



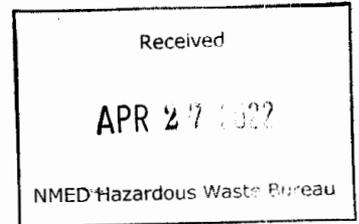
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Western Refining Southwest LLC

A subsidiary of Marathon Petroleum Corporation

I-40 Exit 39
Jamestown, NM 87347



April 22, 2022

Mr. Kevin Pierard, Chief
New Mexico Environment Department
2905 Rodeo Park Drive East, Bldg. 1
Santa Fe, NM 87505-6303

**RE: Response to Approval with Modifications
Sour Naphtha Release Investigation Work Plan
Marathon Gallup Refinery
(dba Western Refining Southwest LLC)
EPA ID# NMD000333211
HWB-WRG-21-014**

Dear Mr. Pierard:

Attached please find the response to comments contained in the New Mexico Environment Department (NMED) Approval with Modifications letter dated April 12, 2022. A timeline of the reports for the sour naphtha release is provided below.

- Investigation Work Plan, submitted October 7, 2021
- Disapproval, received November 23, 2021
- Response to Disapproval, submitted January 25, 2022
- Approval with Modifications, received April 12, 2022

If you have any questions or comments regarding the information contained herein, please do not hesitate to contact Mr. John Moore at 505-879-7643.



Western Refining Southwest LLC

A subsidiary of Marathon Petroleum Corporation

I-40 Exit 39

Jamestown, NM 87347

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction of 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,

Western Refining Southwest LLC, Marathon Gallup Refinery

Ruth A Cade

Ruth Cade
Vice-President

Enclosure

cc: D. Cobrain, NMED HWB
L. Barr, NMOCD
K. Luka, Marathon Petroleum Company
H. Jones, Trihydro Corporation

M. Suzuki, NMED HWB
L. King, USEPA
J. Moore, Marathon Gallup Refinery

ATTACHMENT A

New Mexico Environment Department to Western Refining Southwest LLC Comment Letter “Approval with Modifications, Sour Naphtha Release Investigation Work Plan” (April 12, 2022)

| New Mexico Environment Department (NMED) Comment | Western Refining Southwest LLC Response |
|--|--|
| <p>Comment 1:</p> <p>The Permittee’s response to NMED’s Disapproval Comment 2 states, “[b]ased on the SDS for Sour naphtha (Attachment C), it is unlikely that volatile organic compounds separate of [BTEX] will be present in the soil caused by the sour naphtha release. This investigation is based on the sour naphtha release and will be focused on the extent of contamination caused by the release. Therefore, Marathon does not agree to include additional analytical information for the soil borings.” It is possible that the soils in the area where the sour naphtha release occurred may have been affected by other historical releases. The <i>Marketing Tank Farm Laser-Induced Fluorescence/Hydraulic Profiling Investigation Report Addendum</i>, dated November 2021 reported that diesel and/or gasoline signature were detected in borings MKTF-LIF-83, MKTF-LIF-84, MKTF-LIF-86, and MKTF-LIF-87. Since borings MKTF-LIF-83, MKTF-LIF-84, MKTF-LIF-86, and MKTF-LIF-87 were advanced in the overlapping area where multiple soil borings are proposed to be installed for the delineation of the sour naphtha release, the Permittee must also investigate the presence/absence of potential contamination associated with the detection of gasoline and/or diesel signature. Revise the Work Plan to include the VOC analysis with all of the constituents listed in EPA Method 8260B, total petroleum hydrocarbons gasoline (TPH-GRO), diesel (TPH-DRO), and motor oil range organics (TPH-MRO) and provide replacement pages that include the additional analysis in in the appropriate section(s) of the Work Plan. If the Permittee chooses not to include the additional analysis with investigation, then the Permittee will be required to submit a separate work plan for investigating the presence/absence of potential contamination associated with the detection of gasoline and/or diesel signature from the MKTF investigation and additional borings will need to be advanced at the site.</p> | <p>Response 1:</p> <p>The additional analyses of volatile organic compounds (VOC), total petroleum hydrocarbon-diesel range organics (TPH-DRO), and TPH-motor oil range organics (MRO) have been added to the Laboratory Analysis section of the work plan. Replacement pages have been provided.</p> |

New Mexico Environment Department to Western Refining Southwest LLC Comment Letter “Approval with Modifications, Sour Naphtha Release Investigation Work Plan” (April 12, 2022)

| New Mexico Environment Department (NMED) Comment | Western Refining Southwest LLC Response |
|---|---|
| Comment 2: | Response 2: |
| <p>The Permittee’s response to NMED’s Disapproval Comment 10 states, “[t]he soil samples will not be compared to residential soil screening levels because the investigation will not require clean closure.” For perspective, the Permittee must list residential screening levels in addition to industrial and construction worker screening levels for comparison regardless of the cleanup objectives.</p> | <p>This comment is acknowledged. The Investigation Report table of analytical results will provide residential, industrial, and construction worker screening levels.</p> |

ATTACHMENT B-1

CLEAN



Western Refining Southwest, LLC
Sour Naphtha Investigation Work Plan



**WESTERN REFINING SOUTHWEST LLC
SOUR NAPHTHA RELEASE
INVESTIGATION WORK PLAN
MARATHON GALLUP REFINERY
GALLUP, NEW MEXICO
EPA ID# NMD000333211**

SUBMITTED BY: Trihydro Corporation

1252 Commerce Drive, Laramie, WY 82070



Executive Summary

Western Refining Southwest, LLC is submitting this Investigation Work Plan for the investigation of soils in the vicinity and down gradient of a sour naphtha release to determine the extent of hydrocarbon impacts. This Investigation Work Plan was requested by New Mexico Environment Department (NMED) to install soil borings near previous sample locations from the initial investigation.

On March 26, 2017, a release was detected on a service road by an operator. The release was identified as a sour naphtha soil seep with two areas of sour naphtha pooled along the sloped road base. The release was immediately blocked by isolating the leaking line. A corrosion hole was found in a carbon steel pipeline located approximately 4 feet below the ground surface. The estimated volume released was less than 210 gallons.

Following the release, approximately 16 tons of impacted soil were excavated. Samples were collected and submitted for laboratory analysis for waste characterization purposes. One sample was collected for disposal characterization and was analyzed for volatile organic compounds which exhibited elevated benzene, toluene, ethylbenzene, and total xylenes. The area was backfilled with clean soil and the excavated soil was disposed of offsite (MPC 2019).

This Investigation Work Plan proposes collecting soil samples to determine if additional soil excavation is necessary. This investigation will reduce data gaps from previous efforts and will be utilized to determine if additional excavation or further investigation is warranted.

The recently completed laser-induced fluorescence (LIF) study (May 2021) provided data that indicated potential naphtha detections west of the original investigation area. Therefore, in addition to the requested investigation by NMED, the Refinery also proposes to add one additional soil boring downgradient of the release to evaluate potential sour naphtha occurrences to the west.



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- A. LASER INDUCED FLUORESCENCE (LIF) RESULTS
- B. STANDARD OPERATING PROCEDURES



Introduction

The Gallup Refinery (Refinery) is located approximately 17 miles east of Gallup, McKinley County, New Mexico along the north side of Interstate Highway I-40 (Figure 1). The physical address is I-40, Exit #39 Jamestown, New Mexico 87347. The Refinery property covers approximately 810 acres.

Trihydro Corporation has prepared this Investigation Work Plan for the investigation of soils near a sour naphtha release that occurred in 2017. The proposed investigation includes collecting samples to satisfy the comments in the New Mexico Environment Department's (NMED) "Disapproval, Response Action Report Sour Naphtha Release" (NMED 2020). NMED comments #5, 6, and 11 require the Refinery to submit a work plan to delineate the eastern and western extents of the release and to delineate the extent of the surface and subsurface release (NMED 2020). In addition to the requested investigation by NMED, the Refinery proposes to complete 1 boring near the west extent of the release in response to data collected during the 2021 Laser Induced Fluorescence Investigation (May 2021).

Background

The Refinery is a crude oil refinery (currently indefinitely idled) that processes crude oil transported by pipeline or tanker truck from the Four Corners region. Various process units that have operated at the Refinery include crude distillation, reformer, fluidized catalytic cracker, alkylation, sulfur recovery, merox treater, and hydrotreater. Past operations have produced gasoline, diesel fuels, jet fuels, kerosene, propane, butane, and residual fuel.

As detailed in the "Response Action Report, Sour Naphtha Release" (MPC 2019), on March 26, 2017, an operator detected sour naphtha in a saturated soil seep, approximately 4 ft by 4 ft, in a service road. The sour naphtha flowed approximately 332 ft westerly downhill along the middle and sides of the service road (Figure 3). Two areas of sour naphtha pooled at the sloping road base. The leak was immediately isolated by the operator by blocking valves. The estimated sour naphtha volume released was less than 5 barrels (210 gallons).

The purpose of this Investigation Work Plan is to collect soil samples to delineate the surface and subsurface extent of any remaining contamination and determine if further investigation or remediation is necessary.



Previous Investigation

Following the discovery of the release, impacted soil was excavated. An area approximately 20 ft long (parallel to the pipeline) by 4 ft wide by 4 ft deep was excavated. In addition, the pipe was exposed and repaired. Visibly impacted soil in and around the release area was excavated and placed in 20 cubic yard bins for off-site disposal. Approximately 16 tons of soil were excavated.

On March 30, 2017, a total of six soil samples were collected from excavated soil for waste characterization (Figure 4). Based on analytical results, the 16 tons of soil were treated as hazardous waste and transported offsite for disposal. The excavated area was backfilled with clean soil and the service road was reopened.

Site Conditions

Surface Conditions

Local site topographic features include high ground in the southeast gradually decreasing to a lowland fluvial plain to the northwest. Elevations on the refinery property range from 6,860 ft above mean sea level (amsl) to 7,040 ft amsl. The release area service road elevation is approximately 6,951 ft amsl. The release flowed downhill to the west and collected at the base of the hill. The elevation at the base of the hill is approximately 6,932 ft amsl. In responding to the release, the maintenance department built several berms to contain the sour naphtha release.

Subsurface Conditions

The shallow subsurface soil (alluvium) is comprised of clay and silt with some inter-bedded sand layers. Beneath the alluvium is the Petrified Forest Member of the Chinle Group, which primarily consists of interbedded mudstone, siltstone, and sandstone. The depth of the Alluvium/Chinle interface ranges from 15 to 32 ft bgs.

Scope of Activities

The investigative activities of the sour naphtha release area will be completed in order to delineate horizontal hydrocarbon impacts and collect subsurface soil samples. In addition, surface samples will be collected along the service road. Pending NMED approval, Western Refining Southwest, LLC anticipates the investigation will be completed during 2021.



This investigation includes soil borings directly to the west and east of the release area (Figure 5) and soil boring samples (1 to 16 ft bgs) along the road to the west of the release (Figure 6). Based on the depth of excavation and to evaluate the construction worker exposure, it is anticipated that the depth of the soil borings near the release will be approximately 10 ft.

Soil samples will be collected at the following locations:

- The first soil boring is approximately 15 ft west of sample location #4 from the original investigation (Figure 5). This is the minimum distance to the west of the release where a direct push sample may be collected without intercepting the underground pipelines in the area.
- The second soil boring is approximately 5 ft east of sample location #2 from the original investigation.
- 11 soil borings to the west of the release beginning at 1 ft bgs and continued at 5 foot intervals to a depth of 16 ft bgs, or until refusal, for a maximum of 44 samples.
- One backfill sample from the previous excavation, collected at 2 ft bgs, will be collected as required in comment #4, "Approval with Modifications, Response Action Report Sour Naphtha Release" (MPC 2020).

Based on results from the May 2021 LIF investigation, the Refinery proposes one additional soil boring, collecting samples at depths of 1 ft bgs and continued at 5 foot intervals to 16 ft bgs the west of the sour naphtha release (Figure 5). LIF logs for MKTF-LIF-85 and MKTF-LIF-86 (provided in Appendix A) indicated the potential presence of naphtha and the additional boring will further delineate the release.

Field Screening

All soil borings will be continuously logged, and samples will be field screened for evidence of contaminants. Field screening results will be recorded on the exploratory boring logs. Field screening results will be used to aid in the selection of soil samples for laboratory analysis. The primary screening methods include: (1) visual examination, (2) olfactory examination, and (3) headspace vapor screening for volatile organic compounds (VOC). Visual screening includes examination of soil samples for evidence of staining caused by petroleum-related compounds or other substances that may cause staining of soils. Headspace vapor screening targets VOC and involves placing a soil sample in a plastic sample bag and allow the sample to come to temperature. A photo-ionization detector (PID) equipped with a 10.6 or higher electron volt (eV) lamp or a combustible gas



indicator will be used for VOC field screening. Vapors present within the sample bag's headspace will then be measured by inserting the probe of the instrument in a small opening in the bag. The result and the ambient air temperature will be recorded on the field boring log for each sample.

The monitoring instruments will be calibrated each day to the manufacturer's standard for instrument operation.

Discrete soil samples will be retained for laboratory analysis from within the following intervals:

- Every 5 ft bgs beginning at 1 ft bgs to a depth of 16 ft bgs for the 14 soil borings along the road of the sour naphtha release (Figure 5).
- 2 ft bgs for the previous excavation backfill sample.

Samples may also be collected if elevated PID readings are recorded. Sample intervals will then be adjusted by the qualified field personnel and noted in the field logs to document the updated intervals. Soil samples will be collected at each boring location at 1 ft bgs to delineate the surface conditions. The physical characteristics of the samples, depth where each sample was obtained, method of sample collection, and other observations will be recorded in the field log by qualified field personnel. Additional information, such as the presence of water-bearing zones and any unusual or noticeable conditions encountered during drilling, will be recorded on the logs.

Sample Collection Procedures

Samples will be collected and screened in accordance with the Standard Operating Procedure provided in Appendix B. Details related to sample collection will be documented on the soil screening field forms which will be included in the Investigation Report.

Surface samples will be collected using a decontaminated dig bar, trowel, or hand auger to reach 1 ft depth (2 ft depth for the backfill sample). The sample will be collected by hand, using nitrile gloves, and placed in a sealable plastic bag for analysis.

Soil boring samples will be collected using direct push sampling techniques to collect sample cores at the predetermined depths. The cores will be logged by qualified field personnel onsite and collected in sealable plastic bags for analysis.



Equipment will be decontaminated before collecting each sample, and equipment decontamination will be noted on the field forms. Upon collection, samples will be placed into jars will be filled, labeled, and placed in a cooler. Before shipment, each cooler will be packed with ice and one temperature blank. A chain of custody (CoC) form will accompany each sample shipment. Coolers will be sealed and delivered to Hall Environmental Analytical Laboratory in Albuquerque, New Mexico.

Laboratory Analysis

Collected samples will be analyzed for hydrocarbon impacts with the following methods:

- Method 8015M/D – total petroleum hydrocarbons-gasoline range organics (TPH-GRO), TPH-diesel range organics (DRO), and TPH-motor oil range organics (MRO)
- Method 8260B – volatile organic compounds (VOC)

In addition, as requested in comment 4, “Approval with Modifications, Response Action Report Sour Naphtha Release” (NMED, 2020), the confirmation sample collected from the previous excavation backfill will also be analyzed for:

- Method 8260B –VOC
- Method 8270 SIMs - polycyclic aromatic hydrocarbons (PAH)
- Method 8015M/D –TPH-DRO
- Method 8015M/D –TPH-MRO
- EPA Method 6010B/7471 - Resource Conservation and Recovery Act (RCRA) 8 Metals

Data Quality and Validation

Quality assurance/quality control (QA/QC) samples will be collected during sampling to monitor the validity of the sample collection procedures. Field duplicates will be collected at a rate of 10 percent (%) of all samples collected, or at a minimum of one per day. Equipment blanks will be collected from re-usable equipment at a rate of 10%, or at a minimum of one per day. A trip blank will be included in each cooler. The field duplicate and blank samples will be submitted to the laboratory along with the soil samples. QA/QC samples will be recorded on the field forms and CoCs. All data will undergo Tier II data validation.

Data Evaluation

The soil confirmation sampling results will be compared to NMED Residential, Industrial, and Construction Worker SSLs to determine if further excavation and/or investigation is necessary. The Residential SSLs will be



compared against all analytical results. The Industrial SSLs will be compared against soils collected from 0 to 1 ft bgs. Soil samples with depths greater than 1 ft bgs will be compared to the Construction Worker SSLs. Soil recovered during sampling will be placed in drums, labeled, and stored on the 90 Day Pad to be characterized prior to disposal.

Monitoring and Sampling Program

No groundwater, ambient air, subsurface vapor, remediation systems, engineering controls, or other monitoring and sampling programs are currently being implemented at the sour naphtha release. There are several monitoring wells in the vicinity of the release that are monitored as part of the Refinery's groundwater monitoring program. Data collected from this investigation will be used to evaluate the potential presence of impacted soil, which will allow for planning of future investigation or remediation activities, if needed.

Schedule

Pending NMED approval, the Refinery anticipates the investigation to be completed during 2021. Once the investigation has been completed, the Refinery will submit an investigation report to NMED summarizing the sample results and investigation conclusions within 90 days of the receipt of the analytical data.

References

- Marathon Petroleum Company (MPC). 2019. Response Action Report Sour Naphtha, Gallup Refinery
Marathon Petroleum Company LP, Gallup, New Mexico, EPA ID# NM000333211, HWB-WRG-20-002.
December 20.
- New Mexico Environment Department (NMED). 2020. Disapproval, Response Action Report Sour Naphtha
Release, Gallup Refinery Marathon Petroleum Company LP, Gallup, New Mexico, EPA ID# NM000333211,
HWB-WRG-20-002. February 21.
- New Mexico Environment Department (NMED). 2020. Approval with Modifications, Response Action Report
Sour Naphtha Release, Gallup Refinery Marathon Petroleum Company LP, Gallup, New Mexico, EPA ID#
NM000333211, HWB-WRG-20-002. October 13.

ATTACHMENT B-2
(PLEASE SEE ATTACHED CD)
REDLINE