AP - 111

RESPONSE ACTION REPORT SOUR NAPHTHA RELEASE

2019

Marathon Petroleum Company LP

December 12, 2019

Mr. John E. Kieling, Chief
New Mexico Environmental Department
2905 Rodeo Park Drive East, Bldg. 1
Santa Fe, NM 87SOS-6303

RE: Response Action Report
Sour Naphtha Release
Marathon Petroleum Company LP, Gallup Refinery
(dba Western Refining Southwest, Inc.)
EPA ID# NMD000333211
WRG-17-MISC

Dear Mr. Kieling:

Marathon Petroleum Company LP (dba Western Refining Southwest, Inc.) Gallup Refinery is submitting this Response Action Report for the Sour Naphtha Release that occurred on March 26, 2017. The Response Action Report has been enclosed for your review. If there are any questions, please call Brian Moore at 505-726-9745.

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,
Marathon Petroleum Company LP, Gallup Refinery

Robert S. Hanks
Refinery General Manager

Enclosure

cc K. Van Horn NMED
C. Chavez NMOCD
L. King, EPA
B. Moore Marathon Gallup Refinery

92 Giant Crossing Road
Jamestown, NM 87347

MARATHON REFINING LOGISTICS SERVICES

RESPONSE ACTION REPORT

SOUR NAPHTHA RELEASE

GALLUP REFINERY MARATHON PETROLEUM COMPANY, LP

GALLUP, NEW MEXICO

EPA ID# NMD000333211

SUBMITTED BY: Trihydro Corporation

1252 Commerce Drive, Laramie, WY 82070

Response Action Report Checklist

Included	NA	
☒	☐	Title Page
☒	☐	Executive Summary
☒	☐	Report Checklist
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☒	☐	• General information about Gallup Refinery and Area of Release
☒	☐	• Description of the Release
☒	☐	• Characterization of Released Material
☒	☐	o Discussion of the Unit / Process / Area of Release (as applicable)
☒	☐	o Location of unit(s) on a topographic map of appropriate scale
☒	☐	o Designation of type and function of unit(s)
☒	☐	o General dimensions, capacities and structural description of unit(s) (supply any available plans/drawings)
☒	☐	o Dates that the unit(s) was operated;
☒	☐	o Specifications of all wastes that have been managed at/in the unit(s) to the extent available. Include any available data on hazardous waste or hazardous constituents in the wastes
☒	☐	o All available information pertaining to any release of hazardous waste or hazardous constituents from such unit(s) (to include ground water data, soil analyses, air, and surface water data).
☒	☐	• Site Conditions That Affected Release
☒	☐	Section 2 - Remediation Activities
☒	☐	• Detailed discussion of remediation, what type of cleanup conducted, where was it conducted (GPS coordinates or measurements to physical site features), dimensions of excavation, volumes of remediation waste, characterization sampling, disposition of wastes
☒	☐	• Soil Sampling – detailed discussion of sample collection and analysis
☒	☐	• Soil Field Screening
☒	☐	• Subsurface soil sampling – detailed discussion on soil borings, sampling and analysis
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☒	☐	Section 3 – Regulatory Criteria Comparisons
☒	☐	• Presentation of applicable regulatory screening criteria and comparison to site concentrations.
☒	☐	Section 4 – Conclusions and Recommendations • NMED Concurrence – No Further Action Required • Deferral – Release Area within Existing SWMU / AOC • Possible consideration for SWMU Assessment Report
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Executive Summary

The Marathon Petroleum Company Gallup Refinery is located 17 miles east of Gallup, New Mexico. This Response Action Report provides the March 26, 2017 sour naphtha release response action details and related data.

Approximately 16 tons of soil was excavated from the spill area. Soil confirmation samples were collected and analyzed for total petroleum hydrocarbons (TPH), polynuclear aromatic hydrocarbons (PAHs), volatile organic compounds (VOC), chloride, and sulfate. The samples were also analyzed for toxicity characteristic leaching procedure (TCLP) volatiles, TCLP Resource Conservation and Recovery Act (RCRA) metals, reactive cyanide, reactive sulfide, corrosivity, and ignitability for waste characterization.

Because the site is an industrial facility, residential screening levels were not considered. The release occurred over an area with known light non-aqueous phase liquid (LNAPL) impacts in the groundwater. Because of this, the residual soil concentrations that exceed the risk-based DAF 20 screening levels are not considered a significant groundwater threat and no additional excavation is recommended. Non-residential screening levels were considered in this report.

Four sample location gasoline range organics (GRO) results exceed the industrial/occupational screening levels. These confirmation samples were collected either from the excavation side walls or floor. Therefore, the reported exceedances are from depths greater than one foot where exposure to industrial and construction workers is not likely.

Introduction

The Marathon Petroleum Company Gallup Refinery (Refinery) is located approximately 17 miles east of Gallup, McKinley County, New Mexico along the north side of Interstate Highway I-40. The physical address is I-40, Exit #39 Jamestown, New Mexico 87347. The Refinery property covers approximately 810 acres. The sour naphtha release was located on the Refinery's western side (Figure 1).

General Information

The Refinery processes crude oil transported by pipeline or tanker truck from the Four Corners region. Various process units operated at the Refinery include: crude distillation, reformer, fluidized catalytic cracker, alkylation, sulfur recovery, merox treater, and hydrotreater. Current and past operations have produced gasoline, diesel fuels, jet fuels, kerosene, propane, butane, and residual fuel.

Description Of The Release

At approximately 10:00 AM on March 26, 2017, a naphtha release was detected as an operator was making his rounds. The operator found a naphtha saturated soil seep, approximately 4 feet (ft) by 4 ft, in a service road. The sour naphtha flowed approximately 332 ft westerly down the middle and sides of the service road. Two separate areas of sour naphtha pooled at the sloping road base. The operator immediately isolated the leaking line by blocking valves. The operator notified the Environmental Department and Kurtz Fire Department. Foam

was applied to the release area to minimize vapors. The release area was barricaded with barricade tape. The Maintenance Department was notified, and earthen berms were installed to control the release flow.

The release occurred from a corrosion hole found in a 3-inch diameter carbon steel pipeline located 4 ft below ground surface (bgs). The estimated sour naphtha volume released was less than 5 barrels (210 gallons). Photographs of the release are presented in Appendix A.

The New Mexico Environment Department (NMED) Hazardous Waste Bureau and the New Mexico Oil Conservation Division (NMOCD) were notified of the spill at 10:00 AM, March 27, 2017. An initial written report (Form C-141) was completed on August 30, 2017 (Appendix B). No personnel injuries or fires were reported in relation to the release.

Characterization Of The Release Material

The product released was sour naphtha. The sour naphtha Safety Data Sheet is presented in Appendix C.

Description Of Release Area

The release occurred from a 3-inch diameter carbon steel pipeline located 4 ft bgs. The pipeline transported sour naphtha to Tank T-567. The release occurred where several pipelines cross beneath a service road west of the intersection near the bundle cleaning slab.

Site Conditions That Affect The Release

Local topographic features include high ground in the southeast gradually decreasing to a lowland fluvial plain in the northwest. Refinery elevations range from 6,860 ft to 7,040 ft above mean sea level (amsl). The release area service road elevation is approximately 6,951 ft amsl. The release flowed downhill (west) along the middle and sides of the service road and collected in two separate areas at the slope base. The slope base elevation is approximately 6,932 feet amsl. The maintenance department built several berms to contain the release.

Remediation Activities

Remediation

The sour naphtha was observed to be seeping from beneath the service road and moving westward down the service road (Figure 2). The soil excavation area dimensions are 20 ft long (parallel to the pipeline) by 4 ft wide by 4 ft deep (Figure 3). Following excavation of soil covering the pipe, maintenance replaced the damaged pipeline section. Visibly impacted soil in and surrounding the release area was excavated and placed in 20 cubic yard (cy) bins for off-site disposal. A photograph taken during the excavation process is presented in Appendix D.

Six soil confirmation samples were collected after excavation was completed (Figure 4). Based on the analytical results (Appendix E), the 16 tons of soil were treated as hazardous waste (D018 – soil with benzene) and transported offsite for disposal. Copies of the waste manifests are presented in Appendix F. The excavated area was backfilled with clean soil and the service road was reopened.

Assessment – Soil Confirmation Sampling

Soil samples were collected to confirm that the release area extent had been properly remediated.

Soil Sampling

On March 30, 2017, six discrete soil samples, Sample Locations #1 through #6, were collected from the completed excavation using a trowel that was decontaminated between samples. A description of each sample location (Figure 5) is provided below:

- Sample Location #1 – excavation floor, northeast of the pipeline hole
- Sample Location #2 – excavation floor, southeast of the pipeline hole
- Sample Location #3 – eastern excavation sidewall near the pipeline hole
- Sample Location #4 – western excavation sidewall near the pipeline hole
- Sample Location #5 – western excavation sidewall approximately 8 to 10 ft south of the pipeline hole
- Sample Location #6 – western excavation sidewall approximately 8 to 10 ft north of the pipeline hole

Confirmation Sample Location Selection

The confirmation soil samples were collected based on field screening (e.g., olfactory, staining) and their location relative to the pipeline hole. These locations are the most representative soil conditions after visually impacted soil excavation was completed.

Soil Sampling Analytical Results

On April 5, 2017, the soil confirmation samples were delivered to Hall Environmental Analysis Laboratory (Hall) and analyzed for the following constituents:

- Total Petroleum Hydrocarbons (TPH) – Environmental Protection Agency (EPA) Method 8015D
- Polycyclic Aromatic Hydrocarbons (PAH) – EPA Method 8310
- Anions (chloride and sulfate) – EPA Method 300.0
- Toxicity Characteristic Leaching Procedure (TCLP) Mercury – EPA Method 7470
- TCLP Resource Conservation and Recovery Act (RCRA) Metals – EPA Method 6010B
- TCLP Volatiles – EPA Method 8260B
- Reactivity (cyanide and sulfide)
- Corrosivity
- Ignitability

In addition, Sample Location #4, was also analyzed for total volatiles – EPA Method 8260B.

On April 21, 2017, Hall issued Analytical Report No. 1704176. The report is presented in Appendix E. An analytical results summary for TPH, PAHs, volatiles, chloride, and sulfate is presented in Table 1.

Subsurface Soil Conditions

No soil borings or monitor wells were installed during the investigation.

Groundwater Conditions

A groundwater investigation was not conducted. However, the nearest monitoring well to the release area is MKTF-15 (Figure 5), which is approximately 120 ft northwest (downgradient) of the release area. The MKTF-15 depth to groundwater is approximately 12 ft bgs. LNAPL has been detected in this monitoring well during previous gauging events including September 26, 2017. MKTF-15 was sampled during the first, second, and fourth quarterly groundwater sampling events. The next closest monitoring well MKTF-10 is located along the release flow pathway. Monitoring well MKTF-11 is located at the far end where the sour naphtha pooled at the service road's base. MKTF-10 and MKTF-11 were sampled during quarterly groundwater sampling events in 2017. The groundwater analytical results are presented in the annual groundwater report. The well locations with respect to the release area are shown on Figure 5. The 2017 quarterly gauging events conducted at these three wells are presented in Table 2.

Surface Water Conditions

The release did not reach surface water.

Surface Air And Subsurface Vapor Conditions

Foam was applied to minimize any sour naphtha release vapors.

Regulatory Criteria Comparisons

The potential cleanup levels (i.e., screening levels) are specified in NMED's *Risk Assessment Guidance for Site Investigations and Remediation* dated March 2017 and EPA's Regional Screening Levels dated June 2017 if NMED values are not available.

For non-residential properties (e.g., the Refinery), the soil screening levels (SSLs) must be protective of commercial/industrial workers throughout the upper 1 ft of surface soils and construction workers throughout the upper 10 ft based on NMED criteria. NMED residential soil screening levels are applied to the upper 10 ft and soil screening levels for protection of groundwater apply throughout the vadose zone. EPA soil screening levels for direct contact exposure apply to the upper 2 ft of the vadose zone. The cleanup criteria are presented in the analytical data summary tables.

A review of the analytical results for the soil samples collected on March 30, 2017 indicate that several VOC concentrations, all detected in Sample Location #4 (Table 1), exceed the NMED Risk-Based SSL for a DAF of 20. However, the LNAPL-impacted groundwater beneath the release area minimizes any risk to groundwater.

The analytical results indicate that several semi-volatile organic compound (SVOCs) concentrations were detected (Table 1) that exceed the NMED Risk-Based SSL for a DAF of 20. As stated above, the LNAPL-impacted groundwater beneath the release area minimizes any risks to groundwater.

A review of the TPH analytical results indicates exceedances of the Residential Soil Screening Level (1,000 mg/kg) and/or the industrial/occupational screening level (3,800 mg/kg), assuming unknown oil. GRO results from sample locations #1 through #5 exceed the screening levels (Table 1).

Conclusions and Recommendations

On March 26, 2017, a sour naphtha release was detected in the middle of a service road in the western portion of the Refinery. The sour naphtha flowed approximately 332 ft downhill in a westerly direction along the middle and sides of the service road. The release occurred from a corrosion hole in a 3-inch diameter carbon steel pipeline located 4 ft bgs. The estimated release volume was less than 5 barrels (210 gallons).

Soil Confirmation Sampling Results

An analytical result review indicates that some VOC, SVOC, and GRO concentrations exceeded NMED screening levels. The confirmation samples were collected either from the completed excavation's sidewall or floor, such that the reported exceedances are at depths greater than 1 ft bgs where exposure to industrial and construction workers is not likely.

Recommendations

The release is not considered a significant threat to the underlying groundwater due to pre-existing LNAPL impacts. Because groundwater monitoring is currently being conducted downgradient of the release area, no further action is recommended.

Tables

Table 1. Soil Analytical Results - March 30, 2017
Gallup Refinery
Gallup, New Mexico

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) Soil GW	Source	Sample Location #1		Sample Location #2		Sample Location #3		Sample Location #4		Sample Location #5		Sample Location #6	
							1704176-001		1704176-002		1704176-003		1704176-004		1704176-005		1704176-006	
							3/30/2017		3/30/2017		3/30/2017		3/30/2017		3/30/2017		3/30/2017	
Anions																		
Chloride	18,800,000	(1)	58,400,000	(4)	-	-	270	v	560	v	54	v	750	v	70	v	120	v
Sulfate	-	-	-	-	-	-	30	v	19	J	15	J	34	v	96	v	95	v
Volatiles (mg/kg)																		
1,1,1,2-Tetrachloroethane	27.8	(1)	136	(4)	0.036	(8)	NA		NA		NA		<0.112206	H	NA		NA	
1,1,1-Trichloroethane	14,300	(1)	13,500	(5)	1.28	(8)	NA		NA		NA		<0.129327	H	NA		NA	
1,1,2,2-Tetrachloroethane	7.93	(1)	39.1	(4)	0.00481	(8)	NA		NA		NA		<0.285815	H	NA		NA	
1,1,2-Trichloroethane	2.59	(1)	2.28	(5)	0.0268	(8)	NA		NA		NA		<0.105747	H	NA		NA	
1,1-Dichloroethane	77.9	(1)	380	(4)	0.136	(8)	NA		NA		NA		<0.398406	H	NA		NA	
1,1-Dichloroethene	436	(1)	420	(5)	0.0479	(8)	NA		NA		NA		<0.398406	H	NA		NA	
1,1-Dichloropropene	-	-	-	-	-	-	NA		NA		NA		<0.112583	H	NA		NA	
1,2,3-Trichlorobenzene	63	(2)	930	(6)	0.42	(9)	NA		NA		NA		0.14	J,H	NA		NA	
1,2,3-Trichloropropane	0.05	(1)	1.21	(4)	0.0000582	(8)	NA		NA		NA		<0.49907	H	NA		NA	
1,2,4-Trichlorobenzene	82.2	(1)	78.4	(5)	3.1	(8)	NA		NA		NA		0.14	J,H	NA		NA	
1,2,4-Trimethylbenzene	300	(2)	1,800	(6)	1.62	(9)	NA		NA		NA		67	H	NA		NA	
1,2-Dibromo-3-chloropropane	0.09	(1)	1.17	(4)	0.00139	(8)	NA		NA		NA		**0.16**	J,H	NA		NA	
1,2-Dibromoethane (EDB)	0.67	(1)	3.28	(4)	0.000236	(8)	NA		NA		NA		<0.126758	H	NA		NA	
1,2-Dichlorobenzene	2,140	(1)	2,470	(5)	9.08	(8)	NA		NA		NA		<0.050403	H	NA		NA	
1,2-Dichloroethane (EDC)	8.25	(1)	40.3	(4)	0.0238	(8)	NA		NA		NA		<0.103722	H	NA		NA	
1,2-Dichloropropane	17.6	(1)	25.2	(5)	0.0277	(8)	NA		NA		NA		<0.061625	H	NA		NA	
1,3,5-Trimethylbenzene	270	(2)	1,500	(6)	1.74	(9)	NA		NA		NA		28	H	NA		NA	
1,3-Dichlorobenzene	-	-	-	-	-	-	NA		NA		NA		<0.087724	H	NA		NA	
1,3-Dichloropropane	1,600	(2)	23,000	(6)	2.6	(9)	NA		NA		NA		<0.245715	H	NA		NA	
1,4-Dichlorobenzene	1,290	(1)	6,730	(4)	1.12	(8)	NA		NA		NA		<0.110698	H	NA		NA	
1-Methylnaphthalene	172	(1)	813	(7)	0.893	(8)	NA		NA		NA		0.45	J,H	NA		NA	
2,2-Dichloropropane	-	-	-	-	-	-	NA		NA		NA		<0.113197	H	NA		NA	
2-Butanone	37,300	(1)	91,200	(5)	20.1	(8)	NA		NA		NA		<0.590232	H	NA		NA	
2-Chlorotoluene	1,560	(1)	7,080	(5)	3.56	(8)	NA		NA		NA		<0.077486	H	NA		NA	
2-Hexanone	200	(2)	1,300	(6)	0.176	(9)	NA		NA		NA		<0.19449	H	NA		NA	
2-Methylnaphthalene	232	(1)	1,000	(5)	2.76	(8)	NA		NA		NA		0.44	J,H	NA		NA	
4-Chlorotoluene	1,600	(2)	23,000	(6)	4.8	(9)	NA		NA		NA		<0.09015	H	NA		NA	
4-Isopropyltoluene	-	-	-	-	-	-	NA		NA		NA		3.4	H	NA		NA	
4-Methyl-2-pentanone	5,810	(1)	20,200	(5)	4.8	(8)	NA		NA		NA		<0.212839	H	NA		NA	
Acetone	66,300	(1)	241,000	(5)	49.8	(8)	NA		NA		NA		<1.082832	H	NA		NA	
Benzene	17.7	(1)	86.5	(4)	0.0418	(8)	NA		NA		NA		**25**	H	NA		NA	
Bromobenzene	290	(2)	1,800	(6)	0.84	(9)	NA		NA		NA		<0.073216	H	NA		NA	
Bromodichloromethane	6.14	(1)	29.9	(4)	0.00621	(8)	NA		NA		NA		<0.129621	H	NA		NA	
Bromoform	674	(1)	1,750	(4)	0.147	(8)	NA		NA		NA		<0.244468	H	NA		NA	
Bromomethane	17.6	(1)	17.7	(5)	0.0343	(8)	NA		NA		NA		<0.171881	H	NA		NA	
Carbon disulfide	1,540	(1)	1,610	(5)	4.42	(8)	NA		NA		NA		<0.118374	H	NA		NA	
Carbon tetrachloride	10.6	(1)	52.1	(4)	0.0367	(8)	NA		NA		NA		<0.098489	H	NA		NA	
Chlorobenzene	376	(1)	408	(5)	1.08	(8)	NA		NA		NA		<0.059346	H	NA		NA	
Chloroethane	18,800	(1)	16,500	(5)	107	(8)	NA		NA		NA		<0.327893	H	NA		NA	
Chloroform	5.85	(1)	28.4	(4)	0.0109	(8)	NA		NA		NA		<0.060064	H	NA		NA	
Chloromethane	40.8	(1)	199	(4)	0.0952	(8)	NA		NA		NA		<0.209078	H	NA		NA	
cis-1,2-DCE	156	(1)	708	(5)	0.352	(8)	NA		NA		NA		<0.127196	H	NA		NA	
cis-1,3-Dichloropropene	29.1	(1)	129	(5)	0.028	(8)	NA		NA		NA		<0.075548	H	NA		NA	
Dibromochloromethane	13.8	(1)	66.9	(4)	0.00755	(8)	NA		NA		NA		<0.083749	H	NA		NA	
Dibromomethane	57.4	(1)	53.4	(5)	0.0335	(8)	NA		NA		NA		<0.04864	H	NA		NA	
Dichlorodifluoromethane	180	(1)	159	(5)	7.23	(8)	NA		NA		NA		<0.410186	H	NA		NA	
Ethylbenzene	74.5	(1)	365	(4)	12.3	(8)	NA		NA		NA		**120**	H	NA		NA	
Hexachlorobutadiene	61.6	(1)	51.7	(4)	0.0413	(8)	NA		NA		NA		<0.247574	H	NA		NA	
Isopropylbenzene	2,350	(1)	2,710	(5)	11.4	(8)	NA		NA		NA		19	H	NA		NA	
Methyl tert-butyl ether (MTBE)	968	(1)	4,780	(4)	0.553	(8)	NA		NA		NA		<0.152745	H	NA		NA	
Methylene chloride	409	(1)	1,200	(5)	0.0221	(8)	NA		NA		NA		<0.398406	H	NA		NA	
Naphthalene	1,160	(1)	5,020	(5)	0.0823	(8)	NA		NA		NA		0.83	J,H	NA		NA	
n-Butylbenzene	3,900	(2)	58,000	(6)	64	(9)	NA		NA		NA		4	H	NA		NA	
n-Propylbenzene	3,800	(2)	24,000	(6)	24	(9)	NA		NA		NA		27	H	NA		NA	
sec-Butylbenzene	7,800	(2)	120,000	(6)	118	(9)	NA		NA		NA		4.9	H	NA		NA	
Styrene	7,230	(1)	10,100	(5)	1.71	(8)	NA		NA		NA		<0.173169	H	NA		NA	
tert-Butylbenzene	7,800	(2)	120,000	(6)	32	(9)	NA		NA		NA		0.19	J,H	NA		NA	
Tetrachloroethene (PCE)	110	(1)	119	(5)	0.0398	(8)	NA		NA		NA		<0.079501	H	NA		NA	
Toluene	5,220	(1)	14,000	(5)	11.1	(8)	NA		NA		NA		220	H	NA		NA	
trans-1,2-DCE	293	(1)	303	(5)	0.503	(8)	NA		NA		NA		<0.398406	H	NA		NA	
trans-1,3-Dichloropropene	29.1	(1)	129	(5)	0.0281	(8)	NA		NA		NA		<0.118668	H	NA		NA	
Trichloroethene (TCE)	6.72	(1)	6.84	(5)	0.031	(8)	NA		NA		NA		<0.120571	H	NA		NA	
Trichlorofluoromethane	1,220	(1)	1,120	(5)	15.7	(8)	NA		NA		NA		<0.149492	H	NA		NA	
Vinyl chloride	0.74	(1)	28.3	(4)	0.0134	(8)	NA		NA		NA		<0.083136	H	NA		NA	
Xylenes, Total	863	(1)	791	(5)	154	(8)	NA		NA		NA		330	H	NA		NA	
PAHs (mg/kg)																		
1-Methylnaphthalene	172	(1)	813	(7)	0.893	(8)	<0.024605	u	1.3	J	1.1	J	0.9	J	0.49	J	<0.02501	u
2-Methylnaphthalene	232	(1)	1,000	(5)	2.76	(8)	<0.024901	u	0.53	J	<0.24219	u	<0.24645	u	<0.24034	u	<0.02531	u
Acenaphthene	3,480	(1)	15,100	(5)	0.0309	(8)	<0.024012	u	0.7	J	<0.23354	u	<0.23765	u	<0.23176	u	<0.02441	u
Acenaphthylene	-	-	-	-	-	-	<0.021047	u	<0.20354	u	<0.20471	u	<0.20831	u	<0.20315	u	<0.0214	u

Table 1. Soil Analytical Results - March 30, 2017
Gallup Refinery
Gallup, New Mexico

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) Soil GW	Source	Sample Location #1		Sample Location #2		Sample Location #3		Sample Location #4		Sample Location #5		Sample Location #6	
							1704176-001		1704176-002		1704176-003		1704176-004		1704176-005		1704176-006	
							3/30/2017		3/30/2017		3/30/2017		3/30/2017		3/30/2017		3/30/2017	
Anthracene	17,400	(1)	75,300	(5)	851	(8)	0.019	v	0.16	v	<0.01057	u	<0.01076	u	<0.01049	u	<0.0011	u
Benz(a)anthracene	1.53	(1)	32.3	(4)	0.637	(8)	0.031	v	0.31	v	0.096	v	0.0073	J	0.0072	J	0.00075	J
Benzo(a)pyrene	1.12	(1)	23.6	(4)	3.53	(8)	0.023	v	0.2	v	0.06	J	0.0073	J	<0.00286	u	0.0005	J
Benzo(b)fluoranthene	1.53	(1)	32.3	(4)	6.17	(8)	0.017	v	0.16	v	0.041	J	0.0049	J	<0.00477	u	0.0005	J
Benzo(g,h,i)perylene	-	-	-	-	-	-	0.013	v	0.12	v	0.043	J	0.012	J	0.0072	J	0.0005	J
Benzo(k)fluoranthene	15.30	(1)	323	(4)	60.5	(8)	0.014	v	0.098	v	0.031	J	<0.00391	u	<0.00381	u	<0.0004	u
Chrysene	153	(1)	3,230	(4)	186	(8)	0.017	v	0.16	v	0.062	J	<0.01369	u	<0.01335	u	<0.00141	u
Dibenz(a,h)anthracene	0.15	(1)	3.23	(4)	1.97	(8)	0.0037	J	0.026	J	0.017	J	<0.00587	u	<0.00572	u	<0.0006	u
Fluoranthene	2,320	(1)	10,000	(5)	1,340	(8)	0.065	v	1.4	v	0.27	v	0.024	J	0.041	J	<0.00201	u
Fluorene	2,320	(1)	10,000	(5)	80	(8)	<0.002174	u	<0.02102	u	<0.02114	u	<0.02152	u	<0.02098	u	<0.00221	u
Indeno(1,2,3-cd)pyrene	1.53	(1)	32.3	(4)	20.1	(8)	0.013	v	0.1	v	<0.02307	u	<0.02347	u	<0.02289	u	<0.00241	u
Naphthalene	1,160	(1)	5,020	(5)	0.0823	(8)	0.13	J	0.92	J	1.3	J	0.95	J	0.36	J	<0.03556	u
Phenanthrene	1,740	(1)	7,530	(5)	85.9	(8)	0.058	v	1.5	v	0.062	J	<0.01174	u	<0.01144	u	<0.00121	u
Pyrene	1,740	(1)	7,530	(5)	192	(8)	0.076	v	1.4	v	0.3	v	0.039	J	0.038	J	0.004	J
Total Petroleum Hydrocarbons (mg/kg)																		
Gasoline Range Organics (GRO)	1,000	(11)	3,800	(11)	20,000	(11)	**4200**	v	**5900**	v	**9800**	v	**7300**	v	**3000**	v	<1.12	u
Diesel Range Organics (DRO)	1,000	(11)	3,800	(11)	20,000	(11)	25	v	320	v	360	v	250	v	70	v	1.7	J
Motor Oil Range Organics (MRO)	1,000	(11)	3,800	(11)	20,000	(11)	<44	u	100	v	<500	u	<472	u	<52	u	<51	u

Notes:

< - less than

DAF - Dilution and Attenuation Factor

DRO - Diesel Range Organics

GRO - Gasoline Range Organics

GW - groundwater

h - holding times for preparation or analysis exceeded

j - analyte detected below quantitation limits

mg/kg - milligrams per kilogram

MRO - Motor Oil Range Organics

NA - not applicable

PAH - Polycyclic Aromatic Hydrocarbons

u - reportable detection above the Practical quantitation limit (PQL)

v - result is not detected at method detection limit (MDL)

Bold represents value above Residential Screening Level

Yellow highlight represents value above Leachate (DAF) Screening Level

Bold with yellow highlight value exceeds Residential Screening Level and DAF

Bold with orange highlight value exceeds Residential and Non-Residential Screening Level

Table 2. Monitoring Well Gauging Data - 2017
Gallup Refinery
Gallup, New Mexico

Well ID Number	Inspection or Sample Date	Ground Level Elevations (ft)	Well Casing Rim Elevations (ft)	Depth to LNAPL (ft)	LNAPL Column Thickness (ft)	Depth to Water (ft)	Groundwater Elevation (ft)	Corrected Groundwater Elevation (Factor 0.8) (ft)	Screened Interval Depth Top to Bottom (ft)	Screened Stratigraphic Unit
MKTF-10	3/2/2017	6937.51	6937.16	N/A	N/A	7.47	6929.69	N/A	7 - 17	Chinle/Alluvium Interface
	6/7/2017	6937.51	6937.16	N/A	N/A	7.02	6930.14	N/A	7 - 17	Chinle/Alluvium Interface
	9/27/2017	6937.51	6937.16	N/A	N/A	6.78	6930.38	N/A	7 - 17	Chinle/Alluvium Interface
	11/29/2017	6937.51	6937.16	N/A	N/A	7	6930.16	N/A	7 - 17	Chinle/Alluvium Interface
MKTF-11	3/2/2017	6931.61	6931.34	N/A	N/A	6.96	6924.38	N/A	8 - 18	Chinle/Alluvium Interface
	6/7/2017	6931.61	6931.34	N/A	N/A	7.39	6923.95	N/A	8 - 18	Chinle/Alluvium Interface
	9/26/2017	6931.61	6931.34	N/A	N/A	6.7	6924.64	N/A	8 - 18	Chinle/Alluvium Interface
	11/29/2017	6931.61	6931.34	N/A	N/A	8	6923.34	N/A	8 - 18	Chinle/Alluvium Interface
MKTF-15	3/2/2017	6943.74	6943.48	N/A	N/A	12.15	6931.33	N/A	9 - 19	Chinle/Alluvium Interface
	6/7/2017	6943.74	6943.48	N/A	N/A	11.93	6931.55	N/A	9 - 19	Chinle/Alluvium Interface
	9/26/2017	6943.74	6943.48	12	0.1	12.1	6931.38	6931.46	9 - 19	Chinle/Alluvium Interface
	11/29/2017	6943.74	6943.48	N/A	N/A	12.13	6931.35	N/A	9 - 19	Chinle/Alluvium Interface

Notes:
ft - feet
N/A - Not Applicable

Figures

Image Cite: USDA /fsa – Aerial Photography Field Office, NAIP MrSID – Publication: 2014

2 SOUR NAPHTHA RELEASE
SCALE: 1" = 100'
0 100'

N

EXPLANATION

- TANK
- SOUR NAPHTHA RELEASE

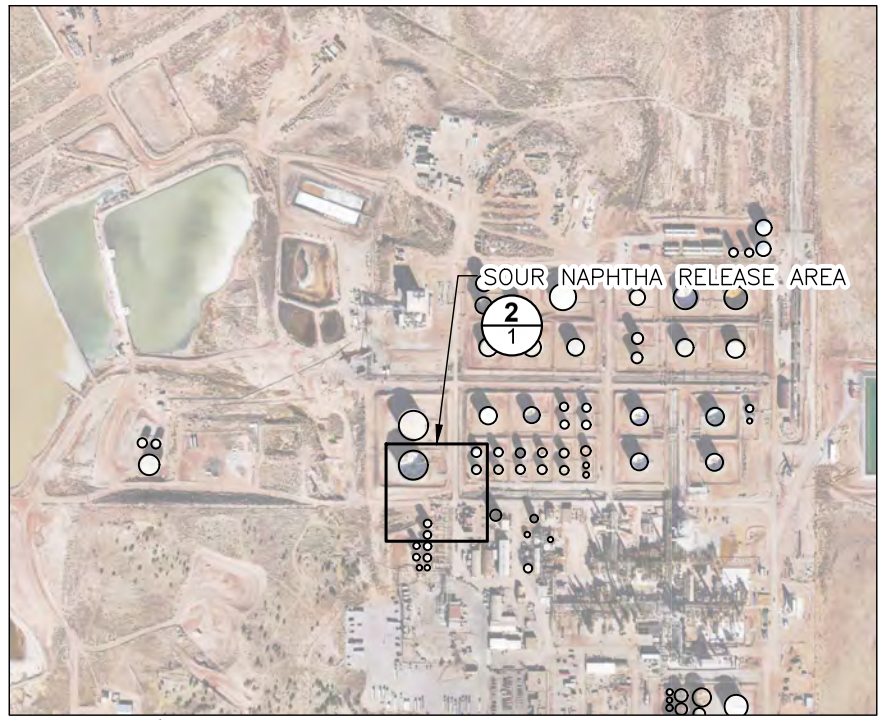

Image Cite: USDA /fsa – Aerial Photography Field Office, NAIP MrSID – Publication: 2014

1 KEY MAP
SCALE: 1" = 800'
0 800'

N

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 1

SITE LOCATION

GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: FZ	Checked By: PH	Scale: AS SHOWN	Date: 2/15/19	File: 697-SOURNAPHTHA-RELEASE-201902

M:\WTOZ\WESTERNREFINING\CADD\GALLUP\RELEASES\SOUR NAPHTHA\697-SOURNAPHTHA-RELEASE-201902

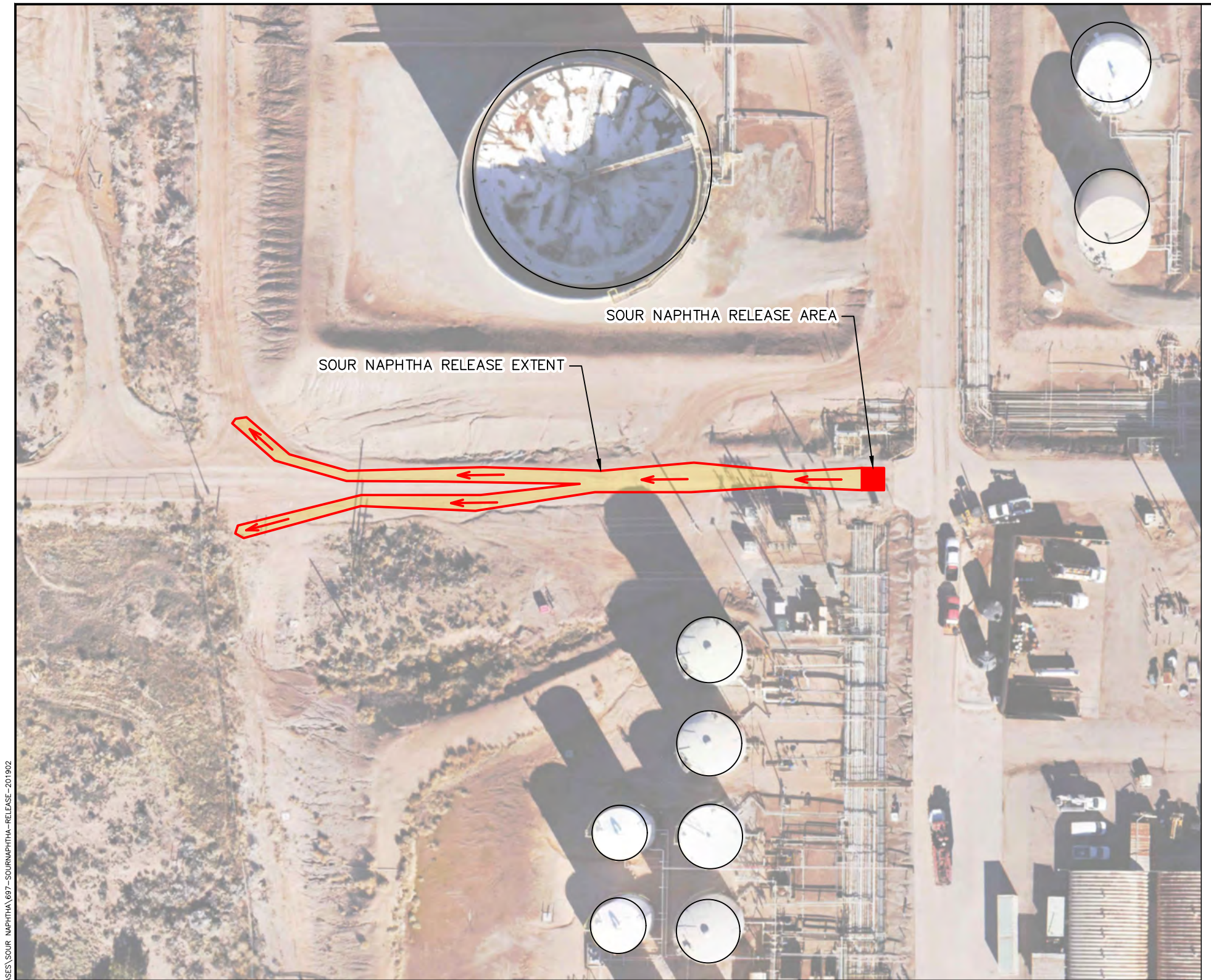

Image Cite: USDA /fsa – Aerial Photography Field Office, NAIP MrSID – Publication: 2014

2 SOUR NAPHTHA RELEASE EXTENT
SCALE: 1" = 60'

0 60'

N

EXPLANATION

- TANK
- SOUR NAPHTHA RELEASE
- SOUR NAPHTHA RELEASE EXTENT
- RELEASE FLOW DIRECTION

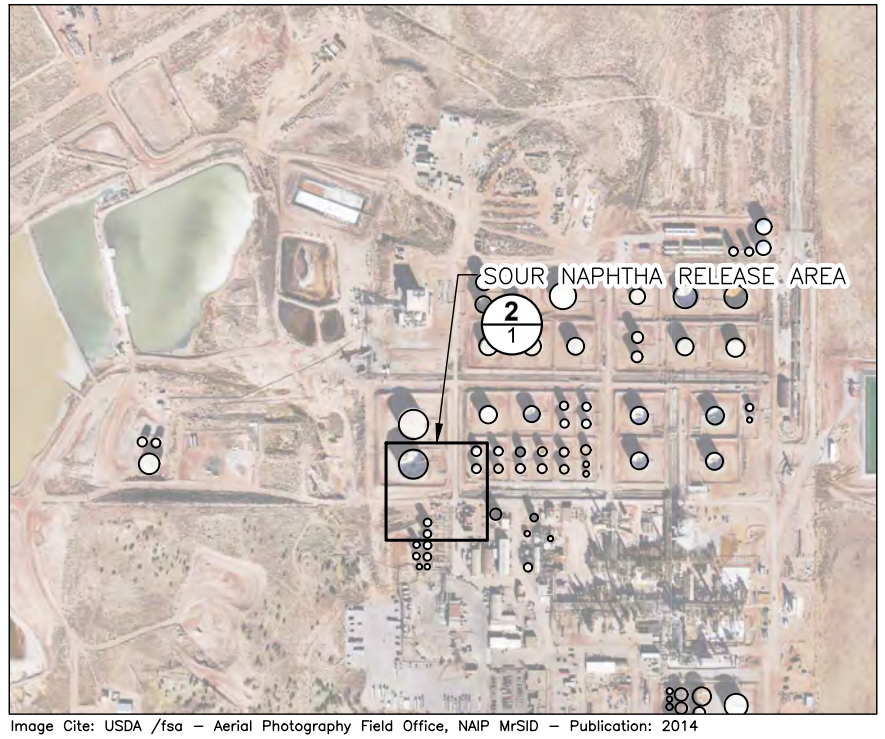

Image Cite: USDA /fsa – Aerial Photography Field Office, NAIP MrSID – Publication: 2014

1 KEY MAP
SCALE: 1" = 800'

0 800'

N

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FIGURE 2

RELEASE EXTENT

GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: FZ	Checked By: PH	Scale: AS SHOWN	Date: 2/15/19	File: 697-SOURNAPHTHA-RELEASE-201902

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Image Cite: USDA /fsa – Aerial Photography Field Office, NAIP MrSID – Publication: 2014

2 SOUR NAPHTHA RELEASE EXCAVATION EXTENT
SCALE: 1" = 20'
0 20'

N

EXPLANATION

- TANK
- SOUR NAPHTHA RELEASE
- UNDERGROUND PRODUCT PIPELINE
- SOUR NAPHTHA RELEASE EXCAVATION EXTENT AREA

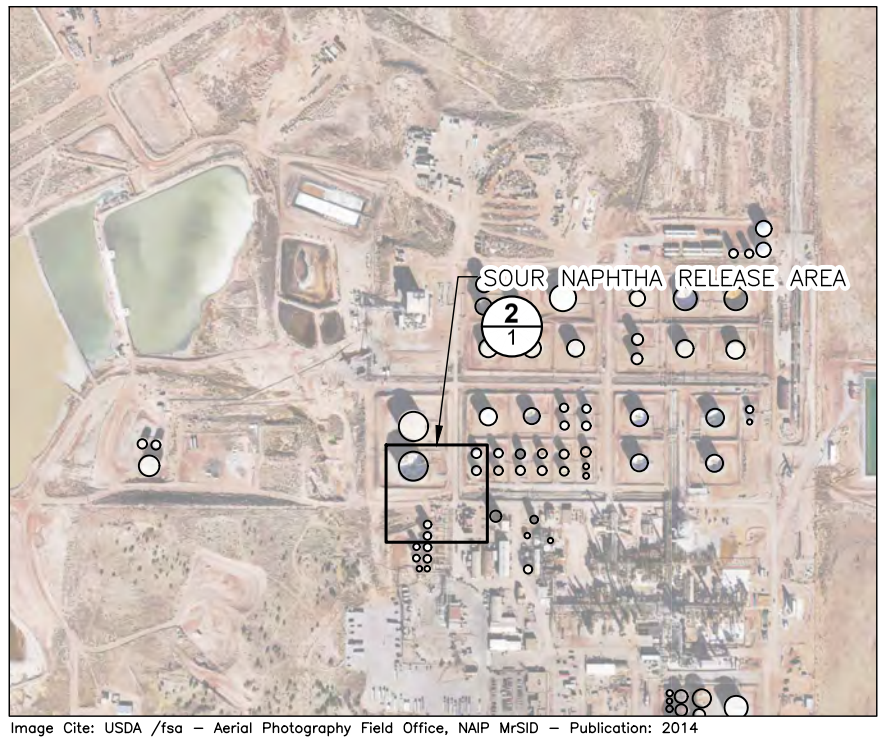

Image Cite: USDA /fsa – Aerial Photography Field Office, NAIP MrSID – Publication: 2014

1 KEY MAP
SCALE: 1" = 800'
0 800'

N

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FIGURE 3

EXCAVATION EXTENT

GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: FZ	Checked By: PH	Scale: AS SHOWN	Date: 2/15/19	File: 697-SOURNAPHTHA-RELEASE-201902

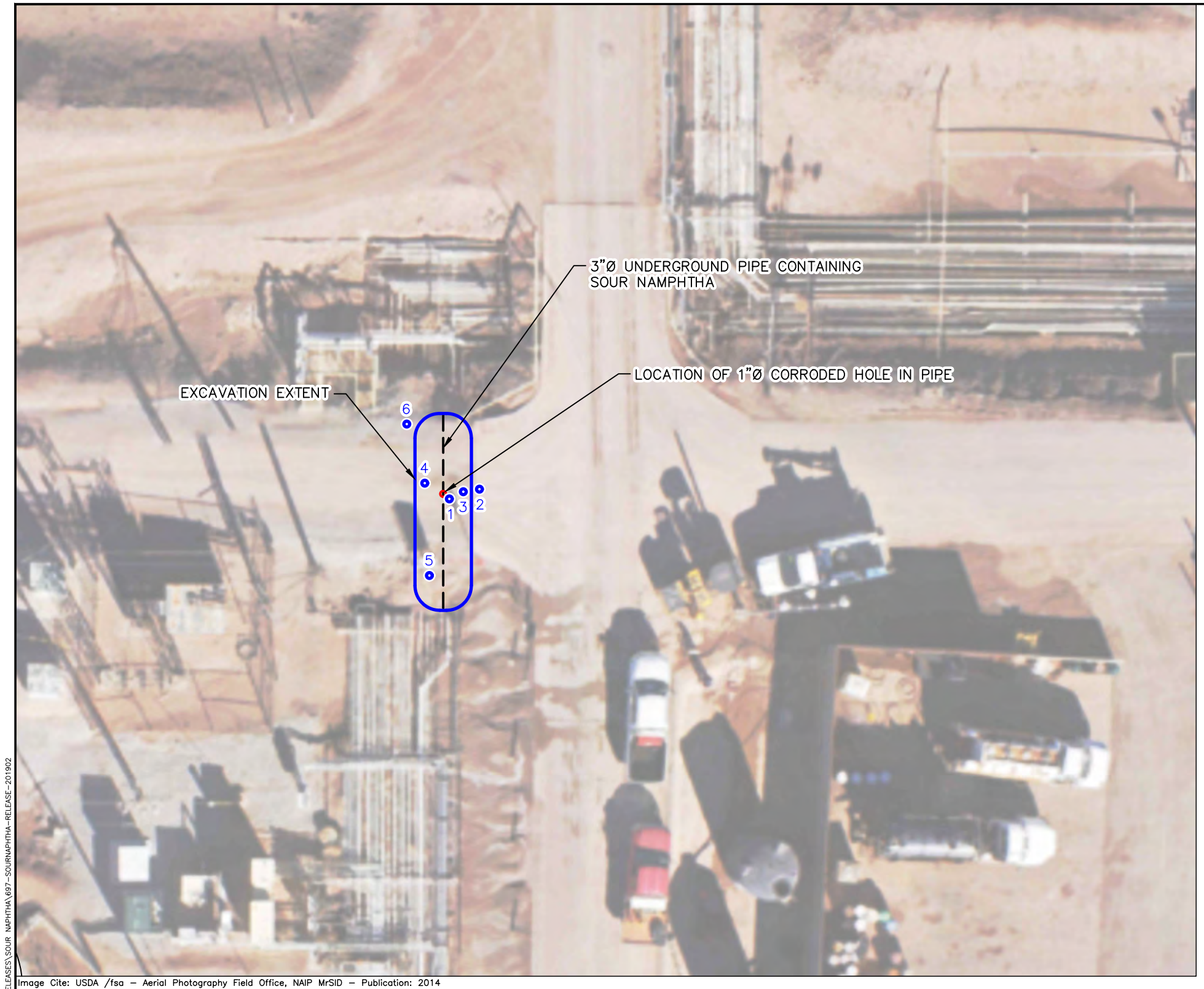

Image Cite: USDA /fsa – Aerial Photography Field Office, NAIP MrSID – Publication: 2014

2 SOUR NAPHTHA RELEASE SOIL SAMPLE LOCATIONS

SCALE: 1" = 20'

0 20'

N

EXPLANATION

- TANK
- SOUR NAPHTHA RELEASE
- UNDERGROUND PRODUCT PIPELINE
- SOUR NAPHTHA RELEASE EXCAVATION EXTENT AREA
- SOIL SAMPLE LOCATIONS

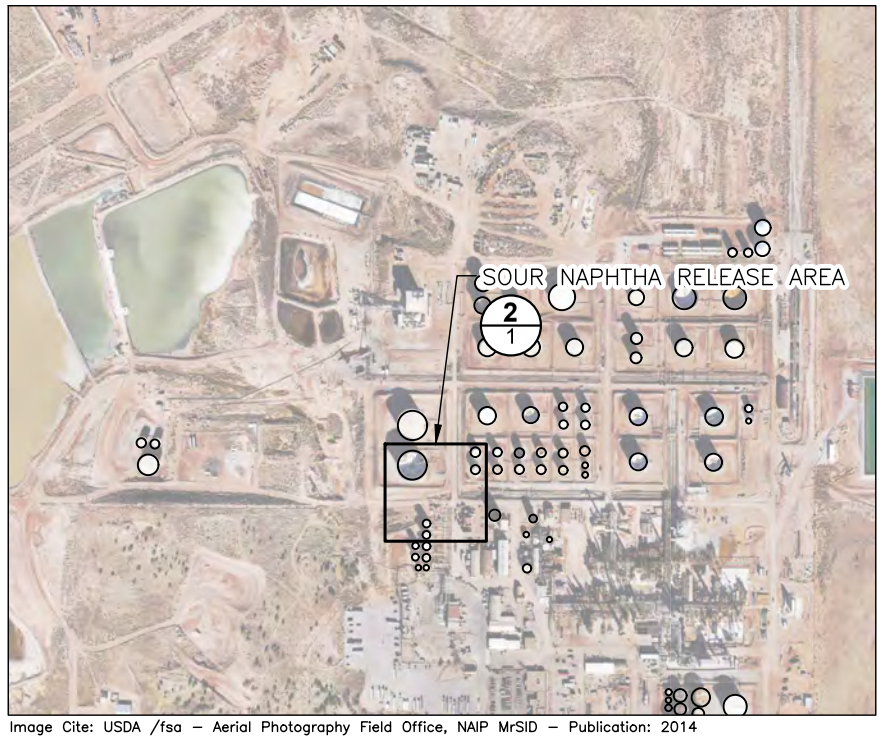

Image Cite: USDA /fsa – Aerial Photography Field Office, NAIP MrSID – Publication: 2014

1 KEY MAP

SCALE: 1" = 800'

0 800'

N

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FIGURE 4

SOIL SAMPLE LOCATIONS

GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: FZ	Checked By: PH	Scale: AS SHOWN	Date: 2/15/19	File: 697-SOURNAPHTHA-RELEASE-201902

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Image Cite: USDA /fsa – Aerial Photography Field Office, NAIP MrSID – Publication: 2014

2 SOUR NAPHTHA RELEASE MONITORING WELL LOCATIONS

SCALE: 1" = 60'

0 60'

N

EXPLANATION

- TANK
- SOUR NAPHTHA RELEASE
- MONITORING WELL LOCATIONS

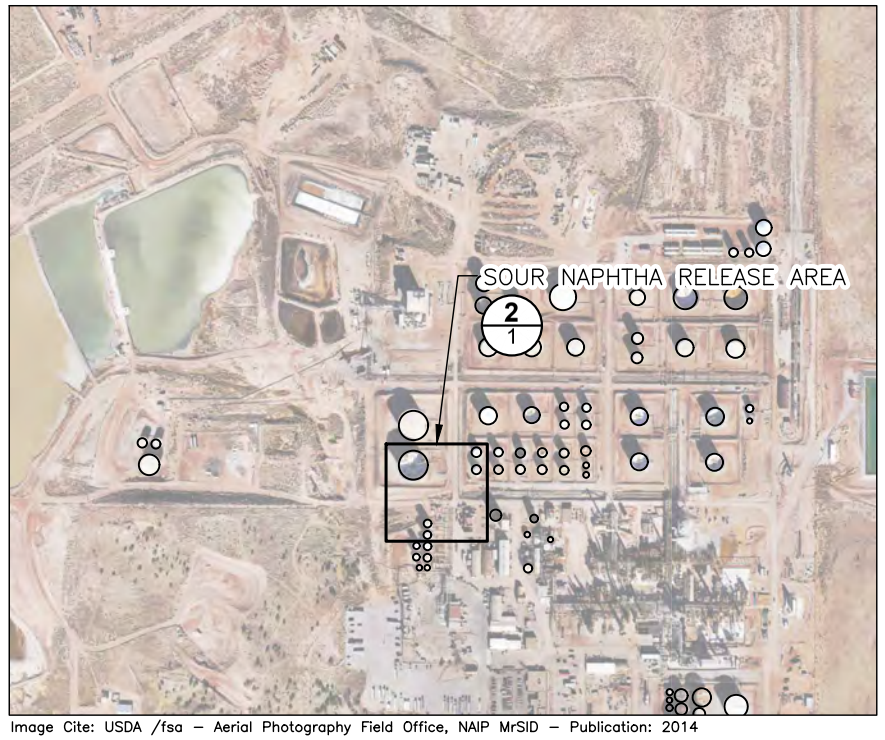

Image Cite: USDA /fsa – Aerial Photography Field Office, NAIP MrSID – Publication: 2014

1 KEY MAP

SCALE: 1" = 800'

0 800'

N

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FIGURE 5

MONITORING WELL LOCATIONS

GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: FZ	Checked By: PH	Scale: AS SHOWN	Date: 2/15/19	File: 697-SOURNAPHTHA-RELEASE-201902

M:\WTOZ\WESTERNREFINING\CADD\GALLUP\RELEASES\SOUR NAPHTHA\697-SOURNAPHTHA-RELEASE-201902

Appendix A
Photographs of Release

Sour Naphtha Release - Looking North

Sour Naphtha Release - Looking West

Appendix B
Form C_141 (August 30, 2017)

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 April 3, 2017

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: Western Refining	Contact: Cheryl Johnson
Address: I-40 Exit 39, Jamestown, NM 87347	Telephone No: 505 722 0231
Facility Name: Gallup 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
	28	15N	15W					McKinley

Latitude 35°29'20.29"N Longitude 108°25'41.13"W NAD83

NATURE OF RELEASE

Type of Release: Sour Naphtha	Volume of Release: < 5 bbls	Volume Recovered: None
Source of Release: Underground pipe leak	Date and Hour of Occurrence: 03/26/17 @ 10:00 AM	Date and Hour of Discovery: 03/26/17 @ 10:00 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? C Smith/NMED	
By Whom? Bill Bailey	Date and Hour: 03/27/17 @ 10:00 AM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

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

Describe Cause of Problem and Remedial Action Taken.* While operator was making his rounds, he smelled naphtha in the air and found a saturated area in the middle of the road where the naphtha was seeping up from the ground (See Figure 1,) and flowed in a westerly direction down the road for approximately 332 feet. Operator notified RSM, Environmental and Kurtz who responded by applying foam to the area to minimize vapors. Operator immediately isolated the line by blocking in valves. Area was isolated and taped off. Maintenance was notified to install earthen berms to control the flow of the spill. No injuries or fires were reported from this release.

Describe Area Affected and Cleanup Action Taken.* Area of the seep was approximately 4 ft x 4 ft section in the middle of the road. Area was excavated to a depth of 4 feet and found an underground 3 inch carbon steel pipe (sour naphtha line to Tank 567) with a 1 inch corroded hole. Maintenance replaced the damaged section of the line. The impacted soil surrounding the area was excavated and placed inside 30 yard bins for disposal. Six locations inside the excavated area were sampled (Figure 2) and sent off for analysis. Based on the analytical (Attachment A), the soil was treated as a hazardous waste (D018), soil with Benzene and sent offsite for disposal. Copies of the manifest are attached (Attachment B). The area was backfilled with clean soil and roadway was re-opened. All impacted soil from the spill was cleaned up from the site and disposed of.

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: Cheryl Johnson	Approved by Environmental Specialist:	
Title: Environmental Specialist	Approval Date:	Expiration Date:
E-mail Address: Cheryl.a.johnson@andeavor.com	Conditions of Approval:	Attached ☐
Date: 08-30-2017 Phone:505-722-0231		

* Attach Additional Sheets If Necessary

Appendix C
Safety Data Sheet – Sour Naphtha

Conforms to HCS 2012 - United States

SAFETY DATA SHEET

Naphtha Sour / HSR (Heavy Straight Run)

Section 1. Identification

GHS product identifier : Naphtha Sour / HSR (Heavy Straight Run)

Other means of identification : Not available.

Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Unit Feed (NHT)

Supplier's details :
Western Refining Company LP
123 W. Mills Avenue
El Paso, TX 79901
Tel: 915-534-1488
Email: Sds-inquiry@wnr.com

Emergency telephone number (with hours of operation) : CHEMTREC, U.S. : 1-800-424-9300 International: +1-703-527-3877 (24/7)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture :
FLAMMABLE LIQUIDS - Category 2
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
GERM CELL MUTAGENICITY - Category 1
CARCINOGENICITY - Category 1A
TOXIC TO REPRODUCTION (Unborn child) - Category 2
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (hearing organs) - Category 1
ASPIRATION HAZARD - Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements :
H225 - Highly flammable liquid and vapor.
H319 - Causes serious eye irritation.
H315 - Causes skin irritation.
H340 - May cause genetic defects.
H350 - May cause cancer.
H361 - Suspected of damaging the unborn child.
H304 - May be fatal if swallowed and enters airways.
H372 - Causes damage to organs through prolonged or repeated exposure. (hearing organs)

Section 2. Hazards identification

Precautionary statements

Prevention : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P233 - Keep container tightly closed.
P260 - Do not breathe vapor.
P270 - Do not eat, drink or smoke when using this product.
P264 - Wash hands thoroughly after handling.

Response : P314 - Get medical attention if you feel unwell.
P308 + P313 - IF exposed or concerned: Get medical attention.
P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P302 + P352 + P362+P364 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse.
P332 + P313 - If skin irritation occurs: Get medical attention.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical attention.

Storage : P405 - Store locked up.
P403 - Store in a well-ventilated place.
P235 - Keep cool.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : MAY RELEASE HIGHLY TOXIC AND FLAMMABLE HYDROGEN SULFIDE (H_2S) GAS.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number/other identifiers

CAS number : Not applicable.

Product code : Not available.

Ingredient name	%	CAS number
Naphtha (petroleum), unsweetened	100	68783-12-0
May contain:		
Benzene	<5	71-43-2
Toluene	<5	108-88-3
Ethylbenzene	<5	100-41-4
Xylene	<5	1330-20-7
Hydrogen sulphide	Trace	7783-06-4

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Section 3. Composition/information on ingredients

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention if symptoms occur.

Skin contact : Flush contaminated skin with plenty of water. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation.

Ingestion : May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No special protection is required.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet or water-based fire extinguishers.

Specific hazards arising from the chemical : Highly flammable liquid and vapor. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Special protective actions for fire-fighters : Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

Spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Naphtha (petroleum), unsweetened	None.
Benzene	**ACGIH TLV (United States, 3/2015). Absorbed through skin.** TWA: 0.5 ppm 8 hours. TWA: 1.6 mg/m³ 8 hours. STEL: 2.5 ppm 15 minutes. STEL: 8 mg/m³ 15 minutes. **OSHA PEL Z2 (United States, 2/2013).** TWA: 10 ppm 8 hours. CEIL: 25 ppm AMP: 50 ppm 10 minutes. **NIOSH REL (United States, 10/2013).** TWA: 0.1 ppm 10 hours. STEL: 1 ppm 15 minutes. **OSHA PEL (United States, 2/2013).** TWA: 1 ppm 8 hours. STEL: 5 ppm 15 minutes.
Toluene	**OSHA PEL Z2 (United States, 2/2013).** TWA: 200 ppm 8 hours. CEIL: 300 ppm AMP: 500 ppm 10 minutes. **NIOSH REL (United States, 10/2013).** TWA: 100 ppm 10 hours. TWA: 375 mg/m³ 10 hours. STEL: 150 ppm 15 minutes. STEL: 560 mg/m³ 15 minutes. **ACGIH TLV (United States, 3/2015).** TWA: 20 ppm 8 hours.
Ethylbenzene	

Section 8. Exposure controls/personal protection

	ACGIH TLV (United States, 3/2015). TWA: 20 ppm 8 hours. **NIOSH REL (United States, 10/2013).** TWA: 100 ppm 10 hours. TWA: 435 mg/m³ 10 hours. STEL: 125 ppm 15 minutes. STEL: 545 mg/m³ 15 minutes. **OSHA PEL (United States, 2/2013).** TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours.
Xylene	**ACGIH TLV (United States, 3/2015).** TWA: 100 ppm 8 hours. TWA: 434 mg/m³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 651 mg/m³ 15 minutes. **OSHA PEL (United States, 2/2013).** TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours.
Hydrogen sulphide	**ACGIH TLV (United States, 3/2015).** TWA: 1 ppm 8 hours. STEL: 5 ppm 15 minutes. **OSHA PEL Z2 (United States, 2/2013).** CEIL: 20 ppm AMP: 50 ppm 10 minutes. **NIOSH REL (United States, 10/2013).** CEIL: 10 ppm 10 minutes. CEIL: 15 mg/m³ 10 minutes.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: Butyl rubber. Polyethylene. Chlorinated polyethylene.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls/personal protection

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.
Color : Clear to Yellow.
Odor : Hydrocarbon.
Odor threshold : Not available.
pH : Not available.
Melting point : Not available.
Boiling point : 71 to 177°C (160 to 350°F)
Flash point : Closed cup: <-6.67°C (<20°F) [Pensky-Martens.]
Evaporation rate : Not available.
Flammability (solid, gas) : Not available.
Lower and upper explosive (flammable) limits : Lower: 1.4%
Upper: 7.6%
Vapor pressure : 1-2 psi / 6.9 - 13.9 kPa
Vapor density : 3 to 4 [Air = 1]
Relative density : 0.7 to 0.8
Solubility : Not available.
Partition coefficient: n-octanol/water : Not available.
Auto-ignition temperature : 280 to 456.11°C (536 to 853°F)
Decomposition temperature : Not available.
Viscosity : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Benzene	LD50 Oral	Rat	930 mg/kg	-
Toluene	LC50 Inhalation Vapor	Rat	49 g/m³	4 hours
Ethylbenzene	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-
Xylene	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
	LD50 Oral	Rat	4300 mg/kg	-
Hydrogen sulphide	LC50 Inhalation Gas.	Rat	444 ppm	4 hours
	LC50 Inhalation Vapor	Rat	700 mg/m³	4 hours

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Benzene	Eyes - Moderate irritant	Rabbit	-	88 mg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 2 mg	-
	Skin - Mild irritant	Rat	-	8 hours 60 µL	-
	Skin - Mild irritant	Rabbit	-	24 hours 15 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
Toluene	Eyes - Mild irritant	Rabbit	-	0.5 minutes 100 mg	-
	Eyes - Mild irritant	Rabbit	-	870 µg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 2 mg	-
	Skin - Mild irritant	Pig	-	24 hours 250 µL	-
	Skin - Mild irritant	Rabbit	-	435 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
	Skin - Moderate irritant	Rabbit	-	500 mg	-
Ethylbenzene	Eyes - Severe irritant	Rabbit	-	500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 15 mg	-
Xylene	Eyes - Mild irritant	Rabbit	-	87 mg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 mg	-
	Skin - Mild irritant	Rat	-	8 hours 60 µL	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Moderate irritant	Rabbit	-	100 %	-

Sensitization

There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity

Classification

Product/ingredient name	OSHA	IARC	NTP	ACGIH	EPA	NIOSH
Benzene	+	1	Known to be a human carcinogen.	A1	-	+
Toluene	-	3	-	A4	-	-
Ethylbenzene	-	2B	-	A3	-	-
Xylene	-	3	-	A4	-	-

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Toluene	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
Benzene	Category 1	Not determined	Not determined
Toluene	Category 2	Not determined	Not determined
Ethylbenzene	Category 2	Not determined	hearing organs

Aspiration hazard

Name	Result
Naphtha Sour / HSR (Heavy Straight Run)	ASPIRATION HAZARD - Category 1
Naphtha (petroleum), unsweetened	ASPIRATION HAZARD - Category 1
Benzene	ASPIRATION HAZARD - Category 1
Toluene	ASPIRATION HAZARD - Category 1
Ethylbenzene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation.

Ingestion : May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Section 11. Toxicological information

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

General : Causes damage to organs through prolonged or repeated exposure.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : May cause genetic defects.

Teratogenicity : Suspected of damaging the unborn child.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	13983.2 mg/kg
Dermal	24511.1 mg/kg
Inhalation (gases)	111414.1 ppm
Inhalation (vapors)	245.1 mg/L

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Benzene	Acute EC50 1600000 µg/L Fresh water	Algae - Selenastrum sp.	96 hours
	Chronic NOEC 98 mg/L Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 1.5 to 5.4 ul/L Marine water	Fish - Morone saxatilis - Juvenile (Fledgling, Hatchling, Weanling)	4 weeks
Toluene	Acute EC50 11600 µg/L Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours
	Acute EC50 6000 µg/L Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Chronic NOEC 2 mg/L Fresh water	Daphnia - Daphnia magna	21 days
Ethylbenzene	Acute EC50 13300 µg/L Fresh water	Crustaceans - Artemia sp. - Nauplii	48 hours
	Acute LC50 13900 µg/L Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
Hydrogen sulphide	Acute EC50 62 µg/L Fresh water	Crustaceans - Gammarus pseudolimnaeus	2 days
	Acute LC50 2 µg/L Fresh water	Fish - Coregonus clupeaformis - Yolk-sac fry	96 hours

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Naphtha (petroleum), unsweetened	-	10 to 2500	high
Benzene	2.13	11	low
Toluene	2.73	90	low
Ethylbenzene	3.6	-	low
Xylene	3.12	8.1 to 25.9	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : There is no data available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

United States - RCRA Toxic hazardous waste "U" List

Ingredient	CAS #	Status	Reference number
Benzene	71-43-2	Listed	U019
Toluene	108-88-3	Listed	U220
Xylene	1330-20-7	Listed	U239

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	UN1268	Not applicable.	Not applicable.
UN proper shipping name	PETROLEUM DISTILLATES, N.O.S. (Naphtha (petroleum), unsweetened, Benzene) RQ (Benzene, Xylene)	-	-
Transport hazard class(es)	3 	-	-
Packing group	II	-	-
Environmental hazards	No.	No	No.
Additional information	**Reportable quantity** 202.02 lbs / 91.717 kg [32.305 gal / 122.29 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements. **Remarks** May contain H_2S	**Remarks** This material not normally shipped.	**Remarks** This material not normally shipped.

AERG : 128

DOT-RQ Details : Benzene 10 lbs / 4.54 kg [1.3675 gal / 5.1767 L]
Xylene 100 lbs / 45.4 kg [13.946 gal / 52.791 L]

Section 14. Transport information

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.
Clean Water Act (CWA) 307: Benzene; Toluene; Ethylbenzene
Clean Water Act (CWA) 311: Benzene; Toluene; Ethylbenzene; Xylene; Hydrogen sulphide

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Listed

SARA 302/304

Composition/information on ingredients

Name	EHS	SARA 302 TPQ		SARA 304 RQ	
		(lbs)	(gallons)	(lbs)	(gallons)
Hydrogen sulfide	Yes.	100	-	500	-

SARA 304 RQ : 20000 lbs / 9080 kg [3198.2 gal / 12106.7 L]

SARA 311/312

Classification : Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Naphtha (petroleum), unsweetened	Yes.	No.	No.	No.	Yes.
Benzene	Yes.	No.	No.	Yes.	Yes.
Toluene	Yes.	No.	No.	Yes.	Yes.
Ethylbenzene	Yes.	No.	No.	Yes.	Yes.
Xylene	Yes.	No.	No.	Yes.	No.
Hydrogen sulphide	Yes.	Yes.	No.	Yes.	No.

SARA 313

Section 15. Regulatory information

	Product name	CAS number
Form R - Reporting requirements	Benzene Toluene Ethylbenzene Xylene	71-43-2 108-88-3 100-41-4 1330-20-7
Supplier notification	Benzene Toluene Ethylbenzene Xylene	71-43-2 108-88-3 100-41-4 1330-20-7

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: Benzene; Toluene; Ethylbenzene; Xylene

New York : The following components are listed: Benzene; Toluene; Ethylbenzene; Xylene

New Jersey : The following components are listed: Benzene; Toluene; Ethylbenzene; Xylene

Pennsylvania : The following components are listed: Benzene; Toluene; Ethylbenzene; Xylene

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Benzene	Yes.	Yes.	6.4 µg/day (ingestion) 13 µg/day (inhalation)	24 µg/day (ingestion) 49 µg/day (inhalation)
Toluene	No.	Yes.	No.	7000 µg/day (ingestion)
Ethylbenzene	Yes.	No.	41 µg/day (ingestion) 54 µg/day (inhalation)	No.

Section 16. Other information

Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 2	On basis of test data
SKIN IRRITATION - Category 2	Calculation method
EYE IRRITATION - Category 2A	Calculation method
GERM CELL MUTAGENICITY - Category 1	Calculation method
CARCINOGENICITY - Category 1A	Calculation method
TOXIC TO REPRODUCTION (Unborn child) - Category 2	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (hearing organs) - Category 1	Calculation method
ASPIRATION HAZARD - Category 1	Expert judgment

History

Date of issue mm/dd/yyyy : 12/15/2016

Date of previous issue 09/15/2016

Version : 6.1

Prepared by : KMK Regulatory Services Inc.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Label elements

Napht h a Sour / HSR (Heavy Straight Run)

Western Refining Company LP
123 W. Mills Avenue
El Paso, TX 79901
Tel: 915-534-1488
Email: Sds-inquiry@wnr.com

Danger

Highly flammable liquid and vapor. Causes serious eye irritation. C irritation. May cause genetic defects. May cause cancer. Suspecte the unborn child. May be fatal if swallowed and enters airways. Cau organs through prolonged or repeated exposure. (hearing organs)

auses skin d of damaging ses damage to

Obtain special instructions before use. Do not handle until all safety have been read and understood. Wear protective gloves. Wear eye protection. Wear protective clothing. Keep away from heat, hot surf open flames and other ignition sources. No smoking. Use explosio electrical, ventilating, lighting and all material-handling equipment. U sparking tools. Take precautionary measures against static dischar container tightly closed. Do not breathe vapor. Do not eat, drink or using this product. Wash hands thoroughly after handling. Get med you feel unwell. IF exposed or concerned: Get medical attention. I SWALLOWED: Immediately call a POISON CENTER or physician. induce vomiting. IF ON SKIN (or hair): Take off immediately all con clothing. Rinse skin with water or shower. IF ON SKIN: Wash with and water. Take off contaminated clothing and wash it before reuse irritation occurs: Get medical attention. IF IN EYES: Rinse cautiou for several minutes. Remove contact lenses, if present and easy to rinsing. If eye irritation persists: Get medical attention. Store locke well-ventilated place. Keep cool. Dispose of contents and container with all local, regional, national and international regulations.

precautions or face aces, sparks, n-proof se only non- ge. Keep smoke when ical attention if F Do NOT taminated plenty of soap . If skin sly with water do. Continue d up. Store in a in accordance

9/2016

Date:12/1

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Benzene	Yes.	Yes.	6.4 µg/day (ingestion) 13 µg/day (inhalation)	24 µg/day (ingestion) 49 µg/day (inhalation)
Toluene	No.	Yes.	No.	7000 µg/day (ingestion)
Ethylbenzene	Yes.	No.	41 µg/day (ingestion) 54 µg/day (inhalation)	No.

New Jersey RTK	CAS number
Naphtha (petroleum), unsweetened	68783-12-0
Benzene	71-43-2
Toluene	108-88-3
Ethylbenzene	100-41-4
Xylene	1330-20-7

This document represents the regulatory content information of the label.
nal label output must be reformatted according to the container size and the mandatory size of the font characters and of t he symbol(s)

The fi

Appendix D
Analytical Data Report

Appendix D
Photograph During Remediation

Sour Naphtha Release - Looking South

Appendix E
Analytical Data Report

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

April 21, 2017

William Bailey

Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301
TEL:
FAX

RE: Naptha Line Spill OrderNo.: 1704176

Dear William Bailey:

Hall Environmental Analysis Laboratory received 6 sample(s) on 4/5/2017 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued April 13, 2017.

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. 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. All samples are reported as received unless otherwise indicated.

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

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Sample Location #1
Project: Naptha Line Spill
Collection Date: 3/30/2017 11:30:00 AM
Lab ID: 1704176-001
Matrix: SLUDGE
Received Date: 4/5/2017 2:18:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **JME**	
Diesel Range Organics (DRO)	25	1.4	8.8		mg/Kg	1	4/10/2017 1:46:18 PM	31151
Motor Oil Range Organics (MRO)	ND	44	44		mg/Kg	1	4/10/2017 1:46:18 PM	31151
Surr: DNOP	112	0	70-130		%Rec	1	4/10/2017 1:46:18 PM	31151
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	4200	110	500		mg/Kg	100	4/6/2017 8:36:44 PM	31106
Surr: BFB	139	0	54-150		%Rec	100	4/6/2017 8:36:44 PM	31106
EPA METHOD 8310: PAHS							Analyst: **SCC**	
Naphthalene	0.13	0.035	0.25	J	mg/Kg	1	4/10/2017 6:52:53 AM	31138
1-Methylnaphthalene	ND	0.025	0.25		mg/Kg	1	4/10/2017 6:52:53 AM	31138
2-Methylnaphthalene	ND	0.025	0.25		mg/Kg	1	4/10/2017 6:52:53 AM	31138
Acenaphthylene	ND	0.021	0.25		mg/Kg	1	4/10/2017 6:52:53 AM	31138
Acenaphthene	ND	0.024	0.25		mg/Kg	1	4/10/2017 6:52:53 AM	31138
Fluorene	ND	0.0022	0.030		mg/Kg	1	4/10/2017 6:52:53 AM	31138
Phenanthrene	0.058	0.0012	0.015		mg/Kg	1	4/10/2017 6:52:53 AM	31138
Anthracene	0.019	0.0011	0.015		mg/Kg	1	4/10/2017 6:52:53 AM	31138
Fluoranthene	0.065	0.0020	0.020		mg/Kg	1	4/10/2017 6:52:53 AM	31138
Pyrene	0.076	0.0024	0.025		mg/Kg	1	4/10/2017 6:52:53 AM	31138
Benz(a)anthracene	0.031	0.00059	0.020		mg/Kg	2	4/10/2017 11:55:16 AM	31138
Chrysene	0.017	0.0014	0.0099		mg/Kg	1	4/10/2017 6:52:53 AM	31138
Benzo(b)fluoranthene	0.017	0.00049	0.0099		mg/Kg	1	4/10/2017 6:52:53 AM	31138
Benzo(k)fluoranthene	0.014	0.00040	0.0099		mg/Kg	1	4/10/2017 6:52:53 AM	31138
Benzo(a)pyrene	0.023	0.00059	0.020		mg/Kg	2	4/10/2017 11:55:16 AM	31138
Dibenz(a,h)anthracene	0.0037	0.00059	0.0099	J	mg/Kg	1	4/10/2017 6:52:53 AM	31138
Benzo(g,h,i)perylene	0.013	0.00040	0.0099		mg/Kg	1	4/10/2017 6:52:53 AM	31138
Indeno(1,2,3-cd)pyrene	0.013	0.0024	0.0099		mg/Kg	1	4/10/2017 6:52:53 AM	31138
Surr: Benzo(e)pyrene	77.0	0	32.4-163		%Rec	1	4/10/2017 6:52:53 AM	31138
EPA METHOD 300.0: ANIONS							Analyst: **MRA**	
Chloride	270	1.3	30		mg/Kg	20	4/7/2017 3:21:41 PM	31127
Sulfate	30	7.1	30		mg/Kg	20	4/7/2017 3:21:41 PM	31127
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00050	0.020		mg/L	1	4/10/2017 2:08:24 PM	31159
EPA METHOD 6010B: TCLP METALS							Analyst: **MED**	
Arsenic	ND	0.024	5.0		mg/L	1	4/10/2017 10:43:30 AM	31140
Barium	3.1	0.0015	100	J	mg/L	1	4/10/2017 10:43:30 AM	31140
Cadmium	ND	0.00080	1.0		mg/L	1	4/10/2017 10:43:30 AM	31140
Chromium	ND	0.0030	5.0		mg/L	1	4/10/2017 10:43:30 AM	31140
Lead	ND	0.0049	5.0		mg/L	1	4/10/2017 10:43:30 AM	31140

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Sample Location #1
Project: Naptha Line Spill
Collection Date: 3/30/2017 11:30:00 AM
Lab ID: 1704176-001
Matrix: SLUDGE
Received Date: 4/5/2017 2:18:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: TCLP METALS							Analyst: **MED**	
Selenium	ND	0.062	1.0		mg/L	1	4/10/2017 10:43:30 AM	31140
Silver	ND	0.0021	5.0		mg/L	1	4/10/2017 10:43:30 AM	31140
VOLATILES BY 8260B/1311							Analyst: **AG**	
Benzene	0.64	0.10	0.50		mg/L	1	4/7/2017 2:56:48 PM	31121
2-Butanone	ND	0.20	200		mg/L	1	4/7/2017 2:56:48 PM	31121
Carbon Tetrachloride	ND	0.10	0.50		mg/L	1	4/7/2017 2:56:48 PM	31121
Chlorobenzene	ND	0.10	100		mg/L	1	4/7/2017 2:56:48 PM	31121
Chloroform	ND	0.10	6.0		mg/L	1	4/7/2017 2:56:48 PM	31121
1,4-Dichlorobenzene	ND	0.10	7.5		mg/L	1	4/7/2017 2:56:48 PM	31121
1,2-Dichloroethane (EDC)	ND	0.10	0.50		mg/L	1	4/7/2017 2:56:48 PM	31121
1,1-Dichloroethene	ND	0.10	0.70		mg/L	1	4/7/2017 2:56:48 PM	31121
Hexachlorobutadiene	ND	0.10	0.50		mg/L	1	4/7/2017 2:56:48 PM	31121
Tetrachloroethene (PCE)	ND	0.10	0.70		mg/L	1	4/7/2017 2:56:48 PM	31121
Trichloroethene (TCE)	ND	0.10	0.50		mg/L	1	4/7/2017 2:56:48 PM	31121
Vinyl chloride	ND	0.10	0.20		mg/L	1	4/7/2017 2:56:48 PM	31121
Surr: 1,2-Dichloroethane-d4	89.8	0	70-130		%Rec	1	4/7/2017 2:56:48 PM	31121
Surr: 4-Bromofluorobenzene	107	0	70-130		%Rec	1	4/7/2017 2:56:48 PM	31121
Surr: Dibromofluoromethane	100	0	70-130		%Rec	1	4/7/2017 2:56:48 PM	31121
Surr: Toluene-d8	95.6	0	70-130		%Rec	1	4/7/2017 2:56:48 PM	31121

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Sample Location #2
Project: Naptha Line Spill
Collection Date: 3/30/2017 11:35:00 AM
Lab ID: 1704176-002
Matrix: SLUDGE
Received Date: 4/5/2017 2:18:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **JME**	
Diesel Range Organics (DRO)	320	1.5	9.5		mg/Kg	1	4/10/2017 3:02:46 PM	31128
Motor Oil Range Organics (MRO)	100	47	47		mg/Kg	1	4/10/2017 3:02:46 PM	31128
Surr: DNOP	102	0	70-130		%Rec	1	4/10/2017 3:02:46 PM	31128
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	5900	110	500		mg/Kg	100	4/6/2017 9:00:10 PM	31106
Surr: BFB	208	0	54-150	S	%Rec	100	4/6/2017 9:00:10 PM	31106
EPA METHOD 8310: PAHS							Analyst: **SCC**	
Naphthalene	0.92	0.34	2.4	J	mg/Kg	1	4/10/2017 8:07:17 AM	31138
1-Methylnaphthalene	1.3	0.24	2.4	J	mg/Kg	1	4/10/2017 8:07:17 AM	31138
2-Methylnaphthalene	0.53	0.24	2.4	J	mg/Kg	1	4/10/2017 8:07:17 AM	31138
Acenaphthylene	ND	0.20	2.4		mg/Kg	1	4/10/2017 8:07:17 AM	31138
Acenaphthene	0.70	0.23	2.4	J	mg/Kg	1	4/10/2017 8:07:17 AM	31138
Fluorene	ND	0.021	0.29		mg/Kg	1	4/10/2017 8:07:17 AM	31138
Phenanthrene	1.5	0.023	0.29		mg/Kg	2	4/10/2017 12:26:30 PM	31138
Anthracene	0.16	0.011	0.14		mg/Kg	1	4/10/2017 8:07:17 AM	31138
Fluoranthene	1.4	0.019	0.19		mg/Kg	1	4/10/2017 8:07:17 AM	31138
Pyrene	1.4	0.023	0.24		mg/Kg	1	4/10/2017 8:07:17 AM	31138
Benz(a)anthracene	0.31	0.0057	0.19		mg/Kg	2	4/10/2017 12:26:30 PM	31138
Chrysene	0.16	0.013	0.096		mg/Kg	1	4/10/2017 8:07:17 AM	31138
Benzo(b)fluoranthene	0.16	0.0048	0.096		mg/Kg	1	4/10/2017 8:07:17 AM	31138
Benzo(k)fluoranthene	0.098	0.0038	0.096		mg/Kg	1	4/10/2017 8:07:17 AM	31138
Benzo(a)pyrene	0.20	0.0057	0.19		mg/Kg	2	4/10/2017 12:26:30 PM	31138
Dibenz(a,h)anthracene	0.026	0.0057	0.096	J	mg/Kg	1	4/10/2017 8:07:17 AM	31138
Benzo(g,h,i)perylene	0.12	0.0038	0.096		mg/Kg	1	4/10/2017 8:07:17 AM	31138
Indeno(1,2,3-cd)pyrene	0.10	0.023	0.096		mg/Kg	1	4/10/2017 8:07:17 AM	31138
Surr: Benzo(e)pyrene	89.5	0	32.4-163		%Rec	1	4/10/2017 8:07:17 AM	31138
EPA METHOD 300.0: ANIONS							Analyst: **MRA**	
Chloride	560	1.3	30		mg/Kg	20	4/7/2017 3:34:05 PM	31127
Sulfate	19	7.1	30	J	mg/Kg	20	4/7/2017 3:34:05 PM	31127
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00050	0.020		mg/L	1	4/10/2017 2:10:11 PM	31159
EPA METHOD 6010B: TCLP METALS							Analyst: **MED**	
Arsenic	ND	0.024	5.0		mg/L	1	4/10/2017 10:48:04 AM	31140
Barium	3.2	0.0015	100	J	mg/L	1	4/10/2017 10:48:04 AM	31140
Cadmium	ND	0.00080	1.0		mg/L	1	4/10/2017 10:48:04 AM	31140
Chromium	ND	0.0030	5.0		mg/L	1	4/10/2017 10:48:04 AM	31140
Lead	ND	0.0049	5.0		mg/L	1	4/10/2017 10:48:04 AM	31140

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Sample Location #2
Project: Naptha Line Spill
Collection Date: 3/30/2017 11:35:00 AM
Lab ID: 1704176-002
Matrix: SLUDGE
Received Date: 4/5/2017 2:18:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: TCLP METALS							Analyst: **MED**	
Selenium	ND	0.062	1.0		mg/L	1	4/10/2017 10:48:04 AM	31140
Silver	ND	0.0021	5.0		mg/L	1	4/10/2017 10:48:04 AM	31140
VOLATILES BY 8260B/1311							Analyst: **AG**	
Benzene	0.62	0.10	0.50		mg/L	1	4/7/2017 4:23:32 PM	31121
2-Butanone	ND	0.20	200		mg/L	1	4/7/2017 4:23:32 PM	31121
Carbon Tetrachloride	ND	0.10	0.50		mg/L	1	4/7/2017 4:23:32 PM	31121
Chlorobenzene	ND	0.10	100		mg/L	1	4/7/2017 4:23:32 PM	31121
Chloroform	ND	0.10	6.0		mg/L	1	4/7/2017 4:23:32 PM	31121
1,4-Dichlorobenzene	ND	0.10	7.5		mg/L	1	4/7/2017 4:23:32 PM	31121
1,2-Dichloroethane (EDC)	ND	0.10	0.50		mg/L	1	4/7/2017 4:23:32 PM	31121
1,1-Dichloroethene	ND	0.10	0.70		mg/L	1	4/7/2017 4:23:32 PM	31121
Hexachlorobutadiene	ND	0.10	0.50		mg/L	1	4/7/2017 4:23:32 PM	31121
Tetrachloroethene (PCE)	ND	0.10	0.70		mg/L	1	4/7/2017 4:23:32 PM	31121
Trichloroethene (TCE)	ND	0.10	0.50		mg/L	1	4/7/2017 4:23:32 PM	31121
Vinyl chloride	ND	0.10	0.20		mg/L	1	4/7/2017 4:23:32 PM	31121
Surr: 1,2-Dichloroethane-d4	94.1	0	70-130		%Rec	1	4/7/2017 4:23:32 PM	31121
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	4/7/2017 4:23:32 PM	31121
Surr: Dibromofluoromethane	98.2	0	70-130		%Rec	1	4/7/2017 4:23:32 PM	31121
Surr: Toluene-d8	96.4	0	70-130		%Rec	1	4/7/2017 4:23:32 PM	31121

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Sample Location #3
Project: Naptha Line Spill
Collection Date: 3/30/2017 11:40:00 AM
Lab ID: 1704176-003
Matrix: SLUDGE
Received Date: 4/5/2017 2:18:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **JME**	
Diesel Range Organics (DRO)	360	16	100		mg/Kg	10	4/10/2017 12:17:24 PM	31128
Motor Oil Range Organics (MRO)	ND	500	500		mg/Kg	10	4/10/2017 12:17:24 PM	31128
Surr: DNOP	0	0	70-130	S	%Rec	10	4/10/2017 12:17:24 PM	31128
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	9800	110	500		mg/Kg	100	4/6/2017 9:23:28 PM	31106
Surr: BFB	260	0	54-150	S	%Rec	100	4/6/2017 9:23:28 PM	31106
EPA METHOD 8310: PAHS							Analyst: **SCC**	
Naphthalene	1.3	0.34	2.4	J	mg/Kg	1	4/10/2017 8:44:40 AM	31138
1-Methylnaphthalene	1.1	0.24	2.4	J	mg/Kg	1	4/10/2017 8:44:40 AM	31138
2-Methylnaphthalene	ND	0.24	2.4		mg/Kg	1	4/10/2017 8:44:40 AM	31138
Acenaphthylene	ND	0.20	2.4		mg/Kg	1	4/10/2017 8:44:40 AM	31138
Acenaphthene	ND	0.23	2.4		mg/Kg	1	4/10/2017 8:44:40 AM	31138
Fluorene	ND	0.021	0.29		mg/Kg	1	4/10/2017 8:44:40 AM	31138
Phenanthrene	0.062	0.012	0.14	J	mg/Kg	1	4/10/2017 8:44:40 AM	31138
Anthracene	ND	0.011	0.14		mg/Kg	1	4/10/2017 8:44:40 AM	31138
Fluoranthene	0.27	0.019	0.19		mg/Kg	1	4/10/2017 8:44:40 AM	31138
Pyrene	0.30	0.023	0.24		mg/Kg	1	4/10/2017 8:44:40 AM	31138
Benz(a)anthracene	0.096	0.0029	0.096		mg/Kg	1	4/10/2017 8:44:40 AM	31138
Chrysene	0.062	0.013	0.096	J	mg/Kg	1	4/10/2017 8:44:40 AM	31138
Benzo(b)fluoranthene	0.041	0.0048	0.096	J	mg/Kg	1	4/10/2017 8:44:40 AM	31138
Benzo(k)fluoranthene	0.031	0.0038	0.096	J	mg/Kg	1	4/10/2017 8:44:40 AM	31138
Benzo(a)pyrene	0.060	0.0029	0.096	J	mg/Kg	1	4/10/2017 8:44:40 AM	31138
Dibenz(a,h)anthracene	0.017	0.0058	0.096	J	mg/Kg	1	4/10/2017 8:44:40 AM	31138
Benzo(g,h,i)perylene	0.043	0.0038	0.096	J	mg/Kg	1	4/10/2017 8:44:40 AM	31138
Indeno(1,2,3-cd)pyrene	ND	0.023	0.096		mg/Kg	1	4/10/2017 8:44:40 AM	31138
Surr: Benzo(e)pyrene	82.5	0	32.4-163		%Rec	1	4/10/2017 8:44:40 AM	31138
EPA METHOD 300.0: ANIONS							Analyst: **MRA**	
Chloride	54	1.3	30		mg/Kg	20	4/7/2017 3:46:29 PM	31127
Sulfate	15	7.1	30	J	mg/Kg	20	4/7/2017 3:46:29 PM	31127
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00050	0.020		mg/L	1	4/10/2017 2:11:59 PM	31159
EPA METHOD 6010B: TCLP METALS							Analyst: **MED**	
Arsenic	ND	0.024	5.0		mg/L	1	4/10/2017 10:49:35 AM	31140
Barium	3.3	0.0015	100	J	mg/L	1	4/10/2017 10:49:35 AM	31140
Cadmium	ND	0.00080	1.0		mg/L	1	4/10/2017 10:49:35 AM	31140
Chromium	ND	0.0030	5.0		mg/L	1	4/10/2017 10:49:35 AM	31140
Lead	ND	0.0049	5.0		mg/L	1	4/10/2017 10:49:35 AM	31140

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Sample Location #3
Project: Naptha Line Spill
Collection Date: 3/30/2017 11:40:00 AM
Lab ID: 1704176-003
Matrix: SLUDGE
Received Date: 4/5/2017 2:18:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: TCLP METALS							Analyst: **MED**	
Selenium	ND	0.062	1.0		mg/L	1	4/10/2017 10:49:35 AM	31140
Silver	ND	0.0021	5.0		mg/L	1	4/10/2017 10:49:35 AM	31140
VOLATILES BY 8260B/1311							Analyst: **AG**	
Benzene	0.72	0.10	0.50		mg/L	1	4/7/2017 4:52:25 PM	31121
2-Butanone	ND	0.20	200		mg/L	1	4/7/2017 4:52:25 PM	31121
Carbon Tetrachloride	ND	0.10	0.50		mg/L	1	4/7/2017 4:52:25 PM	31121
Chlorobenzene	ND	0.10	100		mg/L	1	4/7/2017 4:52:25 PM	31121
Chloroform	ND	0.10	6.0		mg/L	1	4/7/2017 4:52:25 PM	31121
1,4-Dichlorobenzene	ND	0.10	7.5		mg/L	1	4/7/2017 4:52:25 PM	31121
1,2-Dichloroethane (EDC)	ND	0.10	0.50		mg/L	1	4/7/2017 4:52:25 PM	31121
1,1-Dichloroethene	ND	0.10	0.70		mg/L	1	4/7/2017 4:52:25 PM	31121
Hexachlorobutadiene	ND	0.10	0.50		mg/L	1	4/7/2017 4:52:25 PM	31121
Tetrachloroethene (PCE)	ND	0.10	0.70		mg/L	1	4/7/2017 4:52:25 PM	31121
Trichloroethene (TCE)	ND	0.10	0.50		mg/L	1	4/7/2017 4:52:25 PM	31121
Vinyl chloride	ND	0.10	0.20		mg/L	1	4/7/2017 4:52:25 PM	31121
Surr: 1,2-Dichloroethane-d4	97.5	0	70-130		%Rec	1	4/7/2017 4:52:25 PM	31121
Surr: 4-Bromofluorobenzene	109	0	70-130		%Rec	1	4/7/2017 4:52:25 PM	31121
Surr: Dibromofluoromethane	102	0	70-130		%Rec	1	4/7/2017 4:52:25 PM	31121
Surr: Toluene-d8	93.7	0	70-130		%Rec	1	4/7/2017 4:52:25 PM	31121

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Sample Location #4
Project: Naptha Line Spill
Collection Date: 3/30/2017 11:45:00 AM
Lab ID: 1704176-004
Matrix: SLUDGE
Received Date: 4/5/2017 2:18:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **JME**	
Diesel Range Organics (DRO)	250	15	94		mg/Kg	10	4/10/2017 12:39:33 PM	31128
Motor Oil Range Organics (MRO)	ND	470	470		mg/Kg	10	4/10/2017 12:39:33 PM	31128
Surr: DNOP	0	0	70-130	S	%Rec	10	4/10/2017 12:39:33 PM	31128
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	7300	110	500		mg/Kg	100	4/6/2017 9:46:51 PM	31106
Surr: BFB	215	0	54-150	S	%Rec	100	4/6/2017 9:46:51 PM	31106
EPA METHOD 8310: PAHS							Analyst: **SCC**	
Naphthalene	0.95	0.35	2.4	J	mg/Kg	1	4/10/2017 9:15:55 AM	31138
1-Methylnaphthalene	0.90	0.24	2.4	J	mg/Kg	1	4/10/2017 9:15:55 AM	31138
2-Methylnaphthalene	ND	0.25	2.4		mg/Kg	1	4/10/2017 9:15:55 AM	31138
Acenaphthylene	ND	0.21	2.4		mg/Kg	1	4/10/2017 9:15:55 AM	31138
Acenaphthene	ND	0.24	2.4		mg/Kg	1	4/10/2017 9:15:55 AM	31138
Fluorene	ND	0.022	0.29		mg/Kg	1	4/10/2017 9:15:55 AM	31138
Phenanthrene	ND	0.012	0.15		mg/Kg	1	4/10/2017 9:15:55 AM	31138
Anthracene	ND	0.011	0.15		mg/Kg	1	4/10/2017 9:15:55 AM	31138
Fluoranthene	0.024	0.020	0.20	J	mg/Kg	1	4/10/2017 9:15:55 AM	31138
Pyrene	0.039	0.023	0.24	J	mg/Kg	1	4/10/2017 9:15:55 AM	31138
Benz(a)anthracene	0.0073	0.0029	0.098	J	mg/Kg	1	4/10/2017 9:15:55 AM	31138
Chrysene	ND	0.014	0.098		mg/Kg	1	4/10/2017 9:15:55 AM	31138
Benzo(b)fluoranthene	0.0049	0.0049	0.098	J	mg/Kg	1	4/10/2017 9:15:55 AM	31138
Benzo(k)fluoranthene	ND	0.0039	0.098		mg/Kg	1	4/10/2017 9:15:55 AM	31138
Benzo(a)pyrene	0.0073	0.0029	0.098	J	mg/Kg	1	4/10/2017 9:15:55 AM	31138
Dibenz(a,h)anthracene	ND	0.0059	0.098		mg/Kg	1	4/10/2017 9:15:55 AM	31138
Benzo(g,h,i)perylene	0.012	0.0039	0.098	J	mg/Kg	1	4/10/2017 9:15:55 AM	31138
Indeno(1,2,3-cd)pyrene	ND	0.023	0.098		mg/Kg	1	4/10/2017 9:15:55 AM	31138
Surr: Benzo(e)pyrene	95.5	0	32.4-163		%Rec	1	4/10/2017 9:15:55 AM	31138
EPA METHOD 300.0: ANIONS							Analyst: **MRA**	
Chloride	750	1.3	30		mg/Kg	20	4/7/2017 3:58:53 PM	31127
Sulfate	34	7.1	30		mg/Kg	20	4/7/2017 3:58:53 PM	31127
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00050	0.020		mg/L	1	4/10/2017 2:13:47 PM	31159
EPA METHOD 6010B: TCLP METALS							Analyst: **MED**	
Arsenic	ND	0.024	5.0		mg/L	1	4/10/2017 10:51:05 AM	31140
Barium	3.5	0.0015	100	J	mg/L	1	4/10/2017 10:51:05 AM	31140
Cadmium	ND	0.00080	1.0		mg/L	1	4/10/2017 10:51:05 AM	31140
Chromium	ND	0.0030	5.0		mg/L	1	4/10/2017 10:51:05 AM	31140
Lead	ND	0.0049	5.0		mg/L	1	4/10/2017 10:51:05 AM	31140

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Sample Location #4
Project: Naptha Line Spill
Collection Date: 3/30/2017 11:45:00 AM
Lab ID: 1704176-004
Matrix: SLUDGE
Received Date: 4/5/2017 2:18:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: TCLP METALS							Analyst: **MED**	
Selenium	ND	0.062	1.0		mg/L	1	4/10/2017 10:51:05 AM	31140
Silver	ND	0.0021	5.0		mg/L	1	4/10/2017 10:51:05 AM	31140
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	25	0.098	0.50	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Toluene	220	0.40	5.0	H	mg/Kg	100	4/20/2017 3:29:40 PM	31106
Ethylbenzene	120	0.35	5.0	H	mg/Kg	100	4/20/2017 3:29:40 PM	31106
Methyl tert-butyl ether (MTBE)	ND	0.15	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
1,2,4-Trimethylbenzene	67	0.087	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
1,3,5-Trimethylbenzene	28	0.063	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
1,2-Dichloroethane (EDC)	ND	0.10	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
1,2-Dibromoethane (EDB)	ND	0.13	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Naphthalene	0.83	0.10	2.0	JH	mg/Kg	20	4/20/2017 3:58:36 PM	31106
1-Methylnaphthalene	0.45	0.071	4.0	JH	mg/Kg	20	4/20/2017 3:58:36 PM	31106
2-Methylnaphthalene	0.44	0.081	4.0	JH	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Acetone	ND	1.1	15	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Bromobenzene	ND	0.073	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Bromodichloromethane	ND	0.13	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Bromoform	ND	0.24	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Bromomethane	ND	0.17	3.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
2-Butanone	ND	0.59	10	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Carbon disulfide	ND	0.12	10	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Carbon tetrachloride	ND	0.098	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Chlorobenzene	ND	0.059	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Chloroethane	ND	0.33	2.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Chloroform	ND	0.060	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Chloromethane	ND	0.21	3.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
2-Chlorotoluene	ND	0.077	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
4-Chlorotoluene	ND	0.090	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
cis-1,2-DCE	ND	0.13	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
cis-1,3-Dichloropropene	ND	0.076	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
1,2-Dibromo-3-chloropropane	0.16	0.14	2.0	JH	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Dibromochloromethane	ND	0.084	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Dibromomethane	ND	0.049	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
1,2-Dichlorobenzene	ND	0.050	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
1,3-Dichlorobenzene	ND	0.088	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
1,4-Dichlorobenzene	ND	0.11	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Dichlorodifluoromethane	ND	0.41	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
1,1-Dichloroethane	ND	0.40	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
1,1-Dichloroethene	ND	0.40	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Sample Location #4
Project: Naptha Line Spill
Collection Date: 3/30/2017 11:45:00 AM
Lab ID: 1704176-004
Matrix: SLUDGE
Received Date: 4/5/2017 2:18:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
1,2-Dichloropropane	ND	0.062	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
1,3-Dichloropropane	ND	0.25	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
2,2-Dichloropropane	ND	0.11	2.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
1,1-Dichloropropene	ND	0.11	2.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Hexachlorobutadiene	ND	0.25	2.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
2-Hexanone	ND	0.19	10	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Isopropylbenzene	19	0.067	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
4-Isopropyltoluene	3.4	0.076	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
4-Methyl-2-pentanone	ND	0.21	10	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Methylene chloride	ND	0.40	3.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
n-Butylbenzene	4.0	0.089	3.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
n-Propylbenzene	27	0.062	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
sec-Butylbenzene	4.9	0.10	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Styrene	ND	0.17	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
tert-Butylbenzene	0.19	0.081	1.0	JH	mg/Kg	20	4/20/2017 3:58:36 PM	31106
1,1,1,2-Tetrachloroethane	ND	0.11	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
1,1,2,2-Tetrachloroethane	ND	0.29	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Tetrachloroethene (PCE)	ND	0.080	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
trans-1,2-DCE	ND	0.40	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
trans-1,3-Dichloropropene	ND	0.12	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
1,2,3-Trichlorobenzene	0.14	0.091	2.0	JH	mg/Kg	20	4/20/2017 3:58:36 PM	31106
1,2,4-Trichlorobenzene	0.14	0.10	1.0	JH	mg/Kg	20	4/20/2017 3:58:36 PM	31106
1,1,1-Trichloroethane	ND	0.13	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
1,1,2-Trichloroethane	ND	0.11	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Trichloroethene (TCE)	ND	0.12	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Trichlorofluoromethane	ND	0.15	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
1,2,3-Trichloropropane	ND	0.50	2.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Vinyl chloride	ND	0.083	1.0	H	mg/Kg	20	4/20/2017 3:58:36 PM	31106
Xylenes, Total	330	1.6	10	H	mg/Kg	100	4/20/2017 3:29:40 PM	31106
Surr: Dibromofluoromethane	70.6		70-130	H	%Rec	20	4/20/2017 3:58:36 PM	31106
Surr: 1,2-Dichloroethane-d4	88.4		70-130	H	%Rec	20	4/20/2017 3:58:36 PM	31106
Surr: Toluene-d8	105		70-130	H	%Rec	20	4/20/2017 3:58:36 PM	31106
Surr: 4-Bromofluorobenzene	101		70-130	H	%Rec	20	4/20/2017 3:58:36 PM	31106
VOLATILES BY 8260B/1311							Analyst: **rde**	
Benzene	0.88	0.10	0.50		mg/L	1	4/10/2017 1:42:00 PM	31139
2-Butanone	ND	0.20	200		mg/L	1	4/10/2017 1:42:00 PM	31139
Carbon Tetrachloride	ND	0.10	0.50		mg/L	1	4/10/2017 1:42:00 PM	31139
Chlorobenzene	ND	0.10	100		mg/L	1	4/10/2017 1:42:00 PM	31139
Chloroform	ND	0.10	6.0		mg/L	1	4/10/2017 1:42:00 PM	31139

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Sample Location #4
Project: Naptha Line Spill
Collection Date: 3/30/2017 11:45:00 AM
Lab ID: 1704176-004
Matrix: SLUDGE
Received Date: 4/5/2017 2:18:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
VOLATILES BY 8260B/1311							Analyst: **rde**	
1,4-Dichlorobenzene	ND	0.10	7.5		mg/L	1	4/10/2017 1:42:00 PM	31139
1,2-Dichloroethane (EDC)	ND	0.10	0.50		mg/L	1	4/10/2017 1:42:00 PM	31139
1,1-Dichloroethene	ND	0.10	0.70		mg/L	1	4/10/2017 1:42:00 PM	31139
Hexachlorobutadiene	ND	0.10	0.50		mg/L	1	4/10/2017 1:42:00 PM	31139
Tetrachloroethene (PCE)	ND	0.10	0.70		mg/L	1	4/10/2017 1:42:00 PM	31139
Trichloroethene (TCE)	ND	0.10	0.50		mg/L	1	4/10/2017 1:42:00 PM	31139
Vinyl chloride	ND	0.10	0.20		mg/L	1	4/10/2017 1:42:00 PM	31139
Surr: 1,2-Dichloroethane-d4	83.0	0	70-130		%Rec	1	4/10/2017 1:42:00 PM	31139
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	4/10/2017 1:42:00 PM	31139
Surr: Dibromofluoromethane	100	0	70-130		%Rec	1	4/10/2017 1:42:00 PM	31139
Surr: Toluene-d8	94.3	0	70-130		%Rec	1	4/10/2017 1:42:00 PM	31139

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Sample Location #5
Project: Naptha Line Spill
Collection Date: 3/30/2017 11:50:00 AM
Lab ID: 1704176-005
Matrix: SLUDGE
Received Date: 4/5/2017 2:18:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **JME**	
Diesel Range Organics (DRO)	70	1.6	10		mg/Kg	1	4/10/2017 2:34:32 PM	31128
Motor Oil Range Organics (MRO)	ND	52	52		mg/Kg	1	4/10/2017 2:34:32 PM	31128
Surr: DNOP	93.8	0	70-130		%Rec	1	4/10/2017 2:34:32 PM	31128
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	3000	110	500		mg/Kg	100	4/6/2017 10:10:07 PM	31106
Surr: BFB	121	0	54-150		%Rec	100	4/6/2017 10:10:07 PM	31106
EPA METHOD 8310: PAHS							Analyst: **SCC**	
Naphthalene	0.36	0.34	2.4	J	mg/Kg	1	4/10/2017 9:47:11 AM	31138
1-Methylnaphthalene	0.49	0.24	2.4	J	mg/Kg	1	4/10/2017 9:47:11 AM	31138
2-Methylnaphthalene	ND	0.24	2.4		mg/Kg	1	4/10/2017 9:47:11 AM	31138
Acenaphthylene	ND	0.20	2.4		mg/Kg	1	4/10/2017 9:47:11 AM	31138
Acenaphthene	ND	0.23	2.4		mg/Kg	1	4/10/2017 9:47:11 AM	31138
Fluorene	ND	0.021	0.29		mg/Kg	1	4/10/2017 9:47:11 AM	31138
Phenanthrene	ND	0.011	0.14		mg/Kg	1	4/10/2017 9:47:11 AM	31138
Anthracene	ND	0.010	0.14		mg/Kg	1	4/10/2017 9:47:11 AM	31138
Fluoranthene	0.041	0.019	0.19	J	mg/Kg	1	4/10/2017 9:47:11 AM	31138
Pyrene	0.038	0.023	0.24	J	mg/Kg	1	4/10/2017 9:47:11 AM	31138
Benz(a)anthracene	0.0072	0.0029	0.095	J	mg/Kg	1	4/10/2017 9:47:11 AM	31138
Chrysene	ND	0.013	0.095		mg/Kg	1	4/10/2017 9:47:11 AM	31138
Benzo(b)fluoranthene	ND	0.0048	0.095		mg/Kg	1	4/10/2017 9:47:11 AM	31138
Benzo(k)fluoranthene	ND	0.0038	0.095		mg/Kg	1	4/10/2017 9:47:11 AM	31138
Benzo(a)pyrene	ND	0.0029	0.095		mg/Kg	1	4/10/2017 9:47:11 AM	31138
Dibenz(a,h)anthracene	ND	0.0057	0.095		mg/Kg	1	4/10/2017 9:47:11 AM	31138
Benzo(g,h,i)perylene	0.0072	0.0038	0.095	J	mg/Kg	1	4/10/2017 9:47:11 AM	31138
Indeno(1,2,3-cd)pyrene	ND	0.023	0.095		mg/Kg	1	4/10/2017 9:47:11 AM	31138
Surr: Benzo(e)pyrene	94.0	0	32.4-163		%Rec	1	4/10/2017 9:47:11 AM	31138
EPA METHOD 300.0: ANIONS							Analyst: **MRA**	
Chloride	70	1.3	30		mg/Kg	20	4/7/2017 4:11:18 PM	31127
Sulfate	96	7.1	30		mg/Kg	20	4/7/2017 4:11:18 PM	31127
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00050	0.020		mg/L	1	4/10/2017 2:15:36 PM	31159
EPA METHOD 6010B: TCLP METALS							Analyst: **MED**	
Arsenic	ND	0.024	5.0		mg/L	1	4/10/2017 10:52:36 AM	31140
Barium	1.3	0.0015	100	J	mg/L	1	4/10/2017 10:52:36 AM	31140
Cadmium	ND	0.00080	1.0		mg/L	1	4/10/2017 10:52:36 AM	31140
Chromium	ND	0.0030	5.0		mg/L	1	4/10/2017 10:52:36 AM	31140
Lead	ND	0.0049	5.0		mg/L	1	4/10/2017 10:52:36 AM	31140

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Sample Location #5
Project: Naptha Line Spill
Collection Date: 3/30/2017 11:50:00 AM
Lab ID: 1704176-005
Matrix: SLUDGE
Received Date: 4/5/2017 2:18:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: TCLP METALS							Analyst: **MED**	
Selenium	ND	0.062	1.0		mg/L	1	4/10/2017 10:52:36 AM	31140
Silver	ND	0.0021	5.0		mg/L	1	4/10/2017 10:52:36 AM	31140
VOLATILES BY 8260B/1311							Analyst: **rde**	
Benzene	0.63	0.10	0.50		mg/L	1	4/10/2017 2:54:00 PM	31139
2-Butanone	ND	0.20	200		mg/L	1	4/10/2017 2:54:00 PM	31139
Carbon Tetrachloride	ND	0.10	0.50		mg/L	1	4/10/2017 2:54:00 PM	31139
Chlorobenzene	ND	0.10	100		mg/L	1	4/10/2017 2:54:00 PM	31139
Chloroform	ND	0.10	6.0		mg/L	1	4/10/2017 2:54:00 PM	31139
1,4-Dichlorobenzene	ND	0.10	7.5		mg/L	1	4/10/2017 2:54:00 PM	31139
1,2-Dichloroethane (EDC)	ND	0.10	0.50		mg/L	1	4/10/2017 2:54:00 PM	31139
1,1-Dichloroethene	ND	0.10	0.70		mg/L	1	4/10/2017 2:54:00 PM	31139
Hexachlorobutadiene	ND	0.10	0.50		mg/L	1	4/10/2017 2:54:00 PM	31139
Tetrachloroethene (PCE)	ND	0.10	0.70		mg/L	1	4/10/2017 2:54:00 PM	31139
Trichloroethene (TCE)	ND	0.10	0.50		mg/L	1	4/10/2017 2:54:00 PM	31139
Vinyl chloride	ND	0.10	0.20		mg/L	1	4/10/2017 2:54:00 PM	31139
Surr: 1,2-Dichloroethane-d4	81.6	0	70-130		%Rec	1	4/10/2017 2:54:00 PM	31139
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	4/10/2017 2:54:00 PM	31139
Surr: Dibromofluoromethane	101	0	70-130		%Rec	1	4/10/2017 2:54:00 PM	31139
Surr: Toluene-d8	95.8	0	70-130		%Rec	1	4/10/2017 2:54:00 PM	31139

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Sample Location #6
Project: Naptha Line Spill
Collection Date: 3/30/2017 11:55:00 AM
Lab ID: 1704176-006
Matrix: SLUDGE
Received Date: 4/5/2017 2:18:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **JME**	
Diesel Range Organics (DRO)	1.7	1.6	10	J	mg/Kg	1	4/10/2017 1:23:57 PM	31128
Motor Oil Range Organics (MRO)	ND	51	51		mg/Kg	1	4/10/2017 1:23:57 PM	31128
Surr: DNOP	106	0	70-130		%Rec	1	4/10/2017 1:23:57 PM	31128
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.1	5.0		mg/Kg	1	4/7/2017 12:07:09 AM	31106
Surr: BFB	89.3	0	54-150		%Rec	1	4/7/2017 12:07:09 AM	31106
EPA METHOD 8310: PAHS							Analyst: **SCC**	
Naphthalene	ND	0.036	0.25		mg/Kg	1	4/10/2017 10:19:59 AM	31138
1-Methylnaphthalene	ND	0.025	0.25		mg/Kg	1	4/10/2017 10:19:59 AM	31138
2-Methylnaphthalene	ND	0.025	0.25		mg/Kg	1	4/10/2017 10:19:59 AM	31138
Acenaphthylene	ND	0.021	0.25		mg/Kg	1	4/10/2017 10:19:59 AM	31138
Acenaphthene	ND	0.024	0.25		mg/Kg	1	4/10/2017 10:19:59 AM	31138
Fluorene	ND	0.0022	0.030		mg/Kg	1	4/10/2017 10:19:59 AM	31138
Phenanthrene	ND	0.0012	0.015		mg/Kg	1	4/10/2017 10:19:59 AM	31138
Anthracene	ND	0.0011	0.015		mg/Kg	1	4/10/2017 10:19:59 AM	31138
Fluoranthene	ND	0.0020	0.020		mg/Kg	1	4/10/2017 10:19:59 AM	31138
Pyrene	0.0040	0.0024	0.025	J	mg/Kg	1	4/10/2017 10:19:59 AM	31138
Benz(a)anthracene	0.00075	0.00030	0.010	J	mg/Kg	1	4/10/2017 10:19:59 AM	31138
Chrysene	ND	0.0014	0.010		mg/Kg	1	4/10/2017 10:19:59 AM	31138
Benzo(b)fluoranthene	0.00050	0.00050	0.010	J	mg/Kg	1	4/10/2017 10:19:59 AM	31138
Benzo(k)fluoranthene	ND	0.00040	0.010		mg/Kg	1	4/10/2017 10:19:59 AM	31138
Benzo(a)pyrene	0.00050	0.00030	0.010	J	mg/Kg	1	4/10/2017 10:19:59 AM	31138
Dibenz(a,h)anthracene	ND	0.00060	0.010		mg/Kg	1	4/10/2017 10:19:59 AM	31138
Benzo(g,h,i)perylene	0.00050	0.00040	0.010	J	mg/Kg	1	4/10/2017 10:19:59 AM	31138
Indeno(1,2,3-cd)pyrene	ND	0.0024	0.010		mg/Kg	1	4/10/2017 10:19:59 AM	31138
Surr: Benzo(e)pyrene	44.1	0	32.4-163		%Rec	1	4/10/2017 10:19:59 AM	31138
EPA METHOD 300.0: ANIONS							Analyst: **MRA**	
Chloride	120	1.3	30		mg/Kg	20	4/7/2017 4:48:32 PM	31127
Sulfate	95	7.1	30		mg/Kg	20	4/7/2017 4:48:32 PM	31127
MERCURY, TCLP							Analyst: **pmf**	
Mercury	ND	0.00050	0.020		mg/L	1	4/10/2017 2:21:06 PM	31159
EPA METHOD 6010B: TCLP METALS							Analyst: **MED**	
Arsenic	ND	0.024	5.0		mg/L	1	4/10/2017 11:17:23 AM	31140
Barium	2.5	0.0015	100	J	mg/L	1	4/10/2017 11:17:23 AM	31140
Cadmium	ND	0.00080	1.0		mg/L	1	4/10/2017 11:17:23 AM	31140
Chromium	ND	0.0030	5.0		mg/L	1	4/10/2017 11:17:23 AM	31140
Lead	ND	0.0049	5.0		mg/L	1	4/10/2017 11:17:23 AM	31140

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Sample Location #6
Project: Naptha Line Spill
Collection Date: 3/30/2017 11:55:00 AM
Lab ID: 1704176-006
Matrix: SLUDGE
Received Date: 4/5/2017 2:18:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: TCLP METALS							Analyst: **MED**	
Selenium	ND	0.062	1.0		mg/L	1	4/10/2017 11:17:23 AM	31140
Silver	ND	0.0021	5.0		mg/L	1	4/10/2017 11:17:23 AM	31140
EPA METHOD 8260B: TCLP COMPOUNDS							Analyst: **DJF**	
Benzene	ND	0.049	0.50		ppm	10	4/6/2017 2:15:16 PM	31106
1,2-Dichloroethane (EDC)	ND	0.052	0.50		ppm	10	4/6/2017 2:15:16 PM	31106
2-Butanone	ND	0.30	200		ppm	10	4/6/2017 2:15:16 PM	31106
Carbon tetrachloride	ND	0.049	0.50		ppm	10	4/6/2017 2:15:16 PM	31106
Chlorobenzene	ND	0.030	100		ppm	10	4/6/2017 2:15:16 PM	31106
Chloroform	ND	0.030	6.0		ppm	10	4/6/2017 2:15:16 PM	31106
1,4-Dichlorobenzene	ND	0.055	7.5		ppm	10	4/6/2017 2:15:16 PM	31106
1,1-Dichloroethene	ND	0.20	0.70		ppm	10	4/6/2017 2:15:16 PM	31106
Tetrachloroethene (PCE)	ND	0.040	0.70		ppm	10	4/6/2017 2:15:16 PM	31106
Trichloroethene (TCE)	ND	0.060	0.50		ppm	10	4/6/2017 2:15:16 PM	31106
Vinyl chloride	ND	0.042	0.20		ppm	10	4/6/2017 2:15:16 PM	31106
Surr: 1,2-Dichloroethane-d4	109		70-130		%Rec	10	4/6/2017 2:15:16 PM	31106
Surr: 4-Bromofluorobenzene	89.7		70-130		%Rec	10	4/6/2017 2:15:16 PM	31106
Surr: Dibromofluoromethane	106		70-130		%Rec	10	4/6/2017 2:15:16 PM	31106
Surr: Toluene-d8	98.4		70-130		%Rec	10	4/6/2017 2:15:16 PM	31106

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

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	04/10/2017 09:14	WG968433

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	04/07/2017 19:15	WG968481

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
Corrosivity by pH	9.68	T8	1	04/08/2017 11:27	WG968631

Sample Narrative:
9045D L901160-01 WG968631: 9.68 at 20.0c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	128		1	04/07/2017 19:00	WG968557

Wet Chemistry by Method 9012 B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Reactive Cyanide	ND		0.250	1	04/10/2017 09:15	WG968433

Wet Chemistry by Method 9034-9030B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Reactive Sulfide	42.7		25.0	1	04/07/2017 19:15	WG968481

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
Corrosivity by pH	8.86	T8	1	04/08/2017 11:27	WG968631

Sample Narrative:

9045D L901160-02 WG968631: 8.86 at 19.8c

Wet Chemistry by Method D93/1010A

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	Deg. F			date / time	
Ignitability	77.7		1	04/07/2017 19:00	WG968557

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	04/10/2017 09:17	WG968433

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	04/07/2017 19:15	WG968481

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
Corrosivity by pH	9.19	T6	1	04/08/2017 11:27	WG968631

Sample Narrative:

9045D L901160-03 WG968631: 9.19 at 20.0c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	69.7		1	04/07/2017 19:00	WG968557

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	04/10/2017 09:18	WG968433

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	36.6		25.0	1	04/07/2017 19:15	WG968481

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
Corrosivity by pH	9.40	T8	1	04/08/2017 11:27	WG968631

Sample Narrative:

9045D L901160-04 WG968631: 9.40 at 20.0c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	76.5		1	04/07/2017 19:00	WG968557

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	04/10/2017 09:19	WG968433

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	04/07/2017 19:15	WG968481

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
Corrosivity by pH	8.40	T6	1	04/08/2017 11:27	WG968631

Sample Narrative:

9045D L901160-05 WG968631: 8.40 at 20.2c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	123		1	04/07/2017 19:00	WG968557

Wet Chemistry by Method 9012 B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Cyanide	ND		0.250	1	04/10/2017 09:21	WG968433

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	ND		25.0	1	04/07/2017 19:15	WG968481

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
Corrosivity by pH	8.67	T8	1	04/08/2017 11:27	WG968631

Sample Narrative:

9045D L901160-06 WG968631: 8.67 at 20.4c

Wet Chemistry by Method D93/1010A

Analyte	Result Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	DNI at 170		1	04/07/2017 19:00	WG968557

Method Blank (MB)

(MB) R3209490-1 04/10/17 08:51

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
Reactive Cyanide	U		0.039	0.250

L901165-01 Original Sample (OS) • Duplicate (DUP)

(OS) L901165-01 04/10/17 09:25 • (DUP) R3209490-7 04/10/17 09:26

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	0.000	1	200	P1	20

L901035-08 Original Sample (OS) • Duplicate (DUP)

(OS) L901035-08 04/10/17 09:01 • (DUP) R3209490-10 04/10/17 09:12

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/kg	mg/kg		%		%
Reactive Cyanide	ND	0.000	1	0		20

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

(LCS) R3209490-2 04/10/17 08:53 • (LCSD) R3209490-3 04/10/17 08:54

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Reactive Cyanide	2.50	2.48	2.45	99	98	50-150			1	20

L901035-16 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L901035-16 04/10/17 09:10 • (MS) R3209490-9 04/10/17 09:11 • (MSD) R3209490-8 04/10/17 09:03

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Reactive Cyanide	1.67	ND	1.52	1.57	87	90	1	75-125			3	20

Method Blank (MB)

(MB) WG968481-1 04/07/17 19:15

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Reactive Sulfide	U		7.63	25.0

L901160-06 Original Sample (OS) • Duplicate (DUP)

(OS) L901160-06 04/07/17 19:15 • (DUP) WG968481-4 04/07/17 19:15

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Reactive Sulfide	ND	ND	1	0.000		20

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

(LCS) WG968481-2 04/07/17 19:15 • (LCSD) WG968481-3 04/07/17 19:15

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 %
Reactive Sulfide	100	73.3	79.4	73.3	79.4	70.0-130			7.99	20

L900577-01 Original Sample (OS) • Duplicate (DUP)

(OS) L900577-01 04/08/17 11:27 • (DUP) WG968631-3 04/08/17 11:27

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
Corrosivity by pH	6.74	6.72	1	0.297	T8	1

L901160-06 Original Sample (OS) • Duplicate (DUP)

(OS) L901160-06 04/08/17 11:27 • (DUP) WG968631-4 04/08/17 11:27

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
Corrosivity by pH	8.67	8.68	1	0.115	T8	1

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

(LCS) WG968631-1 04/08/17 11:27 • (LCSD) WG968631-2 04/08/17 11:27

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	su	su	su	%	%	%			%	%
Corrosivity by pH	7.50	7.54	7.56	101	101	98.4-102			0.265	1

L899835-08 Original Sample (OS) • Duplicate (DUP)

(OS) L899835-08 04/07/17 19:00 • (DUP) R3209250-3 04/07/17 19:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	Deg. F	Deg. F		%		%
Ignitability	DNI at 170	DNI at 170	1	0.000		10

L901160-01 Original Sample (OS) • Duplicate (DUP)

(OS) L901160-01 04/07/17 19:00 • (DUP) R3209250-4 04/07/17 19:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	Deg. F	Deg. F		%		%
Ignitability	128	126	1	1.00		10

L901160-02 Original Sample (OS) • Duplicate (DUP)

(OS) L901160-02 04/07/17 19:00 • (DUP) R3209250-5 04/07/17 19:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	Deg. F	Deg. F		%		%
Ignitability	77.7	80.0	1	3.00		10

L901160-03 Original Sample (OS) • Duplicate (DUP)

(OS) L901160-03 04/07/17 19:00 • (DUP) R3209250-6 04/07/17 19:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	Deg. F	Deg. F		%		%
Ignitability	69.7	70.0	1	0.000		10

L901160-04 Original Sample (OS) • Duplicate (DUP)

(OS) L901160-04 04/07/17 19:00 • (DUP) R3209250-7 04/07/17 19:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	Deg. F	Deg. F		%		%
Ignitability	76.5	75.6	1	1.00		10

L901160-05 Original Sample (OS) • Duplicate (DUP)

(OS) L901160-05 04/07/17 19:00 • (DUP) R3209250-8 04/07/17 19:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	Deg. F	Deg. F		%		%
Ignitability	123	126	1	2.00		10

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

(LCS) R3209250-1 04/07/17 19:00 • (LCSD) R3209250-2 04/07/17 19:00

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	Deg. F	Deg. F	Deg. F	%	%	%			%	%
Ignitability	82.0	80.4	80.7	98.0	98.0	96.0-104			0.000	10

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
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.
Rec.	Recovery.

Qualifier	Description
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	Sample(s) received past/too close to holding time expiration.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1704176**

21-Apr-17

Client: Western Refining Southwest, Gallup

Project: Naptha Line Spill

Sample ID	**MB-31127**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**31127**	RunNo:	**41969**					
Prep Date:	**4/7/2017**	Analysis Date:	**4/7/2017**	SeqNo:	**1318741**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								
Sulfate	ND	1.5								

Sample ID	**LCS-31127**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**31127**	RunNo:	**41969**					
Prep Date:	**4/7/2017**	Analysis Date:	**4/7/2017**	SeqNo:	**1318742**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.6	90	110			
Sulfate	29	1.5	30.00	0	97.6	90	110			

Qualifiers:

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R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1704176**

21-Apr-17

Client: Western Refining Southwest, Gallup

Project: Naptha Line Spill

Sample ID **MB-31128**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **31128**	RunNo: **41990**
Prep Date: **4/7/2017**	Analysis Date: **4/10/2017**	SeqNo: **1318833** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		110	70	130			

Sample ID **MB-31151**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **31151**	RunNo: **41990**
Prep Date: **4/10/2017**	Analysis Date: **4/10/2017**	SeqNo: **1318834** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		102	70	130			

Sample ID **LCS-31128**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **31128**	RunNo: **41990**
Prep Date: **4/7/2017**	Analysis Date: **4/10/2017**	SeqNo: **1318835** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	104	63.8	116			
Surr: DNOP	5.0		5.000		99.7	70	130			

Sample ID **LCS-31151**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **31151**	RunNo: **41990**
Prep Date: **4/10/2017**	Analysis Date: **4/10/2017**	SeqNo: **1318836** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	100	63.8	116			
Surr: DNOP	4.9		5.000		97.1	70	130			

Sample ID **1704176-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **Sample Location #1**	Batch ID: **31128**	RunNo: **41990**
Prep Date: **4/7/2017**	Analysis Date: **4/10/2017**	SeqNo: **1319273** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	220	9.3	46.51	25.23	420	51.6	130			S
Surr: DNOP	4.9		4.651		104	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1704176**

21-Apr-17

Client: Western Refining Southwest, Gallup

Project: Naptha Line Spill

Sample ID	**1704176-001AMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**Sample Location #1**	Batch ID:	**31128**		RunNo:	**41990**					
Prep Date:	**4/7/2017**	Analysis Date:	**4/10/2017**		SeqNo:	**1319318**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	290	10	51.02	25.23	522	51.6	130	27.7	20	RS	
Surr: DNOP	5.7		5.102		111	70	130	0	0		

Sample ID	**LCS-31157**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**LCSS**	Batch ID:	**31157**		RunNo:	**42017**					
Prep Date:	**4/10/2017**	Analysis Date:	**4/11/2017**		SeqNo:	**1319773**	Units:	**%Rec**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP	5.1		5.000		102	70	130				

Sample ID	**MB-31157**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**PBS**	Batch ID:	**31157**		RunNo:	**42017**					
Prep Date:	**4/10/2017**	Analysis Date:	**4/11/2017**		SeqNo:	**1319775**	Units:	**%Rec**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP	11		10.00		110	70	130				

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1704176**

21-Apr-17

Client: Western Refining Southwest, Gallup

Project: Naptha Line Spill

Sample ID **MB-31106**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **31106**	RunNo: **41937**
Prep Date: **4/5/2017**	Analysis Date: **4/6/2017**	SeqNo: **1317204** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	890		1000		88.6	54	150			

Sample ID **LCS-31106**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **31106**	RunNo: **41937**
Prep Date: **4/5/2017**	Analysis Date: **4/6/2017**	SeqNo: **1317205** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	76.4	125			
Surr: BFB	990		1000		98.9	54	150			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1704176**
21-Apr-17

Client: Western Refining Southwest, Gallup
Project: Naptha Line Spill

Sample ID **mb-31106**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **31106**	RunNo: **41936**
Prep Date: **4/5/2017**	Analysis Date: **4/6/2017**	SeqNo: **1328109** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1704176**

21-Apr-17

Client: Western Refining Southwest, Gallup

Project: Naptha Line Spill

Sample ID **mb-31106**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **31106**	RunNo: **41936**
Prep Date: **4/5/2017**	Analysis Date: **4/6/2017**	SeqNo: **1328109** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.54		0.5000		108	70	130			
Surr: 1,2-Dichloroethane-d4	0.54		0.5000		108	70	130			
Surr: Toluene-d8	0.49		0.5000		97.9	70	130			
Surr: 4-Bromofluorobenzene	0.45		0.5000		90.7	70	130			

Sample ID **lcs-31106**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **31106**	RunNo: **41936**
Prep Date: **4/5/2017**	Analysis Date: **4/6/2017**	SeqNo: **1328110** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	110	70	130			
Toluene	0.98	0.050	1.000	0	97.8	70	130			
Chlorobenzene	0.95	0.050	1.000	0	95.4	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1704176**

21-Apr-17

Client: Western Refining Southwest, Gallup

Project: Naptha Line Spill

Sample ID	**lcs-31106**	SampType:	**LCS**	TestCode:	**EPA Method 8260B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**31106**	RunNo:	**41936**					
Prep Date:	**4/5/2017**	Analysis Date:	**4/6/2017**	SeqNo:	**1328110**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.1	0.050	1.000	0	114	72	146			
Trichloroethene (TCE)	1.0	0.050	1.000	0	100	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		103	70	130			
Surr: 1,2-Dichloroethane-d4	0.54		0.5000		109	70	130			
Surr: Toluene-d8	0.49		0.5000		99.0	70	130			
Surr: 4-Bromofluorobenzene	0.44		0.5000		87.0	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1704176**

21-Apr-17

Client: Western Refining Southwest, Gallup

Project: Naptha Line Spill

Sample ID **mb-31106**	SampType: **MBLK**	TestCode: **EPA Method 8260B: TCLP Compounds**
Client ID: **PBS**	Batch ID: **31106**	RunNo: **41936**
Prep Date: **4/5/2017**	Analysis Date: **4/6/2017**	SeqNo: **1317261** Units: **ppm**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
2-Butanone	ND	20								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	10								
Chloroform	ND	0.60								
1,4-Dichlorobenzene	ND	0.75								
1,1-Dichloroethene	ND	0.070								
Tetrachloroethene (PCE)	ND	0.070								
Trichloroethene (TCE)	ND	0.050								
Vinyl chloride	ND	0.020								
Surr: 1,2-Dichloroethane-d4	0.54		0.5000		108	70	130			
Surr: 4-Bromofluorobenzene	0.45		0.5000		90.7	70	130			
Surr: Dibromofluoromethane	0.54		0.5000		108	70	130			
Surr: Toluene-d8	0.49		0.5000		97.9	70	130			

Sample ID **lcs-31106**	SampType: **LCS**	TestCode: **EPA Method 8260B: TCLP Compounds**
Client ID: **LCSS**	Batch ID: **31106**	RunNo: **41936**
Prep Date: **4/5/2017**	Analysis Date: **4/6/2017**	SeqNo: **1317262** Units: **ppm**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	110	70	130			
Chlorobenzene	0.95	0.050	1.000	0	95.4	70	130			
1,1-Dichloroethene	1.1	0.050	1.000	0	114	72	146			
Trichloroethene (TCE)	1.0	0.050	1.000	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	0.54		0.5000		109	70	130			
Surr: 4-Bromofluorobenzene	0.44		0.5000		87.0	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		103	70	130			
Surr: Toluene-d8	0.49		0.5000		99.0	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1704176**

21-Apr-17

Client: Western Refining Southwest, Gallup

Project: Naptha Line Spill

Sample ID **mb-31121**	SampType: **MBLK**	TestCode: **Volatiles by 8260B/1311**
Client ID: **PBS**	Batch ID: **31121**	RunNo: **41984**
Prep Date: **4/6/2017**	Analysis Date: **4/7/2017**	SeqNo: **1318365** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50								
2-Butanone	ND	200								
Carbon Tetrachloride	ND	0.50								
Chlorobenzene	ND	100								
Chloroform	ND	6.0								
1,4-Dichlorobenzene	ND	7.5								
1,2-Dichloroethane (EDC)	ND	0.50								
1,1-Dichloroethene	ND	0.70								
Hexachlorobutadiene	ND	0.50								
Tetrachloroethene (PCE)	ND	0.70								
Trichloroethene (TCE)	ND	0.50								
Vinyl chloride	ND	0.20								
Surr: 1,2-Dichloroethane-d4	0.18		0.2000		89.1	70	130			
Surr: 4-Bromofluorobenzene	0.22		0.2000		110	70	130			
Surr: Dibromofluoromethane	0.20		0.2000		101	70	130			
Surr: Toluene-d8	0.20		0.2000		98.9	70	130			

Sample ID **lcs-31121**	SampType: **LCS**	TestCode: **Volatiles by 8260B/1311**
Client ID: **LCSS**	Batch ID: **31121**	RunNo: **41984**
Prep Date: **4/6/2017**	Analysis Date: **4/7/2017**	SeqNo: **1318366** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.42	0.10	0.4000	0	105	70	130			
Chlorobenzene	0.38	0.10	0.4000	0	95.1	70	130			
1,1-Dichloroethene	0.37	0.10	0.4000	0	91.5	67.2	131			
Trichloroethene (TCE)	0.36	0.10	0.4000	0	89.7	70	130			
Surr: 1,2-Dichloroethane-d4	0.18		0.2000		88.7	70	130			
Surr: 4-Bromofluorobenzene	0.22		0.2000		111	70	130			
Surr: Dibromofluoromethane	0.20		0.2000		98.9	70	130			
Surr: Toluene-d8	0.19		0.2000		96.3	70	130			

Sample ID **1704176-001ams**	SampType: **MS**	TestCode: **Volatiles by 8260B/1311**
Client ID: **Sample Location #1**	Batch ID: **31121**	RunNo: **41984**
Prep Date: **4/6/2017**	Analysis Date: **4/7/2017**	SeqNo: **1318368** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.10	0.4000	0.6401	103	70	130			
Chlorobenzene	0.37	0.10	0.4000	0	93.7	70	130			
1,1-Dichloroethene	0.35	0.10	0.4000	0	88.2	70	130			
Trichloroethene (TCE)	0.35	0.10	0.4000	0	88.4	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1704176**

21-Apr-17

Client: Western Refining Southwest, Gallup

Project: Naptha Line Spill

Sample ID **1704176-001ams**	SampType: **MS**	TestCode: **Volatiles by 8260B/1311**
Client ID: **Sample Location #1**	Batch ID: **31121**	RunNo: **41984**
Prep Date: **4/6/2017**	Analysis Date: **4/7/2017**	SeqNo: **1318368** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.19		0.2000		92.9	70	130			
Surr: 4-Bromofluorobenzene	0.22		0.2000		108	70	130			
Surr: Dibromofluoromethane	0.20		0.2000		99.8	70	130			
Surr: Toluene-d8	0.18		0.2000		91.9	70	130			

Sample ID **1704176-001amsd**	SampType: **MSD**	TestCode: **Volatiles by 8260B/1311**
Client ID: **Sample Location #1**	Batch ID: **31121**	RunNo: **41984**
Prep Date: **4/6/2017**	Analysis Date: **4/7/2017**	SeqNo: **1318369** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.10	0.4000	0.6401	99.7	70	130	1.07	20	
Chlorobenzene	0.37	0.10	0.4000	0	91.7	70	130	2.16	20	
1,1-Dichloroethene	0.35	0.10	0.4000	0	88.0	70	130	0.316	20	
Trichloroethene (TCE)	0.36	0.10	0.4000	0	90.5	70	130	2.35	20	
Surr: 1,2-Dichloroethane-d4	0.19		0.2000		95.6	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.22		0.2000		112	70	130	0	0	
Surr: Dibromofluoromethane	0.20		0.2000		102	70	130	0	0	
Surr: Toluene-d8	0.19		0.2000		95.6	70	130	0	0	

Sample ID **lcs-31139**	SampType: **LCS**	TestCode: **Volatiles by 8260B/1311**
Client ID: **LCSS**	Batch ID: **31139**	RunNo: **42005**
Prep Date: **4/7/2017**	Analysis Date: **4/10/2017**	SeqNo: **1319276** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.43	0.30	0.4000	0	109	70	130			
Chlorobenzene	0.40	0.30	0.4000	0	100	70	130			
1,1-Dichloroethene	0.47	0.30	0.4000	0	116	67.2	131			
Trichloroethene (TCE)	0.43	0.30	0.4000	0	107	70	130			
Surr: 1,2-Dichloroethane-d4	0.17		0.2000		83.6	70	130			
Surr: 4-Bromofluorobenzene	0.21		0.2000		103	70	130			
Surr: Dibromofluoromethane	0.21		0.2000		104	70	130			
Surr: Toluene-d8	0.18		0.2000		92.3	70	130			

Sample ID **mb-31139**	SampType: **MBLK**	TestCode: **Volatiles by 8260B/1311**
Client ID: **PBS**	Batch ID: **31139**	RunNo: **42005**
Prep Date: **4/7/2017**	Analysis Date: **4/10/2017**	SeqNo: **1319277** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50								
2-Butanone	ND	200								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1704176**

21-Apr-17

Client: Western Refining Southwest, Gallup

Project: Naptha Line Spill

Sample ID **mb-31139** SampType: **MBLK** TestCode: **Volatiles by 8260B/1311**

Client ID: **PBS** Batch ID: **31139** RunNo: **42005**

Prep Date: **4/7/2017** Analysis Date: **4/10/2017** SeqNo: **1319277** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon Tetrachloride	ND	0.50								
Chlorobenzene	ND	100								
Chloroform	ND	6.0								
1,4-Dichlorobenzene	ND	7.5								
1,2-Dichloroethane (EDC)	ND	0.50								
1,1-Dichloroethene	ND	0.70								
Hexachlorobutadiene	ND	0.50								
Tetrachloroethene (PCE)	ND	0.70								
Trichloroethene (TCE)	ND	0.50								
Vinyl chloride	ND	0.20								
Surr: 1,2-Dichloroethane-d4	0.17		0.2000		85.3	70	130			
Surr: 4-Bromofluorobenzene	0.20		0.2000		101	70	130			
Surr: Dibromofluoromethane	0.21		0.2000		105	70	130			
Surr: Toluene-d8	0.18		0.2000		92.0	70	130			

Sample ID **1704176-004ams** SampType: **MS** TestCode: **Volatiles by 8260B/1311**

Client ID: **Sample Location #4** Batch ID: **31139** RunNo: **42005**

Prep Date: **4/7/2017** Analysis Date: **4/10/2017** SeqNo: **1319294** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.4	0.30	0.3995	0.8792	119	70	130			
Chlorobenzene	0.43	0.30	0.3995	0	109	70	130			
1,1-Dichloroethene	0.49	0.30	0.3995	0	124	70	130			
Trichloroethene (TCE)	0.47	0.30	0.3995	0	118	70	130			
Surr: 1,2-Dichloroethane-d4	0.16		0.1998		81.9	70	130			
Surr: 4-Bromofluorobenzene	0.20		0.1998		101	70	130			
Surr: Dibromofluoromethane	0.20		0.1998		101	70	130			
Surr: Toluene-d8	0.19		0.1998		94.6	70	130			

Sample ID **1704176-004amsd** SampType: **MSD** TestCode: **Volatiles by 8260B/1311**

Client ID: **Sample Location #4** Batch ID: **31139** RunNo: **42005**

Prep Date: **4/7/2017** Analysis Date: **4/10/2017** SeqNo: **1319295** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.3	0.30	0.3995	0.8792	113	70	130	1.98	20	
Chlorobenzene	0.43	0.30	0.3995	0	106	70	130	2.16	20	
1,1-Dichloroethene	0.48	0.30	0.3995	0	121	70	130	1.98	20	
Trichloroethene (TCE)	0.46	0.30	0.3995	0	115	70	130	2.33	20	
Surr: 1,2-Dichloroethane-d4	0.17		0.1998		83.6	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.21		0.1998		105	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1704176**

21-Apr-17

Client: Western Refining Southwest, Gallup

Project: Naptha Line Spill

Sample ID **1704176-004amsd** SampType: **MSD** TestCode: **Volatiles by 8260B/1311**

Client ID: **Sample Location #4** Batch ID: **31139** RunNo: **42005**

Prep Date: **4/7/2017** Analysis Date: **4/10/2017** SeqNo: **1319295** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.20		0.1998		101	70	130	0	0	
Surr: Toluene-d8	0.19		0.1998		94.7	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1704176**

21-Apr-17

Client: Western Refining Southwest, Gallup

Project: Naptha Line Spill

Sample ID **MB-31138**	SampType: **MBLK**	TestCode: **EPA Method 8310: PAHs**
Client ID: **PBS**	Batch ID: **31138**	RunNo: **41983**
Prep Date: **4/7/2017**	Analysis Date: **4/10/2017**	SeqNo: **1318361** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	0.25								
1-Methylnaphthalene	ND	0.25								
2-Methylnaphthalene	ND	0.25								
Acenaphthylene	ND	0.25								
Acenaphthene	ND	0.25								
Fluorene	ND	0.030								
Phenanthrene	0.0012	0.015								J
Anthracene	ND	0.015								
Fluoranthene	ND	0.020								
Pyrene	ND	0.025								
Benz(a)anthracene	ND	0.010								
Chrysene	ND	0.010								
Benzo(b)fluoranthene	ND	0.010								
Benzo(k)fluoranthene	ND	0.010								
Benzo(a)pyrene	0.00050	0.010								J
Dibenz(a,h)anthracene	ND	0.010								
Benzo(g,h,i)perylene	0.00050	0.010								J
Indeno(1,2,3-cd)pyrene	ND	0.010								
Surr: Benzo(e)pyrene	0.29		0.5000		58.0	32.4	163			

Sample ID **LCS-31138**	SampType: **LCS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSS**	Batch ID: **31138**	RunNo: **41983**
Prep Date: **4/7/2017**	Analysis Date: **4/10/2017**	SeqNo: **1318362** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	1.2	0.25	2.000	0	60.9	38.1	121			
1-Methylnaphthalene	1.3	0.25	2.000	0	65.7	39.8	121			
2-Methylnaphthalene	1.3	0.25	2.000	0	63.5	38.6	119			
Acenaphthylene	1.3	0.25	2.000	0	63.5	56.9	119			
Acenaphthene	1.3	0.25	2.000	0	63.3	39.1	121			
Fluorene	0.12	0.030	0.2000	0	61.3	35.8	116			
Phenanthrene	0.065	0.015	0.1006	0	64.4	34.3	126			
Anthracene	0.054	0.015	0.1006	0	54.2	31.2	117			
Fluoranthene	0.13	0.020	0.2006	0	64.6	31.2	136			
Pyrene	0.14	0.025	0.2000	0	71.8	40.8	128			
Benz(a)anthracene	0.014	0.010	0.02000	0	68.8	25.7	136			
Chrysene	0.062	0.010	0.1006	0	61.9	34.2	129			
Benzo(b)fluoranthene	0.016	0.010	0.02500	0	63.0	33.2	121			
Benzo(k)fluoranthene	0.0090	0.010	0.01250	0	72.0	35.7	130			J

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1704176**

21-Apr-17

Client: Western Refining Southwest, Gallup

Project: Naptha Line Spill

Sample ID **LCS-31138**	SampType: **LCS**	TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSS**	Batch ID: **31138**	RunNo: **41983**
Prep Date: **4/7/2017**	Analysis Date: **4/10/2017**	SeqNo: **1318362** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	0.0082	0.010	0.01250	0	66.0	27	131			J
Dibenz(a,h)anthracene	0.016	0.010	0.02500	0	65.0	29.4	131			
Benzo(g,h,i)perylene	0.018	0.010	0.02500	0	73.0	32.9	130			
Indeno(1,2,3-cd)pyrene	0.028	0.010	0.05002	0	56.5	28.2	135			
Surr: Benzo(e)pyrene	0.36		0.5000		71.6	32.4	163			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1704176**

21-Apr-17

Client: Western Refining Southwest, Gallup

Project: Naptha Line Spill

Sample ID	**MB-31159**	SampType:	**MBLK**	TestCode:	**MERCURY, TCLP**					
Client ID:	**PBW**	Batch ID:	**31159**	RunNo:	**42003**					
Prep Date:	**4/10/2017**	Analysis Date:	**4/10/2017**	SeqNo:	**1319243**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020								

Sample ID	**LCS-31159**	SampType:	**LCS**	TestCode:	**MERCURY, TCLP**					
Client ID:	**LCSW**	Batch ID:	**31159**	RunNo:	**42003**					
Prep Date:	**4/10/2017**	Analysis Date:	**4/10/2017**	SeqNo:	**1319244**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.020	0.005000	0	100	80	120			J

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1704176**

21-Apr-17

Client: Western Refining Southwest, Gallup

Project: Naptha Line Spill

Sample ID **MB-31140**	SampType: **MBLK**	TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **PBW**	Batch ID: **31140**	RunNo: **41992**
Prep Date: **4/7/2017**	Analysis Date: **4/10/2017**	SeqNo: **1318852** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0								
Barium	ND	100								
Cadmium	ND	1.0								
Chromium	ND	5.0								
Lead	ND	5.0								
Selenium	ND	1.0								
Silver	ND	5.0								

Sample ID **LCS-31140**	SampType: **LCS**	TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **LCSW**	Batch ID: **31140**	RunNo: **41992**
Prep Date: **4/7/2017**	Analysis Date: **4/10/2017**	SeqNo: **1318853** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.52	5.0	0.5000	0	104	80	120			J
Barium	0.48	100	0.5000	0	97.0	80	120			J
Cadmium	0.51	1.0	0.5000	0	101	80	120			J
Chromium	0.49	5.0	0.5000	0	98.0	80	120			J
Lead	0.47	5.0	0.5000	0	94.3	80	120			J
Selenium	0.50	1.0	0.5000	0	100	80	120			J
Silver	0.10	5.0	0.1000	0	104	80	120			J

Sample ID **1704176-001AMS**	SampType: **MS**	TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **Sample Location #1**	Batch ID: **31140**	RunNo: **41992**
Prep Date: **4/7/2017**	Analysis Date: **4/10/2017**	SeqNo: **1318856** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.53	5.0	0.5000	0	105	75	125			J
Barium	3.5	100	0.5000	3.095	83.8	75	125			J
Cadmium	0.50	1.0	0.5000	0	100	75	125			J
Chromium	0.47	5.0	0.5000	0	93.8	75	125			J
Lead	0.45	5.0	0.5000	0	90.4	75	125			J
Selenium	0.46	1.0	0.5000	0	92.6	75	125			J
Silver	0.10	5.0	0.1000	0	102	75	125			J

Sample ID **1704176-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 6010B: TCLP Metals**
Client ID: **Sample Location #1**	Batch ID: **31140**	RunNo: **41992**
Prep Date: **4/7/2017**	Analysis Date: **4/10/2017**	SeqNo: **1318857** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.54	5.0	0.5000	0	108	75	125	3.04	20	J

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1704176**

21-Apr-17

Client: Western Refining Southwest, Gallup

Project: Naptha Line Spill

Sample ID	**1704176-001AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 6010B: TCLP Metals**
Client ID:	**Sample Location #1**	Batch ID:	**31140**	RunNo:	**41992**
Prep Date:	**4/7/2017**	Analysis Date:	**4/10/2017**	SeqNo:	**1318857** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	3.6	100	0.5000	3.095	107	75	125	3.31	20	J
Cadmium	0.51	1.0	0.5000	0	103	75	125	2.26	20	J
Chromium	0.48	5.0	0.5000	0	95.6	75	125	1.92	20	J
Lead	0.46	5.0	0.5000	0	92.5	75	125	2.20	20	J
Selenium	0.48	1.0	0.5000	0	96.1	75	125	3.72	20	J
Silver	0.10	5.0	0.1000	0	105	75	125	3.19	20	J

Sample ID	**1704176-001AMS**	SampType:	**MS**	TestCode:	**EPA Method 6010B: TCLP Metals**
Client ID:	**Sample Location #1**	Batch ID:	**31140**	RunNo:	**41992**
Prep Date:	**4/7/2017**	Analysis Date:	**4/10/2017**	SeqNo:	**1318866** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.56	10	0.5000	0	111	75	125			J
Barium	3.7	200	0.5000	3.326	74.3	75	125			JS
Cadmium	0.52	2.0	0.5000	0	104	75	125			J
Chromium	0.49	10	0.5000	0	98.1	75	125			J
Lead	0.48	10	0.5000	0	96.8	75	125			J
Selenium	0.45	2.0	0.5000	0	90.2	75	125			J
Silver	0.10	10	0.1000	0	102	75	125			J

Sample ID	**1704176-001AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 6010B: TCLP Metals**
Client ID:	**Sample Location #1**	Batch ID:	**31140**	RunNo:	**41992**
Prep Date:	**4/7/2017**	Analysis Date:	**4/10/2017**	SeqNo:	**1318867** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.58	10	0.5000	0	116	75	125	4.17	20	J
Barium	3.9	200	0.5000	3.326	112	75	125	4.99	20	J
Cadmium	0.54	2.0	0.5000	0	108	75	125	4.36	20	J
Chromium	0.51	10	0.5000	0	102	75	125	4.30	20	J
Lead	0.51	10	0.5000	0	101	75	125	4.49	20	J
Selenium	0.48	2.0	0.5000	0	96.6	75	125	6.86	20	J
Silver	0.11	10	0.1000	0	106	75	125	4.03	20	J

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1704176** RcptNo: **1**

Received By: **Ashley Gallegos** **4/5/2017 2:18:00 PM**

Completed By: **Ashley Gallegos** **4/5/2017 3:05:18 PM**

Reviewed By: AJ 04/05/17

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?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? _____
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.9	Good	Not Present			

Chain-of-Custody Record

Client: Western - Refining

Gallup Refinery

Mailing Address: 92 GIANT CROSSING ROAD

Gallup NM 87301

Phone #: 505 722 3833

email or Fax#: 505 863 0930

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

Turn-Around Time: ☐ Standard ☒ Rush

Project Name: Naptha Line Spill

Project #:

Project Manager: William Bailey

AD /JV

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.9

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

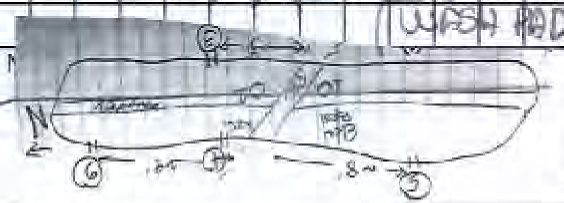
Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1704176	R8015 D (DRO/GRO/MRO)CI		8260B - TCLP	8270 - TCLP	RCRA 8 METALS - TCLP	RCI	PAINT FILTER	8310 PAH	SULFATES			Add 8260 Full List 6-9 of 4/4/17		Air Bubbles (Y or N)
3/30/2017	11:30	Soil	Sample Location # 1	2 - 9oz	None	-001	X		X		X	X		X	X					
3/30/2017	11:35	Soil	Sample Location # 2	2 - 9oz	None	-002	X		X		X	X		X	X					
3/30/2017	11:40	Soil	Sample Location # 3	2 - 9oz	None	-003	X		X		X	X		X	X					
3/30/2017	11:45	Soil	Sample Location # 4	2 - 9oz	None	-004	X		X		X	X		X	X					
3/30/2017	11:50	Soil	Sample Location # 5	2 - 9oz	None	-005	X		X		X	X		X	X					
3-30-17	11:55	Soil	Sample location #6	2-9oz	None	-006	X		X		X	X		X	X					

WASH PAD

Date	Time	Relinquished by	Received by	Date	Time
03-10-17	11:00	Alvin Dorsey (signature)	(signature)	04/05/17	1415

Remarks: T101/101 (10) (102)



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

Appendix F
Waste Mainifests

0012

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	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
NMD000333211	1	888-444-7077	010637254 GBF

GENERATOR

5. Generator's Name and Mailing Address
Western Refining Company - Gallup Refinery
I-40 @ Exit 39
Jamestown, NM 87347
Attn ATTN: Janelle Vestal
Generator's Phone: 505 863-1749

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: CHEMICAL TRANSPORTATION, INC.
U.S. EPA ID Number: AZT000610003

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
US Ecology Texas
3277 County Road 69
Robstown, TX 78380
Facility's Phone: 800 242-9208
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 No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. NA3077, Hazardous waste, solid, n.o.s. (Benzene, Xylene), 9, PGIII	001	CM	00010	T	D018		
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
PROFILE# 09010359-0, TX Waste Code OUT3301H, ERG#171

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/Offeror's Printed/Typed Name: ALVIN Dorsey
Signature
Month 06 Day 28 Year 17

INT'L

16. International Shipments ☐ Import to U.S. ☐ 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
Signature
Month 6 Day 28 Year 17

Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ 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.	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
Signature
Month Day Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

GENERATOR'S INITIAL COPY

042

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	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
NMO 0 0 0 3 3 3 2 1 1	1	888-564-7077	002837255 GBF

GENERATOR

5. Generator's Name and Malling Address
Attn: ATTN: Janelle Yoder
Western Refining Company - Gallup Refinery
I-40 @ Exit 39
Jamestown, NM 87347
Generator's Phone: 505 863-1713

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
CHEMICAL TRANSPORTATION, INC.

U.S. EPA ID Number
AZT0500100088

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address
US Ecology Texas
9777 County Road 93
Robstown, TX 78380
Facility's Phone: 800 242-3269

U.S. EPA ID Number
TXD000945340

9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. NA9077, Hazardous waste, solid, n.o.s. (Benzene, Xylene), 9, PGIII	001	CM	00010	T	D018
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
PROFILE# 090101359-0, TX Waste Code OUT3301H, ERG#171

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/Offeror's Printed/Typed Name: ALVIN DORSEY
Signature
Month 06 Day 29 Year 17

INT'L

16. International Shipments ☐ Import to U.S. ☐ 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
Signature
Month 6 Day 29 Year 17

Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ 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.	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
Signature
Month Day Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

GENERATOR'S INITIAL COPY