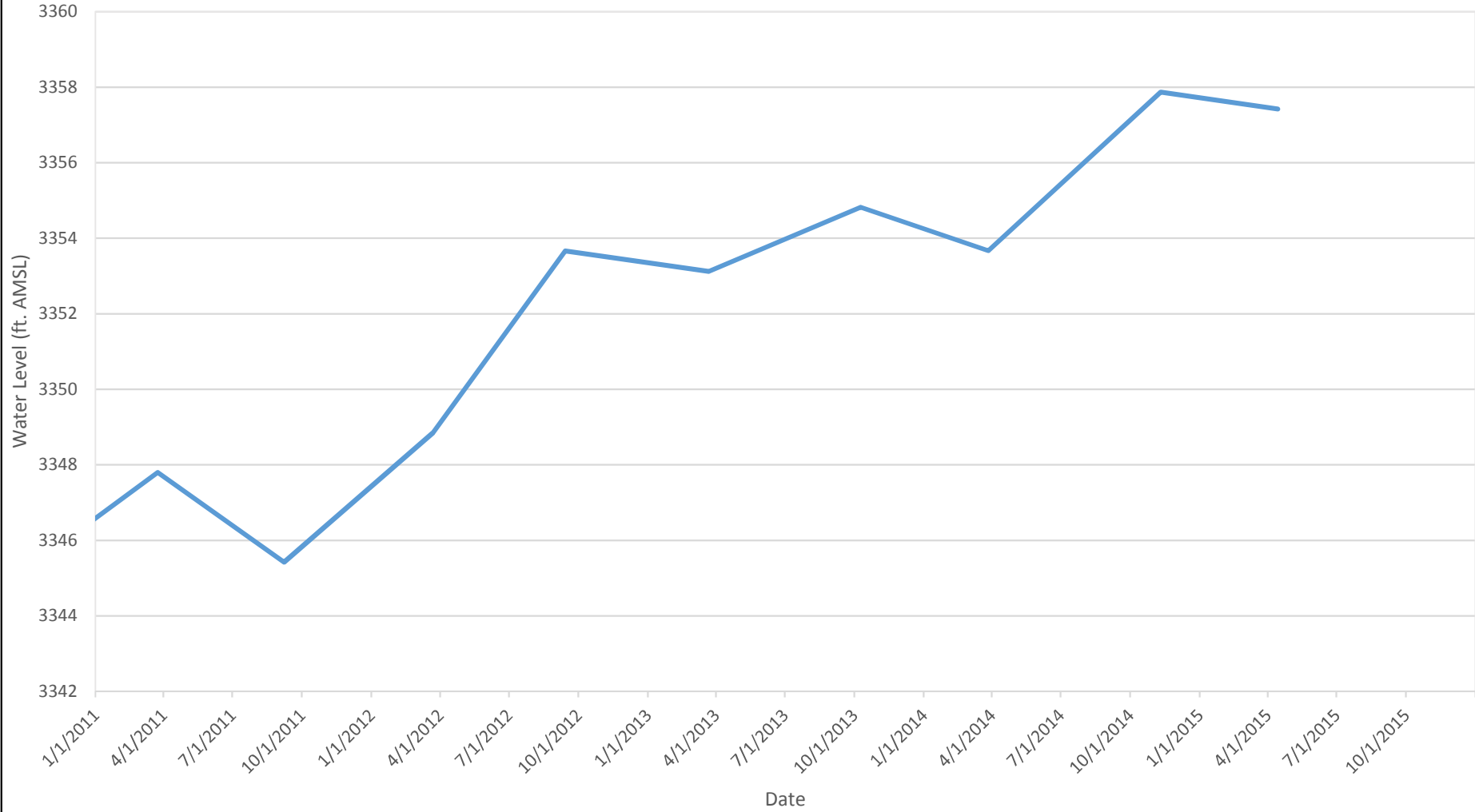
RW-7/RW-7R



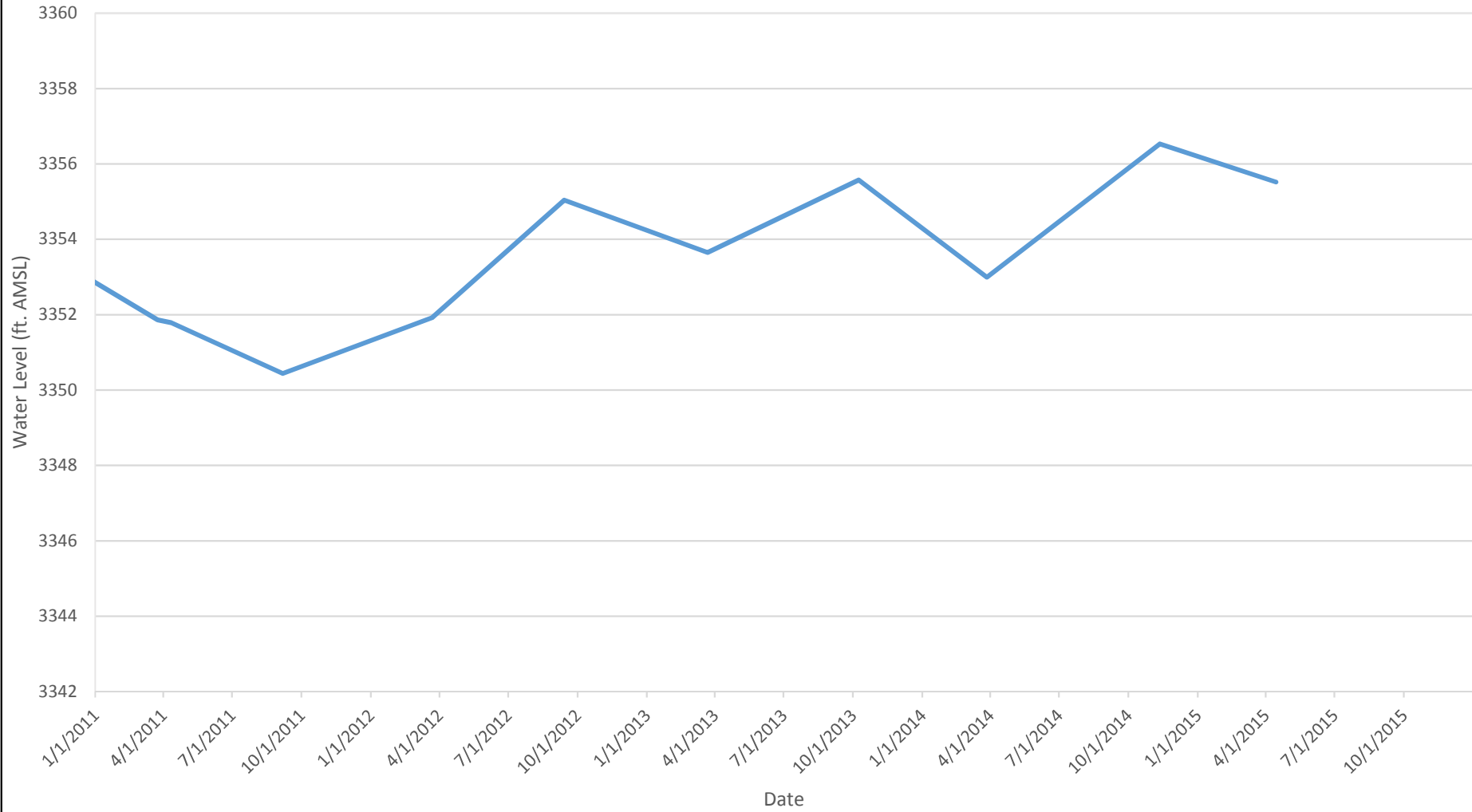
RW-8/RW-8R



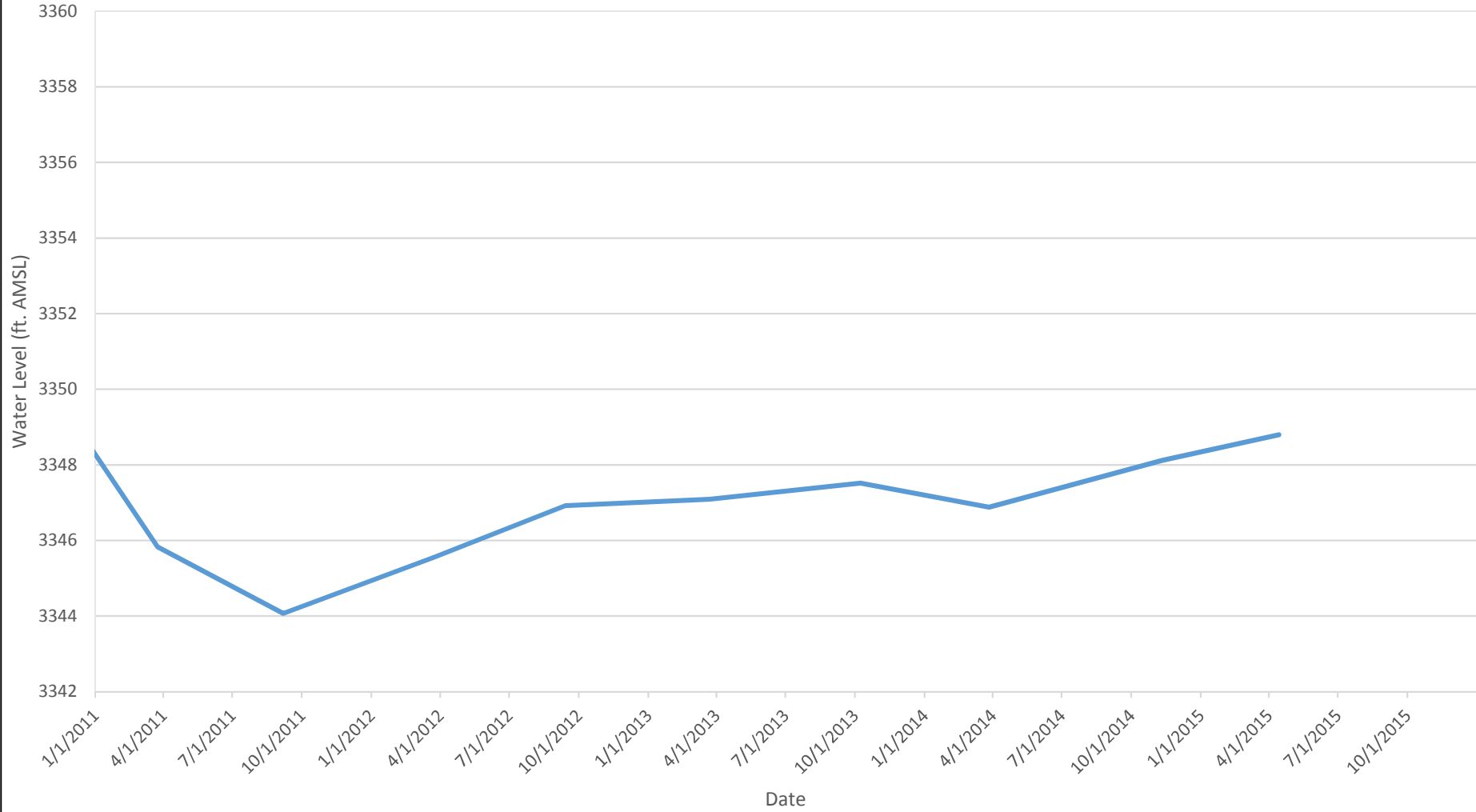
MW-94



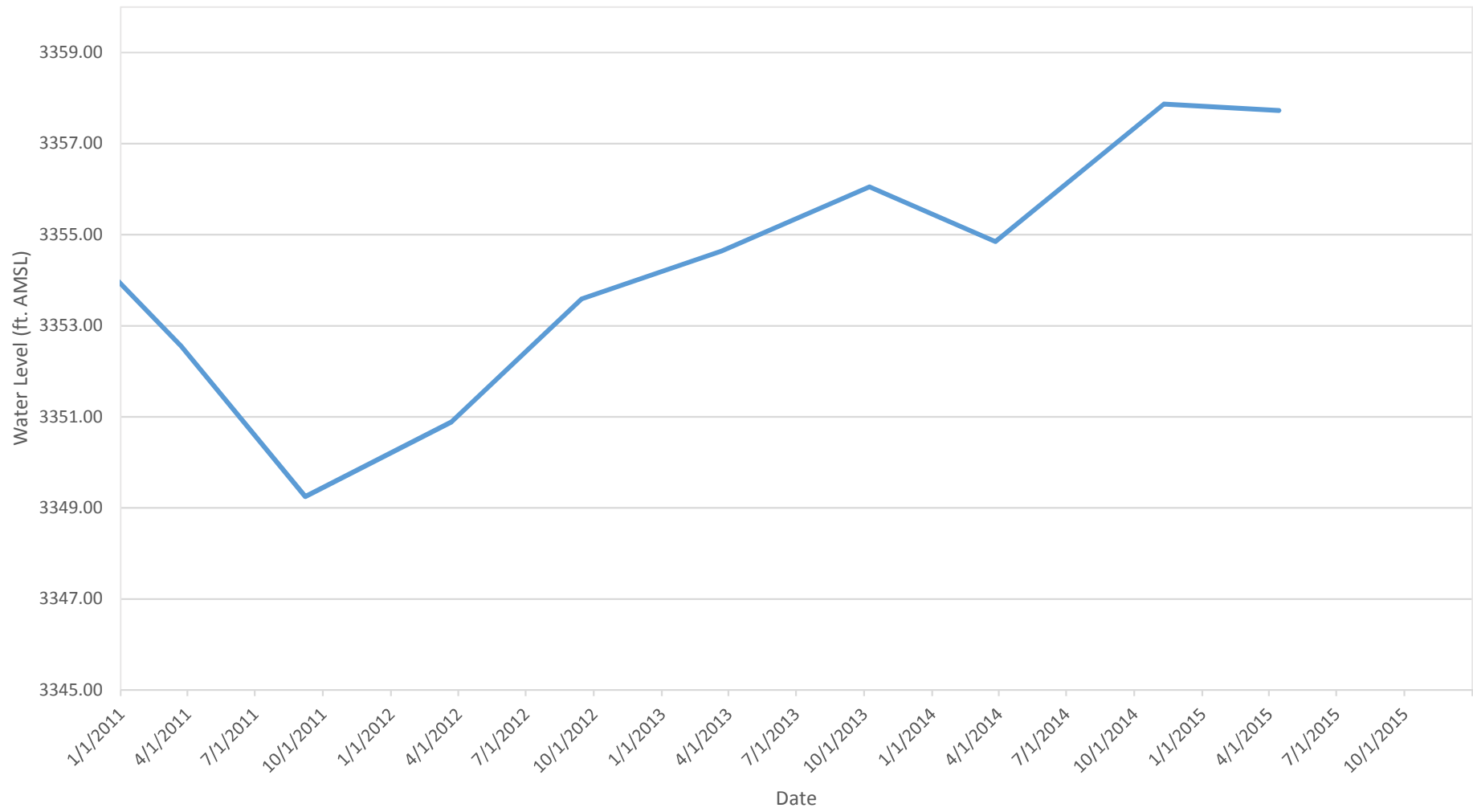
MW-55



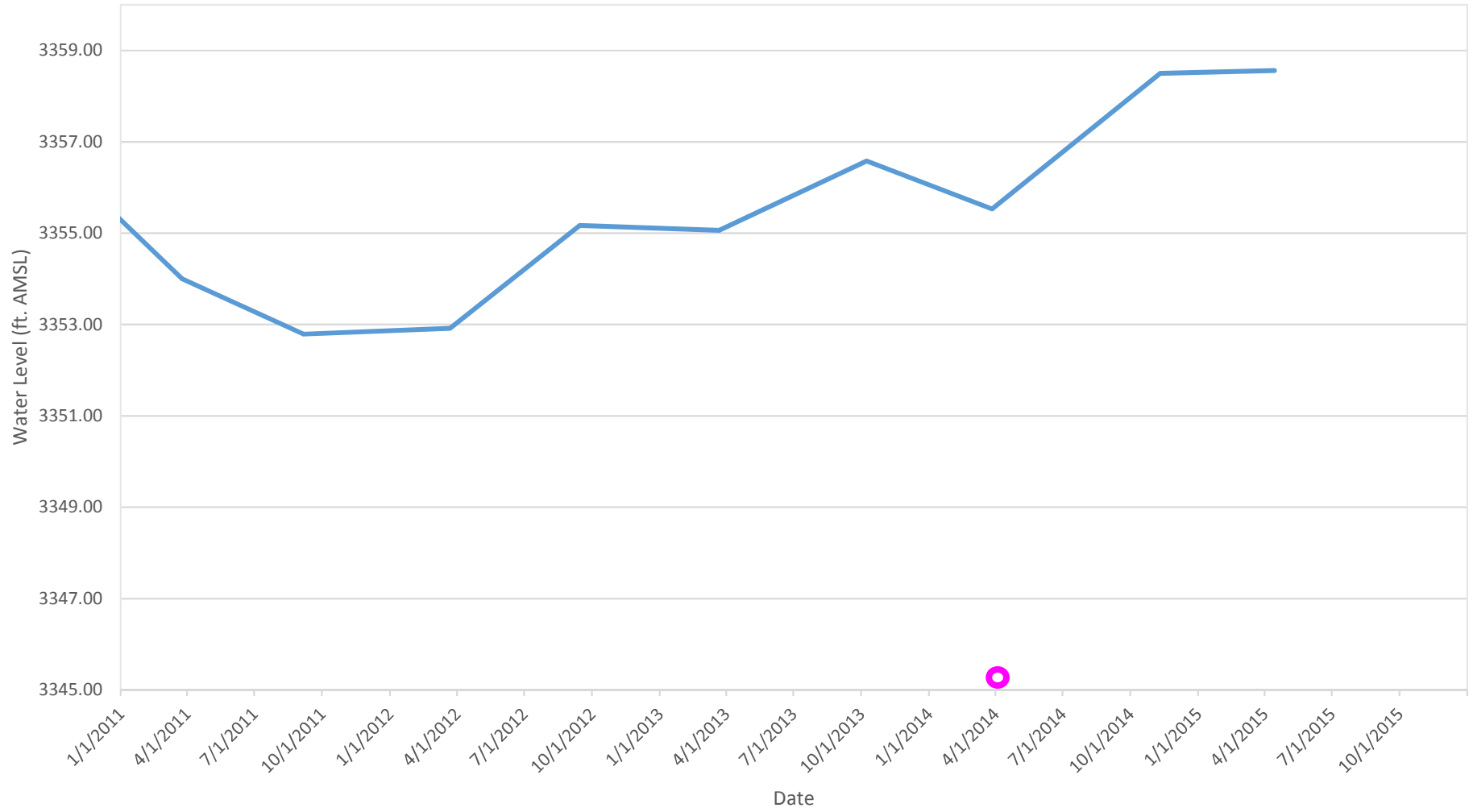
MW-56



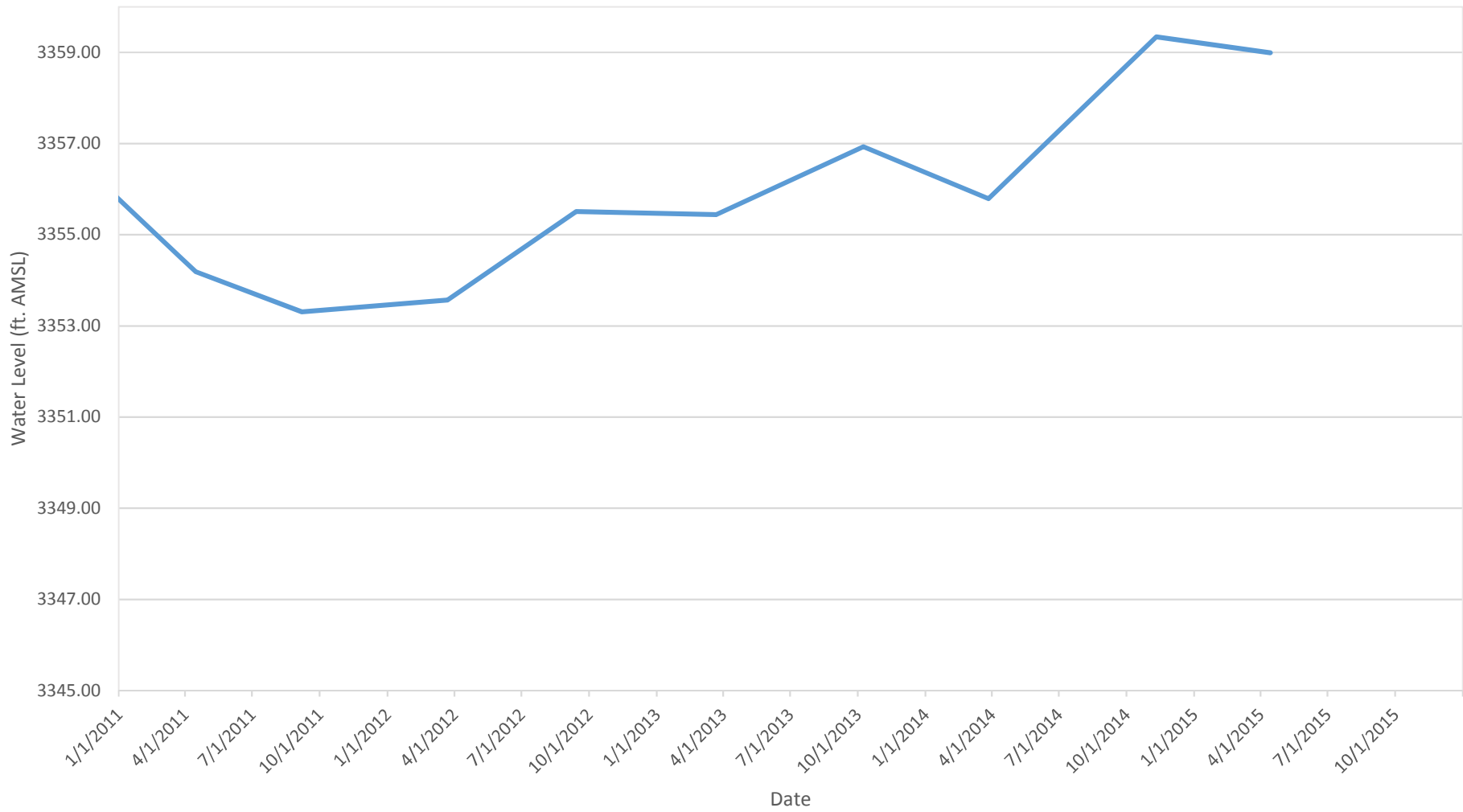
MW-67



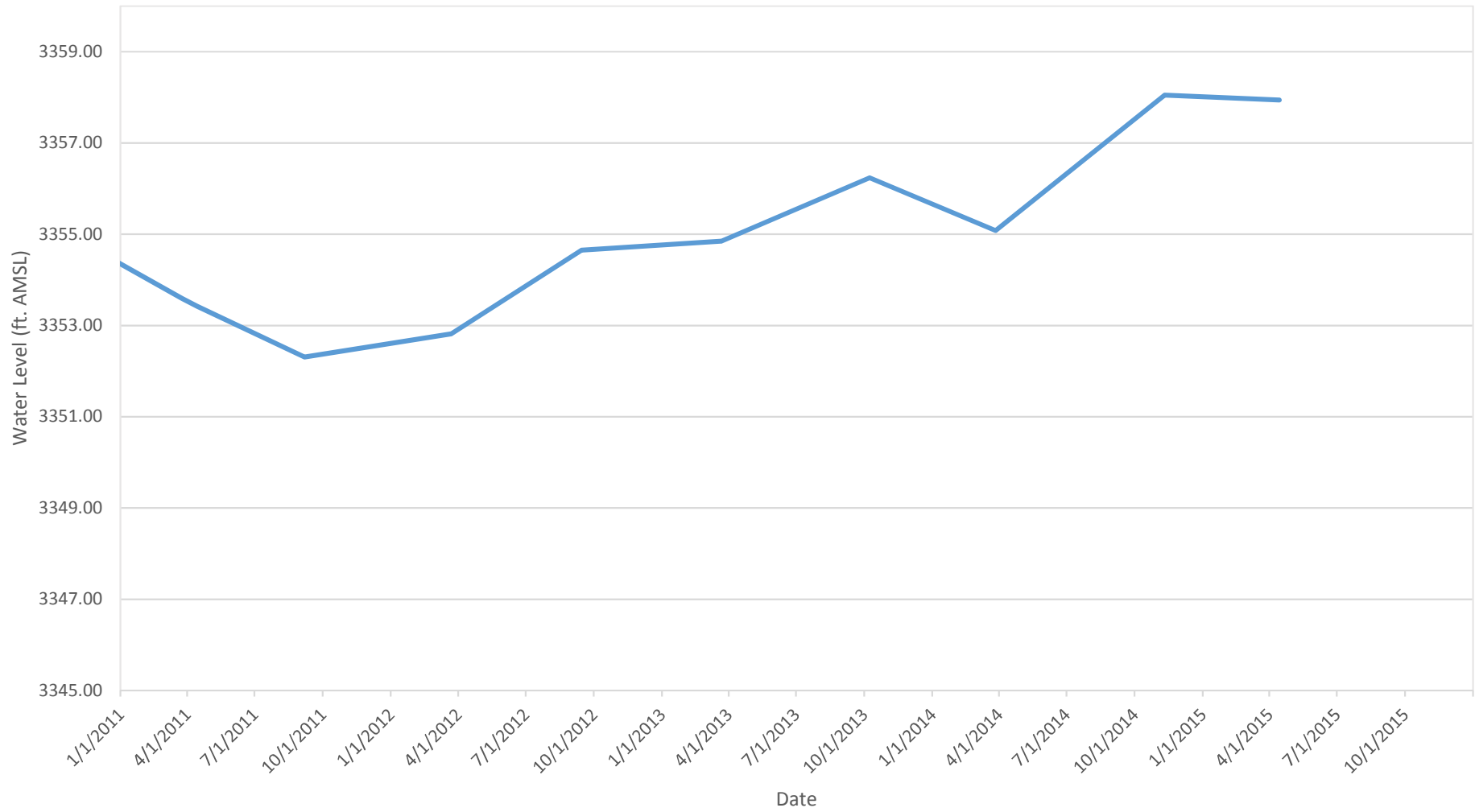
MW-91



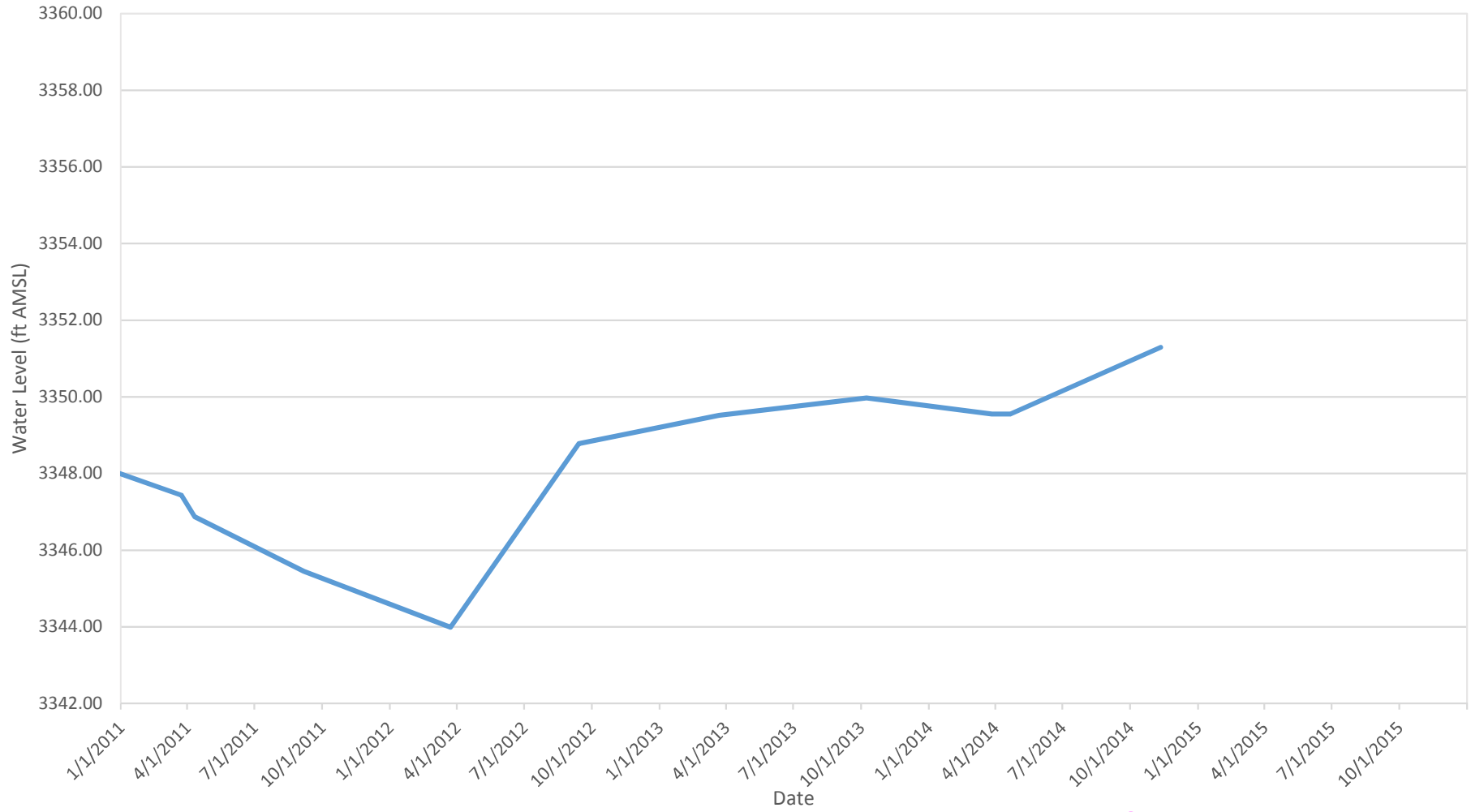
MW-90



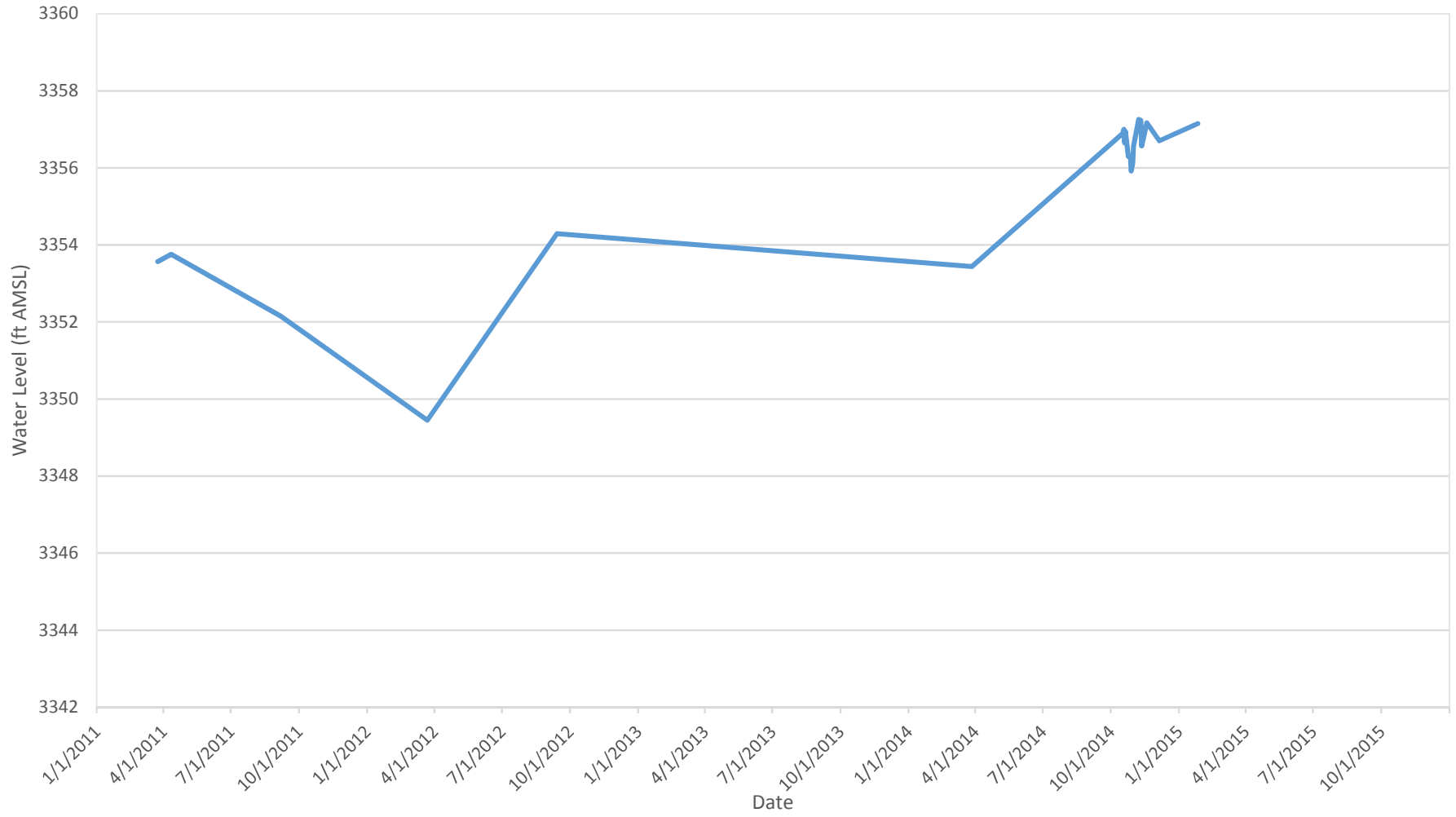
MW-95



RW-16



RW-17





January 8, 2016

Submitted by electronic mail

Mr. Carl Chavez, Environmental Engineer
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: C-141 Report on Seepage into Eagle Draw
Discharge Permit GW-028

Dear Mr. Chavez:

On November 17, 2015, Navajo Refining Company, L.L.C. (Navajo) notified the Oil Conservation Division (OCD) and the New Mexico Environment Department (NMED) Hazardous Waste Bureau (HWB) by telephone that Refinery personnel had observed evidence of the seepage of dark liquids through cracks in a concreted portion of the bank of Eagle Draw within the Refinery. Navajo also notified the National Response Center of this seepage the same day.

This report summarizes Navajo's actions taken to date regarding the seepage, including the measures summarized in your electronic mail of November 17, 2015, and proposed actions based upon our evaluation regarding the likely source of the seepage. Form C-141 is re-provided as Attachment A.

Refinery Setting

The location of the observed seepage along the bank of Eagle Draw is in the northwestern portion of the Refinery. Recovery well (RW) 17 is located on the west side of Eagle Draw, and due north of the observed seepage, and monitor well (MW)-55 is further to the northeast. The area of the seepage is within the Refinery's fenced boundaries. Attachment B provides Figure 1, which is the location of the seepage in relation to an overall Refinery map.

Actions Taken

At the time the incident was internally reported, Environmental Department personnel went out to inspect the seepage to develop an immediate course of action. There was no odor to the seepage itself, but the liquids expressing through cracks in the concrete sidewall appeared to be dark and featured entrained particulate matter. Absorbents were applied in order to remove as much stained material as possible. Although there was no sheen on the surface water in the Draw, field screening of ambient air over the surface water was conducted, but did not indicate

the presence of hydrogen sulfide or benzene. Notwithstanding the lack of hydrocarbon odor in the seepage or sheen on the water in the Draw, Navajo protectively placed oil absorbent booms downstream of the observed seepage locations, and booms will be replaced as needed.

Three water samples were collected on November 19, 2015 at the locations shown in Figure 2 (Attachment C). Two of the samples were collected from surface water: sample location ED01-111915 was very near the point where the seepage was observed within Eagle Draw, downstream of the confluence with Clark Draw. The second surface sample, ED02-111915, was collected further downstream within Eagle Draw east of Navajo Road, within the Refinery's fenceline.¹ At OCD's request for comparison purposes, a sample was also collected from monitoring well MW-55 (see Figure 2, Attachment C), which is screened from 13.7 to 23.7 feet below ground surface. The three samples, plus a trip blank for volatile organic compounds (VOC) analysis, were shipped overnight to a certified laboratory for analysis of the constituents requested by OCD (total petroleum hydrocarbons, general chemistry, VOCs, BTEX, and the eight RCRA metals).

The full set of analytes, associated screening levels, and analytical results are summarized in Table 1 (Attachment D), and a copy of the laboratory report (and the contractor's field notes) is provided as Attachment E. (The lab report erroneously identifies surface water sample ED02-111915 as "ED-1111915," as indicated by the markup on the report.) The lab report was also provided to you via electronic mail on December 21, 2015.

The analytical results from the groundwater sample and the two surface water samples were compared to the following screening levels:

- Upper tolerance limit (UTL) calculated for background concentrations of general chemistry parameters and mercury (from Navajo's background groundwater investigation report submitted to OCD and NMED in September 2015);
- Lower of the New Mexico Water Quality Control Commission (WQCC) Water Quality Standard (WQS) provided in 20.6.2.3103 New Mexico Administrative Code (NMAC) or the United States Environmental Protection Agency (USEPA) Maximum Contaminant Level (MCL) for metals (other than mercury) and VOCs.
- TPH screening level provided in the 2012 version of the HWB risk assessment guidance document for TPH DRO and TPH ORO.
- Human Health Surface Water Quality Standards (SWQS)
- Aquatic Life SWQS

As Table 1 (Attachment D) indicates, the water quality of the two surface water samples is affected primarily by total petroleum hydrocarbons (TPH): Diesel Range Organics (DRO) and Oil Range Organics (ORO), even more so than levels in MW-55. The TPH and VOCs in ED02-

¹The coordinates of the ED01-111915 sample area are latitude 32.852356 and longitude 104.393864, while those of the ED02-111915 sample are latitude 32.852972 and longitude 104.393347.

111955, the downstream surface water sample, are significantly lower than the sample collected nearest the seep, indicating that degradation of these compounds is occurring.

- MW-55: The reported concentration of TPH DRO exceeds the TPH screening level in the sample collected from MW-55. All other constituents of concern (COCs) were either not detected or were reported at concentrations below the screening levels.
- ED01-111955: The reported concentrations of TPH DRO and TPH ORO both exceed the TPH screening level in the sample collected closest to the observed seep. The reported concentrations of arsenic and benzene exceed the EPA MCLs in the sample collected closest to the observed seep. The reported concentration of benzene exceeds the aquatic life chronic SWQS. All other COCs were either not detected or were reported at concentrations below the screening levels.
- ED02-111955: The reported concentrations of TPH DRO and TPH ORO both exceed the TPH screening level in the sample collected on the downstream side of Navajo Road. The reported concentration of potassium exceeds the background UTL in this sample. All other COCs were either not detected or were reported at concentrations below the screening levels.

Evaluation and Recommendations

Navajo has observed higher than normal groundwater levels in the monitoring wells located in the northern portion of the Artesia Refinery during the past two years, most likely due to heavier than normal rainfall in the region during this period. Attachments F and G present the historic precipitation data for the area and ground elevation trends. We believe that impacted groundwater associated with a solid waste management unit and/or an area of contamination, which is being monitored and, in some cases, recovered through implementation of the Facility-Wide Ground Water Monitoring Program (FWGWMP), is the seepage liquid. The constituents of concern measured in the surface water samples appear to be consistent generally with results of recent FWGWMP events for the adjacent wells and recovery trenches.

In addition to the actions taken thus far, we propose the following:

- Conduct weekly inspections of the seepage area for the month of January 2016 to visually examine for additional seepage and potential sheens on surface water in Eagle Draw.
- As needed, apply absorbents to recover/remove any seepage.
- Ensure that booms are ready and serviceable to put into use in surface waters in Eagle Draw, as needed.
- Take and record water level elevations in RW-17A and RW-17G on a weekly basis during the month of January 2016 in order to evaluate fluctuations in levels in comparison to weather.

- Operate RW-7 and RW-8 consistently during the month of January 2016 in order to reduce groundwater elevations.
- Repair the concrete fissures in this specific locale of Eagle Draw.

Should you have any questions about this notification report, please do not hesitate to contact me at (575) 746-5487 or scott.denton@hollyfrontier.com.

Sincerely,



Scott M. Denton
Environmental Manager

c: Robert A. Combs, Artesia Refinery, Environmental Specialist
Leona Tsinnajinnie, NMED HWB

Enclosures:

Attachment A – Form C-141
Attachment B – Figure 1 (Location of Seepage within the Refinery)
Attachment C – Figure 2 (Locations of November 19, 2015 Samples)
Attachment D – Table 1 (Analytical Results and Comparison Standards)
Attachment E – Analytical Lab Report with Contractor Field Notes
Attachment F – Precipitation Data January 2011 – November 2015
Attachment G – GW Level Trends

Attachment A
Form C-141
(Previously provided to OCD)

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Navajo Refining Company, L.L.C.	Contact	Robert Combs
Address	501 E. Main St. Artesia, NM 88210	Telephone No.	575-746-5382
Facility Name	Navajo Refining Company, L.L.C. Artesia	Facility Type	Refinery

Surface Owner	Mineral Owner	API No.
---------------	---------------	---------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
-------------	---------	----------	-------	---------------	------------------	---------------	----------------	--------

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release: Visible evidence of hydrocarbons from groundwater expressed at the ground surface due to elevated water table.	Volume of Release approximately < 1 gallon	Volume Recovered: N/A, Absorbent material applied to recover/remove hydrocarbon staining from groundwater extrusion onto concrete.
Source of Release Impacted groundwater	Date and Hour of Occurrence 12/2/15 Unknown hour	Date and Hour of Discovery 12/2/15@11:40 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? National Response Center at 11:50 am OCD Santa Fe office at 4:50 pm	
By Whom? Gabriela Combs/Robert Combs	Date and Hour please see above	
Was a Watercourse Reached? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, Volume Impacting the Watercourse. < 1 gallon	

If a Watercourse was Impacted, Describe Fully.*

A small area of stained concrete located at the base of Clark Draw and Eagle Draw.


Describe Cause of Problem and Remedial Action Taken.* A hydrocarbon stained area was discovered by Refinery personnel in the base of Clark Draw on 12/2/15. There is not an active release of hydrocarbons from Refinery operations. There is no hydrocarbon sheen present in the water. The impacts of groundwater extrusion are being addressed by removal of hydrocarbons from the concrete with absorbent materials. Absorbent booms were installed downstream as a precautionary measure to prevent the potential for residual hydrocarbons to impact any flowing conditions in the waterway that may arise while the remedial action described below is being implemented.

Describe Area Affected and Cleanup Action Taken.*

The stained area was confined to small, specific areas of the concrete. The adjacent recovery trench will be monitored routinely for evidence of phase separated hydrocarbons; if present, a vacuum truck will be used for the next several days to remove any product collected in the adjacent monitoring well.

A final C-141 report will be submitted to OCD and HWB once corrective actions, sample results, etc. are complete.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

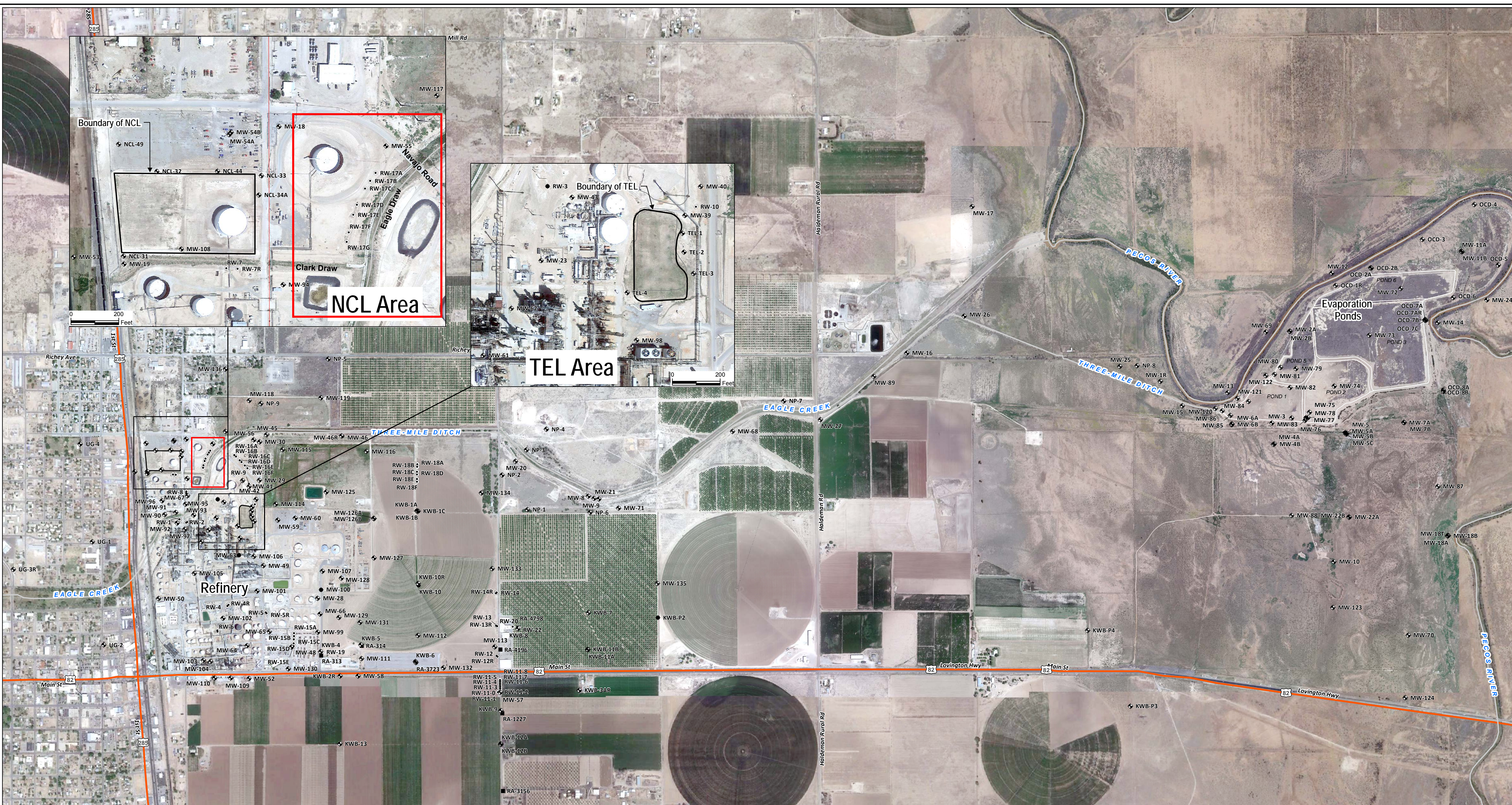
Signature: 		OIL CONSERVATION DIVISION	
Printed Name: Robert Combs		Approved by Environmental Specialist:	
Title: Environmental Specialist		Approval Date:	Expiration Date:
E-mail Address: robert.combs@hollyfrontier.com		Conditions of Approval:	Attached <input type="checkbox"/>
Date: 12/8/15	Phone: 575-746-5382		

* Attach Additional Sheets If Necessary

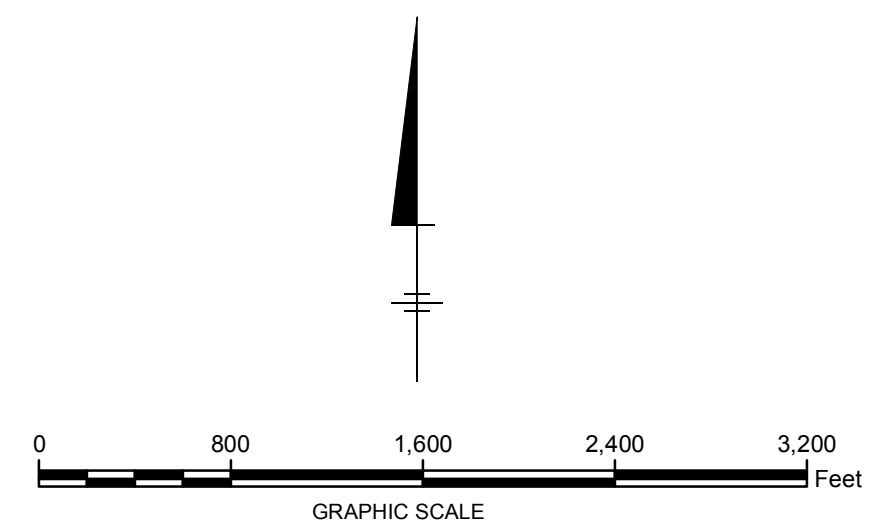
Attachment B

Figure 1 – Location of seepage within the Refinery

CITY: SE DIV\GROUP: ENV\IM DB\K ERNST LD: K SCHNEBELE PIC: PM: P KRUEGER TM: TR:
Project (Project #): Y000838 0004 0004
Path: Z:\GIS\PROJECTS\ENV\NavajoRefining\Artesia\Refinery\Annual_GW_Report_2014\MXD\Fig02_WellLocations.mxd: 2/10/2015 2:47:43 PM



- LEGEND:
- ◆ MONITORING WELL
 - RECOVERY WELL
 - IRRIGATION WELL
 - ABANDONED WELL
 - SAMPLING SITE



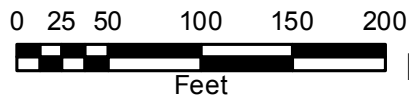
NAVAJO REFINING COMPANY
ARTESIA, NEW MEXICO
EAGLE DRAW EVALUATION

SAMPLING SITE MAP







Attachment C

Figure 2 – Locations of November 19, 2015 Samples



Legend

-  Monitoring Well
-  Recovery Well
-  SURFACE WATER SAMPLES
-  Area Containing Stains

NAVAJO REFINING COMPANY
ARTESIA, NEW MEXICO
EAGLE DRAW EVALUATION

SAMPLE LOCATIONS NEAR EAGLE DRAW

Chavez, Carl J, EMNRD

From: Krueger, Pamela <pam.krueger@arcadis.com>
Sent: Tuesday, December 22, 2015 8:43 AM
To: Chavez, Carl J, EMNRD
Cc: Robert Combs
Subject: NRC Eagle Draw
Attachments: L802348.pdf; Figure1-SiteMap_samples.pdf

Carl – On behalf of the Navajo Refining company, here is the laboratory report for the samples collected from surface water in Eagle Draw and from the nearby monitoring well MW-55. The attached figure shows the locations of the samples and the monitoring well. A final C-141 will be filed by mid-January 2016.

Pamela R. Krueger | Senior Project Manager / Principal-in-Charge |

pam.krueger@arcadis.com

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Be green, leave it on the screen.

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CITY: Lansing DIV: ENV DB: DRA PIC: PM: TM: TR: PROJECT NUMBER: COORDINATE SYSTEM: NAD 1983 StatePlane New Mexico East FIPS 3001 Feet
Z:\GIS\PROJECTS\ENV\NavajoRefining\Artesia\Refinery\Eagle_draw\MXD\Figure1-SiteMap_samples.mxd PLOTTED: 12/18/2015 9:53:33 AM BY: webb



ARCADIS US - TX

Sample Delivery Group: L802348
Samples Received: 11/20/2015
Project Number: TX001155.0001.00003
Description: Navajo Refining Company - Artesia, NM

Report To: Pam Krueger
2929 Briarpark Dr., Suite 300
Houston, TX 77042

Entire Report Reviewed By:



Chris McCord
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



¹Cp: Cover Page	1
²Tc: Table of Contents	2
³Ss: Sample Summary	3
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⁵Sr: Sample Results	5
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ED-1111915 ← L802348-03	7
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⁷Gl: Glossary of Terms	20
⁸Al: Accreditations & Locations	21
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should be
ED02-111915

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



MW-55 L802348-01 GW

				Collected by	Collected date/time	Received date/time	
					11/19/15 10:30	11/20/15 09:00	¹ Cp
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst		
Gravimetric Analysis by Method 2540 C-2011	WG831418	1	11/25/15 16:40	11/25/15 17:16	MF		² Tc
Mercury by Method 7470A	WG830678	1	11/21/15 17:20	11/22/15 11:03	BRJ		³ Ss
Metals (ICPMS) by Method 6020	WG831296	1	11/24/15 09:18	11/24/15 14:44	JDG		⁴ Cn
Semi-Volatile Organic Compounds (GC) by Method 8015	WG830634	1	11/20/15 23:39	11/21/15 18:18	BJF		⁵ Sr
Volatile Organic Compounds (GC) by Method 8015/8021	WG830660	1	11/22/15 18:45	11/22/15 18:45	HJF		⁶ Qc
Wet Chemistry by Method 353.2	WG832327	1	11/30/15 16:19	11/30/15 16:19	ASK		⁷ Gl
Wet Chemistry by Method 9056MOD	WG830779	1	11/24/15 15:13	11/24/15 15:13	DJD		⁸ Al
Wet Chemistry by Method 9056MOD	WG830779	50	11/24/15 15:59	11/24/15 15:59	DJD		⁹ Sc

ED01-111915 L802348-02 GW

				Collected by	Collected date/time	Received date/time	
					11/19/15 12:45	11/20/15 09:00	¹ Cp
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst		
Gravimetric Analysis by Method 2540 C-2011	WG831418	1	11/25/15 16:40	11/25/15 17:16	MF		² Tc
Mercury by Method 7470A	WG830678	1	11/21/15 17:20	11/22/15 11:06	BRJ		³ Ss
Metals (ICPMS) by Method 6020	WG831296	1	11/24/15 09:18	11/24/15 15:54	JDG		⁴ Cn
Semi-Volatile Organic Compounds (GC) by Method 8015	WG830634	1	11/20/15 23:39	11/21/15 18:35	BJF		⁵ Sr
Semi-Volatile Organic Compounds (GC) by Method 8015	WG830634	5	11/20/15 23:39	11/25/15 08:23	JNS		⁶ Qc
Volatile Organic Compounds (GC) by Method 8015/8021	WG830660	1	11/22/15 19:10	11/22/15 19:10	HJF		⁷ Gl
Wet Chemistry by Method 353.2	WG832327	1	11/30/15 16:21	11/30/15 16:21	ASK		⁸ Al
Wet Chemistry by Method 9056MOD	WG830779	1	11/24/15 15:28	11/24/15 15:28	DJD		⁹ Sc
Wet Chemistry by Method 9056MOD	WG830779	50	11/24/15 16:16	11/24/15 16:16	DJD		

ED-111915 L802348-03 GW

				Collected by	Collected date/time	Received date/time	
					11/19/15 13:10	11/20/15 09:00	¹ Cp
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst		
Gravimetric Analysis by Method 2540 C-2011	WG831418	1	11/25/15 16:40	11/25/15 17:16	MF		² Tc
Mercury by Method 7470A	WG830678	1	11/21/15 17:20	11/22/15 11:08	BRJ		³ Ss
Metals (ICPMS) by Method 6020	WG831296	1	11/24/15 09:18	11/24/15 16:01	JDG		⁴ Cn
Semi-Volatile Organic Compounds (GC) by Method 8015	WG830634	1	11/20/15 23:39	11/21/15 18:53	BJF		⁵ Sr
Volatile Organic Compounds (GC) by Method 8015/8021	WG830660	1	11/22/15 19:35	11/22/15 19:35	HJF		⁶ Qc
Wet Chemistry by Method 353.2	WG832327	1	11/30/15 16:22	11/30/15 16:22	ASK		⁷ Gl
Wet Chemistry by Method 9056MOD	WG830779	1	11/24/15 15:43	11/24/15 15:43	DJD		⁸ Al
Wet Chemistry by Method 9056MOD	WG830779	50	11/24/15 16:31	11/24/15 16:31	DJD		⁹ Sc

TRIP BLANK L802348-04 GW

				Collected by	Collected date/time	Received date/time	
					11/19/15 13:10	11/20/15 09:00	¹ Cp
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst		
Volatile Organic Compounds (GC) by Method 8021B	WG830660	1	11/22/15 17:29	11/22/15 17:29	BMB		



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris McCord
Technical Service Representative

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	3480000		2820	10000	1	11/25/2015 17:16	WG831418

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Nitrate-Nitrite	4390		19.7	100	1	11/30/2015 16:19	WG832327

Wet Chemistry by Method 9056MOD

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	225000		2600	50000	50	11/24/2015 15:59	WG830779
Fluoride	2020		9.90	100	1	11/24/2015 15:13	WG830779
Sulfate	2020000		3870	250000	50	11/24/2015 15:59	WG830779

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Mercury,Dissolved	U		0.0490	0.200	1	11/22/2015 11:03	WG830678

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Arsenic,Dissolved	5.53		0.250	2.00	1	11/24/2015 14:44	WG831296
Barium,Dissolved	10.5		0.360	5.00	1	11/24/2015 14:44	WG831296
Cadmium,Dissolved	U		0.160	1.00	1	11/24/2015 14:44	WG831296
Calcium,Dissolved	447000	<u>4</u>	46.0	1000	1	11/24/2015 14:44	WG831296
Chromium,Dissolved	1.86	<u>J</u>	0.540	2.00	1	11/24/2015 14:44	WG831296
Lead,Dissolved	0.389	<u>J</u>	0.240	2.00	1	11/24/2015 14:44	WG831296
Potassium,Dissolved	989	<u>J</u>	37.0	1000	1	11/24/2015 14:44	WG831296
Selenium,Dissolved	8.45		0.380	2.00	1	11/24/2015 14:44	WG831296
Silver,Dissolved	U		0.310	2.00	1	11/24/2015 14:44	WG831296
Sodium,Dissolved	173000	<u>4</u>	110	1000	1	11/24/2015 14:44	WG831296

Volatile Organic Compounds (GC) by Method 8015/8021/8021B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.190	0.500	1	11/22/2015 18:45	WG830660
Toluene	U		0.180	5.00	1	11/22/2015 18:45	WG830660
Ethylbenzene	U		0.160	0.500	1	11/22/2015 18:45	WG830660
Total Xylene	1.30	<u>J</u>	0.510	1.50	1	11/22/2015 18:45	WG830660
TPH (GC/FID) Low Fraction	U		31.4	100	1	11/22/2015 18:45	WG830660
(S) a,a,a-Trifluorotoluene(FID)	94.9			62.0-128		11/22/2015 18:45	WG830660
(S) a,a,a-Trifluorotoluene(PID)	101			55.0-122		11/22/2015 18:45	WG830660

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
C10-C28 Diesel Range	356		22.2	100	1	11/21/2015 18:18	WG830634
C28-C40 Oil Range	108		11.8	100	1	11/21/2015 18:18	WG830634
(S) o-Terphenyl	107			50.0-150		11/21/2015 18:18	WG830634



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	2910000		2820	10000	1	11/25/2015 17:16	WG831418

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Nitrate-Nitrite	U		19.7	100	1	11/30/2015 16:21	WG832327

Wet Chemistry by Method 9056MOD

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	580000		2600	50000	50	11/24/2015 16:16	WG830779
Fluoride	1220		9.90	100	1	11/24/2015 15:28	WG830779
Sulfate	745000		3870	250000	50	11/24/2015 16:16	WG830779

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Mercury,Dissolved	U		0.0490	0.200	1	11/22/2015 11:06	WG830678

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Arsenic,Dissolved	15.9		0.250	2.00	1	11/24/2015 15:54	WG831296
Barium,Dissolved	88.2		0.360	5.00	1	11/24/2015 15:54	WG831296
Cadmium,Dissolved	U		0.160	1.00	1	11/24/2015 15:54	WG831296
Calcium,Dissolved	420000		46.0	1000	1	11/24/2015 15:54	WG831296
Chromium,Dissolved	1.09	J	0.540	2.00	1	11/24/2015 15:54	WG831296
Lead,Dissolved	1.43	J	0.240	2.00	1	11/24/2015 15:54	WG831296
Potassium,Dissolved	5590		37.0	1000	1	11/24/2015 15:54	WG831296
Selenium,Dissolved	0.532	J	0.380	2.00	1	11/24/2015 15:54	WG831296
Silver,Dissolved	U		0.310	2.00	1	11/24/2015 15:54	WG831296
Sodium,Dissolved	250000		110	1000	1	11/24/2015 15:54	WG831296

Volatile Organic Compounds (GC) by Method 8015/8021/8021B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	188		0.190	0.500	1	11/22/2015 19:10	WG830660
Toluene	19.2		0.180	5.00	1	11/22/2015 19:10	WG830660
Ethylbenzene	15.8		0.160	0.500	1	11/22/2015 19:10	WG830660
Total Xylene	131		0.510	1.50	1	11/22/2015 19:10	WG830660
TPH (GC/FID) Low Fraction	1380		31.4	100	1	11/22/2015 19:10	WG830660
(S) a,a,a-Trifluorotoluene(FID)	97.6			62.0-128		11/22/2015 19:10	WG830660
(S) a,a,a-Trifluorotoluene(PID)	104			55.0-122		11/22/2015 19:10	WG830660

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
C10-C28 Diesel Range	7210		111	500	5	11/25/2015 08:23	WG830634
C28-C40 Oil Range	1160		11.8	100	1	11/21/2015 18:35	WG830634
(S) o-Terphenyl	120			50.0-150		11/21/2015 18:35	WG830634



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dissolved Solids	1890000		2820	10000	1	11/25/2015 17:16	WG831418

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Nitrate-Nitrite	41.0	J	19.7	100	1	11/30/2015 16:22	WG832327

Wet Chemistry by Method 9056MOD

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	452000		2600	50000	50	11/24/2015 16:31	WG830779
Fluoride	1490		9.90	100	1	11/24/2015 15:43	WG830779
Sulfate	1470000		3870	250000	50	11/24/2015 16:31	WG830779

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Mercury,Dissolved	U		0.0490	0.200	1	11/22/2015 11:08	WG830678

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Arsenic,Dissolved	7.85		0.250	2.00	1	11/24/2015 16:01	WG831296
Barium,Dissolved	63.0		0.360	5.00	1	11/24/2015 16:01	WG831296
Cadmium,Dissolved	U		0.160	1.00	1	11/24/2015 16:01	WG831296
Calcium,Dissolved	377000		46.0	1000	1	11/24/2015 16:01	WG831296
Chromium,Dissolved	1.04	J	0.540	2.00	1	11/24/2015 16:01	WG831296
Lead,Dissolved	1.14	J	0.240	2.00	1	11/24/2015 16:01	WG831296
Potassium,Dissolved	9330		37.0	1000	1	11/24/2015 16:01	WG831296
Selenium,Dissolved	6.42		0.380	2.00	1	11/24/2015 16:01	WG831296
Silver,Dissolved	U		0.310	2.00	1	11/24/2015 16:01	WG831296
Sodium,Dissolved	258000		110	1000	1	11/24/2015 16:01	WG831296

Volatile Organic Compounds (GC) by Method 8015/8021/8021B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	2.85		0.190	0.500	1	11/22/2015 19:35	WG830660
Toluene	0.574	J	0.180	5.00	1	11/22/2015 19:35	WG830660
Ethylbenzene	0.669		0.160	0.500	1	11/22/2015 19:35	WG830660
Total Xylene	1.47	J	0.510	1.50	1	11/22/2015 19:35	WG830660
TPH (GC/FID) Low Fraction	46.9	J	31.4	100	1	11/22/2015 19:35	WG830660
(S) a,a,a-Trifluorotoluene(FID)	94.5			62.0-128		11/22/2015 19:35	WG830660
(S) a,a,a-Trifluorotoluene(PID)	99.6			55.0-122		11/22/2015 19:35	WG830660

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
C10-C28 Diesel Range	2190		22.2	100	1	11/21/2015 18:53	WG830634
C28-C40 Oil Range	621		11.8	100	1	11/21/2015 18:53	WG830634
(S) o-Terphenyl	107			50.0-150		11/21/2015 18:53	WG830634



Volatile Organic Compounds (GC) by Method 8015/8021/8021B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.190	0.500	1	11/22/2015 17:29	WG830660
Toluene	U		0.180	5.00	1	11/22/2015 17:29	WG830660
Ethylbenzene	U		0.160	0.500	1	11/22/2015 17:29	WG830660
Total Xylene	U		0.510	1.50	1	11/22/2015 17:29	WG830660
(S) o,o,o-Trifluorotoluene(PID) 101				55.0-122		11/22/2015 17:29	WG830660

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) 11/25/15 17:16

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Dissolved Solids	U		2.82	10.0

L802348-01 Original Sample (OS) • Duplicate (DUP)

(OS) 11/25/15 17:16 • (DUP) 11/25/15 17:16

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Dissolved Solids	3480	3590	1	3.26		5

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/25/15 17:16 • (LCSD) 11/25/15 17:16

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Dissolved Solids	8800	8720	8610	99.1	97.8	85.0-115			1.27	5

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) 11/30/15 16:08

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Nitrate-Nitrite	U		0.0197	0.100

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L802348-01 Original Sample (OS) • Duplicate (DUP)

(OS) 11/30/15 16:19 • (DUP) 11/30/15 16:20

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Nitrate-Nitrite	4.39	4.34	1	1.00		20

L802480-01 Original Sample (OS) • Duplicate (DUP)

(OS) 11/30/15 16:36 • (DUP) 11/30/15 16:37

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Nitrate-Nitrite	0.162	0.157	1	3.00		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/30/15 16:11 • (LCSD) 11/30/15 16:12

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Nitrate-Nitrite	5.00	4.73	4.82	95.0	96.0	90.0-110			2.00	20

L802392-01 Original Sample (OS) • Matrix Spike (MS)

(OS) 11/30/15 16:23 • (MS) 11/30/15 16:24

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/l	mg/l	mg/l	%		%	
Nitrate-Nitrite	5.00	1.93	6.97	101	1	90.0-110	



L802480-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/30/15 16:39 • (MS) 11/30/15 16:40 • (MSD) 11/30/15 16:41

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Nitrate-Nitrite	5.00	6.08	11.0	11.0	98.0	98.0	1	90.0-110			0.000	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) 11/24/15 07:42

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	0.0916		0.0519	1.00
Fluoride	U		0.0099	0.100
Sulfate	U		0.0774	5.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L801979-01 Original Sample (OS) • Duplicate (DUP)

(OS) 11/24/15 10:51 • (DUP) 11/24/15 11:06

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	79.7	79.7	10	0		20
Fluoride	0.491	0.496	10	1		20
Sulfate	422	422	10	0		20

L802323-07 Original Sample (OS) • Duplicate (DUP)

(OS) 11/24/15 14:26 • (DUP) 11/24/15 14:42

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	36.4	36.4	10	0		20
Fluoride	0.261	0.248	10	5		20
Sulfate	110	109	10	0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/24/15 07:58 • (LCSD) 11/24/15 08:13

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloride	40.0	39.8	39.9	100	100	90-110			0	20
Fluoride	8.00	7.98	7.99	100	100	90-110			0	20
Sulfate	40.0	40.1	40.2	100	100	90-110			0	20



L801999-04 Original Sample (OS) • Matrix Spike (MS)

(OS) 11/24/15 11:21 • (MS) 11/24/15 11:37

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	5.00	378	862	97	10	80-120	
Fluoride	0.500	0.668	50.8	100	10	80-120	
Sulfate	5.00	207	691	97	10	80-120	

L802323-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/24/15 13:40 • (MS) 11/24/15 13:55 • (MSD) 11/24/15 14:11

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	5.00	17.2	509	509	98	98	10	80-120			0	20
Fluoride	0.500	0.424	50.7	50.9	101	101	10	80-120			0	20
Sulfate	5.00	539	1030	1030	97	97	10	80-120			0	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) 11/22/15 10:19

Analyte	MB Result mg/l	<u>MB Qualifier</u>	MB MDL mg/l	MB RDL mg/l
Mercury,Dissolved	U		0.000049	0.000200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/22/15 10:22 • (LCSD) 11/22/15 10:24

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Mercury,Dissolved	0.00300	0.00260	0.00245	87	82	80-120			6	20

L802534-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/22/15 10:46 • (MS) 11/22/15 10:48 • (MSD) 11/22/15 10:51

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Mercury,Dissolved	0.00300	0.00000972	0.00281	0.00285	93	95	1	75-125			2	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) 11/24/15 15:33

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic,Dissolved	U		0.00025	0.00200
Barium,Dissolved	U		0.00036	0.00500
Cadmium,Dissolved	U		0.00016	0.00100
Calcium,Dissolved	U		0.046	1.00
Chromium,Dissolved	0.000714		0.00054	0.00200
Lead,Dissolved	0.000284		0.00024	0.00200
Potassium,Dissolved	0.0441		0.037	1.00
Selenium,Dissolved	U		0.00038	0.00200
Silver,Dissolved	U		0.00031	0.00200
Sodium,Dissolved	U		0.11	1.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/24/15 14:39 • (LCSD) 11/24/15 14:41

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic,Dissolved	0.0500	0.0528	0.0503	106	101	80-120			5	20
Barium,Dissolved	0.0500	0.0490	0.0501	98	100	80-120			2	20
Cadmium,Dissolved	0.0500	0.0556	0.0519	111	104	80-120			7	20
Calcium,Dissolved	5.00	4.91	5.19	98	104	80-120			6	20
Chromium,Dissolved	0.0500	0.0530	0.0517	106	103	80-120			3	20
Lead,Dissolved	0.0500	0.0507	0.0503	101	101	80-120			1	20
Potassium,Dissolved	5.00	4.87	4.97	97	99	80-120			2	20
Selenium,Dissolved	0.0500	0.0506	0.0509	101	102	80-120			1	20
Silver,Dissolved	0.0500	0.0510	0.0511	102	102	80-120			0	20
Sodium,Dissolved	5.00	5.34	5.68	107	114	80-120			6	20

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/24/15 14:44 • (MS) 11/24/15 14:53 • (MSD) 11/24/15 14:55

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic,Dissolved	0.0500	0.00553	0.0603	0.0619	110	113	1	75-125			3	20
Barium,Dissolved	0.0500	0.0105	0.0589	0.0601	97	99	1	75-125			2	20
Cadmium,Dissolved	0.0500	0.0000293	0.0546	0.0559	109	112	1	75-125			2	20



[L802348-01,02,03](#)

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/24/15 14:44 • (MS) 11/24/15 14:53 • (MSD) 11/24/15 14:55

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Calcium,Dissolved	5.00	447	437	438	0	0	1	75-125	4	4	0	20
Chromium,Dissolved	0.0500	0.00186	0.0507	0.0504	98	97	1	75-125			0	20
Potassium,Dissolved	5.00	0.989	5.49	5.45	90	89	1	75-125			1	20
Lead,Dissolved	0.0500	0.000389	0.0483	0.0490	96	97	1	75-125			1	20
Selenium,Dissolved	0.0500	0.00845	0.0591	0.0591	101	101	1	75-125			0	20
Silver,Dissolved	0.0500	0.000110	0.0490	0.0493	98	98	1	75-125			1	20
Sodium,Dissolved	5.00	173	173	176	0	55	1	75-125	4	4	2	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) 11/22/15 17:03

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000190	0.000500
Toluene	0.000458		0.000180	0.00500
Ethylbenzene	U		0.000160	0.000500
Total Xylene	U		0.000510	0.00150
TPH (GC/FID) Low Fraction	U		0.0314	0.100
(S) a,a,a-Trifluorotoluene(FID)	95.4			62.0-128
(S) a,a,a-Trifluorotoluene(PID)	101			55.0-122

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/22/15 15:00 • (LCSD) 11/22/15 15:25

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.0487	0.0487	97.5	97.4	70.0-130			0.0400	20
Toluene	0.0500	0.0452	0.0446	90.4	89.2	70.0-130			1.40	20
Ethylbenzene	0.0500	0.0471	0.0467	94.3	93.4	70.0-130			0.940	20
Total Xylene	0.150	0.142	0.141	95.0	93.8	70.0-130			1.29	20
(S) a,a,a-Trifluorotoluene(PID)				101	101	55.0-122				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/22/15 15:49 • (LCSD) 11/22/15 16:14

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	5.60	5.89	102	107	67.0-132			5.09	20
(S) a,a,a-Trifluorotoluene(FID)				105	105	62.0-128				

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/22/15 18:45 • (MS) 11/22/15 22:32 • (MSD) 11/22/15 22:57

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	ND	0.0472	0.0487	94.5	97.5	1	57.2-131			3.14	20
Toluene	0.0500	ND	0.0431	0.0443	86.2	88.6	1	63.7-134			2.73	20
Ethylbenzene	0.0500	ND	0.0454	0.0469	90.9	93.8	1	67.5-135			3.23	20



L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/22/15 18:45 • (MS) 11/22/15 22:32 • (MSD) 11/22/15 22:57

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Total Xylene	0.150	0.00130	0.136	0.140	90.0	92.4	1	65.9-138			2.62	20
(S) a,a,a-Trifluorotoluene(PID)					99.6	99.7		55.0-122				

L802348-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 11/22/15 18:45 • (MS) 11/22/15 23:22 • (MSD) 11/22/15 23:47

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	ND	5.22	5.70	94.8	104	1	50.0-143			8.97	20
(S) a,a,a-Trifluorotoluene(FID)					97.1	98.4		62.0-128				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc



Method Blank (MB)

(MB) 11/21/15 17:08

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
C10-C28 Diesel Range	U		0.0222	0.100
C28-C40 Oil Range	U		0.0118	0.100
(S) o-Terphenyl	110			50.0-150

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 11/21/15 17:26 • (LCSD) 11/21/15 17:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	1.50	1.46	1.43	97.2	95.3	70.0-130			1.95	20
(S) o-Terphenyl				117	109	50.0-150				



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
4	The sample concentration was greater than 4 times the spike value.
J	Estimated value.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



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Georgia ¹	923	Ohio–VAP	CL0069
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Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
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Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee ¹⁴	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

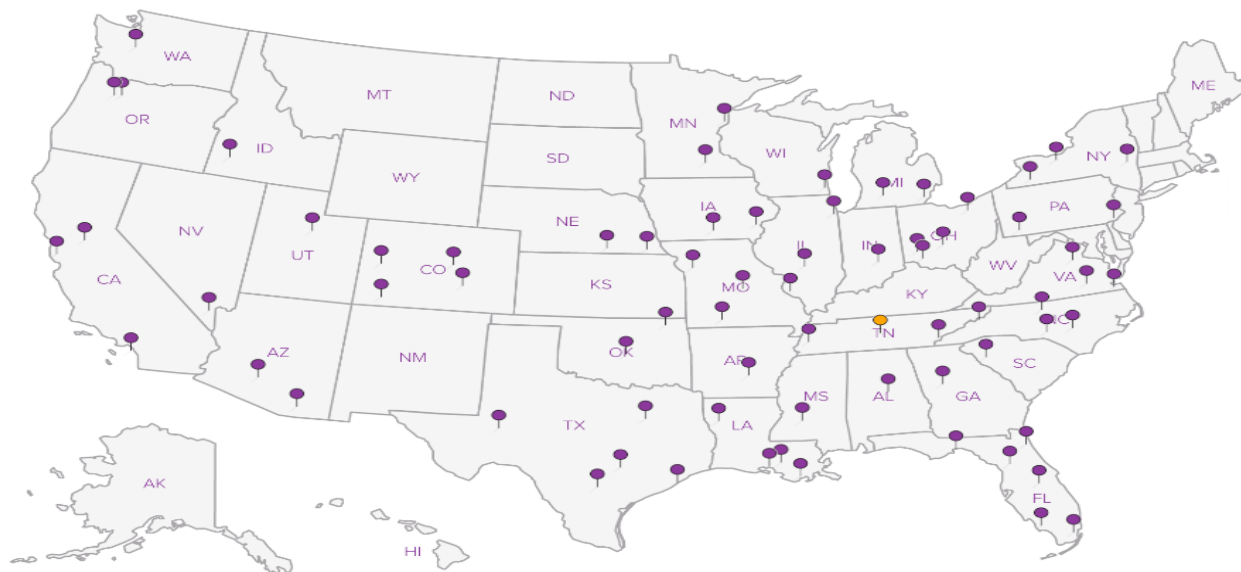
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



ARCADIS US - TX

2929 Briarpark Dr.
Suite 300
Houston, TX 77042

Report to:
Pam Krueger

Project
Description: Navajo Refining Company - Artesia, NM

Phone: 713-953-4800
Fax:

Collected by (print):

Collected by (signature):

Immediately
Packed on Ice N Y

Billing Information:
Attn: Accounts Payable
630 Plaza Drive, Suite 600
Highlands Ranch, CO 80129

Email To: pam.krueger@arcadis.com

City/State
Collected:
Lab Project #
ARCADHTX-NAVAJORUSH
P.O. #

Date Results Needed
Email? No X Yes
FAX? No Yes
No. of
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
MW-55	6	GW	—	11/19/15	1030	12
ED01-111915	6	GW	—	11/19/15	1245	12
ED01-111915	6	GW	—	11/19/15	1310	12
		GW				11
Trip Blank	—	—	—	—	—	1

Analysis / Container / Preservative

BTEX 40mlAmb-HCl	Cl, Fl, SO4 125mlHDPE-NoPres	DROOROLVI 40mlAmb-HCl-BT	Dissolved Metals 500mlHDPE-NoPres	GRO 40mlAmb HCl	NO2NO3 250mlHDPE-H2SO4	TDS 250mlHDPE-NoPres	Total Metals
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Chain of Custody Page 1 of 1



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Phone: 800-767-5859
Fax: 615-758-5859



L# 302378
D081
Acctnum: ARCADHTX
Template: T107511
Prelogin: P531474
TSR: 526 - Chris McCord
PB: 11-1818
Shipped via: FedEx Priority

Rem./Contaminant	Sample # (lab only)
	01
	02
	03
	04

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

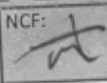
Remarks: Dissolved Metals = M6020RCRA8-D + CADG, KDG, NADG

Hold Metals until word from Pam Krueger

Relinquished by: (Signature) Date: 11/19/15 Time: 1345
Relinquished by: (Signature) Date: Time:
Relinquished by: (Signature) Date: Time:

Received by: (Signature)
Received by: (Signature)
Received for lab by: (Signature)

pH Temp
Flow Other
Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐
Temp: 3.8 °C Bottles Received: 37
Date: 11/20/15 Time: 0940

652919073789
Hold #
Condition: 7F (lab use only)
COC Seal Intact: Y N NA
pH Checked: NCF: 

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, December 10, 2015 2:51 PM
To: 'Combs, Robert'
Cc: Denton, Scott; Griswold, Jim, EMNRD
Subject: RE: Navajo Refinery (GW-028) Wastewater Pipeline Break near the Evaporation Ponds Area Revised Work Plan Review

Robert:

Please see OCD requirements in red text below.

Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM
Environmental Engineer
Oil Conservation Division- Environmental Bureau
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
Phone: (505) 476-3490
Main Phone: (505) 476-3440
Fax: (505) 476-3462

E-mail: CarlJ.Chavez@state.nm.us

Website: www.emnrd.state.nm.us/oed

Why not prevent pollution, minimize waste, reduce operation costs, and move forward with the rest of the Nation? To see how, go to "Publications" and "Pollution Prevention" on the OCD Website.

From: Combs, Robert [mailto:Robert.Combs@HollyFrontier.com]
Sent: Wednesday, December 02, 2015 5:32 PM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Cc: Denton, Scott <Scott.Denton@HollyFrontier.com>
Subject: RE: Navajo Refinery (GW-028) Wastewater Pipeline Break near the Evaporation Ponds Area Revised Work Plan Review

Carl,
Please see below for our responses to comments, as well as the attached, updated workplan. It looks as though our discussion was on 10/13/15; some content is to that effect. Please feel free to call if we need to discuss further.
Thanks,
Robert

The New Mexico Oil Conservation Division (OCD) reviewed the Work Plan (WP) dated August 21, 2015 and has the following comments/recommendations:

- 1) Pg. 2/4: OCD discussed the statistically developed UTLs developed in the Evaporation Pond Area and NMED indicated that no background values have been accepted by NMED at the time of this review. Therefore, OCD cannot condone the use of UTLs for comparison in the Soil Borings and Groundwater at this time. Table 1 includes UTLs and that is ok, but it is not appropriate to use the UTLs from this background soil study as alternative action levels for screening potential impacts from the wastewater line release. Navajo understands that the purpose of the upgradient boring and temporary monitor well is to determine soil and groundwater

concentrations from an area not impacted by the release. **[Chavez, Carl J, EMNRD] No, the temporary MW serves as a background location to assess pollutants in soils and water media at both locations.**

- 2) Pg. 2/4: OCD prefers a location for the alternate Soil Boring (SB) / Temporary MW (TMW) toward the SW away from the evaporation pond area and in a location that is not suspect for contamination. The environmental analytical laboratory test data results will be used for comparison with this SB/TMW. The reasoning behind the proposed location of the 'background' well is that the area NW of the release is topographically and hydraulically upgradient/crossgradient from the spill area. We feel that this area is appropriate for the soil boring/TMW installation, not southwest of the spill area.
- 3) Pg. 3/4: OCD requires in addition to the WP that soil sampling occur every 10 ft. from ground surface to the water table. Groundwater sampling at the water table is required. As we discussed this morning, depth to groundwater in the area at approximately 10 ft. below ground surface. We proposed in the WP to sample the intervals 0-1', 3-4' and the capillary zone. We will modify the WP to collect samples at 0-1', 4-5' and the capillary zone (just above the water table). **[Chavez, Carl J, EMNRD] A groundwater sample must also be taken.**
- 4) Pg. 3/4: The soil and groundwater sampling constituents of concern shall include WQCC Metals. In groundwater, Total Dissolved Solids and pH shall be added to the list. PSH shall be reported within 24 hours of discovery to the OCD. As we discussed, we will change the groundwater analyte list to be the same as the soil analytes, and add TDS and pH. We will continue to run only iron and manganese, as these were the only metals that exceeded WQCC in the sample of the effluent water. We do not believe that there would be other metals present that would be attributable to this release. **[Chavez, Carl J, EMNRD] Run RCRA 8 Metals.**
- 5) Pg. 3/4: Same as No. 1 above. The SB/TMW data results will be compared against each other and the Tables 1 and 2 to develop conclusions. As indicated in No. 1 above, UTLs will not be considered in the evaluation of data. The TMWs shall be properly abandoned per No. 6 below after OCD approves a proposal to PA the TMWs. **Noted, no comment.**
- 6) Pg. 3/4 Second Paragraph from Bottom: The WP as proposed with the exception that at least 10 ft. of screen w/ top of screen set ~ 5 ft. above the water table. Also, OCD would like the wells to be pulled out after use w/ bentonite pellets inserted into the borehole to surface and then hydrated to expand. **We will add a description of our planned plugging and abandonment activities in the workplan. Sorry for this oversight.**
- 7) Pg. 4/4 Second Paragraph: The constituents of concern list should be similar to No. 4 above. **Please see response to #4.**

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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From: [Robert.Combs@hollyfrontier.com](#)
Sent: Friday, April 2, 2010 10:00 AM
To: [Bridgette.Clarke@emnr.com](#)
Cc: [Robert.Combs@hollyfrontier.com](#)
Subject: [Re: \[Chavez, Carl J, EMNRD\] No, the temporary MW serves as a background location to assess pollutants in soils and water media at both locations.](#)

Robert and Scott:

The New Mexico Oil Conservation Division (OCD) reviewed the Work Plan (WP) dated August 21, 2015 and has the following comments/recommendations:

- 1) Pg. 2/4: OCD discussed the statistically developed UTLs developed in the Evaporation Pond Area and NMED indicated that no background values have been accepted by NMED at the time of this review. Therefore, OCD cannot condone the use of UTLs for comparison in the Soil Borings and Groundwater at this time. Table 1 includes UTLs and that is ok, but it is not appropriate to use the UTLs from this background soil study as alternative action levels for screening potential impacts from the wastewater line release.
- 2) Pg. 2/4: OCD prefers a location for the alternate Soil Boring (SB) / Temporary MW (TMW) toward the SW away from the evaporation pond area and in a location that is not suspect for contamination. The environmental analytical laboratory test data results will be used for comparison with this SB/TMW.
- 3) Pg. 3/4: OCD requires in addition to the WP that soil sampling occur every 10 ft. from ground surface to the water table. Groundwater sampling at the water table is required.
- 4) Pg. 3/4: The soil and groundwater sampling constituents of concern shall include WQCC Metals. In groundwater, Total Dissolved Solids and pH shall be added to the list. PSH shall be reported within 24 hours of discovery to the OCD.
- 5) Pg. 3/4: Same as No. 1 above. The SB/TMW data results will be compared against each other and the Tables 1 and 2 to develop conclusions. As indicated in No. 1 above, UTLs will not be considered in the evaluation of data. The TMWs shall be properly abandoned per No. 6 below after OCD approves a proposal to PA the TMWs.
- 6) Pg. 3/4 Second Paragraph from Bottom: The WP as proposed with the exception that at least 10 ft. of screen w/ top of screen set ~ 5 ft. above the water table. Also, OCD would like the wells to be pulled out after use w/ bentonite pellets inserted into the borehole to surface and then hydrated to expand.
- 7) Pg. 4/4 Second Paragraph: The constituents of concern list should be similar to No. 4 above.

Please contact me if you have questions. Thank you.

From: Combs, Robert [<mailto:Robert.Combs@HollyFrontier.com>]
Sent: Tuesday, September 01, 2015 10:42 AM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Subject: Test 2

Carl,
Please let me know if you receive this file or if it again is encrypted. You should not have to register to read our emails. This is a problem on our end and we will work to resolve it.
Thanks,
Robert

Robert Combs
Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
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Robert.Combs@hollyfrontier.com

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Chavez, Carl J, EMNRD

From: Combs, Robert <Robert.Combs@HollyFrontier.com>
Sent: Tuesday, December 08, 2015 5:51 PM
To: Chavez, Carl J, EMNRD
Cc: Tsinnajinnie, Leona, NMENV; Denton, Scott; Orosco, Richard
Subject: 2015-12-02 Hydrocarbons to surface in Eagle Draw
Attachments: 2015-12-02 Initial C-141 Hydrocarbons to surface in Eagle Draw.pdf

Carl,
Please see the attached C-141 form. This will be followed by a final report with investigation details, photos, and corrective actions taken.
Please let me know if you'd like to discuss.
Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Navajo Refining Company, L.L.C.	Contact	Robert Combs
Address	501 E. Main St. Artesia, NM 88210	Telephone No.	575-746-5382
Facility Name	Navajo Refining Company, L.L.C. Artesia	Facility Type	Refinery

Surface Owner	Mineral Owner	API No.
---------------	---------------	---------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
-------------	---------	----------	-------	---------------	------------------	---------------	----------------	--------

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release: Visible evidence of hydrocarbons from groundwater expressed at the ground surface due to elevated water table.	Volume of Release approximately < 1 gallon	Volume Recovered: N/A, Absorbent material applied to recover/remove hydrocarbon staining from groundwater extrusion onto concrete.
Source of Release Impacted groundwater	Date and Hour of Occurrence 12/2/15 Unknown hour	Date and Hour of Discovery 12/2/15@11:40 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? National Response Center at 11:50 am OCD Santa Fe office at 4:50 pm	
By Whom? Gabriela Combs/Robert Combs	Date and Hour please see above	
Was a Watercourse Reached? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, Volume Impacting the Watercourse. < 1 gallon	

If a Watercourse was Impacted, Describe Fully.*

A small area of stained concrete located at the base of Clark Draw and Eagle Draw.


Describe Cause of Problem and Remedial Action Taken.* A hydrocarbon stained area was discovered by Refinery personnel in the base of Clark Draw on 12/2/15. There is not an active release of hydrocarbons from Refinery operations. There is no hydrocarbon sheen present in the water. The impacts of groundwater extrusion are being addressed by removal of hydrocarbons from the concrete with absorbent materials. Absorbent booms were installed downstream as a precautionary measure to prevent the potential for residual hydrocarbons to impact any flowing conditions in the waterway that may arise while the remedial action described below is being implemented.

Describe Area Affected and Cleanup Action Taken.*

The stained area was confined to small, specific areas of the concrete. The adjacent recovery trench will be monitored routinely for evidence of phase separated hydrocarbons; if present, a vacuum truck will be used for the next several days to remove any product collected in the adjacent monitoring well.

A final C-141 report will be submitted to OCD and HWB once corrective actions, sample results, etc. are complete.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 		<u>OIL CONSERVATION DIVISION</u>	
Printed Name: Robert Combs		Approved by Environmental Specialist:	
Title: Environmental Specialist		Approval Date:	Expiration Date:
E-mail Address: robert.combs@hollyfrontier.com		Conditions of Approval:	Attached <input type="checkbox"/>
Date: 12/8/15	Phone: 575-746-5382		

* Attach Additional Sheets If Necessary

Chavez, Carl J, EMNRD

From: Combs, Robert <Robert.Combs@HollyFrontier.com>
Sent: Tuesday, September 01, 2015 10:42 AM
To: Chavez, Carl J, EMNRD
Subject: Test 2
Attachments: Revised WW line investigation plan.pdf

Carl,
Please let me know if you receive this file or if it again is encrypted. You should not have to register to read our emails. This is a problem on our end and we will work to resolve it.
Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
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Robert.Combs@hollyfrontier.com

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Mr. Scott Denton
Environmental Manager
Navajo Refining Company, LLC
501 East Main
Artesia, New Mexico 88211

ARCADIS U.S., Inc.
2929 Briarpark Drive
Suite 300
Houston
Texas 77042
Tel 713 953 4800
Fax 713 977 4620
www.arcadis-us.com

Subject:

Revised Potential Soil Response Action Levels for Wastewater Pipeline Break near the Evaporation Ponds Area, Navajo Refining Company Artesia Refinery

ENVIRONMENT

Dear Mr. Denton:

Date:

August 21, 2015

ARCADIS is providing this letter discussing potential soil response action levels in relation to the reported release of wastewater that occurred approximately 1500 feet south of the inactive former Evaporation Ponds (EPs) associated with the Navajo Refining Company, L.L.C. (NRC) Artesia Refinery (Refinery). The EPs are a Resource Conservation and Recovery Act (RCRA) regulated unit. Documentation of the information relevant to the release was provided on June 11, 2015. Based on conversations with the New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division (OCD), the proposed assessment has been revised.

Contact:

Pamela R. Krueger

Phone:

713.953.4816

Email:

pam.krueger@arcadis-us.com

It is our understanding that the release occurred due to a break in the pipeline that conveys treated wastewater from the Refinery to injection wells located approximately 12 miles east of the Refinery. The break occurred approximately three miles east of the Refinery, south of the Evaporation Ponds (Figure 1).

Our ref:

TX001155

The wastewater that is conveyed through the pipeline is sampled quarterly and analyzed for waste characterization purposes. A copy of the first quarter 2015 wastewater analytical report is provided in Attachment 1 to this letter. The sample was analyzed for total metals, anions, cations, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), corrosivity, reactivity, ignitability, specific conductance, specific gravity, total dissolved solids (TDS), and pH. In addition, the sample was analyzed for eight metals using the toxicity characteristic leaching procedure (TCLP).

The analytical results indicate that the wastewater is not corrosive, not reactive, not ignitable, not toxic (no TCLP metals detected), and contains no VOCs above the New Mexico Water Quality Control Commission (WQCC) standards. The following compounds were reported above the WQCC standards:

Imagine the result

- Phenol was reported at 0.0081 mg/L, above the WQCC standard of 0.005mg/L
- Iron was reported at 3.7 mg/L, above the WQCC standard of 1.0 mg/L
- Manganese was reported at 0.25 mg/L, above the WQCC standard of 0.2 mg/L
- Chloride was reported at 300 mg/L, above the WQCC standard of 250 mg/L
- Fluoride was reported at 11 mg/L, above the WQCC standard of 1.6 mg/L
- Sulfate was reported at 2,100 mg/L, above the WQCC standard of 600 mg/L
- TDS was reported at 3,710 mg/L, above the WQCC standard of 1,000 mg/L

ARCADIS understands that the OCD requested that a soil investigation and remediation be performed, as well as a limited groundwater investigation.

Although the wastewater sample analytical results do exceed the WQCC standards for water quality parameters, including chloride, it should be noted that the area in which the release occurred is known to have elevated chloride concentrations in soil and groundwater, along with other cations, anions and total metals. In 2013, as part of the Phase IV Corrective Action Investigation of the EPs, ARCADIS collected soil samples from 12 soil borings and analyzed the samples for thirteen total metals and for three anions, including chloride, fluoride, and sulfate. A statistical evaluation of the background soil sample results was performed to determine an appropriate upper tolerance limit (UTL) for the data obtained. A copy of the statistical evaluation memo is provided as Attachment 2 to this letter, including a table with a summary of the UTLs calculated for each parameter evaluated.

Figure 1 shows the locations of the background soil samples collected in 2013 (locations BG-01 through BG-12). The borings were located on both sides of the Pecos River, in locations both to the east and west of the EPs. These areas were selected based on their proximity to the EPs, yet outside of the RCRA-regulated unit and outside of the area of potential impacts from the operation of the EPs. Thus, these soil borings were considered representative of the native conditions of soil in the vicinity of the EPs. As a result, it would be appropriate to use the UTLs from this background soil study as alternative action levels for screening potential impacts from the wastewater line release.

As per the OCD requests, soil samples and groundwater samples will be collected as close as possible to the pipeline break and from a location approximately 50 feet to the northwest, or hydraulically upgradient, of the pipeline break. Two soil borings will

be installed and converted into temporary wells. The proposed locations of these borings/temporary wells are provided on Figure 1.

The soil borings will be installed by a State of New Mexico licensed well driller, using a truck-mounted hollow-stem auger rig. Soil samples will be collected continuously and screened using a photo-ionization detector (PID) and visual observations. Discrete soil samples will be collected for laboratory analysis from the following depths below ground surface: 0-1 feet (surface), 3-4 feet (below the 3 foot deep pipeline), and capillary zone above encountered groundwater. The soil samples will be analyzed for the following:

- Total Petroleum Hydrocarbons (TPH):
 - Gasoline Range Organics (GRO)
 - Diesel Range Organics (DRO)
 - Oil Range Organics (ORO)
- Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)
- Chloride
- Fluoride
- Sulfate
- Iron
- Manganese
- Phenol

The soil analytical results will be compared to the calculated background UTL (chloride, fluoride, sulfate, iron, and manganese). For parameters that do not have a calculated background UTL, the analytical results will be compared to the lower of the OCD spill cleanup guidelines and/or the residential or soil-leaching-to-groundwater soil screening levels (SSLs) published by the New Mexico Environment Department. Table 1 presents the proposed screening values for the analytical suite.

The soil borings will be extended to five feet below the observed depth of groundwater. The temporary monitoring wells will be constructed of 2-inch polyvinyl chlorinated (PVC) casing with 5 feet of 0.010-inch well screen. Solid 2-inch diameter PVC casing will be attached to the screen interval and extended to the ground surface. Clean sand will be placed in the annular space to approximately 2 feet above the well screen top as filter pack, then a two-foot bentonite seal will be placed above the filter pack. The PVC casing will be cut off approximately 3 feet above the ground surface. Since the wells will be temporary, a manhole and pad will not be installed.

Both temporary wells will be developed by bailing or pumping to remove fine-grained materials. Water quality parameters will be monitored throughout the development process and development will be considered complete when the parameters have

stabilized. The volume of development water will be recorded and the development water will be disposed of in the refinery process wastewater system.

Groundwater samples will be collected from each of the two temporary monitoring wells, unless there is more than 0.03 feet of phase-separated hydrocarbons (PSH) present in the wells. Groundwater samples will be collected no sooner than 24 hours after the temporary wells have been developed. The groundwater samples will be analyzed for the following:

- TPH (GRO, DRO, ORO)
- BTEX
- Phenol

The groundwater analytical results will be compared to the WQCC standards. The WQCC standards do not include a value for TPH, therefore, the NMED screening value for TPH in groundwater will be used for comparison. Table 2 provides a summary of the groundwater screening values.

A letter report will be prepared and submitted to OCD, documenting the field activities and the analytical results of the investigation. If any of the soil or groundwater results exceed the proposed screening levels, then additional delineation may be warranted and will be proposed in the letter report.

Should you have any questions or comments, please feel free to contact me at 713.953.4816.

Sincerely,

ARCADIS U.S., Inc.



Pamela R. Krueger
Principal-in-Charge

Enclosures:

Figure 1

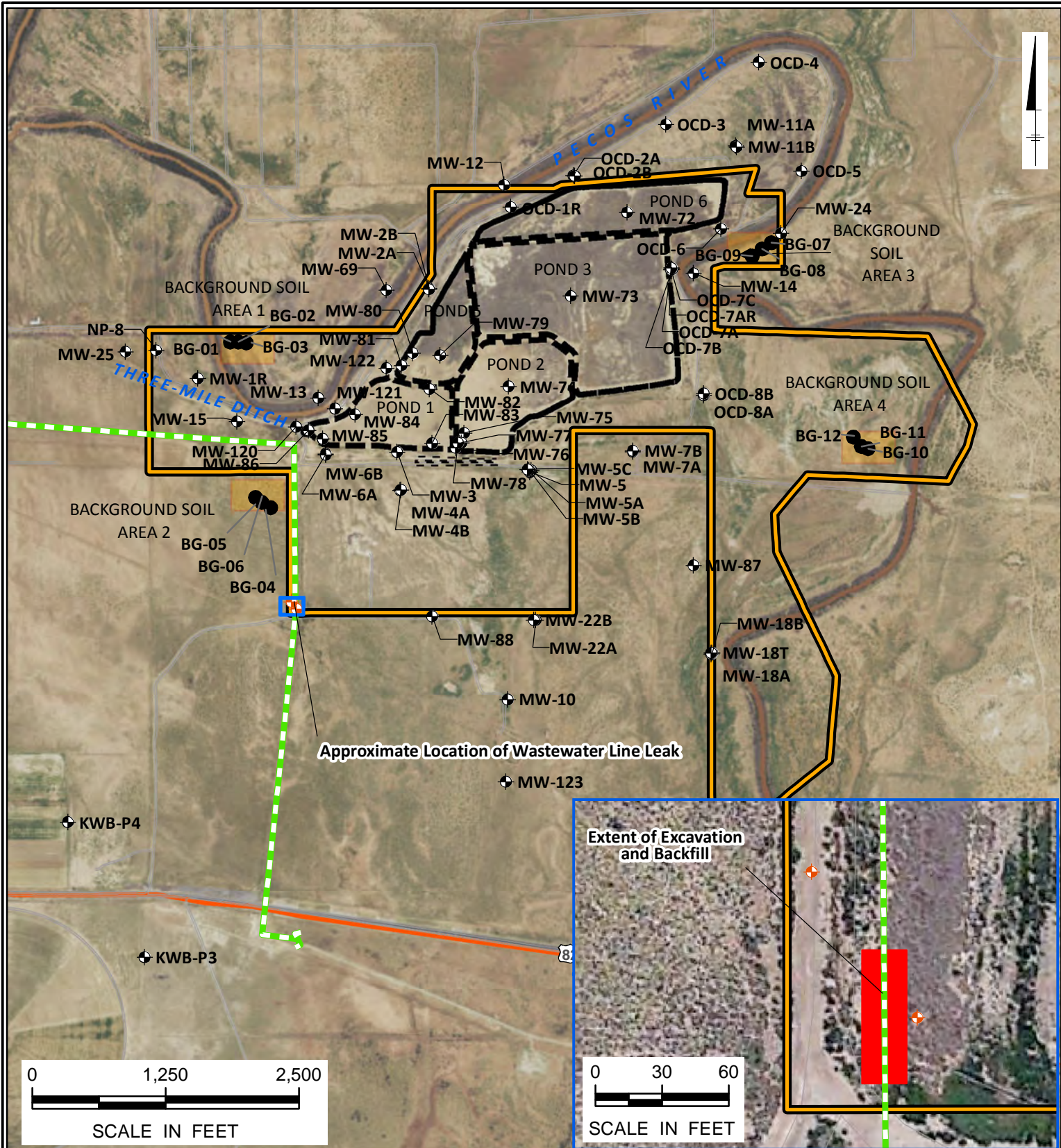
Table 1

Table 2

Attachment 1: Wastewater Analytical Report

Attachment 2: EP Background Soil Statistical Evaluation Memo

Figure



LEGEND

- EXISTING MONITORING WELLS
- ◆ PROPOSED BORINGS/TEMPORARY WELLS
- BACKGROUND SOIL SAMPLES
- WASTE WATER
- APPROXIMATE PIPELINE LOCATION
- NAVAJO PROPERTY BOUNDARY
- POND BOUNDARIES
- PHASE IV BACKGROUND SAMPLE LOCATION
- EXTENT OF EXCAVATION AND BACKFILL

NAVAJO REFINING COMPANY
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

APPROXIMATE LOCATION OF WASTEWATER LINE LEAK



FIGURE

1

Tables

Table 1
Proposed Action Levels for Soil Delineation
Wastewater Line Leak, Artesia, NM

Parameter	OCD Spill Guideline ^a (mg/kg)	Background UTL (mg/kg)	Residential SSL (mg/kg)	DAF 20 SSL (mg/kg)
TPH GRO	100	--	--	--
TPH DRO	100	--	1000	--
TPH ORO	100	--	1000	--
Benzene	10	--	17.8	0.0380
Ethylbenzene	--	--	75.1	0.262
Toluene	--	--	5228	12.1
Xylenes	--	--	871	2.98
BTEX	50	--	--	--
Chloride	--	5264	--	--
Fluoride	--	17.9	--	--
Sulfate	--	9336	--	--
Iron	--	17344	--	--
Manganese	--	488	--	--
Phenol	--	--	18490	52.3

^a Ranking criteria score of >19 based on depth to groundwater
Values shaded in grey are the proposed action levels

BTEX = benzene, toluene, ethylbenzene, total xylenes combined

DAF 20 = dilution attenuation factor of 20

DRO = diesel range organics

GRO = gasoline range organics

mg/kg = milligrams per kilogram

ORO = oil range organics

SSL = soil screening level

TPH = total petroleum hydrocarbons

UTL = upper tolerance limit

Table 2
Proposed Action Levels for Groundwater Delineation
Wastewater Line Leak, Artesia, NM

Parameter	WQCC Standard (mg/L)	NMED TPH Screening Level (mg/L)
TPH GRO	--	--
TPH DRO	--	0.2
TPH ORO	--	0.2
Benzene	0.01	--
Ethylbenzene	0.75	--
Toluene	0.75	--
Xylenes	0.62	--
Phenol	0.005	--

DRO = diesel range organics

GRO = gasoline range organics

mg/kg = milligrams per kilogram

NMED = New Mexico Environment Department

ORO = oil range organics

TPH = total petroleum hydrocarbons

WQCC = Water Quality Control Commission



Attachment 1

Wastewater Analytical Report



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

March 25, 2015

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

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

OrderNo.: 1502959

Dear Dan Crawford:

Hall Environmental Analysis Laboratory received 2 sample(s) on 2/24/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109



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

Case Narrative

WO#: 1502959
Date: 3/25/2015

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

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

Allyl alcohol
t-amyl ethyl ether
Bis(2-chloroethyl)sulfide
Bromoacetone
Chloral hydrate
1-chlorobutane
1-chlorohexane
2-chloroethanol
Crotonaldehyde
Cis-1,4-Dichloro-2butene
1,3-Dichloro-2-propanol
1,2,3,4-Depoxybutane
Ethanol
Ethylene oxide
Malonitrile
Methanol
Methyl acrylate
2-Nitropropane
Paraldehyde
Pentafluorobenzene
2-Pentanone
2-picoline
1-propanol
2-propanol
Propargyl alcohol
Beta-propiolactone
n-propylamine

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1502959**

Date Reported: **3/25/2015**

CLIENT: Navajo Refining Company

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

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

Collection Date: 2/23/2015 8:30:00 AM

Lab ID: 1502959-001

Matrix: AQUEOUS

Received Date: 2/24/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	11	5.0	*	mg/L	50	2/24/2015 11:37:59 PM	R24502
Chloride	300	25		mg/L	50	2/24/2015 11:37:59 PM	R24502
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	2/24/2015 11:25:35 PM	R24502
Bromide	1.1	0.50		mg/L	5	2/24/2015 11:25:35 PM	R24502
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	2/24/2015 11:25:35 PM	R24502
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	2/24/2015 11:25:35 PM	R24502
Sulfate	2100	25		mg/L	50	2/24/2015 11:37:59 PM	R24502
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	2/26/2015 9:31:31 AM	17887
MERCURY, TCLP							Analyst: MED
Mercury	ND	0.020		mg/L	1	3/10/2015 8:26:24 AM	18037
EPA METHOD 6010B: TCLP METALS							Analyst: ELS
Arsenic	ND	5.0		mg/L	1	3/7/2015 2:01:03 PM	18024
Barium	ND	100		mg/L	1	3/7/2015 2:01:03 PM	18024
Cadmium	ND	1.0		mg/L	1	3/7/2015 2:01:03 PM	18024
Chromium	ND	5.0		mg/L	1	3/7/2015 2:01:03 PM	18024
Lead	ND	5.0		mg/L	1	3/7/2015 2:01:03 PM	18024
Selenium	ND	1.0		mg/L	1	3/7/2015 2:01:03 PM	18024
Silver	ND	5.0		mg/L	1	3/7/2015 2:01:03 PM	18024
EPA 6010B: TOTAL METALS							Analyst: ELS
Aluminum	2.0	0.020		mg/L	1	3/7/2015 1:56:58 PM	18024
Antimony	ND	0.050		mg/L	1	3/7/2015 1:56:58 PM	18024
Arsenic	0.029	0.020		mg/L	1	3/7/2015 1:56:58 PM	18024
Barium	ND	0.020		mg/L	1	3/7/2015 1:56:58 PM	18024
Beryllium	ND	0.0030		mg/L	1	3/7/2015 1:56:58 PM	18024
Cadmium	ND	0.0020		mg/L	1	3/7/2015 1:56:58 PM	18024
Calcium	85	1.0		mg/L	1	3/10/2015 12:46:11 PM	18050
Chromium	ND	0.0060		mg/L	1	3/7/2015 1:56:58 PM	18024
Cobalt	ND	0.0060		mg/L	1	3/7/2015 1:56:58 PM	18024
Copper	0.0068	0.0060		mg/L	1	3/7/2015 1:56:58 PM	18024
Iron	3.7	0.050		mg/L	1	3/7/2015 1:56:58 PM	18024
Lead	ND	0.0050		mg/L	1	3/7/2015 1:56:58 PM	18024
Magnesium	26	1.0		mg/L	1	3/10/2015 12:46:11 PM	18050
Manganese	0.25	0.0020		mg/L	1	3/7/2015 1:56:58 PM	18024
Nickel	0.035	0.010		mg/L	1	3/7/2015 1:56:58 PM	18024
Potassium	35	1.0		mg/L	1	3/10/2015 12:46:11 PM	18050
Selenium	ND	0.050		mg/L	1	3/7/2015 1:56:58 PM	18024

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.

Analytical Report

Lab Order **1502959**

Date Reported: **3/25/2015**

CLIENT: Navajo Refining Company

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

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

Collection Date: 2/23/2015 8:30:00 AM

Lab ID: 1502959-001

Matrix: AQUEOUS

Received Date: 2/24/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL METALS							Analyst: ELS
Silver	ND	0.0050		mg/L	1	3/7/2015 1:56:58 PM	18024
Sodium	1300	20		mg/L	20	3/10/2015 12:51:05 PM	18050
Thallium	ND	0.050		mg/L	1	3/7/2015 1:56:58 PM	18024
Vanadium	ND	0.050		mg/L	1	3/7/2015 1:56:58 PM	18024
Zinc	0.064	0.020		mg/L	1	3/7/2015 1:56:58 PM	18024
EPA METHOD 8260B: VOLATILES							Analyst: SUB
Acetonitrile	ND	5.0		µg/L	1	3/3/2015	R24992
Allyl chloride	ND	0.50		µg/L	1	3/3/2015	R24992
Chloroprene	ND	0.50		µg/L	1	3/3/2015	R24992
Cyclohexane	ND	0.50		µg/L	1	3/3/2015	R24992
Diethyl ether	ND	0.50		µg/L	1	3/3/2015	R24992
Diisopropyl ether	ND	0.50		µg/L	1	3/3/2015	R24992
Epichlorohydrin	ND	5.0		µg/L	1	3/3/2015	R24992
Ethyl acetate	ND	0.50		µg/L	1	3/3/2015	R24992
Ethyl methacrylate	ND	2.5		µg/L	1	3/3/2015	R24992
Ethyl tert-butyl ether	ND	0.50		µg/L	1	3/3/2015	R24992
Freon-113	ND	0.50		µg/L	1	3/3/2015	R24992
Isobutanol	ND	50		µg/L	1	3/3/2015	R24992
Isopropyl acetate	ND	0.50		µg/L	1	3/3/2015	R24992
Methacrylonitrile	ND	5.0		µg/L	1	3/3/2015	R24992
Methyl acetate	ND	0.50		µg/L	1	3/3/2015	R24992
Methyl ethyl ketone	ND	2.5		µg/L	1	3/3/2015	R24992
Methyl isobutyl ketone	ND	2.5		µg/L	1	3/3/2015	R24992
Methyl methacrylate	ND	2.5		µg/L	1	3/3/2015	R24992
Methylcyclohexane	ND	1.0		µg/L	1	3/3/2015	R24992
n-Amyl acetate	ND	0.50		µg/L	1	3/3/2015	R24992
n-Hexane	ND	1.0		µg/L	1	3/3/2015	R24992
Nitrobenzene	ND	5.0		µg/L	1	3/3/2015	R24992
Pentachloroethane	ND	5.0		µg/L	1	3/3/2015	R24992
p-isopropyltoluene	1.4	0.50		µg/L	1	3/3/2015	R24992
Propionitrile	ND	5.0		µg/L	1	3/3/2015	R24992
Tetrahydrofuran	ND	0.50		µg/L	1	3/3/2015	R24992
Benzene	ND	0.50		µg/L	1	3/3/2015	R24992
Toluene	ND	0.50		µg/L	1	3/3/2015	R24992
Ethylbenzene	ND	0.50		µg/L	1	3/3/2015	R24992
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	1	3/3/2015	R24992
1,2,4-Trimethylbenzene	2.8	0.50		µg/L	1	3/3/2015	R24992
1,3,5-Trimethylbenzene	2.7	0.50		µg/L	1	3/3/2015	R24992
1,2-Dichloroethane (EDC)	ND	0.50		µg/L	1	3/3/2015	R24992

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.

Analytical Report

Lab Order **1502959**

Date Reported: **3/25/2015**

CLIENT: Navajo Refining Company

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

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

Collection Date: 2/23/2015 8:30:00 AM

Lab ID: 1502959-001

Matrix: AQUEOUS

Received Date: 2/24/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: SUB
1,2-Dibromoethane (EDB)	ND	0.50		µg/L	1	3/3/2015	R24992
Naphthalene	ND	0.50		µg/L	1	3/3/2015	R24992
Acetone	57	2.5		µg/L	1	3/3/2015	R24992
Bromobenzene	ND	0.50		µg/L	1	3/3/2015	R24992
Bromodichloromethane	ND	0.50		µg/L	1	3/3/2015	R24992
Bromoform	ND	0.50		µg/L	1	3/3/2015	R24992
Bromomethane	ND	0.50		µg/L	1	3/3/2015	R24992
Carbon disulfide	0.53	0.50		µg/L	1	3/3/2015	R24992
Carbon Tetrachloride	ND	0.50		µg/L	1	3/3/2015	R24992
Chlorobenzene	ND	0.50		µg/L	1	3/3/2015	R24992
Chloroethane	ND	0.50		µg/L	1	3/3/2015	R24992
Chloroform	ND	0.50		µg/L	1	3/3/2015	R24992
Chloromethane	ND	0.50		µg/L	1	3/3/2015	R24992
2-Chlorotoluene	ND	0.50		µg/L	1	3/3/2015	R24992
4-Chlorotoluene	ND	0.50		µg/L	1	3/3/2015	R24992
cis-1,2-DCE	ND	0.50		µg/L	1	3/3/2015	R24992
cis-1,3-Dichloropropene	ND	0.50		µg/L	1	3/3/2015	R24992
1,2-Dibromo-3-chloropropane	ND	0.50		µg/L	1	3/3/2015	R24992
Dibromochloromethane	ND	0.50		µg/L	1	3/3/2015	R24992
Dibromomethane	ND	0.50		µg/L	1	3/3/2015	R24992
1,2-Dichlorobenzene	ND	0.50		µg/L	1	3/3/2015	R24992
1,3-Dichlorobenzene	ND	0.50		µg/L	1	3/3/2015	R24992
1,4-Dichlorobenzene	ND	0.50		µg/L	1	3/3/2015	R24992
Dichlorodifluoromethane	ND	0.50		µg/L	1	3/3/2015	R24992
1,1-Dichloroethane	ND	0.50		µg/L	1	3/3/2015	R24992
1,1-Dichloroethene	ND	0.50		µg/L	1	3/3/2015	R24992
1,2-Dichloropropane	ND	0.50		µg/L	1	3/3/2015	R24992
1,3-Dichloropropane	ND	0.50		µg/L	1	3/3/2015	R24992
2,2-Dichloropropane	ND	0.50		µg/L	1	3/3/2015	R24992
1,1-Dichloropropene	ND	0.50		µg/L	1	3/3/2015	R24992
Hexachlorobutadiene	ND	0.50		µg/L	1	3/3/2015	R24992
2-Hexanone	ND	0.50		µg/L	1	3/3/2015	R24992
Isopropylbenzene	ND	0.50		µg/L	1	3/3/2015	R24992
Methylene Chloride	ND	2.5		µg/L	1	3/3/2015	R24992
n-Butylbenzene	ND	0.50		µg/L	1	3/3/2015	R24992
n-Propylbenzene	ND	0.50		µg/L	1	3/3/2015	R24992
sec-Butylbenzene	ND	0.50		µg/L	1	3/3/2015	R24992
Styrene	ND	0.50		µg/L	1	3/3/2015	R24992
tert-Butylbenzene	ND	0.50		µg/L	1	3/3/2015	R24992

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	Page 4 of 25
	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.

Analytical Report

Lab Order 1502959

Date Reported: 3/25/2015

CLIENT: Navajo Refining Company

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

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

Collection Date: 2/23/2015 8:30:00 AM

Lab ID: 1502959-001

Matrix: AQUEOUS

Received Date: 2/24/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: SUB
1,1,1,2-Tetrachloroethane	ND	0.50		µg/L	1	3/3/2015	R24992
1,1,2,2-Tetrachloroethane	ND	0.50		µg/L	1	3/3/2015	R24992
Tetrachloroethene (PCE)	ND	0.50		µg/L	1	3/3/2015	R24992
trans-1,2-DCE	ND	0.50		µg/L	1	3/3/2015	R24992
trans-1,3-Dichloropropene	ND	0.50		µg/L	1	3/3/2015	R24992
1,2,3-Trichlorobenzene	ND	0.50		µg/L	1	3/3/2015	R24992
1,2,4-Trichlorobenzene	ND	0.50		µg/L	1	3/3/2015	R24992
1,1,1-Trichloroethane	ND	0.50		µg/L	1	3/3/2015	R24992
1,1,2-Trichloroethane	ND	0.50		µg/L	1	3/3/2015	R24992
Trichloroethene (TCE)	ND	0.50		µg/L	1	3/3/2015	R24992
Trichlorofluoromethane	ND	0.50		µg/L	1	3/3/2015	R24992
1,2,3-Trichloropropane	ND	0.50		µg/L	1	3/3/2015	R24992
Vinyl chloride	ND	0.50		µg/L	1	3/3/2015	R24992
mp-Xylenes	2.4	1.0		µg/L	1	3/3/2015	R24992
o-Xylene	1.7	0.50		µg/L	1	3/3/2015	R24992
tert-Amyl methyl ether	ND	0.50		µg/L	1	3/3/2015	R24992
tert-Butyl alcohol	21	10		µg/L	1	3/3/2015	R24992
Acrolein	ND	0.50		µg/L	1	3/3/2015	R24992
Acrylonitrile	ND	0.50		µg/L	1	3/3/2015	R24992
Bromochloromethane	ND	0.50		µg/L	1	3/3/2015	R24992
2-Chloroethyl vinyl ether	ND	0.50		µg/L	1	3/3/2015	R24992
Iodomethane	ND	0.50		µg/L	1	3/3/2015	R24992
trans-1,4-Dichloro-2-butene	ND	0.50		µg/L	1	3/3/2015	R24992
Vinyl acetate	ND	0.50		µg/L	1	3/3/2015	R24992
1,4-Dioxane	ND	20		µg/L	1	3/3/2015	R24992
Surr: 1,2-Dichlorobenzene-d4	110	70-130		%REC	1	3/3/2015	R24992
Surr: 4-Bromofluorobenzene	100	70-130		%REC	1	3/3/2015	R24992
Surr: Toluene-d8	99.6	70-130		%REC	1	3/3/2015	R24992
EPA 8270C: SEMIVOLATILES/MOD							Analyst: SUB
1,1-Biphenyl	ND	5.0		µg/L	1	3/2/2015	R24992
Atrazine	ND	5.0		µg/L	1	3/2/2015	R24992
Benzaldehyde	ND	5.0		µg/L	1	3/2/2015	R24992
Caprolactam	ND	5.0		µg/L	1	3/2/2015	R24992
N-Nitroso-di-n-butylamine	ND	5.0		µg/L	1	3/2/2015	R24992
Acetophenone	ND	10		µg/L	1	3/2/2015	R24992
1-Methylnaphthalene	ND	10		µg/L	1	3/2/2015	R24992
2,3,4,6-Tetrachlorophenol	ND	10		µg/L	1	3/2/2015	R24992
2,4,5-Trichlorophenol	ND	10		µg/L	1	3/2/2015	R24992
2,4,6-Trichlorophenol	ND	10		µg/L	1	3/2/2015	R24992

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EPA 8270C: SEMIVOLATILES/MOD							Analyst: SUB
2,4-Dichlorophenol	ND	10		µg/L	1	3/2/2015	R24992
2,4-Dimethylphenol	710	10		µg/L	1	3/2/2015	R24992
2,4-Dinitrophenol	ND	10		µg/L	1	3/2/2015	R24992
2,4-Dinitrotoluene	ND	10		µg/L	1	3/2/2015	R24992
2,6-Dinitrotoluene	ND	10		µg/L	1	3/2/2015	R24992
2-Chloronaphthalene	ND	10		µg/L	1	3/2/2015	R24992
2-Chlorophenol	ND	10		µg/L	1	3/2/2015	R24992
2-Methylnaphthalene	ND	10		µg/L	1	3/2/2015	R24992
2-Methylphenol	480	10		µg/L	1	3/2/2015	R24992
2-Nitroaniline	ND	10		µg/L	1	3/2/2015	R24992
2-Nitrophenol	ND	10		µg/L	1	3/2/2015	R24992
3,3'-Dichlorobenzidine	ND	10		µg/L	1	3/2/2015	R24992
3-Nitroaniline	ND	10		µg/L	1	3/2/2015	R24992
4,6-Dinitro-2-methylphenol	ND	10		µg/L	1	3/2/2015	R24992
4-Bromophenyl phenyl ether	ND	10		µg/L	1	3/2/2015	R24992
4-Chloro-3-methylphenol	ND	5.0		µg/L	1	3/2/2015	R24992
4-Chloroaniline	ND	10		µg/L	1	3/2/2015	R24992
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	3/2/2015	R24992
4-Nitroaniline	ND	10		µg/L	1	3/2/2015	R24992
4-Nitrophenol	ND	10		µg/L	1	3/2/2015	R24992
Acenaphthene	ND	10		µg/L	1	3/2/2015	R24992
Acenaphthylene	ND	10		µg/L	1	3/2/2015	R24992
Anthracene	ND	10		µg/L	1	3/2/2015	R24992
Benzo(g,h,i)perylene	ND	10		µg/L	1	3/2/2015	R24992
Benz(a)anthracene	ND	0.10		µg/L	1	3/2/2015	R24992
Benzo(a)pyrene	ND	0.10		µg/L	1	3/2/2015	R24992
Benzo(b)fluoranthene	ND	0.10		µg/L	1	3/2/2015	R24992
Benzo(k)fluoranthene	ND	0.10		µg/L	1	3/2/2015	R24992
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	3/2/2015	R24992
Bis(2-chloroethyl)ether	ND	10		µg/L	1	3/2/2015	R24992
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	3/2/2015	R24992
Bis(2-ethylhexyl)phthalate	ND	5.0		µg/L	1	3/2/2015	R24992
Butyl benzyl phthalate	ND	10		µg/L	1	3/2/2015	R24992
Carbazole	ND	10		µg/L	1	3/2/2015	R24992
Chrysene	ND	0.10		µg/L	1	3/2/2015	R24992
Dibenz(a,h)anthracene	ND	0.10		µg/L	1	3/2/2015	R24992
Dibenzofuran	ND	10		µg/L	1	3/2/2015	R24992
Diethyl phthalate	ND	10		µg/L	1	3/2/2015	R24992
Dimethyl phthalate	ND	10		µg/L	1	3/2/2015	R24992

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	Page 6 of 25
	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.

Analytical Report

Lab Order **1502959**

Date Reported: **3/25/2015**

CLIENT: Navajo Refining Company

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

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

Collection Date: 2/23/2015 8:30:00 AM

Lab ID: 1502959-001

Matrix: AQUEOUS

Received Date: 2/24/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 8270C: SEMIVOLATILES/MOD							Analyst: SUB
Di-n-butyl phthalate	ND	10		µg/L	1	3/2/2015	R24992
Di-n-octyl phthalate	ND	10		µg/L	1	3/2/2015	R24992
Fluoranthene	ND	10		µg/L	1	3/2/2015	R24992
Fluorene	ND	10		µg/L	1	3/2/2015	R24992
Hexachlorobenzene	ND	1.0		µg/L	1	3/2/2015	R24992
Hexachlorobutadiene	ND	10		µg/L	1	3/2/2015	R24992
Hexachlorocyclopentadiene	ND	10		µg/L	1	3/2/2015	R24992
Hexachloroethane	ND	10		µg/L	1	3/2/2015	R24992
Indeno(1,2,3-cd)pyrene	ND	5.0		µg/L	1	3/2/2015	R24992
Isophorone	ND	10		µg/L	1	3/2/2015	R24992
Naphthalene	ND	10		µg/L	1	3/2/2015	R24992
Nitrobenzene	ND	10		µg/L	1	3/2/2015	R24992
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	3/2/2015	R24992
N-Nitrosodiphenylamine	ND	2.0		µg/L	1	3/2/2015	R24992
Pentachlorophenol	ND	10		µg/L	1	3/2/2015	R24992
Phenanthrene	ND	10		µg/L	1	3/2/2015	R24992
Phenol	8.1	5.0		µg/L	1	3/2/2015	R24992
Pyrene	ND	10		µg/L	1	3/2/2015	R24992
o-Toluidine	ND	5.0		µg/L	1	3/2/2015	R24992
Pyridine	ND	5.0		µg/L	1	3/2/2015	R24992
1,2,4,5-Tetrachlorobenzene	ND	10		µg/L	1	3/2/2015	R24992
Surr: 2,4,6-Tribromophenol	121	10-123		%REC	1	3/2/2015	R24992
Surr: 2-Fluorobiphenyl	80.8	19-130		%REC	1	3/2/2015	R24992
Surr: 2-Fluorophenol	83.8	21-110		%REC	1	3/2/2015	R24992
Surr: Nitrobenzene-d5	85.6	25-130		%REC	1	3/2/2015	R24992
Surr: Phenol-d5	86.4	10-125		%REC	1	3/2/2015	R24992
Surr: Terphenyl-d14	29.7	21-141		%REC	1	3/2/2015	R24992
CORROSIVITY							Analyst: SUB
pH	7.01	0.100		pH Units	1	2/27/2015	R24992
IGNITABILITY METHOD 1010							Analyst: SUB
Ignitability	>200	0		°F	1	3/6/2015	R24992
CYANIDE, REACTIVE							Analyst: SUB
Cyanide, Reactive	ND	1.00		mg/L	1	3/5/2015	R24992
SULFIDE, REACTIVE							Analyst: SUB
Reactive Sulfide	ND	1.0		mg/L	1	3/3/2015	R24992
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	4600	0.010		µmhos/cm	1	3/3/2015 3:37:29 PM	R24621

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1502959**

Date Reported: **3/25/2015**

CLIENT: Navajo Refining Company

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

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

Collection Date: 2/23/2015 8:30:00 AM

Lab ID: 1502959-001

Matrix: AQUEOUS

Received Date: 2/24/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM4500-H+B: PH							Analyst: JRR
pH	7.13	1.68	H	pH units	1	3/3/2015 3:37:29 PM	R24621
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	240	20		mg/L CaCO3	1	3/3/2015 3:37:29 PM	R24621
Carbonate (As CaCO3)	ND	2.0		mg/L CaCO3	1	3/3/2015 3:37:29 PM	R24621
Total Alkalinity (as CaCO3)	240	20		mg/L CaCO3	1	3/3/2015 3:37:29 PM	R24621
SPECIFIC GRAVITY							Analyst: JRR
Specific Gravity	1.002	0			1	3/5/2015 12:07:00 PM	R24648
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3710	200	*	mg/L	1	2/27/2015 8:17:00 AM	17895

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.

Analytical Report

Lab Order **1502959**

Date Reported: **3/25/2015**

CLIENT: Navajo Refining Company

Client Sample ID: TRIP BLANK

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

Collection Date:

Lab ID: 1502959-002

Matrix: TRIP BLANK

Received Date: 2/24/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: SUB
Acetonitrile	ND	5.0		µg/L	1	3/3/2015	R24992
Allyl chloride	ND	0.50		µg/L	1	3/3/2015	R24992
Chloroprene	ND	0.50		µg/L	1	3/3/2015	R24992
Cyclohexane	ND	0.50		µg/L	1	3/3/2015	R24992
Diethyl ether	ND	0.50		µg/L	1	3/3/2015	R24992
Diisopropyl ether	ND	0.50		µg/L	1	3/3/2015	R24992
Epichlorohydrin	ND	5.0		µg/L	1	3/3/2015	R24992
Ethyl acetate	ND	0.50		µg/L	1	3/3/2015	R24992
Ethyl methacrylate	ND	2.5		µg/L	1	3/3/2015	R24992
Ethyl tert-butyl ether	ND	0.50		µg/L	1	3/3/2015	R24992
Freon-113	ND	0.50		µg/L	1	3/3/2015	R24992
Isobutanol	ND	0.50		µg/L	1	3/3/2015	R24992
Isopropyl acetate	ND	0.50		µg/L	1	3/3/2015	R24992
Methacrylonitrile	ND	2.5		µg/L	1	3/3/2015	R24992
Methyl acetate	ND	0.50		µg/L	1	3/3/2015	R24992
Methyl ethyl ketone	ND	2.5		µg/L	1	3/3/2015	R24992
Methyl isobutyl ketone	ND	2.5		µg/L	1	3/3/2015	R24992
Methyl methacrylate	ND	2.5		µg/L	1	3/3/2015	R24992
Methylcyclohexane	ND	1.0		µg/L	1	3/3/2015	R24992
n-Amyl acetate	ND	0.50		µg/L	1	3/3/2015	R24992
n-Hexane	ND	1.0		µg/L	1	3/3/2015	R24992
Nitrobenzene	ND	5.0		µg/L	1	3/3/2015	R24992
Pentachloroethane	ND	5.0		µg/L	1	3/3/2015	R24992
p-isopropyltoluene	ND	0.50		µg/L	1	3/3/2015	R24992
Propionitrile	ND	5.0		µg/L	1	3/3/2015	R24992
Tetrahydrofuran	ND	0.50		µg/L	1	3/3/2015	R24992
Benzene	ND	0.50		µg/L	1	3/3/2015	R24992
Toluene	ND	0.50		µg/L	1	3/3/2015	R24992
Ethylbenzene	ND	0.50		µg/L	1	3/3/2015	R24992
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	1	3/3/2015	R24992
1,2,4-Trimethylbenzene	ND	0.50		µg/L	1	3/3/2015	R24992
1,3,5-Trimethylbenzene	ND	0.50		µg/L	1	3/3/2015	R24992
1,2-Dichloroethane (EDC)	ND	0.50		µg/L	1	3/3/2015	R24992
1,2-Dibromoethane (EDB)	ND	0.50		µg/L	1	3/3/2015	R24992
Naphthalene	ND	0.50		µg/L	1	3/3/2015	R24992
Acetone	5.0	2.5		µg/L	1	3/3/2015	R24992
Bromobenzene	ND	0.50		µg/L	1	3/3/2015	R24992
Bromodichloromethane	ND	0.50		µg/L	1	3/3/2015	R24992
Bromoform	ND	0.50		µg/L	1	3/3/2015	R24992

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	Page 9 of 25
	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.

Analytical Report

Lab Order 1502959

Date Reported: 3/25/2015

CLIENT: Navajo Refining Company

Client Sample ID: TRIP BLANK

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

Collection Date:

Lab ID: 1502959-002

Matrix: TRIP BLANK

Received Date: 2/24/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: SUB
Bromomethane	ND	0.50		µg/L	1	3/3/2015	R24992
Carbon disulfide	ND	0.50		µg/L	1	3/3/2015	R24992
Carbon Tetrachloride	ND	0.50		µg/L	1	3/3/2015	R24992
Chlorobenzene	ND	0.50		µg/L	1	3/3/2015	R24992
Chloroethane	ND	0.50		µg/L	1	3/3/2015	R24992
Chloroform	ND	0.50		µg/L	1	3/3/2015	R24992
Chloromethane	ND	0.50		µg/L	1	3/3/2015	R24992
2-Chlorotoluene	ND	0.50		µg/L	1	3/3/2015	R24992
4-Chlorotoluene	ND	0.50		µg/L	1	3/3/2015	R24992
cis-1,2-DCE	ND	0.50		µg/L	1	3/3/2015	R24992
cis-1,3-Dichloropropene	ND	0.50		µg/L	1	3/3/2015	R24992
1,2-Dibromo-3-chloropropane	ND	0.50		µg/L	1	3/3/2015	R24992
Dibromochloromethane	ND	0.50		µg/L	1	3/3/2015	R24992
Dibromomethane	ND	0.50		µg/L	1	3/3/2015	R24992
1,2-Dichlorobenzene	ND	0.50		µg/L	1	3/3/2015	R24992
1,3-Dichlorobenzene	ND	0.50		µg/L	1	3/3/2015	R24992
1,4-Dichlorobenzene	ND	0.50		µg/L	1	3/3/2015	R24992
Dichlorodifluoromethane	ND	0.50		µg/L	1	3/3/2015	R24992
1,1-Dichloroethane	ND	0.50		µg/L	1	3/3/2015	R24992
1,1-Dichloroethene	ND	0.50		µg/L	1	3/3/2015	R24992
1,2-Dichloropropane	ND	0.50		µg/L	1	3/3/2015	R24992
1,3-Dichloropropane	ND	0.50		µg/L	1	3/3/2015	R24992
2,2-Dichloropropane	ND	0.50		µg/L	1	3/3/2015	R24992
1,1-Dichloropropene	ND	0.50		µg/L	1	3/3/2015	R24992
Hexachlorobutadiene	ND	0.50		µg/L	1	3/3/2015	R24992
2-Hexanone	ND	0.50		µg/L	1	3/3/2015	R24992
Isopropylbenzene	ND	0.50		µg/L	1	3/3/2015	R24992
Methylene Chloride	ND	2.5		µg/L	1	3/3/2015	R24992
n-Butylbenzene	ND	0.50		µg/L	1	3/3/2015	R24992
n-Propylbenzene	ND	0.50		µg/L	1	3/3/2015	R24992
sec-Butylbenzene	ND	0.50		µg/L	1	3/3/2015	R24992
Styrene	ND	0.50		µg/L	1	3/3/2015	R24992
tert-Butylbenzene	ND	0.50		µg/L	1	3/3/2015	R24992
1,1,1,2-Tetrachloroethane	ND	0.50		µg/L	1	3/3/2015	R24992
1,1,2,2-Tetrachloroethane	ND	0.50		µg/L	1	3/3/2015	R24992
Tetrachloroethene (PCE)	ND	0.50		µg/L	1	3/3/2015	R24992
trans-1,2-DCE	ND	0.50		µg/L	1	3/3/2015	R24992
trans-1,3-Dichloropropene	ND	0.50		µg/L	1	3/3/2015	R24992
1,2,3-Trichlorobenzene	ND	0.50		µg/L	1	3/3/2015	R24992

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.

Analytical Report

Lab Order **1502959**

Date Reported: **3/25/2015**

CLIENT: Navajo Refining Company

Client Sample ID: TRIP BLANK

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

Collection Date:

Lab ID: 1502959-002

Matrix: TRIP BLANK

Received Date: 2/24/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: SUB
1,2,4-Trichlorobenzene	ND	0.50		µg/L	1	3/3/2015	R24992
1,1,1-Trichloroethane	ND	0.50		µg/L	1	3/3/2015	R24992
1,1,2-Trichloroethane	ND	0.50		µg/L	1	3/3/2015	R24992
Trichloroethene (TCE)	ND	0.50		µg/L	1	3/3/2015	R24992
Trichlorofluoromethane	ND	0.50		µg/L	1	3/3/2015	R24992
1,2,3-Trichloropropane	ND	0.50		µg/L	1	3/3/2015	R24992
Vinyl chloride	ND	0.50		µg/L	1	3/3/2015	R24992
mp-Xylenes	ND	1.0		µg/L	1	3/3/2015	R24992
o-Xylene	ND	0.50		µg/L	1	3/3/2015	R24992
tert-Amyl methyl ether	ND	0.50		µg/L	1	3/3/2015	R24992
tert-Butyl alcohol	ND	10		µg/L	1	3/3/2015	R24992
Acrolein	ND	1.0		µg/L	1	3/3/2015	R24992
Acrylonitrile	ND	0.50		µg/L	1	3/3/2015	R24992
Bromochloromethane	ND	0.50		µg/L	1	3/3/2015	R24992
2-Chloroethyl vinyl ether	ND	0.50		µg/L	1	3/3/2015	R24992
Iodomethane	ND	0.50		µg/L	1	3/3/2015	R24992
trans-1,4-Dichloro-2-butene	ND	0.50		µg/L	1	3/3/2015	R24992
Vinyl acetate	ND	0.50		µg/L	1	3/3/2015	R24992
1,4-Dioxane	ND	20		µg/L	1	3/3/2015	R24992
Surr: 1,2-Dichlorobenzene-d4	102	70-130		%REC	1	3/3/2015	R24992
Surr: 4-Bromofluorobenzene	98.4	70-130		%REC	1	3/3/2015	R24992
Surr: Toluene-d8	100	70-130		%REC	1	3/3/2015	R24992

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#: 1502959

25-Mar-15

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

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R24502		RunNo: 24502							
Prep Date:	Analysis Date: 2/24/2015		SeqNo: 721446		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R24502		RunNo: 24502							
Prep Date:	Analysis Date: 2/24/2015		SeqNo: 721447		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.54	0.10	0.5000	0	108	90	110			
Chloride	4.8	0.50	5.000	0	95.3	90	110			
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	95.4	90	110			
Bromide	2.5	0.10	2.500	0	99.1	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			
Phosphorus, Orthophosphate (As P)	5.0	0.50	5.000	0	100	90	110			
Sulfate	9.8	0.50	10.00	0	97.6	90	110			

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#: 1502959

25-Mar-15

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

Sample ID	MB-R24992		SampType:	MBLK		TestCode:	EPA Method 8260B: VOLATILES			
Client ID:	PBW		Batch ID:	R24992		RunNo:	24992			
Prep Date:			Analysis Date:	3/3/2015		SeqNo:	736964	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acetonitrile	ND	0.50								
Allyl chloride	ND	0.50								
Chloroprene	ND	0.50								
Ethyl methacrylate	ND	0.50								
Isobutanol	ND	0.50								
Methacrylonitrile	ND	0.50								
Methyl ethyl ketone	ND	2.5								
Methyl isobutyl ketone	ND	2.5								
Methyl methacrylate	ND	0.50								
Propionitrile	ND	0.50								
Benzene	ND	0.50								
Toluene	ND	0.50								
Ethylbenzene	ND	0.50								
1,2-Dichloroethane (EDC)	ND	0.50								
1,2-Dibromoethane (EDB)	ND	0.50								
Acetone	ND	2.5								
Bromodichloromethane	ND	0.50								
Bromoform	ND	0.50								
Bromomethane	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon Tetrachloride	ND	0.50								
Chlorobenzene	ND	0.50								
Chloroethane	ND	0.50								
Chloroform	ND	0.50								
Chloromethane	ND	0.50								
cis-1,2-DCE	ND	0.50								
cis-1,3-Dichloropropene	ND	0.50								
1,2-Dibromo-3-chloropropane	ND	0.50								
Dibromochloromethane	ND	0.50								
Dibromomethane	ND	0.50								
1,2-Dichlorobenzene	ND	0.50								
1,4-Dichlorobenzene	ND	0.50								
Dichlorodifluoromethane	ND	0.50								
1,1-Dichloroethane	ND	0.50								
1,1-Dichloroethene	ND	0.50								
1,2-Dichloropropane	ND	0.50								
1,3-Dichloropropane	ND	0.50								
2,2-Dichloropropane	ND	0.50								
1,1-Dichloropropene	ND	0.50								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1502959

25-Mar-15

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

Sample ID	MB-R24992		SampType:	MBLK		TestCode:	EPA Method 8260B: VOLATILES			
Client ID:	PBW		Batch ID:	R24992		RunNo:	24992			
Prep Date:			Analysis Date:	3/3/2015		SeqNo:	736964	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Hexanone	ND	0.50								
Methylene Chloride	ND	2.5								
Styrene	ND	0.50								
1,1,1,2-Tetrachloroethane	ND	0.50								
1,1,2,2-Tetrachloroethane	ND	0.50								
Tetrachloroethene (PCE)	ND	0.50								
trans-1,2-DCE	ND	0.50								
trans-1,3-Dichloropropene	ND	0.50								
1,1,1-Trichloroethane	ND	0.50								
1,1,2-Trichloroethane	ND	0.50								
Trichloroethene (TCE)	ND	0.50								
Trichlorofluoromethane	ND	0.50								
1,2,3-Trichloropropane	ND	0.50								
Vinyl chloride	ND	0.50								
mp-Xylenes	ND	1.0								
o-Xylene	ND	0.50								
Acrolein	ND	0.50								
Acrylonitrile	ND	0.50								
Bromochloromethane	ND	0.50								
Iodomethane	ND	0.50								
trans-1,4-Dichloro-2-butene	ND	0.50								
Vinyl acetate	ND	0.50								

Sample ID	LCS-R24992		SampType:	LCS		TestCode:	EPA Method 8260B: VOLATILES			
Client ID:	LCSW		Batch ID:	R24992		RunNo:	24992			
Prep Date:			Analysis Date:	3/3/2015		SeqNo:	736965	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	9.8		10.00	0	98.4	80	120			
Toluene	10		10.00	0	99.8	80	120			
Ethylbenzene	10		10.00	0	101	80	120			
Chlorobenzene	9.8		10.00	0	98.5	80	120			
1,1-Dichloroethene	9.2		10.00	0	91.7	80	120			
Tetrachloroethene (PCE)	9.8		10.00	0	98.4	80	120			
Trichloroethene (TCE)	9.6		10.00	0	96.1	80	120			
o-Xylene	10		10.00	0	104	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		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1502959

25-Mar-15

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

Sample ID	MB-R24992		SampType:	MBLK		TestCode:	EPA 8270C: Semivolatiles/Mod			
Client ID:	PBW		Batch ID:	R24992		RunNo:	24992			
Prep Date:			Analysis Date:	3/2/2015		SeqNo:	736968	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acetophenone	ND	10								
1-Methylnaphthalene	ND	10								
2,3,4,6-Tetrachlorophenol	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
2,4-Dichlorophenol	ND	10								
2,4-Dimethylphenol	ND	10								
2,4-Dinitrophenol	ND	10								
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
2-Nitroaniline	ND	10								
2-Nitrophenol	ND	10								
3,3'-Dichlorobenzidine	ND	10								
3-Nitroaniline	ND	10								
4,6-Dinitro-2-methylphenol	ND	10								
4-Bromophenyl phenyl ether	ND	10								
4-Chloro-3-methylphenol	ND	5.0								
4-Chloroaniline	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
4-Nitroaniline	ND	10								
4-Nitrophenol	ND	10								
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Anthracene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benz(a)anthracene	ND	0.10								
Benzo(a)pyrene	ND	0.10								
Benzo(b)fluoranthene	ND	0.10								
Benzo(k)fluoranthene	ND	0.10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	5.0								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1502959

25-Mar-15

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

Sample ID MB-R24992	SampType: MBLK			TestCode: EPA 8270C: Semivolatiles/Mod						
Client ID: PBW	Batch ID: R24992			RunNo: 24992						
Prep Date:	Analysis Date: 3/2/2015			SeqNo: 736968		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chrysene	ND	0.10								
Dibenz(a,h)anthracene	ND	0.10								
Dibenzofuran	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	1.0								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Isophorone	ND	10								
Naphthalene	ND	10								
Nitrobenzene	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
Pentachlorophenol	ND	10								
Phenanthrene	ND	1.0								
Phenol	ND	5.0								
Pyrene	ND	10								
1,2,4,5-Tetrachlorobenzene	ND	10								

Sample ID LCS-R24992	SampType: LCS			TestCode: EPA 8270C: Semivolatiles/Mod						
Client ID: LCSW	Batch ID: R24992			RunNo: 24992						
Prep Date:	Analysis Date: 3/2/2015			SeqNo: 736969		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	5.6		5.000	0	112	49	134			
2-Chlorophenol	4.7		5.000	0	94.8	50	131			
4-Chloro-3-methylphenol	4.2		5.000	0	83.0	42	139			
4-Nitrophenol	2.8		5.000	0	56.8	19	137			
Acenaphthene	5.3		5.000	0	106	36	122			
Bis(2-ethylhexyl)phthalate	5.4		5.000	0	109	43	142			
N-Nitrosodi-n-propylamine	5.3		5.000	0	107	46	135			
Pentachlorophenol	4.0		5.000	0	79.4	22	138			
Phenol	4.1		5.000	0	81.2	45	134			
Pyrene	6.2		5.000	0	123	45	138			

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#: 1502959

25-Mar-15

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

Sample ID	MB-17887		SampType:	MBLK		TestCode:	EPA Method 7470: Mercury				
Client ID:	PBW		Batch ID:	17887		RunNo:	24523				
Prep Date:	2/25/2015		Analysis Date:	2/26/2015		SeqNo:	722178		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-17887			SampType:	LCS		TestCode:	EPA Method 7470: Mercury			
Client ID:	LCSW			Batch ID:	17887		RunNo:	24523			
Prep Date:	2/25/2015			Analysis Date:	2/26/2015		SeqNo:	722179		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.0051	0.00020	0.005000	0	102	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 Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1502959

25-Mar-15

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

Sample ID	MB-18037		SampType:	MBLK		TestCode:	MERCURY, TCLP				
Client ID:	PBW		Batch ID:	18037		RunNo:	24714				
Prep Date:	3/9/2015		Analysis Date:	3/10/2015		SeqNo:	728042		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.020									

Sample ID	LCS-18037			SampType:	LCS		TestCode:	MERCURY, TCLP			
Client ID:	LCSW			Batch ID:	18037		RunNo:	24714			
Prep Date:	3/9/2015			Analysis Date:	3/10/2015		SeqNo:	728043		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.020	0.005000	0	105	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 Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1502959

25-Mar-15

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

Sample ID MB-18024	SampType: MBLK		TestCode: EPA 6010B: Total Metals							
Client ID: PBW	Batch ID: 18024		RunNo: 24683							
Prep Date: 3/6/2015	Analysis Date: 3/7/2015		SeqNo: 727309		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Antimony	ND	0.050								
Arsenic	ND	0.020								
Barium	ND	0.020								
Beryllium	ND	0.0030								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.050								
Lead	ND	0.0050								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Selenium	ND	0.050								
Silver	ND	0.0050								
Thallium	ND	0.050								
Vanadium	ND	0.050								
Zinc	ND	0.020								

Sample ID LCS-18024	SampType: LCS		TestCode: EPA 6010B: Total Metals							
Client ID: LCSW	Batch ID: 18024		RunNo: 24683							
Prep Date: 3/6/2015	Analysis Date: 3/7/2015		SeqNo: 727310		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.48	0.020	0.5000	0	95.4	80	120			
Antimony	0.52	0.050	0.5000	0	104	80	120			
Arsenic	0.47	0.020	0.5000	0	93.5	80	120			
Barium	0.49	0.020	0.5000	0	97.1	80	120			
Beryllium	0.50	0.0030	0.5000	0	99.1	80	120			
Cadmium	0.48	0.0020	0.5000	0	96.1	80	120			
Chromium	0.49	0.0060	0.5000	0	97.8	80	120			
Cobalt	0.49	0.0060	0.5000	0	97.4	80	120			
Copper	0.52	0.0060	0.5000	0	105	80	120			
Iron	0.51	0.050	0.5000	0	102	80	120			
Lead	0.48	0.0050	0.5000	0	97.0	80	120			
Manganese	0.49	0.0020	0.5000	0	98.6	80	120			
Nickel	0.49	0.010	0.5000	0	98.6	80	120			
Selenium	0.49	0.050	0.5000	0	98.0	80	120			
Silver	0.10	0.0050	0.1000	0	102	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 Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1502959

25-Mar-15

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

Sample ID	LCS-18024		SampType: LCS		TestCode: EPA 6010B: Total Metals					
Client ID:	LCSW		Batch ID: 18024		RunNo: 24683					
Prep Date:	3/6/2015		Analysis Date: 3/7/2015		SeqNo: 727310		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Thallium	0.48	0.050	0.5000	0	97.0	80	120			
Vanadium	0.49	0.050	0.5000	0	98.2	80	120			
Zinc	0.48	0.020	0.5000	0	95.1	80	120			

Sample ID	1502959-001BMS		SampType: MS		TestCode: EPA 6010B: Total Metals					
Client ID:	WDW-1,2,&3 Effluen		Batch ID: 18050		RunNo: 24731					
Prep Date:	3/9/2015		Analysis Date: 3/10/2015		SeqNo: 728505		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	76	1.0	50.00	25.84	101	75	125			
Potassium	84	1.0	50.00	34.66	98.8	75	125			

Sample ID	1502959-001BMSD		SampType: MSD		TestCode: EPA 6010B: Total Metals					
Client ID:	WDW-1,2,&3 Effluen		Batch ID: 18050		RunNo: 24731					
Prep Date:	3/9/2015		Analysis Date: 3/10/2015		SeqNo: 728506		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	75	1.0	50.00	25.84	98.6	75	125	1.52	20	
Potassium	86	1.0	50.00	34.66	102	75	125	1.89	20	

Sample ID	MB-18050	SampType: MBLK		TestCode: EPA 6010B: Total Metals						
Client ID:	PBW	Batch ID: 18050		RunNo: 24731						
Prep Date:	3/9/2015	Analysis Date: 3/10/2015		SeqNo: 728508		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID	LCS-18050		SampType: LCS		TestCode: EPA 6010B: Total Metals					
Client ID:	LCSW		Batch ID: 18050		RunNo: 24731					
Prep Date:	3/9/2015		Analysis Date: 3/10/2015		SeqNo: 728509		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	57	1.0	50.00	0	113	80	120			
Magnesium	56	1.0	50.00	0	113	80	120			
Potassium	53	1.0	50.00	0	105	80	120			
Sodium	58	1.0	50.00	0	116	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 | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1502959

25-Mar-15

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

Sample ID	MB-R24992		SampType:	MBLK		TestCode:	CYANIDE, Reactive				
Client ID:	PBW		Batch ID:	R24992		RunNo:	24992				
Prep Date:			Analysis Date:	3/5/2015		SeqNo:	736973		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Cyanide, Reactive	ND	1.00									

Sample ID	LCS-R24992		SampType: LCS		TestCode: CYANIDE, Reactive					
Client ID:	LCSW		Batch ID: R24992		RunNo: 24992					
Prep Date:			Analysis Date: 3/5/2015		SeqNo: 736974		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cyanide, Reactive	0.480		0.5000	0	96.0	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 Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1502959

25-Mar-15

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

Sample ID	MB-R24992		SampType:	MBLK		TestCode:	SULFIDE, Reactive				
Client ID:	PBW		Batch ID:	R24992		RunNo:	24992				
Prep Date:			Analysis Date:	3/3/2015		SeqNo:	736976		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Reactive Sulfide	ND	1.0									

Sample ID	LCS-R24992		SampType: LCS		TestCode: SULFIDE, Reactive					
Client ID:	LCSW		Batch ID: R24992		RunNo: 24992					
Prep Date:			Analysis Date: 3/3/2015		SeqNo: 736977		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Reactive Sulfide	0.20		0.2000	0	100	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1502959

25-Mar-15

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

Sample ID mb-1	SampType: MBLK			TestCode: SM2320B: Alkalinity						
Client ID: PBW	Batch ID: R24621			RunNo: 24621						
Prep Date:	Analysis Date: 3/3/2015			SeqNo: 725674		Units: mg/L CaCO3				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20								

Sample ID lcs-1	SampType: LCS			TestCode: SM2320B: Alkalinity						
Client ID: LCSW	Batch ID: R24621			RunNo: 24621						
Prep Date:	Analysis Date: 3/3/2015			SeqNo: 725675		Units: mg/L CaCO3				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79	20	80.00	0	99.2	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1502959

25-Mar-15

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

Sample ID	1502959-001ADUP	SampType:	DUP	TestCode:	Specific Gravity					
Client ID:	WDW-1,2,&3 Effluen	Batch ID:	R24648	RunNo:	24648					
Prep Date:		Analysis Date:	3/5/2015	SeqNo:	726439	Units:				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Specific Gravity	0.9999	0						0.220	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1502959

25-Mar-15

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

Sample ID	MB-17895		SampType: MBLK		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW		Batch ID: 17895		RunNo: 24545					
Prep Date:	2/25/2015		Analysis Date: 2/27/2015		SeqNo: 722782		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-17895		SampType:	LCS		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	LCSW		Batch ID:	17895		RunNo:	24545				
Prep Date:	2/25/2015		Analysis Date:	2/27/2015		SeqNo:	722783		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	1010	20.0	1000	0	101	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
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.halleenvironmental.com

Sample Log-In Check List

Client Name: NAVAJO REFINING CO

Work Order Number: 1502959

RcptNo: 1

Received by/date:

Ag 02/24/15

Logged By: Ashley Gallegos

2/24/2015 8:00:00 AM

Ag

Completed By: Ashley Gallegos

2/24/2015 9:49:07 AM

Ag

Reviewed By:

CS 02/24/15

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

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

Yes ☒

No ☐

NA ☐

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

Yes ☒

No ☐

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

Yes ☒

No ☐

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

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☒

No ☒

No VOA Vials ☐

11. Were any sample containers received broken?

Yes ☐

No ☒

of preserved bottles checked for pH:

2 2
(≤ 2 or > 12 unless noted)

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

Adjusted? *NA*

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

(If no, notify customer for authorization.)

Checked by: *JA*

Special Handling (if applicable)

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

Yes ☐

No ☐

NA ☒

Person Notified:

Date

By Whom:

Via

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	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#: 575-748-5451

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

☐ Standar ☐ Rush

Project Name:

Quarterly WDW-1, 2, & 3 Inj Well

Project #: P.O. # 167796

Project Manager:

Dan Crawford

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

Container Type and #

Preservative Type

HEAL No.

1502959

-001

-001

-003

-00

-00

-00

-00

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-00

Received by:

Date

Time

Relinquished by: Elizabeth Salsberry

Time: 0830

Date: 2/23/15

Relinquished by:

Date

Time

Remarks: Report these results separately from all other

Chain of Custody kits provided.

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 report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Specific Gravity, HCO₃, CO₃, Cl,

SO₄, TDS, pH, cond., Fl,

Cation/anion bal., Br, Eh/40

VOCs/SW-846 Method 8260C

(see attached list 'VOCs')

SVOCs/SW-846 Method 8270D

(see attached list 'SVOCs')

R,C,l/40 CFR part 261

Metals/SW-846 Mthd 6010,

7470 (see attached list 'Metals')

Ca, K, Mg, Na/40 CFR 136.3

TCLP Metals, only /40 CFR Part

261/ SW-846 Method 1311



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

Injection Well Quarterly Sample Details Attachment



Sample Type	Physical Property
Grab	Solid <input type="checkbox"/>
Time Weighted Composite	Liquid <input checked="" type="checkbox"/>
Flow Weighted Composite	Sludge <input type="checkbox"/>

Sample Type
Grab
Time Weighted Composite
Flow Weighted Composite

Type of Sampler
Directly to sample jars

Parts / Sample Intervals
One

Outfall / Sample Location	Waste water effluent pumps to injection wells.
	<input type="checkbox"/> P-849 sample point (first from east) <input type="checkbox"/> P-856 sample point (third from east)
	<input checked="" type="checkbox"/> P-854 sample point (second from east) <input type="checkbox"/> P-857 sample point (fourth from east)

Container	Size	Material	# of Containers	Preservatives						Analysis and/or Method Requested
				Neat (None)	HCL	HNO3	H2SO4	NaOH	Na2S2O3	
1			3	X			X			Specific Gravity, HCO3, CO3, Cl, SO4, TDS, pH, cond., FI, Cation/anion bal., Br, Eh/40 CFR 136.3
2			1			X				VOCs/SW-846 Method 8260C (see attached list 'VOCs')
3			3		X					SVOCs/SW-846 Method 8270D (see attached list 'SVOCs')
4			2	X						R,C,140 CFR part 261
5			2	X						Metals/SW-846 Mthd 6010, 7470 (see attached list 'Metals')
6			2	X						Ca, K, Mg, Na/40 CFR 136.3
7			1	X						TCLP Metals, only /40 CFR Part 261/ SW-846 Method 1311
8										
9										
10										

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

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

Field Data (Weather, Observations, Etc): 2/23/2015 08:35 Tmp. 19.4, Humidity 100%, Wind Dir. NNE, Wind Speed 11.5 mph, Conditions light snow

Date and Time:

Field Temp. 95.6°F Field pH 6.86

Classification	Analyte name ⁽¹⁾	Method	Units	RL
Inorganics	Mercury	SW-846 Method 7470		
Inorganics	Arsenic	SW-846 Method 6010		
Inorganics	Silver	SW-846 Method 6010		
Inorganics	Aluminum	SW-846 Method 6010		
Inorganics	Barium	SW-846 Method 6010		
Inorganics	Beryllium	SW-846 Method 6010		
Inorganics	Calcium	SW-846 Method 6010		
Inorganics	Cadmium	SW-846 Method 6010		
Inorganics	Cobalt	SW-846 Method 6010		
Inorganics	Chromium	SW-846 Method 6010		
Inorganics	Copper	SW-846 Method 6010		
Inorganics	Iron	SW-846 Method 6010		
Inorganics	Mercury	SW-846 Method 6010		
Inorganics	Potassium	SW-846 Method 6010		
Inorganics	Magnesium	SW-846 Method 6010		
Inorganics	Manganese	SW-846 Method 6010		
Inorganics	Sodium	SW-846 Method 6010		
Inorganics	Nickel	SW-846 Method 6010		
Inorganics	Lead	SW-846 Method 6010		
Inorganics	Antimony	SW-846 Method 6010		
Inorganics	Selenium	SW-846 Method 6010		
Inorganics	Thallium	SW-846 Method 6010		
Inorganics	Vanadium	SW-846 Method 6010		
Inorganics	Zinc	SW-846 Method 6010		

** dilute elements only if necessary

⁽¹⁾ 23 TAL Metals



Attachment 2

EP Background Soil Statistical
Evaluation Memo



ARCADIS U.S., Inc.
100 East Campus View Blvd.
Suite 200
Columbus
Ohio 43235
Tel 614 985 9100
Fax 614 985 9170

MEMO

To:
Karel Schnebele

Copies:
Pam Krueger

From:
Mark Lupo

A handwritten signature in blue ink, appearing to read "mjl", is placed over the printed name "Mark Lupo".

Date:
August 14, 2013

ARCADIS Project No.:
TX000864.0004

Subject:
Statistical Determination of Background Concentrations in Soil, Navajo Refinery,
Artesia, New Mexico.

Soil borings were advanced in four designated background soil areas surrounding the Evaporation Ponds near the Navajo Refinery in Artesia, New Mexico in order to determine the background concentrations of key constituents in soil. The data were statistically analyzed in order to calculate values representative of naturally occurring background concentrations. In this memo, the method and results of these calculations are presented.

Location of the Soil Borings

Four areas were designated as "background soil areas" in which soil borings were advanced for collecting background samples. The areas were selected to be representative of native soils similar to those encountered both in the Refinery and in the Evaporation Ponds. However, the four areas were also selected in locations that would not be expected to have impacts from refinery operations or other potential hydrocarbon impacts. Three borings were advanced in each of the areas, designated BG-01 to BG-12. Two samples were collected for analysis from each boring. The first sample was collected one foot below ground surface (bgs) in a soil identified in the boring logs as sandy silt. The second sample was collected within the first foot after encountering a soil identified as silty clay in the boring logs. Table 1 lists the borings, the depths of the samples, and the background areas from which they were obtained.

List of Chemical Constituents

Statistical analysis was conducted for the following thirteen metallic constituents: arsenic, barium, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, selenium, vanadium, and zinc. Three ions were also selected for statistical analysis due to interest to the project team: chloride, fluoride, and sulfate. Of the metals for which data were available, only silver lacked a sufficient number of detections to allow parametric testing. Silver was detected only once out of 24 samples, in BG-05 at a depth of one foot bgs. Eleven of the metals were detected in 24 of 24 samples, as were the ions. Selenium had one non-detection, and mercury had three. The analytical data used in the statistical analysis are presented in Table 1.

Statistical Test Method

Representative background concentrations of the COCs were determined by constructing a statistical interval that would capture 95 percent (%) of the background values with 95% confidence. In statistics, this interval is called a Tolerance Interval, and its upper limit is called the Upper Tolerance Limit (UTL). Because of the application and the COCs, the interval was single-tailed. In this memorandum, all UTLs are "95/95 UTLs", that is, they are the upper limit of an interval designed to capture 95% of the background values with 95% confidence.

A UTL can be computed for a given COC from the mean of the background values (\bar{x}) and the standard deviation (S) using the following parametric formula:

$$UTL = \bar{x} + S \kappa$$

The value of the parameter κ is chosen based upon the level of confidence, the coverage, and the number of points in the data set. The appropriate values of κ can be found in a table provided by the United States Environmental Protection Agency (USEPA) in its 2009 Unified Guidance document for groundwater statistics. (Table 17-3, USEPA, 2009). These values are also available in the statistics literature. In computing the UTLs in this memorandum, we used the table provided by the USEPA (USEPA, 2009).

There are requirements for the use of the above equation. The data must be independent, normally distributed, and free of severe outliers. The distribution of the data points can be tested using a normality test. The Shapiro-Wilk test was run at a 5% level of significance. The Shapiro-Wilk Test is a robust test and is recommended in Unified Guidance (USEPA, 2009). If the data set failed the normality test, a transformation was made and the normality test was repeated. The transformations were made in the following order: square root, cube root, and logarithmic (Box and Cox, 1964). In the event that the data could not be normalized, the parametric equation above could not be used and a non-parametric method for determining the UTL was used. Non-parametric methods are not discussed further in this memo, because their use was not necessary, as discussed below. In addition to testing for normality, the Dixon

test was applied to identify any statistical outliers that might be present. The Dixon test was run at a 5% level of significance. Only one outlier was identified (for cadmium) and its handling is discussed below where the cadmium results are presented.

Environmental data often include non-detected results. Statisticians refer to this condition as censorship. If the detection rate is 85% or better, non-detections were replaced by one half of the detection limit. If the detection rate had been less than 85% for any data set, procedures specified in Unified Guidance (USEPA, 2009) would have been applied. These measures were not needed, because none of the data sets for which UTLs were computed had detection rates less than 85%.

Because the data were collected from two distinct soil types, it was of interest to see if the background data points were of the same statistical population. Toward that end, the data collected from sandy silt and silty clay were compared using a parametric Student's t-test at 95% confidence. If the test identified a statistical difference between the two groups, separate UTLs were computed for each of the two soil types.

Laboratories indicate the concentration as "estimated" and place a "J-flag" if a COC is detected at a concentration higher than the Method Detection Limit (MDL), but lower than the Practical Quantitation Limit (PQL), sometimes called a "reporting limit". All values that were J-flagged were used in the computation of UTLs as if they were quantitative.

Results

The results of the UTL calculations are summarized in Table 2. Each of the sixteen COCs for which a UTL was computed is discussed in a separate section below. In these sections, distribution determinations and outlier tests are discussed. Statistical independence was assumed, since it appears that an effort was made to identify the background soil areas. It is also clear that no two data points came from the same location, but that the twelve borings were distinct.

Arsenic

Arsenic was detected in all of the 24 background samples. The data set was tested and found to be normally distributed and free of statistical outliers. The data had an average value of 2.18 mg/kg. The average concentrations of arsenic in the two soil types were 2.11 mg/kg and 2.24 mg/kg for the sandy silt and the silty clay, respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 3.92 mg/kg. This means that 95% of soil samples can be expected to have a naturally occurring arsenic concentration of 3.92 mg/kg or less with 95% confidence. Thus 3.92 mg/kg can be adopted as the background concentration for arsenic in soil at this site.

Barium

Barium was detected in all of the 24 background samples. The data set was tested and found to be normally distributed and free of statistical outliers. The data had an average value of 144 mg/kg. The average concentrations of barium in the two soil types were 158 mg/kg and 130 mg/kg for the sandy silt and the silty clay, respectively. The t-test indicated that barium was statistically elevated in the sandy silt. The parametric analysis of variance (ANOVA) did not indicate a difference in the populations, but its non-parametric counterpart, the Kruskal-Wallis test did. Therefore the barium data for sandy silt and silty clay were treated as separate statistical populations. Both data sets were normally distributed. No statistical outliers were identified in either group. The sandy silt data had a UTL of 252 mg/kg. The silty clay had a UTL of 227 mg/kg. Thus, a soil sample collected from sandy silt can be expected to have a naturally occurring barium concentration of 252 mg/kg or less. In like manner, a sample collected from silty clay can be expected to have a naturally occurring barium concentration of 227 mg/kg or less.

Cadmium

All but one of the cadmium analyses resulted in a concentration that was below the reporting limit. Cadmium was detected in all 24 samples at concentrations above the method detection limit. Although the data is thus 96% composed of J-flagged data, the data have a discernable distribution. The full data set failed the Shapiro-Wilk test of normality. Successive transformations were undertaken using the method of Box and Cox (1964). The data were found to be lognormally distributed. One statistical outlier was identified, which was the result from BG-12 at one foot bgs. Usually, that data point would be set aside. It would be compelling to do so, because the other 23 data points would be normally distributed (with no other outliers). However, removing the outlier from the calculation would also remove the only point that was not J-flagged.

The decision to include outlier was based upon the following reasoning. First, there is no evidence to suggest that the measurement of the cadmium concentration at BG-12 was the result of an error on the part of field personnel or the laboratory. On the contrary, this concentration of 0.465 mg/kg is believable when compared to the other two samples collected in sandy silt in Background Soil Area 4. BG-11 had the second highest concentration of 0.242 mg/kg. BG-10 had 0.184 mg/kg, which was also greater than the arithmetic mean for the sandy silt. It is therefore more likely that the high concentration is an accurate measurement rather than a sampling or analytical error. The present view of the environmental statistics community is to retain data points rather than dismiss them unless there is evidence of some sort of error or distortion in the data point. The evidence points in the opposite direction. Second, the data set is lognormally distributed with the data point from BG-12 included. That a known distribution is exhibited supports the view that the data point belongs to the population. Third, the twelve data points of each of the sandy silt and silty clay subsets pass the Shapiro-Wilk test when lognormally transformed. Finally, as stated already, the data point in question is the only member of the data set that is not flagged as estimated. For all of these reasons, the outlier was retained.

Whenever a data set is not normally distributed, the arithmetic mean may not be the best estimate of central tendency. It is more accurate to compute the mean in transformed space and back-transform the result. In lognormally distributed data sets, such a measure is known as the geometric mean. For the complete cadmium data set, the geometric mean was 0.139 mg/kg. The geometric mean of the sandy silt was 0.153 mg/kg; the geometric mean of the silty clay was 0.126 mg/kg. The parametric t-test was performed on the log-transformed data and indicated that the data from the two soil types were a single population. The UTL was computed and back-transformed to be 0.339 mg/kg. This means that a soil sample could be expected to have a naturally occurring cadmium concentration of 0.339 mg/kg or less.

Chromium

Chromium was detected in all 24 of the background soil samples. The data set was tested and found to be normally distributed and free of statistical outliers. The data had an average value of 10.0 mg/kg. The average concentrations of chromium in the two soil types were nearly the same: 10.03 mg/kg and 9.97 mg/kg for the sandy silt and the silty clay respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 18.8 mg/kg. This means that a soil sample could be expected to have a naturally occurring chromium concentration of 18.8 mg/kg or less.

Copper

Copper was detected in all 24 of the background soil samples. The data set was tested and found to be normally distributed and free of statistical outliers. The data had an average value of 6.62 mg/kg. The average concentrations of copper in the two soil types were nearly the same: 6.64 mg/kg and 6.61 mg/kg for the sandy silt and the silty clay respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 12.4 mg/kg. This means that a soil sample could be expected to have a naturally occurring copper concentration of 12.4 mg/kg or less.

Iron

Iron was detected in all 24 of the background soil samples. The data set was tested and found to be normally distributed and free of statistical outliers. The data had an average value of 9,242 mg/kg. The average concentrations of iron in the two soil types were nearly the same: 9,335 mg/kg and 9,149 mg/kg for the sandy silt and the silty clay respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 17,344 mg/kg. This means that a soil sample could be expected to have a naturally occurring iron concentration of 17,344 mg/kg or less.

Lead

Lead was detected in all 24 of the background soil samples. The data set was tested and found to be normally distributed and free of statistical outliers. The data had an average value of 6.66 mg/kg. The

average concentrations of lead in the two soil types were 6.94 mg/kg and 6.38 mg/kg for the sandy silt and the silty clay respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 12.1 mg/kg. This means that a soil sample could be expected to have a naturally occurring lead concentration of 12.1 mg/kg or less.

Manganese

Manganese was detected in all 24 of the background soil samples. The data set was tested and found to be normally distributed and free of statistical outliers. The data had an average value of 305 mg/kg. The average concentrations of manganese in the two soil types were 309 mg/kg and 301 mg/kg for the sandy silt and the silty clay respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 488 mg/kg. This means that a soil sample could be expected to have a naturally occurring manganese concentration of 488 mg/kg or less.

Mercury

The mercury data set contained 21 detections and 3 non-detections. The detection rate of 87.5% is greater than the 85% threshold, below which it would no longer be acceptable to replace the non-detections with one half of the method detection limit. With these substitutions, the data were found to be lognormally distributed. The geometric mean, the relevant measure of the mean of a lognormally distributed data set, was 0.00210 mg/kg. The geometric mean of the mercury concentration in sandy silt was 0.00195 mg/kg; the geometric mean in the silty clay was 0.00225 mg/kg. The parametric t-test was performed on the log-transformed data and indicated that the data from the two soil types were a single population. The UTL was computed and back-transformed to be 0.0302 mg/kg. This means that a soil sample could be expected to have a naturally occurring mercury concentration of 0.0302 mg/kg or less.

Nickel

Nickel was detected in all 24 of the background soil samples. The data set was tested and found to be normally distributed and free of statistical outliers. The data had an average value of 9.15 mg/kg. The average concentrations of nickel in the two soil types were nearly the same: 9.25 mg/kg and 9.05 mg/kg for the sandy silt and the silty clay respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 16.2 mg/kg. This means that a soil sample could be expected to have a naturally occurring nickel concentration of 16.2 mg/kg or less.

Selenium

The selenium data set contained 23 detections out of 24 data points. The detection rate of 96% is great enough to justify replacing the non-detection with one half of the method detection limit. With this substitution, the data were statistically analyzed. The data set was found to be normally distributed and

free of outliers. The selenium data had an average value of 0.378 mg/kg. The average concentrations of selenium in the two soil types were 0.391 mg/kg and 0.365 mg/kg for the sandy silt and the silty clay respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 0.682 mg/kg. This means that a soil sample could be expected to have a naturally occurring selenium concentration of 0.682 mg/kg or less.

Vanadium

Vanadium was detected in all 24 of the background soil samples. The data set was tested and found to be normally distributed and free of statistical outliers. The data had an average value of 15.6 mg/kg. The average concentrations of vanadium in the two soil types were 14.6 mg/kg and 16.6 mg/kg for the sandy silt and the silty clay respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 28.3 mg/kg. This means that a soil sample could be expected to have a naturally occurring vanadium concentration of 28.3 mg/kg or less.

Zinc

Zinc was detected in all 24 of the background soil samples. The data set was tested and found to be normally distributed and free of statistical outliers. The data had an average value of 25.1 mg/kg. The average concentrations of zinc in the two soil types were 26.1 mg/kg and 24.1 mg/kg for the sandy silt and the silty clay respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 46.6 mg/kg. This means that a soil sample could be expected to have a naturally occurring zinc concentration of 46.6 mg/kg or less.

Chloride

Chloride was detected in all 24 of the background soil samples. The data set was tested and found to be normally distributed and free of statistical outliers. The data had an average value of 1,952 mg/kg. The average concentrations of chloride in the two soil types were 1,704 mg/kg and 2,200 mg/kg for the sandy silt and the silty clay respectively. The 24 data points were found to be a single population based upon a parametric t-test. The UTL was computed to be 5,264 mg/kg. This means that a soil sample could be expected to have a naturally occurring chloride concentration of 5,264 mg/kg or less.

Fluoride

Fluoride was detected in all of the 24 background soil samples. The data were found to be cube-root normally distributed. The relevant measure of the mean of a cube-root normal data set is to compute the mean of the cube roots of the data points and cube the result. This value was 3.56 mg/kg. The cube-root corrected mean of the fluoride concentration in sandy silt was 2.80 mg/kg; for the silty clay it was 4.45 mg/kg. The parametric t-test was performed on the cube-root transformed data and indicated that the

fluoride data from the two soil types were a single population. The UTL was computed and back-transformed to be 17.9 mg/kg. This means that a soil sample could be expected to have a naturally occurring fluoride concentration of 17.9 mg/kg or less.

Sulfate

Sulfate data was detected in all of the 24 background soil samples. The data were found to be cube-root normally distributed. The cube-root corrected mean was 1,464 mg/kg. The cube-root corrected mean of the sulfate concentration in sandy silt was 553 mg/kg; for the silty clay it was 3,113 mg/kg. The parametric t-test was performed on the cube-root transformed data and indicated that sulfate was statistically elevated in the silty clay compared to the sandy silt. The parametric analysis of variance (ANOVA) and its non-parametric counterpart, the Kruskal-Wallis test concurred. Therefore the sulfate data for sandy silt and silty clay were treated as separate statistical populations. Both data sets were cube-root normally distributed. No statistical outliers were identified in either group. The sandy silt data had a UTL of 9,336 mg/kg. The silty clay had a UTL of 21,620 mg/kg. Thus, a soil sample collected from sandy silt could be expected to have a naturally occurring sulfate concentration of 9,336 mg/kg or less. In like manner, a sample collected from silty clay could be expected to have a naturally occurring sulfate concentration of 21,260 mg/kg or less.

Discussion

It has been stated above that the tolerance intervals from which the UTLs were computed were designed with 95% coverage. By definition, 5% of all background samples will have concentrations that exceed the UTLs. From a practical standpoint, this means that if a soil sample has a concentration that is less than or equal to the UTL, it can be considered to be background, but the converse is not true. If a sample exceeds the UTL it might indicate contamination, but this is not necessarily the case. In order to categorize such a sample as “above background”, another line of evidence is necessary. It may be convenient to simply judge samples as “background” and “above background” on the basis of these UTLs, but in practice, one would be wrong 5% of the time. Stated another way, a suite of samples that were truly from the background and were compared to the UTLs presented in Table 2 would exceed the UTLs and be falsely identified as “above background” 5% of the time. In summary, a thorough interpretation of the field data must be made in view of the definition of the coverage of the UTL. To simply classify all concentrations that exceed the UTL as contaminated is a conservative assumption.

Conclusion

The background soil data were statistically analyzed for sixteen constituents, including thirteen metals and three ions. After testing to be sure the concentrations of the constituent collected from two soil types were a single population, UTLs were computed for the combined data set or for the subsets for the soil types, as appropriate. Procedures were followed to correctly identify the distribution of the data and to account

for outliers. The UTLs are presented in the text of this memo and in a summary table (Table 2). The UTLs were computed for 95% coverage and with 95% confidence. For a given constituent, 95% of background soil samples can be expected to have a concentration at or less than the UTL presented in this memo with 95% confidence. If a soil sample collected in the Refinery area or near the Evaporation Ponds had a concentration less than or equal to its UTL, that concentration of that constituent could be considered to be naturally occurring.

References

Box G.E.P. and D.R. Cox. 1964. An analysis of transformations (with discussion). *Journal of Royal Statistical Society Series B*, 26, 211-252.

United States Environmental Protection Agency. 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance. Office of Resource Conservation and Recovery, Program Implementation and Information Division, U.S. Environmental Protection Agency. EPA 530-R-09-007. March, 2009.



Table 1. Data from Background Soil Borings
Navajo Refining Company, Artesia Refinery, New Mexico

		Depth	Arsenic	Barium	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Mercury		
Boring	Area	feet	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		
BG-01	1	1	1.07	97.2	0.0964	J	3.70	2.25	3,740	3.00	191	0.00048	U
BG-01	1	5	2.12	144	0.0955	J	8.65	6.98	8,940	6.57	348	0.00157	J
BG-02	1	1	1.12	129	0.129	J	5.56	3.21	5,210	3.99	204	0.00121	J
BG-02	1	5	2.75	176	0.139	J	13.8	9.59	12,700	8.77	371	0.00448	
BG-03	1	1	2.28	186	0.131	J	10.9	6.44	10,400	6.62	344	0.00155	J
BG-03	1	6	2.88	162	0.198	J	16.9	10.1	15,300	9.54	431	0.00274	J
BG-04	2	1	2.62	153	0.187	J	14.8	9.48	13,700	9.13	405	0.00580	
BG-04	2	3	1.61	85.6	0.123	J	8.02	4.86	6,370	4.00	178	0.00184	J
BG-05	2	1	1.99	150	0.163	J	8.82	7.34	7,600	7.66	268	0.0300	
BG-05	2	4	3.56	58.6	0.145	J	9.58	7.11	8,070	5.43	241	0.00199	J
BG-06	2	1	2.54	178	0.144	J	10.6	7.49	9,670	7.80	348	0.00574	
BG-06	2	4	2.36	88.6	0.140	J	8.96	5.81	7,130	5.51	266	0.00181	J
BG-07	3	1	0.93	103	0.0719	J	3.80	2.27	3,810	2.93	181	0.00048	U
BG-07	3	5	1.42	139	0.0884	J	6.67	4.42	6,550	4.57	244	0.00157	J
BG-08	3	1	1.92	167	0.132	J	8.99	6.31	8,000	5.83	299	0.00050	U
BG-08	3	4	1.88	145	0.104	J	8.47	5.71	8,230	5.98	261	0.00141	J
BG-09	3	1	1.94	214	0.120	J	9.45	5.51	9,090	6.11	328	0.00076	J
BG-09	3	4	1.24	129	0.0906	J	6.47	3.39	5,910	4.05	232	0.00192	J
BG-10	4	1	2.34	176	0.184	J	12.2	8.33	11,500	8.30	307	0.00314	J
BG-10	4	4	2.62	158	0.140	J	12.5	8.45	12,200	8.56	358	0.00545	
BG-11	4	1	2.58	166	0.242	J	11.4	8.89	11,000	9.50	384	0.00662	
BG-11	4	5	2.59	127	0.184	J	10.4	7.47	9,580	8.09	386	0.00537	
BG-12	4	1	4.04	179	0.465		20.1	12.1	18,300	12.4	445	0.00707	
BG-12	4	5	1.80	152	0.114	J	9.25	5.44	8,810	5.53	301	0.00108	J

Notes:

Area: The designated background soil area in which the boring was advanced.

mg/kg: Milligrams per kilogram.

J: Estimated value; the constituent was detected at a concentration between the method detection limit and the reporting limit.

U: Non-detection; the constituent was not detected above the method detection limit, the value shown on this table. One half the method detection limit was the value used in the statistical calculations.



Table 1. Data from Background Soil Borings
Navajo Refining Company, Artesia Refinery, New Mexico

		Depth	Nickel	Selenium	Silver	Vanadium	Zinc	Chloride	Fluoride	Sulfate			
Boring	Area	feet	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg			
BG-01	1	1	3.60	0.351	J	0.483	U	6.57	10.0	47.6	0.816	J	164
BG-01	1	5	9.51	0.394	J	0.457	U	13.6	22.0	1120	4.33		972
BG-02	1	1	5.02	0.170	U	0.468	U	8.72	15.0	14.7	0.388	J	87.8
BG-02	1	5	12.7	0.485		0.440	U	20.4	33.3	3550	3.43		2560
BG-03	1	1	10.5	0.354	J	0.456	U	17.0	26.7	5760	4.10		4390
BG-03	1	6	13.5	0.433	J	0.467	U	23.9	38.9	1720	1.40		1910
BG-04	2	1	12.8	0.576		0.433	U	19.8	36.9	2480	1.75		4890
BG-04	2	3	5.83	0.192	J	0.425	U	14.2	16.1	860	11.0		7830
BG-05	2	1	8.22	0.399	J	0.262	J	12.1	31.9	45.1	2.56		18.2
BG-05	2	4	7.95	0.394	J	0.488	U	27.6	23.8	1950	20.7		13500
BG-06	2	1	10.8	0.451		0.419	U	15.1	28.1	993	2.21		1080
BG-06	2	4	7.64	0.316	J	0.456	U	16.7	20.8	865	12.1		10600
BG-07	3	1	3.64	0.168	J	0.431	U	6.68	9.94	607	3.34		56.5
BG-07	3	5	6.82	0.270	J	0.472	U	10.9	17.1	3260	3.04		2960
BG-08	3	1	8.46	0.467	J	0.468	U	13.2	21.7	4150	11.1		1130
BG-08	3	4	8.51	0.381	J	0.438	U	13.2	21.3	3810	3.78		4260
BG-09	3	1	9.91	0.287	J	0.443	U	14.9	24.0	1180	6.6		834
BG-09	3	4	5.85	0.222	J	0.453	U	10.2	15.0	2080	3.38		960
BG-10	4	1	11.3	0.394	J	0.425	U	17.9	29.5	2530	2.14		198
BG-10	4	4	11.5	0.468	J	0.484	U	19.0	30.3	2280	3.16		1520
BG-11	4	1	11.6	0.509		0.462	U	16.3	30.8	955	5.03		364
BG-11	4	5	10.3	0.495		0.425	U	14.3	28.3	2960	1.01		1080
BG-12	4	1	15.2	0.654		0.438	U	26.9	49.0	1680	1.64		90.4
BG-12	4	5	8.48	0.330	J	0.388	U	14.6	22.5	1950	1.87		1480

Notes:

Area: The designated background soil area in which the boring was advanced.

mg/kg: Milligrams per kilogram.

J: Estimated value; the constituent was detected at a concentration between the method detection limit and the reporting limit.

U: Non-detection; the constituent was not detected above the method detection limit, the value shown on this table. One half the method detection limit was the value used in the statistical calculations.



**Table 2. Background Concentrations of Key Constituents in Soil
Navajo Refining Company, Artesia Refinery, New Mexico**

Constituent	Lithology	UTL mg/kg	Mean mg/kg	Distribution
Arsenic	All	3.92	2.18	Normal
Barium	Sandy silt	252	158	Normal
Barium	Silty clay	227	130	Normal
Cadmium	All	0.339	0.139	Lognormal
Chromium	All	18.8	10.0	Normal
Copper	All	12.4	6.62	Normal
Iron	All	17,344	9,242	Normal
Lead	All	12.1	6.66	Normal
Manganese	All	488	305	Normal
Mercury	All	0.0302	0.00210	Lognormal
Nickel	All	16.2	9.15	Normal
Selenium	All	0.682	0.378	Normal
Vanadium	All	28.3	15.6	Normal
Zinc	All	46.6	25.1	Normal
Chloride	All	5,264	1,952	Normal
Fluoride	All	17.9	3.56	Cube root
Sulfate	Sandy silt	9,336	533	Cube root
Sulfate	Silty clay	21,620	3,113	Cube root

Notes:

UTL: Upper tolerance limit, with 95% coverage and 95% confidence.

mg/kg: Milligrams per kilogram.

Mean: Not necessarily the arithmetic mean, but the mean computed according to the distribution indicated on this table and back-transformed. See text.



SUSANA MARTINEZ
Governor
JOHN A. SANCHEZ
Lieutenant Governor

**NEW MEXICO
ENVIRONMENT DEPARTMENT**

**2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.env.nm.gov**



RYAN FLYNN
Cabinet Secretary
BUTCH TONGATE
Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

August 4, 2015

Mr. Scott M. Denton
Environmental Manager
Navajo Refining Company, L.L.C.
P.O. Box 159
Artesia, New Mexico 88211-0159

**RE: DENIAL
“NO LONGER CONTAINED-IN” DETERMINATION FOR
CHARACTERIZATION OF SOIL EXCAVATED FROM TANK 815 RELEASE
NAVAJO REFINING COMPANY, L.L.C., ARTESIA REFINERY
EPA ID# NMD048918817
HWB-NRC-MISC**

Dear Mr. Denton:

The New Mexico Environment Department (NMED) has received Navajo Refining Company, L.L.C., Artesia Refinery's (the Permittee) *Characterization of Soil Excavated from Tank 815 Release*, dated July 23, 2015. On April 16, 2015, the Permittee notified NMED and the New Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division (OCD) that the sump located adjacent to Tank 815 had overflowed and that a water/diesel mixture from the sump had been released inside the containment area of the North Colony Landfarm (NCL), a hazardous waste management unit (HWMU).

Three roll-off containers were filled with excavated soil from the southeast quadrant of the containment area and one representative soil sample was collected from each roll-off container in May 2015 and submitted to a laboratory to characterize the soil for disposal. Historically, K048, K049, K051, and K052 listed RCRA hazardous wastes were applied to the NCL. Based on the analytical results of the soil samples, the Permittee is requesting a “no longer contained-in” determination from NMED to allow the excavated soil to be managed as nonhazardous waste.

The excavated soil meets New Mexico's residential soil screening levels (SSLs) for all analytes with the exception of benzo(a)anthracene and benzo(a)pyrene. However, benzo(a)anthracene and benzo(a)pyrene are below the industrial SSLs. Although the excavated soil is not a characteristically hazardous waste per 40 CFR Part 261 Subpart C, it is a K-Listed waste because chrysene and pyrene exceed the hazardous constituent standards as defined in Part 268.2(i) of the Land Disposal Restriction (LDR) Treatment Standards listed in 40 CFR Part 268.40 and the Universal Treatment Standards listed in 40 CFR Part 268.48 regulatory limits.

NMED has reviewed the Permittee's request and has determined that the excavated soil is a hazardous waste and does not meet applicable LDR standards. NMED hereby denies the Permittee's request for a "no longer contained-in" determination and must manage the excavated soil as hazardous waste and dispose of the excavated soil at an appropriate facility.

If you have any questions regarding this letter, please contact Leona Tsinnajinnie of my staff at (505) 476-6057.

Sincerely,

A handwritten signature in blue ink, appearing to read "John E. Kielling", with a small "for" written below it.

John E. Kielling
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
N. Dhawan, NMED HWB
K. Van Horn, NMED HWB
L. Tsinnajinnie, NMED HWB
C. Chavez, NMEMNRD OCD
M. Holder, Navajo Refining Company, L.L.C.
R. Combs, Navajo Refining Company, L.L.C., Artesia Refinery
P. Kruger, ARCADIS
L. King, EPA 6PD-N

File: Reading and NRC 2015, HWB-NRC-MISC



SUSANA MARTINEZ
Governor
JOHN A. SANCHEZ
Lieutenant Governor

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RYAN FLYNN
Cabinet Secretary
BUTCH TONGATE
Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

August 4, 2015

Mr. Scott M. Denton
Environmental Manager
Navajo Refining Company, L.L.C.
P.O. Box 159
Artesia, New Mexico 88211-0159

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“NO LONGER CONTAINED-IN” DETERMINATION FOR
CHARACTERIZATION OF SOIL EXCAVATED FROM TANK 815 RELEASE
NAVAJO REFINING COMPANY, L.L.C., ARTESIA REFINERY
EPA ID# NMD048918817
HWB-NRC-MISC**

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If you have any questions regarding this letter, please contact Leona Tsinnajinnie of my staff at (505) 476-6057.

Sincerely,

A handwritten signature in blue ink, appearing to read "John E. Kielling" with a stylized flourish at the end.

John E. Kielling
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
N. Dhawan, NMED HWB
K. Van Horn, NMED HWB
L. Tsinnajinnie, NMED HWB
C. Chavez, NMEMNRD OCD
M. Holder, Navajo Refining Company, L.L.C.
R. Combs, Navajo Refining Company, L.L.C., Artesia Refinery
P. Kruger, ARCADIS
L. King, EPA 6PD-N

File: Reading and NRC 2015, HWB-NRC-MISC

Chavez, Carl J, EMNRD

From: Combs, Robert <Robert.Combs@HollyFrontier.com>
Sent: Tuesday, April 21, 2015 4:22 PM
To: Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV
Cc: Denton, Scott; Schultz, Michele; Strange, Aaron; Orosco, Richard
Subject: Initial C-141 report - Diesel spill at T-815
Attachments: 2015-04-16 Initial C-141 Diesel spill at T-815.pdf

Carl and Leona,

Please see the attached C-141 form regarding the diesel spill at T-815 on 4/16/15. A Final C-141 form will be prepared once all field activities are complete.

Please contact me for any questions.

Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Form C-141
Revised August 8, 2011

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Navajo Refining Company, L.L.C.	Contact: Robert Combs
Address: 501 E. Main St., Artesia, NM 88210	Telephone No.: 575-746-5382
Facility Name: Navajo Refining Company, L.L.C.	Facility Type: Petroleum Refinery

Surface Owner: Navajo Refining Company, L.L.C.	Mineral Owner N/A	API No. N/A
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
-------------	---------	----------	-------	---------------	------------------	---------------	----------------	--------

Latitude Longitude

NATURE OF RELEASE


Type of Release: finished diesel/water	Volume of Release: > 25 bbls	Volume Recovered: 30 bbls
Source of Release: water draw/sump at T-815	Date and Hour of Occurrence: 04/16/15, Unknown time	Date and Hour of Discovery: 04/16/15 6:30 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? NM Oil Conservation Division Santa Fe- Left message to Carl Chavez NMED Hazardous Waste Bureau - Left message to Leona Tsinnajinnie	
By Whom? R. Combs	Date and Hour 04/16/15 ~13:00 - 15:00	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*
The water collection sump from T-815 overflowed during routine dewatering of the tank. The water draw valve was immediately closed upon discovery and a vacuum truck was sent to recover any free liquids. The recovered liquids were returned to the crude process. The cause of the incident is under investigation.

Describe Area Affected and Cleanup Action Taken.*
Pooled liquids removed by vacuum truck and absorbent pads were used to remove remaining hydrocarbons. Removal of the impacted soil from the spill will be collected in roll-off bins and characterized for disposal. Any additional corrective actions will be presented in a Final C-141 report including analytical reports, map markups, photos, and waste characterization and disposal records.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Robert Combs	Approved by Environmental Specialist:	
Title: Environmental Specialist	Approval Date:	Expiration Date:
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 4/21/15 Phone: 575-746-5382		

* Attach Additional Sheets If Necessary

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, April 21, 2015 9:36 AM
To: 'Combs, Robert'
Cc: Tsinnajinnie, Leona, NMENV; Griswold, Jim, EMNRD
Subject: RE: Initial C-141 report - Effluent Pipeline Leak 2015-04-12

Robert:

Received. OCD wants to make sure this properly cleaned up.

This is high Chloride and Sulfate containing fluids with other parameters of concern. Please note the depth to GW and make sure in your CA that the release is properly investigated (i.e., characterization 500 mg/kg Chloride to delineate horiz./vertical extent of release) and OCD expects to receive a remediation plan for final CA.

Thank you.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Drive, Santa Fe, New Mexico 87505
O: (505) 476-3490

E-mail: CarlJ.Chavez@State.NM.US

Web: <http://www.emnrd.state.nm.us/ocd/>

“Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?” To see how, please go to: “Pollution Prevention & Waste Minimization” at <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>



From: [REDACTED]
Sent: [REDACTED]
To: [REDACTED]
Cc: [REDACTED]
Subject: [REDACTED]

Carl and Leona,

Please see the attached C-141 form regarding the effluent pipeline leak on 4/12/15. A Final C-141 form will be prepared once all field activities are complete.

Please contact me for any questions.

Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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State of New Mexico
Energy Minerals and Natural Resources

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1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Navajo Refining Company, L.L.C.	Contact: Micki Schultz	
Address: 501 E. Main St., Artesia, NM 88210	Telephone No.: 575-746-5281	
Facility Name: Navajo Refining Company, L.L.C.	Facility Type: Petroleum Refinery	
Surface Owner: Navajo Refining Company, L.L.C.	Mineral Owner N/A	API No. N/A

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County

Latitude 32°51'0.32"N Longitude 104°20'20.03"W

NATURE OF RELEASE

Type of Release: Non-hazardous treated wastewater effluent	Volume of Release: > 25 bbls	Volume Recovered: 75 bbls
Source of Release: Small hole in pipeline approximately 3 miles east of Artesia	Date and Hour of Occurrence: 04/12/15, Unknown time	Date and Hour of Discovery: 04/12/15 10:30 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? NM Oil Conservation Division Santa Fe- Left message to Carl Chavez NM Oil Conservation Division Artesia - Left message, return call by Randy Dade NMED Hazardous Waste Bureau - Left message National Response Center - Incident report # 1113386	
By Whom? Ray Smalts	Date and Hour 04/12/15 ~13:15 - 13:30	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. None	
If a Watercourse was Impacted, Describe Fully.* N/A		
Describe Cause of Problem and Remedial Action Taken.* Pipeline leak was discovered during daily visual monitoring of the pipeline route. Wastewater effluent discharge pumps located at the refinery were shut down and a vacuum truck was dispatched to the scene to remove the water which had accumulated with rain water in a low-lying depression in the pipeline path across a field. The vacuumed water was returned to the refinery wastewater treatment unit.		
Describe Area Affected and Cleanup Action Taken.* Pooled water was removed by vacuum truck and the pipeline was repaired. Any additional corrective actions will be presented in a Final C-141 report including analytical reports, map markups, photos, and any waste disposal records.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		
Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Robert Combs	Approved by Environmental Specialist:	
Title: Environmental Specialist	Approval Date:	Expiration Date:
E-mail Address:	Conditions of Approval:	Attached <input type="checkbox"/>
Date:	Phone:	

* Attach Additional Sheets If Necessary

Chavez, Carl J, EMNRD

From: Krueger, Pamela <pam.krueger@arcadis-us.com>
Sent: Friday, December 12, 2014 4:24 PM
To: Tsinnajinnie, Leona, NMENV; Chavez, Carl J, EMNRD
Cc: Robert Combs; Turner, Maisha
Subject: Navajo Refinery - status report for Southwest Tank Farm release
Attachments: Figure1-Release Area.pdf; Figure2-InitialScreening.pdf; Figure3-SoilSamples.pdf; Table 1.pdf; Table 2.pdf

Leona and Carl - This email provides a status report for the release response within the Southwest Tank Farm at the Navajo Refinery in Artesia, NM. Please contact either me or Robert if you have questions.

Southwest Tank Farm Diesel Pipeline Leak Status Report

Identification and Notification

On July 15, 2014, initial notification was provided to OCD and NMED of a diesel release within the containment berms of the Southwest Tank Farm (Figure 1). Rainwater was present within the containment areas due to recent storms and the morning inspections identified diesel on top of the rainwater. The source of the release was determined to be a diesel suction line that penetrates the berm between Tanks 434 and Tanks 417, 418, and 419. The liquid was suctioned up via vacuum trucks and returned to the process at the crude tank. Approximately 700 barrels of diesel and rainwater was removed from the containment areas. Absorbent pads and socks were applied to the remaining areas where diesel could not be removed via vacuum truck.

Response Actions

The berm was removed on July 16, 2014 to locate the source of the leak in the piping. It was determined that multiple small holes were present on the underside of the diesel pipeline.

On July 17, 2014, a hand auger was used to evaluate the depth of impacted soil within the containment areas. A photoionization detector (PID) was used to assist in evaluating the soil impacts. Figure 2 shows the hand auger locations, depths of the hand auger borings, and the PID readings for each location.

Excavation of the surficial soils (3 to 6 inches) was initiated on July 17, 2014 from the area surrounding Tanks 434, 111, 112, and 113. Excavated soils were placed on protective sheeting, then transferred to rolloff bins for characterization prior to disposal. No excavation of soil was performed in the containment around Tanks 417, 418, and 419 due to the presence of active aboveground piping on all sides of this containment area, preventing access.

An initial grab sample was collected from the excavated soil on July 18, 2014. This initial grab sample was analyzed for total petroleum hydrocarbons (TPH) diesel range organics (DRO) and motor oil range organics (ORO), volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and total Resource Conservation and Recovery Act (RCRA) 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver). Table 1 provides a summary of the analytical results, which reflect typical diesel constituents.

On July 31, 2014, a representative composite sample of the excavated soil was collected and submitted for waste characterization sampling. The composite sample was analyzed using the toxicity characteristic leaching procedure (TCLP) for VOCs, SVOCs, and RCRA 8 metals. No detectable concentrations of these compounds were reported. Based on the analytical results, the impacted soil was characterized as non-hazardous waste and disposed of off-site.

The backfilling of the excavated area was completed on December 2, 2014 in order to allow access for continued refurbishing of Tank 434. Clean material was obtained and placed within the excavation.

In-Situ Treatment of Soil

A microbial agent (MicroBlaze™) was applied to the soil in both containment areas on July 18, 2014 in order to treat the soil impacts remaining in place. The material was applied using a mixture of approximately 6 percent (%) of MicroBlaze™ in water. The mixture was sprayed in a layer approximately ¼ to ½ inch in thickness. On July 19, 2014, a rainstorm occurred that resulted in standing water within the containment area. Throughout the following weeks, water was applied to maintain the moisture within the area to promote microbial activity and biodegradation of the diesel impacts in the soil.

On August 13, 2014, soil samples were collected from 10 locations within the Southwest Tank Farm, as shown on Figure 4, to evaluate the current conditions. Samples were collected in the 0-6" interval below the ground surface and were analyzed for TPH DRO and TPH ORO. Table 2 provides a summary of the analytical results.

Periodic application of microbial agents has continued in order to promote degradation of the TPH remaining in the surficial soils, specifically within the containment area around Tanks 417, 418, and 419. As mentioned above, excavation cannot be performed within this area.

On October 16, 2014, soil samples were collected from 7 of the 10 previous locations and analyzed for TPH DRO and TPH ORO. On October 31, 2014, soil samples were collected from the remaining 3 of the 10 previous locations and analyzed for TPH DRO. Table 2 provides a summary of the analytical results. As can be seen in Table 2, the concentration of TPH DRO decreased at some locations but increased at other locations. The changes in concentration are assumed to be attributable to repeated rainfall events which have resulted in stormwater ponding for short periods of time within the containment areas, allowing for some movement of the residual diesel within the containment area.

Planned Work

Treatment of the soil within the containment area surrounding Tanks 417, 418, and 419 using microbial agents is planned to continue. Confirmation soil samples will be collected in January 2015 to evaluate the concentrations of TPH DRO remaining in this area.

The concentrations of TPH DRO present in the shallow soil beneath the backfilled excavation will be documented in the refinery's soil management plan.

Final Report

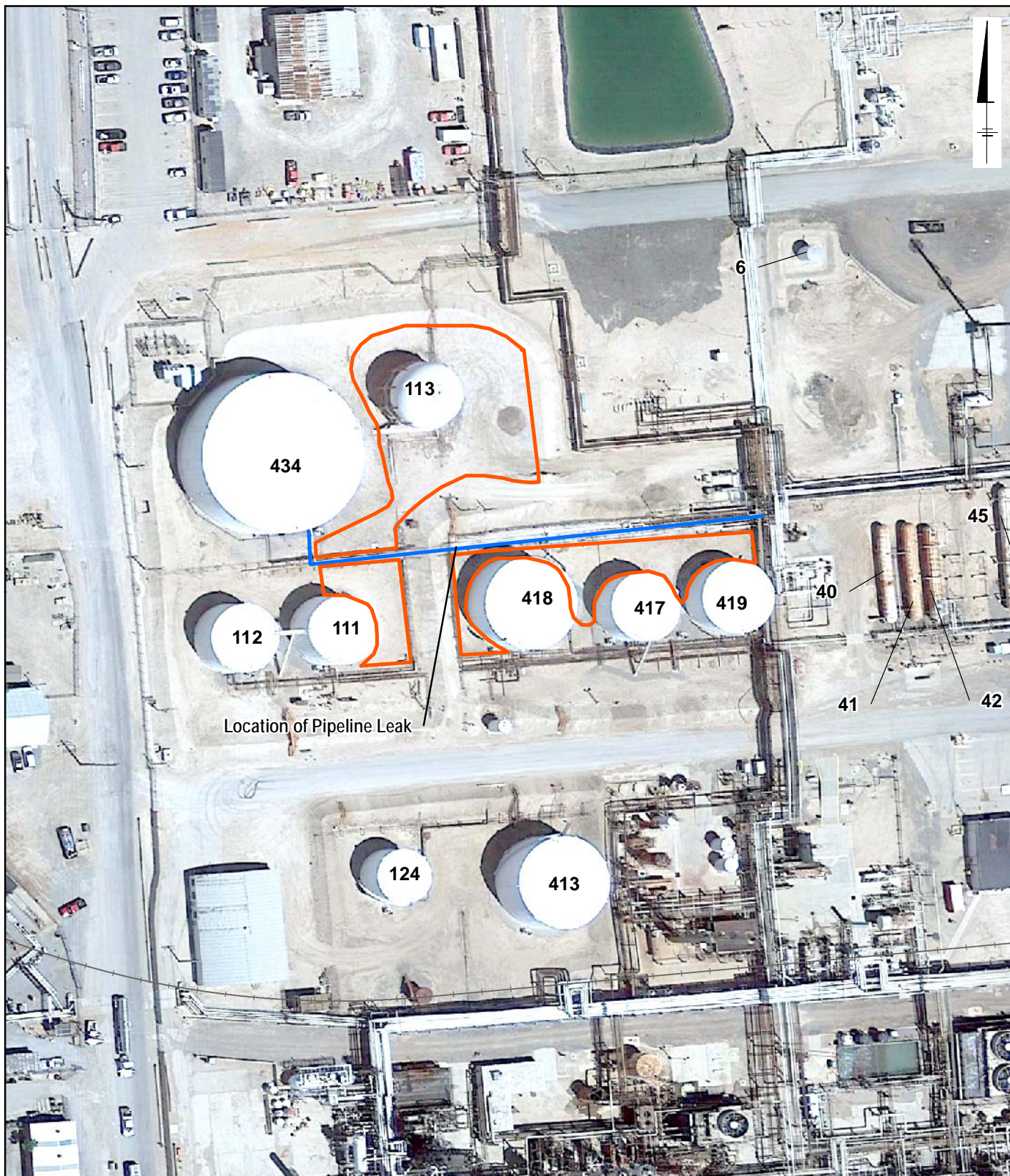
Supporting analytical reports, photos, further documentation, and details will be included in the Final Report/Final C-141.

Pamela R. Krueger | Senior Project Manager | pam.krueger@arcadis-us.com

ARCADIS U.S., Inc. | 2929 Briarpark Dr. Suite 300 | Houston, TX 77043
T: 713.953.4816 | M: 713.249.8548 | F: 713-977-4620
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ARCADIS, Imagine the result

Please consider the environment before printing this email.



LEGEND:

- Outline of Release
- Piping

0 100
SCALE IN FEET

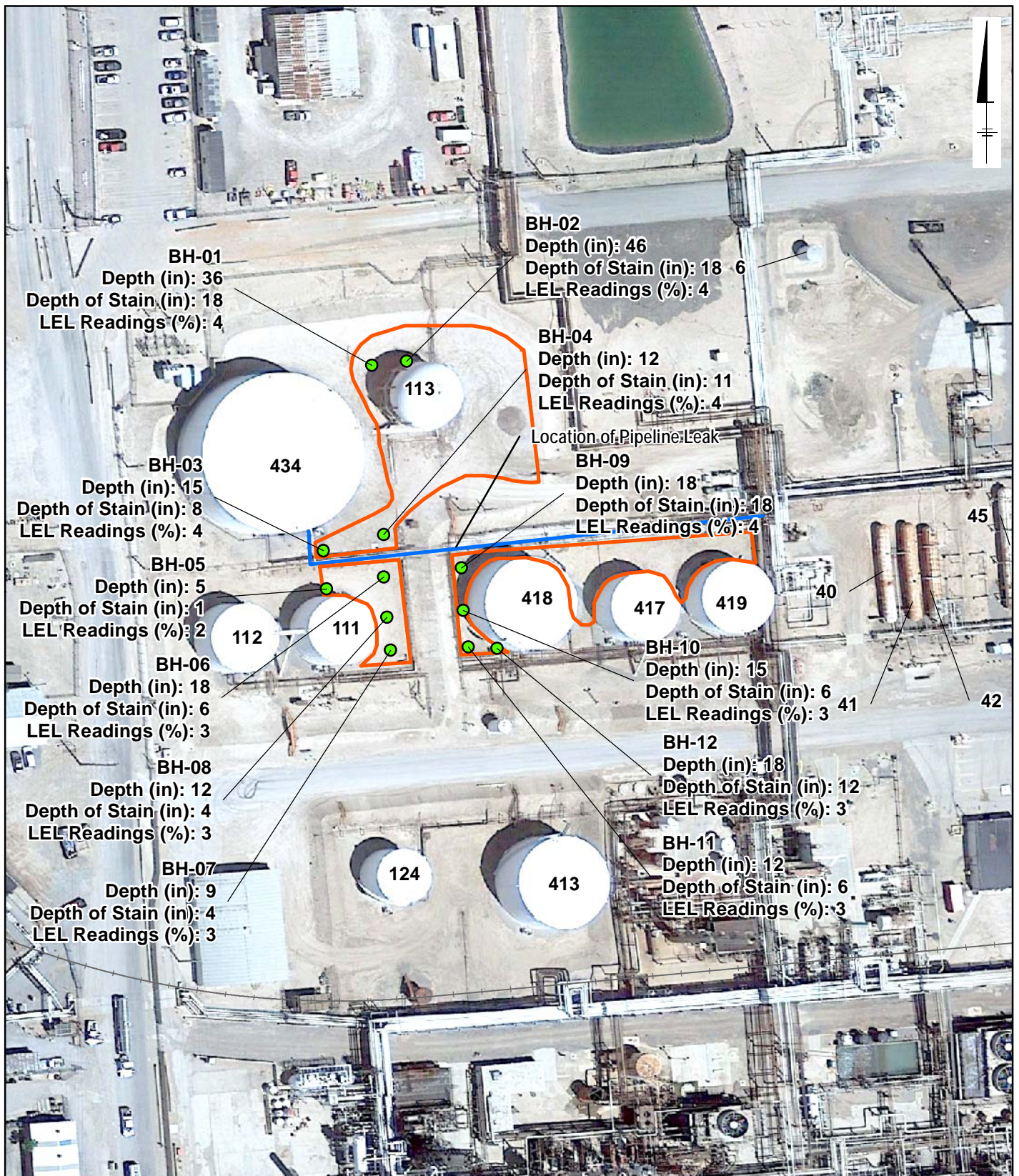
Aerial Photo obtained from Google
Earth Pro, dated May 1, 2014.

NAVAJO REFINING COMPANY
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO
SOUTHWEST TANK FARM RELEASE
STATUS REPORT

RELEASE AREA



FIGURE
1



LEGEND:

- Sample Locations
- Outline of Release
- Piping

0 100
 SCALE IN FEET

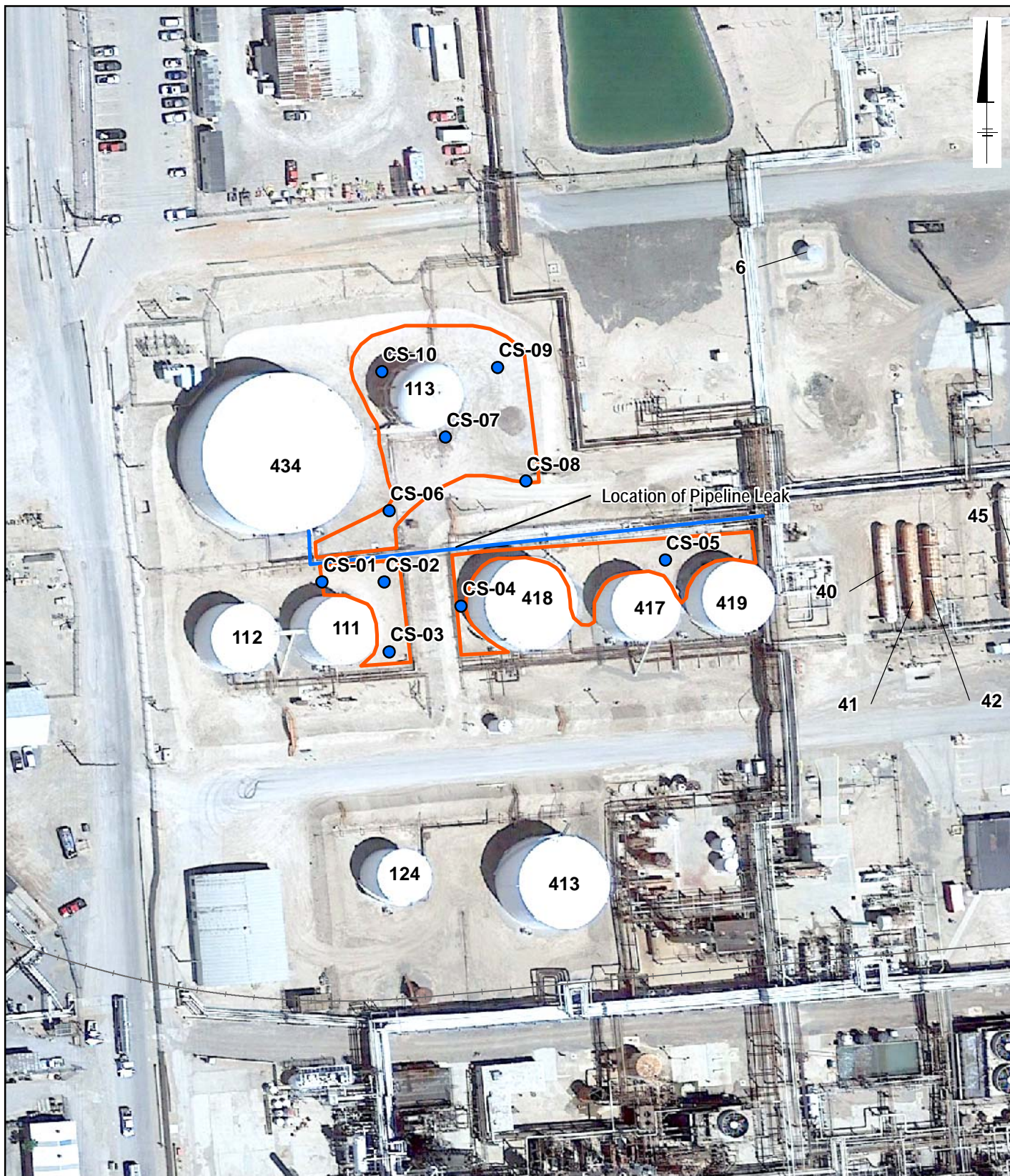
Aerial Photo obtained from Google Earth Pro, dated May 1, 2014.

NAVAJO REFINING COMPANY
 ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO
 SOUTHWEST TANK FARM RELEASE
 STATUS REPORT

INITIAL SCREENING LOCATIONS



FIGURE
 2



LEGEND:

- Confirmation Sample Points
- Outline of Release
- Piping

0 100
 SCALE IN FEET

Aerial Photo obtained from Google
 Earth Pro, dated May 1, 2014.

NAVAJO REFINING COMPANY
 ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO
 SOUTHWEST TANK FARM RELEASE
 STATUS REPORT

**CONFIRMATION SOIL
 SAMPLE LOCATIONS**



FIGURE

3

**Table 1 - Initial Grab Sample Results
for Waste Characterization**

Southwest Tank Farm Diesel Release - July 2014
Navajo Refinery, Artesia, New Mexico

	Soil Grab #1	Soil Composite
	7/18/2014	7/31/2014
Analyte	Result	Result
Total Petroleum Hydrocarbons (mg/kg)		
Diesel Range Organics	130,000	
Motor Oil Range Organics	<50,000	
Total Volatile Organic Compounds (mg/kg)		
1,1-Dichloroethene	<0.39	
1,2-Dichloroethane	<0.79	
1,4-Dichlorobenzene	<1.1	
2-Butanone	<2.2	
Benzene	6.7	
Carbon tetrachloride	<0.67	
Chlorobenzene	<0.53	
Chloroform	<1.7	
Tetrachloroethene	<0.59	
Trichloroethene	<0.67	
Vinyl Chloride	<0.40	
Total Semivolatile Organic Compounds (mg/kg)		
2,4,5-Trichlorophenol	<4.4	
2,4,6-Trichlorophenol	<5.4	
2,4-Dinitrotoluene	<7.3	
Cresols, Total	<6.6	
Hexachlorobenzene	<5.4	
Hexachlorobutadiene	<4.7	
Hexachloroethane	<6.9	
Nitrobenzene	<5.5	
Pentachlorophenol	<8.0	
Pyridine	<5.5	
Total Metals (mg/kg)		
Arsenic	<0.018	
Barium	0.83	
Cadmium	<0.0005	
Chromium	<0.0015	
Lead	<0.0034	
Mercury	<0.00075	
Selenium	<0.027	
Silver	<0.001	
TCLP Volatile Organic Compounds (mg/L)		
1,1-Dichloroethene		<0.30
1,2-Dichloroethane		<0.50
1,4-Dichlorobenzene		<7.5
2-Butanone		<10
Benzene		<0.30
Carbon tetrachloride		<0.50
Chlorobenzene		<0.30
Chloroform		<6.0
Hexachlorobutadiene		<0.50
Tetrachloroethene		<0.70
Trichloroethene		<0.30
Vinyl Chloride		<0.20

	Soil Grab #1	Soil Composite
	7/18/2014	7/31/2014
Analyte	Result	Result
TCLP Semivolatile Organic Compounds (mg/L)		
2-Methylphenol		<200
3+4-Methylphenol		<200
2,4,5-Trichlorophenol		<400
2,4,6-Trichlorophenol		<2.0
2,4-Dinitrotoluene		<0.13
Cresols, Total		<200
Hexachlorobenzene		<0.13
Hexachlorobutadiene		<0.50
Hexachloroethane		<3.0
Nitrobenzene		<2.0
Pentachlorophenol		<100
Phenol		<200
Pyridine		<5.0
TCLP Metals (mg/L)		
Arsenic		<5.0
Barium		<100
Cadmium		<1.0
Chromium		<5.0
Lead		<5.0
Mercury		<0.020
Selenium		<1.0
Silver		<5.0

Notes and Abbreviations:

mg/kg = milligrams per kilogram

mg/L = milligrams per liter

TCLP = Toxicity Characteristic Leaching Procedure

Table 2 - Soil Confirmation Sample Results
Southwest Tank Farm Diesel Release - July 2014
Navajo Refinery, Artesia, New Mexico

Location	Date	DRO	ORO
		(mg/kg)	(mg/kg)
CS-1	8/13/2014	43,000	<4,900
CS-1	10/16/2014	36,000	<5,000
CS-2	8/13/2014	51,000	<5,000
CS-2	10/16/2014	79,000	<50,000
CS-3	8/13/2014	41,000	<5,000
CS-3	10/16/2014	83,000	<5,000
CS-4	8/13/2014	16,000	<5,000
CS-4	10/31/2014	39,000	NA
CS-5	8/13/2014	31,000	<5,000
CS-5	10/31/2014	26,000	NA
CS-6	8/13/2014	80,000	<5,000
CS-6	10/16/2014	69,000	<5,000
CS-7	8/13/2014	25,000	<5,000
CS-7	10/16/2014	36,000	<5,000
CS-8	8/13/2014	48,000	<5,000
CS-8	10/16/2014	39,000	<5,000
CS-9	8/13/2014	33,000	<5,000
CS-9	10/16/2014	11,000	<5,000
CS-10	8/13/2014	5,300	<490
CS-10	10/31/2014	5,200	NA

= not analyzed

Chavez, Carl J, EMNRD

From: Combs, Robert <Robert.Combs@HollyFrontier.com>
Sent: Friday, October 17, 2014 4:01 PM
To: Chavez, Carl J, EMNRD
Cc: Tsinnajinnie, Leona, NMENV; Crawford, Dan; Strange, Aaron; Schultz, Michele
Subject: 2014-10-17 hydrocarbons expressed to surface in Clark Draw/Eagle Draw
Attachments: 2014-10-17 Initial C-141 Hydrocarbons to surface in Clark Draw.pdf; HC stain in Clark Draw 101714 facing west.JPG; hydrocarbon stain in Clark Draw 101714.JPG

Carl,
Please find the attached Initial C-141 for the event we discussed by phone earlier today. Also attached are photos of the area taken today. If you have any questions, please feel free to call me to discuss.
Thanks,
Robert

Robert Combs
Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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1625 N. French Dr., Hobbs, NM 88240
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District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Form C-141
Revised August 8, 2011

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Navajo Refining Company, L.L.C.	Contact	Robert Combs
Address	501 E. Main St. Artesia, NM 88210	Telephone No.	575-746-5382
Facility Name	Navajo Refining Company, L.L.C. Artesia	Facility Type	Refinery

Surface Owner	Mineral Owner	API No.
---------------	---------------	---------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
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Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release: Visible evidence of hydrocarbons from groundwater expressed at the ground surface due to elevated water table.	Volume of Release approximately < 1 gallon	Volume Recovered: N/A, Absorbent material applied to recover hydrocarbons.
Source of Release Impacted groundwater	Date and Hour of Occurrence 10/17/14 Unknown hour	Date and Hour of Discovery 10/17/14@11 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? National Response Center at 12:35 pm OCD Santa Fe office at 1:47 pm OCD Artesia office, left message.	
By Whom? Gabriela Combs/Robert Combs	Date and Hour please see above	
Was a Watercourse Reached? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, Volume Impacting the Watercourse. < 1 gallon	

If a Watercourse was Impacted, Describe Fully.*

A small area of stained concrete located at the base of Clark Draw. There is no water flow in the waterway at this time.

Describe Cause of Problem and Remedial Action Taken.*

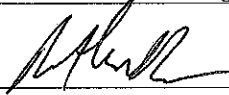
A stained area was discovered in the base of Clark Draw on 10/17/14. There is not an active release of hydrocarbons, but the impacts are being addressed by removal of hydrocarbons by absorbent materials. An absorbent boom will be installed downstream to prevent residual hydrocarbons to be released during flowing conditions in the waterway.

Describe Area Affected and Cleanup Action Taken.*

The stained area was confined to a narrow irregular strip on the concrete. The remedial action plan will be to draw down the water table in the area and utilize the product recovery system to remove phase separated hydrocarbons in the area. A vacuum truck will be used for the next several days to remove any product collected in the adjacent monitoring well.

A final C-141 report will be submitted to OCD and HWB once corrective actions, sample results, etc. are complete.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 		OIL CONSERVATION DIVISION	
Printed Name: Robert Combs		Approved by Environmental Specialist:	
Title: Environmental Specialist		Approval Date:	Expiration Date:
E-mail Address: robert.combs@hollyfrontier.com		Conditions of Approval:	Attached <input type="checkbox"/>
Date: 10/17/14 Phone: 575-746-5382			

* Attach Additional Sheets If Necessary





Chavez, Carl J, EMNRD

From: Schultz, Michele <Michele.Schultz@HollyFrontier.com>
Sent: Thursday, July 17, 2014 3:03 PM
To: Tsinnajinnie, Leona, NMENV; Chavez, Carl J, EMNRD
Cc: Combs, Robert; Cobrain, Dave, NMENV; Dhawan, Neelam, NMENV; VanHorn, Kristen, NMENV; Crawford, Dan
Subject: Navajo Refining Company, LLC 7/15/14 Diesel line leak Initial C-141
Attachments: 071514 C-141 Initial.pdf

Leona, Carl – Attached is the initial C-141 report for Navajo Refining Company's diesel fuel line leak of 7/15/14. We are staging for the excavation work today and are awaiting recommendations from our consultant based on soil probes done this morning. The final C-141 will be submitted upon completion of the excavation and disposition of the impacted soil.

If you have questions, please contact me at 575-308-2141.

Micki Schultz, P.E., CHMM
Environmental Specialist, Water and Waste Programs
Navajo Refining Company
575-746-5281 (office)
575-308-2141 (cell)
micki.schultz@hollyfrontier.com

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State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Navajo Refining Company, L.L.C.	Contact	Micki Schultz
Address	501 E. Main St. Artesia, NM 88210	Telephone No.	575-746-5281
Facility Name	Navajo Refining Company, L.L.C. Artesia	Facility Type	Refinery
Surface Owner	Mineral Owner	API No.	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
-------------	---------	----------	-------	---------------	------------------	---------------	----------------	--------

Latitude 32°50'38.95"N Longitude 104°23'40.85"W

NATURE OF RELEASE

Type of Release	Diesel Pipe Leak	Volume of Release	approximately 700 bbl.	Volume Recovered	711 bbl. Diesel vacuumed and returned to the crude process unit
Source of Release	Inter tank transfer pipe in a containment area	Date and Hour of Occurrence	7/15/14 Unknown hour	Date and Hour of Discovery	7/15/14@7:10 am
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Carl Chavez		
By Whom?	Micki Schultz	Date and Hour	7/15/14 at 3:15 pm		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			
If a Watercourse was Impacted, Describe Fully.*					

Describe Cause of Problem and Remedial Action Taken.*

An older above ground diesel suction line developed a leak sometime during the night where it penetrated an earthen dike between two adjacent containment areas at T-434 in the Southwest tank farm (AOC 4, part of AOC Group 2). Because it had rained during the night, rainwater had pooled in the low spots within the diked containment areas. At the morning shift inspection it was determined that the rainwater contained diesel product. The leaking line was isolated and blocked off to prevent any additional release. Vapor suppressant foam was applied to the pooled liquid to prevent volatile organics from being released during the heat of the day. Three vacuum trucks were sent to the containment areas and vacuumed the diesel/water/foam liquid mixture. The volume of water and diesel from each truckload was recorded separately to determine the amount of diesel that leaked and was returned to the crude process unit.

Describe Area Affected and Cleanup Action Taken.*

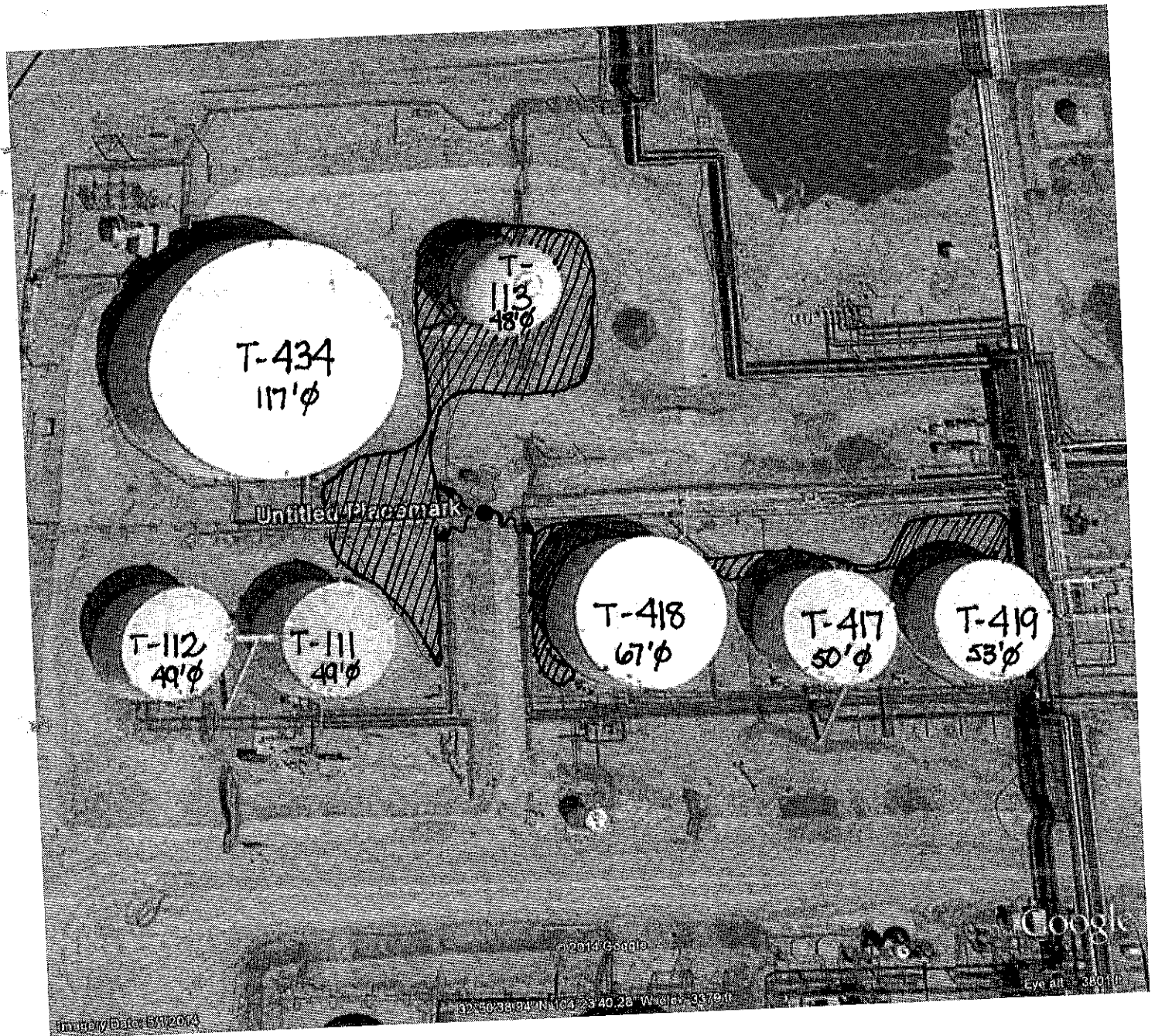
7/15/14 Two tank containment areas retained all of the leaked diesel fuel. All of the liquid was suctioned up via vacuum trucks and returned to the process at the crude tank. Absorbent pads and socks were applied to the remaining small areas where diesel fuel could not be removed. At the close of the initial response action, there was no free liquid remaining in either containment area.
7/16/14 The earthen dike around the pipe leak was removed to locate the source of the leak. The pipeline will be inspected to determine the necessary repair. The area is being staged to begin removal of impacted soil/gravel.
7/17/14 NRC's remediation contractors will commence surgical removal of impacted soil in a sequential manner until visibly saturated soil is abated. Impacted soil will be initially staged on HDPE liners and then transferred to roll-off bins.

A formal report will be submitted to OCD and HWB once corrective actions, sample results, etc. are complete.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOC rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOC marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOC acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

		<u>OIL CONSERVATION DIVISION</u>	
Signature: <i>Micki Schultz</i>		Approved by Environmental Specialist:	
Printed Name: Micki Schultz		Approval Date:	
Title: Environmental Specialist		Expiration Date:	
E-mail Address: micki.schultz@hollyfrontier.com		Conditions of Approval:	Attached <input type="checkbox"/>
Date: 7/16/14 Phone: 575-746-5281			

* Attach Additional Sheets If Necessary



NAVAJO REFINERY SOUTHWEST TANK FARM
7/15/14 DIESEL FUEL LINE LEAK @ DIKE (FLOW FROM WITHIN DIKE)

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, April 24, 2014 4:29 PM
To: 'Krueger, Pamela'; Tsinnajinnie, Leona, NMENV
Cc: Robert Combs; dan.crawford@hollyfrontier.com; Turner, Maisha; Sanchez, Daniel J., EMNRD; Griswold, Jim, EMNRD; Dade, Randy, EMNRD
Subject: RE: Navajo - Groundwater monitoring and PSH

Pam, et al.:

New Mexico Oil Conservation (OCD) has completed a preliminary review of the information provided and map of proposed MW locations.

The proposed MWs do not appear to be in line with contaminant migration (PSH & possibly dissolved phase hydrocarbons).

OCD recommends a MW between RW-22 and KWB-11A; a MW at least 200 ft. ESE and ENE of KWB 11A to bracket the toe of PSH and any dissolved phase hydrocarbons.

Perhaps there is an explanation why the MWs are located north of the trend of ground water contamination?

Thank you.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Drive, Santa Fe, New Mexico 87505
O: (505) 476-3490

E-mail: CarlJ.Chavez@State.NM.US

Web: <http://www.emnrd.state.nm.us/ocd/>

“Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?” To see how, please go to: “Pollution Prevention & Waste Minimization” at <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>



From: Krueger, Pamela [mailto:pkrueger@state.nm.us]
Sent: Monday, April 28, 2014 10:00 AM
To: Chavez, Carl J [mailto:CarlJ.Chavez@State.NM.US]
Cc: Krueger, Pamela [mailto:pkrueger@state.nm.us]; Turner, Maisha [mailto:Maisha.Turner@state.nm.us]; Sanchez, Daniel J. [mailto:Daniel.Sanchez@state.nm.us]; Griswold, Jim [mailto:Jim.Griswold@state.nm.us]; Dade, Randy [mailto:Randy.Dade@state.nm.us]
Subject: RE: Navajo - Groundwater monitoring and PSH

Carl and Leona –

The first semiannual 2014 groundwater monitoring event began in March, beginning with the sitewide potentiometric survey. On March 26, 2014, the sampling crew gauged the wells located in the pecan orchard east of Bolton Road and found unexpected PSH. The attached figure (developed for another purpose) shows the wells in the orchard and in the vicinity for your reference.

On March 26, 2014, the sampling crew recorded no PSH present in KWB-7, KWB-11A, and KWB-11B. On April 17, 2014, the crew was planning to collect samples from these wells and noted the presence of PSH in wells KWB-7 and KWB-11A. No PSH was present in KWB-11B. The gauging measurements are as follows:

- KWB-7, 3/26/14, no PSH, DTW = 25.33 ft, PSH thickness = 0 ft
- KWB-7, 4/17/14, DTP = 24.49 ft, DTW = 24.53 ft, PSH thickness = 0.04 ft
- KWB-11A, 3/26/14, no PSH, DTW = 26.41 ft, PSH thickness = 0 ft
- KWB-11A, 4/17/14, DTP = 25.59 ft, DTW = 25.70 ft, PSH thickness = 0.11 ft
- KWB-11B, 3/26/14, no PSH, DTW = 27.11 ft, PSH thickness = 0 ft
- KWB-11B, 4/17/14, no PSH, DTW = 26.35 ft, PSH thickness = 0 ft

PSH = phase separated hydrocarbons

DTP = depth to product

DTW = depth to water

ft = feet

KWB-7 and KWB-11A have not had PSH present in the past. As per the FWGMWP, the presence of PSH in these two wells is being reported within 7 days of the discovery.

If you have questions, please feel free to contact Robert Combs at (575) 746-5382.

Pamela R. Krueger | Senior Project Manager | pam.krueger@arcadis-us.com

ARCADIS U.S., Inc. | 2929 Briarpark Dr. Suite 300 | Houston, TX 77043

T: 713.953.4816 | M: 713.249.8548 | F: 713-977-4620

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ARCADIS, Imagine the result

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LEGEND:

- MONITORING WELL
- RECOVERY WELL
- IRRIGATION WELL
- PROPOSED MONITORING WELL LOCATIONS
- PROPOSED TEMPORARY MONITORING WELL LOCATION

CHASE FARM, LLC
PROPERTY BOUNDARY

0 220 440 Feet
GRAPHIC SCALE

New Mexico

NAVAJO REFINING COMPANY
ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

**PLANNED WELL LOCATIONS,
CHASE FARMS, LLC**

ARCADIS

FIGURE
A

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Form C-141
Revised August 8, 2011

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company Navajo Refining Co. LLC	Contact Micki Schultz	
Address 501 E. Main St. Artesia, NM 88210	Telephone No. 575-746-5281	
Facility Name Navajo Refinery	Facility Type Petroleum Refinery	
Surface Owner	Mineral Owner	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
-------------	---------	----------	-------	---------------	------------------	---------------	----------------	--------

Latitude 32°50'59.39"N Longitude 104°23'35.82"W

NATURE OF RELEASE

Type of Release: Carbon Black Oil to Eagle Draw	Volume of Release Less than 15 gallons to Eagle Draw	Volume Recovered: Virtually all oil retained by deployed booms and pads
Source of Release: In-plant transfer of CBO from T-65 to South Plant	Date and Hour of Occurrence: 9/12/13 @ ~12:35 pm	Date and Hour of Discovery: 9/12/13 @ ~12:40 pm
Was Immediate Notice Given? X <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not required	If YES, To Whom? National Response Center, OCD Artesia, EPA Region VI, NMED Hazardous Waste Bureau, SERC, LEPC, OCD Santa Fe, OCD Artesia, State Police, Artesia Fire Department	
By Whom? NRC - Micki Schultz; First call to OCD Artesia - Mike Holder; all others by Gabriella Combs	Date and Hour 9/12/13 (all p.m.) NRC 2:15; OCD Artesia 2:15; EPA Region VI 2:30; NMED 2:40; SERC 2:44; LEPC 2:48; OCD Santa Fe 2:54; OCD Artesia 2:58; State Police 3:00; Artesia Fire Dept 3:01	
Was a Watercourse Reached? X <input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, Volume Impacting the Watercourse. Less than 15 gallons to normally dry Eagle Draw that was flowing due to a rainfall event	

If a Watercourse was Impacted, Describe Fully.* Normally dry Eagle Draw, which drains from Artesia during rainfall events, passes through the Navajo Refinery on its way to the Pecos River approximately 3 miles away. The section passing through the refinery is a concrete swale with earthen dikes on both sides. There are two concrete-paved low water roadway crossings at Freeman Avenue and 5th Street. A truck loaded with CBO from T-65 was to transport it to the South Plant along Freeman Avenue. As he entered the low water crossing he saw oil on the road behind him and realized it was coming from his truck. As there was approximately 6 inches of water in the crossing due to a rainfall event, he continued through the crossing, resulting in a release to water.

Describe Cause of Problem and Remedial Action Taken.* The driver checked the hose/valve and determined that he had not properly closed the valve. He closed the valve and stopped the release.

Describe Area Affected and Cleanup Action Taken.* Most of the released CBO (calculated 15 gallons maximum) remained on the gravel roadway and the concrete ramps of the low water crossing at Freeman St. Loads of sand/soil were placed to form dikes on both sides of the crossing right to the waterline to prevent any more oil from reaching the flowing water. Additional soil was placed behind the dikes to soak up the oil on the ramps and roadway. Simultaneously, oil-sorbent booms were placed across Eagle Draw just downstream of the release, and along the edges to retain the oil in quiet eddies. More booms/socks and pads were placed to soak up all visible oil from water and grass along the edge. Further downstream at the second crossing (5th St.), additional booms were placed and a diversion eddy created to enable skimming sheen with oil sorbent pads. A vacuum truck was called to the scene, but there was nothing more than an oil sheen for it to suction. A third set of booms were placed further downstream at the farm field fence, and a fourth set of booms were placed across the end of Navajo property at Bolton Road. The Bolton Road booms were left in place overnight and showed no sign of oil the next morning. The sand/soil was removed within 2 hours from the Freeman St. roadway and crossing ramps and put into rolloff bins for disposal as non-hazardous waste. When there was no longer visible oil or sheen noted at the booms and along the edges of Eagle Draw, the booms and pads were gathered up and placed into drums for disposal as non-hazardous waste. The 4 sets of booms spanning Eagle Draw were left in place overnight, then drummed for disposal as non-hazardous waste.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: <i>Micki Schultz</i>	OIL CONSERVATION DIVISION
Printed Name: Micki Schultz	Approved by Environmental Specialist:

Title: Environmental Specialist	Approval Date:	Expiration Date:
E-mail Address: micki.schultz@hollyfrontier.com	Conditions of Approval:	Attached X <input type="checkbox"/>
Date: 12/30/2013 Phone: 757-746-5281		Valve Release Calculations Non-Hazardous Manifests Cleanup photos

* Attach Additional Sheets If Necessary

	PLANT: Navajo Refining Company, LLC	BY JAL	DATE 09/17/2013	EQUIPMENT NUMBER
	LOCATION: Artesia, NM	CHECKER	DATE	SERVICE: CASE:
	PROJECT: JOB NO.:	REV	BY	DATE

Manufacturer:
 Body Size: 3" Butterfly
 Trim Size:
 Pressure Class:

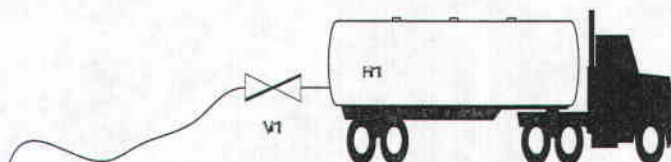
Tag # :

Type:
Char.:

The amount of the spill is estimated at 8 - 15 gallons. Assumes spill lasted approximately 2 minutes and the valve was barely open (5° to 10°).

Deg Open	Cv	GPM
5	2.7	4.0
10	5.0	7.4
20	14.0	20.6
30	32.0	47.1
40	50.0	
50	82.0	
60	116.0	
70	168.0	
80	209.0	
90	227.0	
100	227.0	

W = 21,683 lb/hr
 Q = 47.1 gpm
 SG = 0.920
 $\Delta P = 2.0$ psi
 Cv = 32.0
 Degrees Open = 30



Estimate amount of oil spilled when 3" butterfly valve was left cracked open.

Assumptions:

1. Valve assumed to be slightly open (5°).
2. Truck trailer is full. Assumed level in trailer to be 5 feet.
3. Assume truck traveled 100 yards at 10 mph when spill was noticed and valve was closed.
4. Assume 80% LCO/ 20% CBO (slurry) mix at 100F.
5. Assume spill lasted approximately 2 minutes.

LCO	24.00 API	7.59 lb/gal @60F		
CBO	2.00 API	8.84 lb/gal @60F		
Mix		7.84 lb/gal @60F	0.94 sg @ 60F	0.92 sg @100F

100 yards @ 10 mph = 293.33 yards/min
 Time required for 100 yards: 0.34 minutes

Use 2 minutes for the spill. This allows time to stop, get out of truck, and block in valve.



Freeman St. crossing – Site of release to Eagle Draw – Sand placed on concrete pavement to prevent oil movement to Eagle Draw. Booms placed to capture oil in eddies.



Freeman St. crossing – Removing sand from concrete pavement



Freeman St. – scraping sand from pavement into a rolloff bin



Looking east from Freeman St. crossing – Boom across Eagle Draw, booms used to soak up eddied oil



Cleaning oil from eddies. Current in concrete swale pushed oil into eddies on the outer curve, making it easier to collect and capture



Looking west at Freeman St. crossing. Booms deployed.



5th St. Crossing – Boomed oil trap, oil-only skimmer pads, vacuum truck – west of cow pasture fence



5th St. Crossing – Boomed oil trap, oil-only skimmer pads, vacuum truck – west of cow pasture fence



5th St. crossing – oil trap and vacuum truck suctioning, oil sorbent pads skimming



5th St. crossing – suctioning oil trap with vacuum truck hose



5th St. crossing – oil sheen in trap, oil sorbent pads skimming



5th St. crossing – finishing skimming by hand with oil sorbent pads



Farm Field Fence – Navajo property both sides – Using oil sorbent pads to capture sheen



Farm Field Fence – Navajo property both sides – Boom and trap arrangement



Eagle Draw east of spill – Mopping up with oil sorbent pads and socks



Eagle Draw further downstream – Mopping up with oil sorbent pads



Bolton Road boom deployment – Clean boom at east end of Navajo property



Bolton Road boom deployment – 20 hours later – Clean boom at east end of Navajo property



Bolton Road boom – 20 hours later, still clean



NEW MEXICO NON-HAZARDOUS OILFIELD WASTE MANIFEST
(PLEASE PRINT)

Company Man Contact Information
Name _____
Phone No. _____

GENERATOR		NO. 113010
Operator No. _____	N/A	Location of Origin _____
Operators Name _____	Navajo Refining Co. LLC	Lease/Well Name & No. _____
Address _____	PO Box 159	County _____
City, State, Zip _____	Artesia, NM 88211-0159	API No. _____
Phone No. _____	575-748-9311	Rig Name & No. _____
		A/E/PO No. _____

EXEMPT E&P Waste/Service Identification and Amount (place volume next to waste type in barrels or cubic yards)		
Oil Based Muds _____	NON-INJECTABLE WATERS	INJECTABLE WATERS
Oil Based Cuttings _____	Washout Water (Non-Injectable) _____	Washout Water (Injectable) _____
Water Based Muds _____	Completion Fluid/Flow back (Non-Injectable) _____	Completion Fluid/Flow back (Injectable) _____
Water Based Cuttings _____	Produced Water (Non-Injectable) _____	Produced Water (Injectable) _____
Produced Formation Solids _____	Gathering Line Water/Waste (Non-Injectable) _____	Gathering Line Water/Waste (Injectable) _____
Tank Bottoms _____	INTERNAL USE ONLY	OTHER EXEMPT WASTES (type and generation process of the waste) _____
E&P Contaminated Soil _____	Truck Washout (exempt waste) _____	
Gas Plant Waste _____		

WASTE GENERATION PROCESS: ☐ DRILLING ☐ COMPLETION ☐ PRODUCTION ☐ GATHERING LINES

NON-EXEMPT E&P Waste/Service Identification and Amount			
All non-exempt E&P waste must be analysed and be below the threshold limits for toxicity (TCLP), Ignitability, Corrosivity and Reactivity.			
Non-Exempt Other _____	*please select from Non-Exempt Waste List on back Unit: _____		
QUANTITY	B - BARRELS	L - LIQUID	Y - YARDS
			E - EACH

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste load is (Check the appropriate classification)

- ☐ RCRA EXEMPT: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications on a per month only)
- ☒ RCRA NON-EXEMPT: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as amended. The following documentation demonstrating the waste as non-hazardous is attached. (Check the appropriate items as provided)
- ☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Other (Provide Description Below) _____

☐ EMERGENCY NON-OILFIELD: Emergency non-hazardous, non-oilfield waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous waste determination and a description of the waste must accompany this form)

(PRINT) AUTHORIZED AGENTS SIGNATURE

DATE

SIGNATURE

TRANSPORTER	
Transporter's Name _____	Driver's Name _____
Address _____	Print Name _____
Phone No. _____	Phone No. _____
	Truck No. _____

I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.

SHIPMENT DATE

DRIVER'S SIGNATURE

DELIVERY DATE

DRIVER'S SIGNATURE

TRUCK TIME STAMP		DISPOSAL FACILITY	RECEIVING AREA
IN: _____	OUT: _____	Name/No. _____	
Site Name/ Permit No. _____	Halfway Facility / NM1-006	Phone No. _____	575-393-1079
Address _____	Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220		
NORM READINGS TAKEN? (Circle One) YES NO		If YES, was reading > 50 micro roentgens? (circle one) YES NO	
PASS THE PAINT FILTER TEST? (Circle One) YES NO			

TANK BOTTOMS			
1st Gauge _____	Feet _____	Inches _____	BS&W/BBLs Received _____
2nd Gauge _____			Free Water _____
Received _____			Total Received _____
			BS&W (%) _____

I hereby certify that the above load material has been (circle one): ACCEPTED DENIED If denied, why? _____

NAME (PRINT)

DATE

TITLE

SIGNATURE



NEW MEXICO NON-HAZARDOUS OILFIELD WASTE MANIFEST
(PLEASE PRINT)

Company Man Contact Information
Name _____
Phone No. _____

GENERATOR

NO. 122441

Operator No. _____
Operators Name Navajo Refining Co. LLC
Address PO Box 159
City, State, Zip Artesia, NM 88211-0159
Phone No. 575 748 3311

Location of Origin
Lease/Well _____
Name & No. _____
County N/A
API No. _____
Rig Name & No. _____
AFE/PO No. _____

EXEMPT E&P Waste/Service Identification and Amount (place volume next to waste type in barrels or cubic yards)		
Oil Based Muds	NON-INJECTABLE WATERS	INJECTABLE WATERS
Oil Based Cuttings	Washout Water (Non-Injectable)	Washout Water (Injectable)
Water Based Muds	Completion Fluid/Flow back (Non-Injectable)	Completion Fluid/Flow back (Injectable)
Water Based Cuttings	Produced Water (Non-Injectable)	Produced Water (Injectable)
Produced Formation Solids	Gathering Line Water/Waste (Non-Injectable)	Gathering Line Water/Waste (Injectable)
Tank Bottoms	INTERNAL USE ONLY	OTHER EXEMPT WASTES (type and generation process of the waste)
E&P Contaminated Soil	Truck Washout (exempt waste)	
Gas Plant Waste		

WASTE GENERATION PROCESS: ☐ DRILLING ☐ COMPLETION ☐ PRODUCTION ☐ GATHERING LINES

NON-EXEMPT E&P Waste/Service Identification and Amount
All non-exempt E&P waste must be analysed and be below the threshold limits for toxicity (TCLP), Ignitability, Corrosivity and Reactivity.

Non-Exempt Other _____ *please select from Non-Exempt Waste List on back

QUANTITY B - BARRELS L - LIQUID Y - YARDS

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste load is (Check the appropriate classification)

☐ RCRA EXEMPT: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications on a per month only)

☒ RCRA NON-EXEMPT: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as amended. The following documentation demonstrating the waste as non-hazardous is attached. (Check the appropriate items as provided)

☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Other (Provide Description Below)

☐ EMERGENCY NON-OILFIELD: Emergency non-hazardous, non-oilfield waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous waste determination and a description of the waste must accompany this form)

(PRINT) AUTHORIZED AGENTS SIGNATURE _____ DATE _____ SIGNATURE _____

TRANSPORTER

Transporter's Name E Brothers Waste Services Inc.
Address 512 W. Texas Ave.
Artesia, NM 88210
Phone No. 575 748 1213

Driver's Name _____
Print Name Grog
Phone No. _____
Truck No. 3

I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.

SHIPMENT DATE 11-19-13 DRIVER'S SIGNATURE [Signature] DELIVERY DATE 11-19-13 DRIVER'S SIGNATURE [Signature]

TRUCK TIME STAMP		DISPOSAL FACILITY	RECEIVING AREA
IN: _____	OUT: _____		Name/No. <u>50151</u>
Site Name/Permit No. <u>Halfway Facility / NM1-006</u>	Address <u>Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220</u>	Phone No. <u>575-393-1079</u>	
NORM READINGS TAKEN? (Circle One) YES <u>NO</u>	PASS THE PAINT FILTER TEST? (Circle One) YES <u>NO</u>	If YES, was reading > 50 micro roentgens? (circle one) YES <u>NO</u>	

TANK BOTTOMS

Feet	Inches	BS&W/BBLS Received	BS&W (%)
1st Gauge		Free Water	
2nd Gauge		Total Received	
Received			

I hereby certify that the above load material has been (circle one): ACCEPTED DENIED If denied, why? _____

NAME (PRINT) [Signature] DATE 11-19-13 TITLE [Signature] SIGNATURE [Signature]

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	Navajo Refining Company, L.L.C.	Contact	Robert Combs
Address	501 E. Main St, Artesia, NM 88210	Telephone No.	575-746-5382
Facility Name	Artesia Refinery	Facility Type	Petroleum Refinery
Surface Owner	Mineral Owner	API No.	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
-------------	---------	----------	-------	---------------	------------------	---------------	----------------	--------

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release	Waste Water	Volume of Release	~60 barrels	Volume Recovered	~ 55 barrels
Source of Release	Sewer Line to new Main API lift station	Date and Hour of Occurrence	09/03/2013 at ~15:30	Date and Hour of Discovery	09/03/2013 at ~15:30
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? OCD Santa Fe, Carl Chavez, left message NMED Santa Fe, Leona Tsinnajinnie, left message NMED Santa Fe, Ruth Horowitz (Spill Hotline), left message			
By Whom?	Robert Combs	Date and Hour	09/03/13 at ~17:30		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*


Describe Cause of Problem and Remedial Action Taken.*

At ~15:30 on 09/03/13, an underground sewer line that leads to the aboveground API separator was struck by an excavator. The excavator was digging in the area for installation of a new lift station as part of the storm water lift station and tank installation project. Oily water from the line was released into and contained within the excavation. The sewer line was drained, repaired and put back in service.

Describe Area Affected and Cleanup Action Taken.*

The spill was contained within the excavation in progress. The free liquid was removed by vacuum truck (approximately 55 bbls were recovered) and disposed of in the facility wastewater treatment system upstream of the aboveground API Separator. The stained soil was excavated until no visual indications of staining remained and the stained soil was placed into a roll-off bin for disposal. A waste soil sample was collected and analyzed for a waste determination. Based on the analytical results, the waste is not considered characteristically hazardous. Additionally, Navajo believes the waste should not be considered F037 or F038 listed waste, as described in the response report. However, Navajo elected to manage the soils under a one-time designation as F037 wastes for the purpose of prompt and protective characterization and off-site disposition. Approximately 11 tons of impacted soils were disposed of at the Rineco hazardous waste facility in Benton, Arkansas on November 15, 2013.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	<u>OIL CONSERVATION DIVISION</u>		
Printed Name: Robert Combs	Approved by Environmental Specialist:		
Title: Environmental Specialist	Approval Date:	Expiration Date:	
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 11/27/2013	Phone: 575-308-2718		

* Attach Additional Sheets If Necessary



Mr. Mike Holder
Environmental Manager
Navajo Refining Company, LLC
501 East Main
Artesia, New Mexico 88211

Subject:
Wastewater Sewer Line Spill Response

Dear Mr. Holder:

ARCADIS has prepared this release response report to describe activities that have occurred to address a release of water from the an underground process wastewater sewer line at the Navajo Refining Company (Navajo) refinery located in Artesia, New Mexico (Figure 1). This letter documents the release response and remedial actions associated with the September 3, 2013 release.

Release

On September 3, 2013, contract crews were excavating near the Main API separator for the installation of a new stormwater and API lift station. As shown on Figure 2, the new lift station is located in the northeastern portion of the Refinery, within the wastewater treatment area. During the construction activities, the excavator struck and broke the underground process wastewater sewer line. Oily water was released from the line and contained within the lift station excavation.

Approximately 60 barrels of oily water was released into the lift station excavation. Photographs documenting the spill can be seen in Photographs 1 through 3 in Attachment A to this letter.

Notification

Section 4.7.4 of the Post-Closure Care Permit (Permit) issued by the New Mexico Environment Department (NMED) Hazardous Waste Bureau (HWB) requires that a new release from an existing Area of Concern (AOC) be reported within 15 days. AOC 12 encompasses the wastewater collection system throughout the refinery; thus this pipeline is a part of AOC 12. Figure 2 shows the location of the wastewater sewer line that was broken.

Imagine the result

ARCADIS U.S., Inc.
2929 Briarpark Drive
Suite 300
Houston
Texas 77042
Tel 713 953 4800
Fax 713 977 4620
www.arcadis-us.com

ENVIRONMENT

Date:
November 27, 2013

Contact:
Pamela R. Krueger

Phone:
713.953.4816

Email:
pam.krueger@arcadis-us.com

Our ref:
TX000870

Section 2.D.1 of the Discharge Permit GW-028 issued by the State of New Mexico Energy, Minerals, and Natural Resource Department Oil Conservation Division (OCD) for the facility requires oral notification of a release within twenty-four hours. Section 2.D.2 of the Discharge Permit requires written notification within one week of the identification of a release.

Navajo personnel reported the release of wastewater from the sewer line to NMED and OCD both via phone call on September 3, 2013. An initial C-141 release report was submitted to both the HWB and OCD on September 9, 2013. Thus, the initial reporting requirements of both the OCD Discharge Permit and the HWB Post-Closure Care Permit have been met. A final C-141 report has been included in Attachment B to this letter.

Remedial Actions

Navajo personnel plugged the sewer line and used a vacuum truck to collect free liquids immediately after the spill occurred. Approximately 55 barrels of oily water was recovered and returned to the wastewater treatment system upstream of the API Separator. Navajo contract personnel excavated 10.97 tons of stained soil and placed it in a roll-off bin. As discussed below, Navajo does not believe that the excavated soil was hazardous waste; however, as a conservative measure the soil was disposed of as hazardous waste at the Rineco hazardous waste facility in Benton, Arkansas on November 15, 2013. The waste manifest has been included in Attachment C to this letter.

Navajo personnel drained and repaired the sewer line. The repaired sewer line and the completed construction are shown in Photographs 6 through 10 in Attachment A to this letter.

Waste Characterization

Navajo personnel collected a sample of the excavated soil for waste characterization. The waste soil was analyzed via the Toxicity Characteristic Leaching Procedure (TCLP) for Metals, Volatile Organic Compounds (VOCs), and Semivolatile Organic Compounds (SVOCs) and was also analyzed for reactive cyanide, reactive sulfide, ignitability and pH. A copy of the laboratory analytical report is provided on CD in Attachment D to this letter.

Table 1 presents a summary of the impacted soil analytical data. As shown in Table 1, VOCs, SVOCs and reactive cyanide were not detected above the laboratory reporting limit. Barium was detected at 0.137 milligrams per liter (mg/L) which is below the characteristic hazardous waste limit of 100 mg/L. All other metals were not detected above the laboratory reporting limit. Reactive sulfide was detected at 242 milligrams

per kilogram (mg/kg), which is below the characteristic hazardous waste limit of 500 mg/kg. Based on the analytical results, the soil is not classified as hazardous by characteristic.

NMED stated in an email that “process water is considered hazardous waste as it could be characteristic for benzene (F037/F038 waste) when lateral flow ceases in the process sewer or it could contain other K-listed components.” Per Title 40 of the Code of Federal Regulations (CFR) Part 268 Subpart D, F037 waste is defined as “petroleum refinery primary oil/water/solids separation sludge” and F038 waste is defined as “petroleum refinery secondary (emulsified) oil/water/solids separation sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters.” This incident involved a discharge of flowing wastewater from a pipe upstream of the primary separator, and did not contain nor deposit sludge. The discharge itself did not generate sludge within the spill site as the liquids were contained and recovered. Thus, ARCADIS does not believe that the impacted soil meets the definition of either F037 or F038 because it does not contain either F037 or F038 sludge.

Navajo personnel collected a sample of the recovered liquid and analyzed the sample for selected VOCs, SVOCs, and metals. The liquid analytical results are summarized in Table 2 and compared to the characteristic hazardous waste standards. A copy of the laboratory analytical report is provided on CD in Attachment D to this letter. As shown in Table 2, the wastewater sample contained benzene at a concentration of 2.4 mg/L which is above the characteristic hazardous waste limit of 0.5 mg/L. However, as defined in 40 CFR Appendix VII to Part 261, F037 and F038 wastes are considered listed hazardous wastes due to the following constituents: benzene, benzo(a)pyrene, chrysene, lead and chromium. As shown on Table 2, benzo(a)pyrene, chrysene and chromium were not detected above the laboratory reporting limit and lead was detected at 0.0164 mg/L, which is below the hazardous waste characteristic limit of 5 mg/L. The liquid, while characteristically hazardous for benzene, did not exhibit elevated concentrations of the other constituents that form the basis for listing for F037 and F038 wastes and, thus, should not be considered F037 or F038 hazardous waste. Since the wastewater should not be considered listed hazardous waste, the soil saturated with the spilled wastewater should not be considered listed hazardous waste.

Notwithstanding the foregoing, Navajo elected to manage the soils under a one-time designation as F037 wastes for the purpose of prompt and protective characterization and off-site disposition. Approximately 11 tons of impacted soils were characterized in this manner and, on November 15, 2013, were disposed of at the Rinco hazardous waste facility in Benton, Arkansas.

Conclusion

The remedial response to the September 3, 2013 release has been completed. All visually stained soils have been excavated and disposed of at an appropriate waste management facility. No further remedial action is recommended at this time.

Should you have any questions or comments, please feel free to contact me at 713.953.4816.

Sincerely,

ARCADIS U.S., Inc.



Pamela R. Krueger
Senior Project Manager

Enclosures:

Tables

Figures

Attachment A: Photographic Log

Attachment B: Final C-141 Incident Report

Attachment C: Waste Manifests

Attachment D: Analytical Reports (on CD)



Tables

Table 1 - Excavated Soil Analytical Results
Wastewater Sewer Line Spill at Main API Separator
Navajo Refinery, Artesia, New Mexico

		Wastewater Spill at Lift Station Excavation	
Sample ID:			
Date Sample Collected:		9/24/2013	
Analyte	Hazardous Waste Limit	Result	RL
TCLP Volatile Organic Compounds (mg/L)			
1,1-Dichloroethene	7.00E-01		0.1
1,2-Dichloroethane	5.00E-01		0.1
1,4-Dichlorobenzene	7.50E+00		0.1
2-Butanone	2.00E+02		0.2
Benzene	5.00E-01		0.1
Carbon tetrachloride	5.00E-01		0.1
Chlorobenzene	1.00E+02		0.1
Chloroform	6.00E+00		0.1
Tetrachloroethene	7.00E-01		0.1
Trichloroethene	5.00E-01		0.1
Vinyl Chloride	2.00E-01		0.1
TCLP Semivolatile Organic Compounds (mg/L)			
2,4,5-Trichlorophenol	4.00E+02		0.005
2,4,6-Trichlorophenol	2.00E+00		0.005
2,4-Dinitrotoluene	1.30E-01		0.005
Cresols, Total	2.00E+02		0.015
Hexachlorobenzene	1.30E-01		0.005
Hexachlorobutadiene	5.00E-01		0.005
Hexachloroethane	3.00E+00		0.005
Nitrobenzene	2.00E+00		0.005
Pentachlorophenol	1.00E+02		0.005
Pyridine	5.00E+00		0.005
TCLP Metals (mg/L)			
Arsenic	5.00E+00		0.05
Barium	1.00E+02	0.137	0.05
Cadmium	1.00E+00		0.02
Chromium	5.00E+00		0.05
Lead	5.00E+00		0.05
Mercury	2.00E-01		0.0002
Selenium	1.00E+00		0.05
Silver	5.00E+00		0.05
Reactivity (mg/kg)			
Reactive Cyanide	2.50E+02		0.1
Reactive Sulfide	5.00E+02	242	40
Ignitability (burn rate, mm/sec)	--	Negative	
pH (pH units)	< 2 or > 12.5	7.61	

Notes and Abbreviations:

X	Value exceeds TCLP hazardous by characteristic value as defined in 40 CFR §261.
	Blank cells indicate that the reported result was "not detected" at the reporting limit provided.

CFR = Code of Federal Regulations

mg/kg = milligrams per kilogram

mg/L = milligrams per liter

RL = Reporting Limit

TCLP = Toxicity Characteristic Leaching Procedure

Table 2 - Wastewater Liquid Analytical Results
Wastewater Sewer Line Spill at Main API Separator
Navajo Refinery, Artesia, New Mexico

		API Excavation	
Sample ID:		9/3/2013	
Date Sample Collected:			
Analyte	Hazardous Waste Limit	Result	RL
Volatile Organic Compounds (mg/L)			
1,1,1-Trichloroethane	--		0.25
1,1,2,2-Tetrachloroethane	--		0.25
1,1,2-Trichloroethane	--		0.25
1,1-Dichloroethane	7.00E-01		0.25
1,1-Dichloroethene	5.00E-01		0.25
1,2-Dibromoethane	--		0.25
1,2-Dichloroethane	--		0.25
Benzene	5.00E-01	2.4	0.25
Carbon tetrachloride	5.00E-01		0.25
Chloroform	6.00E+00		0.25
Ethylbenzene	--	2.4	0.25
Methylene chloride	--		0.5
Tetrachloroethene	7.00E-01		0.25
Toluene	--	3.8	0.25
Trichloroethene	5.00E-01		0.25
Vinyl Chloride	2.00E-01		0.1
Xylenes, Total	--	5.3	0.75
Semivolatile Organic Compounds (mg/L)			
1-Methylnaphthalene	--	370	0.38
2-Methylnaphthalene	--	500	0.38
Benzo(a)pyrene	--		0.38
Chrysene	--		0.38
Naphthalene	--	370	0.38
Metals (mg/L)			
Aluminum	--	1.86	0.1
Arsenic	5.00E+00	0.13	0.05
Barium	1.00E+02	0.0656	0.05
Boron	--	1.21	0.05
Cadmium	1.00E+00		0.02
Chromium	5.00E+00		0.05
Cobalt	--	0.00872	0.05
Copper	--	0.0456	0.05
Iron	--	6.9	2
Lead	5.00E+00	0.0164	0.05
Manganese	--	0.078	0.05
Molybdenum	--	0.0894	0.05
Mercury	2.00E-01	0.00205	0.0008
Nickel	--	0.0771	0.05
Selenium	1.00E+00	0.742	0.05
Silver	5.00E+00		0.05
Uranium	--		0.05
Zinc	--	0.365	0.05

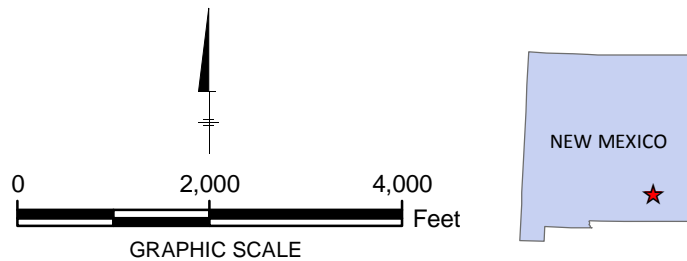
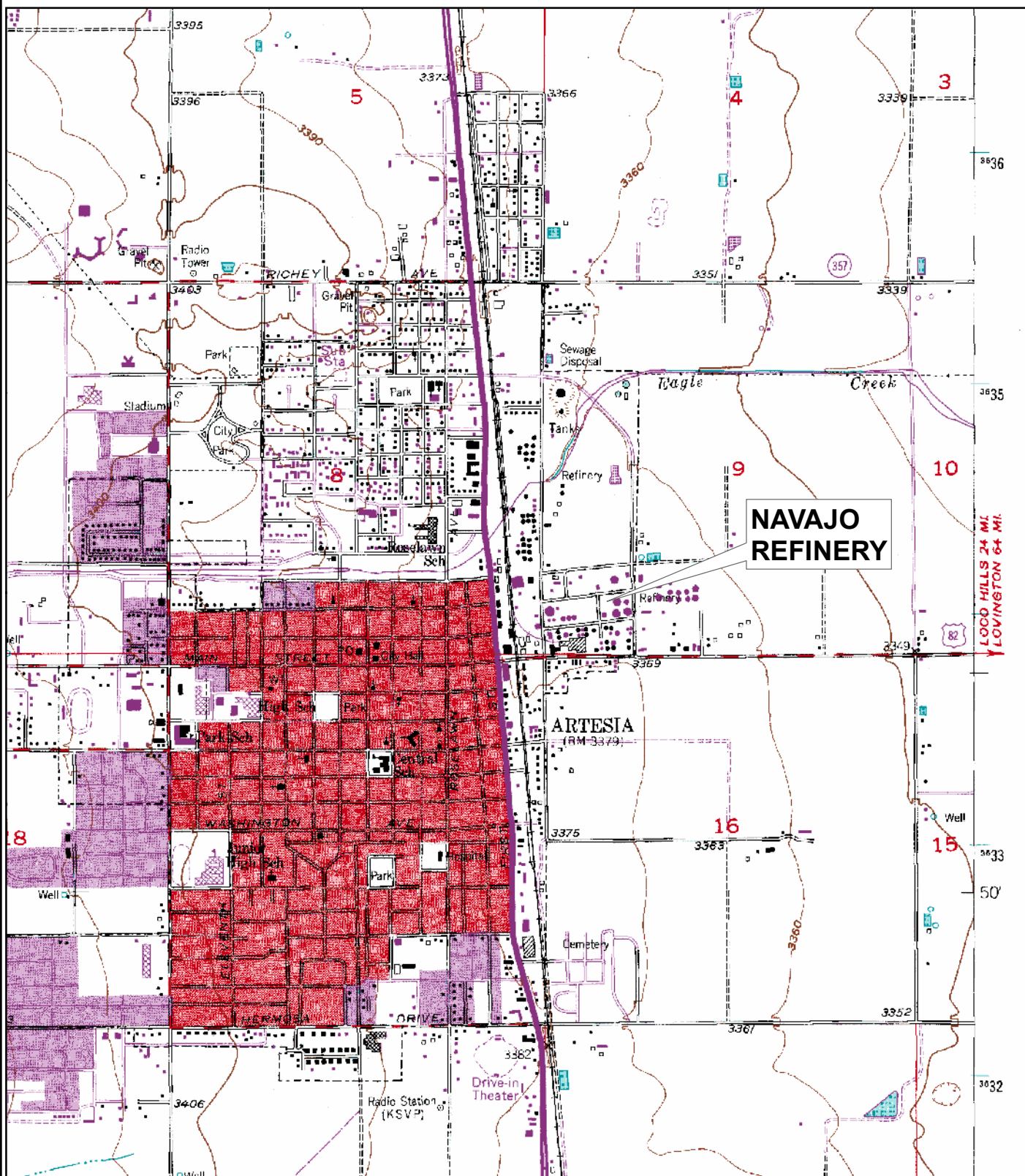
Notes and Abbreviations:

X	Value exceeds hazardous by characteristic value as defined in 40 CFR §261.
	Blank cells indicate that the reported result was "not detected" at the reporting limit provided.

CFR = Code of Federal Regulations
mg/L = milligrams per liter
RL = Reporting Limit

Figures

CITY: SF DIV/GROUP: ENV/IM DB: KERNST LD: S KELLY PIC: PM: TM: TR:
 Project (Project #) TX000825.0003.00003
 Q:\NavajoRefining\ArtesiaRefinery\AOC_Group\3MXD\Site_Location.mxd



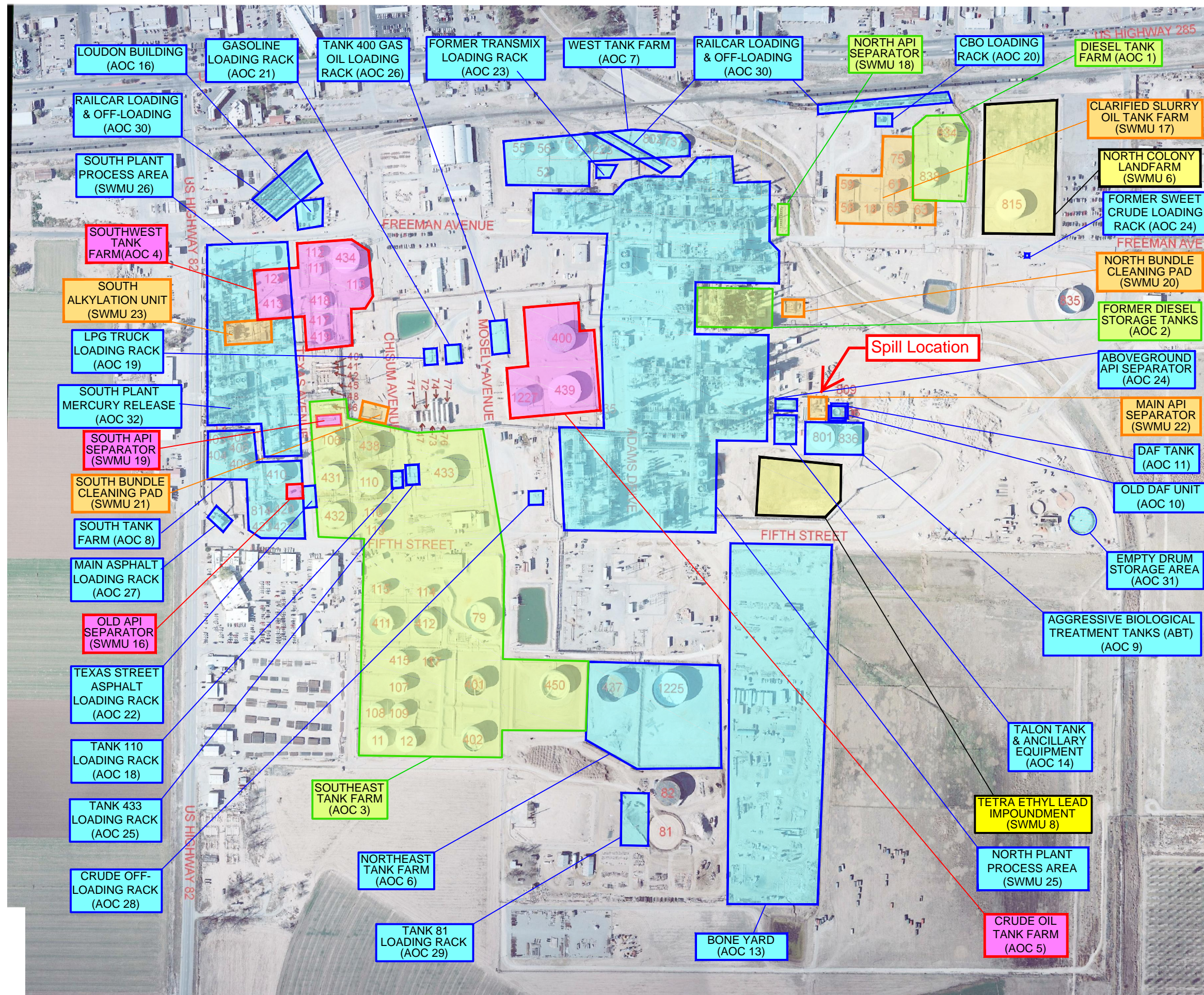
REFERENCE: BASE MAP SOURCE USGS 7.5 MINUTE SERIES
 QUAD ARTESIA QUADRANGLE, 1975.

NAVAJO REFINING COMPANY
 ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO
**WEST LOADING RACK FUEL OIL SPILL
 RESPONSE**

SITE LOCATION MAP

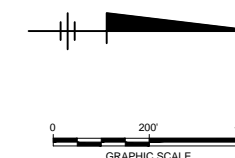


FIGURE
1



EXPLANATION

- AOC OR SWMU LISTED IN 2003 PERMIT AND INCLUDED IN GROUP 1
- AOC OR SWMU LISTED IN THE 2003 PERMIT AND INCLUDED IN GROUP 2
- AOC OR SWMU LISTED IN THE 2003 PERMIT AND INCLUDED IN GROUP 3
- HAZARDOUS WASTE MANAGEMENT UNIT
- AOC OR SWMU ADDED IN 2010 PERMIT MODIFICATION



NAVAJO REFINING COMPANY
ARTESIA REFINERY
EDDY COUNTY, NEW MEXICO

LOCATION OF WEST LOADING RACK
SPILL LOCATION






Attachment A

Photographic Log


Attachment A Photographic Log

Property Name: Navajo Refining Company		Location: Artesia, New Mexico	Project No. TX000870
Photo No. <div style="text-align: center; font-weight: bold;">1</div>	Date: 9/3/13		
Description: Facing northeast, northern portion of the excavation where spilled liquids were contained.			


Attachment A Photographic Log

Property Name: Navajo Refining Company		Location: Artesia, New Mexico	Project No. TX000870
Photo No. <div style="text-align: center; font-weight: bold;">2</div>	Date: 9/3/13		
Description: Facing east, southern portion of the excavation with struck sewer line on far right in the shadow of the excavator.			


Attachment A Photographic Log

Property Name: Navajo Refining Company		Location: Artesia, New Mexico	Project No. TX000870
Photo No. <div style="text-align: center; font-weight: bold;">3</div>	Date: 9/3/13		
Description: Facing east, struck sewer in the shadow of the excavator.			

Attachment A Photographic Log

Property Name: Navajo Refining Company		Location: Artesia, New Mexico	Project No. TX000870
Photo No. <div style="text-align: center; font-weight: bold;">4</div>	Date: 10/15/13		
Description: Facing east, repaired sewer line on the left side of the picture. Main API in background.			

Attachment A Photographic Log

Property Name: Navajo Refining Company		Location: Artesia, New Mexico	Project No. TX000870
Photo No. 5	Date: 10/17/13	 <p>The photograph shows a construction site with a deep trench. Several large white pipes are laid out along the left side of the trench. On the right side, a green pipe is visible, which is the repaired sewer line. A yellow arrow points to this green pipe, and the text 'REPAIRED SEWER LINE' is written in yellow. The date '10.17.2013' is printed in orange in the bottom right corner of the photo.</p>	
Description: Facing east, repaired sewer line in the right side of the picture. No visible evidence of spill remaining.			



Attachment B

Final C-141 Incident Report

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	Navajo Refining Company, L.L.C.	Contact	Robert Combs
Address	501 E. Main St, Artesia, NM 88210	Telephone No.	575-746-5382
Facility Name	Artesia Refinery	Facility Type	Petroleum Refinery
Surface Owner	Mineral Owner	API No.	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
-------------	---------	----------	-------	---------------	------------------	---------------	----------------	--------

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release	Waste Water	Volume of Release	~60 barrels	Volume Recovered	~ 55 barrels
Source of Release	Sewer Line to new Main API lift station	Date and Hour of Occurrence	09/03/2013 at ~15:30	Date and Hour of Discovery	09/03/2013 at ~15:30
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? OCD Santa Fe, Carl Chavez, left message NMED Santa Fe, Leona Tsinnajinnie, left message NMED Santa Fe, Ruth Horowitz (Spill Hotline), left message			
By Whom?	Robert Combs	Date and Hour	09/03/13 at ~17:30		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*


Describe Cause of Problem and Remedial Action Taken.*

At ~15:30 on 09/03/13, an underground sewer line that leads to the aboveground API separator was struck by an excavator. The excavator was digging in the area for installation of a new lift station as part of the storm water lift station and tank installation project. Oily water from the line was released into and contained within the excavation. The sewer line was drained, repaired and put back in service.

Describe Area Affected and Cleanup Action Taken.*

The spill was contained within the excavation in progress. The free liquid was removed by vacuum truck (approximately 55 bbls were recovered) and disposed of in the facility wastewater treatment system upstream of the aboveground API Separator. The stained soil was excavated until no visual indications of staining remained and the stained soil was placed into a roll-off bin for disposal. A waste soil sample was collected and analyzed for a waste determination. Based on the analytical results, the waste is not considered characteristically hazardous. Additionally, Navajo believes the waste should not be considered F037 or F038 listed waste, as described in the response report. However, Navajo elected to manage the soils under a one-time designation as F037 wastes for the purpose of prompt and protective characterization and off-site disposition. Approximately 11 tons of impacted soils were disposed of at the Rineco hazardous waste facility in Benton, Arkansas on November 15, 2013.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION		
Printed Name: Robert Combs	Approved by Environmental Specialist:		
Title: Environmental Specialist	Approval Date:	Expiration Date:	
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 11/27/2013	Phone: 575-308-2718		

* Attach Additional Sheets If Necessary



Attachment C

Waste Manifests

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number NMDO48918817		2. Page 1 of 1	3. Emergency Response Phone 1-800-424-9300		4. Manifest Tracking Number 008302346 JJK			
		5. Generator's Name and Mailing Address Navajo Refining Co. LLC (Artesia) P.O. Box 159 Artesia, NM 88211-0159 USA		Generator's Site Address (if different than mailing address) Navajo Refining Co. LLC (Artesia) 501 E. Main Artesia, NM 88210 USA		Generator's Phone: 575-748-3311				
6. Transporter 1 Company Name Fluid Transports, Inc.		U.S. EPA ID Number TXD988057931		7. Transporter 2 Company Name Fluid Transports Inc.		U.S. EPA ID Number TXD988057931		8. Designated Facility Name and Site Address RINECO 1007 Vulcan Road Benton, AR 72016 USA		
Facility's Phone: 501-778-9089		U.S. EPA ID Number ARD981057870								
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))			10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
	1.	R.Q. NA3077, HAZARDOUS WASTE, SOLID, N.O.S., 9, P.G. III (F037 SEWER SLUDGE)			1 CM		21,940	P	F037	
	2.									
	3.									
	4.									
14. Special Handling Instructions and Additional Information ERG #171 Chemtrec Cust. #CCN15402 Bin # 25S69 Bin Wt. 8060 Spill cleanup from WWT Sewer Line Break 091048555										
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.										
Generator's/Offor's Printed/Typed Name Glen Rhodes - agent for N.R.C.										
Signature Glen Rhodes										
Month Day Year 11 08 13										
INT'L	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____									
	Transporter signature (for exports only): _____									
TRANSPORTER	17. Transporter Acknowledgment of Receipt of Materials									
	Transporter 1 Printed/Typed Name JK Sawedon									
Signature JK Sawedon										
Month Day Year 11 08 13										
Transporter 2 Printed/Typed Name Wayne Gray										
Signature Wayne Gray										
Month Day Year 11 14 13										
DESIGNATED FACILITY	18. Discrepancy									
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection									
	Manifest Reference Number: _____									
	18b. Alternate Facility (or Generator) U.S. EPA ID Number _____									
	Facility's Phone: _____									
18c. Signature of Alternate Facility (or Generator) _____										
Month Day Year ____										
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)										
1. H0C01 2. 3. 4.										
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a										
Printed/Typed Name Whitney Lewis										
Signature Whitney Lewis										
Month Day Year 11 15 13										



P.O. Box 729
Benton, AR 72018
(800) 377-4692
www.rineco.com

Navajo Refining Company, L.L.C.
Environmental Manager
P O Box 159
Artesia, NM 88211-0159

11/19/2013

Certificate of Disposal

Navajo Refining Company, L.L.C., Artesia, NM
Manifest # 008302346JJJ
Received 11/15/2013

This is to certify that the waste materials received from the above referenced generator and manifest number have been managed and disposed of in accordance with all applicable Federal, State, and Local laws and regulations.





Attachment D

Analytical Reports (on CD)



20-Nov-2013

Robert Combs
Navajo Refining Company
PO Box 1490
Artesia, NM 88211-1490

Tel: (575) 746-5382
Fax: (575) 746-5421

Re: WWTP Spill

Work Order: **1309450**

Dear Robert,

ALS Environmental received 1 sample on 11-Sep-2013 09:30 AM for the analyses presented in the following report.

This is a REVISED REPORT. Please see the Case Narrative for discussion concerning this revision.

The total number of pages in this revised report is **GF**.

Regards,

A handwritten signature in black ink that reads "Sonia West".

Electronically approved by: Sonia West

Sonia West
Project Manager



Certificate No: T104704231-13-12

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887

ALS GROUP USA, CORP. Part of the ALS Group An ALS Limited Company

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Navajo Refining Company
Project: WWTP Spill
Work Order: 1309450

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1309450-01	API Excavation	Liquid		9/3/2013 16:58	9/11/2013 09:30	<input type="checkbox"/>

Client: Navajo Refining Company
Project: WWTP Spill
Work Order: 1309450

Case Narrative

As per the clients request via phone conversation on November 15, 2013, this report has been revised to include Chrysene by method 8270.

Sample API Excavation was received in an unpreserved 1 Liter glass container. The sample was received outside of the recommended analytical holding time for water sample for Volatile Organics Method 8260 and Semivolatile Organics Method 8270; the data has been qualified with an "H".

Batch 73195, Total Metals Method 6020, Sample 1309616-01: MS/MSD performed on an unrelated sample.

Batch 73050, Semivolatile Organics Method 8270, Sample API Excavation was analyzed at 10X due to sample matrix and had initial vol of 200mL and final volume of 1.5mL.

Batch 73050, Semivolatile Organics Method 8270, Insufficient sample volume for MS/MSD. An LCS/LCSD pair provided as batch quality control.

Batch 73050, Semivolatile Organics Method 8270, Two surrogates did not meet the RPD limit in the LCS/LCSD pair; however, the individual percent recoveries were within control limits

ALS Environmental

Date: 20-Nov-13

Client: Navajo Refining Company
Project: WWTP Spill
Sample ID: API Excavation
Collection Date: 9/3/2013 04:58 PM

Work Order: 1309450
Lab ID: 1309450-01
Matrix: LIQUID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
MERCURY-SW7470A			SW7470		SW7470	Analyst: OFO	
Mercury	0.00205		0.000800	mg/L	1	9/18/2013	9/18/2013 04:02 PM
METALS			SW6020		SW3010A	Analyst: SKS	
Aluminum	1.86		0.100	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Arsenic	0.130		0.0500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Barium	0.0656		0.0500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Boron	1.21		0.500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Cadmium	U		0.0200	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Chromium	U		0.0500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Cobalt	0.00872	J	0.0500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Copper	0.0456	J	0.0500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Iron	6.90		2.00	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Lead	0.0164	J	0.0500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Manganese	0.0780		0.0500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Molybdenum	0.0894		0.0500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Nickel	0.0771		0.0500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Selenium	0.742		0.0500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Silver	U		0.0500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Uranium	U		0.0500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
Zinc	0.365		0.0500	mg/L	1	9/19/2013	9/19/2013 04:40 PM
SEMIVOLATILES - SW8270D			SW8270		SW3510	Analyst: ACN	
1-Methylnaphthalene	370	JH	380	µg/L	10	9/13/2013	9/20/2013 03:06 PM
2-Methylnaphthalene	500	H	380	µg/L	10	9/13/2013	9/20/2013 03:06 PM
Benzo(a)pyrene	U	H	380	µg/L	10	9/13/2013	9/20/2013 03:06 PM
Chrysene	U	H	380	µg/L	10	9/13/2013	9/20/2013 03:06 PM
Naphthalene	370	JH	380	µg/L	10	9/13/2013	9/20/2013 03:06 PM
Surr: 2,4,6-Tribromophenol	69.0	J	42-124	%REC	10	9/13/2013	9/20/2013 03:06 PM
Surr: 2-Fluorobiphenyl	64.5	J	48-120	%REC	10	9/13/2013	9/20/2013 03:06 PM
Surr: 2-Fluorophenol	48.0	J	20-120	%REC	10	9/13/2013	9/20/2013 03:06 PM
Surr: 4-Terphenyl-d14	81.8		51-135	%REC	10	9/13/2013	9/20/2013 03:06 PM
Surr: Nitrobenzene-d5	72.2	J	41-120	%REC	10	9/13/2013	9/20/2013 03:06 PM
Surr: Phenol-d6	63.4	J	20-120	%REC	10	9/13/2013	9/20/2013 03:06 PM
VOLATILES - SW8260C			SW8260			Analyst: PC	
1,1,1-Trichloroethane	U	H	0.25	mg/L	50		9/12/2013 04:02 PM
1,1,2,2-Tetrachloroethane	U	H	0.25	mg/L	50		9/12/2013 04:02 PM
1,1,2-Trichloroethane	U	H	0.25	mg/L	50		9/12/2013 04:02 PM
1,1-Dichloroethane	U	H	0.25	mg/L	50		9/12/2013 04:02 PM
1,1-Dichloroethene	U	H	0.25	mg/L	50		9/12/2013 04:02 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 20-Nov-13

Client: Navajo Refining Company

Project: WWTP Spill

Work Order: 1309450

Sample ID: API Excavation

Lab ID: 1309450-01

Collection Date: 9/3/2013 04:58 PM

Matrix: LIQUID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
1,2-Dibromoethane	U	H	0.25	mg/L	50		9/12/2013 04:02 PM
1,2-Dichloroethane	U	H	0.25	mg/L	50		9/12/2013 04:02 PM
Benzene	2.4	H	0.25	mg/L	50		9/12/2013 04:02 PM
Carbon tetrachloride	U	H	0.25	mg/L	50		9/12/2013 04:02 PM
Chloroform	U	H	0.25	mg/L	50		9/12/2013 04:02 PM
Ethylbenzene	2.4	H	0.25	mg/L	50		9/12/2013 04:02 PM
Methylene chloride	U	H	0.50	mg/L	50		9/12/2013 04:02 PM
Tetrachloroethene	U	H	0.25	mg/L	50		9/12/2013 04:02 PM
Toluene	3.8	H	0.25	mg/L	50		9/12/2013 04:02 PM
Trichloroethene	U	H	0.25	mg/L	50		9/12/2013 04:02 PM
Vinyl chloride	U	H	0.10	mg/L	50		9/12/2013 04:02 PM
Xylenes, Total	5.3	H	0.75	mg/L	50		9/12/2013 04:02 PM
Surr: 1,2-Dichloroethane-d4	93.5		70-125	%REC	50		9/12/2013 04:02 PM
Surr: 4-Bromofluorobenzene	97.1		72-125	%REC	50		9/12/2013 04:02 PM
Surr: Dibromofluoromethane	96.7		71-125	%REC	50		9/12/2013 04:02 PM
Surr: Toluene-d8	93.1		75-125	%REC	50		9/12/2013 04:02 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Work Order: 1309450
Client: Navajo Refining Company
Project: WWTP Spill

DATES REPORT

Sample ID	Client Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
<u>Batch ID</u> 73050 <u>Test Name:</u> Semivolatiles - SW8270D						
1309450-01A	API Excavation	Liquid	9/3/2013 4:58:00 PM		9/13/2013 09:15 AM	9/20/2013 03:06 PM
<u>Batch ID</u> 73162 <u>Test Name:</u> Mercury-SW7470A						
1309450-01A	API Excavation	Liquid	9/3/2013 4:58:00 PM		9/18/2013 11:40 AM	9/18/2013 04:02 PM
<u>Batch ID</u> 73195 <u>Test Name:</u> Metals						
1309450-01A	API Excavation	Liquid	9/3/2013 4:58:00 PM		9/19/2013 10:00 AM	9/19/2013 04:40 PM
<u>Batch ID</u> R153657 <u>Test Name:</u> Volatiles - SW8260C						
1309450-01A	API Excavation	Liquid	9/3/2013 4:58:00 PM			9/12/2013 04:02 PM

ALS Environmental

Date: 20-Nov-13

Client: Navajo Refining Company
Work Order: 1309450
Project: WWTP Spill

QC BATCH REPORT

Batch ID: **73162** Instrument ID **HG03** Method: **SW7470**

MBLK	Sample ID: GBLKW1-091813-73162				Units: mg/L		Analysis Date: 9/18/2013 03:41 PM			
Client ID:	Run ID: HG03_130918A				SeqNo: 3360508		Prep Date: 9/18/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.000200								

LCS	Sample ID: GLCSW1-091813-73162				Units: mg/L		Analysis Date: 9/18/2013 03:42 PM			
Client ID:	Run ID: HG03_130918A				SeqNo: 3360509		Prep Date: 9/18/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00505	0.000200	0.005	0	101	85-115				

MS	Sample ID: 1309402-01DMS				Units: mg/L		Analysis Date: 9/18/2013 03:50 PM			
Client ID:	Run ID: HG03_130918A				SeqNo: 3360512		Prep Date: 9/18/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00511	0.000200	0.005	-0.000025	103	85-115				

MSD	Sample ID: 1309402-01DMSD				Units: mg/L		Analysis Date: 9/18/2013 03:51 PM			
Client ID:	Run ID: HG03_130918A				SeqNo: 3360513		Prep Date: 9/18/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00492	0.000200	0.005	-0.000025	98.9	85-115	0.00511	3.79	20	

DUP	Sample ID: 1309402-01DDUP				Units: mg/L		Analysis Date: 9/18/2013 03:46 PM			
Client ID:	Run ID: HG03_130918A				SeqNo: 3360511		Prep Date: 9/18/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.000200					-0.000025	0	20	

The following samples were analyzed in this batch:

1309450-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC Page: 1 of 11

Client: Navajo Refining Company
Work Order: 1309450
Project: WWTP Spill

QC BATCH REPORT

Batch ID: **73195** Instrument ID **ICPMS05** Method: **SW6020**

MBLK	Sample ID: MBLKW3-091913-73195				Units: mg/L		Analysis Date: 9/20/2013 12:08 PM			
Client ID:	Run ID: ICPMS05_130920A				SeqNo: 3363548		Prep Date: 9/19/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	U	0.0100								
Arsenic	U	0.00500								
Barium	U	0.00500								
Boron	U	0.0500								
Cadmium	U	0.00200								
Chromium	U	0.00500								
Cobalt	U	0.00500								
Copper	U	0.00500								
Iron	U	0.200								
Lead	U	0.00500								
Manganese	U	0.00500								
Molybdenum	U	0.00500								
Nickel	U	0.00500								
Selenium	U	0.00500								
Silver	U	0.00500								
Uranium	U	0.00500								
Zinc	U	0.00500								

LCS	Sample ID: MLCSW3-091913-73195				Units: mg/L		Analysis Date: 9/19/2013 04:07 PM			
Client ID:	Run ID: ICPMS05_130919A				SeqNo: 3362300		Prep Date: 9/19/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.05273	0.00500	0.05	0	105	80-120				
Barium	0.05382	0.00500	0.05	0	108	80-120				
Boron	0.4791	0.0500	0.5	0	95.8	80-120				
Cadmium	0.05023	0.00200	0.05	0	100	80-120				
Chromium	0.05218	0.00500	0.05	0	104	80-120				
Cobalt	0.0522	0.00500	0.05	0	104	80-120				
Copper	0.05123	0.00500	0.05	0	102	80-120				
Iron	5.33	0.200	5	0	107	80-120				
Lead	0.05107	0.00500	0.05	0	102	80-120				
Manganese	0.05274	0.00500	0.05	0	105	80-120				
Molybdenum	0.04933	0.00500	0.05	0	98.7	80-120				
Nickel	0.0511	0.00500	0.05	0	102	80-120				
Selenium	0.05262	0.00500	0.05	0	105	80-120				
Silver	0.05091	0.00500	0.05	0	102	80-120				
Uranium	0.09508	0.00500	0.1	0	95.1	80-120				
Zinc	0.05587	0.00500	0.05	0	112	80-120				

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1309450
Project: WWTP Spill

QC BATCH REPORT

Batch ID: **73195** Instrument ID **ICPMS05** Method: **SW6020**

LCS	Sample ID: MLCSW3-091913-73195				Units: mg/L		Analysis Date: 9/20/2013 12:10 PM			
Client ID:	Run ID: ICPMS05_130920A				SeqNo: 3363549		Prep Date: 9/19/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1065	0.0100	0.1	0	107	80-120				

MS	Sample ID: 1309616-01DMS				Units: mg/L		Analysis Date: 9/19/2013 04:21 PM			
Client ID:	Run ID: ICPMS05_130919A				SeqNo: 3362305		Prep Date: 9/19/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	2.837	0.0100	0.1	2.969	-132	80-120				SEO
Arsenic	0.05759	0.00500	0.05	0.00563	104	80-120				
Barium	0.1532	0.00500	0.05	0.1134	79.6	80-120				S
Boron	1.091	0.0500	0.5	0.6631	85.6	80-120				
Cadmium	0.0527	0.00200	0.05	0.000053	105	80-120				
Chromium	0.06385	0.00500	0.05	0.01307	102	80-120				
Cobalt	0.05086	0.00500	0.05	0.001394	98.9	80-120				
Copper	0.05476	0.00500	0.05	0.005046	99.4	80-120				
Iron	29.93	0.200	5	26.15	75.6	80-120				SO
Lead	0.0539	0.00500	0.05	0.002549	103	80-120				
Manganese	0.2507	0.00500	0.05	0.211	79.5	80-120				SO
Molybdenum	0.05565	0.00500	0.05	0.00842	94.5	80-120				
Nickel	0.05403	0.00500	0.05	0.004901	98.3	80-120				
Selenium	0.0584	0.00500	0.05	0.005257	106	80-120				
Silver	0.04873	0.00500	0.05	0.00001	97.4	80-120				
Uranium	0.1061	0.00500	0.1	0.008033	98.1	80-120				
Zinc	0.08035	0.00500	0.05	0.02509	111	80-120				

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1309450
Project: WWTP Spill

QC BATCH REPORT

Batch ID: **73195** Instrument ID **ICPMS05** Method: **SW6020**

MSD		Sample ID: 1309616-01DMSD				Units: mg/L		Analysis Date: 9/19/2013 04:23 PM		
Client ID:		Run ID: ICPMS05_130919A				SeqNo: 3362306		Prep Date: 9/19/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	2.716	0.0100	0.1	2.969	-253	80-120	2.837	4.37	15	SEO
Arsenic	0.05978	0.00500	0.05	0.00563	108	80-120	0.05759	3.73	15	
Barium	0.1575	0.00500	0.05	0.1134	88.3	80-120	0.1532	2.79	15	
Boron	1.103	0.0500	0.5	0.6631	87.9	80-120	1.091	1.06	15	
Cadmium	0.05355	0.00200	0.05	0.000053	107	80-120	0.0527	1.6	15	
Chromium	0.06485	0.00500	0.05	0.01307	104	80-120	0.06385	1.55	15	
Cobalt	0.05328	0.00500	0.05	0.001394	104	80-120	0.05086	4.64	15	
Copper	0.05661	0.00500	0.05	0.005046	103	80-120	0.05476	3.32	15	
Iron	30.81	0.200	5	26.15	93.3	80-120	29.93	2.91	15	O
Lead	0.05453	0.00500	0.05	0.002549	104	80-120	0.0539	1.15	15	
Manganese	0.2572	0.00500	0.05	0.211	92.5	80-120	0.2507	2.56	15	O
Molybdenum	0.05767	0.00500	0.05	0.00842	98.5	80-120	0.05565	3.56	15	
Nickel	0.05706	0.00500	0.05	0.004901	104	80-120	0.05403	5.45	15	
Selenium	0.0605	0.00500	0.05	0.005257	110	80-120	0.0584	3.53	15	
Silver	0.04981	0.00500	0.05	0.00001	99.6	80-120	0.04873	2.19	15	
Uranium	0.1081	0.00500	0.1	0.008033	100	80-120	0.1061	1.89	15	
Zinc	0.07989	0.00500	0.05	0.02509	110	80-120	0.08035	0.578	15	

DUP		Sample ID: 1309616-01DDUP				Units: mg/L		Analysis Date: 9/19/2013 04:18 PM		
Client ID:		Run ID: ICPMS05_130919A				SeqNo: 3362304		Prep Date: 9/19/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.006299	0.00500					0.00563	11.2	25	
Barium	0.1128	0.00500					0.1134	0.471	25	
Boron	0.6726	0.0500					0.6631	1.43	25	
Cadmium	U	0.00200					0.000053	0	25	
Chromium	0.01436	0.00500					0.01307	9.42	25	
Cobalt	0.001703	0.00500					0.001394	0	25	J
Copper	0.005504	0.00500					0.005046	8.68	25	
Iron	28.46	0.200					26.15	8.48	25	
Lead	0.002397	0.00500					0.002549	0	25	J
Manganese	0.2288	0.00500					0.211	8.11	25	
Molybdenum	0.009001	0.00500					0.00842	6.67	25	
Nickel	0.005295	0.00500					0.004901	7.73	25	
Selenium	0.006381	0.00500					0.005257	19.3	25	
Silver	U	0.00500					0.00001	0	25	
Uranium	0.008277	0.00500					0.008033	2.99	25	
Zinc	0.02722	0.00500					0.02509	8.15	25	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1309450
Project: WWTP Spill

QC BATCH REPORT

Batch ID: **73195** Instrument ID **ICPMS05** Method: **SW6020**

DUP	Sample ID: 1309616-01DDUP				Units: mg/L		Analysis Date: 9/20/2013 12:15 PM			
Client ID:	Run ID: ICPMS05_130920A				SeqNo: 3363551		Prep Date: 9/19/2013		DF: 10	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	2.192	0.100					2.31	5.24	25	

The following samples were analyzed in this batch:

1309450-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1309450
Project: WWTP Spill

QC BATCH REPORT

Batch ID: **73050** Instrument ID **SV-3** Method: **SW8270**

MBLK	Sample ID: SBLKW1-130913-73050				Units: µg/L		Analysis Date: 9/16/2013 06:21 PM			
Client ID:	Run ID: SV-3_130916B				SeqNo: 3358240		Prep Date: 9/13/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	U	5.0								
2-Methylnaphthalene	U	5.0								
Benzo(a)pyrene	U	5.0								
Chrysene	U	5.0								
Naphthalene	U	5.0								
Surr: 2,4,6-Tribromophenol	93.53	5.0	100	0	93.5	42-124	0			
Surr: 2-Fluorobiphenyl	77.17	5.0	100	0	77.2	48-120	0			
Surr: 2-Fluorophenol	67.1	5.0	100	0	67.1	20-120	0			
Surr: 4-Terphenyl-d14	87.53	5.0	100	0	87.5	51-135	0			
Surr: Nitrobenzene-d5	71.14	5.0	100	0	71.1	41-120	0			
Surr: Phenol-d6	69.12	5.0	100	0	69.1	20-120	0			

LCS	Sample ID: SLCSW1-130913-73050				Units: µg/L		Analysis Date: 9/16/2013 05:35 PM			
Client ID:	Run ID: SV-3_130916B				SeqNo: 3358239		Prep Date: 9/13/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	41.26	5.0	50	0	82.5	55-120				
2-Methylnaphthalene	42.44	5.0	50	0	84.9	55-120				
Benzo(a)pyrene	40.43	5.0	50	0	80.9	55-120				
Chrysene	41.67	5.0	50	0	83.3	55-120				
Naphthalene	39.6	5.0	50	0	79.2	55-120				
Surr: 2,4,6-Tribromophenol	79.62	5.0	100	0	79.6	42-124	0			
Surr: 2-Fluorobiphenyl	69.61	5.0	100	0	69.6	48-120	0			
Surr: 2-Fluorophenol	98.92	5.0	100	0	98.9	20-120	0			
Surr: 4-Terphenyl-d14	89.45	5.0	100	0	89.4	51-135	0			
Surr: Nitrobenzene-d5	69.5	5.0	100	0	69.5	41-120	0			
Surr: Phenol-d6	83.36	5.0	100	0	83.4	20-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1309450
Project: WWTP Spill

QC BATCH REPORT

Batch ID: **73050** Instrument ID **SV-3** Method: **SW8270**

LCSD		Sample ID: SLCSDW1-130913-73050				Units: µg/L		Analysis Date: 9/17/2013 11:47 AM		
Client ID:		Run ID: SV-3_130916B				SeqNo: 3358244		Prep Date: 9/13/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	38.91	5.0	50	0	77.8	55-120	41.26	5.86	20	
2-Methylnaphthalene	41.44	5.0	50	0	82.9	55-120	42.44	2.39	20	
Benzo(a)pyrene	41.04	5.0	50	0	82.1	55-120	40.43	1.51	20	
Chrysene	41.56	5.0	50	0	83.1	55-120	41.67	0.283	20	
Naphthalene	39.98	5.0	50	0	80	55-120	39.6	0.95	20	
Surr: 2,4,6-Tribromophenol	87.43	5.0	100	0	87.4	42-124	79.62	9.35	20	
Surr: 2-Fluorobiphenyl	73.19	5.0	100	0	73.2	48-120	69.61	5.01	20	
Surr: 2-Fluorophenol	75.18	5.0	100	0	75.2	20-120	98.92	27.3	20	R
Surr: 4-Terphenyl-d14	77.31	5.0	100	0	77.3	51-135	89.45	14.6	20	
Surr: Nitrobenzene-d5	76.3	5.0	100	0	76.3	41-120	69.5	9.32	20	
Surr: Phenol-d6	66.91	5.0	100	0	66.9	20-120	83.36	21.9	20	R

The following samples were analyzed in this batch:

1309450-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1309450
Project: WWTP Spill

QC BATCH REPORT

Batch ID: **R153657** Instrument ID **VOA1** Method: **SW8260**

MBLK		Sample ID: VBLKW-130912-R153657				Units: µg/L		Analysis Date: 9/12/2013 02:46 PM		
Client ID:		Run ID: VOA1_130912A				SeqNo: 3354011		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	U	5.0								
1,1,2,2-Tetrachloroethane	U	5.0								
1,1,2-Trichloroethane	U	5.0								
1,1-Dichloroethane	U	5.0								
1,1-Dichloroethene	U	5.0								
1,2-Dibromoethane	U	5.0								
1,2-Dichloroethane	U	5.0								
Benzene	U	5.0								
Carbon tetrachloride	U	5.0								
Chloroform	U	5.0								
Ethylbenzene	U	5.0								
Methylene chloride	U	10								
Tetrachloroethene	U	5.0								
Toluene	U	5.0								
Trichloroethene	U	5.0								
Vinyl chloride	U	2.0								
Xylenes, Total	U	15								
Surr: 1,2-Dichloroethane-d4	49	5.0	50	0	98	70-125	0			
Surr: 4-Bromofluorobenzene	51.26	5.0	50	0	103	72-125	0			
Surr: Dibromofluoromethane	47.84	5.0	50	0	95.7	71-125	0			
Surr: Toluene-d8	45.14	5.0	50	0	90.3	75-125	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1309450
Project: WWTP Spill

QC BATCH REPORT

Batch ID: **R153657** Instrument ID **VOA1** Method: **SW8260**

LCS		Sample ID: VLCSW-130912-R153657				Units: µg/L		Analysis Date: 9/12/2013 01:14 PM		
Client ID:		Run ID: VOA1_130912A				SeqNo: 3354010		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	51.59	5.0	50	0	103	80-120				
1,1,2,2-Tetrachloroethane	43.8	5.0	50	0	87.6	72-120				
1,1,2-Trichloroethane	48.85	5.0	50	0	97.7	80-120				
1,1-Dichloroethane	55.72	5.0	50	0	111	76-120				
1,1-Dichloroethene	57.77	5.0	50	0	116	73-124				
1,2-Dibromoethane	49.91	5.0	50	0	99.8	80-120				
1,2-Dichloroethane	52.43	5.0	50	0	105	78-120				
Benzene	54.11	5.0	50	0	108	73-121				
Carbon tetrachloride	48.43	5.0	50	0	96.9	75-125				
Chloroform	52.59	5.0	50	0	105	70-130				
Ethylbenzene	48.86	5.0	50	0	97.7	80-120				
Methylene chloride	51.52	10	50	0	103	65-133				
Tetrachloroethene	47.65	5.0	50	0	95.3	79-120				
Toluene	47.62	5.0	50	0	95.2	80-120				
Trichloroethene	53.45	5.0	50	0	107	80-120				
Vinyl chloride	60.26	2.0	50	0	121	70-127				
Xylenes, Total	149.3	15	150	0	99.6	80-120				
<i>Surr: 1,2-Dichloroethane-d4</i>	48.87	5.0	50	0	97.7	70-125		0		
<i>Surr: 4-Bromofluorobenzene</i>	52.18	5.0	50	0	104	72-125		0		
<i>Surr: Dibromofluoromethane</i>	50.3	5.0	50	0	101	71-125		0		
<i>Surr: Toluene-d8</i>	47.56	5.0	50	0	95.1	75-125		0		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1309450
Project: WWTP Spill

QC BATCH REPORT

Batch ID: **R153657** Instrument ID **VOA1** Method: **SW8260**

MS		Sample ID: 1309436-05AMS				Units: µg/L		Analysis Date: 9/12/2013 04:28 PM		
Client ID:		Run ID: VOA1_130912A				SeqNo: 3354015		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	47.54	5.0	50	0	95.1	80-120				
1,1,2,2-Tetrachloroethane	52.72	5.0	50	0	105	72-120				
1,1,2-Trichloroethane	51.89	5.0	50	0	104	80-120				
1,1-Dichloroethane	53	5.0	50	0	106	76-120				
1,1-Dichloroethene	48.61	5.0	50	0	97.2	73-124				
1,2-Dibromoethane	51.94	5.0	50	0	104	80-120				
1,2-Dichloroethane	48.5	5.0	50	0	97	78-120				
Benzene	44.39	5.0	50	0	88.8	73-121				
Carbon tetrachloride	44.48	5.0	50	0	89	75-125				
Chloroform	50.02	5.0	50	0	100	70-130				
Ethylbenzene	46.39	5.0	50	0	92.8	80-120				
Methylene chloride	50.26	10	50	0	101	65-133				
Tetrachloroethene	41.87	5.0	50	0	83.7	79-120				
Toluene	46.75	5.0	50	0	93.5	80-120				
Trichloroethene	45.58	5.0	50	0	91.2	80-120				
Vinyl chloride	40.53	2.0	50	0	81.1	70-127				
Xylenes, Total	145.5	15	150	0	97	80-120				
Surr: 1,2-Dichloroethane-d4	48.39	5.0	50	0	96.8	70-125		0		
Surr: 4-Bromofluorobenzene	51.28	5.0	50	0	103	72-125		0		
Surr: Dibromofluoromethane	50.54	5.0	50	0	101	71-125		0		
Surr: Toluene-d8	50.23	5.0	50	0	100	75-125		0		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1309450
Project: WWTP Spill

QC BATCH REPORT

Batch ID: **R153657** Instrument ID **VOA1** Method: **SW8260**

MSD		Sample ID: 1309436-05AMSD				Units: µg/L		Analysis Date: 9/12/2013 04:53 PM		
Client ID:		Run ID: VOA1_130912A				SeqNo: 3354016		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	47.16	5.0	50	0	94.3	80-120	47.54	0.797	20	
1,1,2,2-Tetrachloroethane	50.78	5.0	50	0	102	72-120	52.72	3.75	20	
1,1,2-Trichloroethane	50.25	5.0	50	0	100	80-120	51.89	3.22	20	
1,1-Dichloroethane	52.51	5.0	50	0	105	76-120	53	0.937	20	
1,1-Dichloroethene	51.28	5.0	50	0	103	73-124	48.61	5.35	20	
1,2-Dibromoethane	50.19	5.0	50	0	100	80-120	51.94	3.42	20	
1,2-Dichloroethane	49.25	5.0	50	0	98.5	78-120	48.5	1.55	20	
Benzene	47.99	5.0	50	0	96	73-121	44.39	7.78	20	
Carbon tetrachloride	48.08	5.0	50	0	96.2	75-125	44.48	7.79	20	
Chloroform	49.8	5.0	50	0	99.6	70-130	50.02	0.454	20	
Ethylbenzene	43.63	5.0	50	0	87.3	80-120	46.39	6.13	20	
Methylene chloride	50.01	10	50	0	100	65-133	50.26	0.49	20	
Tetrachloroethene	45.56	5.0	50	0	91.1	79-120	41.87	8.44	20	
Toluene	48.55	5.0	50	0	97.1	80-120	46.75	3.78	20	
Trichloroethene	48.97	5.0	50	0	97.9	80-120	45.58	7.17	20	
Vinyl chloride	48.68	2.0	50	0	97.4	70-127	40.53	18.3	20	
Xylenes, Total	147.3	15	150	0	98.2	78-121	145.5	1.2	20	
Surr: 1,2-Dichloroethane-d4	48.01	5.0	50	0	96	70-125	48.39	0.789	20	
Surr: 4-Bromofluorobenzene	49.03	5.0	50	0	98.1	72-125	51.28	4.49	20	
Surr: Dibromofluoromethane	48.77	5.0	50	0	97.5	71-125	50.54	3.57	20	
Surr: Toluene-d8	47.38	5.0	50	0	94.8	75-125	50.23	5.84	20	

The following samples were analyzed in this batch:

1309450-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Project: WWTP Spill
WorkOrder: 1309450

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

<u>Units Reported</u>	<u>Description</u>
µg/L	Micrograms per Liter
mg/L	Milligrams per Liter

Sample Receipt Checklist

Client Name: **NAVAJO REFINING**

Date/Time Received: **11-Sep-13 09:30**

Work Order: **1309450**

Received by: **JBA**

Checklist completed by Parash M. Ciga 12-Sep-13
eSignature Date

Reviewed by: Senia West 13-Sep-13
eSignature Date

Matrices: Liquid

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>1.0c/1.0c C/U</u> <u>IR1</u>		
Cooler(s)/Kit(s):	<u>2988</u>		
Date/Time sample(s) sent to storage:	<u>9/12/13 09:17</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes: Sample received in 1 Liter W/M Glass container. Water Sample - non preserved - volatiles and semivolatiles have 7 day holding time; sample received outside of holding time. Jsrb.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:



☒ ALS Laboratory Group
10450 Stancliff Rd. #210
Houston, Texas 77099
(Tel) 281.530.5656
(Fax) 281.530.5887

Chain of Custody Form

Page 1 of 1

1309450

NAVAJO REFINING: Navajo Refining Company

Project: WWTP Spill



ALS Project Manager: Sonia West

Customer Information				Project Information				Parameter/Method Request for Analysis											
Purchase Order		Project Name	WWTP Spill	A	Volatiles (Totals)														
Work Order		Project Number		B	Semi-Volatiles (Totals)														
Company Name	Navajo Refining Company	Bill To Company	Navajo Refining Company	C	Metals (Totals)														
Send Report To	Robert Combs	Invoice Attn	Aaron Strange	D															
Address	P. O. Box 159	Address	501 East Main	E															
				F															
City/State/Zip	Artesia, New Mexico 88211-0159	City/State/Zip	Artesia, New Mexico 88210	G															
Phone	(575) 748-3311	Phone	(575) 748-3311	H															
Fax	(575) 746-5451	Fax	(575) 746-5451	I															
e-Mail Address	Aaron.Strange@hollyfrontier.com	e-Mail Address	Aaron.Strange@hollyfrontier.com	J															
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold		
1	API Excavation	9/3/13	16:58	Liquid	None	1	X	X	X										
2	Temperature Blank			Liquid		1													
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
Sampler(s): Please Print & Sign		Shipment Method:		Required Turnaround Time:				Results Due Date:											
Aaron Strange		FedEx		<input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour															
Relinquished by:		Date:	Time:	Received by:		Notes:													
<i>Aaron Strange</i>		9/3/2013	16:15	<i>[Signature]</i>															
Relinquished by:		Date:	Time:	Received by (Laboratory):		Cooler Temp.		QC Package: (Check Box Below)											
<i>[Signature]</i>		9/4/13	0930	<i>[Signature]</i>				<input type="checkbox"/> Level II: Standard QC <input type="checkbox"/> TRRP-Checklist											
Logged by (Laboratory):		Date:	Time:	Checked by (Laboratory):				<input type="checkbox"/> Level III: Std QC + Raw Data <input type="checkbox"/> TRRP Level IV											
								<input type="checkbox"/> Level IV: SW846 CLP-Like											
Preservative Key:		Other: _____																	
1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035																			

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.

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ORIGIN ID: ROWA (575) 748-3311

NAVAJO ARTESIA
501 E MAIN

ARTESIA, NM 882109440
UNITED STATES US

SHIP DATE: 09SEP13
ACTWGT: 25.0 LB MAN
CAD: 634483/CAFE2608

BILL RECIPIENT

SONIA WEST
ALS LABORATORY GROUP
10450 STANCLIFF RD., SUITE 210

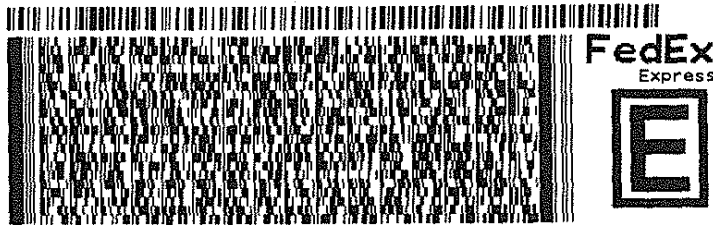
HOUSTON TX 77099

(281) 530-5656

INV:
PO:

REF:

DEPT:



FedEx

TRK#
0201

5614 5589 2050

WED - 11 SEP 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099

TX-US
IAH



Emp# 091856 18SEP13 ROWA 519C1/9256/93AB



ALS Environmental

10450 Stancliff Rd., Suite 210

Houston, Texas 77099

Tel. +1 281 530 5656

Fax. +1 281 530 5887

2988

CUSTODY SEAL

ate: 9-9-13 Time: 10:13
Name: Anna Stuping
Company: Navajo Retaining Co

Seal Broken By:

Signature



06-Nov-2013

Aaron Strange
Navajo Refining Company
PO Box 1490
Artesia, NM 88211-1490

Tel: (575) 748-6733
Fax: (575) 746-5421

Re: Wastewater Spill-Artesia

Work Order: **1311143**

Dear Aaron,

ALS Environmental received 1 sample on 25-Sep-2013 09:25 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 20.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in cursive script that reads "Sonia West".

Electronically approved by: Dayna.Fisher

Sonia West
Project Manager



Certificate No: T104704231-13-12

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887

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Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Navajo Refining Company
Project: Wastewater Spill-Artesia
Work Order: 1311143

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1311143-01	Wastewater Spill at Lift Station Excavation	Solid	13091139	9/24/2013 14:07	9/25/2013 09:25	<input type="checkbox"/>

Client: Navajo Refining Company
Project: Wastewater Spill-Artesia
Work Order: 1311143

Case Narrative

This report contains additional analyses per your request on November 4, 2013 via email. The laboratory analyzed your sample Wastewater Spill at Lift Station Excavation for RCI. The sample was originally reported as ALS Workorder Number 13091139.

The analyses for Reactive Cyanide and Reactive Sulfide were subcontracted to ALS Environmental in Holland, MI.

ALS Environmental**Date:** 06-Nov-13**Client:** Navajo Refining Company**Project:** Wastewater Spill-Artesia**Work Order:** 1311143**Sample ID:** Wastewater Spill at Lift Station Excavation**Lab ID:** 1311143-01**Collection Date:** 9/24/2013 02:07 PM**Matrix:** SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
REACTIVE CYANIDE			SW-846			Analyst: HN
Reactive Cyanide	U	H	0.100	mg/Kg	1	11/6/2013
REACTIVE SULFIDE			SW-846			Analyst: HN
Reactive Sulfide	242	H	40.0	mg/Kg	1	11/5/2013 02:00 PM
IGNITABILITY			SW1030			Analyst: KAH
Ignitability, Solid	Negative	H		Burn Rate, mm/sec	1	11/5/2013 04:20 PM
PH - SOIL - SW9045D			SW9045B			Analyst: KL
pH	7.61	H	0.100	pH Units	1	11/5/2013 01:00 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Work Order: 1311143
Client: Navajo Refining Company
Project: Wastewater Spill-Artesia

DATES REPORT

Sample ID	Client Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
<u>Batch ID</u> R156646 <u>Test Name:</u> Ignitability						
1311143-01A	Wastewater Spill at Lift Station Excavation	Solid	9/24/2013 2:07:00 PM			11/5/2013 04:20 PM
<u>Batch ID</u> R156658 <u>Test Name:</u> pH - Soil - SW9045D						
1311143-01A	Wastewater Spill at Lift Station Excavation	Solid	9/24/2013 2:07:00 PM			11/5/2013 01:00 PM
<u>Batch ID</u> R156680 <u>Test Name:</u> Reactive Cyanide						
1311143-01B	Wastewater Spill at Lift Station Excavation	Solid	9/24/2013 2:07:00 PM			11/6/2013
						11/5/2013 02:00 PM

Client: Navajo Refining Company

Work Order: 1311143

Project: Wastewater Spill-Artesia

QC BATCH REPORT

Batch ID: **R156646** Instrument ID **WetChem** Method: **SW1030** (Dissolve)

DUP Sample ID: **1311030-01ADUP** Units: **Burn Rate, mm/se** Analysis Date: **11/5/2013 04:20 PM**

Client ID: Run ID: **WETCHEM_131105E** SeqNo: **3421081** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ignitability, Solid	U	0					0	0	25	

The following samples were analyzed in this batch:

1311143-01A

Client: Navajo Refining Company
Work Order: 1311143
Project: Wastewater Spill-Artesia

QC BATCH REPORT

Batch ID: **R156658** Instrument ID **WetChem** Method: **SW9045B (Dissolve)**

LCS Sample ID: **WLCSS1-131105-R156658** Units: **pH Units** Analysis Date: **11/5/2013 01:00 PM**

Client ID: Run ID: **WETCHEM_131105H** SeqNo: **3421408** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.01	0.100	6	0	100	98-102				

DUP Sample ID: **1311030-01ADUP** Units: **pH Units** Analysis Date: **11/5/2013 01:00 PM**

Client ID: Run ID: **WETCHEM_131105H** SeqNo: **3421419** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	5.45	0.100					5.5	0.913	10	H

The following samples were analyzed in this batch:

1311143-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Project: Wastewater Spill-Artesia
WorkOrder: 1311143

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

<u>Units Reported</u>	<u>Description</u>
Burn Rate, mm/sec	
mg/Kg	Milligrams per Kilogram
pH Units	

Sample Receipt Checklist

Client Name: **NAVAJO REFINING**

Date/Time Received: **25-Sep-13 09:25**

Work Order: **13091139**

Received by: **WTJ**

Checklist completed by *Parash M. Ciga*
eSignature

25-Sep-13
Date

Reviewed by:

eSignature

Date

Matrices: **Solid**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>3.3c/3.3c C/U</u> <u>IR1</u>		
Cooler(s)/Kit(s):	<u>5119</u>		
Date/Time sample(s) sent to storage:	<u>9/25/13 16:10</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



ALS Laboratory Group
10450 Stancliff Rd. #210
Houston, Texas 77099
(Tel) 281.530.5656
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Chain of Custody Form

Page 1 of 1

1311143

NAVAJO REFINING: Navajo Refining Company

Project: Wastewater Spill-Artesia



ALS Project Manager: Sonia West

Customer Information			Project Information															
Purchase Order		Project Name	Wastewater Spill - Artesia				A	TCLP Volatiles										
Work Order		Project Number					B	TCLP Semi-Volatiles										
Company Name	Navajo Refining Company		Bill To Company	Navajo Refining Company				C	TCLP Metals									
Send Report To	Aaron Strange		Invoice Attn.	Aaron Strange				D										
Address	P. O. Box 159		Address	501 East Main				E										
								F										
City/State/Zip	Artesia, New Mexico 88211-0159		City/State/Zip	Artesia, New Mexico 88210				G										
Phone	(575) 748-3311		Phone	(575) 748-3311				H										
Fax	(575) 748-5451		Fax	(575) 748-5451				I										
e-Mail Address	A.Strange@hollyfrontier.com		e-Mail Address	A.Strange@hollyfrontier.com				J										
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold	
1	Wastewater Spill at Lift Station Excavation	9/24/13	14:07	Solid	Chill	1	X	X	X									
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
Sampler(s): Please Print & Sign Glen Rhodes			Shipment Method: Federal Express		Required Turnaround Time: <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour				Other: _____				Results Due Date: _____					
Relinquished by: Glen Rhodes		Date: 9/24/13	Time: 1500	Received by:			Notes:											
Relinquished by: Aaron Strange		Date: 9/24/13	Time: 16:15	Received by (Laboratory): B. J. [Signature]			Cooler Temp: 33			QC Package: (Check Box Below)								
Logged by (Laboratory):		Date:	Time:	Checked by (Laboratory):						Level II: Standard QC			TRRP-Checklist					
										Level III: Std QC + Raw Data			TRRP Level IV					
										Level IV: SW846 CLP-Like								
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035																		
Other: _____																		

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.

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ALS Environmental

10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Date: 9-24-93
Name: A.
Company: 4

CUSTODY SEAL

24-93 Time: 16:15
Evelyn S. Fong
Varajit Refining Co.

Seal Broken B

Date:

ORIGIN ID: ROUR (5/5) 748-3311

NAVAJO ARTESIA
5011 S. MAINARTESIA NM 882109440
UNITED STATES USSHIP DATE: 24SEP13
ACTWT: 32.0 LB MAN
CRD: 634483/CRFE2704

BILL RECIPIENT

SONIA WEST

ALS LABORATORY GROUP
10450 STANCLIFF RD., SUITE 210

HOUSTON TX 77099

(281) 530-5656
INV. PO.

REF:

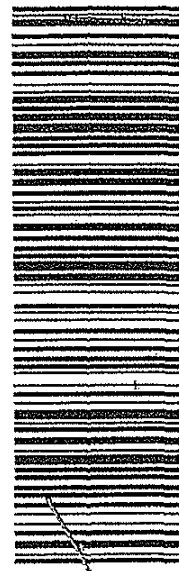
DEPT:

FedEx
Express

J1311305230126

WED - 25 SEP 10:30A
PRIORITY OVERNIGHTTRK# 5614 5589 2304
0281

AB SGRA

77099
TX-US IAH

Part # 156148-434 RIT 08/12

Client: ALS Environmental
Project: 1311143
Work Order: 1311181**Work Order Sample Summary**

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1311181-01	1311143-01B	Solid		9/24/2013 14:07	11/5/2013 09:30	<input type="checkbox"/>

Client: ALS Environmental
Project: 1311143
WorkOrder: 1311181

**QUALIFIERS,
ACRONYMS, UNITS**

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
mg/Kg	Milligrams per Kilogram

Client: ALS Environmental**Project:** 1311143**Work Order:** 1311181**Case Narrative**

Batch R129921, Method SR_7.3.4.2_WST, Sample 1311181-01A: Sample was analyzed outside of the holding time at the request of the client. Results should be considered estimated.

Batch R129963, Method CNR_7.3.3.2_WST, Sample 1311181-01A: Sample was analyzed outside of the holding time at the request of the client. Results should be considered estimated.

ALS Group USA, Corp

Date: 06-Nov-13

Client: ALS Environmental

Project: 1311143

Work Order: 1311181

Sample ID: 1311143-01B

Lab ID: 1311181-01

Collection Date: 9/24/2013 02:07 PM

Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, REACTIVE			SW7.3.3.2			Analyst: ND
Cyanide, Reactive	ND	H	100	mg/Kg	1	11/6/2013
SULFIDE, REACTIVE			SW7.3.4.2			Analyst: ND
Sulfide, Reactive	240	H	100	mg/Kg	1	11/5/2013 02:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Work Order: 1311181
Project: 1311143

QC BATCH REPORT

Batch ID: **R129921** Instrument ID **WETCHEM** Method: **SW7.3.4.2**

MBLK		Sample ID: MB-R129921-R129921				Units: mg/Kg		Analysis Date: 11/5/2013 02:00 PM		
Client ID:		Run ID: WETCHEM_131105M				SeqNo: 2523666		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Sulfide, Reactive ND 100

LCS		Sample ID: LCS-R129921-R129921				Units: mg/Kg		Analysis Date: 11/5/2013 02:00 PM		
Client ID:		Run ID: WETCHEM_131105M				SeqNo: 2523667		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Sulfide, Reactive 1638 100 2149 0 76.2 60-120 0

The following samples were analyzed in this batch:

1311181-01A

Client: ALS Environmental
 Work Order: 1311181
 Project: 1311143

QC BATCH REPORT

Batch ID: **R129963** Instrument ID **WETCHEM** Method: **SW7.3.3.2**

MBLK		Sample ID: MB-R129963-R129963				Units: mg/Kg		Analysis Date: 11/6/2013		
Client ID:		Run ID: WETCHEM_131106B				SeqNo: 2524712		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Cyanide, Reactive ND 100

LCS		Sample ID: LCS-R129963-R129963				Units: mg/Kg		Analysis Date: 11/6/2013		
Client ID:		Run ID: WETCHEM_131106B				SeqNo: 2524713		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Cyanide, Reactive 117.4 100 125 0 94 75-125 0

MS		Sample ID: 13101619-02A MS				Units: mg/Kg		Analysis Date: 11/6/2013		
Client ID:		Run ID: WETCHEM_131106B				SeqNo: 2524716		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Cyanide, Reactive 235 100 250 0 94 50-150 0

MSD		Sample ID: 13101619-02A MSD				Units: mg/Kg		Analysis Date: 11/6/2013		
Client ID:		Run ID: WETCHEM_131106B				SeqNo: 2524717		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Cyanide, Reactive 235.1 100 250 0 94 50-150 235 0.0383 35

The following samples were analyzed in this batch:

1311181-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Subcontractor:**ALS Laboratory Group
3352 128th Ave.

Holland, MI 49424

TEL: (616) 399-6070

FAX: (616) 399-6185

Acct #:

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Date: 04-Nov-13COC ID: 15242Due Date 07-Nov-13

1311181

Salesperson

Houston House Acct

Customer Information		Project Information		Parameter/Method Request for Analysis										
Purchase Order		Project Name	1311143	A	Reactive Cyanide (SW-846)									
Work Order		Project Number		B	Reactive Sulfide (SW-846)									
Company Name	ALS Group USA, Corp.	Bill To Company	ALS Group USA, Corp.	C										
Send Report To	Sonia West	Inv Attn	Accounts Payable	D										
Address	10450 Stancliff Rd, Suite 210	Address	10450 Stancliff Rd, Suite 210	E										
				F										
City/State/Zip	Houston, Texas 77099-4338	City/State/Zip	Houston, Texas 77099-4338	G										
Phone	(281) 530-5656	Phone	(281) 530-5656	H										
Fax	(281) 530-5887	Fax	(281) 530-5887	I										
eMail Address	Sonia.West@alsglobal.com	eMail CC		J										
Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J	
1311143-01B (Wastewater Spill at Lift Station Excavation)	Solid	24/Sep/2013 14:07	(1) 4OZGNEAT	X	X									

RUSH**Comments:**

RUSH !! Please analyze for reactive cyanide & Reactive sulfide. Due on 11/7/13. send report to sonia.west@alsglobal.com & cc : results to jumoke.lawal@alsglobal.com

3.0%

Relinquished by:

Date/Time

Received by:

Date/Time

Cooler IDs

Report/QC Level

Std

Relinquished by:

Date/Time

Received by:

Date/Time

Sample Receipt Checklist

Client Name: **ALS - HOUSTON**

Date/Time Received: **05-Nov-13 09:30**

Work Order: **1311181**

Received by: **DS**

Checklist completed by <u><i>Diane Shaw</i></u>	05-Nov-13	Reviewed by: <u><i>Bill Carey</i></u>	06-Nov-13
eSignature	Date	eSignature	Date

Matrices: **Solid**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>3.0 c</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>11/5/2013 10:21:13 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

281 530-5856
SHIP DATE: 04NOV13
ACTWGT: 8.3 LB
CAD: 300130/CAFE2704
DIMS: 14x11x10 IN
BILL SENDER

TO LES ARNOLD
ALS ENVIRONMENTAL
3352 128TH AVE.

HOLLAND MI 49424

(810) 399-6070
DEPT: ENVIRONMENTAL

REF: VARIJBARE

FedEx
Express



TRK# 5813 7984 6389

NA GRRA

TUE - 05 NOV 10:30A
PRIORITY OVERNIGHT

49424
MI-US GRR





04-Oct-2013

Aaron Strange
Navajo Refining Company
PO Box 159
Artesia, NM 88211

Tel: (575) 748-6733
Fax: (575) 746-5421

Re: Wastewater Spill - Artesia

Work Order: **13091139**

Dear Aaron,

ALS Environmental received 1 sample on 25-Sep-2013 09:25 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 19.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in cursive script that reads "Sonia West".

Electronically approved by: Jumoke M. Lawal

Sonia West
Project Manager



Certificate No: T104704231-13-12

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887

ALS GROUP USA, CORP. Part of the ALS Group An ALS Limited Company

Environmental

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Navajo Refining Company
Project: Wastewater Spill - Artesia
Work Order: 13091139

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
13091139-01	Wastewater Spill at Lift Station Excavation	Solid		9/24/2013 14:07	9/25/2013 09:25	<input type="checkbox"/>

Client: Navajo Refining Company
Project: Wastewater Spill - Artesia
Work Order: 13091139

Case Narrative

Batch 73408, VÔŠÚÀ{ ã[|æĀÁ! * ə æ• ĀHFFĐ Ĝ ĒŮæ] |^ÀŠÔÜÖVGĚHEJĜ Ķ@/ŠÔÜÖ
 ÜÜÖÁ æĀ~ • ã^Ā Ā@/Æ } ġ[|Ā ã• Ā |Ā^} æ&@[|] @ } [|Ā ĀÁ[æĀŌ!^•[|•ĒV@/ŠÔÜÁ æ Ā
 ŠÔÜÖÁ^& ġ^! æ• Ā ^!^Ā ã& Ā@/Æ } ġ[|Ā ã• Ē

ALS Environmental

Date: 04-Oct-13

Client: Navajo Refining Company
Project: Wastewater Spill - Artesia
Sample ID: Wastewater Spill at Lift Station Excavation
Collection Date: 9/24/2013 02:07 PM

Work Order: 13091139
Lab ID: 13091139-01
Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TCLP MERCURY						
Mercury	U		SW7470 0.000200	mg/L	Prep Date: 9/30/2013 1	Analyst: OFO 9/30/2013 06:14 PM
TCLP METALS						
Arsenic	U		SW1311/6020 0.0500	mg/L	Prep Date: 9/27/2013 10	Analyst: SKS 9/27/2013 03:40 PM
Barium	0.137		0.0500	mg/L	10	9/27/2013 03:40 PM
Cadmium	U		0.0200	mg/L	10	9/27/2013 03:40 PM
Chromium	U		0.0500	mg/L	10	9/27/2013 03:40 PM
Lead	U		0.0500	mg/L	10	9/27/2013 03:40 PM
Selenium	U		0.0500	mg/L	10	9/27/2013 03:40 PM
Silver	U		0.0500	mg/L	10	9/27/2013 03:40 PM
TCLP SEMIVOLATILES						
			SW1311/8270		Prep Date: 9/27/2013	Analyst: JLJ
2,4,5-Trichlorophenol	U		0.0050	mg/L	1	10/2/2013 04:04 PM
2,4,6-Trichlorophenol	U		0.0050	mg/L	1	10/2/2013 04:04 PM
2,4-Dinitrotoluene	U		0.0050	mg/L	1	10/2/2013 04:04 PM
Cresols, Total	U		0.015	mg/L	1	10/2/2013 04:04 PM
Hexachlorobenzene	U		0.0050	mg/L	1	10/2/2013 04:04 PM
Hexachlorobutadiene	U		0.0050	mg/L	1	10/2/2013 04:04 PM
Hexachloroethane	U		0.0050	mg/L	1	10/2/2013 04:04 PM
Nitrobenzene	U		0.0050	mg/L	1	10/2/2013 04:04 PM
Pentachlorophenol	U		0.0050	mg/L	1	10/2/2013 04:04 PM
Pyridine	U		0.0050	mg/L	1	10/2/2013 04:04 PM
Surr: 2,4,6-Tribromophenol	79.4		36-126	%REC	1	10/2/2013 04:04 PM
Surr: 2-Fluorobiphenyl	72.7		43-125	%REC	1	10/2/2013 04:04 PM
Surr: 2-Fluorophenol	74.5		37-125	%REC	1	10/2/2013 04:04 PM
Surr: 4-Terphenyl-d14	84.4		32-125	%REC	1	10/2/2013 04:04 PM
Surr: Nitrobenzene-d5	88.3		37-125	%REC	1	10/2/2013 04:04 PM
Surr: Phenol-d6	86.7		40-125	%REC	1	10/2/2013 04:04 PM
TCLP VOLATILES						
			SW1311/8260B		Prep Date: 9/27/2013	Analyst: PC
1,1-Dichloroethene	U		0.10	mg/L	20	10/1/2013 05:00 AM
1,2-Dichloroethane	U		0.10	mg/L	20	10/1/2013 05:00 AM
1,4-Dichlorobenzene	U		0.10	mg/L	20	10/1/2013 05:00 AM
2-Butanone	U		0.20	mg/L	20	10/1/2013 05:00 AM
Benzene	U		0.10	mg/L	20	10/1/2013 05:00 AM
Carbon tetrachloride	U		0.10	mg/L	20	10/1/2013 05:00 AM
Chlorobenzene	U		0.10	mg/L	20	10/1/2013 05:00 AM
Chloroform	U		0.10	mg/L	20	10/1/2013 05:00 AM
Tetrachloroethene	U		0.10	mg/L	20	10/1/2013 05:00 AM
Trichloroethene	U		0.10	mg/L	20	10/1/2013 05:00 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 04-Oct-13

Client: Navajo Refining Company

Project: Wastewater Spill - Artesia

Work Order: 13091139

Sample ID: Wastewater Spill at Lift Station Excavation

Lab ID: 13091139-01

Collection Date: 9/24/2013 02:07 PM

Matrix: SOLID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Vinyl chloride	U		0.10	mg/L	20	10/1/2013 05:00 AM
Surr: 1,2-Dichloroethane-d4	102		70-125	%REC	20	10/1/2013 05:00 AM
Surr: 4-Bromofluorobenzene	97.0		72-125	%REC	20	10/1/2013 05:00 AM
Surr: Dibromofluoromethane	106		71-125	%REC	20	10/1/2013 05:00 AM
Surr: Toluene-d8	96.9		75-125	%REC	20	10/1/2013 05:00 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Work Order: 13091139
Client: Navajo Refining Company
Project: Wastewater Spill - Artesia

DATES REPORT

Sample ID	Client Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
<u>Batch ID</u> 73408 <u>Test Name:</u> TCLP Semivolatiles						
13091139-01 ^	Wastewater Spill at Lift Station Excavation	Solid	9/24/2013 2:07:00 PM	9/27/2013 3:09:09 PM	9/27/2013 10:17 AM	10/2/2013 04:04 PM
<u>Batch ID</u> 73416 <u>Test Name:</u> TCLP Metals						
13091139-01 ^	Wastewater Spill at Lift Station Excavation	Solid	9/24/2013 2:07:00 PM	9/27/2013 8:00:00 AM	9/27/2013 10:00 AM	9/27/2013 03:40 PM
<u>Batch ID</u> 73461 <u>Test Name:</u> TCLP Mercury						
13091139-01 ^	Wastewater Spill at Lift Station Excavation	Solid	9/24/2013 2:07:00 PM	9/27/2013 8:00:00 AM	9/30/2013 11:02 AM	9/30/2013 06:14 PM
<u>Batch ID</u> R154586 <u>Test Name:</u> TCLP Volatiles						
13091139-01 ^	Wastewater Spill at Lift Station Excavation	Solid	9/24/2013 2:07:00 PM	9/28/2013 9:00:00 AM	9/27/2013 05:00 PM	10/1/2013 05:00 AM

ALS Environmental

Date: 04-Oct-13

Client: Navajo Refining Company
Work Order: 13091139
Project: Wastewater Spill - Artesia

QC BATCH REPORT

Batch ID: **73416** Instrument ID **ICPMS05** Method: **SW1311/6020**

MBLK	Sample ID: MBLKT1-092613-73416				Units: mg/L		Analysis Date: 9/27/2013 03:28 PM			
Client ID:	Run ID: ICPMS05_130927A				SeqNo: 3372767		Prep Date: 9/27/2013		DF: 10	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.0500								
Barium	0.04562	0.0500								J
Cadmium	U	0.0200								
Chromium	U	0.0500								
Lead	U	0.0500								
Selenium	0.01023	0.0500								J
Silver	U	0.0500								

MBLK	Sample ID: MBLKW3-092713-73416				Units: mg/L		Analysis Date: 9/27/2013 03:31 PM			
Client ID:	Run ID: ICPMS05_130927A				SeqNo: 3372768		Prep Date: 9/27/2013		DF: 10	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.0500								
Barium	U	0.0500								
Cadmium	U	0.0200								
Chromium	U	0.0500								
Lead	U	0.0500								
Selenium	U	0.0500								
Silver	U	0.0500								

LCS	Sample ID: MLCSW3-092713-73416				Units: mg/L		Analysis Date: 9/27/2013 03:33 PM			
Client ID:	Run ID: ICPMS05_130927A				SeqNo: 3372769		Prep Date: 9/27/2013		DF: 10	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.4864	0.0500	0.5	0	97.3	80-120				
Barium	0.486	0.0500	0.5	0	97.2	80-120				
Cadmium	0.4791	0.0200	0.5	0	95.8	80-120				
Chromium	0.4922	0.0500	0.5	0	98.4	80-120				
Lead	0.4826	0.0500	0.5	0	96.5	80-120				
Selenium	0.5094	0.0500	0.5	0	102	80-120				
Silver	0.4932	0.0500	0.5	0	98.6	80-120				

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 13091139
Project: Wastewater Spill - Artesia

QC BATCH REPORT

Batch ID: **73416** Instrument ID **ICPMS05** Method: **SW1311/6020**

MS		Sample ID: 1309685-01AMS				Units: mg/L		Analysis Date: 9/27/2013 03:54 PM		
Client ID:		Run ID: ICPMS05_130927A				SeqNo: 3372779		Prep Date: 9/27/2013		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.4908	0.0500	0.5	0.000654	98	75-125				
Barium	1.866	0.0500	0.5	1.363	101	75-125				
Cadmium	0.4825	0.0200	0.5	0.003663	95.8	75-125				
Chromium	0.4944	0.0500	0.5	0.007794	97.3	75-125				
Lead	0.5033	0.0500	0.5	0.02031	96.6	75-125				
Selenium	0.5265	0.0500	0.5	0.01452	102	75-125				
Silver	0.4746	0.0500	0.5	0.000548	94.8	75-125				

MSD		Sample ID: 1309685-01AMSD				Units: mg/L		Analysis Date: 9/27/2013 03:57 PM		
Client ID:		Run ID: ICPMS05_130927A				SeqNo: 3372780		Prep Date: 9/27/2013		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.4823	0.0500	0.5	0.000654	96.3	75-125	0.4908	1.76	20	
Barium	1.789	0.0500	0.5	1.363	85.4	75-125	1.866	4.21	20	
Cadmium	0.4702	0.0200	0.5	0.003663	93.3	75-125	0.4825	2.59	20	
Chromium	0.4836	0.0500	0.5	0.007794	95.2	75-125	0.4944	2.22	20	
Lead	0.4826	0.0500	0.5	0.02031	92.5	75-125	0.5033	4.19	20	
Selenium	0.5019	0.0500	0.5	0.01452	97.5	75-125	0.5265	4.79	20	
Silver	0.4627	0.0500	0.5	0.000548	92.4	75-125	0.4746	2.55	20	

DUP		Sample ID: 1309685-01ADUP				Units: mg/L		Analysis Date: 9/27/2013 03:52 PM		
Client ID:		Run ID: ICPMS05_130927A				SeqNo: 3372778		Prep Date: 9/27/2013		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.0500					0.000654	0	25	
Barium	1.34	0.0500					1.363	1.67	25	
Cadmium	U	0.0200					0.003663	0	25	
Chromium	U	0.0500					0.007794	0	25	
Lead	0.01903	0.0500					0.02031	0	25	J
Selenium	0.01275	0.0500					0.01452	0	25	J
Silver	U	0.0500					0.000548	0	25	

The following samples were analyzed in this batch:

13091139-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 13091139
Project: Wastewater Spill - Artesia

QC BATCH REPORT

Batch ID: **73461** Instrument ID **HG03** Method: **SW7470**

MBLK	Sample ID: GBLKW4-093013-73461				Units: mg/L		Analysis Date: 9/30/2013 05:51 PM			
Client ID:	Run ID: HG03_130930A				SeqNo: 3375908		Prep Date: 9/30/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.000200								

MBLK	Sample ID: GBLKT1-092813-73461				Units: mg/L		Analysis Date: 9/30/2013 06:01 PM			
Client ID:	Run ID: HG03_130930A				SeqNo: 3375914		Prep Date: 9/30/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.000200								

LCS	Sample ID: GLCSW4-093013-73461				Units: mg/L		Analysis Date: 9/30/2013 05:52 PM			
Client ID:	Run ID: HG03_130930A				SeqNo: 3375909		Prep Date: 9/30/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.0048	0.000200	0.005		0	96	80-120			

MS	Sample ID: 13091157-01CMS				Units: mg/L		Analysis Date: 9/30/2013 05:57 PM			
Client ID:	Run ID: HG03_130930A				SeqNo: 3375912		Prep Date: 9/30/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00496	0.000200	0.005	-0.000038	100	75-125				

MSD	Sample ID: 13091157-01CMSD				Units: mg/L		Analysis Date: 9/30/2013 05:59 PM			
Client ID:	Run ID: HG03_130930A				SeqNo: 3375913		Prep Date: 9/30/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.0048	0.000200	0.005	-0.000038	96.8	75-125	0.00496	3.28	20	

DUP	Sample ID: 13091157-01CDUP				Units: mg/L		Analysis Date: 9/30/2013 05:56 PM			
Client ID:	Run ID: HG03_130930A				SeqNo: 3375911		Prep Date: 9/30/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.000200					-0.000038	0	20	

The following samples were analyzed in this batch:

13091139-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 13091139
Project: Wastewater Spill - Artesia

QC BATCH REPORT

Batch ID: **73408** Instrument ID **SV-5** Method: **SW1311/8270**

MBLK		Sample ID: SBLKT2-130927-73408				Units: µg/L		Analysis Date: 10/2/2013 06:43 PM		
Client ID:		Run ID: SV-5_131003A				SeqNo: 3380068		Prep Date: 9/27/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	U	5.0								
2,4,6-Trichlorophenol	U	5.0								
2,4-Dinitrotoluene	U	5.0								
Cresols, Total	U	15								
Hexachlorobenzene	U	5.0								
Hexachlorobutadiene	U	5.0								
Hexachloroethane	U	5.0								
Nitrobenzene	U	5.0								
Pentachlorophenol	U	5.0								
Pyridine	U	5.0								
<i>Surr: 2,4,6-Tribromophenol</i>	91.8	5.0	100	0	91.8	36-126	0			
<i>Surr: 2-Fluorobiphenyl</i>	78.43	5.0	100	0	78.4	43-125	0			
<i>Surr: 2-Fluorophenol</i>	73.56	5.0	100	0	73.6	37-125	0			
<i>Surr: 4-Terphenyl-d14</i>	100.1	5.0	100	0	100	32-125	0			
<i>Surr: Nitrobenzene-d5</i>	68.75	5.0	100	0	68.8	37-125	0			
<i>Surr: Phenol-d6</i>	67.93	5.0	100	0	67.9	40-125	0			

LCS		Sample ID: SLCST2-130927-73408				Units: µg/L		Analysis Date: 10/3/2013 02:47 PM		
Client ID:		Run ID: SV-5_131003A				SeqNo: 3380072		Prep Date: 9/27/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	84.69	5.0	100	0	84.7	55-120				
2,4,6-Trichlorophenol	82.97	5.0	100	0	83	55-120				
2,4-Dinitrotoluene	45.63	5.0	50	0	91.3	55-125				
Cresols, Total	219.3	15	250	0	87.7	40-120				
Hexachlorobenzene	44.72	5.0	50	0	89.4	55-120				
Hexachlorobutadiene	42.43	5.0	50	0	84.9	55-120				
Hexachloroethane	36.85	5.0	50	0	73.7	55-120				
Nitrobenzene	34.58	5.0	50	0	69.2	55-120				
Pentachlorophenol	85.09	5.0	100	0	85.1	50-135				
Pyridine	22.82	5.0	50	0	45.6	30-120				
<i>Surr: 2,4,6-Tribromophenol</i>	106.5	5.0	100	0	106	36-126	0			
<i>Surr: 2-Fluorobiphenyl</i>	72.92	5.0	100	0	72.9	43-125	0			
<i>Surr: 2-Fluorophenol</i>	82.36	5.0	100	0	82.4	37-125	0			
<i>Surr: 4-Terphenyl-d14</i>	103.6	5.0	100	0	104	32-125	0			
<i>Surr: Nitrobenzene-d5</i>	66.12	5.0	100	0	66.1	37-125	0			
<i>Surr: Phenol-d6</i>	85.66	5.0	100	0	85.7	40-125	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 13091139
Project: Wastewater Spill - Artesia

QC BATCH REPORT

Batch ID: **73408** Instrument ID **SV-5** Method: **SW1311/8270**

LCSD		Sample ID: SLCSDT2-130927-73408				Units: µg/L		Analysis Date: 10/2/2013 07:27 PM		
Client ID:		Run ID: SV-5_131003A				SeqNo: 3380070		Prep Date: 9/27/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	82.14	5.0	100	0	82.1	55-120	84.69	3.05	25	
2,4,6-Trichlorophenol	80.22	5.0	100	0	80.2	55-120	82.97	3.37	25	
2,4-Dinitrotoluene	40.98	5.0	50	0	82	55-125	45.63	10.8	25	
Cresols, Total	170.3	15	250	0	68.1	40-120	219.3	25.2	25	R
Hexachlorobenzene	44.56	5.0	50	0	89.1	55-120	44.72	0.37	25	
Hexachlorobutadiene	47.1	5.0	50	0	94.2	55-120	42.43	10.4	25	
Hexachloroethane	36.41	5.0	50	0	72.8	55-120	36.85	1.18	25	
Nitrobenzene	33.67	5.0	50	0	67.3	55-120	34.58	2.66	25	
Pentachlorophenol	63.88	5.0	100	0	63.9	50-135	85.09	28.5	25	R
Pyridine	25.09	5.0	50	0	50.2	30-120	22.82	9.48	25	
<i>Surr: 2,4,6-Tribromophenol</i>	95.85	5.0	100	0	95.8	36-126	106.5	10.5	25	
<i>Surr: 2-Fluorobiphenyl</i>	76.93	5.0	100	0	76.9	43-125	72.92	5.36	25	
<i>Surr: 2-Fluorophenol</i>	76.63	5.0	100	0	76.6	37-125	82.36	7.21	25	
<i>Surr: 4-Terphenyl-d14</i>	92.69	5.0	100	0	92.7	32-125	103.6	11.1	25	
<i>Surr: Nitrobenzene-d5</i>	64.27	5.0	100	0	64.3	37-125	66.12	2.85	25	
<i>Surr: Phenol-d6</i>	68.76	5.0	100	0	68.8	40-125	85.66	21.9	25	

MS		Sample ID: 13091139-01AMS				Units: µg/L		Analysis Date: 10/3/2013 03:54 PM		
Client ID: Wastewater Spill at Lift Station Excavation		Run ID: SV-5_131003A				SeqNo: 3380184		Prep Date: 9/27/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	84.55	5.0	100	0	84.6	55-120				
2,4,6-Trichlorophenol	77.79	5.0	100	0	77.8	55-120				
2,4-Dinitrotoluene	46.14	5.0	50	0	92.3	55-125				
Cresols, Total	174.5	15	250	0	69.8	40-120				
Hexachlorobenzene	43.86	5.0	50	0	87.7	55-120				
Hexachlorobutadiene	44.35	5.0	50	0	88.7	55-120				
Hexachloroethane	38.8	5.0	50	0	77.6	55-120				
Nitrobenzene	33.42	5.0	50	0	66.8	55-120				
Pentachlorophenol	82.56	5.0	100	0	82.6	50-135				
Pyridine	26.93	5.0	50	0	53.9	30-120				
<i>Surr: 2,4,6-Tribromophenol</i>	102.3	5.0	100	0	102	36-126	0			
<i>Surr: 2-Fluorobiphenyl</i>	74.81	5.0	100	0	74.8	43-125	0			
<i>Surr: 2-Fluorophenol</i>	72.74	5.0	100	0	72.7	37-125	0			
<i>Surr: 4-Terphenyl-d14</i>	93.41	5.0	100	0	93.4	32-125	0			
<i>Surr: Nitrobenzene-d5</i>	63.02	5.0	100	0	63	37-125	0			
<i>Surr: Phenol-d6</i>	69.75	5.0	100	0	69.8	40-125	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 13091139
Project: Wastewater Spill - Artesia

QC BATCH REPORT

Batch ID: **73408**

Instrument ID **SV-5**

Method: **SW1311/8270**

The following samples were analyzed in this batch:

13091139- 01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 13091139
Project: Wastewater Spill - Artesia

QC BATCH REPORT

Batch ID: **R154586** Instrument ID **VOA1** Method: **SW1311/8260B**

MBLK		Sample ID: VBLKW-130930-R154586				Units: µg/L		Analysis Date: 9/30/2013 11:32 PM		
Client ID:		Run ID: VOA1_130930E				SeqNo: 3376306		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	U	5.0								
1,2-Dichloroethane	U	5.0								
1,4-Dichlorobenzene	U	5.0								
2-Butanone	U	10								
Benzene	U	5.0								
Carbon tetrachloride	U	5.0								
Chlorobenzene	U	5.0								
Chloroform	U	5.0								
Tetrachloroethene	U	5.0								
Trichloroethene	U	5.0								
Vinyl chloride	U	2.0								
<hr/>										
<i>Surr: 1,2-Dichloroethane-d4</i>	50.94	5.0	50	0	102	70-125	0			
<i>Surr: 4-Bromofluorobenzene</i>	49.99	5.0	50	0	100	72.4-125	0			
<hr/>										
<i>Surr: Dibromofluoromethane</i>	50.52	5.0	50	0	101	71.2-125	0			
<i>Surr: Toluene-d8</i>	51.39	5.0	50	0	103	75-125	0			

MBLK		Sample ID: MBLKV1-130927-R154586				Units: µg/L		Analysis Date: 10/1/2013 04:10 AM		
Client ID:		Run ID: VOA1_130930E				SeqNo: 3376310		Prep Date: 9/27/2013		DF: 20
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	U	100								
1,2-Dichloroethane	U	100								
1,4-Dichlorobenzene	U	100								
2-Butanone	U	200								
Benzene	U	100								
Carbon tetrachloride	U	100								
Chlorobenzene	U	100								
Chloroform	U	100								
Tetrachloroethene	U	100								
Trichloroethene	U	100								
Vinyl chloride	U	40								
<hr/>										
<i>Surr: 1,2-Dichloroethane-d4</i>	957.2	100	1000	0	95.7	70-125	0			
<i>Surr: 4-Bromofluorobenzene</i>	941.5	100	1000	0	94.1	72.4-125	0			
<hr/>										
<i>Surr: Dibromofluoromethane</i>	1043	100	1000	0	104	71.2-125	0			
<i>Surr: Toluene-d8</i>	997.9	100	1000	0	99.8	75-125	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 13091139
Project: Wastewater Spill - Artesia

QC BATCH REPORT

Batch ID: **R154586** Instrument ID **VOA1** Method: **SW1311/8260B**

LCS		Sample ID: VLCSW-130930-R154586				Units: µg/L		Analysis Date: 9/30/2013 10:41 PM		
Client ID:		Run ID: VOA1_130930E				SeqNo: 3376305		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	51.11	5.0	50	0	102	73-124				
1,2-Dichloroethane	52.15	5.0	50	0	104	76-120				
1,4-Dichlorobenzene	50.27	5.0	50	0	101	70-130				
2-Butanone	104.2	10	100	0	104	70-130				
Benzene	52.56	5.0	50	0	105	70-128				
Carbon tetrachloride	51.09	5.0	50	0	102	70-130				
Chlorobenzene	47.61	5.0	50	0	95.2	72-127				
Chloroform	51.55	5.0	50	0	103	70-130				
Tetrachloroethene	50.16	5.0	50	0	100	70-130				
Trichloroethene	53.99	5.0	50	0	108	72-129				
Vinyl chloride	54.23	2.0	50	0	108	70-130				
<i>Surr: 1,2-Dichloroethane-d4</i>	50.76	5.0	50	0	102	70-125		0		
<i>Surr: 4-Bromofluorobenzene</i>	49.56	5.0	50	0	99.1	72-125		0		
<i>Surr: Dibromofluoromethane</i>	51.66	5.0	50	0	103	71-125		0		
<i>Surr: Toluene-d8</i>	50.87	5.0	50	0	102	75-125		0		

MS		Sample ID: 13091337-01AMS				Units: µg/L		Analysis Date: 10/1/2013 02:29 AM		
Client ID:		Run ID: VOA1_130930E				SeqNo: 3376308		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	47.41	5.0	50	0	94.8	73-124				
1,2-Dichloroethane	49.26	5.0	50	0	98.5	76-120				
1,4-Dichlorobenzene	46.02	5.0	50	0	92	70-130				
2-Butanone	104	10	100	0	104	70-130				
Benzene	49.85	5.0	50	0	99.7	70-128				
Carbon tetrachloride	45.47	5.0	50	0	90.9	70-130				
Chlorobenzene	48.98	5.0	50	0	98	72-127				
Chloroform	109.1	5.0	50	71.57	75	70-130				
Tetrachloroethene	46.17	5.0	50	0	92.3	70-130				
Trichloroethene	47.04	5.0	50	0	94.1	72-129				
Vinyl chloride	49.16	2.0	50	0	98.3	70-130				
<i>Surr: 1,2-Dichloroethane-d4</i>	51.18	5.0	50	0	102	70-125		0		
<i>Surr: 4-Bromofluorobenzene</i>	52.97	5.0	50	0	106	72-125		0		
<i>Surr: Dibromofluoromethane</i>	51.09	5.0	50	0	102	71-125		0		
<i>Surr: Toluene-d8</i>	51.35	5.0	50	0	103	75-125		0		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 13091139
Project: Wastewater Spill - Artesia

QC BATCH REPORT

Batch ID: **R154586** Instrument ID **VOA1** Method: **SW1311/8260B**

MSD		Sample ID: 13091337-01AMSD				Units: µg/L		Analysis Date: 10/1/2013 02:54 AM		
Client ID:		Run ID: VOA1_130930E				SeqNo: 3376309		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	43.36	5.0	50	0	86.7	73-124	47.41	8.94	20	
1,2-Dichloroethane	48.03	5.0	50	0	96.1	76-120	49.26	2.53	20	
1,4-Dichlorobenzene	48.44	5.0	50	0	96.9	70-130	46.02	5.13	20	
2-Butanone	96.22	10	100	0	96.2	70-130	104	7.76	20	
Benzene	45.94	5.0	50	0	91.9	70-128	49.85	8.16	20	
Carbon tetrachloride	43.75	5.0	50	0	87.5	70-130	45.47	3.85	20	
Chlorobenzene	49.06	5.0	50	0	98.1	72-127	48.98	0.157	20	
Chloroform	108	5.0	50	71.57	72.8	70-130	109.1	1.03	20	
Tetrachloroethene	45.61	5.0	50	0	91.2	70-130	46.17	1.23	20	
Trichloroethene	46.76	5.0	50	0	93.5	72-129	47.04	0.582	20	
Vinyl chloride	45.31	2.0	50	0	90.6	70-130	49.16	8.16	20	
<i>Surr: 1,2-Dichloroethane-d4</i>	48.41	5.0	50	0	96.8	70-125	51.18	5.56	20	
<i>Surr: 4-Bromofluorobenzene</i>	52.85	5.0	50	0	106	72-125	52.97	0.235	20	
<i>Surr: Dibromofluoromethane</i>	47.58	5.0	50	0	95.2	71-125	51.09	7.11	20	
<i>Surr: Toluene-d8</i>	51.26	5.0	50	0	103	75-125	51.35	0.185	20	

The following samples were analyzed in this batch:

13091139-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Project: Wastewater Spill - Artesia
WorkOrder: 13091139

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

<u>Units Reported</u>	<u>Description</u>
mg/L	Milligrams per Liter

Sample Receipt Checklist

Client Name: **NAVAJO REFINING**

Date/Time Received: **25-Sep-13 09:25**

Work Order: **13091139**

Received by: **WTJ**

Checklist completed by *Parash M. Ciga*
eSignature

25-Sep-13
Date

Reviewed by:

eSignature

Date

Matrices: Solid

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>3.3c/3.3c C/U</u> <u>IR1</u>		
Cooler(s)/Kit(s):	<u>5119</u>		
Date/Time sample(s) sent to storage:	<u>9/25/13 16:10</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		
Login Notes:			

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



ALS Laboratory Group
10450 Stancliff Rd. #210
Houston, Texas 77099
(Tel) 281.530.5656
(Fax) 281.530.5887

Chain of Custody Form

Page 1 of 1

13091139

NAVAJO REFINING: Navajo Refining Company

Project: Wastewater Spill - Artesia



ALS Project Manager: Sonia West

Customer Information		Project Information	
Purchase Order		Project Name	Wastewater Spill - Artesia
Work Order		Project Number	
Company Name	Navajo Refining Company	Bill To Company	Navajo Refining Company
Send Report To	Aaron Strange	Invoice Attn.	Aaron Strange
Address	P. O. Box 159	Address	501 East Main
City/State/Zip	Artesia, New Mexico 88211-0159	City/State/Zip	Artesia, New Mexico 88210
Phone	(575) 748-3311	Phone	(575) 748-3311
Fax	(575) 746-5451	Fax	(575) 746-5451
e-Mail Address	A.Strange@hollyfrontier.com	e-Mail Address	A.Strange@hollyfrontier.com

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	Wastewater Spill at Lift Station Excavation	9/24/13	14:07	Solid	Chill	1	X	X	X								
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s): Please Print & Sign Glen Rhodes		Shipment Method: Federal Express		Required Turnaround Time: <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour		Results Due Date:	
Relinquished by: Glen Rhodes	Date: 9/24/13	Time: 1500	Received by:	Notes:			
Relinquished by: Aaron Strange	Date: 9/24/13	Time: 16:15	Received by (Laboratory): Bridget	Cooler Temp.: 3-3		QC Package: (Check Box Below)	
Logged by (Laboratory):		Date:	Time:	Checked by (Laboratory):		Level II: Standard QC	
						Level III: Std QC + Raw Data	
						Level IV: SW846 CLP-Like	
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035						Other:	

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.

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ALS Environmental

10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Date: 9-
Name: A
Company: L

CUSTODY SEAL

26-13 Time: 16:15
Kee S. Fraga
Navajo Refining Co.

Seal Broken B

Date:

ORIGIN ID: RONA (B/V) 748-3311

NAVAJO ARTESIA
501 S MAINARTESIA NM 882109440
UNITED STATES USSHIP DATE: 24SEP13
ACTWT: 32.0 LB. MAN
CRD: 634483/CAFE2704

BILL RECIPIENT

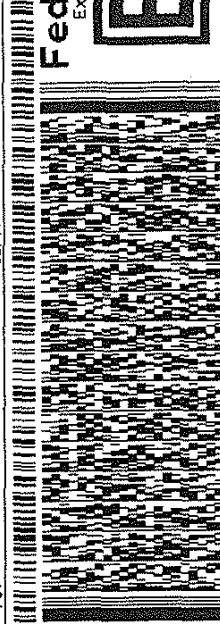
SONIA WEST
ALS LABORATORY GROUP
10450 STANCLIFF RD., SUITE 210

HOUSTON TX 77099

(281) 530-5656

REF:

DEPT:

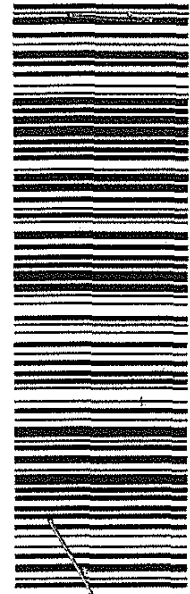
FedEx
Express

19 of 19

518C2/2E52/6F83

WED - 25 SEP 10:30A
PRIORITY OVERNIGHTTRK# 5614 5589 2304
0201

AB SGRA

77099
TX-US IAH

Part # 156148-434 RIT 08/12



Mr. John E. Kieling
Chief, Hazardous Waste Bureau
New Mexico Environmental Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6306

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

November 1, 2013

RE: Submittal of West Loading Rack Fuel Oil Spill Response

Dear Mr. Kieling and Mr. Chavez:

Enclosed are two paper copies and one electronic copy of the *West Loading Rack Fuel Oil Spill Response*. This document is being submitted as a followup to the verbal release notification made on July 1, 2013. The release was reported using a C-141 form on July 10, 2013.

If you have any questions or comments regarding this report, please feel free to contact me at 575-746-5487.

Sincerely,

Michael W. Holder
Environmental Manager
Navajo Refining Company, LLC

c: Pamela R. Krueger, ARCADIS

Mr. Mike Holder
Environmental Manager
Navajo Refining Company, LLC
501 East Main
Artesia, New Mexico 88211

Subject:
West Loading Rack Fuel Oil Spill Response

Dear Mr. Holder:

ARCADIS has prepared this release response report to describe activities that have occurred to address a fuel oil spill at the West Loading Rack at the Navajo Refining Company (Navajo) refinery located in Artesia, New Mexico (Figure 1). This letter documents the release response and remedial actions associated with the July 1, 2013 release.

Release

On July 1, 2013, railcars were being loaded on the West Loading Rack, specifically tracks 958 and 959. As shown on Figure 2, the West Loading Rack is located in the southwestern portion of the Refinery, near the intersection of US Highways 82 and 285. The loader had finished loading spot #1 on cars located on tracks 958 and 959. The loader then opened spot #2 on the car located on track 958 and thought spot #2 had been opened on the car located on track 959. The loader installed the outage gauge on spot #2 of the car located on 959 and did not verify the opening of the valve at spot #2 on the car located on track 959. The loader relied on time loading of the cars, estimated a slower loading rate for the filling of two cars, and went to a shelter area at spot #4 while the tanks loaded. Fuel oil was discharged from the spot #2 valve on the car located on track 958 due to the following circumstances: the valve was not opened on spot #2 of the car located on track 959, the loading rate was higher than estimated, and the car on track 958 was overfilled.

Approximately 150 barrels of fuel oil was released onto the ground between tracks 957 and 959. Photographs documenting the spill can be seen in Photographs 1 through 5 in Attachment A to this letter.

Imagine the result

ARCADIS U.S., Inc.
2929 Briarpark Drive
Suite 300
Houston
Texas 77042
Tel 713 953 4800
Fax 713 977 4620
www.arcadis-us.com

ENVIRONMENT

Date:
November 1, 2013

Contact:
Pamela R. Krueger

Phone:
713.953.4816

Email:
pam.krueger@arcadis-us.com

Our ref:
TX000870

Notification

Section 4.7.4 of the Post-Closure Care Permit (Permit) issued by the New Mexico Environment Department (NMED) Hazardous Waste Bureau (HWB) requires that a new release from an existing Area of Concern (AOC) be reported within 15 days. The West Loading Rack is part of AOC 30 in the Permit. Figure 2 shows the location of the West Loading Rack within the refinery.

Section 2.D.1 of the Discharge Permit GW-028 issued by the State of New Mexico Energy, Minerals, and Natural Resource Department Oil Conservation Division (OCD) for the facility requires oral notification of a release within twenty-four hours. Section 2.D.2 of the Discharge Permit requires written notification within one week of the identification of a release.

Navajo personnel reported the release at the West Loading Rack to NMED and OCD both via phone call on July 1, 2013. An initial C-141 release report was submitted to both the HWB and OCD on July 10, 2013. Thus, the initial reporting requirements of both the OCD Discharge Permit and the HWB Post-Closure Care Permit have been met. A final C-141 report has been included in Attachment B to this letter.

Remedial Actions

Navajo personnel used a vacuum truck to collect free liquids immediately after the spill occurred. Approximately 30 barrels of fuel oil were recovered and returned to process. Navajo contract personnel hand-excavated the stained soil from between tracks 957 and 959 and placed the soil into rolloff containers. The excavated soils were transported to an OCD-approved non-hazardous waste disposal facility (R360 Environmental Solutions). Approximately 156 cubic yards of soil were disposed of at the facility and waste manifests have been included in Attachment C to this letter. The excavation activities are shown in Photographs 6 and 7 in Attachment A to this letter. Clean gravel backfill was brought in to fill the excavation. The gravel was graded and smoothed as shown in Photograph 8 in Attachment A to this letter.

Soil Sampling Results

Navajo personnel collected soil samples from the release area. Eight grab samples were collected from visibly non-impacted soil after impacted soils were removed during the excavation remedial actions. The soil samples were collected at various locations between tracks 957, 958, and 959 on July 11, 2013 and July 16, 2013. The

approximate locations of the soil samples are shown in Figure 3 and are shown in Photographs 9 through 16 in Attachment A.

Soil from each sample location was placed directly into clean glass soil jars, sealed, labeled, and placed into a sealed, cooled container for shipment to the laboratory. The eight soil samples were submitted to ALS Laboratories located in Houston, Texas for the following analyses:

- Total Petroleum Hydrocarbons (TPH) by Method 8015 Modified:
 - Diesel Range Organics (DRO)
 - Gasoline Range Organics (GRO)
- Volatile Organic Compounds (VOCs) by Method 8260C
 - Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX)

Attachment D to this letter report contains the laboratory analytical reports for the soil samples. Tables 1 and 2 present a summary of the soil analytical data. As shown in Tables 1 and 2, DRO was detected above the laboratory reporting limit in six of the eight samples collected. GRO was detected in one of eight samples and none of the BTEX compounds were detected in any of the samples.

In Table 1, the analytical results were screened against the NMED soil screening levels (SSLs), as found in Tables A-1 and 6-2, 2012 NMED Risk Assessment Guidance dated June 2012. Because the West Loading Rack is within the Refinery and access is controlled, the residential exposure scenario was not evaluated. Instead, for BTEX, the SSLs selected for screening the data were the lower of the construction worker (CW) or the industrial/occupational (Ind/Occ) pathways. BTEX was not detected above the laboratory reporting limit in any soil samples. For TPH, the screening value for Industrial Direct Exposure for “#3 and #6 Fuel Oil” was used to screen the DRO. Where DRO was detected above the laboratory reporting limit, it was detected below the SSLs.

In Table 2, the analytical results were screened against the OCD Remediation Action Levels (RALs) based on soils with a ranking score of greater than 19 as described in IV.A.2. of the OCD Guidelines for Remediation of Leaks, Spills and Releases dated August 13, 1993. The soils in this area received a ranking score of greater than 19 because the depth to groundwater in this area is less than 50 feet. Since the BTEX compounds were not detected above the laboratory reporting limit, there were no exceedences of the benzene or total BTEX RALs. TPH GRO and

DRO were either not detected above the laboratory reporting limit or detected below the RAL in all samples except Site#4 – 2nd Bay (located in spot #1 between tracks 957 and 958). DRO was detected at 1,200 mg/kg in the sample collected at Site#4 – 2nd Bay, above the RAL of 100 mg/kg. The stained soils were excavated to the maximum extent practical based on the surrounding infrastructure and no additional excavation is feasible.

Conclusion

The remedial response to the July 1, 2013 release of approximately 150 barrels of fuel oil from the West Loading Rack has been completed. All stained soils have been excavated to the extent practical based on the surrounding infrastructure. No further remedial action is recommended at this time.

Should you have any questions or comments, please feel free to contact me at 713.953.4816.

Sincerely,

ARCADIS U.S., Inc.



Pamela R. Krueger
Senior Project Manager

Enclosures:

Table 1

Figures

Attachment A: Photographic Log

Attachment B: Final C-141 Incident Report

Attachment C: Waste Manifests

Attachment D: Analytical Reports



Tables

Table 1 - Summary of Soil Analytical Results Compared to NMED SSLs
West Loading Rack Fuel Oil Spill Response

Sample ID			East 1st Bay	East 2nd Bay	East 3rd Bay	East 3rd Bay #2	Site#1 - 2nd Bay	Site#2 - 2nd Bay	Site#3 - 2nd Bay	Site#4 - 2nd Bay
Sample Location			Spot #1 Between 958 & 959	Spot #2 Between 958 & 959	Spot #3 Between 958 & 959	Spot #3 Between 958 & 959	Spot #3 Between 957 & 958	Spot #3 Between 957 & 958	Spot #2 Between 957 & 958	Spot #1 Between 957 & 958
Date:			7/11/2013	7/11/2013	7/11/2013	7/11/2013	7/16/2013	7/16/2013	7/16/2013	7/16/2013
Analyte	NMED SSL	SSL Pathway								
Total Petroleum Hydrocarbons (mg/kg)										
TPH - Gasoline Range Organics			< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.15
TPH - Diesel Range Organics	1.60E+03	TPH SSL	14	< 1.7	3.5	< 8.5	4.0	23	14	1,200
Volatile Organic Compounds (µg/kg)										
Benzene	8.47E+04	Ind/Occ	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	3.78E+05	Ind/Occ	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	1.34E+07	CW	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Xylenes	7.43E+05	CW	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10

Indicates detection above screening value.

Bold font indicates detection above the laboratory reporting limit.

Sample locations are described by the spot number within the loading rack (see Figure 3) and the railroad tracks between which the sample was collected.

TPH results are screened against the "#3 and #6 Fuel Oil" Industrial SSL from Table 6-2, 2012 NMED Risk Assessment Guidance.

CW - Construction Worker SSL

Ind/Occ - Industrial/Occupational SSL

mg/kg - Milligrams per kilogram

NMED - New Mexico Environment Department

SSL - Soil Screening Level from Table A-1 or Table 6-2, 2012 NMED Risk Assessment Guidance

TPH - Total Petroleum Hydrocarbons

µg/kg - Micrograms per kilogram

Table 2 - Summary of Soil Analytical Results Compared to OCD RALs
West Loading Rack Fuel Oil Spill Response

Sample ID		East 1st Bay	East 2nd Bay	East 3rd Bay	East 3rd Bay #2	Site#1 - 2nd Bay	Site#2 - 2nd Bay	Site#3 - 2nd Bay	Site#4 - 2nd Bay
Sample Location		Spot #1 Between 958 & 959	Spot #2 Between 958 & 959	Spot #3 Between 958 & 959	Spot #3 Between 958 & 959	Spot #3 Between 957 & 958	Spot #3 Between 957 & 958	Spot #2 Between 957 & 958	Spot #1 Between 957 & 958
Date:		7/11/2013	7/11/2013	7/11/2013	7/11/2013	7/16/2013	7/16/2013	7/16/2013	7/16/2013
Analyte	OCD RAL								
Total Petroleum Hydrocarbons (mg/kg)									
TPH - Gasoline Range Organics	1.00E+02	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.15
TPH - Diesel Range Organics	1.00E+02	14	< 1.7	3.5	< 8.5	4.0	23	14	1,200
Volatile Organic Compounds (µg/kg)									
Benzene	1.00E+04	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Xylenes	--	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
BTEX	5.00E+04	ND	ND	ND	ND	ND	ND	ND	ND

Indicates detection above screening value.

Bold font indicates detection above the laboratory reporting limit.

Sample locations are described by the spot number within the loading rack (see Figure 3) and the railroad tracks between which the sample was collected.

RALs were determined for a soil with a ranking score greater than 19 as described in Section IV of OCD's Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993).

BTEX is calculated as the sum of the benzene, toluene, ethylbenzene and total xylenes concentrations. If all BTEX compounds were not detected above the laboratory reporting limit, a ND is shown.

mg/kg - Milligrams per kilogram

ND - non-detect (only for BTEX)

OCD - New Mexico Oil Conservation District

RAL - Remediation Action Level

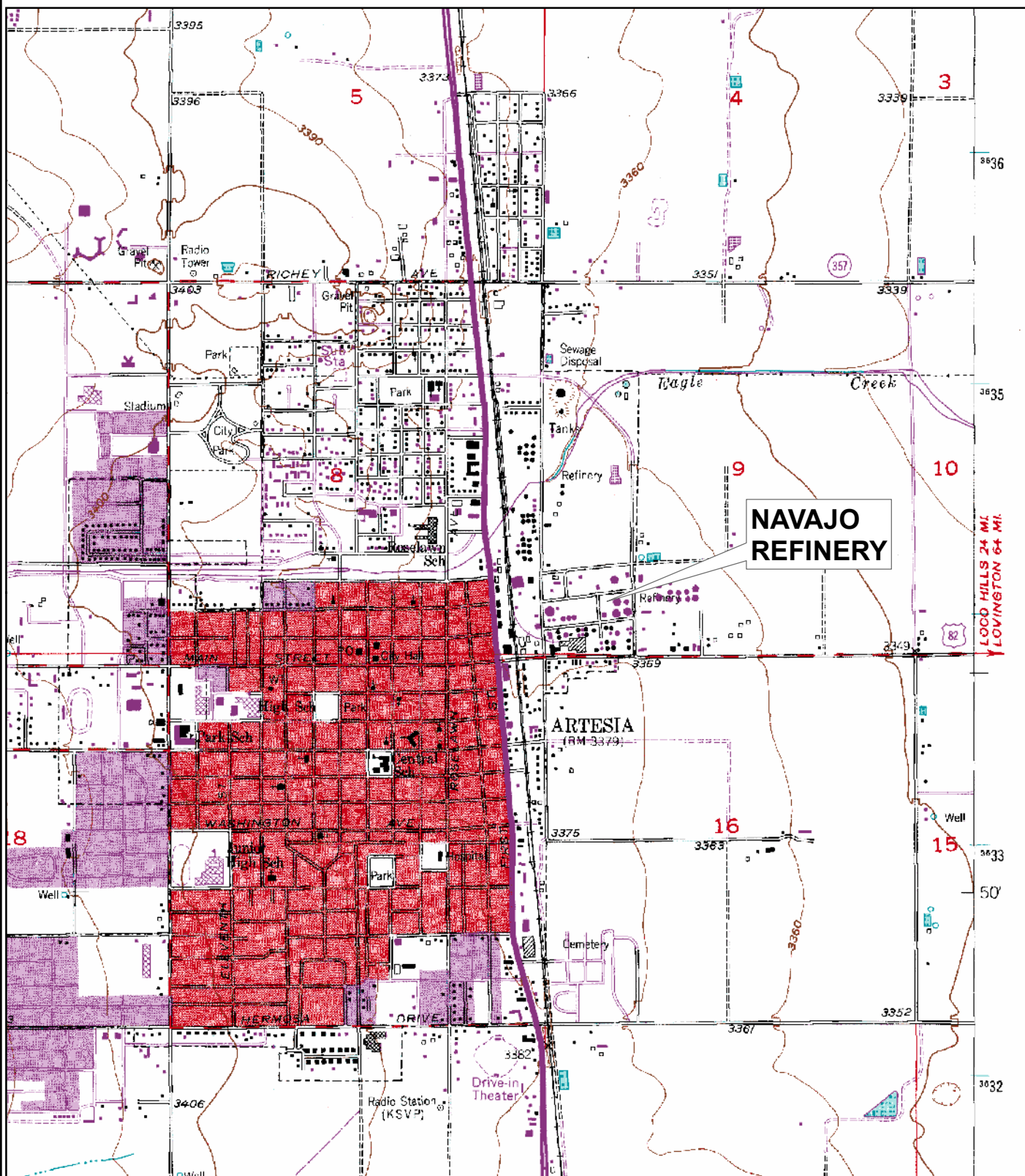
TPH - Total Petroleum Hydrocarbons

µg/kg - Micrograms per kilogram



Figures

CITY: SF DIV/GROUP: ENV/IM DB: KERNST LD: S KELLY PIC: PM: TM: TR:
 Project (Project #) TX000825.0003.00003
 Q:\NavajoRefining\ArtesiaRefinery\AOC_Group\3MXD\Site_Location.mxd



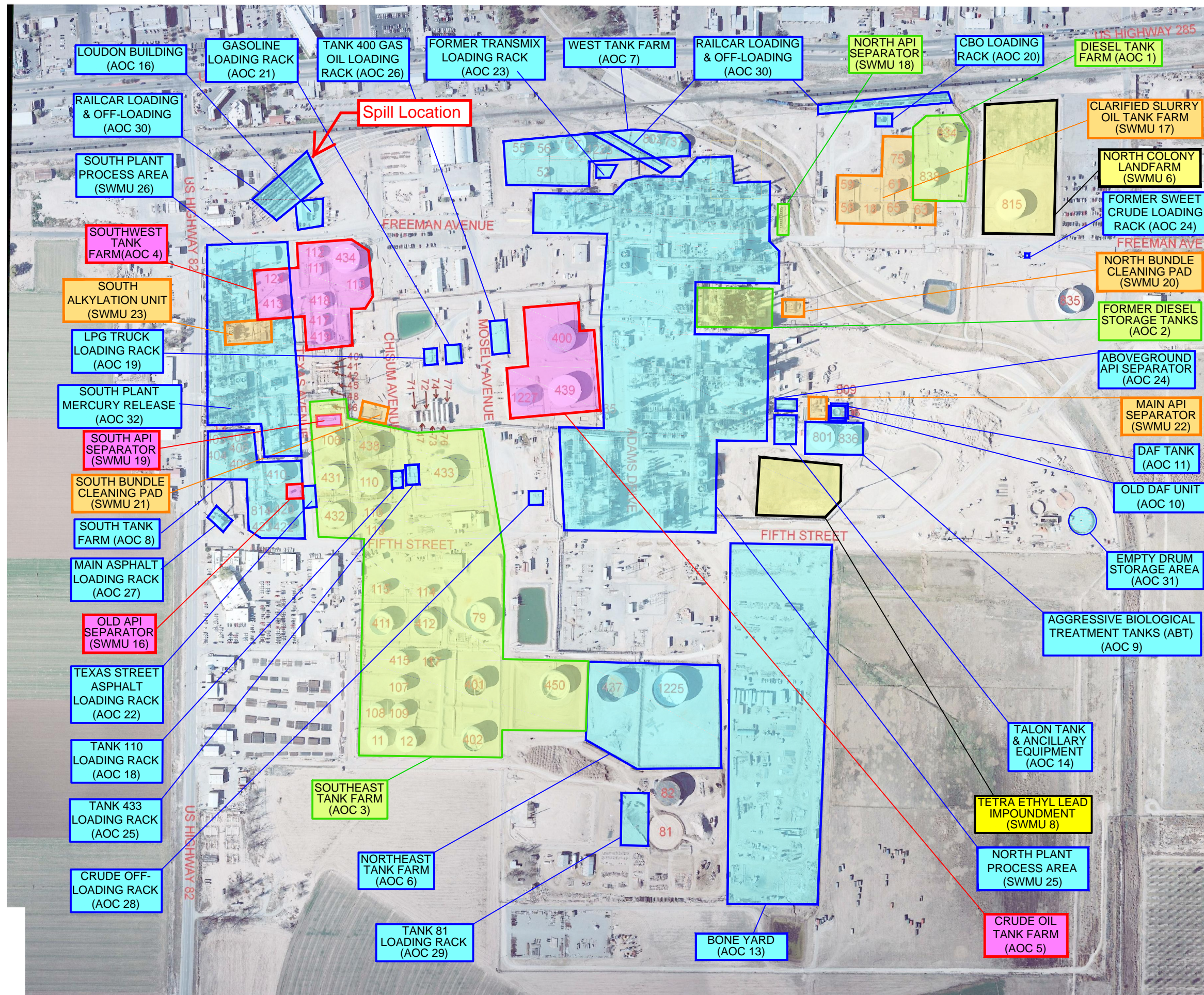
NAVAJO REFINING COMPANY
 ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO
**WEST LOADING RACK FUEL OIL SPILL
 RESPONSE**

SITE LOCATION MAP



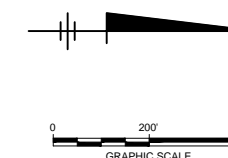
FIGURE
1

REFERENCE: BASE MAP SOURCE USGS 7.5 MINUTE SERIES
 QUAD ARTESIA QUADRANGLE, 1975.



EXPLANATION

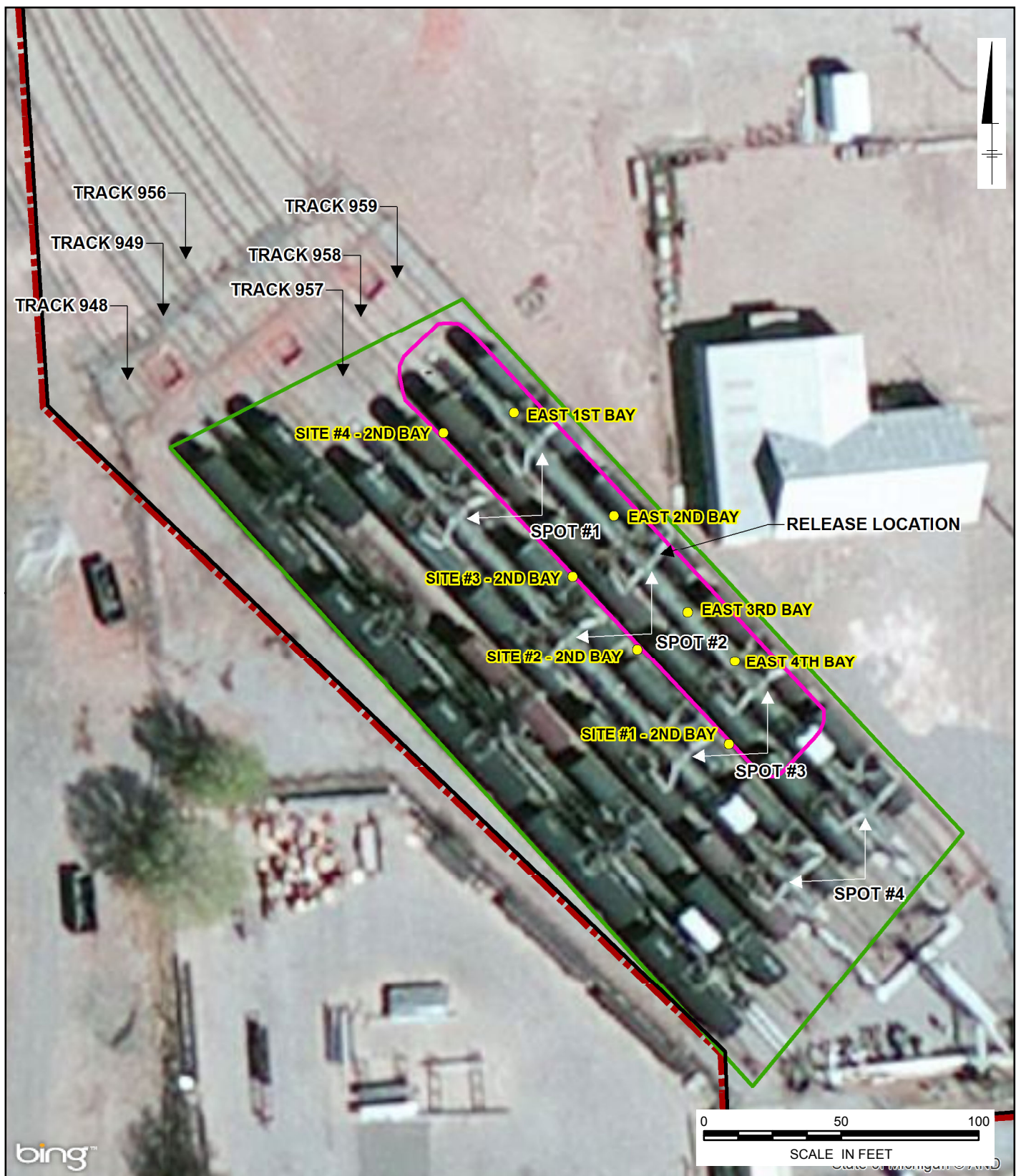
- AOC OR SWMU LISTED IN 2003 PERMIT AND INCLUDED IN GROUP 1
- AOC OR SWMU LISTED IN THE 2003 PERMIT AND INCLUDED IN GROUP 2
- AOC OR SWMU LISTED IN THE 2003 PERMIT AND INCLUDED IN GROUP 3
- HAZARDOUS WASTE MANAGEMENT UNIT
- AOC OR SWMU ADDED IN 2010 PERMIT MODIFICATION



NAVAJO REFINING COMPANY
ARTESIA REFINERY
EDDY COUNTY, NEW MEXICO

LOCATION OF WEST LOADING RACK
SPILL LOCATION





LEGEND:

- SOIL SAMPLE LOCATION
- REFINERY FENCELINE
- NAVAJO REFINING PROPERTY LINE
- AOC 30 BOUNDARY
- APPROXIMATE RELEASE AREA LIMITS

NAVAJO REFINING COMPANY
 ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO
 WEST LOADING RACK FUEL OIL SPILL REPOSE REPORT

**APPROXIMATE LOCATIONS
 OF SOIL SAMPLES**



FIGURE


3




Attachment A

Photographic Log

Attachment A Photographic Log

Property Name: Navajo Refining Company		Location: Artesia, New Mexico	Project No. TX000870
Photo No. 1	Date: 7/2/2013		
Description: Facing southeast at Spot #1 - Fuel oil spilled between track 959 on left and track 958 on right.			


Attachment A Photographic Log

Property Name: Navajo Refining Company		Location: Artesia, New Mexico	Project No. TX000870
Photo No. 2	Date: 7/2/2013		
Description: Facing southeast at Spot #1 - Fuel oil spilled between track 958 on left and track 957 on right.			


Attachment A Photographic Log

Property Name: Navajo Refining Company		Location: Artesia, New Mexico	Project No. TX000870
Photo No. <div style="text-align: center; font-weight: bold;">3</div>	Date: 7/2/2013	<div style="display: flex;"> <div style="flex: 1; padding: 5px;"> Description: Facing south - Overfilled fuel oil railcar at Spot #2 located on track 958 on left. </div> <div style="flex: 2;">  </div> </div>	


Attachment A Photographic Log

Property Name: Navajo Refining Company		Location: Artesia, New Mexico	Project No. TX000870
Photo No. <div style="text-align: center; font-weight: bold;">4</div>	Date: 7/2/2013	<div style="display: flex;"> <div style="flex: 1; padding: 5px;"> Description: Impacted soils between tracks 959 and 958. </div> <div style="flex: 2;">  </div> </div>	

Attachment A Photographic Log

Property Name: Navajo Refining Company		Location: Artesia, New Mexico	Project No. TX000870
Photo No. <div style="text-align: center; font-size: 1.2em;">5</div>	Date: 7/2/2013		
Description: Overfilled fuel oil railcar at Spot #2 located on track 958.			


Attachment A Photographic Log

Property Name: Navajo Refining Company		Location: Artesia, New Mexico	Project No. TX000870
Photo No. <div style="text-align: center; font-size: 1.2em;">6</div>	Date: 7/11/2013		
Description: Hand excavation of impacted soils between tracks 959 and 958.			


Attachment A Photographic Log

Property Name: Navajo Refining Company		Location: Artesia, New Mexico	Project No. TX000870
Photo No. <div style="text-align: center; font-weight: bold;">7</div>	Date: 7/11/2013	<div style="border: 1px solid black; height: 250px; position: relative;"> <div style="position: absolute; top: 10px; left: 10px; width: 150px;"> Description: Area between tracks 959 and 958 during excavation activities. </div>  </div>	


Attachment A Photographic Log

Property Name: Navajo Refining Company		Location: Artesia, New Mexico	Project No. TX000870
Photo No. <div style="text-align: center; font-weight: bold;">8</div>	Date: 7/11/2013	<div style="border: 1px solid black; height: 250px; position: relative;"> <div style="position: absolute; top: 10px; left: 10px; width: 150px;"> Description: Area between tracks 950 and 958 after completion of excavation and backfill. </div>  </div>	


Attachment A Photographic Log

Property Name: Navajo Refining Company		Location: Artesia, New Mexico	Project No. TX000870
Photo No. 9	Date: 7/11/2013		
Description: Soil sample collected between track 958 and 959 from Spot #1 (sample East 1 st Bay).			

Attachment A Photographic Log

Property Name: Navajo Refining Company		Location: Artesia, New Mexico	Project No. TX000870
Photo No. 10	Date: 7/11/2013		
Description: Soil sample collected between track 958 and 959 from Spot #2 (sample East 2 nd Bay).			


Attachment A Photographic Log

Property Name: Navajo Refining Company		Location: Artesia, New Mexico	Project No. TX000870
Photo No. 11	Date: 7/11/2013		
Description: Soil sample collected between track 958 and 959 from Spot #3 (sample East 3 rd Bay).			


Attachment A Photographic Log

Property Name: Navajo Refining Company		Location: Artesia, New Mexico	Project No. TX000870
Photo No. 12	Date: 7/11/2013		
Description: Soil sample collected between track 958 and 959 from Spot #3 (sample East 3 rd Bay #2).			


Attachment A Photographic Log

Property Name: Navajo Refining Company		Location: Artesia, New Mexico	Project No. TX000870
Photo No. 13	Date: 7/16/2013		
Description: Collected between tracks 957 and 958 at Spot #3 (sample Site #1 – 2 nd Bay).			

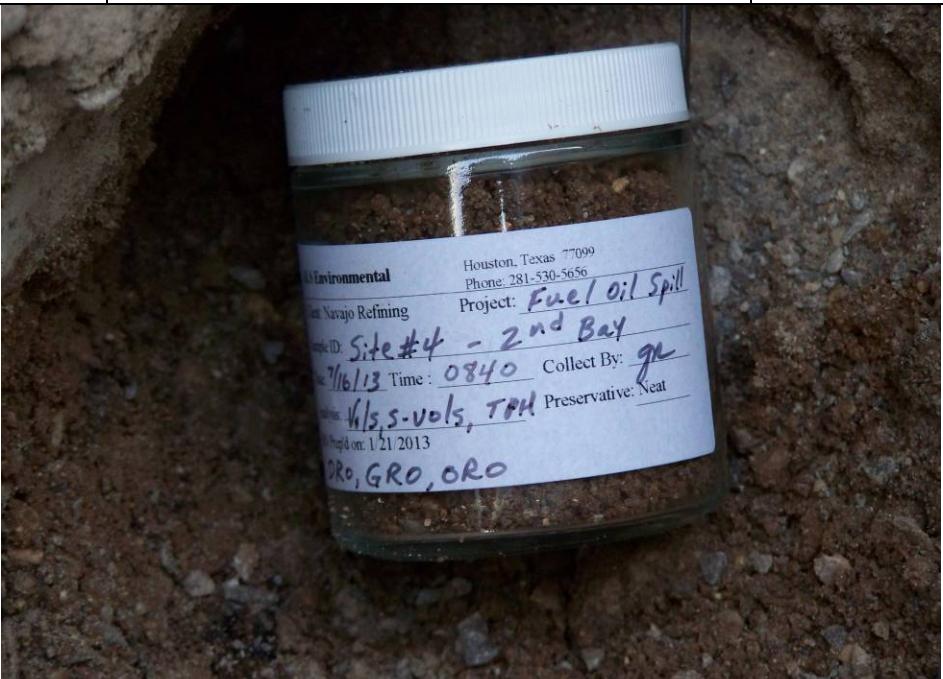
Attachment A Photographic Log

Property Name: Navajo Refining Company		Location: Artesia, New Mexico	Project No. TX000870
Photo No. 14	Date: 7/16/2013		
Description: Collected between tracks 957 and 958 at Spot #3 (sample Site #2 – 2 nd Bay).			

Attachment A Photographic Log

Property Name: Navajo Refining Company		Location: Artesia, New Mexico		Project No. TX000870
Photo No. 15	Date: 7/16/2013			
Description: Collected between tracks 957 and 958 at Spot #2 (sample Site #3 – 2 nd Bay).				

Attachment A Photographic Log

Property Name: Navajo Refining Company		Location: Artesia, New Mexico		Project No. TX000870
Photo No. 16	Date: 7/16/2013			
Description: Collected between tracks 957 and 958 at Spot #1 (sample Site #4 – 2 nd Bay).				



Attachment B

Final C-141 Incident Report

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	Navajo Refining Company, L.L.C.	Contact	Robert Combs
Address	501 E. Main St, Artesia, NM 88210	Telephone No.	575-746-5382
Facility Name	Artesia Refinery	Facility Type	Petroleum Refinery
Surface Owner	Mineral Owner	API No.	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
-------------	---------	----------	-------	---------------	------------------	---------------	----------------	--------

Latitude 32°50'37.36"N Longitude 104°23'45.76"W

NATURE OF RELEASE

Type of Release	Fuel Oil	Volume of Release	~150 bbl	Volume Recovered	~30 bbl
Source of Release	Rail loading area	Date and Hour of Occurrence	07/01/2013 at ~17:15	Date and Hour of Discovery	07/01/2013 at ~17:30
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? OCD Santa Fe, Carl Chavez, left message OCD Artesia, Randy Dade NMED Santa Fe, Ruth Horowitz (Spill Hotline), left message			
By Whom?	Mike Holder/Robert Combs	Date and Hour	7/1/13 at ~17:40		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*


Describe Cause of Problem and Remedial Action Taken.*

At ~17:30 on 07/01/13, it was reported that a rail car had been overtopped and caused the release of approximately 150 bbls of fuel oil. The BPL operator had inadvertently begun to fill one railcar instead of the two he had planned, which allowed the one car to fill more quickly than expected. When the operator noticed the spill, he immediately shut down the transfer pump and closed the valve to the railcar. The impacted area is located along the rail loading racks and was approximately 200 feet long by 30 feet wide (see Figure 3 in the Spill Response Letter).

Describe Area Affected and Cleanup Action Taken.*

The spill was contained between the two rails and some small containment berms. Vacuum trucks were dispatched to the area and were able to recover approximately 30 bbls of the spilled product. Approximately 156 cubic yards of stained material was excavated and disposed of at the R360 non-hazardous waste facility between July 9 and 19, 2013. Soil samples were collected after excavation activities were completed and the results are summarized in Tables 1 and 2 in the Spill Response Letter.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION		
Printed Name: Robert Combs	Approved by Environmental Specialist:		
Title: Environmental Specialist	Approval Date:	Expiration Date:	
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 10/31/2013 Phone: 575-308-2718			

* Attach Additional Sheets If Necessary



Attachment C

Waste Manifests

Halfway Facility
4507 W. Carlsbad Hwy
Hobbs, New Mexico 88240



Phone: (575) 393-1079
Fax: (575) 393-3615
WWW.R360ES.COM

PERMIAN BASIN REGION

Bill To:	NAVAJO	Lease:	ARTESIA YARD
Company/Generator:	NAVAJO	Well:	W LOADING RACK
Company Man:	MIKE HOLDER	Rig:	
Trucking:	S BROTHERS	PO:	
Date:	7/9/2013	Driver:	JOSH
3rd Party Ticket:	105509	Vehicle:	1

Comments

Type of Materials

<u>Product</u>	<u>Quantity</u>	<u>Area</u>	<u>Description</u>
Contaminated Soil (RCRA Non-Exempt)	12.00 yards	50/51	

Generator Certification Statement of Waste Status

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

☐ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description above)

Driver/Agent (signature) R360 Representative (signature)

Leak Bottoms

	Feet	Inches			
1st Gauge			BS & W/BBLs Received		BS & W
2nd Gauge			Free Water		
Received			Total Received		



NEW MEXICO NON-HAZARDOUS OILFIELD WASTE MANIFEST
(PLEASE PRINT)

Company Man Contact Information
Name _____
Phone No. _____

Operator No. N/A
Operators Name Navajo Refining Co. LLC
Address PO Box 159
Artesia, NM 88211-0159
City, State, Zip
Phone No. 575-748-3311

Location of Origin
Lease/Well
Name & No.
County
API No. N/A
Rig Name & No.
AFE/PO No.

NO. **105509**

Oil Based Muds	_____	Washout Water (Non-Injectable)	_____	Washout Water (Injectable)	_____
Oil Based Cuttings	_____	Completion Fluid/Flow back (Non-Injectable)	_____	Completion Fluid/Flow back (Injectable)	_____
Water Based Muds	_____	Produced Water (Non-Injectable)	_____	Produced Water (Injectable)	_____
Water Based Cuttings	_____	Gathering Line Water/Waste (Non-Injectable)	_____	Gathering Line Water/Waste (Injectable)	_____
Produced Formation Solids	_____				
Tank Bottoms	_____				
E&P Contaminated Soil	_____	Truck Washout (exempt waste)	_____		
Gas Plant Waste	_____				

WASTE GENERATION PROCESS: ☐ DRILLING ☐ COMPLETION ☐ PRODUCTION ☐ GATHERING LINES

Non-Exempt Other Soil Containing - Fuel Oil *please select from Non-Exempt Waste List on back Unit W LOADING

QUANTITY 12 B - BARRELS L - LIQUID Y - YARDS E - EACH

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste load is (Check the appropriate classification)

- ☐ RCRA EXEMPT: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications on a per month only)
- ☒ RCRA NON-EXEMPT: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as amended. The following documentation demonstrating the waste as non-hazardous is attached. (Check the appropriate items as provided)
- ☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Other (Provide Description Below)
- Prior Approval Obtained

☐ EMERGENCY NON-OILFIELD: Emergency non-hazardous, non-oilfield waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous waste determination and a description of the waste must accompany this form)

Carrie Hernandez
(PRINT) AUTHORIZED AGENTS SIGNATURE

DATE

SIGNATURE

Carrie Hernandez

TRANSPORTER

Transporter's Name SBrothers Waste Services, Inc.
Address 512 W. Texas Ave.
Artesia, NM 88210
Phone No. 575-748-1213

Driver's Name
Print Name Joshua Green
Phone No.
Truck No. 1

I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.

SHIPMENT DATE

DRIVER'S SIGNATURE

DELIVERY DATE

DRIVER'S SIGNATURE

TRUCK TIME STAMP
IN: _____ OUT: _____

RECEIVING AREA
Name/No. 5051

Site Name/
Permit No. Halfway Facility / NM1-006
Address Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220

Phone No. 575-393-1079

NORM READINGS TAKEN? (Circle One) YES ☐ NO ☒ If YES, was reading > 50 micro roentgens? (circle one) YES ☐ NO ☒

PASS THE PAINT FILTER TEST? (Circle One) YES ☐ NO ☒

1st Gauge
2nd Gauge
Received

Feet	Inches

BS&W/BBLs Received		BS&W (%)	
Free Water			
Total Received			

I hereby certify that the above load material has been (circle one): ACCEPTED DENIED If denied, why?

NAME (PRINT)

DATE

TITLE

SIGNATURE

Halfway Facility
4507 W. Carlsbad Hwy
Hobbs, New Mexico 88240



Phone: (575) 393-1079
Fax: (575) 393-3615
WWW.R360ES.COM

PERMIAN BASIN REGION

Bill To: NAVAJO
Company/Generator: NAVAJO
Company Man: MIKE HOLDER
Trucking: S BROTHERS
Date: 7/9/2013
3rd Party Ticket: 105512

Lease: ARTESIA YARD
Well: WEST RACK
Rig:
PO:
Driver: JOSH
Vehicle: 1

Comments:

Types of Materials

Product	Quantity	Area	Description
Contaminated Soil (RCRA Non-Exempt)	12.00 yards	50/51	

Generator Certification Statement of Waste Status

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

☒ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

☐ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description above)

Driver/Agent (signature)

HS Roll Representative (signature)

Tank Bottoms

	Feet	Inches		
1st Gauge			BS &W/BLS Received	BS & W
2nd Gauge			Free Water	
Received			Total Received	



NEW MEXICO NON-HAZARDOUS OILFIELD WASTE MANIFEST
(PLEASE PRINT)

Company Man Contact Information

Name _____

Phone No. _____

Operator No. N/A
Operators Name Navajo Refining Co. LLC
Address PO Box 159
City, State, Zip Artesia, NM 88211-0159
Phone No. 575-748-3311

Location of Origin
Lease/Well
Name & No. _____
County _____
API No. N/A
Rig Name & No. _____
AFE/PO No. _____

NO. **105512**

Oil Based Muds	_____	Washout Water (Non-Injectable)	_____	Washout Water (Injectable)	_____
Oil Based Cuttings	_____	Completion Fluid/Flow back (Non-Injectable)	_____	Completion Fluid/Flow back (Injectable)	_____
Water Based Cuttings	_____	Produced Water (Non-Injectable)	_____	Produced Water (Injectable)	_____
Water Based Formations Solids	_____	Gathering Line Water/Waste (Non-Injectable)	_____	Gathering Line Water/Waste (Injectable)	_____
Tank Bottoms	_____	Truck Washout (exempt waste)	_____		_____
E&P Contaminated Soil	_____				
Gas Plant Waste	_____				

WASTE GENERATION PROCESS: ☐ DRILLING ☐ COMPLETION ☐ PRODUCTION ☐ GATHERING LINES

Non-Exempt Other Soil Containing - Fuel Oil *please select from Non-Exempt Waste List on back Unit West Rack
QUANTITY B - BARRELS L - LIQUID 12 Y - YARDS E - EACH

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste load is (Check the appropriate classification)

- ☐ RCRA EXEMPT: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications on a per month only)
- ☒ RCRA NON-EXEMPT: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as amended. The following documentation demonstrating the waste as non-hazardous is attached. (Check the appropriate items as provided)
- ☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Other (Provide Description Below)

Prior Approval Obtained

- ☐ EMERGENCY NON-OILFIELD: Emergency non-hazardous, non-oilfield waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous waste determination and a description of the waste must accompany this form)

Carrie Hernandez
(PRINT) AUTHORIZED AGENTS SIGNATURE

DATE

SIGNATURE

Transporter's
Name S Brothers Waste Services, Inc.
Address 512 W. Texas Ave.
Artesia, NM 88210
Phone No. 575-748-1213

Driver's Name
Print Name Joshua Geeslin
Phone No. _____
Truck No. 1

I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.

SHIPMENT DATE

DRIVER'S SIGNATURE

DELIVERY DATE

DRIVER'S SIGNATURE

TRUCK TIME STAMP	DISPOSAL FACILITY	RECEIVING AREA
IN: _____ OUT: _____		Name/No. <u>6/57</u>

Site Name/
Permit No. Halfway Facility / NM1-006
Address Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220

Phone No. 575-393-1079

NORM READINGS TAKEN? (Circle One) YES NO If YES, was reading > 50 micro roentgens? (circle one) YES NO
PASS THE PAINT FILTER TEST? (Circle One) YES NO

1st Gauge _____
2nd Gauge _____
Received _____

BS&W/BBL'S Received	BS&W (%)
Free Water	
Total Received	

I hereby certify that the above load material has been (circle one) ACCEPTED DENIED If denied, why?

NAME (PRINT)

DATE

TITLE

SIGNATURE

C-138

TRANSPORTER COPY

Version 1

Halfway Facility
4507 W. Carlsbad Hwy
Hobbs, New Mexico 88240



Phone: (575) 393-1079
Fax: (575) 393-3615
WWW.R360ES.COM

PERMIAN BASIN REGION

Bill To: NAVAJO
Company/Generator: NAVAJO
Company Man: MIKE HOLDER
Trucking: S BROTHERS
Date: 7/9/2013
3rd Party Ticket: 105513

Lease: ARTESIA YARD
Well: WEST RACK
Rig:
PO:
Driver: GREG
Vehicle: 3

Comments

Product/Volume

Product	Quantity	Area	Description
Contaminated Soil (RCRA Non-Exempt)	12.00 yards	50/51	

Generator Certification Statement of Waste Status

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

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☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description above)

Driver/Generator Signature

R360 Representative Signature

Tank Readings

	Feet	Inches		
1st Gauge			BS &W/BBLS Received	BS & W
2nd Gauge			Free Water	
Received			Total Received	



NEW MEXICO NON-HAZARDOUS OILFIELD WASTE MANIFEST
(PLEASE PRINT)

Company Man Contact Information

Name _____

Phone No. _____

Operator No. N/A
Operators Name Navajo Refining Co. LLC
Address PO Box 159
City, State, Zip Artesia, NM 88211-0159
Phone No. 575-748-3311

Location of Origin
Lease/Well
Name & No. _____
County _____
API No. _____
Rig Name & No. _____
AFE/PO No. _____

NO. **105513**

Oil Based Muds	_____	Washout Water (Non-Injectable)	_____	Washout Water (Injectable)	_____
Oil Based Cuttings	_____	Completion Fluid/Flow back (Non-Injectable)	_____	Completion Fluid/Flow back (Injectable)	_____
Water Based Muds	_____	Produced Water (Non-Injectable)	_____	Produced Water (Injectable)	_____
Water Based Cuttings	_____	Gathering Line Water/Waste (Non-Injectable)	_____	Gathering Line Water/Waste (Injectable)	_____
Produced Formation Solids	_____	Truck Washout (exempt waste)	_____		_____
Tank Bottoms	_____				
E&P Contaminated Soil	_____				
Gas Plant Waste	_____				

WASTE GENERATION PROCESS: ☐ DRILLING ☐ COMPLETION ☐ PRODUCTION ☐ GATHERING LINES

Non-Exempt Other Soil Containing - Fuel Oil *please select from Non-Exempt Waste List on back Unit West Rack
QUANTITY B - BARRELS L - LIQUID 12 Y - YARDS E - EACH

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste load is (Check the appropriate classification)

- ☐ RCRA EXEMPT: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications on a per month only)
- ☒ RCRA NON-EXEMPT: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as amended. The following documentation demonstrating the waste as non-hazardous is attached. (Check the appropriate items as provided)
- ☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Other (Provide Description Below)
- Prior Approval Obtained**

☐ EMERGENCY NON-OILFIELD: Emergency non-hazardous, non-oilfield waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous waste determination and a description of the waste must accompany this form)

Carrie Hernandez
(PRINT) AUTHORIZED AGENTS SIGNATURE

DATE

SIGNATURE

Transporter's
Name SBrothers Waste Services, Inc.
Address 512 W. Texas Ave.
Artesia, NM 88210
Phone No. 575-748-1213

Driver's Name
Print Name Greg Johnson
Phone No. _____
Truck No. 3

I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.

7-9-13
SHIPMENT DATE

Greg Johnson
DRIVER'S SIGNATURE

7-9-13
DELIVERY DATE

Greg Johnson
DRIVER'S SIGNATURE

TRUCK TIME STAMP
IN: _____ OUT: _____
RECEIVING AREA
Name/No. SC/SI

Site Name/ Permit No. Halfway Facility / NM1-006 Phone No. 575-393-1079
Address Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220
NORM READINGS TAKEN? (Circle One) YES NO IF YES, was reading > 50 micro roentgens? (circle one) YES NO
PASS THE PAINT FILTER TEST? (Circle One) YES NO

1st Gauge	_____	BS&W/BBLs Received	_____	BS&W (%)	_____
2nd Gauge	_____	Free Water	_____		_____
Received	_____	Total Received	_____		_____

I hereby certify that the above load material has been (circle one) ACCEPTED DENIED If denied, why?

NAME (PRINT)

DATE

TITLE

SIGNATURE

Halfway Facility
4507 W. Carlsbad Hwy
Hobbs, New Mexico 88240



Phone: (575) 393-1079
Fax: (575) 393-3615
WWW.R360ES.COM

PERMIAN BASIN REGION

TICKET: 515722

Bill To:	NAVAJO	Lease:	ARTESIA YARD
Company/Generator:	NAVAJO	Well:	WEST RACK
Company Man:	MIKE HOLDER	Rig:	
Trucking:	S BROTHERS	PO:	
Date:	7/9/2013	Driver:	GREG
3rd Party Ticket:	105514	Vehicle:	3

Comments

Type of Materials

<u>Product</u>	<u>Quantity</u>	<u>Area</u>	<u>Description</u>
Contaminated Soil (RCRA Exempt)	12.00 yards	50/51	

Generator Certification Statement of Waste Status

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

☐ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description above)

Driver/Agent (signature)

R360 Representative (signature)

Tank Bottoms

	Feet	Inches			
1st Gauge			BS &W/BBLS Received		BS & W
2nd Gauge			Free Water		
Received			Total Received		



NEW MEXICO NON-HAZARDOUS OILFIELD WASTE MANIFEST
(PLEASE PRINT)

Company Man Contact Information

Name _____

Phone No. _____

Operator No. N/A
Operators Name Navajo Refining Co. LLC
Address PO Box 159
City, State, Zip Artesia, NM 88211-0159
Phone No. 575-748-3311

Location of Origin
Lease/Well
Name & No. _____
County _____
API No. _____
Rig Name & No. _____
AFE/PO No. _____

NO. **105514**

Oil Based Muds	_____	Washout Water (Non-Injectable)	_____	Washout Water (Injectable)	_____
Oil Based Cuttings	_____	Completion Fluid/Flow back (Non-Injectable)	_____	Completion Fluid/Flow back (Injectable)	_____
Water Based Muds	_____	Produced Water (Non-Injectable)	_____	Produced Water (Injectable)	_____
Water Based Cuttings	_____	Gathering Line Water/Waste (Non-Injectable)	_____	Gathering Line Water/Waste (Injectable)	_____
Produced Formation Solids	_____	Truck Washout (exempt waste)	_____		_____
Tank Bottoms	_____				
E&P Contaminated Soil	_____				
Gas Plant Waste	_____				

WASTE GENERATION PROCESS: ☐ DRILLING ☐ COMPLETION ☐ PRODUCTION ☐ GATHERING LINES

Non-Exempt Other Soil Containing - Fuel Oil *please select from Non-Exempt Waste List on back Unit Waste Rack
QUANTITY 8 - BARRELS L - LIQUID 12 Y - YARDS E - EACH

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste load is (Check the appropriate classification)

- ☐ RCRA EXEMPT: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications on a per month only)
- ☒ RCRA NON-EXEMPT: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as amended. The following documentation demonstrating the waste as non-hazardous is attached. (Check the appropriate items as provided)
- ☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Other (Provide Description Below)

Prior Approval Obtained

- ☐ EMERGENCY NON-OILFIELD: Emergency non-hazardous, non-oilfield waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous waste determination and a description of the waste must accompany this form)

Carrie Hernandez
(PRINT) AUTHORIZED AGENTS SIGNATURE

DATE

SIGNATURE

Transporter's
Name SBrothers Waste Services, Inc.
Address 512 W. Texas Ave.
Artesia, NM 88210
Phone No. 575-748-1213

Driver's Name

Print Name Greg Shuman

Phone No. _____

Truck No. 3

I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.

7-9-13
SHIPMENT DATE

DRIVER'S SIGNATURE

7-9-13
DELIVERY DATE

DRIVER'S SIGNATURE

TRUCK TIME STAMP	DISPOSAL AREA	RECEIVING AREA
IN: _____ OUT: _____		Name/No. _____

Site Name/
Permit No. Halfway Facility / NM1-006
Address Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220

Phone No. 575-393-1079

NORM READINGS TAKEN? (Circle One) YES NO If YES, was reading > 50 micro roentgens? (circle one) YES NO
PASS THE PAINT FILTER TEST? (Circle One) YES NO

	Feet	Inches
1st Gauge		
2nd Gauge		
Received		

BS&W/BBLs Received		BS&W (%)	
Free Water			
Total Received			

I hereby certify that the above load material has been (circle one): ACCEPTED DENIED If denied, why?

Trinidad 7-9-13 Admin BST [Signature]
NAME (PRINT) DATE TITLE SIGNATURE

Halfway Facility
4507 W. Carlsbad Hwy
Hobbs, New Mexico 88240



Phone: (575) 393-1079
Fax: (575) 393-3615
WWW.R360ES.COM

PERMIAN BASIN REGION**TICKET: 515841**

Bill To:	NAVAJO	Lease:	ARTESIA YARD
Company/Generator:	NAVAJO	Well:	WEST RACK
Company Man:	MIKE HOLDER	Rig:	
Trucking:	S BROTHERS	PO:	
Date:	7/10/2013	Driver:	GREG
3rd Party Ticket:	105515	Vehicle:	3

Comments**Type of Materials**

Product	Quantity	Area	Description
Contaminated Soil (RCRA Exempt)	12.00 yards	50/51	

Generator Certification Statement of Waste Status

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

☐ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description above)

Driver/Agent (signature)**R360 Representative (signature)**

A handwritten signature in black ink, appearing to be "Mike Holder".

A handwritten signature in black ink, appearing to be "Greg".

Tank Bottoms

	Feet	Inches		
1st Gauge			BS & W/BBLs Received	BS & W
2nd Gauge			Free Water	
Received			Total Received	



NEW MEXICO NON-HAZARDOUS OILFIELD WASTE MANIFEST
(PLEASE PRINT)

Company Man Contact Information

Name _____

Phone No. _____

Operator No. N/A
Operators Name Navajo Refining Co. LLC
Address PO Box 159
City, State, Zip Artesia, NM 88211-0159
Phone No. 575-748-3311

Location of Origin
Lease/Well
Name & No. _____
County _____
API No. N/A
Rig Name & No. _____
AFE/PO No. _____

NO. **105515**

Oil Based Muds	_____	Washout Water (Non-Injectable)	_____	Washout Water (Injectable)	_____
Oil Based Cuttings	_____	Completion Fluid/Flow back (Non-Injectable)	_____	Completion Fluid/Flow back (Injectable)	_____
Water Based Muds	_____	Produced Water (Non-Injectable)	_____	Produced Water (Injectable)	_____
Water Based Cuttings	_____	Gathering Line Water/Waste (Non-Injectable)	_____	Gathering Line Water/Waste (Injectable)	_____
Produced Formation Solids	_____	Truck Washout (exempt waste)	_____		_____
Tank Bottoms	_____				
E&P Contaminated Soil	_____				
Gas Plant Waste	_____				

WASTE GENERATION PROCESS: ☐ DRILLING ☐ COMPLETION ☐ PRODUCTION ☐ GATHERING LINES

Non-Exempt Other Soil Containing Fuel Oil *please select from Non-Exempt Waste List on back Unit Wor Rack

QUANTITY B - BARRELS L - LIQUID 12 Y - YARDS E - EACH

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste load is (Check the appropriate classification)

- ☐ RCRA EXEMPT: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications on a per month only)
- ☒ RCRA NON-EXEMPT: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as amended. The following documentation demonstrating the waste as non-hazardous is attached. (Check the appropriate items as provided)
- ☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Other (Provide Description Below)

Prior Approval Obtained

- ☐ EMERGENCY NON-OILFIELD: Emergency non-hazardous, non-oilfield waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous waste determination and a description of the waste must accompany this form)

Carrie Hernandez
(PRINT) AUTHORIZED AGENTS SIGNATURE

DATE

SIGNATURE

Transporter's
Name S Brothers Waste Services, Inc.
Address 512 W. Texas Ave.
Artesia, NM 88210
Phone No. 575-748-1213

Driver's Name
Print Name greg shuman
Phone No. _____
Truck No. 3

I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.

7-10-13
SHIPMENT DATE

[Signature]
DRIVER'S SIGNATURE

7-10-13
DELIVERY DATE

[Signature]
DRIVER'S SIGNATURE

TRUCK TIME STAMP IN: _____ OUT: _____ RECEIVING AREA Name/No. _____

Site Name/
Permit No. Halfway Facility / NM1-006
Address Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220

Phone No. 575-393-1079

NORM READINGS TAKEN? (Circle One) YES NO If YES, was reading > 50 micro roentgens? (circle one) YES NO
PASS THE PAINT FILTER TEST? (Circle One) YES NO

1st Gauge _____
2nd Gauge _____
Received _____

BS&W/BBLs Received		BS&W (%)	
Free Water			
Total Received			

I hereby certify that the above load material has been (circle one): ACCEPTED DENIED If denied, why?
T Martinez 7-10-13 Admin/Asst [Signature]
NAME (PRINT) DATE TITLE SIGNATURE

Halfway Facility
4507 W. Carlsbad Hwy
Hobbs, New Mexico 88240



Phone: (575) 393-1079
Fax: (575) 393-3615
WWW.R360ES.COM

PERMIAN BASIN REGION**TICKET: 516487**

Bill To:	NAVAJO	Lease:	ARTESIA YARD
Company/Generator:	NAVAJO	Well:	WEST RACK
Company Man:	MIKE HOLDER	Rig:	
Trucking:	S BROTHERS	PO:	
Date:	7/12/2013	Driver:	JOSH
3rd Party Ticket:	105517	Vehicle:	1

Comments**Type of Materials**

Product	Quantity	Area	Description
Contaminated Soil (RCRA Exempt)	12.00 yards	50/51	

Generator Certification Statement of Waste Status

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description above)

Driver/Agent (signature)**R360 Representative (signature)**

A handwritten signature in black ink, appearing to be a stylized 'M' or similar character.

Tank Bottoms

	Feet	Inches		
1st Gauge			BS &W/BBLs Received	BS & W
2nd Gauge			Free Water	
Received			Total Received	



NEW MEXICO NON-HAZARDOUS OILFIELD WASTE MANIFEST
(PLEASE PRINT)

Company Man Contact Information

Name _____
Phone No. _____

Operator No. N/A
Operators Name Navajo Refining Co. LLC
Address PO Box 159
City, State, Zip Artesia, NM 88211-0159
Phone No. 575-748-3311

Location of Origin
Lease/Well
Name & No. _____
County _____
API No. _____
Rig Name & No. _____
AFE/PO No. _____

NO. 105517

Oil Based Muds	_____	Washout Water (Non-Injectable)	_____	Washout Water (Injectable)	_____
Oil Based Cuttings	_____	Completion Fluid/Flow back (Non-Injectable)	_____	Completion Fluid/Flow back (Injectable)	_____
Water Based Muds	_____	Produced Water (Non-Injectable)	_____	Produced Water (Injectable)	_____
Water Based Cuttings	_____	Gathering Line Water/Waste (Non-Injectable)	_____	Gathering Line Water/Waste (Injectable)	_____
Produced Formation Solids	_____	Truck Washout (exempt waste)	_____		_____
Tank Bottoms	_____				
E&P Contaminated Soil	_____				
Gas Plant Waste	_____				

WASTE GENERATION PROCESS: ☐ DRILLING ☐ COMPLETION ☐ PRODUCTION ☐ GATHERING LINES

Non-Exempt Other Soil Containing - Fuel Oil *please select from Non-Exempt Waste List on back Unit West Rack
QUANTITY B - BARRELS L - LIQUID 12 Y - YARDS E - EACH

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste load is (Check the appropriate classification)

- ☐ RCRA EXEMPT: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications on a per month only)
- ☒ RCRA NON-EXEMPT: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as amended. The following documentation demonstrating the waste as non-hazardous is attached. (Check the appropriate items as provided)
- ☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Other (Provide Description Below)

Prior Approval Obtained

- ☐ EMERGENCY NON-OILFIELD: Emergency non-hazardous, non-oilfield waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous waste determination and a description of the waste must accompany this form)

Carrie Hernandez
(PRINT) AUTHORIZED AGENTS SIGNATURE

DATE

SIGNATURE

Transporter's
Name SBrothers Waste Services, Inc.
Address 512 W. Texas Ave.
Artesia, NM 88210
Phone No. 575-748-1213

Driver's Name
Print Name Joshua Beersin
Phone No. _____
Truck No. 1

I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.

SHIPMENT DATE

DRIVER'S SIGNATURE

DELIVERY DATE

DRIVER'S SIGNATURE

TRUCK TIME STAMP
IN: _____ OUT: _____

RECEIVING AREA
Name/No. 50/51

Site Name/
Permit No. Halfway Facility / NM1-006
Address Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220

Phone No. 575-393-1079

NORM READINGS TAKEN? (Circle One) YES NO IF YES, was reading \geq 50 micro roentgens? (circle one) YES NO
PASS THE PAINT FILTER TEST? (Circle One) YES NO

1st Gauge _____
2nd Gauge _____
Received _____

BS&W/BBLs Received	_____	BS&W (%)	_____
Free Water	_____		
Total Received	_____		

I hereby certify that the above load material has been (circle one):

ACCEPTED

DENIED

If denied, why?

NAME (PRINT)

DATE

TITLE

SIGNATURE

Halfway Facility
4507 W. Carlsbad Hwy
Hobbs, New Mexico 88240



Phone: (575) 393-1079
Fax: (575) 393-3615
WWW.R360ES.COM

PERMIAN BASIN REGION

Bill To:	NAVAJO	Lease:	ARTESIA YARD
Company/Generator:	NAVAJO	Well:	WEST RANCH
Company Man:	MIKE HOLDER	Rig:	
Trucking:	S BROTHERS	PO:	
Date:	7/15/2013	Driver:	JOSH
3rd Party Ticket:	105518	Vehicle:	1

Comments**Type of Materials**

<u>Product</u>	<u>Quantity</u>	<u>Area</u>	<u>Description</u>
Contaminated Soil (RCRA Non-Exempt)	12.00 yards	50/51	

Generator Certification Statement of Waste Status

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

☐ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description above)

Driver/Agent (signature)**R360 Representative (signature)****Tank Bottoms**

	Feet	Inches		
1st Gauge			BS & W/BLS Received	BS & W
2nd Gauge			Free Water	
Received			Total Received	



NEW MEXICO NON-HAZARDOUS OILFIELD WASTE MANIFEST
(PLEASE PRINT)

Company Man Contact Information

Name _____

Phone No. _____

Operator No. N/A
Operators Name Navajo Refining Co. LLC
Address PO Box 159
City, State, Zip Artesia, NM 88211-0159
Phone No. 575-748-3311

Location of Origin
Lease/Well
Name & No. _____
County _____
API No. _____
Rig Name & No. _____
AFE/PO No. _____

NO. **105518**

Oil Based Muds _____	Washout Water (Non-Injectable) _____	Washout Water (Injectable) _____
Oil Based Cuttings _____	Completion Fluid/Flow back (Non-Injectable) _____	Completion Fluid/Flow back (Injectable) _____
Water Based Muds _____	Produced Water (Non-Injectable) _____	Produced Water (Injectable) _____
Water Based Cuttings _____	Gathering Line Water/Waste (Non-Injectable) _____	Gathering Line Water/Waste (Injectable) _____
Produced Formation Solids _____	Truck Washout (exempt waste) _____	
Tank Bottoms _____		
E&P Contaminated Soil _____		
Gas Plant Waste _____		

WASTE GENERATION PROCESS: ☐ DRILLING ☐ COMPLETION ☐ PRODUCTION ☐ GATHERING LINES

Non-Exempt Other Soil Containing - Fuel/Oil *please select from Non-Exempt Waste List on back Unit West Rock

QUANTITY B - BARRELS L - LIQUID 12 Y - YARDS E - EACH

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste load is (Check the appropriate classification)

- ☐ RCRA EXEMPT: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications on a per month only)
- ☒ RCRA NON-EXEMPT: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as amended. The following documentation demonstrating the waste as non-hazardous is attached. (Check the appropriate items as provided)
- ☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Other (Provide Description Below)

Prior Approval Obtained

☐ EMERGENCY NON-OILFIELD: Emergency non-hazardous, non-oilfield waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous waste determination and a description of the waste must accompany this form)

Carrie Hernandez
(PRINT) AUTHORIZED AGENTS SIGNATURE

DATE

SIGNATURE

Transporter's
Name S Brothers Waste Services, Inc.
Address 512 W. Texas Ave.
Artesia, NM 88210
Phone No. 575-748-1213

Driver's Name

Print Name Joshua Gars

Phone No. _____

Truck No. 1

I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.

SHIPMENT DATE

DRIVER'S SIGNATURE

DELIVERY DATE

DRIVER'S SIGNATURE

TRUCK TIME STAMP
IN: _____ OUT: _____

RECEIVING AREA
Name/No. 50151

Site Name/Permit No. Halfway Facility / NM1-006 Phone No. 575-393-1079
Address Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220

NORM READINGS TAKEN? (Circle one) YES NO If YES, was reading > 50 micro roentgens? (circle one) YES NO
PASS THE PAINT FILTER TEST? (Circle one) YES NO

1st Gauge	Feet	Inches	BS&W/BBLs Received	BS&W (%)
2nd Gauge			Free Water	
Received			Total Received	

I hereby certify that the above load material has been circle one: ACCEPTED DENIED If denied, why? _____

NAME (PRINT)

DATE

TITLE

SIGNATURE

Halfway Facility
4507 W. Carlsbad Hwy
Hobbs, New Mexico 88240



Phone: (575) 393-1079
Fax: (575) 393-3615
WWW.R360ES.COM

PERMIAN BASIN REGION

Bill To:	NAVAJO	Lease:	ARTESIA YARD
Company/Generator:	NAVAJO	Well:	WEST RACK
Company Man:	MIKE HOLDER	Rig:	
Trucking:	S BROTHERS	PO:	
Date:	7/15/2013	Driver:	JOSH
3rd Party Ticket:	105519	Vehicle:	1

Comments

Type of Materials

<u>Product</u>	<u>Quantity</u>	<u>Area</u>	<u>Description</u>
Contaminated Soil (RCRA Non-Exempt)	12.00 yards	50/51	

Generator Certification Statement of Waste Status

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

☐ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description above)

Driver/Agent (signature) _____ R360 Representative (signature) _____

Tank Bottoms

	Feet	Inches		
1st Gauge			BS &W/BBLs Received	BS & W
2nd Gauge			Free Water	
Received			Total Received	



NEW MEXICO NON-HAZARDOUS OILFIELD WASTE MANIFEST
(PLEASE PRINT)

Company Man Contact Information

Name _____

Phone No. _____

NO. 105519

Operator No. N/A

Operators Name Navajo Refining Co. LLC

Address PO Box 159

City, State, Zip Artesia, NM 88211-0159

Phone No. 575-748-3311

Location of Origin _____

Lease/Well _____

Name & No. _____

County _____

API No. N/A

Rig Name & No. _____

AFE/PO No. _____

Oil Based Muds	_____	Washout Water (Non-Injectable)	_____	Washout Water (Injectable)	_____
Oil Based Cuttings	_____	Completion Fluid/Flow back (Non-Injectable)	_____	Completion Fluid/Flow back (Injectable)	_____
Water Based Muds	_____	Produced Water (Non-Injectable)	_____	Produced Water (Injectable)	_____
Water Based Cuttings	_____	Gathering Line Water/Waste (Non-Injectable)	_____	Gathering Line Water/Waste (Injectable)	_____
Produced Formation Solids	_____				
Tank Bottoms	_____				
E&P Contaminated Soil	_____	Truck Washout (exempt waste)	_____		
Gas Plant Waste	_____				

WASTE GENERATION PROCESS: ☐ DRILLING ☐ COMPLETION ☐ PRODUCTION ☐ GATHERING LINES

Non-Exempt Other Soil Containing Fuel Oil *please select from Non-Exempt Waste List on back Unit West Rock

QUANTITY B - BARRELS L - LIQUID 12 Y - YARDS E - EACH

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste load is (Check the appropriate classification)

- ☐ RCRA EXEMPT: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications on a per month only)
- ☒ RCRA NON-EXEMPT: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as amended. The following documentation demonstrating the waste as non-hazardous is attached. (Check the appropriate items as provided)
- ☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Other (Provide Description Below)

Prior Approval Obtained

☐ EMERGENCY NON-OILFIELD: Emergency non-hazardous, non-oilfield waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous waste determination and a description of the waste must accompany this form)

Carrie Hernandez
(PRINT) AUTHORIZED AGENTS SIGNATURE

DATE

Carrie Hernandez
SIGNATURE

Transporter's

Name S Brothers Waste Services, Inc.

Address 512 W. Texas Ave.

Artesia, NM 88210

Phone No. 575-748-1213

Driver's Name

Print Name Joshua Gustin

Phone No. _____

Truck No. 1

I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.

SHIPMENT DATE

DRIVER'S SIGNATURE

DELIVERY DATE

DRIVER'S SIGNATURE

TRUCK TIME STAMP		RECEIVING AREA
IN: <u>1:55</u>	OUT: _____	Name/No. <u>50/51</u>

Site Name/ Halfway Facility / NM1-006

Permit No. _____

Address Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220

Phone No.

575-393-1079

NORM READINGS TAKEN? (Circle One) YES ☒ NO ☐

If YES, was reading > 50 micro roentgens? (circle one)

YES ☐

NO ☐

PASS THE PAINT FILTER TEST? (Circle One) YES ☒ NO ☐

NO ☐

1st Gauge	Feet	Inches
2nd Gauge		
Received		

BS&W/BBLS Received	BS&W (%)
Free Water	
Total Received	

I hereby certify that the above load material has been (circle one):

ACCEPTED

DENIED

If denied, why?

Jacob OLS
NAME (PRINT)

7/15/13
DATE

Admin Asst
TITLE

Jacob OLS
SIGNATURE

Halfway Facility
4507 W. Carlsbad Hwy
Hobbs, New Mexico 88240



Phone: (575) 393-1079
Fax: (575) 393-3615
WWW.R360ES.COM

PERMIAN BASIN REGION**TICKET: 517425**

Bill To:	NAVAJO	Lease:	ARTESIA YARD
Company/Generator:	NAVAJO	Well:	WEST RACK
Company Man:	MIKE HOLDER	Rig:	
Trucking:	S BROTHERS	PO:	
Date:	7/16/2013	Driver:	JOSHUA
3rd Party Ticket:	105520	Vehicle:	1

Comments**Type of Materials**

<u>Product</u>	<u>Quantity</u>	<u>Area</u>	<u>Description</u>
Contaminated Soil (RCRA Exempt)	12.00 yards	50/51	

Generator Certification Statement of Waste Status

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description above)

Driver/Agent (signature)**R360 Representative (signature)**

A handwritten signature in black ink, appearing to be "Jm", is written over the R360 Representative signature line.

Tank Bottoms

	Feet	Inches		
1st Gauge			BS & W/BBLS Received	BS & W
2nd Gauge			Free Water	
Received			Total Received	



NEW MEXICO NON-HAZARDOUS OILFIELD WASTE MANIFEST
(PLEASE PRINT)

Company Man Contact Information

Name _____

Phone No. _____

NO. 105520

Operator No. N/A
Operators Name Navajo Refining Co. LLC
Address PO Box 159
Artesia, NM 88211-0159
City, State, Zip
Phone No. 575-748-3311

Location of Origin
Lease/Well
Name & No. _____
County _____
API No. N/A
Rig Name & No. _____
AFE/PO No. _____

Oil Based Muds	_____	Washout Water (Non-Injectable)	_____	Washout Water (Injectable)	_____
Oil Based Cuttings	_____	Completion Fluid/Flow back (Non-Injectable)	_____	Completion Fluid/Flow back (Injectable)	_____
Water Based Muds	_____	Produced Water (Non-Injectable)	_____	Produced Water (Injectable)	_____
Water Based Cuttings	_____	Gathering Line Water/Waste (Non-Injectable)	_____	Gathering Line Water/Waste (Injectable)	_____
Produced Formation Solids	_____	Truck Washout (exempt waste)	_____		_____
Tank Bottoms	_____				
E&P Contaminated Soil	_____				
Gas Plant Waste	_____				

WASTE GENERATION PROCESS: ☐ DRILLING ☐ COMPLETION ☐ PRODUCTION ☐ GATHERING LINES

Non-Exempt Other Soil Containing - Fuel Oil *please select from Non-Exempt Waste List on back Unit West Rack

QUANTITY B - BARRELS L - LIQUID 12 Y - YARDS E - EACH

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste load is (Check the appropriate classification)

- ☐ RCRA EXEMPT: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications on a per month only)
- ☒ RCRA NON-EXEMPT: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as amended. The following documentation demonstrating the waste as non-hazardous is attached: (Check the appropriate items as provided)
- ☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Other (Provide Description Below)

Prior Approval Obtained

- ☐ EMERGENCY NON-OILFIELD: Emergency non-hazardous, non-oilfield waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous waste determination and a description of the waste must accompany this form)

Carrie Hernandez
(PRINT) AUTHORIZED AGENTS SIGNATURE

DATE

SIGNATURE

Transporter's
Name SBrothers Waste Services, Inc.
Address 512 W. Texas Ave.
Artesia, NM 88210
Phone No. 575-748-1213

Driver's Name
Print Name Joshua Geeslin
Phone No. _____
Truck No. 1

I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.

SHIPMENT DATE

DRIVER'S SIGNATURE

DELIVERY DATE

DRIVER'S SIGNATURE

TRUCK TIME STAMP
IN: _____ OUT: _____

RECEIVING AREA
Name/No. 510/51

Site Name/
Permit No. Halfway Facility / NM1-006
Address Mile Marker 66 Hwy 52/180 Carlsbad, NM 88220

Phone No. 575-393-1079

NORM READINGS TAKEN? (Circle One) YES NO If YES, was reading > 50 micro roentgens? (circle one) YES NO
PASS THE PAINT FILTER TEST? (Circle One) YES NO

1st Gauge
2nd Gauge
Received

Feet	Inches

BS&W/BBLs Received	BS&W (%)
Free Water	
Total Received	

I hereby certify that the above load material has been (circle one):

ACCEPTED

DENIED

If denied, why?

NAME (PRINT)

DATE

TITLE

SIGNATURE

Halfway Facility
4507 W. Carlsbad Hwy
Hobbs, New Mexico 88240



Phone: (575) 393-1079
Fax: (575) 393-3615
WWW.R360ES.COM

PERMIAN BASIN REGION

TICKET: 517482			
Bill To:	NAVAJO	Lease:	ARTESIA YARD
Company/Generator:	NAVAJO	Well:	WEST RACK
Company Man:	MIKE HOLDER	Rig:	
Trucking:	S BROTHERS	PO:	
Date:	7/16/2013	Driver:	JOSH
3rd Party Ticket:	105542	Vehicle:	1

Comments**Type of Materials**

<u>Product</u>	<u>Quantity</u>	<u>Area</u>	<u>Description</u>
Contaminated Soil (RCRA Non-Exempt)	12.00 yards	50/51	

Generator Certification Statement of Waste Status

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

☐ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description above)

Driver/Agent (signature) **R360 Representative (signature)****Tank Bottoms**

	Feet	Inches			
1st Gauge			BS &W/BBLS Received		BS & W
2nd Gauge			Free Water		
Received			Total Received		



NEW MEXICO NON-HAZARDOUS OILFIELD WASTE MANIFEST
(PLEASE PRINT)

Company Man Contact Information
Name _____
Phone No. _____

Operator No. N/A
Operators Name Navajo Refining Co. LLC
Address PO Box 159
City, State, Zip Artesia, NM 88211-0159
Phone No. 575-748-3311

Location of Origin
Lease/Well Name & No. _____
County _____
API No. N/A
Rig Name & No. _____
AFE/PO No. _____

NO. **105542**

Oil Based Muds	_____	Washout Water (Non-Injectable)	_____	Washout Water (Injectable)	_____
Oil Based Cuttings	_____	Completion Fluid/Flow back (Non-Injectable)	_____	Completion Fluid/Flow back (Injectable)	_____
Water Based Muds	_____	Produced Water (Non-Injectable)	_____	Produced Water (Injectable)	_____
Water Based Cuttings	_____	Gathering Line Water/Waste (Non-Injectable)	_____	Gathering Line Water/Waste (Injectable)	_____
Produced Formation Solids	_____				
Tank Bottoms	_____				
E&P Contaminated Soil	_____	Truck Washout (exempt waste)	_____		
Gas Plant Waste	_____				

WASTE GENERATION PROCESS: ☐ DRILLING ☐ COMPLETION ☐ PRODUCTION ☐ GATHERING LINES

Non-Exempt Other Soil Containing - Fuel Oil *please select from Non-Exempt Waste List on back Unit West Rock

QUANTITY B - BARRELS L - LIQUID 12 Y - YARDS E - EACH

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste load is (Check the appropriate classification)

- ☐ RCRA EXEMPT: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications on a per month only)
- ☒ RCRA NON-EXEMPT: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as amended. The following documentation demonstrating the waste as non-hazardous is attached. (Check the appropriate items as provided)
- ☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Other (Provide Description Below)

Prior Approval Obtained

- ☐ EMERGENCY NON-OILFIELD: Emergency non-hazardous, non-oilfield waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous waste determination and a description of the waste must accompany this form)

Carrie Hernandez
(PRINT) AUTHORIZED AGENTS SIGNATURE

DATE

SIGNATURE

Transporter's
Name SBrothers Waste Services, Inc.
Address 512 W. Texas Ave.
Artesia, NM 88210
Phone No. 575-748-1213

Driver's Name
Print Name Joshua Gerslin
Phone No. _____
Truck No. 1

I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.

SHIPMENT DATE

DRIVER'S SIGNATURE

7-16-2013
DELIVERY DATE

DRIVER'S SIGNATURE

TRUCK TIME STAMP
IN: _____ OUT: _____

RECEIVING AREA
Name/No. [Signature]

Site Name/
Permit No. Halfway Facility / NM1-006
Address Mile Marker 65 Hwy 62/180 Carlsbad, NM 88220

Phone No. 575-393-1079

NORM READINGS TAKEN? (Circle One) YES NO IF YES, Was reading > 50 micro roentgens? (circle one) YES NO
PASS THE PAINT FILTER TEST? (Circle One) YES NO

Feet _____ Inches _____
1st Gauge _____
2nd Gauge _____
Received _____

BS&W/BBLs Received	_____	BS&W (%)	_____
Free Water	_____		
Total Received	_____		

I hereby certify that the above load material has been (circle one): ACCEPTED DENIED If denied, why? _____

NAME (PRINT)

DATE

TITLE

SIGNATURE

Halfway Facility
4507 W. Carlsbad Hwy
Hobbs, New Mexico 88240



Phone: (575) 393-1079
Fax: (575) 393-3615
WWW.R360ES.COM

PERMIAN BASIN REGION

TICKET: 517557

Bill To:	NAVAJO	Lease:	ARTESIA YARD
Company/Generator:	NAVAJO	Well:	WEST RACJ
Company Man:	MIKE HOLDER	Rig:	
Trucking:	S BROTHERS	PO:	
Date:	7/16/2013	Driver:	JOSHUA
3rd Party Ticket:	105545	Vehicle:	1

Comments

Type of Materials

Product	Quantity	Area	Description
Contaminated Soil (RCRA Non-Exempt)	12.00 yards	50/51	

Generator Certification Statement of Waste Status

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

☐ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description above)

Driver/Agent (signature)

R360 Representative (signature)

Tank Bottoms

	Feet	Inches			
1st Gauge			BS & W/BBLs Received		BS & W
2nd Gauge			Free Water		
Received			Total Received		



NEW MEXICO NON-HAZARDOUS OILFIELD WASTE MANIFEST
(PLEASE PRINT)

Company Man Contact Information

Name _____

Phone No. _____

Operator No. N/A
Operators Name Navajo Refining Co. LLC
Address PO Box 159
Artesia, NM 88211-0159
City, State, Zip
Phone No. 575-748-3311

Location of Origin
Lease/Well
Name & No. _____
County N/A
API No. _____
Rig Name & No. _____
AFE/PO No. _____

NO. **105545**

Oil Based Muds	_____	Washout Water (Non-Injectable)	_____	Washout Water (Injectable)	_____
Oil Based Cuttings	_____	Completion Fluid/Flow back (Non-Injectable)	_____	Completion Fluid/Flow back (Injectable)	_____
Water Based Muds	_____	Produced Water (Non-Injectable)	_____	Produced Water (Injectable)	_____
Water Based Cuttings	_____	Gathering Line Water/Waste (Non-Injectable)	_____	Gathering Line Water/Waste (Injectable)	_____
Produced Formation Solids	_____	Truck Washout (exempt waste)	_____		_____
Tank Bottoms	_____				
E&P Contaminated Soil	_____				
Gas Plant Waste	_____				

WASTE GENERATION PROCESS: ☐ DRILLING ☐ COMPLETION ☐ PRODUCTION ☐ GATHERING LINES

Non-Exempt Other Soil Containing - Fuel Oil *please select from Non-Exempt Waste List on back Unit West. Rock.
QUANTITY B - BARRELS L - LIQUID 12 Y - YARDS E - EACH

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste load is (Check the appropriate classification)

- ☐ RCRA EXEMPT: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications on a per month only)
- ☒ RCRA NON-EXEMPT: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as amended. The following documentation demonstrating the waste as non-hazardous is attached. (Check the appropriate items as provided)
- ☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Other (Provide Description Below)
- Prior Approval Obtained**

☐ EMERGENCY NON-OILFIELD: Emergency non-hazardous, non-oilfield waste that has been ordered by the Department of Public Safety (the order, documentation of non-hazardous waste determination and a description of the waste must accompany this form)

Carrie Hernandez
(PRINT) AUTHORIZED AGENTS SIGNATURE

DATE

SIGNATURE

Transporter's
Name S Brothers Waste Services, Inc.
Address 512 W. Texas Ave.
Artesia, NM 88210
Phone No. 575-748-1213

Driver's Name
Print Name Joshua Geesh
Phone No. _____
Truck No. 1

I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.

SHIPMENT DATE

DRIVER'S SIGNATURE

DELIVERY DATE

DRIVER'S SIGNATURE

TRUCK TIME STAMP	RECEIVING AREA
IN: _____ OUT: _____	Name/No. <u>50151</u>

Site Name/
Permit No. Halfway Facility / NM1-006
Address Mile Marker 66 Hwy 62/180 Carlsbad, NM 88220

Phone No. 575-393-1079

NORM READINGS TAKEN? (Circle One) YES ☐ NO ☒ If YES, was reading > 50 micro roentgens? (circle one) YES ☐ NO ☒

PASS THE PAINT FILTER TEST? (Circle One) YES ☐ NO ☒

1st Gauge _____
2nd Gauge _____
Received _____

BS&W/BBLs Received	BS&W (%)
Free Water	
Total Received	

I hereby certify that the above load material has been (circle one):

ACCEPTED

DENIED

If denied, why?

J Martinez
NAME (PRINT)

DATE

Admin Asst
TITLE

SIGNATURE

Halfway Facility
4507 W. Carlsbad Hwy
Hobbs, New Mexico 88240



Phone: (575) 393-1079
Fax: (575) 393-3615
WWW.R360ES.COM

PERMIAN BASIN REGION

Ticket: 518268

Bill To:	NAVAJO	Lease:	ARTESIA YARD
Company/Generator:	NAVAJO	Well:	WEST LOADING RACK
Company Man:	MIKE HOLDER	Rig:	
Trucking:	S BROTHERS	PO:	
Date:	7/19/2013	Driver:	GREG
3rd Party Ticket:	117284	Vehicle:	3

Comments

Type of Materials

<u>Product</u>	<u>Quantity</u>	<u>Area</u>	<u>Description</u>
Contaminated Soil (RCRA Non-Exempt)	12.00 yards	50/51	

Generator Certification Statement of Waste Status

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description above)

Driver/Agent (signature)

R360 Representative (signature)

Tank Bottoms

	Fect	Inches		
1st Gauge			BS &W/BLS Received	BS & W
2nd Gauge			Free Water	
Received			Total Received	

NON-HAZARDOUS WASTE MANIFEST

117284

PART I: Generator Navajo Refining Co. LLC
Address PO Box 159
City/State Artesia, NM 88211-0159

(575) 748-3311
Telephone No.

ORIGINATION OF WASTE:

Operations Center Artesia Permit No. N/A

Property Name West Rack
(Well, Tank Battery, Plant, Facility)

Prior Approval Obtained

WASTE IDENTIFICATION AND AMOUNT (BARRELS, YARDS, TONS, CU.FT., LBS., UNITS, ETC.)

Drilling Fluids	_____	Tank Bottoms	_____	Exempt Fluids	_____
Completion Fluids	_____	Gas Plant Waste	_____	C117 No.	_____
Contaminated Soil	_____	Other Materials	_____	Pit No.	_____

DESCRIPTION / NOTES

Soil Containing Fuel Oil

Soil Contaminated with

12yds

West Rack

CERTIFICATION:

The waste described above is not hazardous pursuant to 40 CFR Part 261 and was consigned to the transporter named below. I certify that the foregoing is true and correct to the best of my knowledge.

Carrie Humanez
Signature of Generator's Authorized Agent

7-19-13
Date and Time of Shipment

PART II: TRANSPORTER: (To be completed in full by Transporter)

Name S Brothers
Address _____
City/State Artesia

Telephone No. _____
3
Truck No.

CERTIFICATION:

I certify that the waste in quantity above was received by me for shipment to the destination below.

Aug
Signature of Transporter's Agent

7-19-13
Date and Time Received

PART III: DISPOSAL OR RECLAMATION SITE:

Name R360 Permian Basin, LLC
Address P.O. Box 388
City/State Hobbs, N.M. 88241-0388

(575) 393-1079

Telephone No.

www.r360environmentalsolutions.com

E-mail

CERTIFICATION:

I certify that the waste described in Part I was received by me via the transporter described in Part II.

Michael D. Sanders
Signature of Facility Agent

7/19/13
Date and Time Received

Halfway Facility
4507 W. Carlsbad Hwy
Hobbs, New Mexico 88240



Phone: (575) 393-1079
Fax: (575) 393-3615
WWW.R360ES.COM

PERMIAN BASIN REGION

TICKET: 517987

Bill To:	NAVAJO	Lease:	ARTESIA YARD
Company/Generator:	NAVAJO	Well:	WEST RACK
Company Man:	MIKE HOLDER	Rig:	
Trucking:	S BROTHERS	PO:	
Date:	7/18/2013	Driver:	GREG
3rd Party Ticket:	117285	Vehicle:	3

Comments

Type of Materials

<u>Product</u>	<u>Quantity</u>	<u>Area</u>	<u>Description</u>
Contaminated Soil (RCRA Non-Exempt)	12.00 yards	50/51	

Generator Certification Statement of Waste Status

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

☐ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description above)

Driver/Agent (signature)

R360 Representative (signature)

Tank Bottoms

	Feet	Inches			
1st Gauge			BS & W/BBLS Received		BS & W
2nd Gauge			Free Water		
Received			Total Received		

NON-HAZARDOUS WASTE MANIFEST

117285

PART I: Generator Navaio Refining Co. LLC
Address PO Box 159
City/State Artesia, NM 88211-0159

(575) 748-3311
Telephone No.

ORIGIN OF WASTE:

Operations Center Artesia

Permit No. N/A

Property Name

West Rack
(Well, Tank Battery, Plant, Facility)

Prior Approval Obtained

WASTE IDENTIFICATION AND AMOUNT (BARRELS, YARDS, TONS, CU.FT., LBS., UNITS, ETC.)

Drilling Fluids	_____	Tank Bottoms	_____	Exempt Fluids	_____
Completion Fluids	_____	Gas Plant Waste	_____	C117 No.	_____
Contaminated Soil	_____	Other Materials	_____	Pit No.	_____

DESCRIPTION / NOTES

Soil Containing Fuel Oil

Soil Contaminated when

12yds

CERTIFICATION:

The waste described above is not hazardous pursuant to 40 CFR Part 261 and was consigned to the transporter named below. I certify that the foregoing is true and correct to the best of my knowledge.

Carmie Hernandez
Signature of Generator's Authorized Agent

7-18-13
Date and Time of Shipment

PART II: TRANSPORTER: (To be completed in full by Transporter)

Name S Brothers
Address _____
City/State Artesia

Telephone No. _____
3
Truck No.

CERTIFICATION:

I certify that the waste in quantity above was received by me for shipment to the destination below.

Greg
Signature of Transporter's Agent

7-18-13
Date and Time Received

PART III: DISPOSAL OR RECLAMATION SITE:

Name R360 Permian Basin, LLC
Address P.O. Box 388
City/State Hobbs, N.M. 88241-0388

(575) 393-1079
Telephone No.

www.r360environmentalsolutions.com
E-mail

CERTIFICATION:

I certify that the waste described in Part I was received by me via the transporter described in Part II.

J. M. [Signature]
Signature of Facility Agent

7-18-13
Date and Time Received



Attachment D

Analytical Reports



24-Jul-2013

Aaron Strange
Navajo Refining Company
PO Box 159
Artesia, NM 88211

Tel: (575) 748-6733
Fax: (575) 746-5421

Re: Fuel Oil Spill- West Loading Rack

Work Order: **1307647**

Dear Aaron,

ALS Environmental received 4 samples on 16-Jul-2013 09:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 19.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in cursive script that reads "Sonia West".

Electronically approved by: Dayna.Fisher

Sonia West
Project Manager



Certificate No: T104704231-13-12

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887

ALS GROUP USA, CORP. Part of the ALS Group An ALS Limited Company

Environmental The ALS logo, a stylized blue triangle with a yellow flame.

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Navajo Refining Company
Project: Fuel Oil Spill- West Loading Rack
Work Order: 1307647

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1307647-01	East 3rd Bay	Solid		7/11/2013 14:35	7/16/2013 09:00	<input type="checkbox"/>
1307647-02	East 3rd Bay #2	Solid		7/11/2013 14:40	7/16/2013 09:00	<input type="checkbox"/>
1307647-03	East 2nd Bay	Solid		7/11/2013 14:50	7/16/2013 09:00	<input type="checkbox"/>
1307647-04	East 1st Bay	Solid		7/11/2013 14:55	7/16/2013 09:00	<input type="checkbox"/>

Client: Navajo Refining Company
Project: Fuel Oil Spill- West Loading Rack
Work Order: 1307647

Case Narrative

Batch 71724B, TPH DRO/ORO 8015, Sample East 3rd Bay: This sample was analyzed at a 5 x dilution due to matrix interference.

Batch 71724B, TPH DRO/ORO 8015, Sample East 3rd Bay #2: This sample was analyzed at a 5 x dilution due to matrix interference.

Batch R150673, Volatile Organics 8260, Sample 1307738-01: MS/MSD are for an unrelated sample.

ALS Environmental

Date: 24-Jul-13

Client: Navajo Refining Company
Project: Fuel Oil Spill- West Loading Rack
Sample ID: East 3rd Bay
Collection Date: 7/11/2013 02:35 PM

Work Order: 1307647
Lab ID: 1307647-01
Matrix: SOLID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
TPH DRO/ORO	Method: SW8015M			Prep: SW3541 / 7/23/13		Analyst: RPM	
TPH (Diesel Range)	3.5	J	2.5	8.5	mg/Kg	5	7/23/2013 15:47
Surr: 2-Fluorobiphenyl	103			60-135	%REC	5	7/23/2013 15:47
<hr/>							
GASOLINE RANGE ORGANICS - SW8015C	Method: SW8015					Analyst: KKP	
Gasoline Range Organics	U		0.020	0.050	mg/Kg	1	7/23/2013 22:42
Surr: 4-Bromofluorobenzene	108			70-130	%REC	1	7/23/2013 22:42
<hr/>							
VOLATILES - SW8260C	Method: SW8260					Analyst: WLR	
Benzene	U		0.60	5.0	µg/Kg	1	7/18/2013 13:15
Ethylbenzene	U		0.90	5.0	µg/Kg	1	7/18/2013 13:15
Toluene	U		0.70	5.0	µg/Kg	1	7/18/2013 13:15
Xylenes, Total	U		1.7	10	µg/Kg	1	7/18/2013 13:15
Surr: 1,2-Dichloroethane-d4	97.0			70-128	%REC	1	7/18/2013 13:15
Surr: 4-Bromofluorobenzene	101			73-126	%REC	1	7/18/2013 13:15
Surr: Dibromofluoromethane	96.1			71-128	%REC	1	7/18/2013 13:15
Surr: Toluene-d8	100			73-127	%REC	1	7/18/2013 13:15

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 24-Jul-13

Client: Navajo Refining Company
Project: Fuel Oil Spill- West Loading Rack
Sample ID: East 3rd Bay #2
Collection Date: 7/11/2013 02:40 PM

Work Order: 1307647
Lab ID: 1307647-02
Matrix: SOLID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
TPH DRO/ORO	Method: SW8015M			Prep: SW3541 / 7/23/13		Analyst: RPM	
TPH (Diesel Range)	U		2.5	8.5	mg/Kg	5	7/23/2013 15:47
Surr: 2-Fluorobiphenyl	65.2			60-135	%REC	5	7/23/2013 15:47
<hr/>							
GASOLINE RANGE ORGANICS - SW8015C	Method: SW8015					Analyst: KKP	
Gasoline Range Organics	U		0.020	0.050	mg/Kg	1	7/23/2013 22:58
Surr: 4-Bromofluorobenzene	108			70-130	%REC	1	7/23/2013 22:58
<hr/>							
VOLATILES - SW8260C	Method: SW8260					Analyst: WLR	
Benzene	U		0.60	5.0	µg/Kg	1	7/18/2013 13:43
Ethylbenzene	U		0.90	5.0	µg/Kg	1	7/18/2013 13:43
Toluene	U		0.70	5.0	µg/Kg	1	7/18/2013 13:43
Xylenes, Total	U		1.7	10	µg/Kg	1	7/18/2013 13:43
Surr: 1,2-Dichloroethane-d4	96.9			70-128	%REC	1	7/18/2013 13:43
Surr: 4-Bromofluorobenzene	98.8			73-126	%REC	1	7/18/2013 13:43
Surr: Dibromofluoromethane	95.0			71-128	%REC	1	7/18/2013 13:43
Surr: Toluene-d8	102			73-127	%REC	1	7/18/2013 13:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 24-Jul-13

Client: Navajo Refining Company
Project: Fuel Oil Spill- West Loading Rack
Sample ID: East 2nd Bay
Collection Date: 7/11/2013 02:50 PM

Work Order: 1307647
Lab ID: 1307647-03
Matrix: SOLID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO Method: SW8015M Prep: SW3541 / 7/23/13 Analyst: RPM							
TPH (Diesel Range)	U		0.50	1.7	mg/Kg	1	7/23/2013 16:11
Surr: 2-Fluorobiphenyl	70.8			60-135	%REC	1	7/23/2013 16:11
GASOLINE RANGE ORGANICS - SW8015C Method: SW8015 Analyst: KKP							
Gasoline Range Organics	U		0.020	0.050	mg/Kg	1	7/23/2013 23:14
Surr: 4-Bromofluorobenzene	108			70-130	%REC	1	7/23/2013 23:14
VOLATILES - SW8260C Method: SW8260 Analyst: WLR							
Benzene	U		0.60	5.0	µg/Kg	1	7/19/2013 23:39
Ethylbenzene	U		0.90	5.0	µg/Kg	1	7/19/2013 23:39
Toluene	U		0.70	5.0	µg/Kg	1	7/19/2013 23:39
Xylenes, Total	U		1.7	10	µg/Kg	1	7/19/2013 23:39
Surr: 1,2-Dichloroethane-d4	90.3			70-128	%REC	1	7/19/2013 23:39
Surr: 4-Bromofluorobenzene	92.8			73-126	%REC	1	7/19/2013 23:39
Surr: Dibromofluoromethane	96.0			71-128	%REC	1	7/19/2013 23:39
Surr: Toluene-d8	100			73-127	%REC	1	7/19/2013 23:39

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 24-Jul-13

Client: Navajo Refining Company
Project: Fuel Oil Spill- West Loading Rack
Sample ID: East 1st Bay
Collection Date: 7/11/2013 02:55 PM

Work Order: 1307647
Lab ID: 1307647-04
Matrix: SOLID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO	Method: SW8015M			Prep: SW3541 / 7/23/13		Analyst: RPM	
TPH (Diesel Range)	14		2.5	8.5	mg/Kg	5	7/23/2013 16:11
Surr: 2-Fluorobiphenyl	69.8			60-135	%REC	5	7/23/2013 16:11
GASOLINE RANGE ORGANICS - SW8015C	Method: SW8015					Analyst: KKP	
Gasoline Range Organics	U		0.020	0.050	mg/Kg	1	7/23/2013 23:30
Surr: 4-Bromofluorobenzene	108			70-130	%REC	1	7/23/2013 23:30
VOLATILES - SW8260C	Method: SW8260					Analyst: WLR	
Benzene	U		0.60	5.0	µg/Kg	1	7/20/2013 00:06
Ethylbenzene	U		0.90	5.0	µg/Kg	1	7/20/2013 00:06
Toluene	U		0.70	5.0	µg/Kg	1	7/20/2013 00:06
Xylenes, Total	U		1.7	10	µg/Kg	1	7/20/2013 00:06
Surr: 1,2-Dichloroethane-d4	85.4			70-128	%REC	1	7/20/2013 00:06
Surr: 4-Bromofluorobenzene	96.1			73-126	%REC	1	7/20/2013 00:06
Surr: Dibromofluoromethane	98.1			71-128	%REC	1	7/20/2013 00:06
Surr: Toluene-d8	98.6			73-127	%REC	1	7/20/2013 00:06

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 24-Jul-13

Client: Navajo Refining Company
Work Order: 1307647
Project: Fuel Oil Spill- West Loading Rack

QC BATCH REPORT

Batch ID: **71724B** Instrument ID **FID-7** Method: **SW8015M**

MBLK	Sample ID: FBLKS1-130723-71724B					Units: mg/Kg		Analysis Date: 7/23/2013 11:22 AM		
Client ID:	Run ID: FID-7_130723A					SeqNo: 3296807		Prep Date: 7/23/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	U	1.7								
<i>Surr: 2-Fluorobiphenyl</i>	2.729	0.10	3.33	0	82	60-135	0			

LCS	Sample ID: FLCSS1-130723-71724B					Units: mg/Kg		Analysis Date: 7/23/2013 11:46 AM		
Client ID:	Run ID: FID-7_130723A					SeqNo: 3296808		Prep Date: 7/23/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	31.3	1.7	33.33	0	93.9	70-130				
<i>Surr: 2-Fluorobiphenyl</i>	2.418	0.10	3.33	0	72.6	60-135	0			

MS	Sample ID: 1307728-01BMS					Units: mg/Kg		Analysis Date: 7/23/2013 12:57 PM		
Client ID:	Run ID: FID-7_130723A					SeqNo: 3296810		Prep Date: 7/23/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	36.51	1.7	33.32	3.182	100	70-130				
<i>Surr: 2-Fluorobiphenyl</i>	2.605	0.10	3.329	0	78.3	60-135	0			

MSD	Sample ID: 1307728-01BMSD					Units: mg/Kg		Analysis Date: 7/23/2013 01:20 PM		
Client ID:	Run ID: FID-7_130723A					SeqNo: 3296811		Prep Date: 7/23/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	34.65	1.7	33.33	3.182	94.4	70-130	36.51	5.23	30	
<i>Surr: 2-Fluorobiphenyl</i>	2.656	0.10	3.33	0	79.8	60-135	2.605	1.93	30	

The following samples were analyzed in this batch:

1307647-01C	1307647-02C	1307647-03C
1307647-04C		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1307647
Project: Fuel Oil Spill- West Loading Rack

QC BATCH REPORT

Batch ID: **R150980** Instrument ID **FID-14** Method: **SW8015**

MBLK	Sample ID: GBLKS-130723-R150980				Units: mg/Kg		Analysis Date: 7/23/2013 07:29 PM			
Client ID:	Run ID: FID-14_130723A				SeqNo: 3296984		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	U	0.050								
<i>Surr: 4-Bromofluorobenzene</i>	0.1038	0.0050	0.1	0	104	70-130	0			

LCS	Sample ID: GLCSS-130723-R150980				Units: mg/Kg		Analysis Date: 7/23/2013 07:13 PM			
Client ID:	Run ID: FID-14_130723A				SeqNo: 3296983		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.152	0.050	1	0	115	70-130				
<i>Surr: 4-Bromofluorobenzene</i>	0.1032	0.0050	0.1	0	103	70-130	0			

MS	Sample ID: 1307728-01BMS				Units: mg/Kg		Analysis Date: 7/23/2013 10:10 PM			
Client ID:	Run ID: FID-14_130723A				SeqNo: 3296993		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.9546	0.050	1	0	95.5	70-130				
<i>Surr: 4-Bromofluorobenzene</i>	0.1077	0.0050	0.1	0	108	70-130	0			

MSD	Sample ID: 1307728-01BMSD				Units: mg/Kg		Analysis Date: 7/23/2013 10:26 PM			
Client ID:	Run ID: FID-14_130723A				SeqNo: 3296994		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.003	0.050	1	0	100	70-130	0.9546	4.97	30	
<i>Surr: 4-Bromofluorobenzene</i>	0.1076	0.0050	0.1	0	108	70-130	0.1077	0.0762	30	

The following samples were analyzed in this batch:

1307647-01A	1307647-02A	1307647-03A
1307647-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1307647
Project: Fuel Oil Spill- West Loading Rack

QC BATCH REPORT

Batch ID: **R150673** Instrument ID **VOA3** Method: **SW8260**

MBLK		Sample ID: VBLKS1-071813-R150673				Units: µg/Kg		Analysis Date: 7/18/2013 09:35 AM		
Client ID:		Run ID: VOA3_130718A				SeqNo: 3292440		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	U	5.0								
1,1,2,2-Tetrachloroethane	U	5.0								
1,1,2-Trichloroethane	U	5.0								
1,1-Dichloroethane	U	5.0								
1,1-Dichloroethene	U	5.0								
1,2-Dibromoethane	U	5.0								
1,2-Dichloroethane	U	5.0								
Benzene	U	5.0								
Carbon tetrachloride	U	5.0								
Chloroform	U	5.0								
Ethylbenzene	U	5.0								
Methylene chloride	U	10								
Tetrachloroethene	U	5.0								
Toluene	U	5.0								
Trichloroethene	U	5.0								
Vinyl chloride	U	2.0								
Xylenes, Total	U	10								
<i>Surr: 1,2-Dichloroethane-d4</i>	46.01	0	50	0	92	70-128	0			
<i>Surr: 4-Bromofluorobenzene</i>	49.75	0	50	0	99.5	73-126	0			
<i>Surr: Dibromofluoromethane</i>	45.34	0	50	0	90.7	71-128	0			
<i>Surr: Toluene-d8</i>	49.48	0	50	0	99	73-127	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1307647
Project: Fuel Oil Spill- West Loading Rack

QC BATCH REPORT

Batch ID: **R150673** Instrument ID **VOA3** Method: **SW8260**

LCS				Sample ID: VLCSS1-071813-R150673			Units: µg/Kg		Analysis Date: 7/18/2013 08:15 AM		
Client ID:		Run ID: VOA3_130718A			SeqNo: 3292439		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
1,1,1-Trichloroethane	61.11	5.0	50	0	122	79-124					
1,1,2,2-Tetrachloroethane	46.12	5.0	50	0	92.2	75-123					
1,1,2-Trichloroethane	46.74	5.0	50	0	93.5	79-120					
1,1-Dichloroethane	54.11	5.0	50	0	108	75-124					
1,1-Dichloroethene	50.23	5.0	50	0	100	80-122					
1,2-Dibromoethane	47.19	5.0	50	0	94.4	79-120					
1,2-Dichloroethane	53.88	5.0	50	0	108	73-121					
Benzene	57.88	5.0	50	0	116	79-120					
Carbon tetrachloride	58.56	5.0	50	0	117	74-126					
Chloroform	54.67	5.0	50	0	109	78-120					
Ethylbenzene	52.66	5.0	50	0	105	80-122					
Methylene chloride	45.55	10	50	0	91.1	62-130					
Tetrachloroethene	51.52	5.0	50	0	103	73-129					
Toluene	53.63	5.0	50	0	107	79-120					
Trichloroethene	55.75	5.0	50	0	111	80-121					
Vinyl chloride	54.28	2.0	50	0	109	76-126					
Xylenes, Total	159.8	10	150	0	107	80-120					
<i>Surr: 1,2-Dichloroethane-d4</i>	52.76	0	50	0	106	70-128		0			
<i>Surr: 4-Bromofluorobenzene</i>	51.19	0	50	0	102	73-126		0			
<i>Surr: Dibromofluoromethane</i>	50.83	0	50	0	102	71-128		0			
<i>Surr: Toluene-d8</i>	49.18	0	50	0	98.4	73-127		0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1307647
Project: Fuel Oil Spill- West Loading Rack

QC BATCH REPORT

Batch ID: **R150673** Instrument ID **VOA3** Method: **SW8260**

MS				Sample ID: 1307738-01AMS		Units: µg/Kg		Analysis Date: 7/18/2013 11:51 AM		
Client ID:		Run ID: VOA3_130718A			SeqNo: 3292442		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	59.6	5.0	50	0	119	79-124				
1,1,2,2-Tetrachloroethane	26.91	5.0	50	0	53.8	75-123				S
1,1,2-Trichloroethane	44.77	5.0	50	0	89.5	79-120				
1,1-Dichloroethane	50.23	5.0	50	0	100	75-124				
1,1-Dichloroethene	48.4	5.0	50	0	96.8	80-122				
1,2-Dibromoethane	43.75	5.0	50	0	87.5	79-120				
1,2-Dichloroethane	51.65	5.0	50	0	103	73-121				
Benzene	55.97	5.0	50	0	112	79-120				
Carbon tetrachloride	50.67	5.0	50	0	101	74-126				
Chloroform	53.02	5.0	50	0	106	78-120				
Ethylbenzene	51.99	5.0	50	0	104	80-122				
Methylene chloride	42.55	10	50	0	85.1	62-130				
Tetrachloroethene	81.35	5.0	50	0	163	73-129				S
Toluene	52.48	5.0	50	0	105	79-120				
Trichloroethene	89.84	5.0	50	4.887	170	80-121				S
Vinyl chloride	50.85	2.0	50	0	102	76-126				
Xylenes, Total	153.8	10	150	0	103	80-120				
Surr: 1,2-Dichloroethane-d4	50.44	0	50	0	101	70-128		0		
Surr: 4-Bromofluorobenzene	49.36	0	50	0	98.7	73-126		0		
Surr: Dibromofluoromethane	48.53	0	50	0	97.1	71-128		0		
Surr: Toluene-d8	49.46	0	50	0	98.9	73-127		0		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1307647
Project: Fuel Oil Spill- West Loading Rack

QC BATCH REPORT

Batch ID: **R150673** Instrument ID **VOA3** Method: **SW8260**

MSD	Sample ID: 1307738-01AMSD				Units: µg/Kg		Analysis Date: 7/18/2013 12:19 PM			
Client ID:	Run ID: VOA3_130718A				SeqNo:3292443		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	60.33	5.0	50	0	121	79-124	59.6	1.22	30	
1,1,2,2-Tetrachloroethane	30.77	5.0	50	0	61.5	75-123	26.91	13.4	30	S
1,1,2-Trichloroethane	46.95	5.0	50	0	93.9	79-120	44.77	4.74	30	
1,1-Dichloroethane	50.18	5.0	50	0	100	75-124	50.23	0.0952	30	
1,1-Dichloroethene	49.29	5.0	50	0	98.6	80-122	48.4	1.82	30	
1,2-Dibromoethane	46.51	5.0	50	0	93	79-120	43.75	6.1	30	
1,2-Dichloroethane	52.31	5.0	50	0	105	73-121	51.65	1.27	30	
Benzene	58.12	5.0	50	0	116	79-120	55.97	3.77	30	
Carbon tetrachloride	50.44	5.0	50	0	101	74-126	50.67	0.454	30	
Chloroform	53.82	5.0	50	0	108	78-120	53.02	1.5	30	
Ethylbenzene	54.26	5.0	50	0	109	80-122	51.99	4.27	30	
Methylene chloride	42.51	10	50	0	85	62-130	42.55	0.113	30	
Tetrachloroethene	85.65	5.0	50	0	171	73-129	81.35	5.15	30	S
Toluene	55.48	5.0	50	0	111	79-120	52.48	5.56	30	
Trichloroethene	79.73	5.0	50	4.887	150	80-121	89.84	11.9	30	S
Vinyl chloride	51.35	2.0	50	0	103	76-126	50.85	0.972	30	
Xylenes, Total	162.4	10	150	0	108	79-123	153.8	5.43	30	
Surr: 1,2-Dichloroethane-d4	50.19	0	50	0	100	70-128	50.44	0.486	30	
Surr: 4-Bromofluorobenzene	51.26	0	50	0	103	73-126	49.36	3.79	30	
Surr: Dibromofluoromethane	48.29	0	50	0	96.6	71-128	48.53	0.496	30	
Surr: Toluene-d8	50.84	0	50	0	102	73-127	49.46	2.76	30	

The following samples were analyzed in this batch:

1307647-01A 1307647-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1307647
Project: Fuel Oil Spill- West Loading Rack

QC BATCH REPORT

Batch ID: **R150812** Instrument ID **VOA3** Method: **SW8260**

MBLK	Sample ID: VBLKS2-071913-R150812				Units: µg/Kg		Analysis Date: 7/19/2013 09:24 PM			
Client ID:	Run ID: VOA3_130719B				SeqNo: 3294120		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	U	5.0								
Ethylbenzene	U	5.0								
Toluene	U	5.0								
Xylenes, Total	U	10								
<i>Surr: 1,2-Dichloroethane-d4</i>	43.9	0	50	0	87.8	70-128	0			
<i>Surr: 4-Bromofluorobenzene</i>	47.73	0	50	0	95.5	73-126	0			
<i>Surr: Dibromofluoromethane</i>	47.26	0	50	0	94.5	71-128	0			
<i>Surr: Toluene-d8</i>	50.5	0	50	0	101	73-127	0			

LCS	Sample ID: VLCSS2-071913-R150812				Units: µg/Kg		Analysis Date: 7/19/2013 08:02 PM			
Client ID:	Run ID: VOA3_130719B				SeqNo: 3294119		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	50.84	5.0	50	0	102	79-120				
Ethylbenzene	53.95	5.0	50	0	108	80-122				
Toluene	49.91	5.0	50	0	99.8	79-120				
Xylenes, Total	154.9	10	150	0	103	80-120				
<i>Surr: 1,2-Dichloroethane-d4</i>	50.07	0	50	0	100	70-128	0			
<i>Surr: 4-Bromofluorobenzene</i>	48.79	0	50	0	97.6	73-126	0			
<i>Surr: Dibromofluoromethane</i>	51.66	0	50	0	103	71-128	0			
<i>Surr: Toluene-d8</i>	49.56	0	50	0	99.1	73-127	0			

MS	Sample ID: 1307827-01AMS				Units: µg/Kg		Analysis Date: 7/19/2013 10:18 PM			
Client ID:	Run ID: VOA3_130719B				SeqNo: 3294122		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	52.84	5.0	50	0	106	79-120				
Ethylbenzene	54.24	5.0	50	0	108	80-122				
Toluene	53.59	5.0	50	0	107	79-120				
Xylenes, Total	159.3	10	150	0	106	80-120				
<i>Surr: 1,2-Dichloroethane-d4</i>	49.43	0	50	0	98.9	70-128	0			
<i>Surr: 4-Bromofluorobenzene</i>	50.59	0	50	0	101	73-126	0			
<i>Surr: Dibromofluoromethane</i>	50.67	0	50	0	101	71-128	0			
<i>Surr: Toluene-d8</i>	50.29	0	50	0	101	73-127	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1307647
Project: Fuel Oil Spill- West Loading Rack

QC BATCH REPORT

Batch ID: **R150812** Instrument ID **VOA3** Method: **SW8260**

MSD		Sample ID: 1307827-01AMSD				Units: µg/Kg		Analysis Date: 7/19/2013 10:45 PM		
Client ID:		Run ID: VOA3_130719B				SeqNo: 3294123		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	51.95	5.0	50	0	104	79-120	52.84	1.7	30	
Ethylbenzene	52	5.0	50	0	104	80-122	54.24	4.22	30	
Toluene	51.12	5.0	50	0	102	79-120	53.59	4.71	30	
Xylenes, Total	154.5	10	150	0	103	79-123	159.3	3.09	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	48.59	0	50	0	97.2	70-128	49.43	1.72	30	
<i>Surr: 4-Bromofluorobenzene</i>	49.36	0	50	0	98.7	73-126	50.59	2.47	30	
<i>Surr: Dibromofluoromethane</i>	50.47	0	50	0	101	71-128	50.67	0.389	30	
<i>Surr: Toluene-d8</i>	49.46	0	50	0	98.9	73-127	50.29	1.65	30	

The following samples were analyzed in this batch:

1307647-03A	1307647-04A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Project: Fuel Oil Spill- West Loading Rack
WorkOrder: 1307647

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

<u>Units Reported</u>	<u>Description</u>
µg/Kg	Micrograms per Kilogram
mg/Kg	Milligrams per Kilogram

Sample Receipt Checklist

Client Name: **NAVAJO REFINING**

Date/Time Received: **16-Jul-13 09:00**

Work Order: **1307647**

Received by: **LOT**

Checklist completed by Robert D. Harris
eSignature

16-Jul-13
Date

Reviewed by: Sonia West
eSignature

18-Jul-13
Date

Matrices: **solids**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>1.0c/1.0c c/u</u> <u>IR1</u>		
Cooler(s)/Kit(s):	<u>9260</u>		
Date/Time sample(s) sent to storage:	<u>7/16/13 17:00</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		
Login Notes:			

Client Contacted:

Date Contacted:

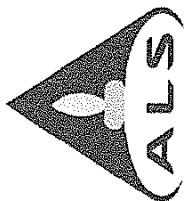
Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



ALS Laboratory Group
10450 Stancil Rd. #210
Houston, Texas 77099
(Tel) 281.530.5656
(Fax) 281.530.5887

Chain of Custody Form

Page 1 of 1

1307647

NAVAJO REFINING: Navajo Refining Company
Project: Fuel Oil Spill- West Loading Rack



Customer Information				Project Information		Parameter/Method Request for Analysis																													
Purchase Order	Project Name			Fuel Oil Spill - West Loading Rack		A Semi-Volatiles																													
Work Order	Project Number					B TPH																													
Company Name	Navajo Refining Company			Bill To Company		Navajo Refining Company		C DRO																											
Send Report To	Aaron Strange			Invoice Attn.		Aaron Strange		D ORO																											
Address P. O. Box 159				Address		501 East Main		E GRO																											
City/State/Zip	Artesia, New Mexico 88211-0159			City/State/Zip		Artesia, New Mexico 88210		F VOC ③ per G. Rhodes 7-16-13																											
Phone	(575) 748-3311			Phone		(575) 748-3311		G																											
Fax	(575) 746-5451			Fax		(575) 746-5451		H																											
e-Mail Address	A.Strange@hollifrontier.com			e-Mail Address		A.Strange@hollifrontier.com		I																											
No.	Sample Description			Date		Time		Matrix		Pres.		# Bottles		A		B		C		D		E		F		G		H		I		J		Hold	
1	East 3rd Bay			7/11/13		14:35		Solid		None		3		X		X		X		X		X		X											
2	East 3rd Bay #2			7/11/13		14:40		Solid		None		3		X		X		X		X		X		X											
3	East 2nd Bay			7/11/13		14:50		Solid		None		3		X		X		X		X		X		X											
4	East 1st Bay			7/11/13		14:55		Solid		None		3		X		X		X		X		X		X											
5	Temperature Blank																																		
6																																			
7																																			
8																																			
9																																			
10																																			

Sampler(s): Please Print & Sign		Shipment Method:		Required Turnaround Time:		Results Due Date:	
Glen Rhodes		Federal Express		<input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> Other			
Relinquishing by: <i>Glen Rhodes</i>		Received by: <i>Glen Rhodes</i>		Time: 7/15/13 15:00		Time: 7/16/13 0900	
Relinquishing by:		Received by (Laboratory):		Time:		Time:	
Logged by (Laboratory):		Checked by (Laboratory):		Time:		Time:	
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035		Cooler Temp. 1.0		QC Package: (Check Box Below)		Level II: Standard QC	
						Level III: Std QC + Raw Data	
						Level IV: SW846 CLP-Like	
						Other:	

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.

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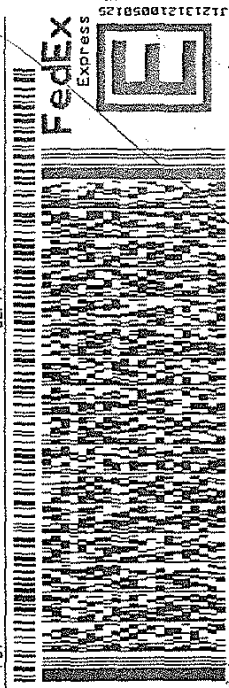
ORIGIN ID: ROWA (575) 748-3311
 NAVAJO ARTESIA
 501 E MAIN
 ARTESIA, NM 882109440
 UNITED STATES US

SHIP DATE: 15JUL13
 ACTWGT: 50.0 LB MAN
 CRD: 634483/CRFE2608

BILL RECIPIENT

TO SONIA WEST
 ALS LABORATORY GROUP
 10450 STANCLIFF RD., SUITE 210
 HOUSTON TX 77099

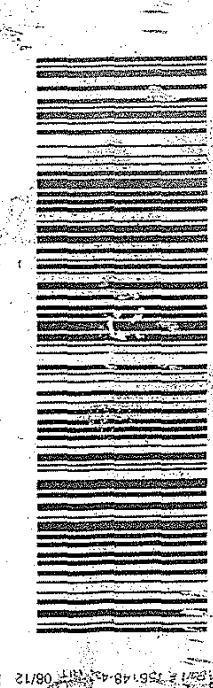
REF: (281) 530-5656
 DEPT: 201




TRK# 5614 5589 0974
 (9201)

TUE - 16 JUL 10:30A
 PRIORITY OVERNIGHT

77099
 TX-US IAH



	ALS Environmental	
	10450 Stancliff Rd., Suite 210	
	Houston, Texas 77099	
	Tel. +1 281 530 5656	
Fax. +1 281 530 5887		9260
Date: 7		
Name:		
Company:		

CUSTODY SEAL		Sign By: B Date: 7/16/13
-15-13	Time: 1530	
<i>Glen Rhodes</i> Navajo Refining Co.		



24-Jul-2013

Aaron Strange
Navajo Refining Company
PO Box 159
Artesia, NM 88211

Tel: (575) 748-6733
Fax: (575) 746-5421

Re: Fuel Oil Spill- West Loading Rack

Work Order: **1307705**

Dear Aaron,

ALS Environmental received 4 samples on 17-Jul-2013 08:55 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 18.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in cursive script that reads "Sonia West".

Electronically approved by: Dayna.Fisher

Sonia West
Project Manager



Certificate No: T104704231-13-12

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887

ALS GROUP USA, CORP. Part of the ALS Group An ALS Limited Company

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Navajo Refining Company
Project: Fuel Oil Spill- West Loading Rack
Work Order: 1307705

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1307705-01	Site#1 - 2nd Bay	Solid		7/16/2013 08:25	7/17/2013 08:55	<input type="checkbox"/>
1307705-02	Site#2 - 2nd Bay	Solid		7/16/2013 08:30	7/17/2013 08:55	<input type="checkbox"/>
1307705-03	Site#3 - 2nd Bay	Solid		7/16/2013 08:35	7/17/2013 08:55	<input type="checkbox"/>
1307705-04	Site#4 - 2nd Bay	Solid		7/16/2013 08:40	7/17/2013 08:55	<input type="checkbox"/>

Client: Navajo Refining Company
Project: Fuel Oil Spill- West Loading Rack
Work Order: 1307705

Case Narrative

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 Óæ&QÜFÍ Ê FÍ ÊX[|æ^Á!*æ æ• Ä G ÊÜæ]|^ÄHÊÏÏIÊÏ ÖÄ ÜÊ ÜÖÄ^Ä|ÄÄ Ä }|^æ^åÄæ]|^È

ALS Environmental

Date: 24-Jul-13

Client: Navajo Refining Company
Project: Fuel Oil Spill- West Loading Rack
Sample ID: Site#1 - 2nd Bay
Collection Date: 7/16/2013 08:25 AM

Work Order: 1307705
Lab ID: 1307705-01
Matrix: SOLID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO Method: SW8015M Prep: SW3541 / 7/23/13 Analyst: RPM							
TPH (Diesel Range)	4.0		0.50	1.7	mg/Kg	1	7/24/2013 10:04
Surr: 2-Fluorobiphenyl	61.3			60-135	%REC	1	7/24/2013 10:04
GASOLINE RANGE ORGANICS - SW8015C Method: SW8015 Analyst: KKP							
Gasoline Range Organics	U		0.020	0.050	mg/Kg	1	7/24/2013 00:35
Surr: 4-Bromofluorobenzene	106			70-130	%REC	1	7/24/2013 00:35
VOLATILES - SW8260C Method: SW8260 Analyst: WLR							
Benzene	U		0.60	5.0	µg/Kg	1	7/22/2013 13:17
Ethylbenzene	U		0.90	5.0	µg/Kg	1	7/22/2013 13:17
Toluene	U		0.70	5.0	µg/Kg	1	7/22/2013 13:17
Xylenes, Total	U		1.7	10	µg/Kg	1	7/22/2013 13:17
Surr: 1,2-Dichloroethane-d4	93.4			70-128	%REC	1	7/22/2013 13:17
Surr: 4-Bromofluorobenzene	96.8			73-126	%REC	1	7/22/2013 13:17
Surr: Dibromofluoromethane	95.3			71-128	%REC	1	7/22/2013 13:17
Surr: Toluene-d8	97.3			73-127	%REC	1	7/22/2013 13:17

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 24-Jul-13

Client: Navajo Refining Company
Project: Fuel Oil Spill- West Loading Rack
Sample ID: Site#2 - 2nd Bay
Collection Date: 7/16/2013 08:30 AM

Work Order: 1307705
Lab ID: 1307705-02
Matrix: SOLID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO Method: SW8015M Prep: SW3541 / 7/23/13 Analyst: RPM							
TPH (Diesel Range)	23		0.50	1.7	mg/Kg	1	7/24/2013 10:28
Surr: 2-Fluorobiphenyl	64.9			60-135	%REC	1	7/24/2013 10:28
GASOLINE RANGE ORGANICS - SW8015C Method: SW8015 Analyst: KKP							
Gasoline Range Organics	U		0.020	0.050	mg/Kg	1	7/24/2013 00:51
Surr: 4-Bromofluorobenzene	108			70-130	%REC	1	7/24/2013 00:51
VOLATILES - SW8260C Method: SW8260 Analyst: WLR							
Benzene	U		0.60	5.0	µg/Kg	1	7/22/2013 17:15
Ethylbenzene	U		0.90	5.0	µg/Kg	1	7/22/2013 17:15
Toluene	U		0.70	5.0	µg/Kg	1	7/22/2013 17:15
Xylenes, Total	U		1.7	10	µg/Kg	1	7/22/2013 17:15
Surr: 1,2-Dichloroethane-d4	91.4			70-128	%REC	1	7/22/2013 17:15
Surr: 4-Bromofluorobenzene	96.0			73-126	%REC	1	7/22/2013 17:15
Surr: Dibromofluoromethane	99.5			71-128	%REC	1	7/22/2013 17:15
Surr: Toluene-d8	99.2			73-127	%REC	1	7/22/2013 17:15

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 24-Jul-13

Client: Navajo Refining Company
Project: Fuel Oil Spill- West Loading Rack
Sample ID: Site#3 - 2nd Bay
Collection Date: 7/16/2013 08:35 AM

Work Order: 1307705
Lab ID: 1307705-03
Matrix: SOLID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
TPH DRO/ORO	Method: SW8015M			Prep: SW3541 / 7/23/13		Analyst: RPM	
TPH (Diesel Range)	14		0.50	1.7	mg/Kg	1	7/23/2013 14:13
Surr: 2-Fluorobiphenyl	67.0			60-135	%REC	1	7/23/2013 14:13
<hr/>							
GASOLINE RANGE ORGANICS - SW8015C	Method: SW8015					Analyst: KKP	
Gasoline Range Organics	U		0.020	0.050	mg/Kg	1	7/24/2013 01:07
Surr: 4-Bromofluorobenzene	109			70-130	%REC	1	7/24/2013 01:07
<hr/>							
VOLATILES - SW8260C	Method: SW8260					Analyst: WLR	
Benzene	U		0.60	5.0	µg/Kg	1	7/22/2013 13:41
Ethylbenzene	U		0.90	5.0	µg/Kg	1	7/22/2013 13:41
Toluene	U		0.70	5.0	µg/Kg	1	7/22/2013 13:41
Xylenes, Total	U		1.7	10	µg/Kg	1	7/22/2013 13:41
Surr: 1,2-Dichloroethane-d4	90.7			70-128	%REC	1	7/22/2013 13:41
Surr: 4-Bromofluorobenzene	95.3			73-126	%REC	1	7/22/2013 13:41
Surr: Dibromofluoromethane	96.6			71-128	%REC	1	7/22/2013 13:41
Surr: Toluene-d8	99.4			73-127	%REC	1	7/22/2013 13:41

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 24-Jul-13

Client: Navajo Refining Company
Project: Fuel Oil Spill- West Loading Rack
Sample ID: Site#4 - 2nd Bay
Collection Date: 7/16/2013 08:40 AM

Work Order: 1307705
Lab ID: 1307705-04
Matrix: SOLID

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO Method: SW8015M Prep: SW3541 / 7/23/13 Analyst: RPM							
TPH (Diesel Range)	1,200		37	130	mg/Kg	50	7/23/2013 18:25
Surr: 2-Fluorobiphenyl	0	S		60-135	%REC	50	7/23/2013 18:25
GASOLINE RANGE ORGANICS - SW8015C Method: SW8015 Analyst: KKP							
Gasoline Range Organics	0.15		0.020	0.050	mg/Kg	1	7/24/2013 01:23
Surr: 4-Bromofluorobenzene	108			70-130	%REC	1	7/24/2013 01:23
VOLATILES - SW8260C Method: SW8260 Analyst: WLR							
Benzene	U		0.60	5.0	µg/Kg	1	7/22/2013 14:05
Ethylbenzene	U		0.90	5.0	µg/Kg	1	7/22/2013 14:05
Toluene	U		0.70	5.0	µg/Kg	1	7/22/2013 14:05
Xylenes, Total	U		1.7	10	µg/Kg	1	7/22/2013 14:05
Surr: 1,2-Dichloroethane-d4	92.6			70-128	%REC	1	7/22/2013 14:05
Surr: 4-Bromofluorobenzene	96.0			73-126	%REC	1	7/22/2013 14:05
Surr: Dibromofluoromethane	96.3			71-128	%REC	1	7/22/2013 14:05
Surr: Toluene-d8	97.6			73-127	%REC	1	7/22/2013 14:05

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Work Order: 1307705
Client: Navajo Refining Company
Project: Fuel Oil Spill- West Loading Rack

DATES REPORT

Sample ID	Client Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
<u>Batch ID</u> 71724 <u>Test Name:</u> TPH DRO/ORO						
1307705-01C	Site#1 - 2nd Bay	Solid	7/16/2013 8:25:00 AM		7/23/2013 08:00 AM	7/24/2013 10:04 AM
1307705-02C	Site#2 - 2nd Bay		7/16/2013 8:30:00 AM		7/23/2013 08:00 AM	7/24/2013 10:28 AM
1307705-03C	Site#3 - 2nd Bay		7/16/2013 8:35:00 AM		7/23/2013 08:00 AM	7/23/2013 02:13 PM
1307705-04C	Site#4 - 2nd Bay		7/16/2013 8:40:00 AM		7/23/2013 08:00 AM	7/23/2013 06:25 PM
<u>Batch ID</u> R150818 <u>Test Name:</u> Volatiles - SW8260C						
1307705-02A	Site#2 - 2nd Bay	Solid	7/16/2013 8:30:00 AM			7/22/2013 05:15 PM
<u>Batch ID</u> R150873 <u>Test Name:</u> Volatiles - SW8260C						
1307705-01A	Site#1 - 2nd Bay	Solid	7/16/2013 8:25:00 AM			7/22/2013 01:17 PM
1307705-03A	Site#3 - 2nd Bay		7/16/2013 8:35:00 AM			7/22/2013 01:41 PM
1307705-04A	Site#4 - 2nd Bay		7/16/2013 8:40:00 AM			7/22/2013 02:05 PM
<u>Batch ID</u> R150980 <u>Test Name:</u> Gasoline Range Organics - SW8015C						
1307705-01B	Site#1 - 2nd Bay	Solid	7/16/2013 8:25:00 AM			7/24/2013 12:35 AM
1307705-02B	Site#2 - 2nd Bay		7/16/2013 8:30:00 AM			7/24/2013 12:51 AM
1307705-03B	Site#3 - 2nd Bay		7/16/2013 8:35:00 AM			7/24/2013 01:07 AM
1307705-04B	Site#4 - 2nd Bay		7/16/2013 8:40:00 AM			7/24/2013 01:23 AM

ALS Environmental

Date: 24-Jul-13

Client: Navajo Refining Company
Work Order: 1307705
Project: Fuel Oil Spill- West Loading Rack

QC BATCH REPORT

Batch ID: **71724** Instrument ID **FID-7** Method: **SW8015M**

MBLK	Sample ID: FBLKS1-130723-71724				Units: mg/Kg		Analysis Date: 7/23/2013 11:22 AM			
Client ID:	Run ID: FID-7_130723A				SeqNo: 3296430		Prep Date: 7/23/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	U	1.7								
<i>Surr: 2-Fluorobiphenyl</i>	2.729	0.10	3.33	0	82	60-135	0			

LCS	Sample ID: FLCSS1-130723-71724				Units: mg/Kg		Analysis Date: 7/23/2013 11:46 AM			
Client ID:	Run ID: FID-7_130723A				SeqNo: 3296431		Prep Date: 7/23/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	31.3	1.7	33.33	0	93.9	70-130				
<i>Surr: 2-Fluorobiphenyl</i>	2.418	0.10	3.33	0	72.6	60-135	0			

MS	Sample ID: 1307728-01BMS				Units: mg/Kg		Analysis Date: 7/23/2013 12:57 PM			
Client ID:	Run ID: FID-7_130723A				SeqNo: 3296433		Prep Date: 7/23/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	36.51	1.7	33.32	3.182	100	70-130				
<i>Surr: 2-Fluorobiphenyl</i>	2.605	0.10	3.329	0	78.3	60-135	0			

MSD	Sample ID: 1307728-01BMSD				Units: mg/Kg		Analysis Date: 7/23/2013 01:20 PM			
Client ID:	Run ID: FID-7_130723A				SeqNo: 3296434		Prep Date: 7/23/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	34.65	1.7	33.33	3.182	94.4	70-130	36.51	5.23	30	
<i>Surr: 2-Fluorobiphenyl</i>	2.656	0.10	3.33	0	79.8	60-135	2.605	1.93	30	

The following samples were analyzed in this batch:

1307705-01C	1307705-02C	1307705-03C
1307705-04C		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1307705
Project: Fuel Oil Spill- West Loading Rack

QC BATCH REPORT

Batch ID: **R150980** Instrument ID **FID-14** Method: **SW8015**

MBLK	Sample ID: GBLKS-130723-R150980				Units: mg/Kg		Analysis Date: 7/23/2013 07:29 PM			
Client ID:	Run ID: FID-14_130723A				SeqNo: 3296984		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	U	0.050								
<i>Surr: 4-Bromofluorobenzene</i>	0.1038	0.0050	0.1	0	104	70-130	0			

LCS	Sample ID: GLCSS-130723-R150980				Units: mg/Kg		Analysis Date: 7/23/2013 07:13 PM			
Client ID:	Run ID: FID-14_130723A				SeqNo: 3296983		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.152	0.050	1	0	115	70-130				
<i>Surr: 4-Bromofluorobenzene</i>	0.1032	0.0050	0.1	0	103	70-130	0			

MS	Sample ID: 1307728-01BMS				Units: mg/Kg		Analysis Date: 7/23/2013 10:10 PM			
Client ID:	Run ID: FID-14_130723A				SeqNo: 3296993		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.9546	0.050	1	0	95.5	70-130				
<i>Surr: 4-Bromofluorobenzene</i>	0.1077	0.0050	0.1	0	108	70-130	0			

MSD	Sample ID: 1307728-01BMSD				Units: mg/Kg		Analysis Date: 7/23/2013 10:26 PM			
Client ID:	Run ID: FID-14_130723A				SeqNo: 3296994		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.003	0.050	1	0	100	70-130	0.9546	4.97	30	
<i>Surr: 4-Bromofluorobenzene</i>	0.1076	0.0050	0.1	0	108	70-130	0.1077	0.0762	30	

The following samples were analyzed in this batch:

1307705-01B	1307705-02B	1307705-03B
1307705-04B		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1307705
Project: Fuel Oil Spill- West Loading Rack

QC BATCH REPORT

Batch ID: **R150818** Instrument ID **VOA3** Method: **SW8260**

MBLK	Sample ID: VBLKS1-072213-R150818				Units: µg/Kg		Analysis Date: 7/22/2013 10:28 AM			
Client ID:	Run ID: VOA3_130722A				SeqNo: 3294831		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	U	5.0								
Ethylbenzene	U	5.0								
Toluene	U	5.0								
Xylenes, Total	U	10								
<i>Surr: 1,2-Dichloroethane-d4</i>	46.03	0	50	0	92.1	70-128	0			
<i>Surr: 4-Bromofluorobenzene</i>	48.86	0	50	0	97.7	73-126	0			
<i>Surr: Dibromofluoromethane</i>	47.95	0	50	0	95.9	71-128	0			
<i>Surr: Toluene-d8</i>	49.4	0	50	0	98.8	73-127	0			

LCS	Sample ID: VLCSS1-072213-R150818				Units: µg/Kg		Analysis Date: 7/22/2013 09:07 AM			
Client ID:	Run ID: VOA3_130722A				SeqNo: 3294829		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	53.75	5.0	50	0	108	79-120				
Ethylbenzene	58.44	5.0	50	0	117	80-122				
Toluene	55.14	5.0	50	0	110	79-120				
Xylenes, Total	170.9	10	150	0	114	80-120				
<i>Surr: 1,2-Dichloroethane-d4</i>	48.61	0	50	0	97.2	70-128	0			
<i>Surr: 4-Bromofluorobenzene</i>	50.24	0	50	0	100	73-126	0			
<i>Surr: Dibromofluoromethane</i>	48.4	0	50	0	96.8	71-128	0			
<i>Surr: Toluene-d8</i>	48.76	0	50	0	97.5	73-127	0			

MS	Sample ID: 1307774-07AMS				Units: µg/Kg		Analysis Date: 7/22/2013 03:47 PM			
Client ID:	Run ID: VOA3_130722A				SeqNo: 3295666		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	40.7	5.2	51.5	0	79	79-120				
Ethylbenzene	40.19	5.2	51.5	0	78	80-122				S
Toluene	40.79	5.2	51.5	0	79.2	79-120				
Xylenes, Total	120.9	10	154.5	0	78.3	80-120				S
<i>Surr: 1,2-Dichloroethane-d4</i>	48.86	0	51.5	0	94.9	70-128	0			
<i>Surr: 4-Bromofluorobenzene</i>	52	0	51.5	0	101	73-126	0			
<i>Surr: Dibromofluoromethane</i>	50.59	0	51.5	0	98.2	71-128	0			
<i>Surr: Toluene-d8</i>	51.35	0	51.5	0	99.7	73-127	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1307705
Project: Fuel Oil Spill- West Loading Rack

QC BATCH REPORT

Batch ID: **R150818** Instrument ID **VOA3** Method: **SW8260**

MSD		Sample ID: 1307774-07AMSD				Units: µg/Kg		Analysis Date: 7/22/2013 04:16 PM		
Client ID:		Run ID: VOA3_130722A				SeqNo: 3295667		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	37.02	4.6	46.5	0	79.6	79-120	40.7	9.48	30	
Ethylbenzene	38.08	4.6	46.5	0	81.9	80-122	40.19	5.4	30	
Toluene	37.05	4.6	46.5	0	79.7	79-120	40.79	9.63	30	
Xylenes, Total	112.5	9.3	139.5	0	80.6	79-123	120.9	7.24	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	44.3	0	46.5	0	95.3	70-128	48.86	9.78	30	
<i>Surr: 4-Bromofluorobenzene</i>	47.03	0	46.5	0	101	73-126	52	10	30	
<i>Surr: Dibromofluoromethane</i>	44.82	0	46.5	0	96.4	71-128	50.59	12.1	30	
<i>Surr: Toluene-d8</i>	46.82	0	46.5	0	101	73-127	51.35	9.23	30	

The following samples were analyzed in this batch:

1307705-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1307705
Project: Fuel Oil Spill- West Loading Rack

QC BATCH REPORT

Batch ID: **R150873** Instrument ID **VOA5** Method: **SW8260**

MBLK	Sample ID: VBLKS1-072213-R150873				Units: µg/Kg		Analysis Date: 7/22/2013 10:06 AM			
Client ID:	Run ID: VOA5_130722A				SeqNo: 3295674		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	U	5.0								
Ethylbenzene	U	5.0								
Toluene	U	5.0								
Xylenes, Total	U	10								
<i>Surr: 1,2-Dichloroethane-d4</i>	45.7	0	50	0	91.4	70-128	0			
<i>Surr: 4-Bromofluorobenzene</i>	48.17	0	50	0	96.3	73-126	0			
<i>Surr: Dibromofluoromethane</i>	48.12	0	50	0	96.2	71-128	0			
<i>Surr: Toluene-d8</i>	50.16	0	50	0	100	73-127	0			

LCS	Sample ID: VLCSS1-072213-R150873				Units: µg/Kg		Analysis Date: 7/22/2013 09:20 AM			
Client ID:	Run ID: VOA5_130722A				SeqNo: 3295673		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	56.29	5.0	50	0	113	79-120				
Ethylbenzene	54.82	5.0	50	0	110	80-122				
Toluene	55.02	5.0	50	0	110	79-120				
Xylenes, Total	165	10	150	0	110	80-120				
<i>Surr: 1,2-Dichloroethane-d4</i>	50.31	0	50	0	101	70-128	0			
<i>Surr: 4-Bromofluorobenzene</i>	50.26	0	50	0	101	73-126	0			
<i>Surr: Dibromofluoromethane</i>	49.78	0	50	0	99.6	71-128	0			
<i>Surr: Toluene-d8</i>	48.47	0	50	0	96.9	73-127	0			

MS	Sample ID: 1307861-01AMS				Units: µg/Kg		Analysis Date: 7/22/2013 12:06 PM			
Client ID:	Run ID: VOA5_130722A				SeqNo: 3295679		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	54.48	5.0	50	0	109	79-120				
Ethylbenzene	52.29	5.0	50	0	105	80-122				
Toluene	53.97	5.0	50	0	108	79-120				
Xylenes, Total	159.2	10	150	0	106	80-120				
<i>Surr: 1,2-Dichloroethane-d4</i>	48.97	0	50	0	97.9	70-128	0			
<i>Surr: 4-Bromofluorobenzene</i>	49.45	0	50	0	98.9	73-126	0			
<i>Surr: Dibromofluoromethane</i>	51.37	0	50	0	103	71-128	0			
<i>Surr: Toluene-d8</i>	49.82	0	50	0	99.6	73-127	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1307705
Project: Fuel Oil Spill- West Loading Rack

QC BATCH REPORT

Batch ID: **R150873** Instrument ID **VOA5** Method: **SW8260**

MSD	Sample ID: 1307861-01AMSD					Units: µg/Kg		Analysis Date: 7/22/2013 12:30 PM		
Client ID:	Run ID: VOA5_130722A				SeqNo:3295680		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	54.2	5.0	50	0	108	79-120	54.48	0.515	30	
Ethylbenzene	53.47	5.0	50	0	107	80-122	52.29	2.23	30	
Toluene	54.32	5.0	50	0	109	79-120	53.97	0.647	30	
Xylenes, Total	160	10	150	0	107	79-123	159.2	0.5	30	
Surr: 1,2-Dichloroethane-d4	48.72	0	50	0	97.4	70-128	48.97	0.497	30	
Surr: 4-Bromofluorobenzene	50.65	0	50	0	101	73-126	49.45	2.41	30	
Surr: Dibromofluoromethane	48.67	0	50	0	97.3	71-128	51.37	5.4	30	
Surr: Toluene-d8	49.49	0	50	0	99	73-127	49.82	0.673	30	

The following samples were analyzed in this batch:

1307705-01A	1307705-03A	1307705-04A
-------------	-------------	-------------

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Project: Fuel Oil Spill- West Loading Rack
WorkOrder: 1307705

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

<u>Units Reported</u>	<u>Description</u>
µg/Kg	Micrograms per Kilogram
mg/Kg	Milligrams per Kilogram

Sample Receipt Checklist

Client Name: **NAVAJO REFINING**

Date/Time Received: **17-Jul-13 08:55**

Work Order: **1307705**

Received by: **PMG**

Checklist completed by Makenzie L. Henderson
eSignature

17-Jul-13
Date

Reviewed by: Sonia West
eSignature

18-Jul-13
Date

Matrices: **Solid**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>1.9c/1.9c C/U</u> <u>IR1</u>		
Cooler(s)/Kit(s):	<u>3334</u>		
Date/Time sample(s) sent to storage:	<u>7/17/13 11:04</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted by:	<u>-</u>		
Login Notes:			

Client Contacted:

Date Contacted:

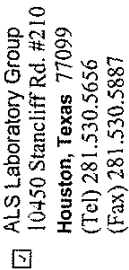
Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

Page 1 of 1

NAVAJO REFINING: Navajo Refining Company
Project: Artesia Tank 815 Spill



Customer Information				Project Information				Parameter/Method Request for Analysis											
ALS Project Manager: Sonia West																			
Purchase Order				Project Name				Volatiles											
Work Order				Project Number				Semi-Volatiles											
Company Name				Bili To Company				TPH											
Send Report To				Invoice Attn.				DRO											
Address				Address				ORO											
City/State/Zip				City/State/Zip				GRO											
Phone				Phone															
Fax				Fax															
e-Mail Address				e-Mail Address															
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold		
1	Site#1 - 2nd Bay	7/16/13	8:25	Solid	None	3	X	X	X	X	X	X	X						
2	Site#2 - 2nd Bay	7/16/13	8:30	Solid	None	3	X	X	X	X	X	X	X						
3	Site#3 - 2nd Bay	7/16/13	8:35	Solid	None	3	X	X	X	X	X	X	X						
4	Site#4 - 2nd Bay	7/16/13	8:40	Solid	None	3	X	X	X	X	X	X	X						
5	Temperature Blank																		
6																			
7																			
8																			
9																			
10																			

Sampler(s): Please Print & Sign Glen Rhodes		Shipment Method: Federal Express		Required Turnaround Time: <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> Other _____		Results Due Date:	
Relinquished by: Glen Rhodes		Received by: B. Rhodes 7/17/13 0855		Notes:			
Relinquished by:		Received by (Laboratory):		Cooler Temp.		QC Package: (Check Box Below)	
Date: 7/16/13		Time: 1515		Checked by (Laboratory):		Level II: Standard QC	
Date:		Time:		Checked by (Laboratory):		Level III: Std QC + Raw Data	
Date:		Time:		Checked by (Laboratory):		Level IV: SW846 CLP-Like	
Date:		Time:		Checked by (Laboratory):		Other: _____	

Logged by (Laboratory):		Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035	
Relinquished by:		Relinquished by:	

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.

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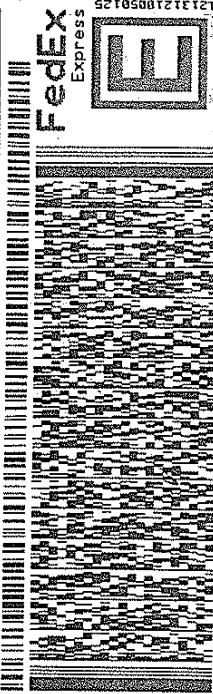
ORIGIN ID: ROMA (575) 748-3311
 NAVAJO ARTESIA
 501 E MAIN
 ARTESIA, NM 882109440
 UNITED STATES US

BILL RECIPIENT

TO SONIA WEST
 ALS LABORATORY GROUP
 10450 STANCLIFF RD., SUITE 210

HOUSTON TX 77099
 (281) 530-5656
 INV: REF:
 PO:

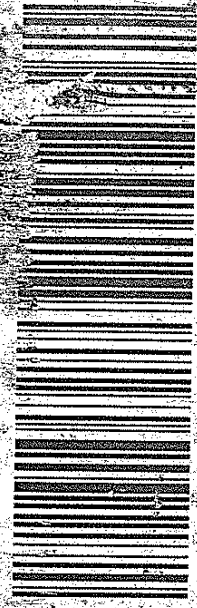
DEPT:



USA - JUL 16 10:30 AM
 PRIORITY OVERNIGHT

77099
 TX-US IAH

AB SGRA



Part # 156148-134 BRT 08/12

1307705



ALS Environmental
 10450 Stancliff Rd., Suite 210
 Houston, Texas 77099
 Tel. +1 281 530 5656
 Fax. +1 281 530 5887

3334

Date:
 Name:
 Com:

CUSTODY SEAL

Date: 7/16/13 Time: 1520
 By: Glen Rhodes
 Company: Navajo Refining Co.

Sealed By:

7/17/13

Chavez, Carl J, EMNRD

From: Speer, Julie <JSpeer@trcsolutions.com>
Sent: Friday, September 13, 2013 4:43 PM
To: Chavez, Carl J, EMNRD
Cc: Gilbert, Bryan; Sahba, Arsin; Robert.Combs@hollyfrontier.com; Holder, Mike
Subject: Navajo Refining Company Lea Refinery, Lovington - Jan 2011 & Dec 2012 Gas Oil Release Investigations
Attachments: Gas Oil Release Report FINAL to OCD 091313.pdf

Carl,

Attached please find the letter documenting the soil investigations of the January 2011 and December 2012 gas oil releases at Navajo Refining Company's Lea Refinery in Lovington, New Mexico. A hard copy will be delivered next week.

Thank you,
Julie Speer, E.I.T.
Associate Project Manager



505 East Huntland Drive, Suite 250, Austin, TX 78752
T: 512.684.3148 | F: 512.329.8750 | C: 512.431.8184

jspeer@trcsolutions.com | www.trcsolutions.com

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>



505 East Huntland Drive
Suite 250
Austin, TX 78752

512.329.6080 PHONE
512.329.8750 FAX

www.TRCSolutions.com

September 13, 2013

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Drive,
Santa Fe, New Mexico 87505

Re: January 2011 and December 2012 Gas Oil Release Soil Investigations, Navajo Refining Company, Lea Refinery, Lovington, New Mexico, AP-110

Dear Mr. Chavez:

On behalf of Navajo Refining Company (NRC), TRC Environmental Corporation (TRC) is submitting this letter to document the results of the January 2011 and December 2012 gas oil release investigations conducted at the NRC Lea Refinery (refinery) located near Lovington, Lea County, New Mexico. An initial Release Notification and Corrective Action Form C-141 (Form C-141) for the January 2011 gas oil release was submitted to the New Mexico Oil Conservation Division (OCD) on February 14, 2011. An initial Form C-141 for the December 2012 gas oil release was submitted to the OCD on December 27, 2012. The final Form C-141 for the December 2012 release is provided as Attachment A. The final Form C-141 and disposal records for the January 2011 release will be provided under separate cover.

Both the January 2011 and December 2012 gas oil releases occurred at the Holly Energy Partners (HEP) pump station located at the southwest portion of the refinery. The site plan and HEP pump station location are shown on Figure 1 and the approximate areas affected by the January 2011 and December 2012 releases are shown on Figure 2.

The January 2011 gas oil release occurred on January 29, 2011, when a relief valve at the HEP pump station malfunctioned causing a sump to fill with gas oil. A float that was supposed to trigger a high level alarm for the sump also malfunctioned allowing approximately 37 barrels of gas oil and water to overflow from the sump onto the ground surface. All released gas oil and water were contained within the bermed area of the pump station. Approximately 35 barrels of gas oil free liquid and water were recovered with a vacuum truck and added back to process for reuse. The remainder of the solidified gas oil and any affected gravel and surface soils were excavated in January 2013 and stored in a roll-off bin at the refinery. Excavation was not

conducted until January 2013 due to the presence of aboveground piping that precluded excavation equipment access into the affected area. The roll-off bin will be transported to R360 in Hobbs, New Mexico for disposal.

The December 2012 gas oil release occurred on December 27, 2012, when a pump seal failed at the HEP pump station. Fifty to sixty barrels of gas oil were released to the gravel-covered ground surface. All released gas oil was contained within the bermed area of the pump station. A vacuum truck was used immediately following the release to recover free liquid until the gas oil cooled and solidified. The recovered free liquid was added back to process for reuse. The remainder of the solidified gas oil and any affected gravel and surface soil (108 cubic yards) were excavated immediately following the release and placed in roll-off boxes and transported to R360 in Hobbs, New Mexico for disposal.

Disposal records for the December 2012 gas oil release are provided as Attachment B. Disposal records for the January 2011 release will be provided under separate cover. A photographic log of spill response and investigation activities is provided as Attachment C.

SOIL INVESTIGATION ACTIVITIES

Soil investigation activities were conducted by TRC on June 19 and 21, 2013. The objective of the investigation was to determine the vertical extent of potential hydrocarbon impacts associated with the January 2011 and December 2012 gas oil releases. Three soil borings were advanced within the former footprint of the December 2012 gas oil release (BH-1 through BH-3) and one soil boring was advanced with the former footprint of the January 2011 gas oil release (BH-4). The locations of the boring are shown on Figure 2. The soil borings were drilled using air-rotary drilling techniques. Soil samples were continuously collected with a split spoon and described based on lithology, moisture content, and notable presence of potential hydrocarbon impact (i.e. odor and staining). Soil samples were also field screened with a photoionization detector (PID). Soil boring logs are provided as Attachment D.

Two soil samples from each boring were submitted for laboratory analysis. The soil samples submitted for laboratory analysis were collected from the interval with the highest PID readings and an underlying interval (with no suspected hydrocarbon impact) as follows:

- BH-1: Sampled from 6-7 feet bgs and 13-13.5 feet bgs (total boring depth of 13.5 feet bgs).
- BH-2: Sampled from 12-13 feet bgs and 14-14.5 feet bgs (total boring depth of 14.5 feet bgs).
- BH-3: Sampled from 7-8 feet bgs and 14-15 feet bgs (total boring depth of 15 feet bgs).

- BH-4: Sampled from 14-15 feet bgs and 16-16.5 feet bgs (total boring depth of 16.5 feet bgs).

Soil samples were submitted to ALS Environmental in Houston, Texas for laboratory analysis of the following constituents of concern (COCs):

- Benzene, toluene, ethylbenzene, and xylenes (BTEX) by method SW8021B;
- Total petroleum hydrocarbons (TPH) by method SW8015; and
- Chloride by method E300.

INVESTIGATION RESULTS

No hydrocarbon staining was observed in borings BH-1 through BH-4. Minor hydrocarbon odor and PID readings of 0.0 parts per million (ppm) to 0.2 ppm were recorded in borings BH-1, BH-2, and BH-3. In boring BH-4, strong to weak hydrocarbon odors and PID readings of 0.0 ppm to 22.1 ppm were recorded from the ground surface to 14 feet bgs while weak hydrocarbon odors and a PID reading of 101 ppm were recorded from 14 to 15 feet bgs.

Laboratory analytical results from the June 2013 investigation are summarized in Table 1. Laboratory analytical reports are provided as Attachment E.

The June 2013 soil sample analytical results were compared to the OCD Remediation Action Levels (RALs) as determined using the ranking system found in the OCD's *Guidelines for the Remediation of Leaks and Spills* (1993). The gas oil release was assigned a ranking score of "0" based on the following:

- The average depth to groundwater across the refinery is 107.5 feet bgs based on groundwater gauging data collected in August 2013. This is consistent with historical groundwater levels measured at the refinery.
- The release location is located more than 1,000 feet from the nearest water source (e.g., a public water supply well) and more than 200 feet from the nearest private domestic water source (e.g., a private water supply well). Portions of the refinery are located within the wellhead protection areas of City of Lovington public supply wells and water supply wells used on behalf of NRC at the refinery; however, the gas oil release area is not located within a wellhead protection area.
- The release is located more than 1,000 feet from the nearest surface water body.

The OCD RALs for a ranking score of "0" can be found in Table 1. No COCs were detected at concentrations above the OCD RALS in any of the soil samples collected from the four borings in the gas-oil release area, including from boring BH-4.



The June 2013 soil sample analytical results for chloride were compared to the New Mexico Environment Department Soil Screening Levels (SSL) for the chloride leaching to groundwater pathway as there is no established OCD RAL for chloride. The leaching to groundwater pathway SSL was developed in accordance with the NMED's *Risk Assessment Guidance for Site Investigation and Remediation* dated February 2012 and updated June 2012. The SSLs were developed using a dilution attenuation factor (DAF) of 20 based on the following:

- The average depth to groundwater is greater than 100 feet (a DAF of 1 is generally used at sites with shallow groundwater or karst topography).
- The volume of gas oil released (50 to 60 barrels) and the resulting spill area (0.21 acres) were minor (smaller source areas typically result in larger DAFs).
- The absence of elevated chloride concentrations in the samples collected from the gas oil release area borings indicate chloride has been vertically delineated beneath the spill area.

The SSL calculation spreadsheet is provided as Attachment F. Detected chloride concentrations were significantly lower than the calculated SSL for all samples collected from the gas oil release area.

A review of the laboratory quality assurance/quality control (QA/QC) data revealed anomalously high recoveries from matrix spike/matrix spike duplicate (MS/MSD) analyses performed on samples collected from the gas oil release area and analyzed for TPH diesel-range organics (DRO) and TPH oil-range organics (ORO). These high recoveries indicate possible matrix interference and suggest that the detected concentrations of ORO and DRO in the gas oil release samples are biased high.

RECOMMENDATIONS AND CONCLUSIONS

The June 2013 investigation results indicate that NRC's spill response activities following the January 2011 and December 2012 gas oil releases effectively removed the release material and prevented COCs from migrating into surface soils above RALs. NRC respectfully requests a no further action determination regarding the January 2011 and December 2012 gas oil releases at the refinery based on the following:

- Free liquid gas oil was immediately recovered via vacuum truck and placed back into process for reuse. All solidified gas oil and impacted gravel/soil was recovered via excavation and was transported off-site for disposal.
- According to Material Safety Data Sheets (MSDSs), gas oil is a heavy, highly viscous hydrocarbon with negligible solubility in groundwater. Gas oil is stable and non-reactive at ambient temperatures and has a pour-point of 85° Fahrenheit (i.e., the lowest temperature at which it becomes semi-solid and loses its flow characteristics). According



to the National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center (NCDC), the ambient air temperature December 2012 release ranged from 18 to 38° Fahrenheit, which caused the gas oil to rapidly cool and solidify, therefore inhibiting it from migrating readily into subsurface soil. The material safety data sheet for gas oil is included as Attachment G.

- Laboratory analytical results of soil samples collected from four soil borings installed within the release area indicate no COCs are present at concentrations above the OCD RALs for a ranking score of "0".

Excavated gravel and soil associated with the January 2011 release is contained within a roll-off bin and will be transported to R360 in Hobbs, New Mexico for disposal. Disposal records and a final Form C-141 for the January 2011 release will be provided under separate cover.

If you have any further questions, please do not hesitate to contact Robert Combs of NRC at (575) 746-5382, Bryan Gilbert of TRC at (512) 684-3104, or Julie Speer of TRC at (512) 684-3148.

Sincerely,



Bryan Gilbert, P.G.
Project Manager

Sincerely,



Julie Speer, E.I.T.
Associate Project Manager

Attachments: Figure 1 - Refinery Vicinity Map
Figure 2 - Gas Oil Release Boring Location Map

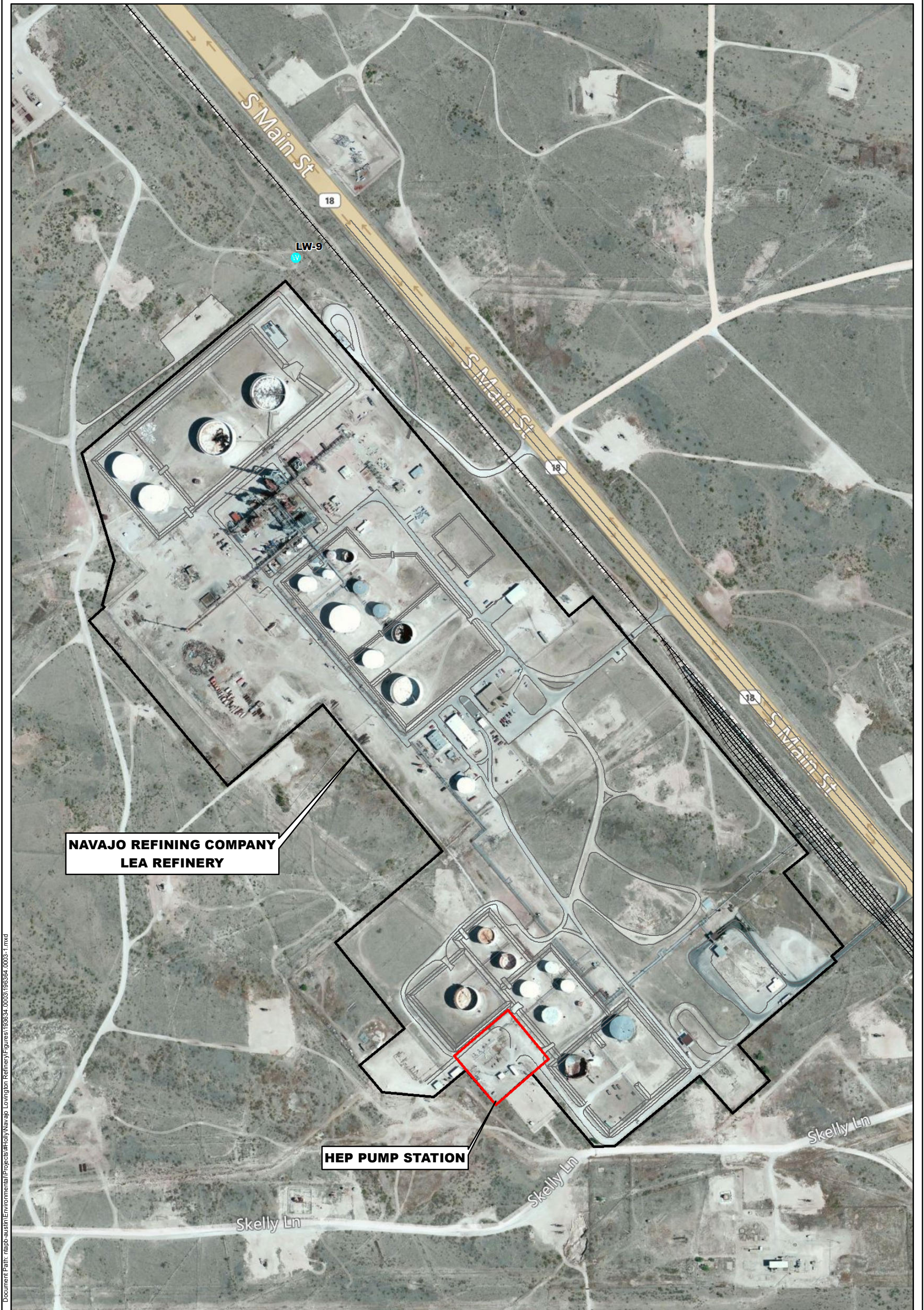
Table 1 - BTEX, TPH, and Chloride Analytical Results in Soil

Attachment A – December 2012 Final Release Notification and Corrective Action Form C-141
Attachment B – December 2012 Release Disposal Records
Attachment C – Photographic log
Attachment D – Soil Boring Logs
Attachment E – ALS Environmental Laboratory Reports
Attachment F – SSL Calculation for Chloride Leaching to Groundwater
Attachment G – Material Safety Data Sheet for Gas Oil

cc: Robert Combs, Navajo Refining Company, Artesia, New Mexico
Michael Holder, Navajo Refining Company, Artesia, New Mexico
Arsin Sahba, TRC, Austin, Texas



FIGURES

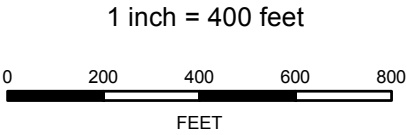


NAVAJO REFINING COMPANY
LEA REFINERY

HEP PUMP STATION

LEGEND

- +++++ RAILROAD
- SITE BOUNDARY
- APPROXIMATE BOUNDARY OF HOLLY ENERGY PARTNERS PUMP STATION
- WATER WELL



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Microsoft Corporation ImagePatch.com © 2010 NAVTEQ
© AND



REFINERY VICINITY MAP

NAVAJO REFINING COMPANY
LEA REFINERY LOVINGTON, NM

PROJECT NO: 196364.0003	MXD: 196364.5000-1
AUTHOR: DGM	DATE: 9/5/2013



505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
(512) 329-6080

FIGURE
1

Document Path: \\apb-austn\Environmental\Projects\HollyNavajo Refinery Documents\2013 Gas Oil Release\Figures\196364_5000-2.mxd

APPROXIMATE EXTENT OF
DECEMBER 2012 GAS OIL RELEASE

APPROXIMATE EXTENT OF
JANUARY 2011 GAS OIL RELEASE

BH-04

BH-01

BH-02

BH-03

HEP PUMP STATION

LEGEND

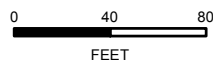


SOIL BORING



APPROXIMATE BOUNDARY
OF HOLLY ENERGY PARTNER'S
PUMP STATION

1 inch = 80 feet



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed,
USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the

GAS OIL RELEASE SOIL SAMPLE LOCATION MAP

NAVAJO REFINING COMPANY
LEA REFINERY LOVINGTON, NM

PROJECT NO: 196364.0003

MXD: 196364_5000-2

AUTHOR: DGM

DATE: 9/13/2013



505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
(512) 329-6080

FIGURE

2

TABLE

**TABLE 1. BTEX, TPH, AND CHLORIDE ANALYTICAL RESULTS IN SOIL
JUNE 2013 GAS OIL RELEASE INVESTIGATION
NAVAJO REFINING COMPANY LEA REFINERY - LOVINGTON, NEW MEXICO**

Sample Location	Sample Interval (feet bgs)	Benzene (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Xylenes, Total (mg/kg)	BTEX, Total (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
OCD RAL		10	---	---	---	50	---	---	---	5,000	867*
BH-1	6-7	<0.0010	<0.0010	<0.0010	<0.0030	<0.0030	<0.050	2,800	75 J	2875	5.96
BH-1	13-13.5	<0.0010	<0.0010	<0.0010	<0.0030	<0.0030	<0.050	210	8.8 J	219	5.4
BH-2	12-13	<0.0010	<0.0010	<0.0010	<0.0030	<0.0030	<0.050	0.85 J	3.6	4.5	4.83 J
BH-2	14-14.5	<0.0010	<0.0010	<0.0010	<0.0030	<0.0030	<0.050	5.7	5.5	11.20	5.29
BH-3	7-8	<0.0010	<0.0010	<0.0010	<0.0030	<0.0030	<0.050	0.56 J	3.9	4.5	5.17
BH-3	14-15	<0.0010	<0.0010	<0.0010	<0.0030	<0.0030	<0.050	<1.7	3.4	3.40	5.15
BH-4	14-15	0.0014	<0.0010	<0.0010	<0.0030	0.0014	<0.050	<1.7	2.7 J	2.7	7.22
BH-4	16-17	0.002	<0.0010	0.0023	<0.0030	0.0043	0.041 J	190	920	1110	8.15

Note:

RALs were selected based on a site depth to water of 105 feet bgs; no water source within 1,000 feet; and no private water source within 200 feet, and no surface water within 1,000 feet.

*Chloride concentrations were compared to Soil Screening Level (SSL) developed in accordance with the New Mexico Environment Department's (NMED's) *Risk Assessment*

mg/kg - milligrams per kilogram

feet bgs - feet below ground surface

BTEX - Benzene, toluene, ethylbenzene, and xylene

TPH - Total petroleum hydrocarbons

GRO - Gasoline range organics (C6 to C12)

DRO - Diesel Range Organics (>C12 to C21)

ORO - Oil Range Organics (>C21 to C35)

NMOCD - New Mexico Oil Conservation Division

RAL - Remediation Action Level based on a ranking score of "0".

J - Analyte detected below quantitation limit

ATTACHMENT A

December 2012 Final Release Notification and Corrective Action Form C-141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company Navajo Refining Co. LLC	Contact Robert Combs	
Address 7406 South Main St., Lovington, NM	Telephone No. 575-746-5382	
Facility Name Lea Refinery	Facility Type Petroleum Refinery	
Surface Owner	Mineral Owner	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
-------------	---------	----------	-------	---------------	------------------	---------------	----------------	--------

Latitude 32.87405 Longitude -103.30000

NATURE OF RELEASE

Type of Release Gasoil	Volume of Release 50-60 bbl	Volume Recovered 50-60 bbl
Source of Release Pump seal failure	Date and Hour of Occurrence 12/27/2012 prior to 0250	Date and Hour of Discovery 12/27/2012, 0250
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*


Describe Cause of Problem and Remedial Action Taken.*

A Holly Energy Partners (HEP) pipeline ten-inch variable speed pump inner seal failed, releasing gas oil to the ground surface (gravel). An operator discovered the spill, traced it to its source, and notified the pipeline operator, who shut down the pump at approximately 0300 on 12/27/2012.

Describe Area Affected and Cleanup Action Taken.*

The gas oil was retained within the bermed containment at the HEP pipeline pump station. A vacuum truck was used to remove free liquid until the gas oil cooled and solidified. The remainder of the solidified gas oil and affected surface gravel were excavated and transferred to roll-off bins for disposal at R360 in Hobbs, New Mexico. Soil samples were collected for laboratory analysis in June 2013 to delineate the vertical extent of potential impacts. The results indicate that no constituents of concern (COCs) exceed the OCD Remedial Action Levels (RALs) or the New Mexico Environment Department's (NMED's) Soil Screening Levels (SSLs). For further details regarding the June 2013 investigation and results, please refer to the *December 2012 Gas Oil Release Soil Investigation* letter that was submitted to the OCD on September 13, 2013.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Robert Combs	Approved by Environmental Specialist:	
Title: Environmental Specialist	Approval Date:	Expiration Date:
E-mail Address: Robert.Combs@hollyfrontier.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date:	Phone: 575-746-5382	

* Attach Additional Sheets If Necessary

ATTACHMENT B

December 2012 Release Disposal Records

NON-HAZARDOUS WASTE MANIFEST

91334

PART I: Generator Alumina Refining - Lead Plant
Address 1912 E. Main
City/State Longton, N.M. 87260

(575) 393-3631
Telephone No.

ORIGIN OF WASTE:

Operations Center _____

Permit No. **NA**
~~NA 1234567~~

Property Name Longton
(Well, Tank Battery, Plant, Facility)

WASTE IDENTIFICATION AND AMOUNT (BARRELS, YARDS, TONS, CU.FT., LBS., UNITS, ETC.)			
Drilling Fluids _____	Tank Bottoms _____	Exempt Fluids _____	
Completion Fluids _____	Gas Plant Waste _____	C117 No. _____	
Contaminated Soil <u>✓</u>	Other Materials _____	Pit No. _____	
DESCRIPTION / NOTES			
<u>Soil and debris containing Gasoil - 12 yards</u>			
<u>HEP Pipeline Leak.</u>			

CERTIFICATION:

The waste described above is not hazardous pursuant to 40 CFR Part 261 and was consigned to the transporter named below. I certify that the foregoing is true and correct to the best of my knowledge.

[Signature]
Signature of Generator's Authorized Agent

1-3-2013
Date and Time of Shipment

PART II: TRANSPORTER: (To be completed in full by Transporter)

Name ~~Longton~~ S Brothers
Address _____
City/State _____

Telephone No. _____

Truck No. _____

CERTIFICATION:

I certify that the waste in quantity above was received by me for shipment to the destination below.

[Signature]
Signature of Transporter's Agent

1-3-2013
Date and Time Received

PART III: DISPOSAL OR RECLAMATION SITE:

Name Controlled Recovery, Inc.
Address P.O. Box 388
City/State Hobbs, N.M. 88241-0388

(575) 393-1079

Telephone No.

www.crihobbs.com

E-mail

CERTIFICATION:

I certify that the waste described in Part I was received by me via the transporter described in Part II.

[Signature]
Signature of Facility Agent

1/3/13
Date and Time Received

NON-HAZARDOUS WASTE MANIFEST

01832

PART I: Generator Marine Refining - Los Pinos
 Address 1916 Wagon
 City/State Hobbs, N.M. 88240

(575) 393-1079
 Telephone No.

ORIGIN OF WASTE:

Operations Center _____

NA
 Permit No. _____

Property Name Los Pinos
 (Well, Tank Battery, Plant, Facility)

WASTE IDENTIFICATION AND AMOUNT (BARRELS, YARDS, TONS, CU.FT., LBS., UNITS, ETC.)		
Drilling Fluids _____	Tank Bottoms _____	Exempt Fluids _____
Completion Fluids _____	Gas Plant Waste _____	C117 No. _____
Contaminated Soil _____	Other Materials _____	Pit No. _____
DESCRIPTION / NOTES		
<u>Soil and debris contaminated with Diesel 12 yards</u>		
<u>15' pipeline leak</u>		

CERTIFICATION:

The waste described above is not hazardous pursuant to 40 CFR Part 261 and was consigned to the transporter named below. I certify that the foregoing is true and correct to the best of my knowledge.

 Signature of Generator's Authorized Agent

1-2-2015
 Date and Time of Shipment

PART II: TRANSPORTER: (To be completed in full by Transporter)

Name S Brothers
 Address _____
 City/State _____

 Telephone No.

 Truck No.

CERTIFICATION:

I certify that the waste in quantity above was received by me for shipment to the destination below.

 Signature of Transporter's Agent

1-2-2015
 Date and Time Received

PART III: DISPOSAL OR RECLAMATION SITE:

Name Controlled Recovery, Inc.
 Address P.O. Box 388
 City/State Hobbs, N.M. 88241-0388

(575) 393-1079

Telephone No.

www.crihobbs.com

E-mail

CERTIFICATION:

I certify that the waste described in Part I was received by me via the transporter described in Part II.

 Signature of Facility Agent

1-2-13
 Date and Time Received

NON-HAZARDOUS WASTE MANIFEST

91351

PART I:

Generator Newark Refining - Linc Plant
Address 7406 S. Main St
City/State Lexington, N.M. 88241

(505) 945-9201
Telephone No.

ORIGIN OF WASTE:

Operations Center _____

Permit No. NA

Property Name Lexington
(Well, Tank Battery, Plant, Facility)

WASTE IDENTIFICATION AND AMOUNT (BARRELS, YARDS, TONS, CU.FT., LBS., UNITS, ETC.)

Drilling Fluids _____	Tank Bottoms _____	Exempt Fluids _____
Completion Fluids _____	Gas Plant Waste _____	C117 No. _____
Contaminated Soil <u>✓</u>	Other Materials _____	Pit No. _____

DESCRIPTION / NOTES

Soil and Tank Bottoms contaminated with diesel - 12 yards
Hot Pipeline Spill

CERTIFICATION:

The waste described above is not hazardous pursuant to 40 CFR Part 261 and was consigned to the transporter named below. I certify that the foregoing is true and correct to the best of my knowledge.

[Signature]
Signature of Generator's Authorized Agent

1-2-2013
Date and Time of Shipment

PART II: TRANSPORTER: (To be completed in full by Transporter)

Name Freight Transport S. Brothers
Address _____
City/State _____

Telephone No. _____

Truck No. _____

CERTIFICATION:

I certify that the waste in quantity above was received by me for shipment to the destination below.

[Signature]
Signature of Transporter's Agent

1-2-13
Date and Time Received

PART III: DISPOSAL OR RECLAMATION SITE:

Name Controlled Recovery, Inc.
Address P.O. Box 388
City/State Hobbs, N.M. 88241-0388

(575) 393-1079

Telephone No.

www.crihobbs.com

E-mail

CERTIFICATION:

I certify that the waste described in Part I was received by me via the transporter described in Part II.

[Signature]
Signature of Facility Agent

1-2-13
Date and Time Received

NON-HAZARDOUS WASTE MANIFEST

21830

PART I: Generator Aluminum Refining - Leadport
Address 400 Main
City/State Leamington NM 88406

(575) 291-7831
Telephone No.

ORIGIN OF WASTE:

Operations Center _____

Permit No. **NA**
~~NA~~

Property Name Leamington
(Well, Tank Battery, Plant, Facility)

WASTE IDENTIFICATION AND AMOUNT (BARRELS, YARDS, TONS, CU.FT., LBS., UNITS, ETC.)		
Drilling Fluids _____	Tank Bottoms _____	Exempt Fluids _____
Completion Fluids _____	Gas Plant Waste _____	C117 No. _____
Contaminated Soil <u>✓</u>	Other Materials _____	Pit No. _____
DESCRIPTION / NOTES		
<u>Soil and debris contaminated with Gasol. 12 yards</u>		
<u>HP Pipeline spill.</u>		

CERTIFICATION:

The waste described above is not hazardous pursuant to 40 CFR Part 261 and was consigned to the transporter named below. I certify that the foregoing is true and correct to the best of my knowledge.

[Signature]
Signature of Generator's Authorized Agent

1-2-2013
Date and Time of Shipment

PART II: TRANSPORTER: (To be completed in full by Transporter)

Name First Interstate S Brothers
Address _____
City/State _____

Telephone No. _____

Truck No. _____

CERTIFICATION:

I certify that the waste in quantity above was received by me for shipment to the destination below.

[Signature]
Signature of Transporter's Agent

1-2-2013
Date and Time Received

PART III: DISPOSAL OR RECLAMATION SITE:

Name Controlled Recovery, Inc.
Address P.O. Box 388
City/State Hobbs, N.M. 88241-0388

(575) 393-1079

Telephone No.

www.crihobbs.com

E-mail

CERTIFICATION:

I certify that the waste described in Part I was received by me via the transporter described in Part II.

[Signature]
Signature of Facility Agent

1/2/13
Date and Time Received

NON-HAZARDOUS WASTE MANIFEST

21328

PART I: Generator Aluminum Refining Plant
Address 7444 S. Alameda
City/State Longview WA 99260

(575) 393-1079
Telephone No.

ORIGIN OF WASTE:

Operations Center _____

Permit No. NA

Property Name Longview
(Well, Tank Battery, Plant, Facility)

WASTE IDENTIFICATION AND AMOUNT (BARRELS, YARDS, TONS, CU.FT., LBS., UNITS, ETC.)

Drilling Fluids _____	Tank Bottoms _____	Exempt Fluids _____
Completion Fluids _____	Gas Plant Waste _____	C117 No. _____
Contaminated Soil <u>✓</u>	Other Materials _____	Pit No. _____

DESCRIPTION / NOTES

Soil and Debris Contaminated w/ GAS oil 12 yards

MLP Pipeline Spill

CERTIFICATION:

The waste described above is not hazardous pursuant to 40 CFR Part 261 and was consigned to the transporter named below. I certify that the foregoing is true and correct to the best of my knowledge.

[Signature]
Signature of Generator's Authorized Agent

12/31/12
Date and Time of Shipment

PART II: TRANSPORTER: (To be completed in full by Transporter)

Name Transwest Express
Address _____
City/State _____

Telephone No. _____

Truck No. _____

CERTIFICATION:

I certify that the waste in quantity above was received by me for shipment to the destination below.

[Signature]
Signature of Transporter's Agent

12/31/12
Date and Time Received

PART III: DISPOSAL OR RECLAMATION SITE:

Name Controlled Recovery, Inc.
Address P.O. Box 388
City/State Hobbs, N.M. 88241-0388

(575) 393-1079

Telephone No.

www.crihobbs.com

E-mail

CERTIFICATION:

I certify that the waste described in Part I was received by me via the transporter described in Part II.

[Signature]
Signature of Facility Agent

12/31/12
Date and Time Received

NON-HAZARDOUS WASTE MANIFEST

91324

PART I: Generator Alaska Refining Corp
Address 7116 - 11th
City/State Long Beach, N.M. 98766

(CSE) 360-7821
Telephone No.

ORIGIN OF WASTE:

Operations Center _____

Permit No. NA

Property Name Long Beach
(Well, Tank Battery, Plant, Facility)

WASTE IDENTIFICATION AND AMOUNT (BARRELS, YARDS, TONS, CU.FT., LBS., UNITS, ETC.)		
Drilling Fluids _____	Tank Bottoms _____	Exempt Fluids _____
Completion Fluids _____	Gas Plant Waste _____	C117 No. _____
Contaminated Soil <u>✓</u>	Other Materials _____	Pit No. _____
DESCRIPTION / NOTES		
<u>Soil & debris from oil spill - 12 yards</u>		
<u>100% Petroleum based</u>		

CERTIFICATION:

The waste described above is not hazardous pursuant to 40 CFR Part 261 and was consigned to the transporter named below. I certify that the foregoing is true and correct to the best of my knowledge.

[Signature]
Signature of Generator's Authorized Agent

12/31/12 - 01:06
Date and Time of Shipment

PART II: TRANSPORTER: (To be completed in full by Transporter)

Name Elmer Transport S. Brothers
Address _____
City/State _____

Telephone No. _____

Truck No. 1

CERTIFICATION:

I certify that the waste in quantity above was received by me for shipment to the destination below.

[Signature]
Signature of Transporter's Agent

12-31-12
Date and Time Received

PART III: DISPOSAL OR RECLAMATION SITE:

Name Controlled Recovery, Inc.
Address P.O. Box 388
City/State Hobbs, N.M. 88241-0388

(575) 393-1079

Telephone No.

www.crihobbs.com

E-mail

CERTIFICATION:

I certify that the waste described in Part I was received by me via the transporter described in Part II.

[Signature]
Signature of Facility Agent

12-31-12
Date and Time Received

NON-HAZARDOUS WASTE MANIFEST

91329

PART I: Generator North Rofing - Leaf Plant
Address 1000 Main
City/State Louisiana 70060

(504) 396-5801
Telephone No.

ORIGIN OF WASTE:

Operations Center _____

Permit No. **NA** 100396-1027

Property Name Louisa
(Well, Tank Battery, Plant, Facility)

WASTE IDENTIFICATION AND AMOUNT (BARRELS, YARDS, TONS, CU.FT., LBS., UNITS, ETC.)		
Drilling Fluids _____	Tank Bottoms _____	Exempt Fluids _____
Completion Fluids _____	Gas Plant Waste _____	C117 No. _____
Contaminated Soil <u>✓</u>	Other Materials _____	Pit No. _____
DESCRIPTION / NOTES		
<u>Soil and Debris Contaminated w/ GAS OIL 12 yards</u>		
<u>HCP Pipeline Spill</u>		

CERTIFICATION:

The waste described above is not hazardous pursuant to 40 CFR Part 261 and was consigned to the transporter named below. I certify that the foregoing is true and correct to the best of my knowledge.

[Signature]
Signature of Generator's Authorized Agent

12/01/02 1356
Date and Time of Shipment

PART II: TRANSPORTER: (To be completed in full by Transporter)

Name Fleet Transport S-Brothers
Address _____
City/State _____

Telephone No. _____

Truck No. 1

CERTIFICATION:

I certify that the waste in quantity above was received by me for shipment to the destination below.

[Signature]
Signature of Transporter's Agent

12/01/02
Date and Time Received

PART III: DISPOSAL OR RECLAMATION SITE:

Name Controlled Recovery, Inc.
Address P.O. Box 388
City/State Hobbs, N.M. 88241-0388

(575) 393-1079

Telephone No.

www.crihobbs.com

E-mail

CERTIFICATION:

I certify that the waste described in Part I was received by me via the transporter described in Part II.

[Signature]
Signature of Facility Agent

12-31-02
Date and Time Received

NON-HAZARDOUS WASTE MANIFEST

91523

PART I: Generator Aluminum Refining - La. Trans
Address 7406 S. Highway 101
City/State Longview, N.M. 87601

(575) 393-1079
Telephone No.

ORIGIN OF WASTE:

Operations Center _____

Permit No. NA

Property Name Location
(Well, Tank Battery, Plant, Facility)

WASTE IDENTIFICATION AND AMOUNT (BARRELS, YARDS, TONS, CU.FT., LBS., UNITS, ETC.)		
Drilling Fluids _____	Tank Bottoms _____	Exempt Fluids _____
Completion Fluids _____	Gas Plant Waste _____	C117 No. _____
Contaminated Soil <u>✓</u>	Other Materials _____	Pit No. _____
DESCRIPTION / NOTES		
<u>Soil + debris contaminated with Gas Oil - 12 yds.</u>		
<u>400 Pipeline Leak</u>		

CERTIFICATION:

The waste described above is not hazardous pursuant to 40 CFR Part 261 and was consigned to the transporter named below. I certify that the foregoing is true and correct to the best of my knowledge.

[Signature]
Signature of Generator's Authorized Agent

12-28-2012
Date and Time of Shipment

PART II: TRANSPORTER: (To be completed in full by Transporter)

Name Thompson Bros. 5 Brothers
Address _____
City/State _____

Telephone No. _____

Truck No. _____

CERTIFICATION:

I certify that the waste in quantity above was received by me for shipment to the destination below.

[Signature]
Signature of Transporter's Agent

12-28-2012
Date and Time Received

PART III: DISPOSAL OR RECLAMATION SITE:

Name Controlled Recovery, Inc.
Address P.O. Box 388
City/State Hobbs, N.M. 88241-0388

(575) 393-1079

Telephone No.

www.crihobbs.com

E-mail

CERTIFICATION:

I certify that the waste described in Part I was received by me via the transporter described in Part II.

[Signature]
Signature of Facility Agent

12/28/12
Date and Time Received

NON-HAZARDOUS WASTE MANIFEST

91327

PART I:

Generator Navajo Refining - Lead Plant
Address 7100 Main St
City/State Longton NM 88266

(575) 393-1079
Telephone No.

ORIGIN OF WASTE:

Operations Center _____

Permit No. NA

Property Name Longton
(Well, Tank Battery, Plant, Facility)

WASTE IDENTIFICATION AND AMOUNT (BARRELS, YARDS, TONS, CU.FT., LBS., UNITS, ETC.)

Drilling Fluids _____	Tank Bottoms _____	Exempt Fluids _____
Completion Fluids _____	Gas Plant Waste _____	C117 No. _____
Contaminated Soil _____	Other Materials _____	Pit No. _____

DESCRIPTION / NOTES

Small amount of drilling fluid, gas plant waste - 12 yards
NEI Pipe, etc. Road

CERTIFICATION:

The waste described above is not hazardous pursuant to 40 CFR Part 261 and was consigned to the transporter named below. I certify that the foregoing is true and correct to the best of my knowledge.

[Signature]
Signature of Generator's Authorized Agent

12-29-2012
Date and Time of Shipment

PART II: TRANSPORTER: (To be completed in full by Transporter)

Name First Transport S. Co. Inc.
Address _____
City/State _____

Telephone No. _____

Truck No. _____

CERTIFICATION:

I certify that the waste in quantity above was received by me for shipment to the destination below.

[Signature]
Signature of Transporter's Agent

12-29-2012
Date and Time Received

PART III: DISPOSAL OR RECLAMATION SITE:

Name Controlled Recovery, Inc.
Address P.O. Box 388
City/State Hobbs, N.M. 88241-0388

(575) 393-1079

Telephone No.

www.crihobbs.com

E-mail

CERTIFICATION:

I certify that the waste described in Part I was received by me via the transporter described in Part II.

[Signature]
Signature of Facility Agent

12-29-2012
Date and Time Received

ATTACHMENT C

Photographic Log



Photo 1: Navajo Refining Company (NRC) staff removes liquid gas oil using a vacuum truck from the Holly Energy Partners (HEP) pump station (i.e., release location) on December 27, 2012.



Photo 2: Solidified gas oil on ground surface south of release location (December 27, 2012).



Photo 3: Gas oil retained within diked containment southeast of release (December 27, 2012).



Photo 4: Drilling soil boring BH-4 (June 19, 2013).

ATTACHMENT D

Soil Boring Logs



BORING LOG

BH-1

Client: Holly Frontier, Navajo Refining Company

Site: Lea Refinery

Address: 7406 South Main St, Lovington, New Mexico

Project: Gas Oil Release Soil Investigation

TRC Project #: 196364

Start Date: 6/19/2013

Finish Date: 6/19/2013

Permit #: NA

Drilling Company: Talon Drilling

Drilling Crew: Gabe Perez and crew

TRC Site Rep.: Josh Ward

Drilling Method: Air Rotary

TRC Reviewer: Bryan Gilbert

Boring Diameter (in): 6 1/4

Boring Depth (ft bgs): 13.5

X-Y Coord. Sys.: NA

Sampling Method: 2-foot x 2-inch Split Spoon

X-Coord: NA

Blow Count Method: NA

Grout: Hydrated 3/8-inch Bentonite Chips

Y-Coord: NA

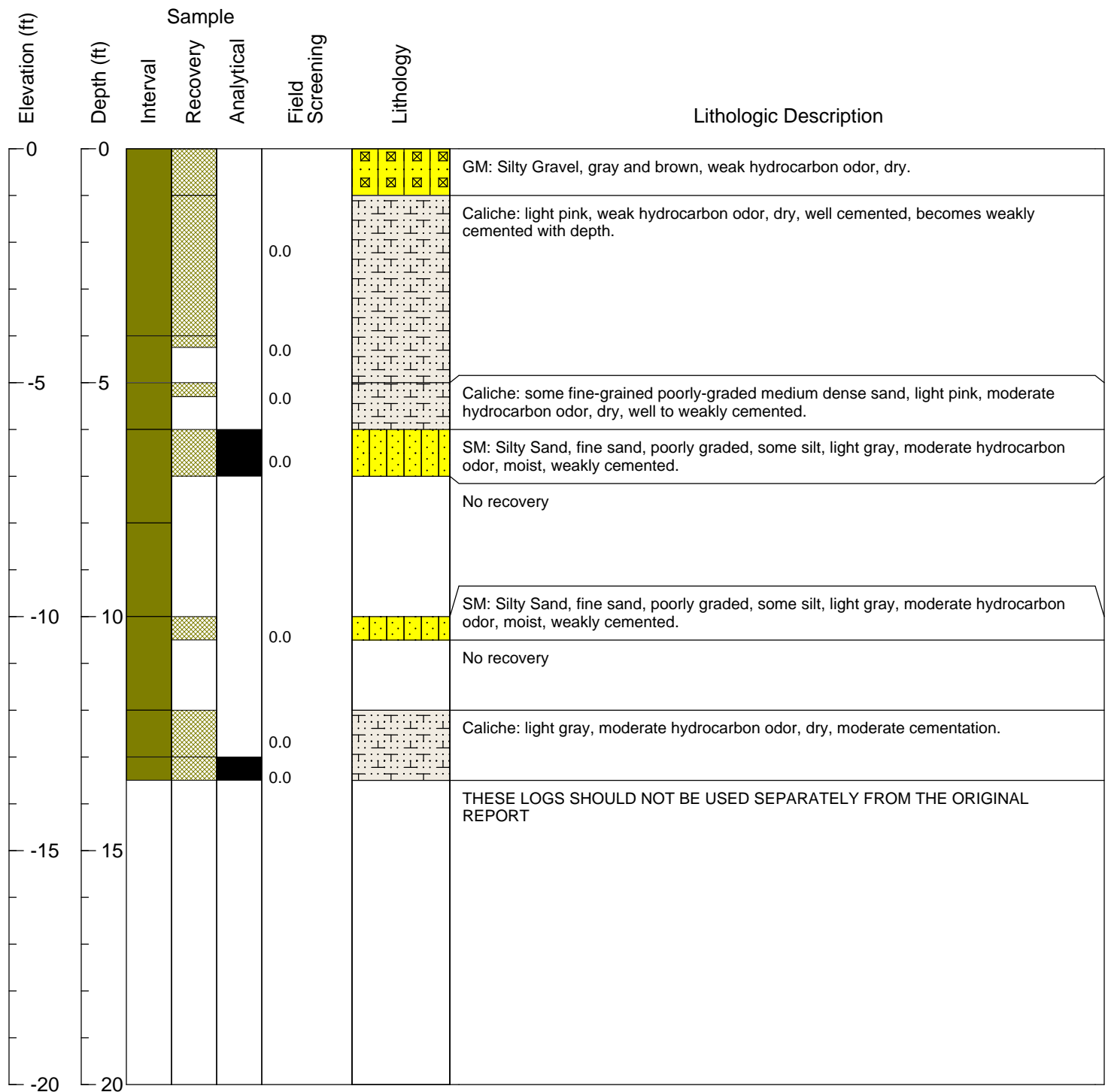
Field Screening Parameter: Volatile Organic Compounds

Elevation Datum: NM

Meter: MiniRAE 2000 PID

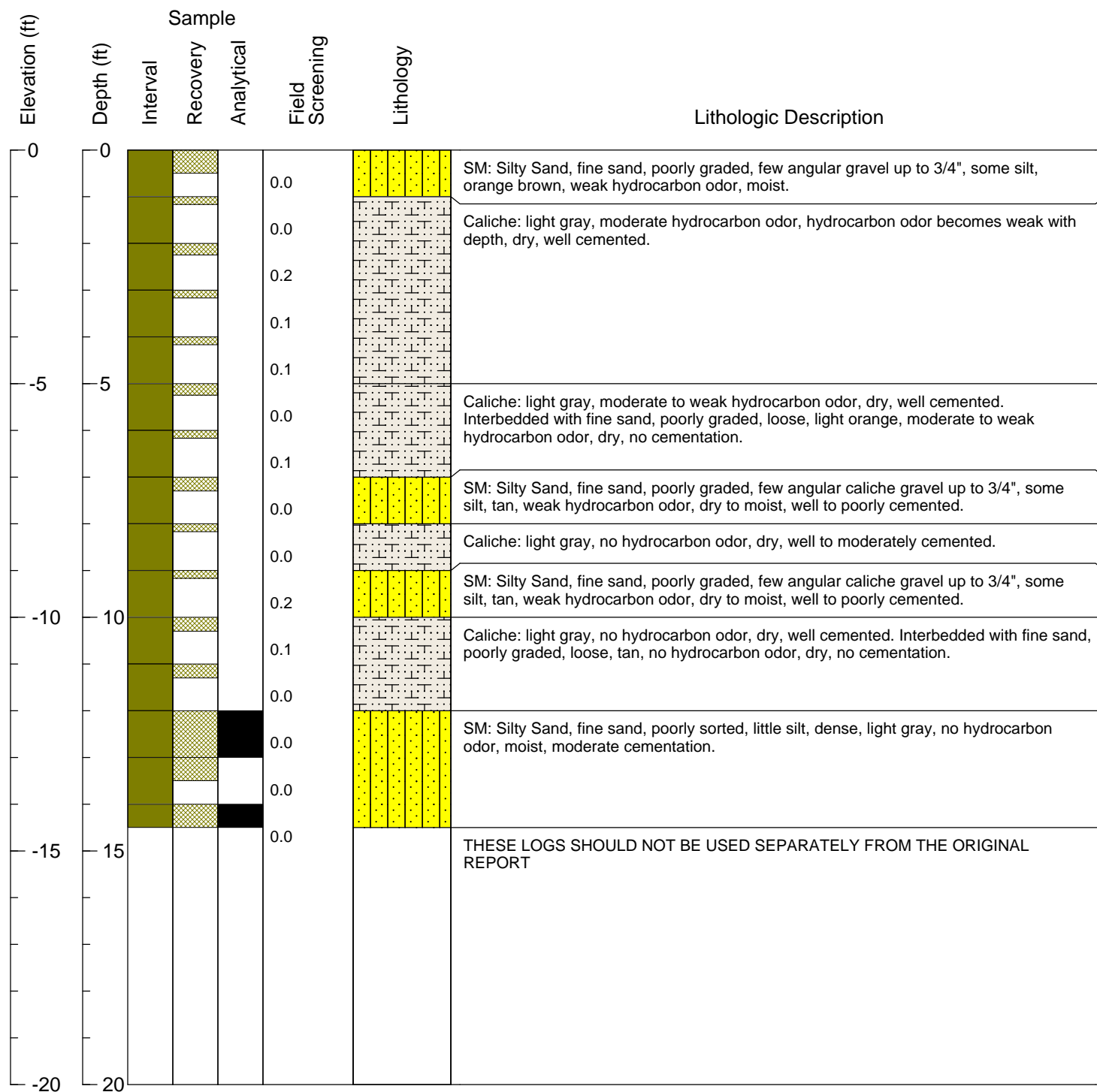
Units: ppm

Ground Elevation (ft): NM



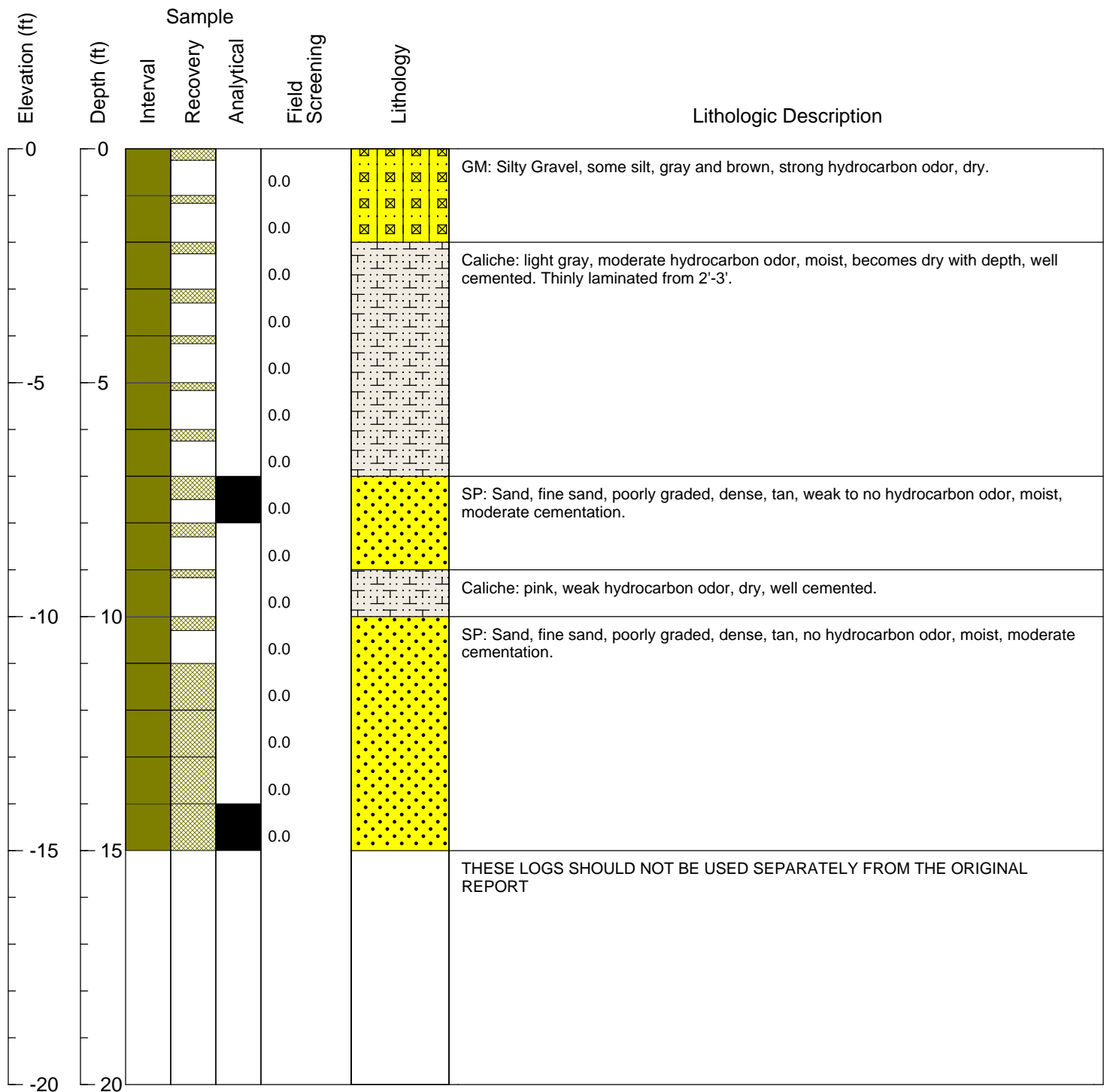


Ground Elevation (ft):NM





Ground Elevation (ft):NM





BORING LOG

BH-4

Client: Holly Frontier, Navajo Refining Company

Site: Lea Refinery

Address: 7406 South Main St, Lovington, New Mexico

Project: Gas Oil Release Soil Investigation

TRC Project #: 196364

Start Date: 6/19/2013

Finish Date: 6/19/2013

Permit #: NA

Drilling Company: Talon Drilling

Drilling Crew: Gabe Perez and crew

TRC Site Rep.: Josh Ward

Drilling Method: Air Rotary

TRC Reviewer: Bryan Gilbert

Boring Diameter (in): 6 1/4

Boring Depth (ft bgs): 17

X-Y Coord. Sys.: NA

Sampling Method: 2-foot x 2-inch Split Spoon

X-Coord: NA

Blow Count Method: NA

Grout: Hydrated 3/8-inch Bentonite Chips

Y-Coord: NA

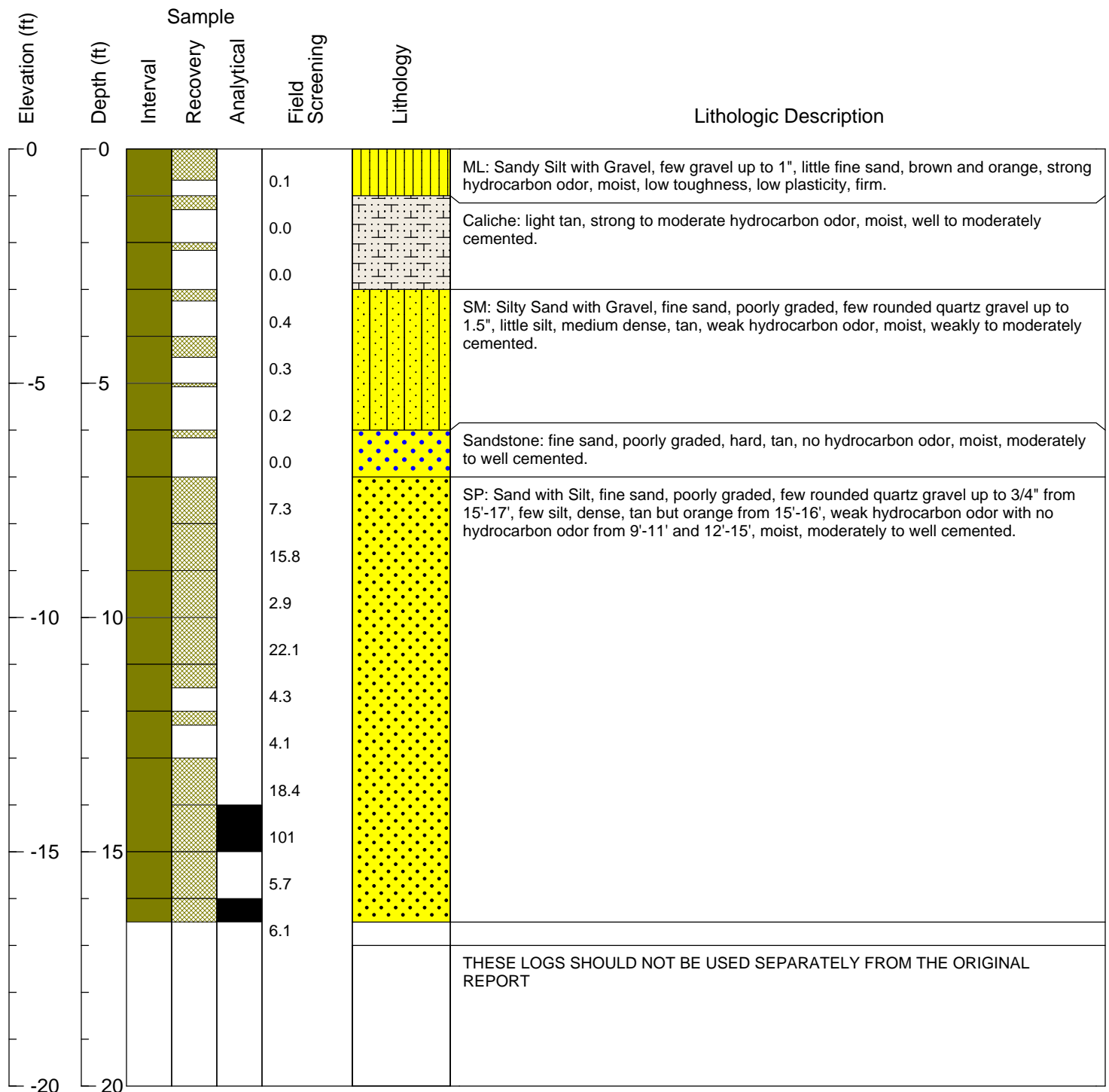
Field Screening Parameter: Volatile Organic Compounds

Elevation Datum: NM

Meter: MiniRAE 2000 PID

Units: ppm

Ground Elevation (ft): NM



ATTACHMENT E

ALS Environmental Laboratory Reports



09-Jul-2013

Robert Combs
Navajo Refining Company
PO Box 159
Artesia, NM 88211

Tel: (575) 746-5382
Fax: (575) 746-5421

Re: Gas-Oil Release Investigation

Work Order: **1306935**

Dear Robert,

ALS Environmental received 9 samples on 22-Jun-2013 09:45 AM for the analyses presented in the following report.

This is a REVISED REPORT. Please see the Case Narrative for discussion concerning this revision.

The total number of pages in this revised report is 6 .

Regards,

A handwritten signature in black ink that reads "Sonia West".

Electronically approved by: Sonia West

Sonia West
Project Manager



Certificate No: T104704231-13-12

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887

ALS GROUP USA, CORP. Part of the ALS Group An ALS Limited Company

Environmental

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Navajo Refining Company
Project: Gas-Oil Release Investigation
Work Order: 1306935

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1306935-01	BH-1 13-13.5	Soil		6/19/2013 20:30	6/22/2013 09:45	<input type="checkbox"/>
1306935-02	BH-1 6-7	Soil		6/19/2013 21:10	6/22/2013 09:45	<input type="checkbox"/>
1306935-03	BH-3 7-8	Soil		6/19/2013 22:25	6/22/2013 09:45	<input type="checkbox"/>
1306935-04	BH-3 14-15	Soil		6/19/2013 22:30	6/22/2013 09:45	<input type="checkbox"/>
1306935-05	BH-2 12-13	Soil		6/20/2013 10:30	6/22/2013 09:45	<input type="checkbox"/>
1306935-06	BH-2 14-14.5	Soil		6/20/2013 10:40	6/22/2013 09:45	<input type="checkbox"/>
1306935-07	BH-4 14-15	Soil		6/20/2013 13:40	6/22/2013 09:45	<input type="checkbox"/>
1306935-08	BH-4 16-17	Soil		6/20/2013 13:50	6/22/2013 09:45	<input type="checkbox"/>
1306935-09	TB-06-21-13-01	Water		6/19/2013	6/22/2013 09:45	<input type="checkbox"/>

Client: Navajo Refining Company
Project: Gas-Oil Release Investigation
Work Order: 1306935

Case Narrative

As per your request, this report has been revised to change the project name.

Batch 71054, TPH DRO/ORO - 8015, Sample BH-1 6-7: The surrogate was diluted out in the 100 x dilution.

Batch 71054, TPH DRO/ORO - 8015, Sample BH-4 16-17: The surrogate was diluted out in the 20 x dilution.

Batch 71054, TPH DRO/ORO - 8015, Sample BH-1 13-13.5: The MS/MSD recoveries were outside of the control limits for TPH DRO and TPH ORO due to matrix interference.

Batch R149461, BTEX 8021B, Sample 1306884-01A: MS/MSD are for an unrelated sample.

Batch 71202, Chloride 300.0, Sample BH-4 16-17: MS/MSD recoveries were outside of the control limits due to possible matrix interference.

ALS Environmental

Date: 09-Jul-13

Client: Navajo Refining Company
Project: Gas-Oil Release Investigation
Sample ID: BH-1 13-13.5
Collection Date: 6/19/2013 08:30 PM

Work Order: 1306935
Lab ID: 1306935-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO - 8015C						
TPH (Diesel Range)	210		SW8015M	8.5 mg/Kg	5	Prep Date: 6/26/2013 Analyst: RPM
TPH (Motor Oil Range)	8.8	J		17 mg/Kg	5	6/27/2013 10:37 AM
Surr: 2-Fluorobiphenyl	73.6		60-135	%REC	5	6/27/2013 10:37 AM
GASOLINE RANGE ORGANICS - SW8015C						
Gasoline Range Organics	U		SW8015	0.050 mg/Kg	1	Analyst: KKP
Surr: 4-Bromofluorobenzene	111		70-130	%REC	1	6/25/2013 03:44 PM
BTEX						
Benzene	U		SW8021B	1.0 µg/Kg	1	Analyst: KKP
Toluene	U			1.0 µg/Kg	1	6/25/2013 01:46 PM
Ethylbenzene	U			1.0 µg/Kg	1	6/25/2013 01:46 PM
Xylenes, Total	U			3.0 µg/Kg	1	6/25/2013 01:46 PM
Surr: 4-Bromofluorobenzene	118		75-131	%REC	1	6/25/2013 01:46 PM
Surr: Trifluorotoluene	104		73-130	%REC	1	6/25/2013 01:46 PM
ANIONS - EPA 300.0 (1993)						
Chloride	5.40		E300	4.99 mg/Kg	1	Prep Date: 6/29/2013 Analyst: JKP
Surr: Selenate (surr)	107		85-115	%REC	1	7/1/2013 04:14 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 09-Jul-13

Client: Navajo Refining Company
Project: Gas-Oil Release Investigation
Sample ID: BH-1 6-7
Collection Date: 6/19/2013 09:10 PM

Work Order: 1306935
Lab ID: 1306935-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO - 8015C						
TPH (Diesel Range)	2,800		SW8015M		Prep Date: 6/26/2013	Analyst: RPM
			170	mg/Kg	100	6/27/2013 10:37 AM
TPH (Motor Oil Range)	75	J	340	mg/Kg	100	6/27/2013 10:37 AM
Surr: 2-Fluorobiphenyl	0	S	60-135	%REC	100	6/27/2013 10:37 AM
GASOLINE RANGE ORGANICS - SW8015C						
GASOLINE RANGE ORGANICS			SW8015			Analyst: KKP
Gasoline Range Organics	U		0.050	mg/Kg	1	6/25/2013 01:52 PM
Surr: 4-Bromofluorobenzene	129		70-130	%REC	1	6/25/2013 01:52 PM
BTEX						
BTEX			SW8021B			Analyst: KKP
Benzene	U		1.0	µg/Kg	1	6/25/2013 02:07 PM
Toluene	U		1.0	µg/Kg	1	6/25/2013 02:07 PM
Ethylbenzene	U		1.0	µg/Kg	1	6/25/2013 02:07 PM
Xylenes, Total	U		3.0	µg/Kg	1	6/25/2013 02:07 PM
Surr: 4-Bromofluorobenzene	112		75-131	%REC	1	6/25/2013 02:07 PM
Surr: Trifluorotoluene	102		73-130	%REC	1	6/25/2013 02:07 PM
ANIONS - EPA 300.0 (1993)						
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 6/29/2013	Analyst: JKP
Chloride	5.96		4.99	mg/Kg	1	7/1/2013 04:29 AM
Surr: Selenate (surr)	112		85-115	%REC	1	7/1/2013 04:29 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 09-Jul-13

Client: Navajo Refining Company
Project: Gas-Oil Release Investigation
Sample ID: BH-3 7-8
Collection Date: 6/19/2013 10:25 PM

Work Order: 1306935
Lab ID: 1306935-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO - 8015C						
TPH (Diesel Range)	0.56	J	SW8015M 1.7	mg/Kg	1	Prep Date: 6/26/2013 Analyst: RPM 6/26/2013 03:24 PM
TPH (Motor Oil Range)	3.9		3.4	mg/Kg	1	6/26/2013 03:24 PM
Surr: 2-Fluorobiphenyl	66.5		60-135	%REC	1	6/26/2013 03:24 PM
GASOLINE RANGE ORGANICS - SW8015C						
Gasoline Range Organics	U		SW8015 0.050	mg/Kg	1	Analyst: KKP 6/25/2013 02:08 PM
Surr: 4-Bromofluorobenzene	124		70-130	%REC	1	6/25/2013 02:08 PM
BTEX						
Benzene	U		SW8021B 1.0	µg/Kg	1	Analyst: KKP 6/25/2013 02:27 PM
Toluene	U		1.0	µg/Kg	1	6/25/2013 02:27 PM
Ethylbenzene	U		1.0	µg/Kg	1	6/25/2013 02:27 PM
Xylenes, Total	U		3.0	µg/Kg	1	6/25/2013 02:27 PM
Surr: 4-Bromofluorobenzene	119		75-131	%REC	1	6/25/2013 02:27 PM
Surr: Trifluorotoluene	105		73-130	%REC	1	6/25/2013 02:27 PM
ANIONS - EPA 300.0 (1993)						
Chloride	5.17		E300 5.00	mg/Kg	1	Prep Date: 6/29/2013 Analyst: JKP 7/1/2013 04:43 AM
Surr: Selenate (surr)	114		85-115	%REC	1	7/1/2013 04:43 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 09-Jul-13

Client: Navajo Refining Company
Project: Gas-Oil Release Investigation
Sample ID: BH-3 14-15
Collection Date: 6/19/2013 10:30 PM

Work Order: 1306935
Lab ID: 1306935-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO - 8015C						
TPH (Diesel Range)	U		SW8015M	1.7 mg/Kg	Prep Date: 6/26/2013	Analyst: RPM
					1	6/26/2013 03:47 PM
TPH (Motor Oil Range)	3.4		3.4 mg/Kg		1	6/26/2013 03:47 PM
Surr: 2-Fluorobiphenyl	64.8		60-135 %REC		1	6/26/2013 03:47 PM
GASOLINE RANGE ORGANICS - SW8015C						
Gasoline Range Organics	U		SW8015	0.050 mg/Kg	1	Analyst: KKP
Surr: 4-Bromofluorobenzene	111		70-130 %REC		1	6/25/2013 03:12 PM
BTEX						
Benzene	U		SW8021B	1.0 µg/Kg	1	Analyst: KKP
Toluene	U			1.0 µg/Kg	1	6/25/2013 02:47 PM
Ethylbenzene	U			1.0 µg/Kg	1	6/25/2013 02:47 PM
Xylenes, Total	U			3.0 µg/Kg	1	6/25/2013 02:47 PM
Surr: 4-Bromofluorobenzene	119		75-131 %REC		1	6/25/2013 02:47 PM
Surr: Trifluorotoluene	107		73-130 %REC		1	6/25/2013 02:47 PM
ANIONS - EPA 300.0 (1993)						
Chloride	5.15		E300	5.00 mg/Kg	Prep Date: 6/29/2013	Analyst: JKP
Surr: Selenate (surr)	111		85-115 %REC		1	7/1/2013 04:58 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 09-Jul-13

Client: Navajo Refining Company
Project: Gas-Oil Release Investigation
Sample ID: BH-2 12-13
Collection Date: 6/20/2013 10:30 AM

Work Order: 1306935
Lab ID: 1306935-05
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO - 8015C						
TPH (Diesel Range)	0.85	J	1.7	mg/Kg	1	6/26/2013 04:11 PM
TPH (Motor Oil Range)	3.6		3.4	mg/Kg	1	6/26/2013 04:11 PM
Surr: 2-Fluorobiphenyl	75.1		60-135	%REC	1	6/26/2013 04:11 PM
GASOLINE RANGE ORGANICS - SW8015C						
Gasoline Range Organics	U		0.050	mg/Kg	1	6/25/2013 03:28 PM
Surr: 4-Bromofluorobenzene	115		70-130	%REC	1	6/25/2013 03:28 PM
BTEX						
Benzene	U		1.0	µg/Kg	1	6/25/2013 05:07 PM
Toluene	U		1.0	µg/Kg	1	6/25/2013 05:07 PM
Ethylbenzene	U		1.0	µg/Kg	1	6/25/2013 05:07 PM
Xylenes, Total	U		3.0	µg/Kg	1	6/25/2013 05:07 PM
Surr: 4-Bromofluorobenzene	118		75-131	%REC	1	6/25/2013 05:07 PM
Surr: Trifluorotoluene	104		73-130	%REC	1	6/25/2013 05:07 PM
ANIONS - EPA 300.0 (1993)						
Chloride	4.83	J	5.00	mg/Kg	1	7/1/2013 05:12 AM
Surr: Selenate (surr)	108		85-115	%REC	1	7/1/2013 05:12 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 09-Jul-13

Client: Navajo Refining Company
Project: Gas-Oil Release Investigation
Sample ID: BH-2 14-14.5
Collection Date: 6/20/2013 10:40 AM

Work Order: 1306935
Lab ID: 1306935-06
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO - 8015C						
			SW8015M		Prep Date: 6/26/2013	Analyst: RPM
TPH (Diesel Range)	5.7		1.7	mg/Kg	1	6/26/2013 04:35 PM
TPH (Motor Oil Range)	5.5		3.4	mg/Kg	1	6/26/2013 04:35 PM
Surr: 2-Fluorobiphenyl	60.2		60-135	%REC	1	6/26/2013 04:35 PM
GASOLINE RANGE ORGANICS - SW8015C						
			SW8015			Analyst: KKP
Gasoline Range Organics	U		0.050	mg/Kg	1	6/25/2013 04:32 PM
Surr: 4-Bromofluorobenzene	112		70-130	%REC	1	6/25/2013 04:32 PM
BTEX						
			SW8021B			Analyst: KKP
Benzene	U		1.0	µg/Kg	1	6/25/2013 05:28 PM
Toluene	U		1.0	µg/Kg	1	6/25/2013 05:28 PM
Ethylbenzene	U		1.0	µg/Kg	1	6/25/2013 05:28 PM
Xylenes, Total	U		3.0	µg/Kg	1	6/25/2013 05:28 PM
Surr: 4-Bromofluorobenzene	119		75-131	%REC	1	6/25/2013 05:28 PM
Surr: Trifluorotoluene	104		73-130	%REC	1	6/25/2013 05:28 PM
ANIONS - EPA 300.0 (1993)						
			E300		Prep Date: 6/29/2013	Analyst: JKP
Chloride	5.29		5.00	mg/Kg	1	7/1/2013 05:27 AM
Surr: Selenate (surr)	113		85-115	%REC	1	7/1/2013 05:27 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 09-Jul-13

Client: Navajo Refining Company
Project: Gas-Oil Release Investigation
Sample ID: BH-4 14-15
Collection Date: 6/20/2013 01:40 PM

Work Order: 1306935
Lab ID: 1306935-07
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO - 8015C						
TPH (Diesel Range)	U		SW8015M	1.7 mg/Kg	Prep Date: 6/26/2013	Analyst: RPM
					1	6/26/2013 04:58 PM
TPH (Motor Oil Range)	2.7	J	3.4 mg/Kg		1	6/26/2013 04:58 PM
Surr: 2-Fluorobiphenyl	72.3		60-135 %REC		1	6/26/2013 04:58 PM
GASOLINE RANGE ORGANICS - SW8015C						
Gasoline Range Organics	U		SW8015	0.050 mg/Kg	1	Analyst: KKP
Surr: 4-Bromofluorobenzene	111		70-130 %REC		1	6/25/2013 04:49 PM
BTEX						
Benzene	1.4		SW8021B	1.0 µg/Kg	1	Analyst: KKP
Toluene	U			1.0 µg/Kg	1	6/25/2013 05:48 PM
Ethylbenzene	U			1.0 µg/Kg	1	6/25/2013 05:48 PM
Xylenes, Total	U			3.0 µg/Kg	1	6/25/2013 05:48 PM
Surr: 4-Bromofluorobenzene	122		75-131 %REC		1	6/25/2013 05:48 PM
Surr: Trifluorotoluene	106		73-130 %REC		1	6/25/2013 05:48 PM
ANIONS - EPA 300.0 (1993)						
Chloride	7.22		E300	5.00 mg/Kg	Prep Date: 6/29/2013	Analyst: JKP
Surr: Selenate (surr)	105		85-115 %REC		1	7/1/2013 05:42 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 09-Jul-13

Client: Navajo Refining Company
Project: Gas-Oil Release Investigation
Sample ID: BH-4 16-17
Collection Date: 6/20/2013 01:50 PM

Work Order: 1306935
Lab ID: 1306935-08
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO - 8015C						
			SW8015M		Prep Date: 6/26/2013	Analyst: RPM
TPH (Diesel Range)	190		34	mg/Kg	20	6/27/2013 10:13 AM
TPH (Motor Oil Range)	920		68	mg/Kg	20	6/27/2013 10:13 AM
Surr: 2-Fluorobiphenyl	0	S	60-135	%REC	20	6/27/2013 10:13 AM
GASOLINE RANGE ORGANICS - SW8015C						
			SW8015			Analyst: KKP
Gasoline Range Organics	0.041	J	0.050	mg/Kg	1	6/25/2013 05:05 PM
Surr: 4-Bromofluorobenzene	109		70-130	%REC	1	6/25/2013 05:05 PM
BTEX						
			SW8021B			Analyst: KKP
Benzene	2.0		1.0	µg/Kg	1	6/25/2013 06:08 PM
Toluene	2.3		1.0	µg/Kg	1	6/25/2013 06:08 PM
Ethylbenzene	U		1.0	µg/Kg	1	6/25/2013 06:08 PM
Xylenes, Total	U		3.0	µg/Kg	1	6/25/2013 06:08 PM
Surr: 4-Bromofluorobenzene	115		75-131	%REC	1	6/25/2013 06:08 PM
Surr: Trifluorotoluene	101		73-130	%REC	1	6/25/2013 06:08 PM
ANIONS - EPA 300.0 (1993)						
			E300		Prep Date: 6/29/2013	Analyst: JKP
Chloride	8.15		5.00	mg/Kg	1	7/1/2013 05:56 AM
Surr: Selenate (surr)	115		85-115	%REC	1	7/1/2013 05:56 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental**Date:** 09-Jul-13

Client: Navajo Refining Company
Project: Gas-Oil Release Investigation
Sample ID: TB-06-21-13-01
Collection Date: 6/19/2013

Work Order: 1306935
Lab ID: 1306935-09
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX BY SW8021B			SW8021B			Analyst: KKP
Benzene	U		1.0	µg/L	1	7/1/2013 07:47 PM
Toluene	U		1.0	µg/L	1	7/1/2013 07:47 PM
Ethylbenzene	U		1.0	µg/L	1	7/1/2013 07:47 PM
Xylenes, Total	U		3.0	µg/L	1	7/1/2013 07:47 PM
Surr: 4-Bromofluorobenzene	98.7		75-129	%REC	1	7/1/2013 07:47 PM
Surr: Trifluorotoluene	94.0		75-130	%REC	1	7/1/2013 07:47 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 09-Jul-13

Client: Navajo Refining Company
Work Order: 1306935
Project: Gas-Oil Release Investigation

QC BATCH REPORT

Batch ID: **71054** Instrument ID **FID-7** Method: **SW8015M**

MBLK	Sample ID: FBLKS1-130626-71054				Units: mg/Kg		Analysis Date: 6/26/2013 03:00 PM			
Client ID:	Run ID: FID-7_130626B				SeqNo: 3269372		Prep Date: 6/26/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	U	1.7								
TPH (Motor Oil Range)	U	3.4								
<i>Surr: 2-Fluorobiphenyl</i>	3.078	0.10	3.33	0	92.4	60-135	0			

LCS	Sample ID: FLCSS1-130626-71054				Units: mg/Kg		Analysis Date: 6/26/2013 03:24 PM			
Client ID:	Run ID: FID-7_130626B				SeqNo: 3269373		Prep Date: 6/26/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	27.01	1.7	33.33	0	81	70-130				
TPH (Motor Oil Range)	26.63	3.4	33.33	0	79.9	70-130				
<i>Surr: 2-Fluorobiphenyl</i>	2.192	0.10	3.33	0	65.8	60-135	0			

MS	Sample ID: 1306935-01CMS				Units: mg/Kg		Analysis Date: 6/26/2013 04:35 PM			
Client ID: BH-1 13-13.5	Run ID: FID-7_130626B				SeqNo: 3269375		Prep Date: 6/26/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	296.6	1.7	33.3	183	341	70-130				SEO
TPH (Motor Oil Range)	59.93	3.4	33.3	13.25	140	70-130				S
<i>Surr: 2-Fluorobiphenyl</i>	3.895	0.10	3.327	0	117	60-135	0			

MSD	Sample ID: 1306935-01CMSD				Units: mg/Kg		Analysis Date: 6/26/2013 04:58 PM			
Client ID: BH-1 13-13.5	Run ID: FID-7_130626B				SeqNo: 3269376		Prep Date: 6/26/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	268.8	1.7	33.3	183	258	70-130	296.6	9.81	30	SEO
TPH (Motor Oil Range)	55.27	3.4	33.3	13.25	126	70-130	59.93	8.09	30	
<i>Surr: 2-Fluorobiphenyl</i>	3.65	0.10	3.327	0	110	60-135	3.895	6.49	30	

The following samples were analyzed in this batch:

1306935-01C	1306935-02C	1306935-03C
1306935-04C	1306935-05C	1306935-06C
1306935-07C	1306935-08C	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC Page: 1 of 7

Client: Navajo Refining Company
Work Order: 1306935
Project: Gas-Oil Release Investigation

QC BATCH REPORT

Batch ID: **R149530** Instrument ID **BTEX3** Method: **SW8021B**

MBLK		Sample ID: BBLKS1-130625-R149530				Units: µg/Kg		Analysis Date: 6/25/2013 01:26 PM		
Client ID:		Run ID: BTEX3_130625A				SeqNo: 3266651		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	U	1.0								
Toluene	U	1.0								
Ethylbenzene	U	1.0								
Xylenes, Total	U	3.0								
Surr: 4-Bromofluorobenzene	35.53	1.0	30	0	118	75-131	0			
Surr: Trifluorotoluene	32.05	1.0	30	0	107	73-130	0			

LCS		Sample ID: BLCSS1-130625-R149530				Units: µg/Kg		Analysis Date: 6/25/2013 12:46 PM		
Client ID:		Run ID: BTEX3_130625A				SeqNo: 3266650		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	22.34	1.0	20	0	112	74-129				
Toluene	22.24	1.0	20	0	111	75-128				
Ethylbenzene	22.64	1.0	20	0	113	73-127				
Xylenes, Total	67.34	3.0	60	0	112	74-127				
Surr: 4-Bromofluorobenzene	36.75	1.0	30	0	123	75-131	0			
Surr: Trifluorotoluene	32.29	1.0	30	0	108	73-130	0			

MS		Sample ID: 1306935-04AMS				Units: µg/Kg		Analysis Date: 6/25/2013 03:47 PM		
Client ID: BH-3 14-15		Run ID: BTEX3_130625A				SeqNo: 3266658		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	20.79	1.0	20	0	104	74-129				
Toluene	20.49	1.0	20	0	102	75-128				
Ethylbenzene	20.86	1.0	20	0	104	73-127				
Xylenes, Total	62.26	3.0	60	0	104	74-127				
Surr: 4-Bromofluorobenzene	30.59	1.0	30	0	102	75-131	0			
Surr: Trifluorotoluene	28.13	1.0	30	0	93.8	73-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1306935
Project: Gas-Oil Release Investigation

QC BATCH REPORT

Batch ID: **R149530** Instrument ID **BTEX3** Method: **SW8021B**

MSD	Sample ID: 1306935-04AMSD				Units: µg/Kg			Analysis Date: 6/25/2013 04:07 PM		
Client ID: BH-3 14-15	Run ID: BTEX3_130625A				SeqNo: 3266659		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.62	1.0	20	0	108	74-129	20.79	3.92	30	
Toluene	21.58	1.0	20	0	108	75-128	20.49	5.2	30	
Ethylbenzene	22.05	1.0	20	0	110	73-127	20.86	5.55	30	
Xylenes, Total	66	3.0	60	0	110	74-127	62.26	5.83	30	
Surr: 4-Bromofluorobenzene	32.98	1.0	30	0	110	75-131	30.59	7.54	30	
Surr: Trifluorotoluene	29.65	1.0	30	0	98.8	73-130	28.13	5.26	30	

The following samples were analyzed in this batch:

1306935-01A	1306935-02A	1306935-03A
1306935-04A	1306935-05A	1306935-06A
1306935-07A	1306935-08A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1306935
Project: Gas-Oil Release Investigation

QC BATCH REPORT

Batch ID: **R149566** Instrument ID **FID-14** Method: **SW8015**

MBLK	Sample ID: GBLKS-130625-R149566			Units: mg/Kg			Analysis Date: 6/25/2013 12:15 PM			
Client ID:	Run ID: FID-14_130625A			SeqNo: 3267424			Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	U	0.050								
<i>Surr: 4-Bromofluorobenzene</i>	0.1207	0.0050	0.1	0	121	70-130	0			

LCS	Sample ID: GLCSS-130625-R149566			Units: mg/Kg			Analysis Date: 6/25/2013 10:54 AM			
Client ID:	Run ID: FID-14_130625A			SeqNo: 3267423			Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.9953	0.050	1	0	99.5	70-130				
<i>Surr: 4-Bromofluorobenzene</i>	0.1202	0.0050	0.1	0	120	70-130	0			

MS	Sample ID: 1306935-08BMS			Units: mg/Kg			Analysis Date: 6/25/2013 05:21 PM			
Client ID: BH-4 16-17	Run ID: FID-14_130625A			SeqNo: 3267437			Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.025	0.050	1	0.04141	98.3	70-130				
<i>Surr: 4-Bromofluorobenzene</i>	0.1165	0.0050	0.1	0	117	70-130	0			

MSD	Sample ID: 1306935-08BMSD			Units: mg/Kg			Analysis Date: 6/25/2013 05:37 PM			
Client ID: BH-4 16-17	Run ID: FID-14_130625A			SeqNo: 3267438			Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.9769	0.050	1	0.04141	93.5	70-130	1.025	4.78	30	
<i>Surr: 4-Bromofluorobenzene</i>	0.1204	0.0050	0.1	0	120	70-130	0.1165	3.26	30	

The following samples were analyzed in this batch:

1306935-01B	1306935-02B	1306935-03B
1306935-04B	1306935-05B	1306935-06B
1306935-07B	1306935-08B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1306935
Project: Gas-Oil Release Investigation

QC BATCH REPORT

Batch ID: **R149841** Instrument ID **BTEX1** Method: **SW8021B**

MBLK	Sample ID: BBLKW1-130701-R149841				Units: µg/L		Analysis Date: 7/1/2013 11:24 AM			
Client ID:	Run ID: BTEX1_130701A				SeqNo: 3274465		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	U	1.0								
Toluene	U	1.0								
Ethylbenzene	U	1.0								
Xylenes, Total	U	3.0								
Surr: 4-Bromofluorobenzene	28.76	1.0	30	0	95.9	75-129	0			
Surr: Trifluorotoluene	28.23	1.0	30	0	94.1	75-130	0			

LCS	Sample ID: BLCSW1-130701-R149841				Units: µg/L		Analysis Date: 7/1/2013 11:06 AM			
Client ID:	Run ID: BTEX1_130701A				SeqNo: 3274464		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	19.4	1.0	20	0	97	75-126				
Toluene	19.36	1.0	20	0	96.8	75-125				
Ethylbenzene	19.18	1.0	20	0	95.9	75-125				
Xylenes, Total	57.94	3.0	60	0	96.6	75-125				
Surr: 4-Bromofluorobenzene	29.35	1.0	30	0	97.8	75-129	0			
Surr: Trifluorotoluene	29.63	1.0	30	0	98.8	75-130	0			

MS	Sample ID: 13061031-12AMS				Units: µg/L		Analysis Date: 7/1/2013 03:41 PM			
Client ID:	Run ID: BTEX1_130701A				SeqNo: 3274477		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	35.55	1.0	20	16.75	94	75-126				
Toluene	17.92	1.0	20	0	89.6	75-125				
Ethylbenzene	9.962	1.0	20	0	49.8	75-125				S
Xylenes, Total	84.03	3.0	60	24.76	98.8	75-125				
Surr: 4-Bromofluorobenzene	32.89	1.0	30	0	110	75-129	0			
Surr: Trifluorotoluene	83.99	1.0	30	0	280	75-130	0			S

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1306935
Project: Gas-Oil Release Investigation

QC BATCH REPORT

Batch ID: **R149841** Instrument ID **BTEX1** Method: **SW8021B**

MSD Sample ID: **13061031-12AMSD** Units: **µg/L** Analysis Date: **7/1/2013 03:59 PM**

Client ID: Run ID: **BTEX1_130701A** SeqNo: **3274538** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	34.93	1.0	20	16.75	90.9	75-126	35.55	1.76	20	
Toluene	18.76	1.0	20	0	93.8	75-125	17.92	4.58	20	
Ethylbenzene	12.09	1.0	20	0	60.5	76-125	9.962	19.3	20	S
Xylenes, Total	83.61	3.0	60	24.76	98.1	75-125	84.03	0.497	20	
Surr: 4-Bromofluorobenzene	34.91	1.0	30	0	116	75-129	32.89	5.94	20	
Surr: Trifluorotoluene	82.54	1.0	30	0	275	75-130	83.99	1.74	20	S

The following samples were analyzed in this batch: | 1306935-09A |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1306935
Project: Gas-Oil Release Investigation

QC BATCH REPORT

Batch ID: **71202** Instrument ID **ICS2100** Method: **E300** **(Dissolve)**

MBLK	Sample ID: WBLKS1-71202			Units: mg/Kg			Analysis Date: 7/1/2013 01:09 AM			
Client ID:	Run ID: ICS2100_130701A			SeqNo: 3274051			Prep Date: 6/29/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	4.75	5.0								J
<i>Surr: Selenate (surr)</i>	55.34	1.0	50	0	111	85-115	0			

LCS	Sample ID: WLCSS1-71202			Units: mg/Kg			Analysis Date: 7/1/2013 01:24 AM			
Client ID:	Run ID: ICS2100_130701A			SeqNo: 3274052			Prep Date: 6/29/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	203.2	5.0	200	0	102	90-110				
<i>Surr: Selenate (surr)</i>	53.14	1.0	50	0	106	85-115	0			

MS	Sample ID: 1306935-08CMS			Units: mg/Kg			Analysis Date: 7/1/2013 06:11 AM			
Client ID: BH-4 16-17	Run ID: ICS2100_130701A			SeqNo: 3274071			Prep Date: 6/29/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	117.8	4.2	83.63	8.155	131	75-125				S
<i>Surr: Selenate (surr)</i>	47.22	0.84	41.81	0	113	80-120	0			

MSD	Sample ID: 1306935-08CMSD			Units: mg/Kg			Analysis Date: 7/1/2013 06:25 AM			
Client ID: BH-4 16-17	Run ID: ICS2100_130701A			SeqNo: 3274072			Prep Date: 6/29/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	117.6	4.2	83.37	8.155	131	75-125	117.8	0.158	20	S
<i>Surr: Selenate (surr)</i>	46.86	0.83	41.68	0	112	80-120	47.22	0.775	20	

The following samples were analyzed in this batch:

1306935-01C	1306935-02C	1306935-03C
1306935-04C	1306935-05C	1306935-06C
1306935-07C	1306935-08C	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Project: Gas-Oil Release Investigation
WorkOrder: 1306935

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

<u>Units Reported</u>	<u>Description</u>
µg/Kg	Micrograms per Kilogram
µg/L	Micrograms per Liter
mg/Kg	Milligrams per Kilogram

Sample Receipt Checklist

Client Name: **NAVAJO REFINING**

Date/Time Received: **22-Jun-13 09:45**

Work Order: **1306935**

Received by: **RDH**

Checklist completed by Parash M. Ciga
eSignature

24-Jun-13
Date

Reviewed by: Senia West
eSignature

25-Jun-13
Date

Matrices: soil/Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<div>2.3c/2.3c,1.9c/1.9c,2.7c/2.7c,3.2c/3.2c C/U</div>		<div>IR1</div>
Cooler(s)/Kit(s):	<div>4696,4096,3172,3036</div>		
Date/Time sample(s) sent to storage:	<div>6/24/13 13:15</div>		
Water - VOA vials have zero headspace?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<div>-</div>		
Login Notes:			

Client Contacted:

Date Contacted:

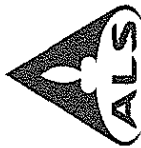
Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



Cincinnati, OH
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Everett, WA
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Fort Collins, CO
+1 970 490 1511

Holland, MI
+1 616 399 6070

Chain of Custody For

Page 1 of 1

COC ID: 82290

Environmental

1306935

NAVAJO REFINING: Navajo Refining Company

Project: 196364.5000.0000



Customer Information				Project Information													
Purchase Order		Project Name		A	B	C	D	E	F	G	H	I	J	Hold			
Work Order		Project Number	196364.5000.0000	B													
Company Name	Navajo Refining Company	Bill To Company	Navajo Refining Company	C													
Send Report To	Robert Combs	Invoice Attn	Robert Combs	D													
Address	501 East Main	Address	501 East Main	E													
City/State/Zip	Artesia, NM 88211	City/State/Zip	Artesia, NM 88211	F													
Phone	(505) 748-3311	Phone	(505) 748-6733	G													
Fax	(505) 748-5421	Fax	(505) 748-5421	H													
e-Mail Address		e-Mail Address		I													
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	BH-1 13-135	6-14-13	2030	Soil	8	3	X	X	X	X	X						
2	BH-1 6-7		2110														
3	BH-3 7-8		2225														
4	BH-3 14-15		2230														
5	BH-2 12-13	6-20-13	1030														
6	BH-2 14-145		1040														
7	BH-4 14-15		1340														
8	BH-4 16-17		1350														
9	TR-06-21-13-01			LIQUOR	8/3	2											
10																	

Sampler(s) Please Print & Sign		Shipment Method		Required Turnaround Time: (Check Box)		Results Due Date:	
Date: 6/21/13	Time: 10:05	Date: 6/21/13	Time: 10:05	<input checked="" type="checkbox"/> Std 10 WK Days	<input type="checkbox"/> 5 WK Days	<input type="checkbox"/> 2 WK Days	<input type="checkbox"/> 24 Hour
Relinquished by: [Signature]		Received by (Laboratory): [Signature]		Notes: 10 Day TAT. CC report to Bryan Gilbert & Julie Spear. bryangilbert@arsolutions.com		Cooler Temp. [] Cooler ID []	
Relinquished by: [Signature]		Checked by (Laboratory): [Signature]		QC Package: (Check One Box Below)		Level II Std QC <input type="checkbox"/> Level III Std QC/RAW Data <input type="checkbox"/> Level IV SW/846/CLP <input type="checkbox"/> Other / EDD <input type="checkbox"/>	
Logged by (Laboratory): [Signature]		Time: []		Cooler Temp. [] Cooler ID []		Level II Std QC <input type="checkbox"/> Level III Std QC/RAW Data <input type="checkbox"/> Level IV SW/846/CLP <input type="checkbox"/> Other / EDD <input type="checkbox"/>	
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035							

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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ORIGIN 10-RUSH (312) 523-6080
T R C ENVIRONMENTAL CORP
505 E HUNTLAND DR STE 250
AUSTIN, TX 787523740
UNITED STATES US

ACTWGT: 66.9 LB
CAD: /POS1400
DIMS: 24x14x15 IN
BILL RECIPIENT

ALS LABORATORY SERVICES
10450 STANCLIFF RD
STE 210
HOUSTON TX 77099
(281) 530-5856

REF:

DEPT:



SATURDAY 12:00P
PRIORITY OVERNIGHT

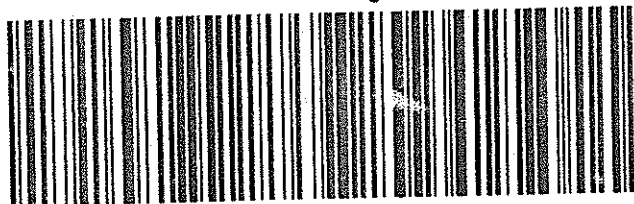
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MPS# 7957 9201 4462
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Mstr# 8020 3307 4443

0215

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ORIGIN 10-RUSH (312) 523-6080
T R C ENVIRONMENTAL CORP
505 E HUNTLAND DR STE 250
AUSTIN, TX 787523740
UNITED STATES US

SHIP DATE: 21JUN13
ACTWGT: 66.9 LB
CAD: /POS1400
DIMS: 24x14x15 IN
BILL RECIPIENT

ALS LABORATORY SERVICES
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STE 210
HOUSTON TX 77099
(281) 530-5856

REF:

DEPT:



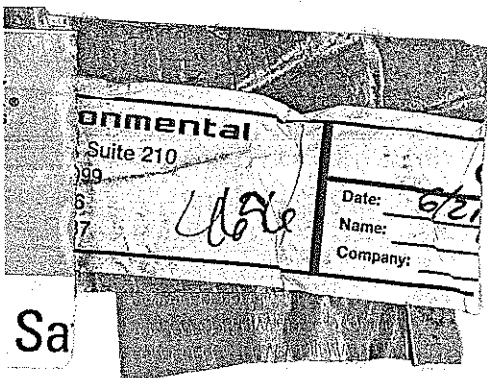
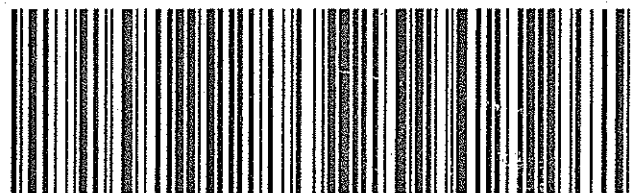
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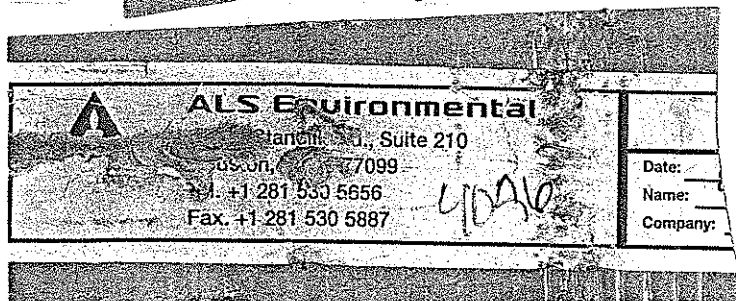
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TX-US IAH

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Name: [Handwritten]		Date: 6/22/13
Company: [Handwritten]		



CUSTODY SEAL		Seal Broken By:
Date: 6/21/13	Time: 2:40 PM	Signature: [Handwritten]
Name: [Handwritten]		Date: 6/22/13
Company: [Handwritten]		

ORIGIN ID:HOBA (512) 329-6080
T R C ENVIRONMENTAL CORP
505 E HUNTCLIFF DR STE 250
AUSTIN, TX 787523740
UNITED STATES US

SHIP DATE: 21JUN13
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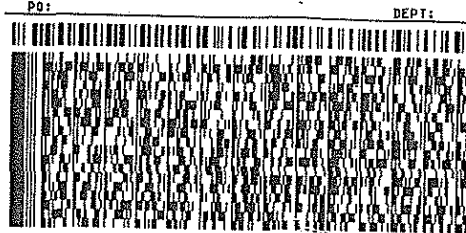
TO

ALS LABORATORY SERVICES
10450 STANCLIFF RD
STE 210
HOUSTON TX 77099
(281) 530-5656
REF: DEPT:



TO

ALS LABORATORY SERVICES
10450 STANCLIFF RD
STE 210
HOUSTON TX 77099
(281) 530-5656
REF: DEPT:



2 of 5
MPS# 7957 9201 4430
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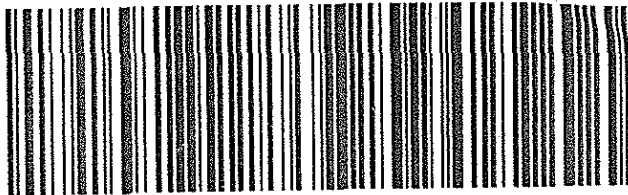
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1 of 5
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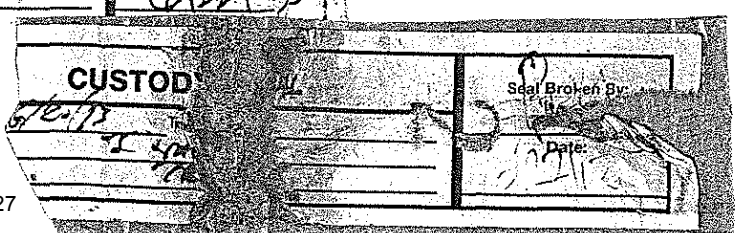
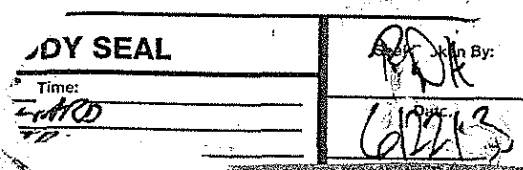
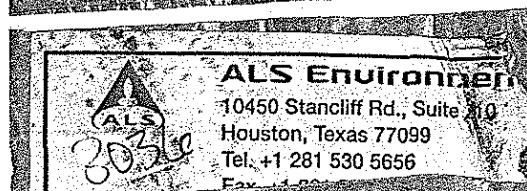
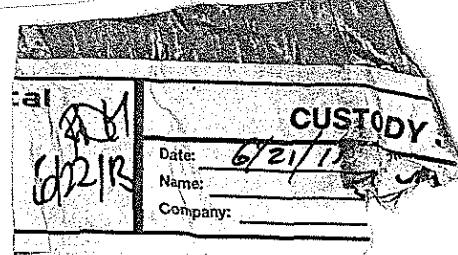
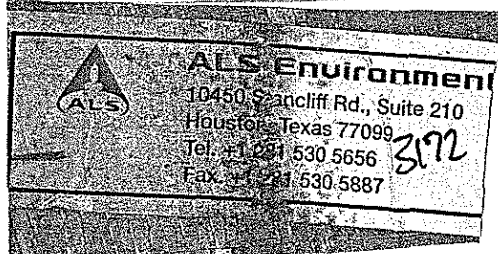
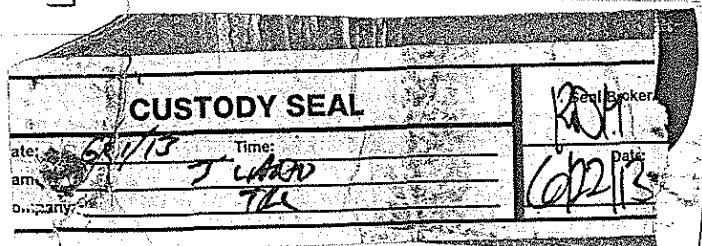
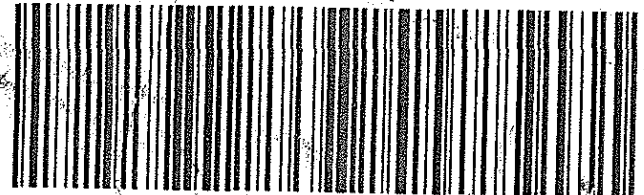
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PRIORITY OVERNIGHT

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Date: 3/21/13

Name:

Company:

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Seal Broken By:

Time:

3 JARD

Date: 6/22/13

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3122 CUSTODY S

Date: 6/21/13

Name: J JARD

Company: TR

EAL

Seal Broken By:

Date: 6/22/13

ORIGIN ID:HOBA (512) 329-6080
T R C ENVIRONMENTAL CORP
505 E HUNTLAND DR STE 250
AUSTIN, TX 787523740
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TO

ALS LABORATORY SERVICES
10450 STANCLIFF RD
STE 210
HOUSTON TX 77099

(281) 530-5656

REF:

DEPT:

FedEx
Express



TO

ALS LABORATORY SERVICES
10450 STANCLIFF RD
STE 210
HOUSTON TX 77099

(281) 530-5656

REF:

DEPT:

FedEx
Express



2 of 5
MPS# 7957 9201 4430
0681
Mstr# 8020 3307 4443

SATURDAY 12:00
PRIORITY OVERNIGHT

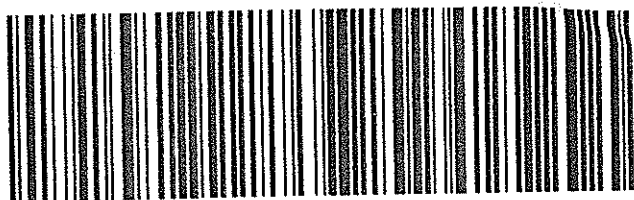
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SATURDAY 12:00P
PRIORITY OVERNIGHT

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TX-US IAH

3036



ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUSTODY SEAL
Date: 6/21/13 Time: 1:40 PM
Name: J. L. LARSON
Company: TRL
Seal Broken By: [Signature]
Date: 6/22/13

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUSTODY SEAL
Date: 6/21/13 Time: 1:40 PM
Name: J. L. LARSON
Company: TRL
Seal Broken By: [Signature]
Date: 6/22/13

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Date: 6/21/13 Time: 1:40 PM
Name: J. L. LARSON
Company: TRL
Seal Broken By: [Signature]
Date: 6/22/13

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Date: 6/21/13 Time: 1:40 PM
Name: J. L. LARSON
Company: TRL
Seal Broken By: [Signature]
Date: 6/22/13

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Date: 5/26/13

Name:

Company:

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CUSTODY SEAL

Time:

J. JARD

TL

Seal Broken By:

Date:

6/22/13

mental

3122 CUSTODY S

Date: 6/22/13

Name: J. JARD

Company: TL

EAL

Seal Broken By:

Date:

6/22/13

ATTACHMENT F

SSL Calculation for Chloride Leaching to Groundwater

EVALUATION OF SOIL SCREENING LEVEL FOR CHLORIDE LEACHING TO GROUNDWATER

$$SSL = C_w \times \left[K_d + \left(\frac{\theta_w + \theta_a H'}{\rho_b} \right) \right]$$

Parameter	Definition (units)	Value	Source of Value
SSL	Soil Screening Level for migration to groundwater pathway (mg/kg)	867	Calculated (above equation)
C_w	Target soil leachate concentration (mg/L)	5,000	Calculated; C _w =NM WQCC Human Health Standard x DAF
HHS	Chloride WQCC Human Health Standard (mg/L)	250	20.6.2.3103 of the New Mexico Administrative Code
DAF	Dilution Attenuation Factor (unitless)	20	Default (Risk Assessment Guidance for Investigations and Remediations, Volume 1 (updated June 2012)
θ_w	Water-filled soil porosity (L _{water} /L _{soil})	0.26	Default (Risk Assessment Guidance for Investigations and Remediations, Volume 1 (updated June 2012)
K_d	Soil-water partition coefficient (L/kg)	0.00	Default conservative value
θ_a	Air-filled soil porosity (L _{air} /L _{soil})	0.17	Default (Risk Assessment Guidance for Investigations and Remediations, Volume 1 (updated June 2012)
H'	Henry's Law Constant (unitless)	0.00	Default conservative value
ρ_b	Dry soil bulk density (kg/L)	1.50	Default (Risk Assessment Guidance for Investigations and Remediations, Volume 1 (updated June 2012)

ATTACHMENT G

Material Safety Data Sheet for Gas Oil



HOLLYFRONTIER

NAVAJO REFINING COMPANY, LLC

MATERIAL SAFETY DATA SHEET - GAS OIL

SECTION 1 - PRODUCT and COMPANY IDENTIFICATION

MANUFACTURER:

NAVAJO REFINING COMPANY, LLC
PO BOX 159
ARTESIA, NM 88211-0159

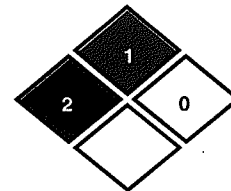
CONTACT INFORMATION:

Main Telephone – (575) 748-3311
Safety Department – (575) 365-8364 (24 Hours)
Environmental Department – (575) 365-8365 (24 Hours)

EMERGENCY PHONE NUMBERS:

CHEMTREC: 1-800-424-9300 (for fire, spill and emergency response information)
New Mexico Poison Information Center: 1-800-432-6866
Texas (El Paso) Poison Information Center: (915) 533-1244
Arizona Poison Information Center: 1-800-362-0101 or (602) 253-3334

PRODUCT NAME: Gas Oil
CAS NUMBER: 68783-08-4
CHEMICAL FAMILY: Petroleum Hydrocarbon
FORMULA: Mixture
SYNONYMS: FCC Feed Stock, VGO, Flasher Gas Oil, AGO,
Light Vacuum Gas Oil, LVGO, Heavy Vacuum Gas Oil,
HVGO



NFPA 704 (SECTION 16)

SECTION 2 - HAZARDOUS INGREDIENTS

HAZARDOUS			OSHA LIMITS (TWA)		NIOSH LIMITS (TWA)			ACGIH LIMITS (TWA)	
COMPONENTS	VOL %	CAS NO.	PEL	STEL	REL	STEL	IDLH	TLV	STEL
Gas Oil Containing	100%	68783-08-4	NE	NE	NE	NE	NE	NE	NE
Vacuum Distillate	40%	70592-78-8	NE	NE	NE	NE	NE	NE	NE

OTHER INGREDIENT INFORMATION: Gas Oil may contain traces of sulfur. **NE** designates Not Established.

SECTION 3 - PHYSICAL DATA

BOILING POINT: 350° – 1000°F
VAPOR PRESSURE: <1.0 mmHg @20°C
VAPOR DENSITY (AIR=1): N/A
SOLUBILITY IN WATER: Negligible

SPECIFIC GRAVITY (WATER=1): 0.914 – 0.928
% VOLATILE BY VOLUME: 0%
EVAPORATION RATE: N/A
AUTOIGNITION TEMP: 505°F*

ODOR THRESHOLD: N/A

APPEARANCE AND ODOR: Dark brown liquid with a hydrocarbon odor.

*Data for Fuel Oil #4.

GAS OIL

SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

CLASSIFICATION: Class IIIB

FLASH POINT: >200°F

FLAMMABLE LIMITS: LEL = 1.0%* UEL = 5.0%*

EXTINGUISHING MEDIA: Dry chemical (Class B fire extinguisher), carbon dioxide (CO₂), water spray or foam

SPECIAL FIRE FIGHTING PROCEDURES: Move container from fire area, if possible. Use water to keep fire-exposed containers cool. Use foam for spill control.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Evacuate a radius of 1500 feet for uncontrolled fires. Vapors are heavier than air and may travel great distances and flash back. Extinguish only if flow can be stopped.

*Data for Fuel Oil No. 4.

NFPA FIRE = 1 (low)

SECTION 5 - REACTIVITY DATA

STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID/INCOMPATIBILITY: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, sulfur dioxide

NFPA REACTIVITY = 0 (minimal)

SECTION 6 - HEALTH HAZARD DATA

ROUTES OF ENTRY: Ingestion, skin contact, inhalation.

HEALTH HAZARDS: Depression of central nervous system ranging from mild headache to anesthesia, coma, and death. Liver and kidney damage may occur.

CARCINOGENICITY: No data available.

SIGNS AND SYMPTOMS OF EXPOSURE: May cause nausea, vomiting, dizziness, headache, coughing or gagging and depression of the central nervous system.

EMERGENCY AND FIRST AID PROCEDURES:

INGESTION: Immediately seek medical attention. DO NOT induce vomiting. Give water to dilute, if conscious. Extreme care must be used to prevent aspiration.

INHALATION: Maintain respiration, assist with artificial respiration if needed and give oxygen if available and trained to do so. Seek medical attention.

NFPA HEALTH = 2 (Moderate)

GAS OIL

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Eliminate all sources of ignition. Contain spill. Use water fog to dilute or foam to suppress vapor cloud. Use SCBA to avoid breathing vapors. Absorb liquid with sand or clay. Larger spills may be picked up with a vacuum truck.

WASTE DISPOSAL: Dispose in accordance with RCRA regulations. Do not put in sewers or any watercourse.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: All equipment and storage containers should be properly grounded. This material is subject to OSHA and DOT regulations. Portable metal containers should be bonded to the storage container before transferring liquid.

OTHER PRECAUTIONS: Do not weld on containers unless they have been properly cleaned and purged using safe work practices. Avoid breathing vapors.

SECTION 8 - ENVIRONMENTAL AND SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Use NIOSH/MSHA-approved respiratory protection in areas exceeding exposure limits, the type to be determined by the degree of exposure.

VENTILATION: Use in well-ventilated area. Mechanical exhaust should be explosion-proof.

EYE/SKIN PROTECTION: Full-face protection, chemical protective gloves, and coveralls with long sleeves.

WORK/HYGIENIC PRACTICES: Remove contaminated clothing as soon as possible. Always wash after handling hazardous chemicals.

REFER TO DEPARTMENT OF TRANSPORTATION (DOT) EMERGENCY RESPONSE GUIDEBOOK GUIDE 128 FOR ADDITIONAL EMERGENCY INFORMATION.

This information is believed to be accurate and as reliable as information available to us. We make no warranty or guarantee as to its accuracy and assume no liability from its use. Users should determine the suitability of the information for their particular purposes.

SAMPLE T104B GAS OIL LOVINGTON

ASTM D-97 Pour Point of petroleum products

ASTM D-97 85°F

ASTM D-4402 Rotational Viscosity @ temperatures below

ASTM D-4402 @ 80°F 2780

ASTM D-4402 @ 90°F 678

ASTM D-4402 @ 100°F 169

ASTM D-4402 @ 110°F 61

ASTM D-4402 @ 120°F 36

ASTM D-4402 @ 200°F 19.2

ASTM D-4402 @ 210°F 17.6

DATE 7/30/12

#1 TESTER R.GREEN / M.BROWN

Note: From R. Green 10/17/12, units are Centipoise, cP (phone call w/D.Boyer)

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, September 13, 2013 4:11 PM
To: Combs, Robert (Robert.Combs@hollyfrontier.com)
Cc: Tsinnajinnie, Leona, NMENV; Dade, Randy, EMNRD; Bratcher, Mike, EMNRD
Subject: FW: 7/1/13 Fuel Oil Spill
Attachments: NRC Fuel Oil #6 - 07-2011.pdf

Robert:

Good afternoon. Can you give the agencies the status of the cleanup for the above fuel oil release in the rail loading area on 7/1/2013?

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Drive, Santa Fe, New Mexico 87505
Office: (505) 476-3490
E-mail: CarlJ.Chavez@State.NM.US
Website: <http://www.emnrd.state.nm.us/ocd/>
“Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?” To see how, please go to: “Pollution Prevention & Waste Minimization” at <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

From: Combs, Robert [mailto:Robert.Combs@hollyfrontier.com]
Sent: Thursday, July 18, 2013 3:27 PM
To: Chavez, Carl J, EMNRD
Cc: Holder, Mike
Subject: FW: 7/1/13 Fuel Oil Spill

Carl,

Following our conversation, I want to confirm that we should analyze for:

- TPH-GRO cleanup level: <100 ppm
- TPH-DRO cleanup level: <100 ppm
- BTEX cleanup level: <50 ppm; benzene cleanup level <10 ppm

The first group of samples was received by the lab today, so I will update them ASAP so they can get started.

Please call me if you think of anything else.

Thanks,
Robert

Robert Combs
Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159

office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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From: Combs, Robert
Sent: Thursday, July 18, 2013 2:42 PM
To: 'Chavez, Carl J, EMNRD'
Cc: Holder, Mike
Subject: FW: 7/1/13 Fuel Oil Spill

Carl,

Attached is the MSDS for the material released. The final C-141 will include:

- Color photos of the excavated area
- Analytical reports
- Markup of spill location indicating lateral extent and sample locations.

As I mentioned earlier, NMED-HWB asked that we run TPH-DRO; are there any other analytes that you would suggest besides BTEX?

We are currently preparing a workplan to address spills within the refineries, but the draft is not yet complete. The fuel oil spill has already been cleaned with the following approach:

1. Free liquid was removed.
2. Saturated and stained soil was excavated.
3. Samples were collected of the clean soil in the bottom of the excavation.

The lab has received the first group of samples and we need to finalize the analytical suite so they can get started.

I'll give you a call in a few minutes to discuss further.

Thanks,
Robert

Robert Combs
Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com






















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From: Chavez, Carl J, EMNRD [<mailto:CarlJ.Chavez@state.nm.us>]
Sent: Thursday, July 11, 2013 7:47 AM
To: Combs, Robert; Horowitz, Ruth, NMENV
Cc: Holder, Mike; Schultz, Michele; Strange, Aaron; Dade, Randy, EMNRD; Tsinnajinnie, Leona, NMENV; Dhawan, Neelam, NMENV; VonGonten, Glenn, EMNRD; Sanchez, Daniel J., EMNRD
Subject: RE: 7/1/13 Fuel Oil Spill

Robert:

Good morning. Could you please provide an MSDS that describes the specific type of fuel oil (see sample list below) released to the ground. The water table as I recall is about 25 – 30 below ground level.

The final C-141 should also include color photos of the excavation with analytical data provided as verification of remediation.

	Product Name	Manufacturer Name	Issue Date	Language	Doc. Ref.	View MSDS
1	■ #2 Fuel Oil	Somerset Refinery Incorporated	1995-12-12	English	431198	
2	■ #6 Fuel Oil	Somerset Refinery Incorporated	2003-02-11	English	407047	
3	■ #6 Fuel Oil / Road Oil	Somerset Refinery Incorporated	2003-02-11	English	407047	
4	◆ ASTM D396; Diesel Oil; Home Heating Oil; No. 2 Fuel Oil; Number 2 Burner Fuel	National Cooperative Refinery Association	2012-06-12	English	2040720	
5	◆ Burner Fuel, No. 5 Fuel Oil	Giant Refining Co. // Giant Yorktown Refinery	2006-06-21	English	1005433	
6	◆ Diesel Fuel Oil	Giant Refining Co. // Giant Yorktown Refinery	2006-07-01	English	1005434	
7	◆ Fuel Oil #1	National Cooperative Refinery Association	1992-11-20	English	2446766	
8	■ Fuel Oil #1	Petro Star North Pole Refinery	2005-01-28	English	3524083	
9	◆ Fuel Oil 2	Petro Star North Pole Refinery	2005-08-25	English	3524084	
10	◆ Fuel Oil No. 1	Giant Refining Co. // Giant Yorktown Refinery	2006-08-17	English	881079	
11	◆ Fuel Oil No. 1	National Cooperative Refinery Association	2010-12-14	English	2040719	
12	◆ Fuel Oil No. 1; Coal Oil; Range Oil; Kerosene; K-10; Kerosene; Gasoline,	National Cooperative Refinery Association	2010-12-14	English	2040719	
13	◆ Fuel Oil No. 2	National Cooperative Refinery Association	2005-12-19	English	1536633	
14	◆ Fuel Oil No. 2	National Cooperative Refinery Association	2012-06-12	English	2040720	
15	■ Fuel Oil No. 5	Giant Refining Co. // Giant Yorktown Refinery	2006-06-21	English	1005433	
16	■ Fuel Oil No. 5	Giant Refining Co. // Giant Yorktown Refinery	2006-06-21	English	1005433	
17	■ IFB #1 Fuel Oil	Indiana Farm Bureau Refinery	2000-04-01	English	39601	
18	◆ No. 1-D Fuel Oil	National Cooperative Refinery Association	2012-12-07	English	1535183	
19	◆ No. 2 Fuel Oil	Giant Refining Co. // Giant Yorktown Refinery	2006-07-01	English	1005434	
20	◆ No. 2 Fuel Oil	National Cooperative Refinery Association	2005-12-19	English	1536633	
21	◆ No. 2 Fuel Oil	National Cooperative Refinery Association	2012-06-12	English	2040720	

22 ■ <u>ULSD No. 1 Fuel Oil</u>	<u>National Cooperative Refinery Association</u>	2010-12-14	English	2040719 
23 ■ <u>ULSD No. 2 Fuel Oil</u>	<u>National Cooperative Refinery Association</u>	2012-06-12	English	2040720 

Thank you.

Carl J. Chavez, CHMM
 New Mexico Energy, Minerals & Natural Resources Department
 Oil Conservation Division, Environmental Bureau
 1220 South St. Francis Drive, Santa Fe, New Mexico 87505
 Office: (505) 476-3490
 E-mail: CarlJ.Chavez@State.NM.US
 Website: <http://www.emnrd.state.nm.us/ocd/>
 “Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?” To see how, please go to: “Pollution Prevention & Waste Minimization” at
<http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

From: Combs, Robert [<mailto:Robert.Combs@hollyfrontier.com>]
Sent: Wednesday, July 10, 2013 4:36 PM
To: Chavez, Carl J, EMNRD; Horowitz, Ruth, NMENV
Cc: Holder, Mike; Schultz, Michele; Strange, Aaron; Dade, Randy, EMNRD
Subject: FW: 7/1/13 Fuel Oil Spill

Ruth and Carl,

Attached is the Initial C-141 report for the fuel oil spill at the Artesia refinery on 7/1/13. A final C-141 report will follow and will include photos and waste disposal details.

If there are any questions, please call me at 575-308-2718.

Thanks,
 Robert

Robert Combs
 Environmental Specialist
 The HollyFrontier Companies
 P.O. Box 159
 Artesia, NM 88211-0159
 office: 575-746-5382
 cell: 575-308-2718
 fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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From: Combs, Robert
Sent: Tuesday, July 09, 2013 4:50 PM
To: 'Chavez, Carl J, EMNRD'; Ruth Horowitz (ruth.horowitz@state.nm.us)
Cc: Holder, Mike
Subject: 7/1/13 Fuel Oil Spill
Importance: High

Ruth and Carl,

I just realized that I inadvertently missed the deadline for submittal of the initial C-141 report for the fuel oil spill on July 1, 2013. I need to collect a few last details and will do my best to have it submitted to you by the end of the day tomorrow (7/10/13).

Sorry for the delay.
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
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HOLLYFRONTIER

NAVAJO REFINING COMPANY, LLC

MATERIAL SAFETY DATA SHEET - #6 FUEL OIL

SECTION 1 - PRODUCT and COMPANY IDENTIFICATION

MANUFACTURER:

NAVAJO REFINING COMPANY, LLC
PO BOX 159
ARTESIA, NM 88211-0159

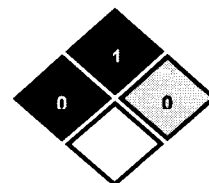
CONTACT INFORMATION:

Main Telephone – (575) 748-3311
Safety Department – (575) 365-8364 (24 Hours)
Environmental Department – (575) 365-8365 (24 Hours)

EMERGENCY PHONE NUMBERS:

CHEMTREC: 1-800-424-9300 (for fire, spill and emergency response information)
New Mexico Poison Information Center: 1-800-432-6866
Texas (El Paso) Poison Information Center: (915) 533-1244
Arizona Poison Information Center: 1-800-362-0101 or (602) 253-3334

PRODUCT NAME: #6 Fuel Oil
CAS NUMBER: 68476-33-5
CHEMICAL FAMILY: Aromatic Hydrocarbon
FORMULA: N/A
SYNONYMS: UN 1993 Fuel Oil, Bunker C, Residual Fuel Oil #6
SHIPPING NAME: Fuel Oil (No. 6), 3 Combustible, NA 1993, 111



NFPA 704 (SECTION 16)

SECTION 2 - HAZARDOUS INGREDIENTS

HAZARDOUS			OSHA LIMITS (TWA)		NIOSH LIMITS (TWA)			ACGIH LIMITS (TWA)	
COMPONENTS	VOL %	CAS NO.	PEL	STEL	REL	STEL	IDLH	TLV	STEL
Fuel Oil, Residual	100%	68476-33-5	5 mg/m ³ *	5 mg/m ³ *	NE	NE	NE	5 mg/m ³ *	NE
Hydrogen Sulfide	Trace	7783-06-4	10 ppm C**	50 ppm (Max)	10 ppm C	N/A	100 ppm	10 ppm	15 ppm

OTHER INGREDIENT INFORMATION: Complex mixture of high boiling point hydrocarbons. This product contains trace amounts of hydrogen sulfide, a toxic gas. * Oil mist, mineral.

NOTE: ** NM OSHA limit (normally 20 ppm C). C designates Ceiling Value, which should not be exceeded at any time. (Max) designates 10-minute maximum peak value, which should not to be exceeded at any time. NE designates Not Established.

SECTION 3 - PHYSICAL DATA

BOILING POINT: >700°F
VAPOR PRESSURE: N/A
VAPOR DENSITY (AIR=1): N/A
SOLUBILITY IN WATER: Insoluble
ODOR THRESHOLD: N/A

SPECIFIC GRAVITY (WATER=1): 0.9-1.1
% VOLATILE BY VOLUME: 0%
EVAPORATION RATE: N/A
AUTOIGNITION TEMP: 760°F

APPEARANCE AND ODOR: Thick black liquid at room temperature with an odor of asphalt.

#6 FUEL OIL

SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

CLASSIFICATION: Class IIIA, Combustible Liquid

FLASH POINT: >150°F (COC)

FLAMMABLE LIMITS: LEL = 1.0 UEL = 20.0

EXTINGUISHING MEDIA: Dry chemical (Class B fire extinguisher), carbon dioxide

SPECIAL FIRE FIGHTING PROCEDURES: Move container from fire area, if possible. Use water to keep fire-exposed containers cool.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Evacuate a radius of 1500 feet for uncontrolled fires. Water or foam may cause frothing and evolution of steam. Gases may accumulate from low boiling hydrocarbons and hydrogen sulfide. Iron sulfide may also accumulate.

NFPA FIRE = 2 (moderate)

SECTION 5 - REACTIVITY DATA

STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID/INCOMPATIBILITY: Strong oxidizers.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, sulfur dioxide

NFPA REACTIVITY = 0 (minimal)

SECTION 6 - HEALTH HAZARD DATA

ROUTES OF ENTRY: At room temperature, No. 6 Fuel Oil is a thick liquid. This material is frequently transported and stored hot. Burns or exposure to product fumes may occur from product at elevated temperatures.

HEALTH HAZARDS: Dermatitis, eye, skin or lung irritation. Hot fuel oil can cause severe burns. Exposure to over 600 ppm of hydrogen sulfide can be rapidly fatal.

CARCINOGENICITY: While No. 6 Fuel Oil is not listed by NTP or IARC as a human carcinogen, it contains polycyclic aromatic hydrocarbons which the NTP lists as anticipated human carcinogens.

SIGNS AND SYMPTOMS OF EXPOSURE: Skin irritation, irritation of nose and throat, burns from contact with hot fuel oil.

EMERGENCY AND FIRST AID PROCEDURES:

INHALATION: Maintain respiration, assist with artificial respiration if needed and give oxygen if available and trained to do so. Seek medical attention.

BURNS: Immediately cool skin by quenching with cold water. Cover with a sterile dressing and seek medical assistance.

NFPA HEALTH = 2 (moderate)

#6 FUEL OIL

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Contain spill. Allow to cool. Remove sources of ignition. Absorb using clay or earth and pick up with shovels ;or tractors. Place in appropriate waste containers.

WASTE DISPOSAL: Dispose in accordance with RCRA regulations. Do not put in sewers or any water course.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Fuel oil is normally stored at high temperatures. It can cause severe burns.

OTHER PRECAUTIONS: Avoid breathing vapors. Always wear protective equipment and clothing when handling hot fuel oil. Do not weld on containers unless they have been properly cleaned and purged using safe work practices.

SECTION 8 - ENVIRONMENTAL AND SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Use NIOSH/MSHA approved respiratory protection in areas exceeding exposure limits, the type to be determined by the degree of exposure.

VENTILATION: Use in well ventilated area. Mechanical exhaust should be explosion proof. Be aware that a hazardous concentration of vapors may form in headspace of tanks above hot product.

EYE/SKIN PROTECTION: Full face protection, heavy leather gloves if hot, and coveralls with long sleeves. Wear impervious gloves to avoid skin contact.

WORK/HYGIENIC PRACTICES: Remove contaminated clothing as soon as possible. Always wash after handling hazardous chemicals.

NOTICE: This product contains a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

REFER TO DEPARTMENT OF TRANSPORTATION (DOT) EMERGENCY RESPONSE GUIDEBOOK GUIDE 111 FOR ADDITIONAL EMERGENCY INFORMATION.

This information is believed to be accurate and as reliable as information available to us. We make no warranty or guarantee as to its accuracy and assume no liability from its use. Users should determine the suitability of the information for their particular purposes.

Chavez, Carl J, EMNRD

From: Combs, Robert <Robert.Combs@hollyfrontier.com>
Sent: Wednesday, July 10, 2013 4:36 PM
To: Chavez, Carl J, EMNRD; Horowitz, Ruth, NMENV
Cc: Holder, Mike; Schultz, Michele; Strange, Aaron; Dade, Randy, EMNRD
Subject: FW: 7/1/13 Fuel Oil Spill
Attachments: C-141 2013-0701 Fuel Oil Spill initial report and aerial photo 071013.pdf

Ruth and Carl,

Attached is the Initial C-141 report for the fuel oil spill at the Artesia refinery on 7/1/13. A final C-141 report will follow and will include photos and waste disposal details.

If there are any questions, please call me at 575-308-2718.

Thanks,
Robert

Robert Combs
Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
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Sorry for the delay.
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1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Navajo Refining Company, L.L.C.	Contact	Robert Combs
Address	501 E. Main St. Artesia, NM 88210	Telephone No.	575-746-5382
Facility Name	Artesia Refinery	Facility Type	Petroleum Refinery
Surface Owner	Mineral Owner	API No.	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release	Fuel Oil	Volume of Release	~150 bbl	Volume Recovered	~30 bbl
Source of Release	Rail loading area	Date and Hour of Occurrence	07/01/2013 at ~17:15	Date and Hour of Discovery	07/01/2013 at ~17:30
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	OCD Santa Fe, Carl Chavez, left message OCD Artesia, Randy Dade NMED Santa Fe, Ruth Horowitz (Spill Hotline), left message		
By Whom?	Mike Holder/Robert Combs	Date and Hour	7/1/13 at ~17:40		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

At ~17:30 on 07/01/13, it was reported that a rail car had been overtopped and caused the release of approximately 150 bbls of fuel oil. The BPL operator had inadvertently began to fill one railcar instead of the two he had planned, which allowed the one car to more quickly than expected. When the operator noticed the spill, he immediately shut down the transfer pump and closed the valve to the railcar. The impacted area is located along the rail loading racks and was approximately 100 feet long by 30 feet wide (see attached aerial photo markup of area).

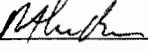
Describe Area Affected and Cleanup Action Taken.*

The spill was contained between the two rails and some small containment berms. Vacuum trucks were dispatched to the area and were able to recover approximately 30 bbls of the spilled product. Excavation of the impacted area is underway and the stained material will be disposed at a non-hazardous disposal facility.

A final C-141 including photos and waste disposal information will follow.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

OIL CONSERVATION DIVISION

Signature: 	Approved by Environmental Specialist:	
Printed Name: Robert Combs		
Title: Environmental Specialist	Approval Date:	Expiration Date:
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 07/10/13 Phone: 575-308-2718		

* Attach Additional Sheets if Necessary

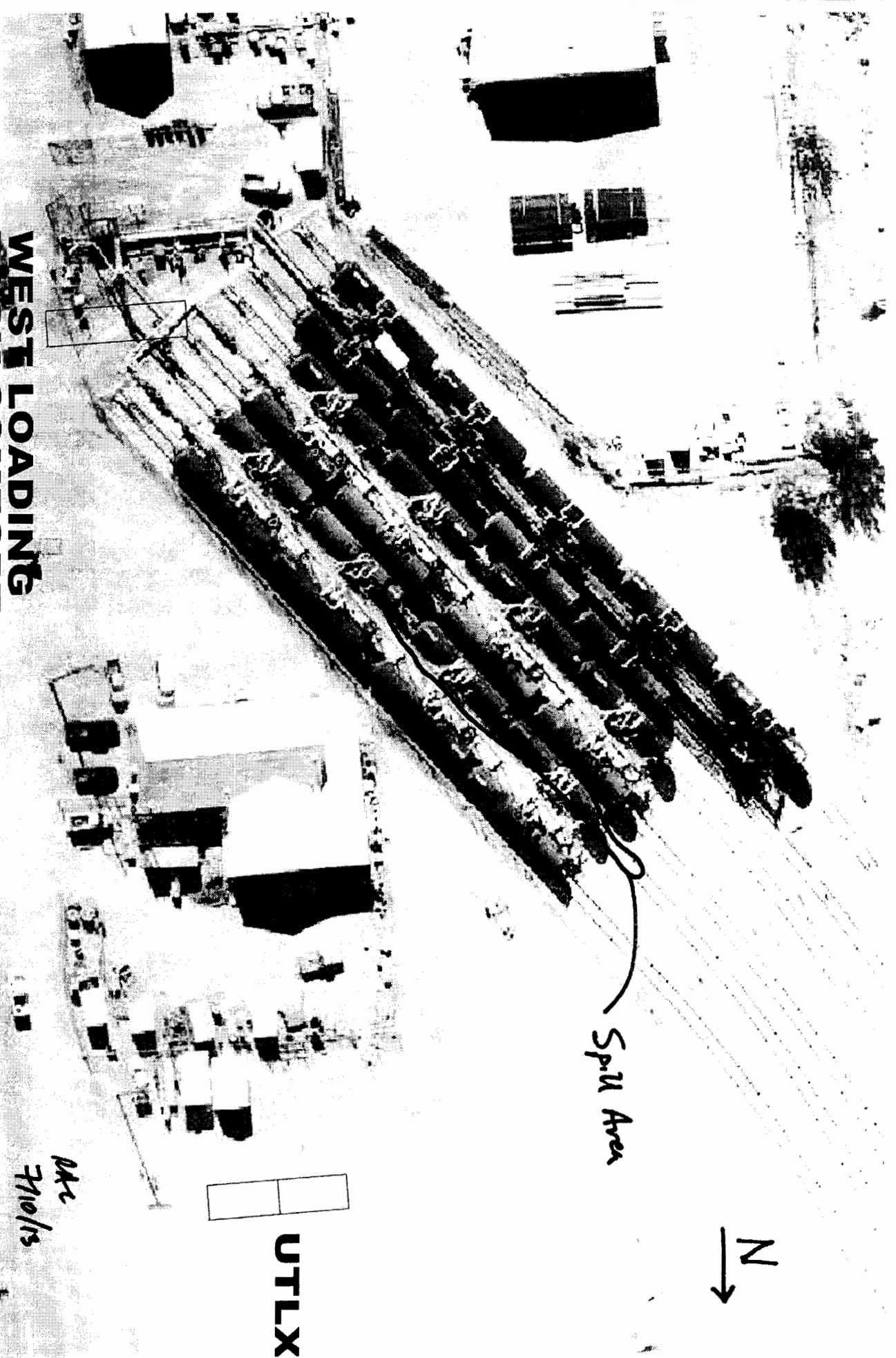
WEST LOADING

Spill Area

N
↓

UTLX

AKC
710/13



Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, September 12, 2013 2:31 PM
To: Schultz, Michele (Michele.Schultz@hollyfrontier.com)
Cc: Sanchez, Daniel J., EMNRD; VonGonten, Glenn, EMNRD; Dade, Randy, EMNRD; Horowitz, Ruth, NMENV
Subject: FW: NRC#1059999 Release ~ 5 bbl Carbon Black Oil to Eagle Draw Drainage Tributary

Miki:

Please submit a C-141 Form to me with a copy to the OCD Artesia District Office. The Final C-141 should include photos of the release before and after cleanup.

Eagle Draw may be considered "Waters of the State" as this drains eastward to the Pecos River.

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division, Environmental Bureau
1220 South St. Francis Drive, Santa Fe, New Mexico 87505
Office: (505) 476-3490
E-mail: CarlJ.Chavez@State.NM.US
Website: <http://www.emnrd.state.nm.us/ocd/> "Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?" To see how, please go to: "Pollution Prevention & Waste Minimization" at <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

-----Original Message-----

From: Horowitz, Ruth, NMENV
Sent: Thursday, September 12, 2013 2:24 PM
To: Chavez, Carl J, EMNRD
Subject: FW: NRC#1059999

fyi

-----Original Message-----

From: HQS-PF-flidr-NRC@uscg.mil [mailto:HQS-PF-flidr-NRC@uscg.mil]
Sent: Thursday, September 12, 2013 2:20 PM
To: Horowitz, Ruth, NMENV
Subject: NRC#1059999

NATIONAL RESPONSE CENTER 1-800-424-8802

GOVERNMENT USE ONLYGOVERNMENT USE ONLY***

Information released to a third party shall comply with any applicable federal and/or state Freedom of Information and Privacy Laws

INCIDENT DESCRIPTION

*Report taken by: MST2 JOSHUA DIAZ at 16:14 on 12-SEP-13

Incident Type: MOBILE

Incident Cause: NATURAL PHENOMENON

Affected Area: EAGLE DRAW

Incident occurred on 12-SEP-13 at 13:00 local incident time.

Affected Medium: WATER EAGLE DRAW

REPORTING PARTY

Name: MICHELE SCHULTZ

Organization: NAVAJO REFINERY

Address: 501 E. MAIN ST
ARTESIA, NM

PRIMARY Phone: (575)7465281

Type of Organization: PRIVATE ENTERPRISE

SUSPECTED RESPONSIBLE PARTY

Name: MICHELE SCHULTZ

Organization: NAVAJO REFINERY

Address: 501 E. MAIN ST
ARTESIA, NM

PRIMARY Phone: (575)7465281

INCIDENT LOCATION

501 E. MAIN ST County: EDDY

City: ARTESIA State: NM

RELEASED MATERIAL(S)

CHRIS Code: OTH Official Material Name: OTHER OIL

Also Known As: CARBON BLACK OIL

Qty Released: 5 BARREL(S) Qty in Water: 0 UNKNOWN AMOUNT

DESCRIPTION OF INCIDENT

CALLER STATED THAT THEY ARE HAVING HEAVY RAINFALL AND A DRIVER
RELEASED OIL INTO THE STORM WATER RUNOFF THAT IS USUALLY DRY.

SENSITIVE INFORMATION

INCIDENT DETAILS

Road Mile Marker:

Length of Service Disruption:

Airbag Deployed: UNKNOWN

---SHEEN INFORMATION---

Sheen Color: RAINBOW
Sheen Odor Description:
Sheen Travel Direction:
Sheen Size Length:
Sheen Size Width:
---WATER INFORMATION---
Body of Water: EAGLE DRAW
Tributary of:
Nearest River Mile Marker:
Water Supply Contaminated: UNKNOWN
---MOBILE INFORMATION---
Vehicle Type: OTHER
Vehicle Number: UNKNOWN
Trailer/Tanker Number:
Vehicle Fuel Capacity:
Cargo Capacity:
Cargo On Board:
Hazmat Carrier: UNKNOWN
Carrier Licensed: UNKNOWN
Suspected Non Compliance: UNKNOWN

IMPACT

Fire Involved: NO Fire Extinguished: UNKNOWN

INJURIES: NO Hospitalized: Empl/Crew: Passenger:
FATALITIES: NO Empl/Crew: Passenger: Occupant:
EVACUATIONS:NO Who Evacuated: Radius/Area:

Damages: NO

	Hours	Direction of
Closure Type Description of Closure	Closed	Closure
N		
Air:		
N	Major	
Road:	Artery:N	
N		
Waterway:		
N		
Track:		

Environmental Impact: UNKNOWN
Media Interest: UNKNOWN Community Impact due to Material:

REMEDIAL ACTIONS

DEPLOYED BOOM, WENT DOWNSTREAM TO PLACE MORE BOOM.
Release Secured: UNKNOWN
Release Rate:
Estimated Release Duration:

WEATHER

Weather: RAINY, °F

ADDITIONAL AGENCIES NOTIFIED

Federal:

State/Local:

State/Local On Scene:

State Agency Number:

NOTIFICATIONS BY NRC

AZ STATE MINE INSPECTOR (COMMAND CENTER)

12-SEP-13 16:19 (602)5425971

DHS NOC (NOC)

12-SEP-13 16:19 (202)2828114

COLORADO INFO ANALYSIS CENTER (FUSION CENTER)

12-SEP-13 16:19 (720)8526705

DOT CRISIS MANAGEMENT CENTER (MAIN OFFICE)

12-SEP-13 16:19 (202)3661863

U.S. EPA VI (MAIN OFFICE)

(866)3727745

FEDERAL EMERGENCY MANAGEMENT AGENCY (MAIN OFFICE)

12-SEP-13 16:19 (800)6347084

INFO ANALYSIS AND INFRA PROTECTION (MAIN OFFICE)

12-SEP-13 16:19

NATIONAL INFRASTRUCTURE COORD CTR (MAIN OFFICE)

12-SEP-13 16:19 (202)2829201

NATIONAL INFRASTRUCTURE COORD CTR (INFRASTRUCTURE PROTECTION)

12-SEP-13 16:19 (202)2829201

NOAA RPTS FOR NM (MAIN OFFICE)

12-SEP-13 16:19 (206)5264911

NATIONAL RESPONSE CENTER HQ (AUTOMATIC REPORTS)

12-SEP-13 16:19 (202)2671136

NM HWB (MAIN OFFICE)

12-SEP-13 16:19 (505)4766025

TCEQ (MAIN OFFICE)

12-SEP-13 16:19 (512)2392507

USCG DISTRICT 8 (MAIN OFFICE)

12-SEP-13 16:19 (504)5896225

ADDITIONAL INFORMATION

*** END INCIDENT REPORT #1059999 ***

Report any problems by calling 1-800-424-8802

PLEASE VISIT OUR WEB SITE AT <http://www.nrc.uscg.mil>

Chavez, Carl J, EMNRD

From: Schultz, Michele <Michele.Schultz@hollyfrontier.com>
Sent: Tuesday, October 16, 2012 10:44 AM
To: Chavez, Carl J, EMNRD
Cc: Holder, Mike; Combs, Robert; Strange, Aaron
Subject: Initial C-141-T 815 diesel release 101112
Attachments: 2012-10-11 T-815 Release 12 bbl diesel C141.pdf

Carl – Attached is the C-141 form for a diesel release that occurred at Tank 815 on 10/11/12. As this release occurred within a diked area that has a RCRA permit, we are awaiting instructions from NMED on acceptable methods to proceed with soil clean up.

Micki Schultz, P.E., CHMM
Environmental Specialist, Water and Waste Programs
Navajo Refining Company
575-746-5281 (office)
575-308-2141 (cell)
micki.schultz@hollyfrontier.com

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State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Navajo Refining Co. LLC	Contact Micki Schultz	
Address 501 E. Main St. Artesia, NM 88210	Telephone No. 575-746-5281	
Facility Name Navajo Refinery	Facility Type Petroleum Refinery	
Surface Owner	Mineral Owner	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
-------------	---------	----------	-------	---------------	------------------	---------------	----------------	--------

Latitude 32°50'36.70"N Longitude 104°23'46.38"W

NATURE OF RELEASE

Type of Release Diesel release	Volume of Release <12 bbls	Volume Recovered 0 bbls
Source of Release Sampling valve left open	Date and Hour of Occurrence 10/11/12 @ afternoon/evening	Date and Hour of Discovery 10/11/12 @ ~ 8:30 pm
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

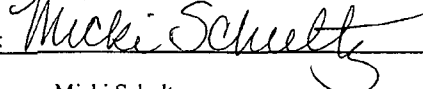
A sample valve was left open during a prior sampling and was not immediately noticed because the tank liquid level was below the sample port height. When the tank level rose above sample port height, a release of diesel occurred. The subsequent sampler noticed stained soil, closed the valve, and reported.

Describe Area Affected and Cleanup Action Taken.*

Tank 815 inside dike, 20 ft x 30 ft stained soil, sheen on rainwater which was removed with a vacuum truck.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

OIL CONSERVATION DIVISION

Signature: 	Approved by Environmental Specialist:	
Printed Name: Micki Schultz	Approval Date:	Expiration Date:
Title: Environmental Specialist	Conditions of Approval:	
E-mail Address: micki.schultz@hollyfrontier.com	Attached <input type="checkbox"/>	
Date: 10/16/2012	Phone: 757-746-5281	

* Attach Additional Sheets If Necessary

Chavez, Carl J, EMNRD

From: Schultz, Michele <Michele.Schultz@hollyfrontier.com>
Sent: Monday, September 24, 2012 3:53 PM
To: Chavez, Carl J, EMNRD
Cc: Holder, Mike; Combs, Robert; Strange, Aaron
Subject: 09-22-12 Pitch spill
Attachments: 2012-09-22 C141.pdf

Carl – Attached is the initial C141 form for a pitch overflow that occurred at our rail loading facility over the weekend. If you have questions or require additional information regarding this event, please contact me. The final report will follow once we complete the disposal of the materials.

Micki Schultz, P.E., CHMM
Environmental Specialist, Water and Waste Programs
Navajo Refining Company
575-746-5281 (office)
575-308-2141 (cell)
micki.schultz@hollyfrontier.com

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1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Navajo Refining Co. LLC	Contact Micki Schultz
Address 501 E. Main St. Artesia, NM 88210	Telephone No. 575-746-5281
Facility Name Navajo Refinery	Facility Type Petroleum Refinery

Surface Owner	Mineral Owner	API No.
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
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Latitude 32°50'36.70"N Longitude 104°23'46.38"W

NATURE OF RELEASE

Type of Release Pitch Spill	Volume of Release ~10 bbls	Volume Recovered ~10 bbls
Source of Release Valve leak after rail car was loaded	Date and Hour of Occurrence 9/22/12 @ ~ 6:00 pm	Date and Hour of Discovery 9/22/12 @ ~ 6:10 pm
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

A railcar was loaded with pitch and the loading valve was closed as normal when the car became full. The valve leaked and continued to fill pitch into the railcar. It was discovered when the car overflowed. The leaking valve was blocked.

Describe Area Affected and Cleanup Action Taken.*

Railcar loading area, 5 ft x 15 ft. along track. Pitch set up quickly when it cooled to a solid. A work authorization was entered for clean up.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

OIL CONSERVATION DIVISION

Signature:

Micki Schultz

Printed Name: Micki Schultz

Approved by Environmental Specialist:

Title: Environmental Specialist

Approval Date:

Expiration Date:

E-mail Address: micki.schultz@hollyfrontier.com

Conditions of Approval:

Attached ☐

Date: 9/24/2012

Phone: 757-746-5281

* Attach Additional Sheets If Necessary



SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

NEW MEXICO
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1

Santa Fe, New Mexico 87505-6303

Phone (505) 476-6000 Fax (505) 476-6030

www.nmenv.state.nm.us



DAVE MARTIN
Secretary

BUTCH TONGATE
Deputy Secretary

JAMES H. DAVIS, Ph.D.
Director
Resource Protection Division

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

July 5, 2012

Mr. Robert Combs
Navajo Refining Company
P.O. Box 159
Artesia, New Mexico 88211-0159

**RE: REQUEST FOR CLARIFICATION OF MERCURY SOIL SCREENING
LEVELS AND APPROVAL FOR SECOND EXTENSION REQUEST FOR
MERCURY RELEASE REMEDY COMPLETION REPORT
NAVAJO REFINING COMPANY, ARTESIA REFINERY
EPA ID NO. NMD048918817
HWB-NRC-09-003**

Dear Mr. Combs:

The New Mexico Environment Department (NMED) has received Navajo Refining Company, Artesia Refinery's (the Permittee) *Request for Clarification of Mercury Soil Screening Levels and Second Request for Extension for Mercury Release Remedy Completion Report* extension request dated June 25, 2012. The stated reason for the request is due to the Permittee's request for clarification of the mercury soil screening level changes through time to properly evaluate the remedial actions completed to-date and to determine whether any of the soil remaining in place poses an unacceptable risk to potential receptors. The Permittee must communicate any concerns related to future submittal dates with NMED prior to the deadlines provided in NMED's response letters. NMED hereby approves the submittal extension for the Mercury Release Remedy Completion Report. The report must be submitted no later than **September 1, 2012**.

R. Combs
July 5, 2012
Page 2 of 2

If you have any questions regarding this letter, please contact Leona Tsinnajinnie of my staff at (505) 476-6057.

Sincerely,

A handwritten signature in dark ink, appearing to read "John E. Kielling", with a stylized flourish at the end.

John E. Kielling
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
L. Tsinnajinnie, NMED HWB
C. Chavez, OCD
J. Lackey, NRC
P. Krueger, Arcadis
K. Schnebele, Arcadis

File: Reading File and NRC 2012, HWB-NRC-09-003

Chavez, Carl J, EMNRD

From: Schultz, Michele <Michele.Schultz@hollyfrontier.com>
Sent: Thursday, June 07, 2012 4:37 PM
To: Chavez, Carl J, EMNRD; Horowitz, Ruth, NMENV
Cc: Lackey, Johnny; Holder, Mike; Strange, Aaron; Combs, Robert
Subject: C-141 initial report--2012-06-03 sump overflow
Attachments: 3947_001.pdf

Please see the attached initial C-141 report for the sump overflow that occurred on 6/3/12.

If there are any questions, please contact me at 575-746-5281.

Micki Schultz, P.E., CHMM
Environmental Specialist, Water and Waste Programs
Navajo Refining Company
575-746-5281 (office)
575-308-2141 (cell)
micki.schultz@hollyfrontier.com

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State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Navajo Refining Company, L.L.C.	Contact	Micki Schultz
Address	501 E. Main St, Artesia, NM 88210	Telephone No.	575-746-5281
Facility Name	Artesia Refinery	Facility Type	Petroleum Refinery

Surface Owner	Mineral Owner	API No.
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
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Latitude _____ Longitude _____

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release	Diesel and water	Volume of Release	~20 bbl	Volume Recovered	Unknown
Source of Release	Sump at Tank 834	Date and Hour of Occurrence	6/3/12 ~9:00	Date and Hour of Discovery	6/3/12 ~9:20
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?			
By Whom?	Date and Hour				
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

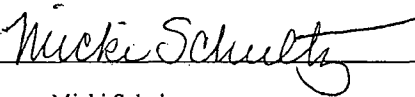
At ~9:30 on 6/3/2012, the Control Room notified Environmental that a overflow had occurred at the Tank 834 separation sump due to an automatic sump pump instrumentation malfunction. Pooled liquid was removed via vacuum truck. The malfunctioning control valve was repaired.

Describe Area Affected and Cleanup Action Taken.*

A vacuum truck was dispatched to recover freestanding water/diesel released; the volume recovered will be reported in the final report.

A final C-141 report will be submitted and will include all applicable analytical reports and associated disposal records.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	<u>OIL CONSERVATION DIVISION</u>		
Printed Name: Micki Schultz	Approved by Environmental Specialist:		
Title: Environmental Specialist	Approval Date:	Expiration Date:	
E-mail Address: micki.schultz@hollyfrontier.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 6/7/12	Phone: 575-746-5281		

* Attach Additional Sheets If Necessary

Chavez, Carl J, EMNRD

From: Strange, Aaron <Aaron.Strange@hollyfrontier.com>
Sent: Monday, June 25, 2012 3:06 PM
To: Chavez, Carl J, EMNRD; Dade, Randy, EMNRD; Cobrain, Dave, NMENV; Tsinnajinnie, Leona, NMENV
Cc: Holder, Mike; Lackey, Johnny; Schultz, Michele; Combs, Robert
Subject: C-141
Attachments: 2012-6-11 Fire P-454 Gas Oil Booster Pump.pdf

Leona, Carl, Randy and Dave,

Please see the attached final C-141 report for the small fire that occurred on 6/11/2012.

If there are any questions, please contact me at 575-746-5468.

Thanks,
Aaron

Aaron Strange
Environmental Technician, Senior

Environmental Department
Navajo Refining Co, LLC
Artesia NM
Off: (575) 746-5468
Cell: (575) 703-5057

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Energy Minerals and Natural Resources

Oil Conservation Division
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Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

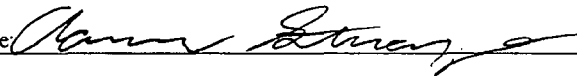
Name of Company	Navajo Refining Co., L.L.C.	Contact	Aaron Strange
Address	P.O. Box 159	Telephone No.	575-746-5468
Facility Name	Artesia facility	Facility Type	Petroleum Refinery
Surface Owner	Mineral Owner	API No.	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
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Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release	small fire	Volume of Release	unknown	Volume Recovered	N/A
Source of Release	Pump P-454 Bearing Failure (on the motor)	Date and Hour of Occurrence	~12:12 11 June, 2012	Date and Hour of Discovery	~12:12 11 June, 2012
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Emailed Carl Chavez, Leona Tsinnajinnie, and Randy Dade.			
By Whom?	Aaron Strange	Date and Hour	~13:29 11 June, 2012		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			
If a Watercourse was Impacted, Describe Fully.* N/A					
Describe Cause of Problem and Remedial Action Taken.* At ~12:12 on June 11, 2012, the P-454 Gas Oil Booster Pump began smoking then caught on fire. By 12:20 operations had extinguished the fire with a handheld fire extinguisher. The bearing failed on the electric motor which leaked lube oil and caught on fire. P-454 was blocked in after the fire was put out.					
Describe Area Affected and Cleanup Action Taken.* Pump P-454 is located South of Tank T-433. The pump sits on a concrete containment. Nothing spilled onto the ground and no cleanup was needed. There were no injuries and other than the pump motor no equipment was damaged The fire was put out quickly with a hand held fire extinguisher.					
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.					
Signature: 		OIL CONSERVATION DIVISION			
Printed Name: Aaron Strange		Approved by Environmental Specialist:			
Title: Sr. Environmental Technician		Approval Date:		Expiration Date:	
E-mail Address: Aaron.Strange@hollyfrontier.com		Conditions of Approval:		Attached <input type="checkbox"/>	
Date: 6/25/12 Phone: 575-748-3311					

* Attach Additional Sheets If Necessary

Chavez, Carl J, EMNRD

From: Combs, Robert <Robert.Combs@hollyfrontier.com>
Sent: Thursday, May 31, 2012 10:24 PM
To: Chavez, Carl J, EMNRD; Dade, Randy, EMNRD; Horowitz, Ruth, NMENV; Cobrain, Dave, NMENV
Cc: Lackey, Johnny; Holder, Mike; Strange, Aaron; Schultz, Michele
Subject: C-141 initial report--2012-05-24 Effluent pipeline leaks
Attachments: C-141 2012-05-24 Effluent pipeline leak--initial report.pdf; Effluent Pipeline Spill Locations 052412.pdf

Please see the attached initial C-141 report for the treated waste water leaks that occurred on 5/24/12. Also attached is a GoogleEarth image indicating the approximate locations.

If there are any questions, please contact me at 575-746-5382.

Thanks,
Robert

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State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Navajo Refining Company, L.L.C.	Contact	Robert Combs
Address	501 E. Main St, Artesia, NM 88210	Telephone No.	575-746-5382
Facility Name	Artesia Refinery	Facility Type	Petroleum Refinery
Surface Owner	Mineral Owner	API No.	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
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Latitude 32° 50' 46.10" N Longitude 104° 20' 22.89" W

Latitude 32° 47' 48.13" N Longitude 104° 15' 50.50" W

NATURE OF RELEASE

Type of Release	Treated Waste Water	Volume of Release	~350 bbl	Volume Recovered	Unknown
Source of Release	Effluent pipeline junction	Date and Hour of Occurrence	5/24/12 ~10:00	Date and Hour of Discovery	5/24/12 ~10:30
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? OCD—Artesia (575-748-1283); left voicemail message for Randy Dade OCD—Santa Fe (505-476-3490); spoke with Carl Chavez NMED—Santa Fe (505-476-6000); left voicemail message for Ruth Horowitz			
By Whom?	Robert Combs	Date and Hour 5/24/12 ~14:20			
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

At ~10:40 on 5/24/2012, the FCC Division Control Room notified Environmental that a leak had occurred along the treated waste water effluent pipeline to the injection wells. The operators noticed that the pipeline pressure indication dropped to 0 psig. The operators shut down the effluent pipeline pumps and a contract employee was dispatched to inspect the pipeline. It was discovered that the waste water fiberglass pipeline had separated in two locations (see approximate locations listed above). Once the locations were known, the spill was reported to the agencies listed.

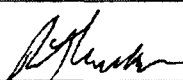
Describe Area Affected and Cleanup Action Taken.*

Both leak locations were outside of Refinery property in unpopulated areas. Vacuum trucks were dispatched to recover the freestanding water released; the volume recovered has not yet been reported. At both spill locations, the pipeline separated at a threaded junction. The breaches were repaired and the pipeline was returned to service.

At this time, the holes where repairs were made remain open and barricaded, and no further cleanup activities have been pursued. Since the locations are outside of Refinery, the landowners are being contacted for access to be granted for spill cleanup.

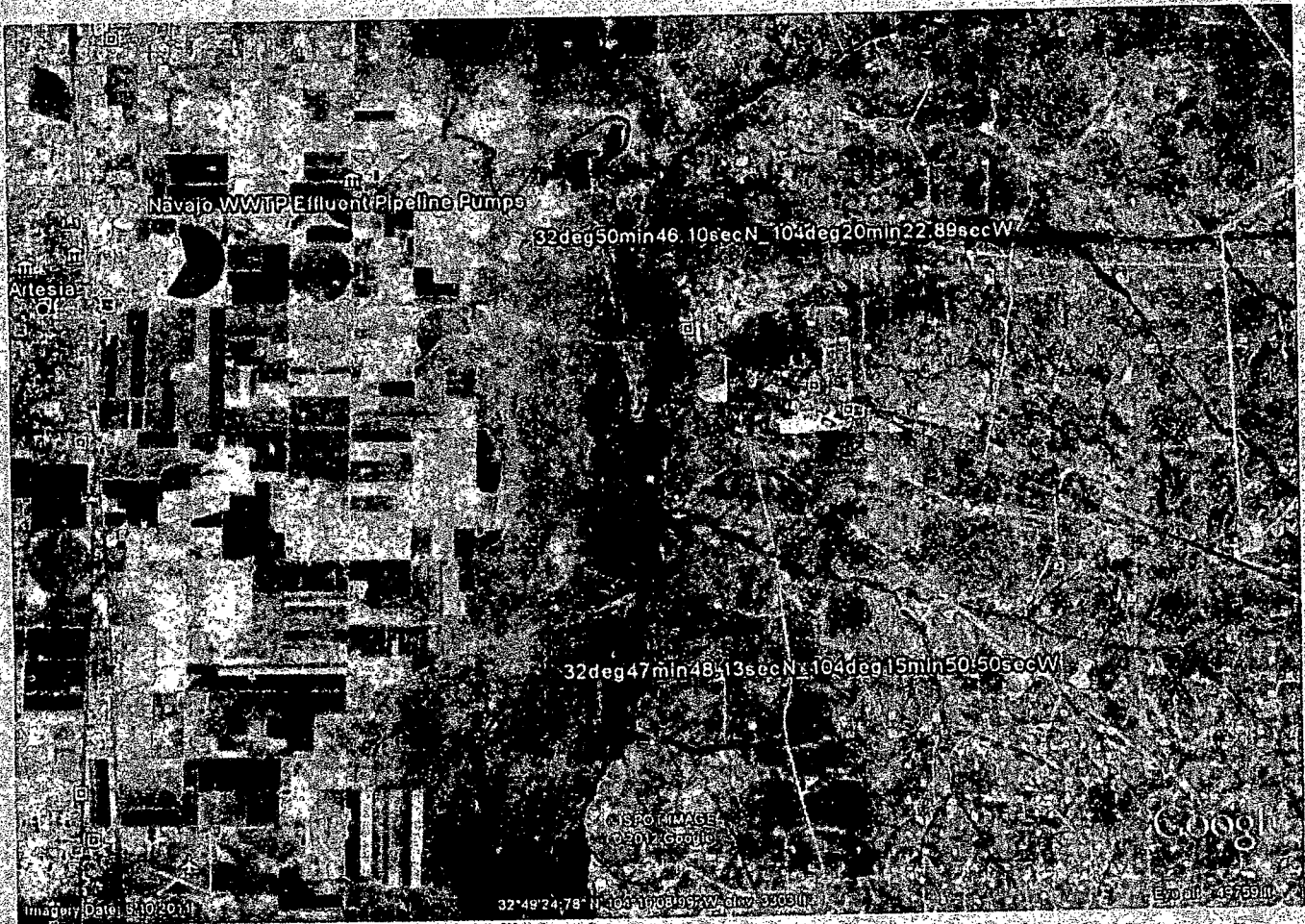
A final C-141 report will be submitted and will include all analytical reports, photos, and any associated disposal records.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Robert Combs	Approved by Environmental Specialist:	
Title: Environmental Specialist	Approval Date:	Expiration Date:

E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 5/31/12 Phone: 575-308-2718		

* Attach Additional Sheets If Necessary



Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, May 24, 2012 12:06 PM
To: Combs, Robert (Robert.Combs@hollyfrontier.com); Strange, Aaron (Aaron.Strange@hollyfrontier.com)
Cc: VonGonten, Glenn, EMNRD
Subject: Navajo Artesia Refinery (GW-028) Final C-141 Spill/Release Reports

Gentlemen:

FYI, the OCD is now logging spills/releases at refineries into its OCD Online system "Spills" (click [here](#)).

Also, the OCD notices that final C-141s should be forthcoming soon for the following spills:

- 1) Holly Energy Partners Artesia Receiving Manifold (Fire) 3/24/2012
- 2) Sulfur Guard Catalyst from Vacuum Bin (Fire) 4/3/2012
- 3) Tank 1227 (Fire) 4/29/2012

Please contact me if you have questions. Thank you.

xc: OCD Online "C-141s" thumbnail

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Drive, Santa Fe, New Mexico 87505
Office: (505) 476-3490

E-mail: CarlJ.Chavez@State.NM.US

Website: <http://www.emnrd.state.nm.us/oecd/>

"Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?" To see how, please go to: "Pollution Prevention & Waste Minimization" at <http://www.emnrd.state.nm.us/oecd/environmental.htm#environmental>

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, May 24, 2012 2:29 PM
To: CarlJ.Chavez@state.nm.us
Cc: VonGonten, Glenn, EMNRD; Dade, Randy, EMNRD
Subject: Navajo Artesia Refinery (GW-028) Effluent Line Release Notification to OCD
***** Note to File*****

FYI:

I received a call today at about 14:10 from Mr. Robert Combs related to a release along the effluent line to the 3 UIC Class I (NH) Disposal Wells (about 3 miles from the Pecos River or ¾ mile west and upgradient from the Gaines Disposal Well. Mr. Combs indicated that a pressure drop was realized at about 10:00 today and the line was shut-in within 20 minutes. Since the flow rate was about 750 gpm over a 20 minute time-frame, the estimated volume of the release is about 350 bbls. of effluent from the refinery. A C-141 will be submitted next week.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Drive, Santa Fe, New Mexico 87505
Office: (505) 476-3490
E-mail: CarlJ.Chavez@State.NM.US
Website: <http://www.emnrd.state.nm.us/ocd/>
“Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?” To see how, please go to: “Pollution Prevention & Waste Minimization” at <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

Chavez, Carl J, EMNRD

From: Combs, Robert <Robert.Combs@hollyfrontier.com>
Sent: Friday, May 18, 2012 1:47 PM
To: Strange, Aaron; Chavez, Carl J, EMNRD; Dade, Randy, EMNRD; Tsinnajinnie, Leona, NMENV; Cobrain, Dave, NMENV
Cc: Lackey, Johnny; Holder, Mike; Schultz, Michele
Subject: RE: 5/11/2012 spill gas oil
Attachments: C-141 2012-05-11 GO spill near T-110 initial report.pdf

Carl, Randy, Leona and Dave,

Please see the attached C-141 initial report for the gas oil spill reported on 5/11/12. A final C-141 will follow once all cleanup activities have been completed.

Please let me know if you have any questions.

Thanks,
Robert

From: Strange, Aaron
Sent: Friday, May 11, 2012 5:09 PM
To: Chavez, Carl J, EMNRD; Randy Dade (randy.dade@state.nm.us); Tsinnajinnie, Leona, NMENV; Dave Cobrain (dave.cobrain@state.nm.us)
Cc: Envir
Subject: 5/11/2012 spill gas oil

Carl, Randy, Leona, and Dave,

Please see the email below. There was an ~10 barrel spill of gas oil on 5/11/12 at Navajo Refining Company in Artesia NM. Robert Combs will follow up with a C-141 next week.

Aaron Strange
Environmental Technician, Senior
Off: (575) 746-5468
Cell: (575) 703-5057

From: Latham, David
Sent: Friday, May 11, 2012 2:18 PM
To: Strange, Aaron
Cc: McKee, Michael; Boans, Robert; Spence, Richard (Trampas)
Subject: Gas Oil Leak inside T-110 dike

Gentlemen,

At approximately 1:30pm on 11 May 2012, the Blender Shift Foreman (Luis Gabaldon) and Asphalt Loader (James Mayo) noticed a pool of gas oil inside the T-110 dike when they went to the tank to block in the gas oil loading rack.

It appears approximately 10 barrels of gas oil is pooled inside the tank dike area. The gas oil appears to be coming from the underground portion of the transfer line when runs between T-110 and the fuel oil tanks.

The crew was instructed to blow out the line into the fuel oil tank and the isolate at both ends.

A vacuum truck is being dispatched to vacuum up the pooled gas oil.

We will create a WA to clean up the contaminated soil and excavate the line for repairs.

We do not need to transfer gas oil over the weekend, so work can begin next week.

David Latham
Oil Movements
The HollyFrontier Companies
Navajo Refining Company, LLC
501 East Main Street
Artesia NM 88210
575.746.5277

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State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Navajo Refining Company, L.L.C.	Contact	Robert Combs
Address	501 E. Main St, Artesia, NM 88210	Telephone No.	575-746-5382
Facility Name	Artesia Refinery	Facility Type	Petroleum Refinery
Surface Owner	Mineral Owner	API No.	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
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Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release	Gas Oil	Volume of Release	~10 bbl	Volume Recovered	unknown
Source of Release	Section of piping between tanks	Date and Hour of Occurrence	05/11/12 ~13:30	Date and Hour of Discovery	05/11/12 ~13:30
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Carl Chavez, OCD Randy Dade, OCD Leona Tsinnajinnie, NMED Dave Cobrain, NMED			
By Whom?	Aaron Strange, by email	Date and Hour 17:09 May 11, 2012			
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*


At ~14:30 on 5/11/2012, the Oil Movements Manager notified the Environmental Department that a gas oil spill was discovered in the area of T-110 due to a leaking pipe. It was estimated that approximately 10 barrels were released. The line was isolated, clamped, and returned to service. Further leaking has not been observed and the line is scheduled to be replaced. A work authorization was submitted to vacuum the free liquid and remove the contaminated soil.

Describe Area Affected and Cleanup Action Taken.*

A vacuum truck was dispatched to collect the remaining liquid, but the volume recovered was not recorded. The contaminated soil will be removed and disposed at an appropriate disposal facility. Excavation will be completed once access to the area is permitted; recent rain showers have prohibited further cleanup.

A final C-141 and photos will follow with all other supporting documentation and incident details.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION		
Printed Name: Robert Combs	Approved by Environmental Specialist:		
Title: Environmental Specialist	Approval Date:	Expiration Date:	
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 5/18/2012	Phone: 575-308-2718		

* Attach Additional Sheets If Necessary

Chavez, Carl J, EMNRD

From: Combs, Robert <Robert.Combs@hollyfrontier.com>
Sent: Friday, May 04, 2012 9:28 AM
To: Chavez, Carl J, EMNRD; Dade, Randy, EMNRD; Tsinnajinnie, Leona, NMENV; Cobrain, Dave, NMENV
Cc: Strange, Aaron; Schultz, Michele; Lackey, Johnny; Holder, Mike
Subject: C-141 04/29/12--small fire on T-1227 insulation
Attachments: C-141 fire on insulation at T-1227 042912.pdf

Carl, Randy, Leona and Dave,
Please see the attached C-141 regarding a small fire on T-1227 that occurred on 4/30/12. A final C-141 will follow when the investigation is complete.
Please feel free to contact me for any questions.
Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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State of New Mexico
Energy Minerals and Natural Resources

Form C-141
Revised August 8, 2011

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Navajo Refining Co., L.L.C.	Contact	Robert Combs
Address	P.O. Box 159	Telephone No.	575-746-5382
Facility Name	Artesia facility	Facility Type	Petroleum Refinery
Surface Owner	Mineral Owner	API No.	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
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Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release	small fire	Volume of Release	unknown	Volume Recovered	N/A
Source of Release		Date and Hour of Occurrence	~04:30 29 April, 2012	Date and Hour of Discovery	~4:30 29 April, 2012
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Carl Chavez, OCD; left message.		
By Whom?	Johnny Lackey	Date and Hour	~12:00 29 April, 2012		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*

At ~04:30 on April 29, 2012, operators noticed a fire on the top of T-1227 (pitch storage tank). Alarm was sounded and the fire was extinguished by the fire team.

An investigation is underway and a final C-141 will follow once that report is complete.

Describe Area Affected and Cleanup Action Taken.*

The fire team applied water from a nearby fire water monitor to extinguish.

There were no injuries as a result of this small fire.

There tank insulation in the local area will require replacement.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

OIL CONSERVATION DIVISION

Signature:



Printed Name: Robert Combs

Approved by Environmental Specialist:

Title: Environmental Specialist

Approval Date:

Expiration Date:

E-mail Address: Robert.Combs@hollyfrontier.com

Conditions of Approval:

Attached ☐

Date: 5/4/12 Phone: 575-746-5382

* Attach Additional Sheets If Necessary

Chavez, Carl J, EMNRD

From: Combs, Robert <Robert.Combs@hollyfrontier.com>
Sent: Friday, February 24, 2012 4:26 PM
To: Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV; Dade, Randy, EMNRD
Cc: Lackey, Johnny; VonGonten, Glenn, EMNRD; Strange, Aaron
Subject: RE: 2012-02-23 Fire FCC Combined Feed Pump
Attachments: C-141 Fire at P-927 23 Feb 2012.pdf

Please see the attached C-141; feel free to call me for any questions.
Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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From: Chavez, Carl J, EMNRD [<mailto:CarlJ.Chavez@state.nm.us>]
Sent: Friday, February 24, 2012 8:35 AM
To: Strange, Aaron; Tsinnajinnie, Leona, NMENV; Dade, Randy, EMNRD
Cc: Lackey, Johnny; Combs, Robert; Hammond, Estefani; VonGonten, Glenn, EMNRD
Subject: RE: 2012-02-23 Fire FCC Combined Feed Pump

Aaron:

I notice that for corrective action there was no damage to equipment listed; however, the combined feed pump flange leaked hydrocarbons that ignited. Could you please clarify whether there was any corrective action(s) to repair and/or replace the leaky pump flange on the combined feed pump?

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us

Website: <http://www.emnrd.state.nm.us/ocd/>

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<http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>)

From: Strange, Aaron [mailto:Aaron.Strange@hollyfrontier.com]
Sent: Thursday, February 23, 2012 5:05 PM
To: Tsinnajinnie, Leona, NMENV; Chavez, Carl J, EMNRD; Dade, Randy, EMNRD
Cc: Lackey, Johnny; Combs, Robert; Hammond, Estefani
Subject: 2012-02-23 Fire FCC Combined Feed Pump

Leona, Carl, and Randy,

The Environmental Dept. was notified that there was a small fire today at ~13:00 in the FCC at P-927 Combined Feed pump. A flange at the pump leaked hydrocarbon which ignited. The fire was put out quickly with a steam hose. There were no injuries and no equipment damage as a result. A C-141 will be submitted with further details.

Please let us know if you have any questions,

Thanks,
Aaron

Aaron Strange
Environmental Technician, Senior
Environmental Department
Navajo Refining Co, LLC
Artesia NM
Off: (575) 746-5468
Cell: (575) 703-5057

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Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	Navajo Refining Co., L.L.C.	Contact	Robert Combs
Address	P.O. Box 159	Telephone No.	575-746-5382
Facility Name	Artesia facility	Facility Type	Petroleum Refinery
Surface Owner	Mineral Owner	API No.	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
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Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release small fire	Volume of Release unknown	Volume Recovered N/A
Source of Release	Date and Hour of Occurrence ~13:00 23 Feb., 2012	Date and Hour of Discovery ~13:00 23 Feb., 2012
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Leona Tsinnajinnie, NMED Dave Cobrain, NMED Carl Chavez, OCD Randy Dade, OCD	
By Whom? Aaron Strange	Date and Hour via email, 17:05 23 Feb., 2012	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*


At ~13:00 on February 23, 2012, operators noticed a fire on P-927 (FCC combined feed pump) while making rounds. The operators immediately extinguished the fire with a steam hose. They discovered that a small valve (1/4 inch sample valve, petcock) was leaking between a 3/4" inch block valve and a pressure gauge on the seal pot of P-927. The leak was stopped by turning off the pump and closing the isolation valve. The temperature of the hydrocarbon feed to the FCC at the local process is 450-500° F, which is above its flashpoint. When the liquid dripped off of the leaking valve, it came in contact with a hot pipe flange and ignited.

Describe Area Affected and Cleanup Action Taken.*

The fire was extinguished with steam.
There were no injuries as a result of this small fire.
There were no equipment damages (electrical, mechanical, etc.) with the exception of the piping insulation in the local area that will require replacement.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

OIL CONSERVATION DIVISION

Signature: 	Approved by Environmental Specialist:		
Printed Name: Robert Combs	Approval Date:		
Title: Environmental Specialist	Expiration Date:		Attached <input type="checkbox"/>
E-mail Address: Robert.Combs@hollyfrontier.com	Conditions of Approval:		
Date: 2/24/12 Phone: 575-746-5382			

* Attach Additional Sheets If Necessary

Chavez, Carl J, EMNRD

From: Strange, Aaron [Aaron.Strange@hollyfrontier.com]
Sent: Wednesday, April 11, 2012 5:02 PM
To: Chavez, Carl J, EMNRD; Dade, Randy, EMNRD; Tsinnajinnie, Leona, NMENV; Cobrain, Dave, NMENV
Cc: Lackey, Johnny; Combs, Robert; Schultz, Michele
Subject: Initial C-141
Attachments: Initial C-141 Fire at vacuum bin on 2012-04-03 .pdf

Carl, Randy, Leona, and Dave,

Please see the attached initial C-141 for the fire that occurred on 4-3-2012.

If you have any questions, please feel free to contact Robert Combs or myself.

Thanks,
Aaron

Aaron Strange
Environmental Technician, Senior
Environmental Department
Navajo Refining Co, LLC
Artesia NM
Off: (575) 746-5468
Cell: (575) 703-5057

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Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Navajo Refining Co., L.L.C.	Contact	Robert Combs
Address	P.O. Box 159	Telephone No.	575-746-5382
Facility Name	Artesia facility	Facility Type	Petroleum Refinery

Surface Owner	Mineral Owner	API No.
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
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Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release	small fire	Volume of Release	unknown	Volume Recovered	N/A
Source of Release	Vacuum bin being used to collect spent sulfur guard catalyst	Date and Hour of Occurrence	~10:30 April 03, 2012	Date and Hour of Discovery	~10:30 April 03, 2012
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Leona Tsinnajinnie, NMED Dave Cobrain, NMED Carl Chavez, OCD Randy Dade, OCD			
By Whom?	Robert Combs	Date and Hour	via email, 16:18	April 3, 2012	
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*

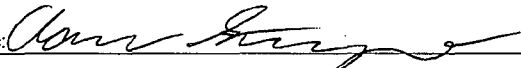
At approximately 10:30 on 4/3/12, there was a small fire at a vacuum bin being used to collect spent sulfur guard catalyst. This was a very brief fire, extinguished within 30 seconds of discovery. Navajo is conducting a root cause investigation. We will follow up with a final C-141 report once the investigation is filed.

Describe Area Affected and Cleanup Action Taken.*

The area affected was next to Freeman St. on the east side of the Naphtha Hydrotreater (Unit 13). There was a small amount of catalyst that spilled to the ground from the back door of the vacuum bin. The spilled catalyst was shoveled back into the bin. There were no liquids released during the event. The fire did damage the back door of the vacuum bin but no one was injured.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

OIL CONSERVATION DIVISION

Signature: 	Approved by Environmental Specialist:		
Printed Name: Aaron Strange			
Title: Sr. Environmental Technician	Approval Date:	Expiration Date:	
E-mail Address: Aaron.Strange@hollyfrontier.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 11 April, 2012 Phone: 575-746-5468			

* Attach Additional Sheets If Necessary

Chavez, Carl J, EMNRD

From: Combs, Robert [Robert.Combs@hollyfrontier.com]
Sent: Tuesday, April 03, 2012 4:18 PM
To: Chavez, Carl J, EMNRD; Dade, Randy, EMNRD; Tsinnajinnie, Leona, NMENV; Cobrain, Dave, NMENV
Cc: Lackey, Johnny; Strange, Aaron; Schultz, Michele
Subject: 2012-04-03 Fire at sulfur guard at Unit 13--Naphtha hydrotreater

Carl, Randy, Leona, and Dave,

At approximately 10:30 on 4/3/12, there was a small fire at a vacuum bin used to collect the used sulfur guard catalyst. This was a very brief fire, extinguished within 30 seconds of discovery and there were no injuries and only minor equipment damage. There were no liquids released during the event.

A C-141 report will follow.

If you have any questions, please feel free to contact Aaron Strange or myself.

Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, March 27, 2012 9:14 AM
To: 'Combs, Robert'
Cc: Tsinnajinnie, Leona, NMENV
Subject: RE: C-141 2012-03-26 spill at HEP Artesia Manifold

Robert:

Initial C-141 Received. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462

E-mail: CarlJ.Chavez@state.nm.us

Website: <http://www.emnrd.state.nm.us/ocd/>

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<http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>)

From: Combs, Robert [<mailto:Robert.Combs@hollyfrontier.com>]
Sent: Monday, March 26, 2012 2:21 PM
To: Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV
Cc: Dade, Randy, EMNRD; Cobrain, Dave, NMENV; Lackey, Johnny; Strange, Aaron; Schultz, Michele
Subject: C-141 2012-03-26 spill at HEP Artesia Manifold

Carl and Leona,
Please see the attached C-141 initial report for the HEP release within the Artesia Refinery.
If you have any questions, please contact myself or Lori Copeland at 214-208-1260.
Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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Oil Conservation Division
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Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Navajo Refining Company, L.L.C.	Contact	Robert Combs
Address	501 E. Main St, Artesia, NM 88210	Telephone No.	575-746-5382
Facility Name	Artesia Refinery	Facility Type	Petroleum Refinery
Surface Owner	Mineral Owner	API No.	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
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Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release	Kerosene	Volume of Release	<25 bbl	Volume Recovered	0 bbl
Source of Release	Holly Energy Partners Artesia Receiving Manifold	Date and Hour of Occurrence	03/24/12	Date and Hour of Discovery	03/26/12 ~08:30
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required				
By Whom?	If YES, To Whom?				
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Date and Hour					
If YES, Volume Impacting the Watercourse.					

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*


At ~11:30 on 03/26/2012, the Holly Energy Partners Environmental office notified Navajo Environmental that they had a release of approximately 20 bbl of kerosene at their Artesia Manifold. This manifold is located within the Navajo Artesia Refinery, but is an HEP asset. The release was caused by a bleed valve (probably 1/4" valve) that was left in the open position. The bleed valve was closed to prevent further releases. The impacted area was approximately 20 feet by 50 feet.

Describe Area Affected and Cleanup Action Taken.*

By the time the release was discovered, the liquid had been absorbed into the ground; there was no liquid present to recover. The stained area will be excavated and sampled by a third party.

A final C-141, analytical results, and photos will follow with all other supporting documentation and incident details.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 		OIL CONSERVATION DIVISION	
Printed Name: Robert Combs		Approved by Environmental Specialist:	
Title: Environmental Specialist		Approval Date:	Expiration Date:
E-mail Address: robert.combs@hollyfrontier.com		Conditions of Approval:	
Date: 03/26/2012 Phone: 575-308-2718		Attached <input type="checkbox"/>	

* Attach Additional Sheets If Necessary

INITIAL INCIDENT REPORTING FORM - HOLLY ENERGY PARTNERS CONTROL CENTER

Type of Incident (fire, explosion, release, safety, etc)

RELEASE

Name of Facility/Pipeline/Station:

ARTESIA REC MANIFOLD

Contact Name of Reporting Party:

KEVIN KENNEDY

Contact telephone # of Reporting Party:

575-703-8900

Date & Time of Incident:

3/26/2012

Was a Contractor involved in this Incident?
yes, Insert name of Contractor

if

NO

Location of discharge/incident (valve, sump, etc):

BLOCK AND BLEED ON VALVE #20

Type of Product (diesel, gas, crude etc):

KERO

Cause of Incident (material failure, fire, explosion, excavation
damage, corrosion, personnel error, etc):

BLOCK AND BLEED ON VALVE #20

Were there any injuries? Yes or No

NO

Estimated volume of discharge if applicable:

Gallons:

Barrels:

approximately 20

Weather conditions on scene:

CLEAR

GPS Coordinates:

Longitude:

Latitude:

Person completing this report & date:

Name:

Date:

JOE CARLO

3/26/2012

Additional comments/information:

This release was due to a valve left open during pipeline receipt.
Due to this valve being downstream of the meter where the
delivery is made into refinery tankage, this is not a regulated
portion of the pipeline therefore no reporting will be made at
this time.

HEP will be responsible for the cleanup.

Notification Procedure (must be done within 30 minutes from the time of notification):

Once form has been completed please email to the attention of the Manager of Regulatory Compliance (Lori Coupland) and
contact her via phone at (214)208-1260. If unable to contact Lori, please notify Nora Vazquez @ (972)835-9738.

Chavez, Carl J, EMNRD

From: Strange, Aaron [Aaron.Strange@hollyfrontier.com]
Sent: Thursday, February 23, 2012 5:05 PM
To: Tsinnajinnie, Leona, NMENV; Chavez, Carl J, EMNRD; Dade, Randy, EMNRD
Cc: Lackey, Johnny; Combs, Robert; Hammond, Estefani
Subject: 2012-02-23 Fire FCC Combined Feed Pump

Leona, Carl, and Randy,

The Environmental Dept. was notified that there was a small fire today at ~13:00 in the FCC at P-927 Combined Feed pump. A flange at the pump leaked hydrocarbon which ignited. The fire was put out quickly with a steam hose. There were no injuries and no equipment damage as a result. A C-141 will be submitted with further details.

Please let us know if you have any questions,

Thanks,
Aaron

Aaron Strange
Environmental Technician, Senior

Environmental Department
Navajo Refining Co, LLC
Artesia NM
Off: (575) 746-5468
Cell: (575) 703-5057

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Chavez, Carl J, EMNRD

From: Combs, Robert [Robert.Combs@hollyfrontier.com]
Sent: Wednesday, February 08, 2012 5:36 PM
To: Chavez, Carl J, EMNRD
Subject: RE: T-401/T-1215 Spill Cleanup

Carl,
Thanks so much for your help with this. I will start sending you our documentation ASAP so we can work to close these incidents.
Thanks again,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Wednesday, February 08, 2012 9:41 AM
To: Combs, Robert
Subject: RE: T-401/T-1215 Spill Cleanup

Robert:

You should have the OCD's path forward on the releases.

Only the OCD is involved with the Lea Refinery (Tk-1215), while the NMED should be involved with the OCD on the Artesia Refinery (Tk-401) release.

Please contact me to discuss. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/>
"Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at:
<http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>)

From: Combs, Robert [mailto:Robert.Combs@hollyfrontier.com]
Sent: Friday, February 03, 2012 3:05 PM
To: Chavez, Carl J, EMNRD
Subject: RE: T-401/T-1215 Spill Cleanup

Carl,
Thanks for the feedback; I look forward to your response.
Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
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From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Friday, February 03, 2012 12:24 PM
To: Combs, Robert
Cc: Lackey, Johnny
Subject: RE: T-401/T-1215 Spill Cleanup

Robert:

I'm trying to get to this after returning to the office from sick leave. I will follow-up with you next week on Tuesday and/or Wednesday.

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us

Website: <http://www.emnrd.state.nm.us/ocd/>

"Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at:
<http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>)

From: Combs, Robert [mailto:Robert.Combs@hollyfrontier.com]
Sent: Wednesday, February 01, 2012 5:21 PM
To: Chavez, Carl J, EMNRD
Cc: Lackey, Johnny
Subject: RE: T-401/T-1215 Spill Cleanup

Carl,

Have you had a chance to look for any communications with Darrell regarding clean-up activities around these tanks? We are nearing the end of the maintenance activities and I would like to make sure that we have followed your recommendations.

Thanks,

Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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From: Chavez, Carl J, EMNRD [<mailto:CarlJ.Chavez@state.nm.us>]
Sent: Tuesday, January 24, 2012 9:51 AM
To: Combs, Robert
Cc: Lackey, Johnny
Subject: RE: T-401/T-1215 Spill Cleanup

Robert:

Good morning. The releases are filed on OCD Online for the refineries (see below):

Lea Refinery (GW-014):
[C-141 Files](#)

Artesia Refinery (GW-028):
[C-141 Files](#)

I will follow-up by forwarding e-mails that I have in my mail folder for the above spills. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462

E-mail: CarlJ.Chavez@state.nm.us

Website: <http://www.emnrd.state.nm.us/ocd/>

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<http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>)

From: Combs, Robert [<mailto:Robert.Combs@hollyfrontier.com>]
Sent: Monday, January 23, 2012 4:54 PM
To: Chavez, Carl J, EMNRD
Cc: Lackey, Johnny
Subject: T-401/T-1215 Spill Cleanup

Carl,

As I'm sure you've seen Johnny's previous message about Darrell, his absence leaves several details for us to sort out. Would you mind helping me get up to speed on the cleanup requirements for the T-401 (Artesia) and T-1215 (Lovington) spills?

If you don't mind, I will probably be coming to you with questions as they arise.

Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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Chavez, Carl J, EMNRD

From: Combs, Robert [Robert.Combs@hollyfrontier.com]
Sent: Tuesday, January 31, 2012 6:05 PM
To: Chavez, Carl J, EMNRD; Cobrain, Dave, NMENV; Horowitz, Ruth, NMENV; Dade, Randy, EMNRD
Cc: Lackey, Johnny; Strange, Aaron
Subject: C-141 Spill--FCC scrubber water 2011-01-31
Attachments: Initial C-141 FCC scrubber spill 31 Jan 2012.pdf

Carl, Dave, Ruth, and Randy,

Please see the attached initial C-141 for a spill that occurred this morning in the vicinity of our WWTP. A Final C-141 will follow and will include sample analyses and photos.

If there are any questions, please contact me at 575-746-5382.

Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Navajo Refining Company, L.L.C.	Contact	Robert Combs
Address	501 E. Main St, Artesia, NM 88210	Telephone No.	575-746-5382
Facility Name	Artesia Refinery	Facility Type	Petroleum Refinery
Surface Owner	Mineral Owner	API No.	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
-------------	---------	----------	-------	---------------	------------------	---------------	----------------	--------

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release	FCC Scrubber water	Volume of Release	<25 bbl	Volume Recovered	15 bbl
Source of Release	Effluent pipeline junction	Date and Hour of Occurrence	01/31/12 ~03:00	Date and Hour of Discovery	01/31/12 ~03:00
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required				
By Whom?	If YES, To Whom?				
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Date and Hour					
If YES, Volume Impacting the Watercourse.					

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

At ~03:30 on 01/31/2012, the FCC Division Control Room notified the Environmental Department that a hose connection had failed on a transfer pump and released an estimated 15-20 bbl of water from the FCC flue gas scrubber.

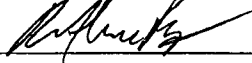
Describe Area Affected and Cleanup Action Taken.*

The connection was repaired and fastened to prevent a recurrence. Vacuum trucks were dispatched to the area to recover the remaining liquid. The wet soil will be removed, sampled and disposed at an appropriate disposal site.

A final C-141, analytical results, and photos will follow with all other supporting documentation and incident details.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

OIL CONSERVATION DIVISION

Signature: 	Approved by Environmental Specialist:		
Printed Name: Robert Combs	Approval Date:		
Title: Environmental Specialist	Expiration Date:		Attached <input type="checkbox"/>
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:		
Date: 01/31/2012	Phone: 575-308-2718		

* Attach Additional Sheets If Necessary

Chavez, Carl J, EMNRD

From: Strange, Aaron [Aaron.Strange@hollyfrontier.com]
Sent: Wednesday, December 14, 2011 8:47 AM
To: Chavez, Carl J, EMNRD; Cobrain, Dave, NMENV; Tsinnajinnie, Leona, NMENV
Cc: Moore, Darrell; Lackey, Johnny; Combs, Robert
Subject: C-141 Final - Flash fire at the SRU-2
Attachments: C-141--fire at SRU-2.pdf

Carl, Randy, Dave, and Leona,

Please see the attached C-141 for flash fire at the SRU-2.

Please let me know if you have any questions regarding these events.

Thanks,
Aaron

Aaron Strange
Environmental Technician, Senior

Environmental Department
Navajo Refining Co, LLC
Artesia NM
Off: (575) 746-5468
Cell: (575) 703-5057

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State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	Navajo Refining Co.	Contact	Aaron Strange
Address	P.O. Box 159	Telephone No.	575-746-53468
Facility Name	Artesia facility	Facility Type	Petroleum Refinery

Surface Owner	Mineral Owner	API No.
---------------	---------------	---------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
-------------	---------	----------	-------	---------------	------------------	---------------	----------------	--------

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release	flash fire	Volume of Release	unknown	Volume Recovered	N/A
Source of Release	sour water knock out drum (D-297)	Date and Hour of Occurrence	16:08 11 Dec., 2011	Date and Hour of Discovery	16:08 11 Dec., 2011
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Carl Chavez, OCD (called, however the voicemail would not work) Geoffrey Leking , OCD			
By Whom?	Estefani Hammond	Date and Hour	12 Dec., 2011 Morning		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*
N/A.

Describe Cause of Problem and Remedial Action Taken.*


At ~16:08 on 11 December, 2011, there was a flash fire off of the sour water knock out drum (D-297) in the SRU-2 (Unit 30). The line between from D-297 to D-298 was plugged. Operations first suspected it was a bad valve, so they removed the valve but it was not the problem. They then hooked up steam to the drum to clear the line. The plug in the line let loose and a fire flashed from where they had removed the valve. The flash of fire was very short and was consumed as it escaped the equipment. The flash fire burned itself out before any fire suppression equipment could be used.

Describe Area Affected and Cleanup Action Taken.*

The area affected was the SRU-2 (Unit 33). The flash of fire was very short and was consumed as it escaped the equipment. There was no hydrocarbon that came in contact with the ground. No cleanup was needed. There were no injuries or equipment damage associated with this event.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

OIL CONSERVATION DIVISION

Signature: 	Approved by Environmental Specialist:	
Printed Name: Aaron Strange	Approval Date:	Expiration Date:
Title: Sr. Environmental Technician	Conditions of Approval:	
E-mail Address: Aaron.Strange@hollyfrontier.com	Attached <input type="checkbox"/>	
Date: 14 December, 2011 Phone: 575-746-5468		

* Attach Additional Sheets If Necessary

Chavez, Carl J, EMNRD

From: Combs, Robert [Robert.Combs@hollyfrontier.com]
Sent: Monday, December 12, 2011 4:56 PM
To: Chavez, Carl J, EMNRD; Dade, Randy, EMNRD; Cobrain, Dave, NMENV; Tsinnajinnie, Leona, NMENV
Cc: Moore, Darrell; Lackey, Johnny; Strange, Aaron
Subject: C-141 Final Reports--Fire at North Bundle Pad and Fire at P-2105 Crude Bottoms Pump
Attachments: C-141 Final--Fire at P-2105 crude bottoms pump.pdf; C-141 Final--Fire at north bundle pad 07 Dec 2011.pdf

Carl, Randy, Dave, and Leona,

Please see the attached C-141s for the events:

- Fire at the North Bundle Pad
- Fire at P-2105 Crude Bottoms Pump

Please let me know if you have any questions regarding these events.

Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	Navajo Refining Co.	Contact	Robert Combs
Address	P.O. Box 159	Telephone No.	575-746-5382
Facility Name	Artesia facility	Facility Type	Petroleum Refinery
Surface Owner	Mineral Owner	API No.	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
-------------	---------	----------	-------	---------------	------------------	---------------	----------------	--------

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release	small fire	Volume of Release	unknown	Volume Recovered	N/A
Source of Release	P-2105 Crude bottoms pump	Date and Hour of Occurrence	08:00 6 Dec., 2011	Date and Hour of Discovery	08:10 6 Dec., 2011
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Leona Tsinnajinnie, NMED Dave Cobrain, NMED Carl Chavez, OCD Randy Dade, OCD			
By Whom?	Aaron Strange	Date and Hour	via email, 11:00 6 Dec., 2011		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			
If a Watercourse was Impacted, Describe Fully.* N/A.					
Describe Cause of Problem and Remedial Action Taken.* At ~08:00 on 6 December, 2011, the unit operator noticed a fire at one of the crude bottoms pumps, P-2105. The operator quickly notified their supervisors and the Safety Dept. They were able to extinguish the fire with two 30 pound and one 150 pound fire extinguishers. The operators quickly recognized the cause of the event as a seal failure, likely due to the unit upset (charge heater H-20 trip). There were no injuries or equipment damage associated with this event.					
Describe Area Affected and Cleanup Action Taken.* The leak that caused the fire was very small and was consumed as it escaped the equipment. There was no hydrocarbon that came in contact with the ground.					
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.					
Signature: 		OIL CONSERVATION DIVISION			
Printed Name: Robert Combs		Approved by Environmental Specialist:			
Title: Environmental Specialist		Approval Date:		Expiration Date:	
E-mail Address: robert.combs@hollyfrontier.com		Conditions of Approval:		Attached <input type="checkbox"/>	
Date: 12 December, 2011 Phone: 575-746-5382					

* Attach Additional Sheets If Necessary

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State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	Navajo Refining Co.	Contact	Robert Combs
Address	P.O. Box 159	Telephone No.	575-746-5382
Facility Name	Artesia facility	Facility Type	Petroleum Refinery
Surface Owner	Mineral Owner	API No.	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
-------------	---------	----------	-------	---------------	------------------	---------------	----------------	--------

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release	small fire	Volume of Release	unknown	Volume Recovered	N/A
Source of Release	North bundle pad	Date and Hour of Occurrence	10:05 7 Dec., 2011	Date and Hour of Discovery	10:10 7 Dec., 2011
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Leona Tsinnajinnie, NMED Dave Cobrain, NMED Carl Chavez, OCD Randy Dade, OCD			
By Whom?	Robert Combs	Date and Hour	via email, 11:40 8 Dec., 2011		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*
N/A.

Describe Cause of Problem and Remedial Action Taken.*


At ~10:00 on 7 December, 2011, an operator noticed black smoke coming from the north bundle pad area. He immediately used a 30 pound fire extinguisher to put out the fire. It is suspected that a high velocity gas release from the North Plant caused liquid to be carried out of the flare and drop to grade igniting a fire on the bundle pad. It is difficult to determine the exact source of the emission due to the number of unit upsets during that time period.

There were no injuries or equipment damage associated with this event.

Describe Area Affected and Cleanup Action Taken.*

The liquid that ignited the fire fell on a contained area, no further action was required after the fire was extinguished.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION		
Printed Name: Robert Combs	Approved by Environmental Specialist:		
Title: Environmental Specialist	Approval Date:	Expiration Date:	
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 12 December, 2011 Phone: 575-746-5382			

* Attach Additional Sheets If Necessary

Chavez, Carl J, EMNRD

From: Leking, Geoffrey R, EMNRD
Sent: Monday, December 12, 2011 7:38 AM
To: Chavez, Carl J, EMNRD
Subject: Navajo

Carl

Navajo, Lovington experienced a wastewater leak this weekend per a phone message left by Stephanie Hammond. Apparently she tried to leave you a message, but stated that your voice mail was turned off? She tried to leave an initial message here, but was using Larry Johnson's old extension. She finally left it with Patricia's voice mail at the front desk. I called her this morning to indicate we had received her notification. She estimated that 15 barrels of wastewater was released and a vac truck was called and picked up most of the release.

She also stated that there had been a flash fire at the Artesia refinery and will call Dist. 2 and you on this.

Geoff

Chavez, Carl J, EMNRD

From: Combs, Robert [Robert.Combs@hollyfrontier.com]
Sent: Monday, December 05, 2011 8:18 AM
To: Kim Flowers; Chavez, Carl J, EMNRD
Cc: Moore, Darrell; Rhodes, Glen; Strange, Aaron; Dave Small
Subject: Request for waste disposal
Attachments: Profile form and C-138 fire water line N of Maint.pdf

Kim,
Please see the attached profile form, C-138 and analytical results for excavated soil generated from a fire water line installation. Please let us know via email if this waste is approved for disposal.
Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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CERTIFICATE OF WASTE STATUS NON-EXEMPT WASTE MATERIAL

COMPANY/GENERATOR: Navajo Refining Co.

ADDRESS: 501 E. Main St.

GENERATING SITE: Artesia facility

COUNTY Eddy

STATE NM

TYPE OF WASTE: Soil

ESTIMATED VOLUME: _____

GENERATING PROCESS: Excavated soil from fire water line installation

REMARKS: see attached ALS report, work order# 1107046

NMOCD FACILITY: CRI

TRUCKING COMPANY: S Brothers

As a condition of acceptance for disposal, I hereby certify that this waste is a non-exempt waste as defined by the Environmental Protection Agency's (EPA) July 1988 Regulatory Determination. To my knowledge, this waste will be analyzed pursuant to the provisions of 40 CFR Part 261 to verify the nature as non-hazardous. I further certify that to my knowledge "hazardous or listed waste" pursuant to the provisions of 40CFR, Part 261, Subparts C and D, has not been added or mixed with the waste so as to make the resultant mixture a "hazardous waste" pursuant to the provisions of 40 CFR, Sections 2613.

AGENT:



SIGNATURE

NAME:

Robert Combs

PRINTED

ADDRESS:

501 E. Main St., Artesia, NM 88210

DATE:

12/5/2011

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-138
Revised August 1, 2011

*Surface Waste Management Facility
Operator
and Generator shall maintain and make this
documentation available for Division
inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address: Navajo Refining Co.
2. Originating Site: Artesia Facility
3. Location of Material (Street Address, City, State or ULSTR): 501 E. Main St., Artesia, NM
4. Source and Description of Waste: Excavated soil from fire water line installation located north of our Maintenance building. Please see the attached analytical data from ALS: Work order: 1107046 Sample ID: 1107046-02
Estimated Volume 150 yds. yd ³ / bbls Known Volume (to be entered by the operator at the end of the haul) yd ³ / bbls
5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS I, Robert Combs, representative or authorized agent for Navajo Refining Co. do hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification) <input type="checkbox"/> RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non- exempt waste. <u>Operator Use Only Waste Acceptance Frequency</u> <input type="checkbox"/> Monthly <input type="checkbox"/> Weekly <input type="checkbox"/> Per Load <input checked="" type="checkbox"/> RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items) <input type="checkbox"/> MSDS Information <input checked="" type="checkbox"/> RCRA Hazardous Waste Analysis <input type="checkbox"/> Process Knowledge <input type="checkbox"/> Other (Provide description in Box 4) GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS I, [redacted], representative for [redacted] do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.
5. Transporter: S Brothers

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #:

Address of Facility:

Method of Treatment and/or Disposal:

☐ Evaporation ☐ Injection ☐ Treating Plant ☐ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☐ APPROVED

☐ DENIED (Must Be Maintained As Permanent Record)

PRINT NAME: [redacted]

TITLE: [redacted]

DATE: [redacted]

SIGNATURE: [redacted]
Surface Waste Management Facility Authorized Agent

TELEPHONE NO.: [redacted]

Chavez, Carl J, EMNRD

From: Combs, Robert [Robert.Combs@hollyfrontier.com]
Sent: Thursday, December 08, 2011 11:41 AM
To: Chavez, Carl J, EMNRD; Cobrain, Dave, NMENV; Tsinnajinnie, Leona, NMENV; Dade, Randy, EMNRD
Cc: Moore, Darrell; Strange, Aaron; Lackey, Johnny
Subject: Fire--north bundle pad drain

Leona, Randy, Dave and Carl,

We were just notified that there was a small fire on the north bundle pad at approximately 10:00 am on 12/7/2011. The fire was caused by a North Plant flaring event, where it is suspected that hydrocarbons were carried over and dropped onto the adjacent bundle pad. The fire was quickly extinguished with a 30 lb fire extinguisher without causing harm to personnel or damage to equipment.

A final C-141 will be submitted for the event.

If you have any questions, please feel free to contact me.

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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Chavez, Carl J, EMNRD

From: Strange, Aaron [Aaron.Strange@hollyfrontier.com]
Sent: Tuesday, December 06, 2011 11:24 AM
To: Chavez, Carl J, EMNRD; Cobrain, Dave, NMENV; Dade, Randy, EMNRD; Tsinnajinnie, Leona, NMENV
Cc: Envir
Subject: Fire, W-16 Crude Bottoms Pump

Carl, Dave, Randy, and Leona,

At approximately 08:15 on 12/6/2011 a fire started on the pump seal of the W-16 Crude Bottoms Pump in the South Plant Crude Unit. At approximately 08:20 the fire was out and the all clear alarm was sounded. The fire was put out with hand held fire extinguishers and only lasted a few minutes. The pump seal was damaged but that is the extent of damages. No one was injured. Nothing spilled off of the concrete containment.

Navajo will submit the C-141 for this incident. If you have any questions please call the Environmental Department at 575-748-3311.

Aaron Strange
Environmental Technician, Senior

Environmental Department
Navajo Refining Co, LLC
Artesia NM
Off: (575) 746-5468
Cell: (575) 703-5057

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Chavez, Carl J, EMNRD

From: Combs, Robert [Robert.Combs@hollyfrontier.com]
Sent: Wednesday, November 30, 2011 1:59 PM
To: Chavez, Carl J, EMNRD; Cobrain, Dave, NMENV; Dade, Randy, EMNRD; Tsinnajinnie, Leona, NMENV
Cc: Lackey, Johnny; Moore, Darrell; Strange, Aaron; Rhodes, Glen
Subject: C-141 Spill--fuel oil spill at west loading rack 22 Nov 2011
Attachments: C-141--fuel oil spill at west rack 22 Nov 2011.doc; 11-23-2011 insp pictures 010.jpg; 11-23-2011 insp pictures 003.jpg; 11-23-2011 insp pictures 004.jpg; 11-23-2011 insp pictures 006.jpg; 11-23-2011 insp pictures 007.jpg

Carl, Dave, Randy, and Leona,

Please see the attached C-141 and for the fuel oil spill at our rail loading rack (west rack) on November 22, 2011. A final C-141 will follow and will include any details following further investigation.

If there are any questions, please contact me at 575-746-5382.

Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Form C-141
Revised August 8, 2011

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Navajo Refining Co.	Contact	Robert Combs
Address	P.O. Box 159	Telephone No.	575-746-5382
Facility Name	Artesia facility	Facility Type	Petroleum Refinery
Surface Owner	Mineral Owner	API No.	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
-------------	---------	----------	-------	---------------	------------------	---------------	----------------	--------

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release	Fuel oil spill	Volume of Release	5 bbl	Volume Recovered	N/A
Source of Release	Rail car at west loading rack	Date and Hour of Occurrence	20:00 22 Nov, 2011	Date and Hour of Discovery	20:00 22 Nov., 2011
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Ruth Horowitz, NMED; Dave Cobrain, NMED E. L. Gonzales, OCD; Carl Chavez, OCD; Randy Dade, OCD			
By Whom?	Aaron Strange	Date and Hour	via email, 14:26 23 Nov., 2011		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*
N/A.

Describe Cause of Problem and Remedial Action Taken.*

A BPL (blender, pumper, loader) operator was loading a railcar with fuel oil and left the immediate area to observe the loaded product weight displayed on a central panel. While he was away, the railcar overflowed, spilling ~5 bbl onto the ground below. When the operator notice that the railcar was flowing over, he quickly closed the valve, stopping further flow to the vessel. The railcar load progress can be checked by a few different methods: by weight as displayed on a central panel; or by level, using a gauge rod to check the fluid level in the vessel. When the operator left the railcar the level was approximately 4-5 inches below the final loading level and during the few minutes he was away, the liquid overflowed.

Describe Area Affected and Cleanup Action Taken.*

Due to the physical properties of fuel oil, the product must be heated to 220-230 degrees F to enable flow through piping and fittings. Once outside of the heat-traced piping, the viscosity increases as the fluid cools, minimizing the affected area of the spill. Operations called Maintenance the morning of 23 Nov 2011 to clean the spill, and replace the volume of stained gravel. The gravel/product mixture was collected into a 'lugger bucket' and will be disposed as non-hazardous waste.

Photos are attached to show the affected area and spill cleanup.

A Final C-141 will be submitted once this waste is disposed.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

OIL CONSERVATION DIVISION

Signature:

Printed Name: Robert Combs

Approved by Environmental Specialist:

Title: Environmental Specialist

Approval Date:

Expiration Date:

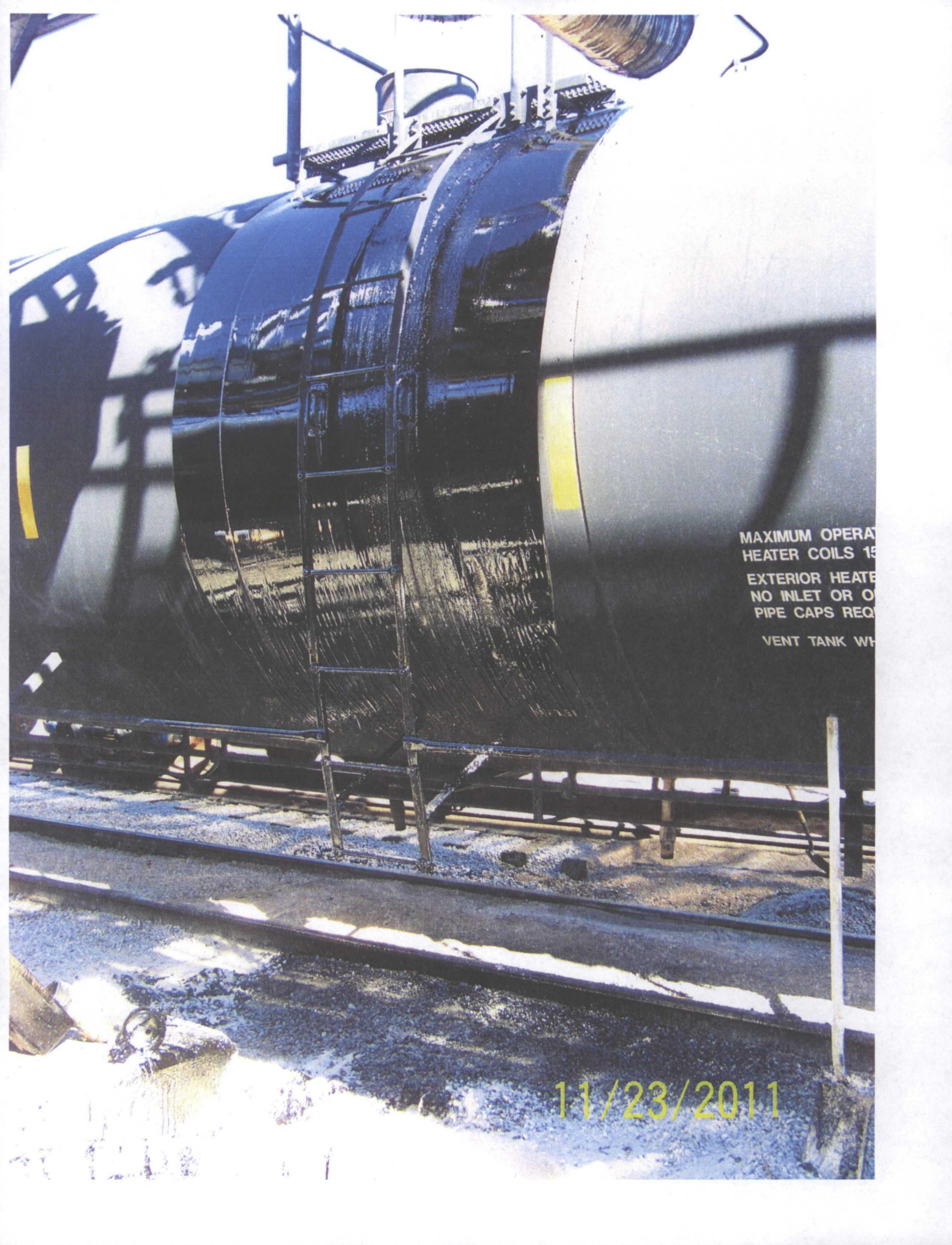
E-mail Address: robert.combs@hollyfrontier.com

Conditions of Approval:

Attached ☐

Date: 20 October, 2011 Phone: 575-746-5382

* Attach Additional Sheets If Necessary



MAXIMUM OPERAT
HEATER COILS 15
EXTERIOR HEATE
NO INLET OR O
PIPE CAPS REQ
VENT TANK WH

11/23/2011



11/23/2011



11/23/2011





Chavez, Carl J, EMNRD

From: Strange, Aaron [Aaron.Strange@hollyfrontier.com]
Sent: Wednesday, November 23, 2011 2:26 PM
To: Chavez, Carl J, EMNRD; Cobrain, Dave, NMENV; Dade, Randy, EMNRD; Gonzales, Elidio L, EMNRD; Horowitz, Ruth, NMENV
Cc: Lackey, Johnny; Moore, Darrell; Combs, Robert; Rhodes, Glen
Subject: Spill 5bbl Fuel Oil from railcar

Carl, Dave, Randy, E.L, and Ruth,

Navajo Refining Co had a ~5bbl spill of Fuel Oil from a railcar on 11/22/2011 at ~20:00. The railcar overflowed while being loaded. The spilled Fuel Oil is a thick viscous material that was easily cleaned up by a crew with shovels. The waste was placed into a roll-off bin. We will be submitting an initial C-141 next week.

Thanks you,

Aaron

Aaron Strange
Environmental Technician, Senior
Environmental Department
Navajo Refining Co, LLC
Artesia NM
Off: (575) 746-5468
Cell: (575) 703-5057

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Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, November 22, 2011 4:30 PM
To: 'Krueger, Pamela'; Moore, Darrell; Tsinnajinnie, Leona, NMENV; Cobrain, Dave, NMENV
Cc: Dade, Randy, EMNRD
Subject: RE: TK-401 Leak

Pam and Darrell:

I think NMED can respond to the AOC; active remediation based on the chemicals of concern; and/or monitoring downgradient from the tank in question.

OCD requests and engineering drawing to determine how the tank will actually be repaired, since it seems like patch work is the plan bases on the LEL and safety concerns. OCD thinks there needs to be competent lower plate, LDS, with another well designed plate above the LDS with an MIT that verifies no leakage to the LDS in order to restore the tank to working order.

Based on the above, the operator can propose an alternative to the above to the agencies.

I'll be back in next Tuesday, November 29, 2011 at 6:30 a.m. NMED should respond tomorrow before the holiday, and if not, maybe by November 28, 2011.

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us

Website: <http://www.emnrd.state.nm.us/ocd/>

"Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at:

<http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>)

From: Krueger, Pamela [<mailto:pam.krueger@arcadis-us.com>]
Sent: Tuesday, November 22, 2011 2:52 PM
To: Moore, Darrell; Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV
Cc: Dade, Randy, EMNRD
Subject: RE: TK-401 Leak

Tank 401 is already included in the Permit under AOC3 – Southeast Tank Farm. That AOC is included in AOC Group 1. MW-28 is on the downgradient side of the Southeast Tank Farm, almost due east of Tank 401. This well is sampled semiannually and the analyte list includes GRO, DRO, Volatiles, metals and cyanide.

Pamela R. Krueger | Senior Project Manager | pam.krueger@arcadis-us.com
ARCADIS U.S., Inc. | 2929 Briarpark Dr. Suite 300 | Houston, TX 77042
T. 713.953.4816 | M. 713.249.8548 | F. 713.977.4620
www.arcadis-us.com
ARCADIS, Imagine the result

From: Moore, Darrell [<mailto:Darrell.Moore@hollyfrontier.com>]
Sent: Tuesday, November 22, 2011 3:32 PM
To: Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV
Cc: Dade, Randy, EMNRD; Krueger, Pamela
Subject: RE: TK-401 Leak

Et al

We have gotten into this tank and are having problems with LEL levels. The LEL levels are making it unsafe to do any cutting of the floor so that we could perform the path forward delineated below. Obviously, there is some amount of contamination below the tank. Since we cant cut the floor safely, even using water, we would like to propose a modified path forward.

- 1) We will plug all holes in the current floor of the tank. This should isolate whatever contamination is under the tank and allow us to get the LEL's down to a safe level.
- 2) We will then cover the floor with 4" of pea gravel and install a new steel floor in the tank.
- 3) The below path forward mentions MW-99 as being a monitor well to watch. That monitor well is actually WEST of TK 401 and will probably not be relevant to this issue. That was my mistake. However, MW-28 is about 300 ft due east of TK-401 and we can monitor that well for any trends in VOC's. MW-66 is also east of TK-401, but just south of due east.

Since we cant safely approach this any other way, this may be a candidate to be included in our post-closure permit as an Area of Concern (AOC).

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]

Sent: Thursday, November 10, 2011 7:48 AM

To: Tsinnajinnie, Leona, NMENV

Cc: Moore, Darrell; Dade, Randy, EMNRD

Subject: FW: TK-401 Leak

Leona:

I spoke with Darrell Moore this morning about the leak and a path forward as requested in his e-mail on 11/8.

The path forward is:

1) Remove the section where the double pinhole leak is located (NW Quadrant of Tank within 3 ft. of cement ring wall (note: no liner exists beneath the tank) and hand auger down to 10 ft. and assess cuttings and PID readings for gross contamination assessment. A bottom hole sample collected using EPA QA/QC and DQO protocols will be analyzed for TPH and VOCs.

2) The closest MW (MW-99) is located about 300 yds E-NE of Tank will be evaluated for increasing trends of VOCs.

3) The Prax-Aire monitoring was implemented about a year ago and there were no indications of a leak at that time according to Darrell. Prax-Aire was called out recently again and detected a leak, but it was the stained soils from the tattle-tale leak detection system in the concrete ringwall beneath the tank that indicated that there was a leak.

4) The operator will notify the NMED and OCD before the augering is to be performed. Based on this work, the agencies will need to determine whether active remediation and another MW positioned down gradient is warranted. Darrell indicated that this area was not in a SWMU.

Please chime in if you have comments and/or recommendations at this time. Thank you.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Dept.

Oil Conservation Division, Environmental Bureau

1220 South St. Francis Dr., Santa Fe, New Mexico 87505

Office: (505) 476-3490

Fax: (505) 476-3462

E-mail: CarlJ.Chavez@state.nm.us

Website: <http://www.emnrd.state.nm.us/ocd/>

"Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at: <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>)

From: Chavez, Carl J, EMNRD
Sent: Tuesday, November 08, 2011 7:24 AM
To: Tsinnajinnie, Leona, NMENV
Subject: FW: TK-401 Leak

Leona:

I'm wondering if this is the tank with the liner connected to the inner ring-wall of the tank concrete base? Also, I thought Navajo had a liquid level alarm to detect product loss or some method to gauge the tanks for possible loss?

I'm reading up on naphthas now to see about contaminant hydrogeology and monitoring..... I'll get back with you soon to discuss.

Thanks.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us

Website: <http://www.emnrd.state.nm.us/ocd/>

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From: Moore, Darrell [<mailto:Darrell.Moore@hollyfrontier.com>]
Sent: Tuesday, November 08, 2011 7:00 AM
To: Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV
Subject: TK-401 Leak

Carl and Leona

Ive attached the C-141 and a few photos of a leak we had in a gasoline tank (Tk-401). This C-141 and the pictures were sent to OCD and NMED on October 7, 2011. We have emptied the tank and found a small hole in the floor in the northwest quadrant and that will be repaired. We have cleaned up the part of the spill that can be reached. Obviously we cant clean up the spill that is under the tank. So Im looking for guidance from OCD and NMED about a path going forward. Do we put this area on the AOC list in our post-closure permit and deal with it that way?

Darrell Moore
Environmental Manager for Water and Wastec
The Holly Frontier Companies
Navajo Refining Company, LLC
501 E Main
PO Box 159
Artesia NM 88211-0159
Phone: 575-746-5281
Cell: 575-703-5058

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Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, November 10, 2011 7:48 AM
To: Tsinnajinnie, Leona, NMENV
Cc: 'Moore, Darrell'; Dade, Randy, EMNRD
Subject: FW: TK-401 Leak
Attachments: C-141 T-401 leak.pdf; IMAG0112.jpg; IMAG0110.jpg

Leona:

I spoke with Darrell Moore this morning about the leak and a path forward as requested in his e-mail on 11/8.

The path forward is:

- 1) Remove the section where the double pinhole leak is located (NW Quadrant of Tank within 3 ft. of cement ring wall (note: no liner exists beneath the tank) and hand auger down to 10 ft. and assess cuttings and PID readings for gross contamination assessment. A bottom hole sample collected using EPA QA/QC and DQO protocols will be analyzed for TPH and VOCs.
- 2) The closest MW (MW-99) is located about 300 yds E-NE of Tank will be evaluated for increasing trends of VOCs.
- 3) The Prax-Aire monitoring was implemented about a year ago and there were no indications of a leak at that time according to Darrell. Prax-Aire was called out recently again and detected a leak, but it was the stained soils from the tattle-tale leak detection system in the concrete ringwall beneath the tank that indicated that there was a leak.
- 4) The operator will notify the NMED and OCD before the augering is to be performed. Based on this work, the agencies will need to determine whether active remediation and another MW positioned down gradient is warranted. Darrell indicated that this area was not in a SWMU.

Please chime in if you have comments and/or recommendations at this time. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us

Website: <http://www.emnrd.state.nm.us/ocd/>

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<http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

From: Chavez, Carl J, EMNRD
Sent: Tuesday, November 08, 2011 7:24 AM
To: Tsinnajinnie, Leona, NMENV
Subject: FW: TK-401 Leak

Leona:

I'm wondering if this is the tank with the liner connected to the inner ring-wall of the tank concrete base? Also, I thought Navajo had a liquid level alarm to detect product loss or some method to gauge the tanks for possible loss?

I'm reading up on naphthas now to see about contaminant hydrogeology and monitoring..... I'll get back with you soon to discuss.

Thanks.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
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E-mail: CarlJ.Chavez@state.nm.us
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<http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>)

From: Moore, Darrell [mailto:Darrell.Moore@hollyfrontier.com]
Sent: Tuesday, November 08, 2011 7:00 AM
To: Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV
Subject: TK-401 Leak

Carl and Leona

Ive attached the C-141 and a few photos of a leak we had in a gasoline tank (Tk-401). This C-141 and the pictures were sent to OCD and NMED on October 7, 2011. We have emptied the tank and found a small hole in the floor in the northwest quadrant and that will be repaired. We have cleaned up the part of the spill that can be reached. Obviously we cant clean up the spill that is under the tank. So Im looking for guidance from OCD and NMED about a path going forward. Do we put this area on the AOC list in our post-closure permit and deal with it that way?

Darrell Moore
Environmental Manager for Water and Wastec
The Holly Frontier Companies
Navajo Refining Company, LLC
501 E Main
PO Box 159
Artesia NM 88211-0159
Phone: 575-746-5281
Cell: 575-703-5058

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Chavez, Carl J, EMNRD

From: Moore, Darrell [Darrell.Moore@hollyfrontier.com]
Sent: Thursday, November 10, 2011 7:29 AM
To: Chavez, Carl J, EMNRD
Subject: Tk -401

Carl

I just found out that we ARE going to put in a new floor above the old floor with gravel between the two floors. So this tank will have a form of secondary containment when we are finished.

Darrell Moore
Environmental Manager for Water and Waste
The Holly Frontier Companies
Navajo Refining Company, LLC
501 E Main
PO Box 159
Artesia NM 88211-0159
Phone: 575-746-5281
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Chavez, Carl J, EMNRD

From: Moore, Darrell [Darrell.Moore@hollyfrontier.com]
Sent: Tuesday, November 08, 2011 7:00 AM
To: Chavez, Carl J, EMNRD; Tsinnajinnie, Leona, NMENV
Subject: TK-401 Leak
Attachments: C-141 T-401 leak.pdf; IMAG0112.jpg; IMAG0110.jpg

Carl and Leona

Ive attached the C-141 and a few photos of a leak we had in a gasoline tank (Tk-401). This C-141 and the pictures were sent to OCD and NMED on October 7, 2011. We have emptied the tank and found a small hole in the floor in the northwest quadrant and that will be repaired. We have cleaned up the part of the spill that can be reached. Obviously we cant clean up the spill that is under the tank. So Im looking for guidance from OCD and NMED about a path going forward. Do we put this area on the AOC list in our post-closure permit and deal with it that way?

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811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Navajo Refining Co.	Contact Robert Combs	
Address 501 E. Main St., Artesia, NM 88210	Telephone No. 575-746-5382	
Facility Name	Facility Type Petroleum Refinery	
Surface Owner	Mineral Owner	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
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Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release Isomerate (naphtha range)	Volume of Release Unknown	Volume Recovered N/A
Source of Release T-401	Date and Hour of Occurrence Unknown	Date and Hour of Discovery ~08:00 3 October, 2011
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*


On 24 September, 2011, the Blender operators noticed a stain on the ground near T-401 during rounds. The operators used a four-gas monitor to determine if the spill was water or the finished product and found no LEL was detected, so the spill was presumed to be water. On 29 September, 2011, a four-gas analyzer was again used to check the stain and found that <20% LEL was detected. At that time, the product rundown was switched to another tank (T-412) and Praxair was called to determine if there was a leak in the tank floor. They found that their tracer chemical was detected outside of the tank, which was reported 3 October, 2011. From the time the stain was noticed until present, the stain has been damp with no liquid present. Please see the attached photos.

Describe Area Affected and Cleanup Action Taken.*

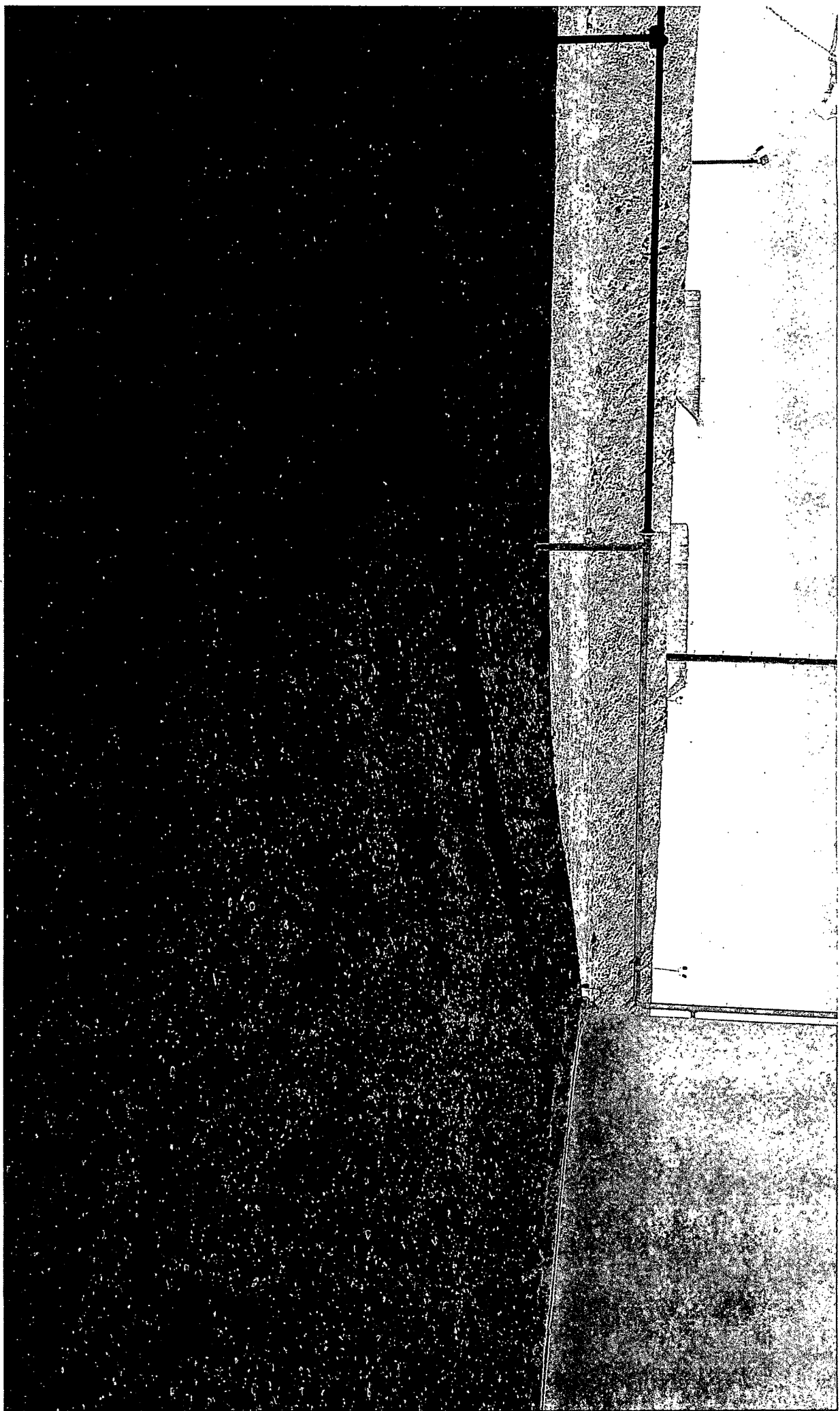
T-401 is elevated above grade by approximately 4 feet. The stain originates at the ring wall and runs down the earthen foundation to a broadened area. The overall length of the stain is ~27 feet and the average width of the run-off path is ~2.5 feet and the widest portion of the stain is 13 feet. A 'tramp' pump has been placed in the area and piped to T-412 in order to empty the contents as soon as possible so that entry and inspection can be made. Once the tank is empty, the area will be excavated and sampled for analyses. A final report will be submitted with clean-up details and the analytical results.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

OIL CONSERVATION DIVISION

Signature: 	Approved by Environmental Specialist:		
Printed Name: Robert Combs	Approval Date:		Expiration Date:
Title: Environmental Specialist	Conditions of Approval:		Attached <input type="checkbox"/>
E-mail Address: Robert.Combs@hollyfrontier.com			
Date: 7 October, 2011	Phone: 575-746-5382		

* Attach Additional Sheets If Necessary





Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, October 20, 2011 10:37 AM
To: 'Combs, Robert'; Tsinnajinnie, Leona, NMENV; Dade, Randy, EMNRD
Cc: Moore, Darrell; Strange, Aaron
Subject: RE: C-141 final report--C-693 fire

Robert:

Received.

Recommend that the refinery include in its SOP(s) high-risk process areas, etc. with potential for explosive atmospheric areas with heated insulated lines that it check for hydrocarbon stains or leaks on lines before restarting the system and either wash the lines with soap and water and/or replace unwashable stained insulation before startup to prevent an ignition source.

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us

Website: <http://www.emnrd.state.nm.us/ocd/>

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<http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>)

From: Combs, Robert [<mailto:Robert.Combs@hollyfrontier.com>]
Sent: Thursday, October 20, 2011 10:03 AM
To: Tsinnajinnie, Leona, NMENV; Chavez, Carl J, EMNRD; Dade, Randy, EMNRD
Cc: Moore, Darrell; Strange, Aaron
Subject: C-141 final report--C-693 fire

Leona, Carl and Randy,

Please see the attached C-141 final report for the fire that occurred October 13, 2011 at C-693 hydrogen compressor. Please let me know if you have any questions.

Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	Navajo Refining Co.	Contact	Robert Combs
Address	P.O. Box 159	Telephone No.	575-746-5382
Facility Name	Artesia facility	Facility Type	Petroleum Refinery
Surface Owner	Mineral Owner	API No.	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
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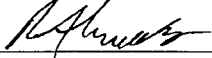
Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release	small fire	Volume of Release	unknown	Volume Recovered	N/A
Source of Release	C-693 lube oil supply/governor	Date and Hour of Occurrence	09:45 13 Oct, 2011	Date and Hour of Discovery	09:45 13 Oct., 2011
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Leona Tsinnajinnie, NMED Carl Chavez, OCD Randy Dade, OCD			
By Whom?	Robert Combs	Date and Hour via email, 16:00 13 Oct., 2011			
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			
If a Watercourse was Impacted, Describe Fully.* N/A.					
Describe Cause of Problem and Remedial Action Taken.* At ~09:45 on 13 October, 2011, the operations group was starting the Unit 33 hydrogen recycle compressor (C-693). The compressor is powered by a steam turbine and had been shut down in order to allow a maintenance crew to perform routine maintenance activities. Following normal start-up procedures, the operators began to 'line-up' the valves on the lube oil, seal oil, and compressor valves (hydrogen and steam). As the steam began to flow through the piping and turbine, the piping and equipment heated and a small volume of lube oil that had soaked some of the insulating material ignited. Operators quickly utilized a steam hose and fire extinguished to put out the fire and isolated the compressor. Once the fire was extinguished, the operators began to start the compressor again. There were no injuries or equipment damaged as a result.					
Describe Area Affected and Cleanup Action Taken.* N/A.					

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOC rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOC marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOC acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

OIL CONSERVATION DIVISION

Signature: 	Approved by Environmental Specialist:		
Printed Name: Robert Combs	Approval Date:		
Title: Environmental Specialist	Expiration Date:		Attached <input type="checkbox"/>
E-mail Address: robert.combs@hollyfrontier.com	Conditions of Approval:		
Date: 20 October, 2011 Phone: 575-746-5382			

* Attach Additional Sheets If Necessary

Chavez, Carl J, EMNRD

From: Combs, Robert [Robert.Combs@hollyfrontier.com]
Sent: Thursday, October 13, 2011 4:21 PM
To: Tsinnajinnie, Leona, NMENV; Chavez, Carl J, EMNRD; Dade, Randy, EMNRD
Cc: Moore, Darrell; Lackey, Johnny; Strange, Aaron
Subject: small fire at C-693 turbine

Leona, Carl, and Randy,

The Environmental Dept. was notified that there was a small fire this morning ~9:45 on a steam turbine-powered compressor. The compressor was being started after completion of maintenance activities and some lube oil soaked insulation ignited. The fire was quickly put out with a fire extinguisher. There were no injuries and no equipment damage as a result. A C-141 will be submitted with further details.

Please let us know if you have any questions,

Thanks,
Robert

Robert Combs

Environmental Specialist
The HollyFrontier Companies
P.O. Box 159
Artesia, NM 88211-0159
office: 575-746-5382
cell: 575-308-2718
fax: 575-746-5451
Robert.Combs@hollyfrontier.com

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