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Western Refining Southwest LLC
A subsidiary of Marathon Petroleum Corporation
I-40 Exit 39
Jamestown, NM 87347

April 16, 2024

Mr. Ricardo Maestas, Acting Chief
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

RE: Response to Disapproval
Sour Naphtha Investigation Report
Western Refining Southwest LLC, D/B/A Marathon Gallup Refinery
EPA ID #NMD000333211
HWB-WRG-21-014

Dear Mr. Maestas:

Attached please find the Response to Disapproval, Sour Naphtha Release Investigation Report as requested in the New Mexico Environment Department (NMED) Disapproval letter dated March 12, 2024. Included with this submittal are the response to comments, revised investigation report, and an electronic copy of the redlined version of the investigation report.

A timeline of the report is provided below:

- Sour Naphtha Release Investigation Report, submitted November 28, 2022
- Disapproval, received March 12, 2024

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 or Ms. Kateri Luka at (714) 713-1218.

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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, D/B/A Marathon Gallup Refinery

Timothy J. Peterkoski
Director of Environment and Climate Strategy

Enclosure

cc: M. Suzuki, NMED HWB
L. Andress, NMED HWB
L. Tsinnajinnie, NMED HWB
N. Dhawan, NMED HWB
L. Barr, NMEC OCD
L. King, EPA Region 6
K. Luka, Marathon Petroleum Corporation
J. Moore, Marathon Gallup Refinery
H. Jones, Trihydro Corporation

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ATTACHMENT A

RESPONSE TO COMMENTS

ATTACHMENT A. RESPONSE TO THE NEW MEXICO ENVIRONMENT DEPARTMENT (NMED) TO WESTERN REFINING SOUTHWEST LLC (D/B/A MARATHON GALLUP REFINERY [REFINERY]) DISAPPROVAL LETTER FOR SOUR NAPHTHA INVESTIGATION REPORT (MARCH 12, 2024)

NMED Comments	Refinery Responses
Comment 1:	**Response 1:**
In the *Analytical Results Section*, last paragraph, page 10 of 15, the Permittee states, "[t]he combination of less contaminant mass, faster transport rates, and high degradation potential suggest that shorter longevity in the vadose zone is a reasonable assumption. Therefore, it follows that soils overlying the smear zone may not require an interim response for the purpose of protecting groundwater. The Refinery proposes to conduct a holistic migration to groundwater analysis on a site-wide basis." The groundwater beneath the vadose zone must be protected from all potential contaminants of concern (COCs). However, if the groundwater has already been contaminated with the same COCs that are detected with the vadose zone, soils overlying the smear zone (i.e., vadose zone) will not require an interim response for the purpose of protecting groundwater. In addition, the analysis of contaminant migration from the vadose zone to groundwater must be conducted in a site-specific manner because the severity of contamination and the COCs are specific to each AOC and SWMU. Since groundwater beneath the pertinent area has been impacted by hydrocarbons, the risk of migration analysis for organic contaminants are not relevant. Revise the Report accordingly.	This comment is acknowledged and the *Analytical Results* section, page 10 of 15, has been revised to state, "[h]owever, the Refinery has known hydrocarbon impacts to groundwater in the area of the sour naphtha release and therefore an analysis of potential organic contaminant migration from the vadose zone to groundwater is not necessary to this investigation," and "[t]he results of the screening assessment reported on Table 2 are not further discussed in the text because there were no exceedances identified for non-organic contaminants."

ATTACHMENT A. RESPONSE TO THE NEW MEXICO ENVIRONMENT DEPARTMENT (NMED) TO WESTERN REFINING SOUTHWEST LLC (D/B/A MARATHON GALLUP REFINERY [REFINERY]) DISAPPROVAL LETTER FOR SOUR NAPHTHA INVESTIGATION REPORT (MARCH 12, 2024)

NMED Comments	Refinery Responses
Comment 2:	**Response 2:**
In the *Conclusions and Recommendations* section, paragraphs 1 and 2, page 14 of 15, the Permittee states, "[i]t is possible that the sour naphtha flowed on the surface westward down the hill and percolated into the soil once the topographical gradient diminished sufficiently to allow infiltration," and "[g]iven that the NMED screening level is based on human health considerations related to direct soil exposure (NMED 2022b), as well as assumptions about the composition of the hydrocarbon released, the Refinery proposed to develop an alternate screening level for TPH-GRO." An alternate screening level for total petroleum hydrocarbon (TPH) gasoline range organics (GRO) is not appropriate because the exposure scenarios and chemical composition of GRO detected at the area are not different from those of the remaining Facility. Remove the proposal to develop an alternate screening level for TPH-GRO from the revised Report. In addition, since residual TPH contamination is present at borings SNR-01, SNR-02, and SNR-04, which define the boundary of the investigation area, additional borings west of SNR-01, northwest of SNR-02, and southwest of SNR-04 must be advanced to define the lateral extent of the contamination. Propose to submit a work plan to investigate the lateral extent of the contamination beyond the boring locations SNR-01, SNR-02, and SNR-04 in the revised Report.	This comment is acknowledged. The *Conclusions and Recommendations* section, page 14 of 15, has been revised to remove the proposal for an alternate screening level for TPH-GRO. A work plan investigating potential residual contamination beyond the boring locations SNR-01, SNR-02, and SNR-04 will be submitted no later than August 13, 2024.

ATTACHMENT B

RED LINE/STRIKE OUT REPORT

(PLEASE SEE ATTACHED CD

Sour Naphtha Release

Investigation Report

Western Refining Southwest LLC

(D/B/A Marathon Gallup Refinery)

Gallup, New Mexico

EPA ID# NMD000333211

December 15, 2022

Revised April 19, 2024

Executive Summary

Western Refining Southwest~~,~~ LLC (D/B/A Marathon Gallup Refinery) is submitting this Investigation Report detailing the May 2022 investigation of soils in the vicinity and down-gradient of the 2017 sour naphtha release to determine the extent of hydrocarbon impacts. On March 26, 2017, a release was detected on a service road by an operator; the release was identified as sour naphtha. From the release point, the product flowed downhill and pooled at two locations along the sloped road base. The release location was identified and 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. Six soil samples were collected for waste characterization and submitted for laboratory analysis. 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).

The May 2022 investigation was requested by the New Mexico Environment Department (NMED) in comments from the *Disapproval, Response Action Report Sour Naphtha Release* (NMED, 2020). Specifically, NMED comments #5, 6, and 11 requested the Refinery submit a work plan to further delineate extent of the release (NMED 2020a). The investigation area was expanded to the west and down gradient of the release, in response to data collected during the 2021 Laser Induced Fluorescence Investigation (MPC 2022) which showed potential signatures indicative of sour naphtha in the subsurface approximately 450 feet west of the 2017 release location.

In total, 54 individual samples were collected from 15 separate locations during the May 2022 sampling event. Analytical results and data discussion are provided herein.

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E. MARATHON NAPHTHA SAFETY DATA SHEET

List of Acronyms

%	Percent
DRO	Diesel Range Organics
ft	feet
ft-bgs	feet below ground surface
GRO	Gasoline Range Organics
MPC	Marathon Petroleum Company
NMED	New Mexico Environment Department
ORO	Oil Range Organics
PID	Photo Ionization Detector
RCRA	Resource Conservation and Recovery Act
SVOC	Semi-Volatile Organic Compounds
TPH	Total Petroleum Hydrocarbons
VOCs	Volatile Organic Compounds

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. 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 report detailing the results of soil sampling efforts near a sour naphtha release that occurred in 2017. The investigation was requested by the New Mexico Environment Department (NMED) in comments from the *Disapproval, Response Action Report Sour Naphtha Release* (NMED 2020a). Specifically, NMED comments #5, 6, and 11 requested the Refinery submit a work plan to further delineate extent of the release (NMED 2020a). The work plan was approved with modifications by NMED on April 12, 2022 (NMED 2022~~b~~). The investigation area was expanded to the west, topographically and hydraulically down gradient of the release, in response to data collected during the 2021 Laser Induced Fluorescence Investigation (MPC 2022) which showed potential 'sour naphtha-like' signatures in the subsurface approximately 450 feet (ft) west of the 2017 release location.

Background

As detailed in the *Response Action Report, Sour Naphtha Release* (Response Action Report) (MPC 2019), on March 26, 2017, an operator detected sour naphtha seeping from saturated soil seep, approximately 4 ft by 4 ft, which was flowing overland in the path of a service road, as shown on Figure 1. The sour naphtha flowed approximately 332 ft westerly downhill along the middle and sides of the service road. Two areas of sour naphtha pooled at the sloping road base. The leak was immediately isolated by the operator and several berms were built to contain the sour naphtha; the estimated volume released was less than 5 barrels (210 gallons).

Following the discovery/isolation of the release an area approximately 20 ft long (parallel to the pipeline) by 4 ft wide and 4 ft deep was excavated and the sour naphtha transfer pipe was exposed and repaired. In total, approximately 16 tons of soil were excavated. Six soil samples were collected during excavation efforts as confirmation samples. Based on analytical results, the soil was treated as hazardous waste and transported off-site for disposal. The excavated area was backfilled with clean soil and the service road was reopened. A detailed description of the release, spill response, and soil sampling activities was presented to NMED in the Response Action Report (MPC 2019). Figure 1 provides the approximate surface flow path, the approximate excavation area extent, and the confirmation soil sample locations.

May 2022 Investigation Activities

Additional investigative activities associated with the 2017 sour naphtha release were conducted in May of 2022. The purpose of the May 2022 investigation was to assess potential horizontal and vertical migration not captured/recovered during the 2017 spill response. The investigation included soil borings directly to the west and east of the original release area as well as locations further west along the service road (topographically and hydraulically down gradient).

In total, 54 samples were collected from 15 locations (14 borings and one excavation confirmation sample location, Figure 2). Each soil boring location was continuously logged; field forms can be found in Appendix A. In accordance with the approved work plan, field screening via an on-site photo ionization detector (PID) was utilized to aid in the selection of appropriate sample intervals. In general, samples were collected ~~in~~at 1 to 2 foot intervals, with the sample location chosen where the PID reading was highest. In locations where PID readings were zero, samples were taken at a minimum of every 5 feet. Soil borings were advanced to 16 ft below ground surface (ft-bgs), or refusal, whichever came first (as further detailed in the section below). ~~All~~ ~~t~~The samples collected from borings were analyzed for Skinner List volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH). The excavation confirmation sample (SNR-EX CONF [1.5-2.5]) was analyzed for VOCs, TPH, semi-volatile organic compounds (SVOCs) and Resource Conservation and Recovery Act (RCRA) 8 total metals.

Work Plan Deviations

The approved investigation work plan proposed 15 locations (14 borings and 1 excavation confirmation sample location). One sample location was to be installed approximately 5 feet east (hydraulically upgradient) of the 2017 excavation area. Due to access issues and health and safety concerns, that location (SNR-14) was moved approximately 50 feet further east. Movement of this location was approved by NMED prior to sampling via email correspondence dated April 29, 2022 (included as Appendix B).

Although not a deviation, it should be noted that refusal was met above the planned termination depth of 16 ft-bgs at ~~all~~the sampling locations due to the dense clay material and the direct push continuous core sample method selected (4-inch outer steel casement with 3-inch inner steel push rod equipped with 3-inch plastic sample liner). Two of the locations reached 8 ft-bgs before refusal, 3 locations reached between 13 and 14 ft-bgs, and the remaining 9 locations reached 15 ft-bgs.

Analytical Results

Analytical results were compared to soil screening levels (SSLs) (NMED 2022~~b~~). The following tables were prepared:

- Table 1a – TPH Results
- Table 1b – VOC Results
- Table 1c – SVOC Results
- Table 1d – RCRA-8 Metals Results

Residential screening levels were included on Tables 1a through 1d as requested by NMED (Comment #2 to the *Approval with Modifications, Sour Naphtha Release Investigation Work Plan)*; residential exceedances are shown in bold. However, residential exceedances are not discussed in this section as they are not ~~remedial~~remediation drivers at this time, based on the potential for ongoing industrial use at the Refinery. Although Industrial SSLs are included on Tables 1a through 1d, it is important to note that sample intervals are ~~all~~ deeper than 1 ft-bgs (the exposure interval for industrial receptors), due to the road base gravel material that comprised the top 1 foot at each sample location. Industrial worker exceedances are noted on the table with bold and highlighted text~~,~~ but are not further discussed below. Construction Worker SSLs are also included on the tables~~,~~ and apply to soils deeper than 1 ft-bgs (up to 10 ft-bgs). Construction Worker exceedances are underlined. The NMED SSLs are based on both cancer and noncancer effects; when a constituent has SSLs for both SSL endpoints, the lower of the two SSL was used for comparison.

Per NMED SSL guidance, soil leachate-based SSLs (SL-SSL) with a dilution attenuation factor ~~(DAF)~~ of 20 are compared to the maximum reported concentration as a first step screening assessment in Table 2. However, the Refinery has known hydrocarbon impacts to groundwater in the area of the sour naphtha release and therefore an analysis of potential organic contaminant migration from the vadose zone to groundwater is not ~~relevant~~necessary to this investigation and have not been included in Table 2.~~, including the presence of separate phase hydrocarbons and an associated smear zone which can act as a long-term source to groundwater. For organic contaminants, vadose zone sources of hydrocarbons are expected to deplete before smear zone sources. The expectation for shorter longevity in the vadose zone can be attributed to several factors, including greater air saturation and less contaminant mass. Diffusive transport is faster in soils with higher air saturation (ITRC 2009), suggesting that mass removal of VOCs is faster in the vadose zone. The combination of less contaminant mass, faster transport rates, and high degradation potential suggest that shorter longevity in the vadose zone is a reasonable assumption. Therefore, it follows that soils overlying the smear zone may not require an interim response for the purpose of protecting groundwater. The Refinery proposes to conduct a holistic migration to groundwater analysis on a site-wide basis. As such,~~ Tthe results of the first step screening assessment reported on~~ the~~ Ttable~~s~~ 2 are not further discussed in the text ~~since~~because there were no exceedances identified for non-organic contaminants. ~~, and the ratios (maximum reported concentration divided by the SL-SSL) are not reported.~~

Total Petroleum Hydrocarbons

Construction Worker SSL exceedances for TPH gasoline range organics (GRO) were identified in 9 of the 15 sample locations. Of those 9 sample locations, 14 TPH GRO exceedances were identified, one of those exceedances was a non-detect result in which the reporting level was above the Construction Worker SSL (SNR-02 [1-2 ft bgs]). The TPH-GRO exceedances were identified at:

- SNR-01 (5-6 ft bgs)
- SNR-01 (9-10 ft bgs)
- SNR-02 (1-2 ft bgs)
- SNR-02 (4-5 ft bgs)
- SNR-02 (7-8 ft bgs)
- SNR-03 (5-6 ft bgs)
- SNR-04 (5-6 ft bgs)
- SNR-05 (5-6 ft bgs)
- SNR-06 (7-8 ft bgs)
- SNR-07 (10-12 ft bgs)
- SNR-07 (14-15 ft bgs)
- SNR-09 (6-7 ft bgs)
- SNR-09 (8-9 ft bgs)
- SNR-12 (14-15 ft bgs)

Ten of the 14 TPH GRO exceedances were within the 5 to 10 ft-bgs interval, a zone primarily characterized by sandy lenses intermixed in a dense reddish-brown clay. The highest exceedance was 9,650 mg/kg at SNR-02 (7-8 ft bgs) and the lowest exceedance (658 mg/kg) was observed at SNR-01 (9-10 ft bgs).

There were also two sample locations/intervals with TPH diesel range organic (DRO) Construction Worker SSL exceedances. These exceedances occurred at SNR-01 (5-6 ft bgs) and SNR-02 (1-2 ft bgs). There were no locations with TPH oil range organic (ORO) Construction Worker SSL exceedances.

Volatile Organic Compounds

There were no detected Construction Worker SSL exceedances of VOCs from any sample location/interval. One location, SNR-12 (14-15 ft bgs), had a non-detect exceedance where the reporting limit was above the applicable Construction Worker SSL for trichloroethene. This non-detect exceedance was due to an increased dilution rate for select VOCs as noted in the data validation report summary (Appendix C). Trichloroethene was not detected in the 2017 samples.

Semi-volatile Organic Compounds and RCRA-8 Metals

The excavation confirmation sample located within the footprint of the 2017 excavation area, SNR-EX CONF (1.5-2.5 ft bgs), was analyzed for SVOCs and RCRA-8 metals in addition to VOCs and TPH. This was the only sample location with the expanded constituent list, as detailed in the approved work plan. There were no exceedances, or notable detections, at this sample location.

Data Discussion

This section will provide a brief discussion of analytical data collected following the release in 2017. The discussion will focus on VOCs and TPH results, and comparison to the 2017 investigation results.

2017 Response Action Analytical Data

During the 2017 response action to the sour naphtha release, six confirmation soil samples were collected from the following locations:

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

~~All s~~Sample locations were analyzed for TPH, only Sample Location #4 was analyzed for VOCs. Note that Sample Location #4 is topographically and hydraulically down gradient of the release location.

Sample locations 1 through 4 contained elevated TPH GRO readings (above applicable screening levels) with DRO and ORO ranges detected at relatively low concentrations. More specifically, “the sour naphtha averaged 96.7% TPH-GRO, 3.0% TPH-DRO, and 0.3 % TPH-ORO” (2019, MPC) based on the analyses of five soil samples. Sample locations 5 and 6 were below the applicable screening levels for TPH.

Low-level detections of VOCs were present at Sample Location #4 including (but not limited to) benzene, ethylbenzene, toluene, and xylenes. However, ~~all~~ VOC detections were below applicable screening levels. Analytical results can be viewed on Table 1 of the *Response Action Report Sour Naphtha Release*, included as Appendix D.

2022 Investigation Data Discussion

Analytical results from the 2017 investigation are summarized on Table 1 of the Response Action Report, included as Appendix D. Similar to the 2017 sample results, TPH GRO was the predominant constituent detected above applicable SSLs during the May 2022 investigation. The majority of the samples within the 5 to

10 ft-bgs interval that contained TPH GRO exceedances had relatively low TPH DRO and ORO results. However, the TPH DRO composition percent (%) during this investigation was approximately 30% for locations with TPH GRO exceedances between 5 and 10 ft bgs, higher than the 3.0% reported in the 2017 confirmation samples. As the depth of the sampling~~es~~ interval increased (i.e., 10 to 15 ft-bgs), there was a rise in TPH DRO percent which could be indicative of a separate product type.

While ~~all~~ VOC detections were below their respective Construction Worker SSLs, the relative concentration of detected constituents in the 5 to 10 ft-bgs interval is similar to the expected relative concentrations based on the chemical composition of naphtha (see Appendix E, Section 3); more specifically, increased xylene concentrations, similar toluene/ethylbenzene concentrations (lower than xylene), and benzene concentrations lower than toluene/ethylbenzene.

~~The l~~Locations closer to the original release point (i.e., SNR-10, 11, 12, and 13) had fewer TPH detection exceedances and lower VOC detections than the locations further west. This trend ~~could~~may be explained by the topographical gradient, as the increased detections and exceedances occurred towards the bottom of the hill where the sour naphtha was observed to pool during the 2017 release. It is possible that the sour naphtha was able to percolate into the subsurface at the bottom of the hill and reach the sandy intervals present in the 5 to 10 ft-bgs interval.

Conclusions and Recommendations

Results indicate that residual impacts from the sour naphtha release are likely present within the top 10 feet of the subsurface topographically down gradient from the original release location, specifically in the sandy lenses located in the 5 to 10 ft-bgs interval. Despite the presence of odor and hydrocarbon-like staining, there was very little moisture present at the time of sample collection in the majority of the 5 to 10 ft-bgs intervals. While the sandy lenses within this interval could potentially provide a capture zone, they are located above the local shallow water table which does limit migration potential (in this area the water table ranges from approximately 10 to 15 ft-bgs). As ~~previously mentioned~~discussed above, the majority of the detection exceedances were further away from the original release location and topographically down gradient. It is possible that the sour naphtha flowed on the surface westward down the hill and percolated into the soil ~~once~~after the topographical gradient diminished sufficiently to allow surface pooling and subsequent infiltration.

The discussion above focuses on TPH exceedances as there were no VOC detection exceedances from ~~any of~~ the 54 samples collected. While the results do ~~indicate~~suggest potential residual impacts from the sour naphtha release ~~it is clear~~the results indicate that impacts in this area are primarily confined vertically to the 5 to 10 ft-bgs interval. Out of the 14 sample intervals with TPH detection exceedances, 1 was within the 1 to 2 ft-bgs interval, 10 of them were within the 5 to 10 ft-bgs interval, and 3 of them were in the 10 to 15 ft-bgs interval. ~~Given that the NMED screening level is based on human health considerations related to direct soil exposure (NMED 2022b), as well as assumptions about the composition of the hydrocarbon released, the Refinery proposes to develop an alternate screening level for TPH-GRO. The alternate screening level for GRO would follow the TPH Criteria Work Group guidance for development, based on site specific exposure scenarios and chemical composition information for the sour naphtha released (NMED 2022b). The alternate screening level for TPH-GRO will be applied to the sour naphtha investigation results to determine if additional investigation is needed.~~

The excavation confirmation sample results indicate that the backfill material was, and is not, contaminated. No additional sampling is required in regard to the backfill material.

References

ITRC. 2009. Evaluating Natural Source Zone Depletion at Sites with LNAPL. ITRC LNAPL Team. April 2009.

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.

MPC. 2022. Marketing Tank Farm Laser-Induced Fluorescence/Hydraulic Profiling Investigation Report, Gallup Refinery Marathon Petroleum Company LP, Gallup, New Mexico, EPA ID# NM000333211. March 22.

New Mexico Environment Department (NMED). 2020a. 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.

NMED. 2020b. 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.

~~NMED. 2022a. Approval with Modifications, Response to Disapproval, Sour Naphtha Investigation Work Plan, Western Refining Southwest LLC, Gallup Refinery, Gallup, New Mexico EPA ID# NM000333211, HWB-WRG-21-014. April 12.~~

NMED. 2022~~b~~. Risk Assessment Guidance for Site Investigations and Remediation. Soil Screening Guidance for Human Health Risk Assessment. June.

Figures

Tables

Appendix A – Field Forms (Boring Logs)

Appendix B – Trihydro/NMED Email Correspondence

Appendix C – Data Validation Report

Appendix D – Sour Naphtha Response Action Report

Appendix E – Marathon Naphtha Safety Data Sheet

ATTACHMENT C

REVISED REPORT

Sour Naphtha Release

Investigation Report

Western Refining Southwest LLC

(D/B/A Marathon Gallup Refinery)

Gallup, New Mexico

EPA ID# NMD000333211

December 15, 2022

Revised April 16, 2024

Executive Summary

Western Refining Southwest LLC (D/B/A Marathon Gallup Refinery) is submitting this Investigation Report detailing the May 2022 investigation of soils in the vicinity and down-gradient of the 2017 sour naphtha release to determine the extent of hydrocarbon impacts. On March 26, 2017, a release was detected on a service road by an operator; the release was identified as sour naphtha. From the release point, the product flowed downhill and pooled at two locations along the sloped road base. The release location was identified and 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. Six soil samples were collected for waste characterization and submitted for laboratory analysis. 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).

The May 2022 investigation was requested by the New Mexico Environment Department (NMED) in comments from the *Disapproval, Response Action Report Sour Naphtha Release* (NMED, 2020). Specifically, NMED comments #5, 6, and 11 requested the Refinery submit a work plan to further delineate extent of the release (NMED 2020a). The investigation area was expanded to the west and down gradient of the release, in response to data collected during the 2021 Laser Induced Fluorescence Investigation (MPC 2022) which showed potential signatures indicative of sour naphtha in the subsurface approximately 450 feet west of the 2017 release location.

In total, 54 individual samples were collected from 15 separate locations during the May 2022 sampling event. Analytical results and data discussion are provided herein.

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List of Acronyms

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ft	feet
ft-bgs	feet below ground surface
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SVOC	Semi-Volatile Organic Compounds
TPH	Total Petroleum Hydrocarbons
VOCs	Volatile Organic Compounds

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. 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 report detailing the results of soil sampling efforts near a sour naphtha release that occurred in 2017. The investigation was requested by the New Mexico Environment Department (NMED) in comments from the *Disapproval, Response Action Report Sour Naphtha Release* (NMED 2020a). Specifically, NMED comments #5, 6, and 11 requested the Refinery submit a work plan to further delineate extent of the release (NMED 2020a). The work plan was approved with modifications by NMED on April 12, 2022 (NMED 2022). The investigation area was expanded to the west, topographically and hydraulically down gradient of the release, in response to data collected during the 2021 Laser Induced Fluorescence Investigation (MPC 2022) which showed potential 'sour naphtha-like' signatures in the subsurface approximately 450 feet (ft) west of the 2017 release location.

Background

As detailed in the *Response Action Report, Sour Naphtha Release* (Response Action Report) (MPC 2019), on March 26, 2017, an operator detected sour naphtha seeping from saturated soil seep, approximately 4 ft by 4 ft, which was flowing overland in the path of a service road, as shown on Figure 1. The sour naphtha flowed approximately 332 ft westerly downhill along the middle and sides of the service road. Two areas of sour naphtha pooled at the sloping road base. The leak was immediately isolated by the operator and several berms were built to contain the sour naphtha; the estimated volume released was less than 5 barrels (210 gallons).

Following the discovery/isolation of the release an area approximately 20 ft long (parallel to the pipeline) by 4 ft wide and 4 ft deep was excavated and the sour naphtha transfer pipe was exposed and repaired. In total, approximately 16 tons of soil were excavated. Six soil samples were collected during excavation efforts as confirmation samples. Based on analytical results, the soil was treated as hazardous waste and transported off-site for disposal. The excavated area was backfilled with clean soil and the service road was reopened. A detailed description of the release, spill response, and soil sampling activities was presented to NMED in the Response Action Report (MPC 2019). Figure 1 provides the approximate surface flow path, the approximate excavation area extent, and the confirmation soil sample locations.

May 2022 Investigation Activities

Additional investigative activities associated with the 2017 sour naphtha release were conducted in May of 2022. The purpose of the May 2022 investigation was to assess potential horizontal and vertical migration not captured/recovered during the 2017 spill response. The investigation included soil borings directly to the west and east of the original release area as well as locations further west along the service road (topographically and hydraulically down gradient).

In total, 54 samples were collected from 15 locations (14 borings and one excavation confirmation sample location, Figure 2). Each soil boring location was continuously logged; field forms can be found in Appendix A. In accordance with the approved work plan, field screening via an on-site photo ionization detector (PID) was utilized to aid in the selection of appropriate sample intervals. In general, samples were collected at 1 to 2 foot intervals, with the sample location chosen where the PID reading was highest. In locations where PID readings were zero, samples were taken at a minimum of every 5 feet. Soil borings were advanced to 16 ft below ground surface (ft-bgs), or refusal, whichever came first (as further detailed in the section below). The samples collected from borings were analyzed for Skinner List volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH). The excavation confirmation sample (SNR-EX CONF [1.5-2.5]) was analyzed for VOCs, TPH, semi-volatile organic compounds (SVOCs) and Resource Conservation and Recovery Act (RCRA) 8 total metals.

Work Plan Deviations

The approved investigation work plan proposed 15 locations (14 borings and 1 excavation confirmation sample location). One sample location was to be installed approximately 5 feet east (hydraulically upgradient) of the 2017 excavation area. Due to access issues and health and safety concerns, that location (SNR-14) was moved approximately 50 feet further east. Movement of this location was approved by NMED prior to sampling via email correspondence dated April 29, 2022 (included as Appendix B).

Although not a deviation, it should be noted that refusal was met above the planned termination depth of 16 ft-bgs at the sampling locations due to the dense clay material and the direct push continuous core sample method selected (4-inch outer steel casement with 3-inch inner steel push rod equipped with 3-inch plastic sample liner). Two of the locations reached 8 ft-bgs before refusal, 3 locations reached between 13 and 14 ft-bgs, and the remaining 9 locations reached 15 ft-bgs.

Analytical Results

Analytical results were compared to soil screening levels (SSLs) (NMED 2022). The following tables were prepared:

- Table 1a – TPH Results
- Table 1b – VOC Results
- Table 1c – SVOC Results
- Table 1d – RCRA-8 Metals Results

Residential screening levels were included on Tables 1a through 1d as requested by NMED (Comment #2 to the *Approval with Modifications, Sour Naphtha Release Investigation Work Plan)*; residential exceedances are shown in bold. However, residential exceedances are not discussed in this section as they are not remediation drivers at this time, based on the potential for ongoing industrial use at the Refinery. Although Industrial SSLs are included on Tables 1a through 1d, it is important to note that sample intervals are deeper than 1 ft-bgs (the exposure interval for industrial receptors), due to the road base gravel material that comprised the top 1 foot at each sample location. Industrial worker exceedances are noted on the table with bold and highlighted text but are not further discussed below. Construction Worker SSLs are also included on the tables and apply to soils deeper than 1 ft-bgs (up to 10 ft-bgs). Construction Worker exceedances are underlined. The NMED SSLs are based on both cancer and noncancer effects; when a constituent has SSLs for both SSL endpoints, the lower of the two SSL was used for comparison.

Per NMED SSL guidance, soil leachate-based SSLs (SL-SSL) with a dilution attenuation factor of 20 are compared to the maximum reported concentration as a first step screening assessment in Table 2. However, the Refinery has known hydrocarbon impacts to groundwater in the area of the sour naphtha release and therefore an analysis of potential organic contaminant migration from the vadose zone to groundwater is not necessary to this investigation and have not been included in Table 2. The results of the first step screening assessment reported on Table 2 are not further discussed in the text because there were no exceedances identified for non-organic contaminants.

Total Petroleum Hydrocarbons

Construction Worker SSL exceedances for TPH gasoline range organics (GRO) were identified in 9 of the 15 sample locations. Of those 9 sample locations, 14 TPH GRO exceedances were identified, one of those exceedances was a non-detect result in which the reporting level was above the Construction Worker SSL (SNR-02 [1-2 ft bgs]). The TPH-GRO exceedances were identified at:

- SNR-01 (5-6 ft bgs)
- SNR-02 (1-2 ft bgs)
- SNR-02 (7-8 ft bgs)
- SNR-01 (9-10 ft bgs)
- SNR-02 (4-5 ft bgs)
- SNR-03 (5-6 ft bgs)

- SNR-04 (5-6 ft bgs)
- SNR-05 (5-6 ft bgs)
- SNR-06 (7-8 ft bgs)
- SNR-07 (10-12 ft bgs)
- SNR-07 (14-15 ft bgs)
- SNR-09 (6-7 ft bgs)
- SNR-09 (8-9 ft bgs)
- SNR-12 (14-15 ft bgs)

Ten of the 14 TPH GRO exceedances were within the 5 to 10 ft-bgs interval, a zone primarily characterized by sandy lenses intermixed in a dense reddish-brown clay. The highest exceedance was 9,650 mg/kg at SNR-02 (7-8 ft bgs) and the lowest exceedance (658 mg/kg) was observed at SNR-01 (9-10 ft bgs).

There were also two sample locations/intervals with TPH diesel range organic (DRO) Construction Worker SSL exceedances. These exceedances occurred at SNR-01 (5-6 ft bgs) and SNR-02 (1-2 ft bgs). There were no locations with TPH oil range organic (ORO) Construction Worker SSL exceedances.

Volatile Organic Compounds

There were no detected Construction Worker SSL exceedances of VOCs from any sample location/interval. One location, SNR-12 (14-15 ft bgs), had a non-detect exceedance where the reporting limit was above the applicable Construction Worker SSL for trichloroethene. This non-detect exceedance was due to an increased dilution rate for select VOCs as noted in the data validation report summary (Appendix C). Trichloroethene was not detected in the 2017 samples.

Semi-volatile Organic Compounds and RCRA-8 Metals

The excavation confirmation sample located within the footprint of the 2017 excavation area, SNR-EX CONF (1.5-2.5 ft bgs), was analyzed for SVOCs and RCRA-8 metals in addition to VOCs and TPH. This was the only sample location with the expanded constituent list, as detailed in the approved work plan. There were no exceedances, or notable detections, at this sample location.

Data Discussion

This section will provide a brief discussion of analytical data collected following the release in 2017. The discussion will focus on VOCs and TPH results, and comparison to the 2017 investigation results.

2017 Response Action Analytical Data

During the 2017 response action to the sour naphtha release, six confirmation soil samples were collected from the following locations:

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

Sample locations were analyzed for TPH, only Sample Location #4 was analyzed for VOCs. Note that Sample Location #4 is topographically and hydraulically down gradient of the release location.

Sample locations 1 through 4 contained elevated TPH GRO readings (above applicable screening levels) with DRO and ORO ranges detected at relatively low concentrations. More specifically, “the sour naphtha averaged 96.7% TPH-GRO, 3.0% TPH-DRO, and 0.3 % TPH-ORO” (2019, MPC) based on the analyses of five soil samples. Sample locations 5 and 6 were below the applicable screening levels for TPH.

Low-level detections of VOCs were present at Sample Location #4 including (but not limited to) benzene, ethylbenzene, toluene, and xylenes. However, VOC detections were below applicable screening levels. Analytical results can be viewed on Table 1 of the *Response Action Report Sour Naphtha Release*, included as Appendix D.

2022 Investigation Data Discussion

Analytical results from the 2017 investigation are summarized on Table 1 of the Response Action Report, included as Appendix D. Similar to the 2017 sample results, TPH GRO was the predominant constituent detected above applicable SSLs during the May 2022 investigation. The majority of the samples within the 5 to

10 ft-bgs interval that contained TPH GRO exceedances had relatively low TPH DRO and ORO results. However, the TPH DRO composition percent (%) during this investigation was approximately 30% for locations with TPH GRO exceedances between 5 and 10 ft bgs, higher than the 3.0% reported in the 2017 confirmation samples. As the depth of the sampling interval increased (i.e., 10 to 15 ft-bgs), there was a rise in TPH DRO percent which could be indicative of a separate product type.

While VOC detections were below their respective Construction Worker SSLs, the relative concentration of detected constituents in the 5 to 10 ft-bgs interval is similar to the expected relative concentrations based on the chemical composition of naphtha (see Appendix E, Section 3); more specifically, increased xylene concentrations, similar toluene/ethylbenzene concentrations (lower than xylene), and benzene concentrations lower than toluene/ethylbenzene.

Locations closer to the original release point (i.e., SNR-10, 11, 12, and 13) had fewer TPH detection exceedances and lower VOC detections than the locations further west. This trend may be explained by the topographical gradient, as the increased detections and exceedances occurred towards the bottom of the hill where the sour naphtha was observed to pool during the 2017 release. It is possible that the sour naphtha was able to percolate into the subsurface at the bottom of the hill and reach the sandy intervals present in the 5 to 10 ft-bgs interval.

Conclusions and Recommendations

Results indicate that residual impacts from the sour naphtha release are likely present within the top 10 feet of the subsurface topographically down gradient from the original release location, specifically in the sandy lenses located in the 5 to 10 ft-bgs interval. Despite the presence of odor and hydrocarbon-like staining, there was very little moisture present at the time of sample collection in the majority of the 5 to 10 ft-bgs intervals. While the sandy lenses within this interval could potentially provide a capture zone, they are located above the local shallow water table which does limit migration potential (in this area the water table ranges from approximately 10 to 15 ft-bgs). Asdiscussed above, the majority of the detection exceedances were further away from the original release location and topographically down gradient. It is possible that the sour naphtha flowed on the surface westward down the hill and percolated into the soil after the topographical gradient diminished sufficiently to allow surface pooling and subsequent infiltration.

The discussion above focuses on TPH exceedances as there were no VOC detection exceedances from the 54 samples collected. While the results do suggest potential residual impacts from the sour naphtha release the results indicate that impacts in this area are primarily confined vertically to the 5 to 10 ft-bgs interval. Out of the 14 sample intervals with TPH detection exceedances, 1 was within the 1 to 2 ft-bgs interval, 10 of them were within the 5 to 10 ft-bgs interval, and 3 of them were in the 10 to 15 ft-bgs interval.

The excavation confirmation sample results indicate that the backfill material was, and is not, contaminated. No additional sampling is required in regard to the backfill material.

References

ITRC. 2009. Evaluating Natural Source Zone Depletion at Sites with LNAPL. ITRC LNAPL Team. April 2009.

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.

MPC. 2022. Marketing Tank Farm Laser-Induced Fluorescence/Hydraulic Profiling Investigation Report, Gallup Refinery Marathon Petroleum Company LP, Gallup, New Mexico, EPA ID# NM000333211. March 22.

New Mexico Environment Department (NMED). 2020a. 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.

NMED. 2020b. 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.

NMED. 2022. Risk Assessment Guidance for Site Investigations and Remediation. Soil Screening Guidance for Human Health Risk Assessment. June.

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Figures

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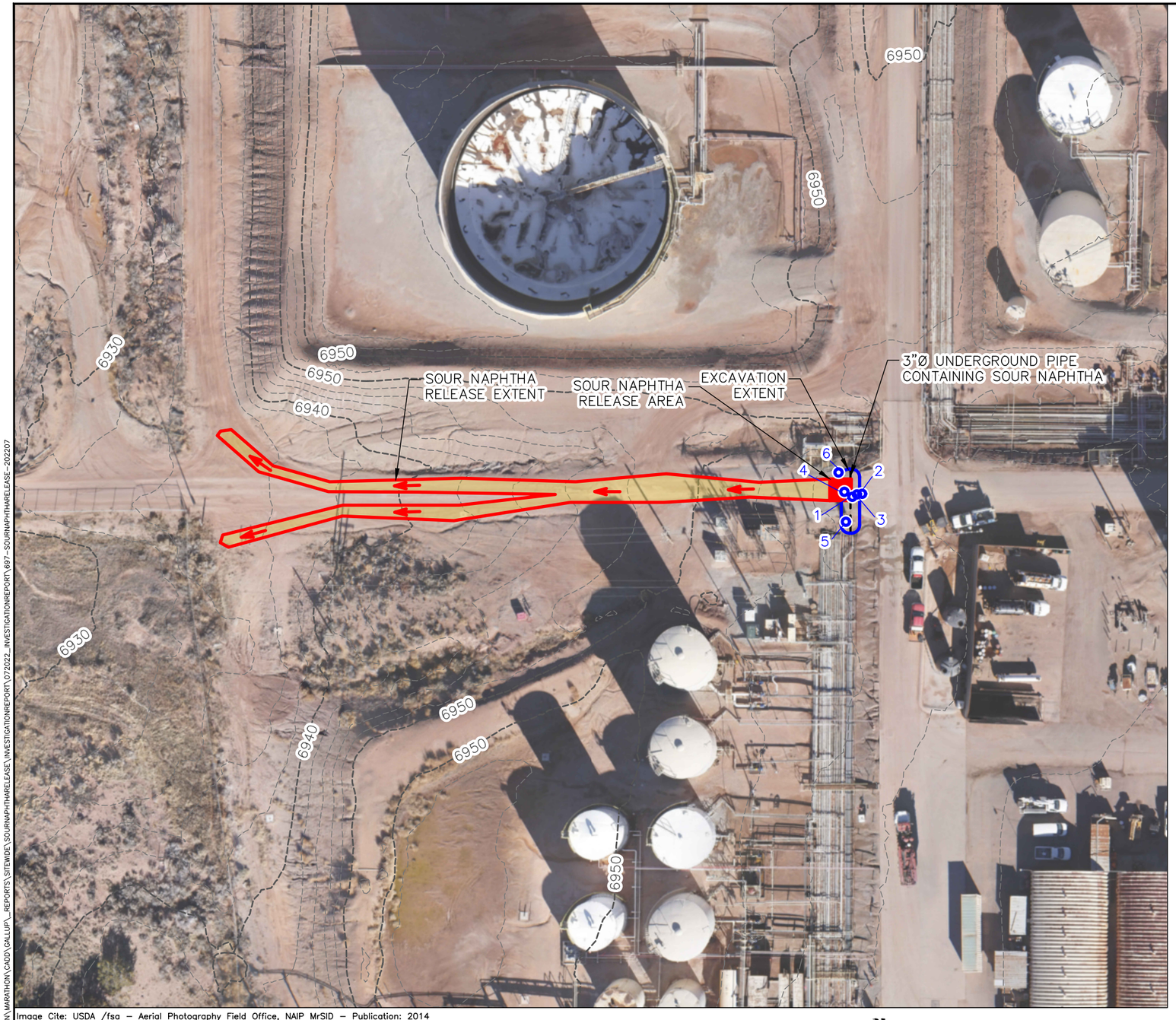


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2 2017 SOUR NAPHTHA RELEASE AND RESPONSE MAP
SCALE: 1" = 60'

N
0 60'



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

1 KEY MAP
SCALE: 1" = 800'

N
0 800'

EXPLANATION

- SOUR NAPHTHA RELEASE EXCAVATION EXTENT AREA
- HISTORICAL SOIL SAMPLE LOCATION
- SOUR NAPHTHA RELEASE
- APPROXIMATE SOUR NAPHTHA RELEASE EXTENT
- RELEASE FLOW DIRECTION
- -----6880----- SURFACE CONTOURS (2-FOOT INTERVAL)
- UNDERGROUND PRODUCT PIPELINE

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FIGURE 1

2017 SOUR NAPHTHA RELEASE AND RESPONSE

**WESTERN REFINING SOUTHWEST, LLC
MARATHON GALLUP REFINERY
GALLUP, NEW MEXICO**

Drawn By: KML	Checked By: JH	Scale: AS SHOWN	Date: 8/31/22	File: 697-SOURNAPHTHARELEASE-202207

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2 SOUR NAPHTHA RELEASE MAY 2022 SOIL INVESTIGATION LOCATIONS
SCALE: 1" = 60'

N
0 60'



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

1 KEY MAP
SCALE: 1" = 800'

N
0 800'

EXPLANATION

- MAY 2022 EXCAVATION BACKFILL CONFIRMATION SAMPLE LOCATION
- MAY 2022 SOIL INVESTIGATION LOCATION
- SOUR NAPHTHA RELEASE EXCAVATION EXTENT AREA
- SOUR NAPHTHA RELEASE AREA
- APPROXIMATE SOUR NAPHTHA RELEASE EXTENT
- RELEASE FLOW DIRECTION
- -----6880----- SURFACE CONTOURS (2-FOOT INTERVAL)

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FIGURE 2

2022 SOUR NAPHTHA INVESTIGATION LOCATIONS

**WESTERN REFINING SOUTHWEST LLC
MARATHON GALLUP REFINERY
GALLUP, NEW MEXICO**

Drawn By: KML	Checked By: JH	Scale: AS SHOWN	Date: 9/1/22	File: 697-IR-SOURNAPHTHAINVLOCS-202207

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Tables

TABLE 1a. SOUR NAPHTHA RELEASE INVESTIGATION REPORT, TPH RESULTS
WESTERN REFINING SOUTHWEST LLC
D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Diesel Range Organics (mg/kg)	Gasoline Range Organics (mg/kg)	Oil Range Organics (mg/kg)
SNR-EX CONF (1.5-2.5 ft)	05/18/22	35.8 J	55.5	ND(51.7)
SNR-01 (1-2 ft)	05/16/22	ND(50.7)	ND(50.7)	ND(50.7)
SNR-01 (5-6 ft)	05/16/22	**3150**	**9070 J+**	ND(53.6)
SNR-01 (9-10 ft)	05/16/22	470	**658**	ND(53.8)
SNR-01 (14-15 ft)	05/16/22	ND(54.5)	ND(54.5)	ND(54.5)
SNR-02 (1-2 ft)	05/16/22	**4340**	**ND(1000) ***	**ND(1000) ***
SNR-02 (4-5 ft)	05/16/22	743	**1770**	ND(51.7)
SNR-02 (7-8 ft)	05/16/22	**1360**	**9650 J+**	ND(54.3)
SNR-03 (1-2 ft)	05/16/22	**2110**	**292**	51.6
SNR-03 (5-6 ft)	05/16/22	629	**805**	ND(51.1)
SNR-03 (10-11 ft)	05/16/22	52.6 J	76.4	ND(55.2)
SNR-03 (12-13 ft)	05/16/22	28.1 J	38.2 J	ND(55.9)
SNR-04 (1-2 ft)	05/16/22	ND(52.3)	ND(52.3)	ND(52.3)
SNR-04 (5-6 ft)	05/16/22	**1010**	**740**	ND(54.3)
SNR-04 (11-12 ft)	05/16/22	80 J	49.1 J	ND(52.7)
SNR-04 (14-15 ft)	05/16/22	ND(53.1)	ND(53.1)	ND(53.1)
SNR-05 (1-2 ft)	05/16/22	ND(50.1) UJ	ND(50.1) R	ND(50.1)
SNR-05 (5-6 ft)	05/16/22	648 J-	**1070**	ND(51.3)
SNR-05 (13-14 ft)	05/16/22	882 J-	**313**	ND(52.5)
SNR-05 (14-15 ft)	05/16/22	ND(52.1) UJ	ND(52.1)	ND(52.1)
SNR-06 (1-2 ft)	05/16/22	725	63.2	30.5 J
SNR-06 (5-6 ft)	05/16/22	116	**342**	ND(52.3)
SNR-06 (7-8 ft)	05/16/22	378	**3050**	ND(52)
SNR-07 (1-2 ft)	05/16/22	ND(51.1) UJ	ND(51.1)	ND(51.1)
SNR-07 (6-7 ft)	05/16/22	ND(53.3) UJ	56.9	ND(53.3)
SNR-07 (10-12 ft)	05/16/22	**1240 J-**	**1060**	ND(52.4)
SNR-07 (14-15 ft)	05/16/22	**2050 J-**	**3060**	ND(52)
SNR-08 (1-2 ft)	05/17/22	ND(52.4) UJ	ND(52.4)	ND(52.4)
SNR-08 (5-6 ft)	05/17/22	ND(51.4) UJ	ND(51.4)	ND(51.4)
SNR-08 (9-10 ft)	05/17/22	**1560 J-**	**302**	ND(51)
SNR-08 (13-13.5 ft)	05/17/22	ND(52.4) UJ	ND(52.4)	ND(52.4)
SNR-09 (1-2 ft)	05/17/22	ND(51) UJ	ND(51)	ND(51)
SNR-09 (6-7 ft)	05/17/22	575 J-	**1280 J**	ND(49.4)
SNR-09 (8-9 ft)	05/17/22	**1750 J-**	**1140**	ND(53.5)
SNR-09 (13-14 ft)	05/17/22	441 J-	**322**	ND(52.2)
SNR-10 (1-2 ft)	05/17/22	ND(53.2)	ND(53.2)	ND(53.2)
SNR-10 (5-6 ft)	05/17/22	ND(55.7) UJ	ND(55.7)	ND(55.7)
SNR-10 (10.5-11.5 ft)	05/17/22	ND(58.4) UJ	43 J	ND(58.4)
SNR-10 (14.5-15 ft)	05/17/22	178	ND(58.9)	ND(58.9)
SNR-11 (1-2 ft)	05/17/22	35.3 J-	ND(53.1)	ND(53.1)
SNR-11 (5-6 ft)	05/17/22	ND(54.2) UJ	ND(54.2)	ND(54.2)
SNR-11 (9-10 ft)	05/17/22	ND(50.2)	ND(50.2)	ND(50.2)
SNR-11 (14.5-15 ft)	05/17/22	115	**161**	ND(51.4)
SNR-12 (1-2 ft)	05/17/22	ND(51)	ND(51)	ND(51)
SNR-12 (6-7 ft)	05/17/22	ND(50.9)	41.8 J	ND(50.9)
SNR-12 (9.5-10 ft)	05/17/22	ND(51.4)	38.9 J	ND(51.4)
SNR-12 (14-15 ft)	05/17/22	707	**2430**	ND(52.1)
SNR-13 (1-2 ft)	05/17/22	212	98.1	ND(51.9)
SNR-13 (6-7 ft)	05/17/22	ND(55.3)	**112**	ND(55.3)
SNR-13 (14-15 ft)	05/17/22	ND(56)	ND(56)	ND(56)
SNR-14 (1-2 ft)	05/18/22	ND(54.5)	ND(54.5)	ND(54.5)
SNR-14 (5-6 ft)	05/18/22	**2110**	**124**	ND(52.8)
SNR-14 (9-10 ft)	05/18/22	399	ND(54.6)	ND(54.6)
SNR-14 (14-15 ft)	05/18/22	143 J	ND(52.9)	ND(52.9)
NMED Residential Soil Screening Level (0-10 ft-bgs) (exceedances in bold text)		1000	100	1000
NMED Industrial Soil Screening Level (0-1 ft-bgs) (exceedances in bold text and highlighted):		3000	500	3800
NMED Construction Worker Soil Screening Level (1-10 ft-bgs) (exceedances underlined):		3000	500	5000

ft-bgs - feet below ground surface
J - estimated concentration
J- - estimated concentration, value biased low
J+ - estimated concentration, value biased high
mg/kg - milligrams per kilogram

Notes:
1. * indicates a non-detected result in which the reporting limit exceeds the NMED Industrial, Residential, and/or Construction Worker SSL.
2. The Soil Screening Level source is: NMED Risk Assessment Guidance for Site Investigations and Remediation (June 2022) - Table 6-2

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TABLE 1b. SOUR NAPHTHA RELEASE INVESTIGATION REPORT, VOC RESULTS
WESTERN REFINING SOUTHWEST LLC
D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Start Depth (ft-bgs)	End Depth (ft-bgs)	Benzene (mg/kg)	2-Butanone (mg/kg)	Carbon Disulfide (mg/kg)	Chlorobenzene (mg/kg)
SNR-EX CONF (1.5-2.5 ft)	05/18/22	1.5	2.5	ND(0.00104)	ND(0.0208)	ND(0.00519)	ND(0.00519) UJ
SNR-01 (1-2 ft)	05/16/22	1	2	ND(0.001)	ND(0.0201)	ND(0.00502)	ND(0.00502) UJ
SNR-01 (5-6 ft)	05/16/22	5	6	9.37	ND(4.33)	ND(1.08)	ND(1.08) UJ
SNR-01 (9-10 ft)	05/16/22	9	10	4.11	0.865 J+	ND(1.07)	ND(1.07) UJ
SNR-01 (14-15 ft)	05/16/22	14	15	0.00586	0.0177 J+	0.00316 J	ND(0.00547) UJ
SNR-02 (1-2 ft)	05/16/22	1	2	1.98	0.0269 J+	0.00258 J	ND(0.00502) UJ
SNR-02 (4-5 ft)	05/16/22	4	5	0.00421	0.0088 J+	ND(0.0052)	ND(0.0052) UJ
SNR-02 (7-8 ft)	05/16/22	7	8	17.7	0.807 J+	ND(1.1)	ND(1.1) UJ
SNR-03 (1-2 ft)	05/16/22	1	2	0.039	0.0313 J+	ND(0.00511)	ND(0.00511) UJ
SNR-03 (5-6 ft)	05/16/22	5	6	0.553	ND(4.07)	ND(1.02)	ND(1.02) UJ
SNR-03 (10-11 ft)	05/16/22	10	11	0.728	ND(0.0223)	0.00415 J+	ND(0.00558) UJ
SNR-03 (12-13 ft)	05/16/22	12	13	0.0831 J	0.0332 J+	0.00204 J	ND(0.00561) UJ
SNR-04 (1-2 ft)	05/16/22	1	2	ND(0.00103)	ND(0.0207)	ND(0.00517)	ND(0.00517) UJ
SNR-04 (5-6 ft)	05/16/22	5	6	0.0241	0.024 J+	0.00299 J	ND(0.00546) UJ
SNR-04 (11-12 ft)	05/16/22	11	12	1.27	ND(0.0212)	ND(0.0053)	ND(0.0053) UJ
SNR-04 (14-15 ft)	05/16/22	14	15	0.0656	0.0104 J+	ND(0.00534)	ND(0.00534) UJ
SNR-05 (1-2 ft)	05/16/22	1	2	0.00245	ND(0.0199)	ND(0.00497)	ND(0.00497) UJ
SNR-05 (5-6 ft)	05/16/22	5	6	1.1	1.09 J+	ND(1.04)	ND(1.04)
SNR-05 (13-14 ft)	05/16/22	13	14	0.0172 J+	ND(0.0211)	ND(0.00529)	ND(0.00529)
SNR-05 (14-15 ft)	05/16/22	14	15	ND(0.00104)	ND(0.0208)	ND(0.00519)	ND(0.00519)
SNR-06 (1-2 ft)	05/16/22	1	2	0.00404	ND(0.0203)	ND(0.00507)	ND(0.00507) UJ
SNR-06 (5-6 ft)	05/16/22	5	6	0.00155	0.02 J-	0.000654 J	ND(0.00521) UJ
SNR-06 (7-8 ft)	05/16/22	7	8	3.16	ND(0.0208)	0.00575 J+	ND(0.00519) UJ
SNR-07 (1-2 ft)	05/16/22	1	2	ND(0.00103)	ND(0.0206)	ND(0.00514)	ND(0.00514)
SNR-07 (6-7 ft)	05/16/22	6	7	0.174 J	1.18 J+	ND(1.06)	ND(1.06)
SNR-07 (10-12 ft)	05/16/22	10	12	3.67	1.08 J+	ND(1.04)	ND(1.04)
SNR-07 (14-15 ft)	05/16/22	14	15	5.52	1.15 J+	ND(1.04)	ND(1.04)
SNR-08 (1-2 ft)	05/17/22	1	2	ND(0.00105)	ND(0.0209)	ND(0.00523)	ND(0.00523)
SNR-08 (5-6 ft)	05/17/22	5	6	ND(0.00103)	ND(0.0207)	ND(0.00516)	ND(0.00516)
SNR-08 (9-10 ft)	05/17/22	9	10	0.661	ND(4.1)	ND(1.02)	ND(1.02)
SNR-08 (13-13.5 ft)	05/17/22	13	13.5	0.0375	0.933 J+	ND(0.131)	ND(0.131)
SNR-09 (1-2 ft)	05/17/22	1	2	ND(0.00102)	ND(0.0204)	ND(0.0051)	ND(0.0051)
SNR-09 (6-7 ft)	05/17/22	6	7	ND(0.2)	1.04 J+	ND(1)	ND(1)
SNR-09 (8-9 ft)	05/17/22	8	9	10.8	0.804 J+	ND(1.07)	ND(1.07)
SNR-09 (13-14 ft)	05/17/22	13	14	1.37	1.05 J+	ND(1.05)	ND(1.05)
SNR-10 (1-2 ft)	05/17/22	1	2	ND(0.00108)	ND(0.0215)	ND(0.00538)	ND(0.00538)
SNR-10 (5-6 ft)	05/17/22	5	6	ND(0.00111)	ND(0.0222)	ND(0.00555)	ND(0.00555)
SNR-10 (10.5-11.5 ft)	05/17/22	10.5	11.5	0.0161 J+	0.978 J+	ND(0.146)	ND(0.146)
SNR-10 (14.5-15 ft)	05/17/22	14.5	15	0.0729	ND(4.71)	ND(0.147)	ND(0.147)
SNR-11 (1-2 ft)	05/17/22	1	2	0.000481 J	ND(0.0213)	ND(0.00533)	ND(0.00533)
SNR-11 (5-6 ft)	05/17/22	5	6	ND(0.00109)	ND(0.0218) UJ	ND(0.00545)	ND(0.00545)
SNR-11 (9-10 ft)	05/17/22	9	10	0.000434 J	ND(0.0201) UJ	ND(0.00503)	ND(0.00503)
SNR-11 (14.5-15 ft)	05/17/22	14.5	15	0.88	ND(4.14) UJ	ND(1.03)	ND(1.03)
SNR-12 (1-2 ft)	05/17/22	1	2	0.000509 J	ND(0.0205) UJ	ND(0.00513)	ND(0.00513)
SNR-12 (6-7 ft)	05/17/22	6	7	ND(0.00101)	ND(0.0202)	ND(0.00505)	ND(0.00506)
SNR-12 (9.5-10 ft)	05/17/22	9.5	10	ND(0.0257)	0.933 J+	ND(0.128)	ND(0.128)
SNR-12 (14-15 ft)	05/17/22	14	15	**45.2**	ND(41.6)	ND(10.4)	ND(10.4)
SNR-13 (1-2 ft)	05/17/22	1	2	0.466	ND(0.0206) UJ	ND(0.00516)	ND(0.00516)
SNR-13 (6-7 ft)	05/17/22	6	7	0.548 J+	ND(4.43) UJ	ND(1.11)	ND(1.11)
SNR-13 (14-15 ft)	05/17/22	14	15	0.000974 J	0.0066 J-	0.000788 J	ND(0.00565)
SNR-14 (1-2 ft)	05/18/22	1	2	ND(0.0011)	ND(0.0221) UJ	ND(0.00553)	ND(0.00553)
SNR-14 (5-6 ft)	05/18/22	5	6	0.0015 J+	0.0055 J+	ND(0.00531)	ND(0.00531)
SNR-14 (9-10 ft)	05/18/22	9	10	0.0821 J+	ND(0.0218)	0.00368 J+	ND(0.00545)
SNR-14 (14-15 ft)	05/18/22	14	15	0.0186	ND(0.0212) UJ	0.00109 J	ND(0.0053)
NMED Residential Soil Screening Level (0-10 ft-bgs) (exceedances in bold text)				17.8	37400.0	1550.0	378.0
NMED Industrial Soil Screening Level (0-1 ft-bgs) (exceedances in bold text and highlighted):				87.2	411000.0	8540.0	2160.0
NMED Construction Worker Soil Screening Level (1-10 ft-bgs) (exceedances underlined):				423.0	91700.0	1620.0	412.0

ft-bgs - feet below ground surface
J - estimated concentration
J- - estimated concentration, value biased low
J+ - estimated concentration, value biased high
mg/kg - milligrams per kilogram
ND - not detected (reporting limit in parentheses)
NMED - New Mexico Environment Department
UJ - estimated reporting limit
VOCs - volatile organic compounds

Notes:
1. * indicates a non-detected result in which the reporting limit exceeds the NMED Industrial, Residential, and/or Construction Worker SSL.
2. The Soil Screening Level source is: NMED Risk Assessment Guidance for Site Investigations and Remediation (June 2022) - Table 6-2

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TABLE 1b. SOUR NAPHTHA RELEASE INVESTIGATION REPORT, VOC RESULTS
WESTERN REFINING SOUTHWEST LLC
D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Start Depth (ft-bgs)	End Depth (ft-bgs)	Chloroform (mg/kg)	1,2-Dibromoethane (mg/kg)	1,1-Dichloroethane (mg/kg)	1,2-Dichloroethane (mg/kg)
SNR-EX CONF (1.5-2.5 ft)	05/18/22	1.5	2.5	ND(0.00519)	ND(0.00519)	ND(0.00519)	ND(0.00519)
SNR-01 (1-2 ft)	05/16/22	1	2	ND(0.00502)	ND(0.00502)	ND(0.00502)	ND(0.00502)
SNR-01 (5-6 ft)	05/16/22	5	6	ND(1.08)	**ND(1.08) ***	ND(1.08)	ND(1.08)
SNR-01 (9-10 ft)	05/16/22	9	10	ND(1.07)	**ND(1.07) ***	ND(1.07)	ND(1.07)
SNR-01 (14-15 ft)	05/16/22	14	15	ND(0.00547)	ND(0.00547)	ND(0.00547)	ND(0.00547)
SNR-02 (1-2 ft)	05/16/22	1	2	ND(0.00502)	ND(0.00502)	ND(0.00502)	ND(0.00502)
SNR-02 (4-5 ft)	05/16/22	4	5	ND(0.0052)	ND(0.0052)	ND(0.0052)	ND(0.0052)
SNR-02 (7-8 ft)	05/16/22	7	8	ND(1.1)	**ND(1.1) ***	ND(1.1)	ND(1.1)
SNR-03 (1-2 ft)	05/16/22	1	2	ND(0.00511)	ND(0.00511)	ND(0.00511)	ND(0.00511)
SNR-03 (5-6 ft)	05/16/22	5	6	ND(1.02)	**ND(1.02) ***	ND(1.02)	ND(1.02)
SNR-03 (10-11 ft)	05/16/22	10	11	ND(0.00558)	ND(0.00558)	ND(0.00558)	ND(0.00558)
SNR-03 (12-13 ft)	05/16/22	12	13	ND(0.00561)	ND(0.00561)	ND(0.00561)	ND(0.00561)
SNR-04 (1-2 ft)	05/16/22	1	2	ND(0.00517)	ND(0.00517)	ND(0.00517)	ND(0.00517)
SNR-04 (5-6 ft)	05/16/22	5	6	ND(0.00546)	ND(0.00546)	ND(0.00546)	ND(0.00546)
SNR-04 (11-12 ft)	05/16/22	11	12	ND(0.0053)	ND(0.0053)	ND(0.0053)	ND(0.0053)
SNR-04 (14-15 ft)	05/16/22	14	15	ND(0.00534)	ND(0.00534)	ND(0.00534)	ND(0.00534)
SNR-05 (1-2 ft)	05/16/22	1	2	ND(0.00497)	ND(0.00497)	ND(0.00497)	ND(0.00497)
SNR-05 (5-6 ft)	05/16/22	5	6	0.053 J	**ND(1.04) ***	ND(1.04)	ND(1.04)
SNR-05 (13-14 ft)	05/16/22	13	14	ND(0.00529)	ND(0.00529)	ND(0.00529)	ND(0.00529)
SNR-05 (14-15 ft)	05/16/22	14	15	ND(0.00519)	ND(0.00519)	ND(0.00519)	ND(0.00519)
SNR-06 (1-2 ft)	05/16/22	1	2	ND(0.00507)	ND(0.00507)	ND(0.00507)	ND(0.00507)
SNR-06 (5-6 ft)	05/16/22	5	6	ND(0.00521)	ND(0.00521)	ND(0.00521)	ND(0.00521)
SNR-06 (7-8 ft)	05/16/22	7	8	ND(0.00519)	ND(0.00519)	ND(0.00519)	ND(0.00519)
SNR-07 (1-2 ft)	05/16/22	1	2	ND(0.00514)	ND(0.00514)	ND(0.00514)	ND(0.00514)
SNR-07 (6-7 ft)	05/16/22	6	7	ND(1.06)	**ND(1.06) ***	ND(1.06)	ND(1.06)
SNR-07 (10-12 ft)	05/16/22	10	12	ND(1.04)	**ND(1.04) ***	ND(1.04)	ND(1.04)
SNR-07 (14-15 ft)	05/16/22	14	15	ND(1.04)	**ND(1.04) ***	ND(1.04)	ND(1.04)
SNR-08 (1-2 ft)	05/17/22	1	2	ND(0.00523)	ND(0.00523)	ND(0.00523)	ND(0.00523)
SNR-08 (5-6 ft)	05/17/22	5	6	ND(0.00516)	ND(0.00516)	ND(0.00516)	ND(0.00516)
SNR-08 (9-10 ft)	05/17/22	9	10	ND(1.02)	**ND(1.02) ***	ND(1.02)	ND(1.02)
SNR-08 (13-13.5 ft)	05/17/22	13	13.5	ND(0.131)	ND(0.131)	ND(0.131)	ND(0.131)
SNR-09 (1-2 ft)	05/17/22	1	2	ND(0.0051)	ND(0.0051)	ND(0.0051)	ND(0.0051)
SNR-09 (6-7 ft)	05/17/22	6	7	ND(1)	**ND(1) ***	ND(1)	ND(1)
SNR-09 (8-9 ft)	05/17/22	8	9	ND(1.07)	**ND(1.07) ***	ND(1.07)	ND(1.07)
SNR-09 (13-14 ft)	05/17/22	13	14	ND(1.05)	**ND(1.05) ***	ND(1.05)	ND(1.05)
SNR-10 (1-2 ft)	05/17/22	1	2	ND(0.00538)	ND(0.00538)	ND(0.00538)	ND(0.00538)
SNR-10 (5-6 ft)	05/17/22	5	6	ND(0.00555)	ND(0.00555)	ND(0.00555)	ND(0.00555)
SNR-10 (10.5-11.5 ft)	05/17/22	10.5	11.5	ND(0.146)	ND(0.146)	ND(0.146)	ND(0.146)
SNR-10 (14.5-15 ft)	05/17/22	14.5	15	ND(0.147)	ND(0.147)	ND(0.147)	ND(0.147)
SNR-11 (1-2 ft)	05/17/22	1	2	ND(0.00533)	ND(0.00533)	ND(0.00533)	ND(0.00533)
SNR-11 (5-6 ft)	05/17/22	5	6	ND(0.00545)	ND(0.00545)	ND(0.00545)	ND(0.00545)
SNR-11 (9-10 ft)	05/17/22	9	10	ND(0.00503)	ND(0.00503)	ND(0.00503)	ND(0.00503)
SNR-11 (14.5-15 ft)	05/17/22	14.5	15	ND(1.03)	**ND(1.03) ***	ND(1.03)	ND(1.03)
SNR-12 (1-2 ft)	05/17/22	1	2	ND(0.00513)	ND(0.00513)	ND(0.00513)	ND(0.00513)
SNR-12 (6-7 ft)	05/17/22	6	7	ND(0.00505)	ND(0.00505)	ND(0.00505)	ND(0.00505)
SNR-12 (9.5-10 ft)	05/17/22	9.5	10	ND(0.128)	ND(0.128)	ND(0.128)	ND(0.128)
SNR-12 (14-15 ft)	05/17/22	14	15	**ND(10.4) ***	**ND(10.4) ***	ND(10.4)	**ND(10.4) ***
SNR-13 (1-2 ft)	05/17/22	1	2	ND(0.00516)	ND(0.00516)	ND(0.00516)	ND(0.00516)
SNR-13 (6-7 ft)	05/17/22	6	7	ND(1.11)	**ND(1.11) ***	ND(1.11)	ND(1.11)
SNR-13 (14-15 ft)	05/17/22	14	15	ND(0.00565)	ND(0.00565)	ND(0.00565)	ND(0.00565)
SNR-14 (1-2 ft)	05/18/22	1	2	ND(0.00553)	ND(0.00553)	ND(0.00553)	ND(0.00553)
SNR-14 (5-6 ft)	05/18/22	5	6	ND(0.00531)	ND(0.00531)	ND(0.00531)	ND(0.00531)
SNR-14 (9-10 ft)	05/18/22	9	10	ND(0.00545)	ND(0.00545)	ND(0.00545)	ND(0.00545)
SNR-14 (14-15 ft)	05/18/22	14	15	ND(0.0053)	ND(0.0053)	ND(0.0053)	ND(0.0053)
NMED Residential Soil Screening Level (0-10 ft-bgs) (exceedances in bold text)				5.9	0.7	78.6	8.3
NMED IndustrialSoil Screening Level (0-1 ft-bgs) (exceedances in bold text and highlighted):				28.7	3.3	383.3	40.7
NMED Construction Worker Soil Screening Level (1-10 ft-bgs) (exceedances underlined):				134.0	16.3	1820.0	195.0

ft-bgs - feet below ground surface
J - estimated concentration
J- - estimated concentration, value biased low
J+ - estimated concentration, value biased high
mg/kg - milligrams per kilogram
ND - not detected (reporting limit in parentheses)
NMED - New Mexico Environment Department
UJ - estimated reporting limit
VOCs - volatile organic compounds

Notes:
1. * indicates a non-detected result in which the reporting limit exceeds the NMED Industrial, Residential, and/or Construction Worker SSL.
2. The Soil Screening Level source is: NMED Risk Assessment Guidance for Site Investigations and Remediation (June 2022) - Table 6-2

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TABLE 1b. SOUR NAPHTHA RELEASE INVESTIGATION REPORT, VOC RESULTS
WESTERN REFINING SOUTHWEST LLC
D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Start Depth (ft-bgs)	End Depth (ft-bgs)	1,4-Dioxane (mg/kg)	Ethylbenzene (mg/kg)	Styrene (mg/kg)	Tetrachloroethene (mg/kg)	1,1,1-Trichloroethane (mg/kg)
SNR-EX CONF (1.5-2.5 ft)	05/18/22	1.5	2.5	ND(0.104)	0.0183 J-	ND(0.00519) UJ	ND(0.00519) UJ	ND(0.00519)
SNR-01 (1-2 ft)	05/16/22	1	2	ND(0.1)	ND(0.001) UJ	ND(0.00502) UJ	ND(0.00502) UJ	ND(0.00502)
SNR-01 (5-6 ft)	05/16/22	5	6	ND(21.7)	24.9 J-	ND(1.08) UJ	ND(1.08) UJ	ND(1.08)
SNR-01 (9-10 ft)	05/16/22	9	10	ND(21.3)	9.6 J-	ND(1.07) UJ	ND(1.07) UJ	ND(1.07)
SNR-01 (14-15 ft)	05/16/22	14	15	ND(0.109)	0.0041 J-	ND(0.00547) UJ	ND(0.00547) UJ	ND(0.00547)
SNR-02 (1-2 ft)	05/16/22	1	2	ND(0.1)	1.24	ND(0.00502) UJ	ND(0.00502) UJ	ND(0.00502)
SNR-02 (4-5 ft)	05/16/22	4	5	ND(0.104)	2.44	ND(0.0052) UJ	ND(0.0052) UJ	ND(0.0052)
SNR-02 (7-8 ft)	05/16/22	7	8	ND(22)	32.2 J+	ND(1.1) UJ	ND(1.1) UJ	ND(1.1)
SNR-03 (1-2 ft)	05/16/22	1	2	ND(0.102)	1.67	ND(0.00511) UJ	ND(0.00511) UJ	ND(0.00511)
SNR-03 (5-6 ft)	05/16/22	5	6	ND(20.4)	11.1 J-	ND(1.02) UJ	ND(1.02) UJ	ND(1.02)
SNR-03 (10-11 ft)	05/16/22	10	11	ND(0.112)	1.98	ND(0.00558) UJ	ND(0.00558) UJ	ND(0.00558)
SNR-03 (12-13 ft)	05/16/22	12	13	ND(0.112)	0.0556 J-	ND(0.00561) UJ	ND(0.00561) UJ	ND(0.00561)
SNR-04 (1-2 ft)	05/16/22	1	2	ND(0.103)	ND(0.00105)	ND(0.00517) UJ	ND(0.00517) UJ	ND(0.00517)
SNR-04 (5-6 ft)	05/16/22	5	6	ND(0.109)	1.77	ND(0.00546) UJ	ND(0.00546) UJ	ND(0.00546)
SNR-04 (11-12 ft)	05/16/22	11	12	ND(0.106)	2.79	ND(0.0053) UJ	ND(0.0053) UJ	ND(0.0053)
SNR-04 (14-15 ft)	05/16/22	14	15	ND(0.107)	0.0117 J-	ND(0.00534) UJ	ND(0.00534) UJ	ND(0.00534)
SNR-05 (1-2 ft)	05/16/22	1	2	ND(0.0994)	0.00512 J-	ND(0.00497) UJ	ND(0.00497) UJ	ND(0.00497)
SNR-05 (5-6 ft)	05/16/22	5	6	ND(20.7) UJ	18.5	ND(1.04)	ND(1.04)	ND(1.04)
SNR-05 (13-14 ft)	05/16/22	13	14	ND(0.106) UJ	3.04	ND(0.00529)	ND(0.00529)	ND(0.00529)
SNR-05 (14-15 ft)	05/16/22	14	15	ND(0.104) UJ	ND(0.00104)	ND(0.00519)	ND(0.00519)	ND(0.00519)
SNR-06 (1-2 ft)	05/16/22	1	2	ND(0.101)	0.113 J-	ND(0.00507) UJ	ND(0.00507) UJ	ND(0.00507)
SNR-06 (5-6 ft)	05/16/22	5	6	ND(0.104)	0.582	ND(0.00521) UJ	ND(0.00521) UJ	ND(0.00521)
SNR-06 (7-8 ft)	05/16/22	7	8	ND(0.104)	26.7	ND(0.00519) UJ	ND(0.00519) UJ	ND(0.00519)
SNR-07 (1-2 ft)	05/16/22	1	2	ND(0.103) UJ	ND(0.00103)	ND(0.00514)	ND(0.00514)	ND(0.00514)
SNR-07 (6-7 ft)	05/16/22	6	7	ND(21.2) UJ	2.1	ND(1.06)	ND(1.06)	ND(1.06)
SNR-07 (10-12 ft)	05/16/22	10	12	ND(20.8) UJ	14.4	ND(1.04)	ND(1.04)	ND(1.04)
SNR-07 (14-15 ft)	05/16/22	14	15	ND(20.7) UJ	39.4	ND(1.04)	ND(1.04)	ND(1.04)
SNR-08 (1-2 ft)	05/17/22	1	2	ND(0.105) UJ	ND(0.00105) UJ	ND(0.00523)	ND(0.00523)	ND(0.00523)
SNR-08 (5-6 ft)	05/17/22	5	6	ND(0.103) UJ	0.000907 J	ND(0.00516)	ND(0.00516)	ND(0.00516)
SNR-08 (9-10 ft)	05/17/22	9	10	ND(20.5) UJ	7.59 J	ND(1.02)	ND(1.02)	ND(1.02)
SNR-08 (13-13.5 ft)	05/17/22	13	13.5	ND(2.63) UJ	1.47 J	ND(0.131)	ND(0.131)	ND(0.131)
SNR-09 (1-2 ft)	05/17/22	1	2	ND(0.102) UJ	ND(0.00102) UJ	ND(0.0051)	ND(0.0051)	ND(0.0051)
SNR-09 (6-7 ft)	05/17/22	6	7	ND(20) UJ	8.26 J	ND(1)	ND(1)	ND(1)
SNR-09 (8-9 ft)	05/17/22	8	9	ND(21.5) UJ	63.5 J	ND(1.07)	ND(1.07)	ND(1.07)
SNR-09 (13-14 ft)	05/17/22	13	14	ND(20.9) UJ	12.4 J	ND(1.05)	ND(1.05)	ND(1.05)
SNR-10 (1-2 ft)	05/17/22	1	2	ND(0.108) UJ	ND(0.00108) UJ	ND(0.00538)	ND(0.00538)	ND(0.00538)
SNR-10 (5-6 ft)	05/17/22	5	6	ND(0.111) UJ	0.000578 J	ND(0.00555)	ND(0.00555)	ND(0.00555)
SNR-10 (10.5-11.5 ft)	05/17/22	10.5	11.5	ND(2.91) UJ	1.43 J+	ND(0.146)	ND(0.146)	ND(0.146)
SNR-10 (14.5-15 ft)	05/17/22	14.5	15	ND(2.94) UJ	1.46 J	ND(0.147)	ND(0.147)	ND(0.147)
SNR-11 (1-2 ft)	05/17/22	1	2	ND(0.107) UJ	0.00268 J	ND(0.00533)	ND(0.00533)	ND(0.00533)
SNR-11 (5-6 ft)	05/17/22	5	6	ND(0.109)	ND(0.00109) UJ	ND(0.00545)	ND(0.00545)	ND(0.00545)
SNR-11 (9-10 ft)	05/17/22	9	10	ND(0.101)	0.0104 J	ND(0.00503)	ND(0.00503)	ND(0.00503)
SNR-11 (14.5-15 ft)	05/17/22	14.5	15	ND(20.7)	9.57 J	ND(1.03)	ND(1.03)	ND(1.03)
SNR-12 (1-2 ft)	05/17/22	1	2	ND(0.103)	ND(0.00103) UJ	ND(0.00513)	ND(0.00513)	ND(0.00513)
SNR-12 (6-7 ft)	05/17/22	6	7	ND(0.101)	0.0675 J+	ND(0.00505)	ND(0.00505)	ND(0.00505)
SNR-12 (9.5-10 ft)	05/17/22	9.5	10	ND(2.57)	0.583 J+	ND(0.128)	ND(0.128)	ND(0.128)
SNR-12 (14-15 ft)	05/17/22	14	15	**ND(208) UJ ***	56.9 J	ND(10.4)	ND(10.4)	ND(10.4)
SNR-13 (1-2 ft)	05/17/22	1	2	ND(0.103)	0.147 J	ND(0.00516)	ND(0.00516)	ND(0.00516)
SNR-13 (6-7 ft)	05/17/22	6	7	ND(22.2)	11.3 J+	ND(1.11)	ND(1.11)	ND(1.11)
SNR-13 (14-15 ft)	05/17/22	14	15	ND(0.113)	0.00466 J	ND(0.00565)	ND(0.00565)	ND(0.00565)
SNR-14 (1-2 ft)	05/18/22	1	2	ND(0.111)	0.00226	ND(0.00553)	ND(0.00553)	ND(0.00553)
SNR-14 (5-6 ft)	05/18/22	5	6	ND(0.106)	0.219	ND(0.00531)	ND(0.00531)	ND(0.00531)
SNR-14 (9-10 ft)	05/18/22	9	10	ND(0.109)	0.838	ND(0.00545)	ND(0.00545)	ND(0.00545)
SNR-14 (14-15 ft)	05/18/22	14	15	ND(0.106)	0.137	ND(0.0053)	ND(0.0053)	ND(0.0053)
NMED Residential Soil Screening Level (0-10 ft-bgs) (exceedances in bold text)				53.3	75.1	7260.0	337.0	14400.0
NMED Industrial Soil Screening Level (0-1 ft-bgs) (exceedances in bold text and highlighted):				257.0	368.0	51300.0	1650.0	72500.0
NMED Construction Worker Soil Screening Level (1-10 ft-bgs) (exceedances underlined):				1880.0	1770.0	10200.0	7910.0	13600.0

ft-bgs - feet below ground surface
J - estimated concentration
J- - estimated concentration, value biased low
J+ - estimated concentration, value biased high
mg/kg - milligrams per kilogram
ND - not detected (reporting limit in parentheses)
NMED - New Mexico Environment Department
UJ - estimated reporting limit
VOCs - volatile organic compounds

Notes:
1. * indicates a non-detected result in which the reporting limit exceeds the NMED Industrial, Residential, and/or Construction Worker SSL.
2. The Soil Screening Level source is: NMED Risk Assessment Guidance for Site Investigations and Remediation (June 2022) - Table 6-2

TABLE 1b. SOUR NAPHTHA RELEASE INVESTIGATION REPORT, VOC RESULTS
WESTERN REFINING SOUTHWEST LLC
D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Start Depth (ft-bgs)	End Depth (ft-bgs)	Toluene (mg/kg)	Trichloroethene (mg/kg)	m,p-Xylene (mg/kg)	o-Xylene (mg/kg)	Xylenes, Total (mg/kg)
SNR-EX CONF (1.5-2.5 ft)	05/18/22	1.5	2.5	ND(0.00519)	ND(0.00519)	0.0909	0.0602	0.151
SNR-01 (1-2 ft)	05/16/22	1	2	ND(0.00502)	ND(0.00502)	ND(0.00201)	ND(0.001)	ND(0.00201)
SNR-01 (5-6 ft)	05/16/22	5	6	86.7	ND(1.08)	144 J+	58.1	202
SNR-01 (9-10 ft)	05/16/22	9	10	9.48	ND(1.07)	31	12.5	43.5
SNR-01 (14-15 ft)	05/16/22	14	15	ND(0.00547)	ND(0.00547)	0.00323	0.00148	0.00471
SNR-02 (1-2 ft)	05/16/22	1	2	11.6	ND(0.00502)	19.3	7.21	26.5
SNR-02 (4-5 ft)	05/16/22	4	5	0.865	ND(0.0052)	11.1	4.56	15.7
SNR-02 (7-8 ft)	05/16/22	7	8	182 J+	ND(1.1)	263	87.9 J+	351
SNR-03 (1-2 ft)	05/16/22	1	2	3.02	ND(0.00511)	17.3	7.29	24.6
SNR-03 (5-6 ft)	05/16/22	5	6	14.4	ND(1.02)	61.3	23	84.3
SNR-03 (10-11 ft)	05/16/22	10	11	0.7	ND(0.00558)	11.1	4.1	15.2
SNR-03 (12-13 ft)	05/16/22	12	13	0.00377 J	ND(0.00561)	0.085 J	0.0322 J	0.117 J
SNR-04 (1-2 ft)	05/16/22	1	2	ND(0.00517)	ND(0.00517)	0.00127 J	ND(0.00105)	0.00127 J
SNR-04 (5-6 ft)	05/16/22	5	6	0.0093	ND(0.00546)	3.06	0.197	3.26
SNR-04 (11-12 ft)	05/16/22	11	12	5.1	ND(0.0053)	12.8	4.22	17
SNR-04 (14-15 ft)	05/16/22	14	15	0.00543	ND(0.00534)	0.0104	0.00663	0.017
SNR-05 (1-2 ft)	05/16/22	1	2	0.00258 J	ND(0.00497)	0.147	0.0772	0.224
SNR-05 (5-6 ft)	05/16/22	5	6	6.31	ND(1.04)	73.7	24.9	98.6
SNR-05 (13-14 ft)	05/16/22	13	14	1.11	ND(0.00529)	11.2	4.2	15.4
SNR-05 (14-15 ft)	05/16/22	14	15	ND(0.00519)	ND(0.00519)	ND(0.00211)	ND(0.00106)	ND(0.00211)
SNR-06 (1-2 ft)	05/16/22	1	2	0.0931	ND(0.00507)	0.979	0.45	1.43
SNR-06 (5-6 ft)	05/16/22	5	6	0.0421 J+	ND(0.00521)	3.03	1.24	4.27
SNR-06 (7-8 ft)	05/16/22	7	8	15.4	ND(0.00519)	81.8	29.5	111
SNR-07 (1-2 ft)	05/16/22	1	2	ND(0.00514)	ND(0.00514)	ND(0.00206)	ND(0.00103)	ND(0.00206)
SNR-07 (6-7 ft)	05/16/22	6	7	1.78	ND(1.06)	8.24	2.97	11.2
SNR-07 (10-12 ft)	05/16/22	10	12	11.8	ND(1.04)	46.9	15.8	62.7
SNR-07 (14-15 ft)	05/16/22	14	15	79	ND(1.04)	139	55.7	195
SNR-08 (1-2 ft)	05/17/22	1	2	ND(0.00523)	ND(0.00523)	ND(0.00209) UJ	0.00155 J	0.00155 J
SNR-08 (5-6 ft)	05/17/22	5	6	ND(0.00516)	ND(0.00516)	0.00415 J	0.00211 J	0.00626 J
SNR-08 (9-10 ft)	05/17/22	9	10	2.51	ND(1.02)	24.2 J	7.91 J	32.1 J
SNR-08 (13-13.5 ft)	05/17/22	13	13.5	0.095 J	ND(0.131)	0.506 J	0.141 J	0.647 J
SNR-09 (1-2 ft)	05/17/22	1	2	ND(0.0051)	ND(0.0051)	ND(0.00204) UJ	ND(0.00102) UJ	ND(0.00204) UJ
SNR-09 (6-7 ft)	05/17/22	6	7	1.51 J	ND(1)	39.9 J	17.4 J	57.3 J
SNR-09 (8-9 ft)	05/17/22	8	9	14.8	ND(1.07)	204 J	74.8 J	279 J
SNR-09 (13-14 ft)	05/17/22	13	14	2.93	ND(1.05)	23.7 J	7.9 J	31.6 J
SNR-10 (1-2 ft)	05/17/22	1	2	ND(0.00538)	ND(0.00538)	ND(0.00215) UJ	ND(0.00108) UJ	ND(0.00215) UJ
SNR-10 (5-6 ft)	05/17/22	5	6	ND(0.00555)	ND(0.00555)	0.00219 J	ND(0.00111) UJ	0.00219 J
SNR-10 (10.5-11.5 ft)	05/17/22	10.5	11.5	1 J+	ND(0.146)	4.09 J	1.45 J	5.54 J
SNR-10 (14.5-15 ft)	05/17/22	14.5	15	0.129 J	ND(0.147)	0.338 J	0.095 J	0.433 J
SNR-11 (1-2 ft)	05/17/22	1	2	ND(0.00533)	ND(0.00533)	0.00803 J	0.00136 J	0.00939 J
SNR-11 (5-6 ft)	05/17/22	5	6	ND(0.00545)	ND(0.00545)	ND(0.00218) UJ	ND(0.00109) UJ	ND(0.00218) UJ
SNR-11 (9-10 ft)	05/17/22	9	10	0.00143 J	ND(0.00503)	0.0244 J	0.00929 J	0.0337 J
SNR-11 (14.5-15 ft)	05/17/22	14.5	15	20.5	ND(1.03)	29.1 J	10.1 J	39.2 J
SNR-12 (1-2 ft)	05/17/22	1	2	0.00141 J	ND(0.00513)	0.00125 J	ND(0.00103) UJ	0.00125 J
SNR-12 (6-7 ft)	05/17/22	6	7	0.00136 J+	ND(0.00505)	0.597 J	0.201 J	0.798 J
SNR-12 (9.5-10 ft)	05/17/22	9.5	10	0.123 J+	ND(0.128)	1.68 J+	0.549 J+	2.23 J+
SNR-12 (14-15 ft)	05/17/22	14	15	416	ND(10.4) *	152 J	52.7 J	205 J
SNR-13 (1-2 ft)	05/17/22	1	2	0.747	ND(0.00516)	0.655 J	0.835 J	1.49 J
SNR-13 (6-7 ft)	05/17/22	6	7	5.84 J+	ND(1.11)	24.3 J+	8.27 J+	32.6 J+
SNR-13 (14-15 ft)	05/17/22	14	15	ND(0.00565)	ND(0.00565)	0.0101 J	0.00174 J	0.0118 J
SNR-14 (1-2 ft)	05/18/22	1	2	ND(0.00551)	ND(0.00553)	0.0023	0.00109 J	0.00339
SNR-14 (5-6 ft)	05/18/22	5	6	0.0154 J+	ND(0.00531)	0.0623 J+	0.0362 J+	0.0985 J+
SNR-14 (9-10 ft)	05/18/22	9	10	0.0259 J+	ND(0.00545)	0.0328 J+	0.0275 J+	0.0603 J+
SNR-14 (14-15 ft)	05/18/22	14	15	0.0103	ND(0.0053)	ND(0.00212)	ND(0.00106)	ND(0.00212)
NMED Residential Soil Screening Level (0-10 ft-bgs) (exceedances in bold text)				5230.0	15.5	764.0	805.0	871.0
NMED Industrial Soil Screening Level (0-1 ft-bgs) (exceedances in bold text and highlighted):				61340.0	112.0	3730.0	3940.0	4280.0
NMED Construction Worker Soil Screening Level (1-10 ft-bgs) (exceedances underlined):				14040.0	5370.0	696.0	736.0	798.0

ft-bgs - feet below ground surface
J - estimated concentration
J- - estimated concentration, value biased low
J+ - estimated concentration, value biased high
mg/kg - milligrams per kilogram
ND - not detected (reporting limit in parentheses)
NMED - New Mexico Environment Department
UJ - estimated reporting limit
VOCs - volatile organic compounds

Notes:
1. * indicates a non-detected result in which the reporting limit exceeds the NMED Industrial, Residential, and/or Construction Worker SSL.
2. The Soil Screening Level source is: NMED Risk Assessment Guidance for Site Investigations and Remediation (June 2022) - Table 6-2

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TABLE 1c. SOUR NAPHTHA RELEASE INVESTIGATION REPORT, SVOC RESULTS
WESTERN REFINING SOUTHWEST LLC
D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Start Depth (ft-bgs)	End Depth (ft-bgs)	1-Methylnaphthalene (mg/kg)	2-Methylnaphthalene (mg/kg)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)
SNR-EX CONF (1.5-2.5 ft)	05/18/22	1.5	2.5	0.00844 J	0.0117 J	ND(0.00346)	0.00361	0.00547	0.00611
NMED Residential Soil Screening Level (0-10 ft-bgs) (exceedances in bold text)				172.0	232.0	3480.0	17400.0	1.5	1.1
NMED Industrial Soil Screening Level (0-1 ft-bgs) (exceedances in bold text and highlighted):				813.0	3370.0	50500.0	253000.0	32.3	23.6
NMED Construction Worker Soil Screening Level (1-10 ft-bgs) (exceedances underlined):				6060.0	1000.0	15100.0	75300.0	240.0	173.0

Location ID	Date Sampled	Start Depth (ft-bgs)	End Depth (ft-bgs)	Benzo(b)fluoranthene (mg/kg)	Benzo(ghi)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenz(a,h)anthracene (mg/kg)	Fluoranthene (mg/kg)
SNR-EX CONF (1.5-2.5 ft)	05/18/22	1.5	2.5	0.00957	0.00909	ND(0.00346)	0.00838	ND(0.00346)	0.00794
NMED Residential Soil Screening Level (0-10 ft-bgs) (exceedances in bold text)				1.5	NA	15.3	153.0	0.2	2320.0
NMED Industrial Soil Screening Level (0-1 ft-bgs) (exceedances in bold text and highlighted):				32.3	NA	323.0	3230.0	3.2	33700.0
NMED Construction Worker Soil Screening Level (1-10 ft-bgs) (exceedances underlined):				240.0	NA	2310.0	23100.0	24.0	10000.0

Location ID	Date Sampled	Start Depth (ft-bgs)	End Depth (ft-bgs)	Fluorene (mg/kg)	Indeno(1,2,3-cd)pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
SNR-EX CONF (1.5-2.5 ft)	05/18/22	1.5	2.5	ND(0.00346)	0.00367	ND(0.0346)	0.00431	0.00818
NMED Residential Soil Screening Level (0-10 ft-bgs) (exceedances in bold text)				2320.0	1.5	22.6	1850.0	1740.0
NMED Industrial Soil Screening Level (0-1 ft-bgs) (exceedances in bold text and highlighted):				33700.0	32.3	108.0	27500.0	25300.0
NMED Construction Worker Soil Screening Level (1-10 ft-bgs) (exceedances underlined):				10000.0	240.0	633.0	8070.0	7530.0

ft-bgs - feet below ground surface
J - estimated concentration
mg/kg - milligrams per kilogram
ND - not detected (reporting limit in parentheses)
NMED - New Mexico Environment Department
SVOCs - semi-volatile organic compounds

Note:
1. The Soil Screening Level source is: NMED Risk Assessment Guidance for Site Investigations and Remediation (June 2022) - Table 6-2

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TABLE 1d. SOUR NAPHTHA RELEASE INVESTIGATION REPORT, RCRA-8 METALS RESULTS
WESTERN REFINING SOUTHWEST LLC
D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Start Depth (ft-bgs)	End Depth (ft-bgs)	Arsenic, Total (mg/kg)	Barium, Total (mg/kg)	Cadmium, Total (mg/kg)	Chromium, Total (mg/kg)	Lead, Total (mg/kg)	Mercury, Total (mg/kg)	Selenium, Total (mg/kg)	Silver, Total (mg/kg)
SNR-EX CONF (1.5-2.5 ft)	05/18/22	1.5	2.5	2.45 J	574	0.114 J	13.8	12.4	0.188	ND(1.89)	ND(1.89)
NMED Residential Soil Screening Level (0-10 ft-bgs) (exceedances in bold text)				7.1	15600.0	85900.0	96.6	400.0	23.5	391.0	391.0
NMED Industrial Soil Screening Level (0-1 ft-bgs) (exceedances in bold text and highlighted):				35.9	255000.0	417000.0	505.0	800.0	389.0	6490.0	6490.0
NMED Construction Worker Soil Screening Level (1-10 ft-bgs) (exceedances underlined):				217.0	4390.0	3600.0	468.0	800.0	77.0	1750.0	1770.0

ft-bgs - feet below ground surface

J - estimated concentration

mg/kg - milligrams per kilogram

ND - not detected (reporting limit in parentheses)

NMED - New Mexico Environment Department

RCRA - Resource Conservation and Recovery Act

Note:

1. The Soil Screening Level source is: NMED Risk Assessment Guidance for Site Investigations and Remediation (June 2022) - Table 6-2

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TABLE 2. SOUR NAPHTHA RELEASE INVESTIGATION REPORT, MIGRATION TO GROUNDWATER
WESTERN REFINING SOUTHWEST LLC
D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

	Arsenic, Total (mg/kg)	Barium, Total (mg/kg)	Cadmium, Total (mg/kg)	Chromium, Total (mg/kg)	Lead, Total (mg/kg)	Mercury, Total (mg/kg)	Selenium, Total (mg/kg)	Silver, Total (mg/kg)
Concentration	2.45 J	574	0.114 J	13.8	12.4	0.188	ND(1.89)	ND(1.89)
Location	SNR-EX CONF (1.5-2.5 ft)	SNR-EX CONF (1.5-2.5 ft)	SNR-EX CONF (1.5-2.5 ft)	SNR-EX CONF (1.5-2.5 ft)	SNR-EX CONF (1.5-2.5 ft)	SNR-EX CONF (1.5-2.5 ft)	SNR-EX CONF (1.5-2.5 ft)	SNR-EX CONF (1.5-2.5 ft)
Date Sampled	5/18/2022	5/18/2022	5/18/2022	5/18/2022	5/18/2022	5/18/2022	5/18/2022	5/18/2022
NMED Migration to Groundwater (exceedances in bold text)	5.83	2698.79	9.39	205256	270.1	2.09	10.22	13.76

J - estimated concentration

mg/kg - milligrams per kilogram

ND(X) - not detected at the reporting limit, where (X) denotes the reporting limit concentration

NMED - New Mexico Environment Department

Notes:

NMED Risk Assessment Guidance for Site Investigations and Remediation (June 2022) - Table A-1, dilution attenuation factor = 20

Maximum results for each constituent shown and compared against the screening levels

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Appendix A – Field Forms (Boring Logs)

Trihydro CORPORATION

Lithology Log

Sheet 1 of 2

LOCID: SNR-01

Project Name: Sour Naphtha Investigation	Project Number: 697-076-003	Site ID: Marathon Gallup Refinery	
Drilling Company: Cascade	Driller:	Ground Elevation:	Total Drilled Depth:
Drilling Equipment: Geoprobe 6620DT	Drilling Method: Direct Push	Borehole Diameter: 2 inch	Date/Time Drilling Started: 5/16/2022 10:00
Date/Time Total Depth Reached: 5/16/2022 15'			
Type of Sampling Device: Continuous Core		Water Level (bgs): First	Final
Sample Hammer: GH62 Type	Driving Wt.	Drop	Geologist/Engineer: Brian McLoughlin / Jim Hageman
Checked by/Date			
Weather: Clear, sunny, ~60's		Other Personnel Present	
Site Conditions			

Location Description (include sketch in field logbook)
GPS used for location

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	~~ASTM D1586~~ PID	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types, times, and depth, odor, organic vapor measurements, etc.)
1'				GRAVEL (ROAD BASE) LIGHT BROWN SANDY TRANSITION TO REDDISH BROWN SANDY - DRY @ 0.5'	7.05 @ 0.5'						FIRST CORE ONLY ABOUT 1' OF RECOVERY IN FIRST 5'. NO ODOR.
2											HAND AUGER (1'-2') SAMPLE @ 1 FT BGS @ 10:25
4				REDDISH BROWN, SANDY, SOME ROCKS ~0.25" DIA. MOSTLY DRY	257.3 @ 5'-6'						SAMPLE @ 5'-6' BGS @ 10:30
6				DARK RED BROWN - CLAY FAT-CLAY MOIST / NO HC-LIKE ODOR							
				S.A.A.	245.6 @ 7'-8'						STRONG HC-LIKE ODOR AROUND 8' BGS
8				DARK RED/BROWN CLAY, MOIST HC-LIKE ODOR FAT CLAY							
				S.A.A.	383.7 @ 9'-10'						SAMPLE @ 9'-10' BGS @ 10:35
10											

Trihydro CORPORATION

Lithology Log (continued) Sheet 2 of 2

LOCID SNR-01

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	ASTM Code	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types & depth, odor, organic vapor measurements, etc.)
				DARK REDDISH - BROWN MOIST SAND LENSE @ 10.5' BGS HC-LIKE ODOR	333.2	@ 10'-11'					
				SOME BLACK/GRAY STAINING IN SAND LENSE							
12				SAA	237.2	@ 12'-13'					
				DARK RED/BROWN CLAY MOIST - NO STAINING SLIGHT HC LIKE ODOR							SAMPLE @ 14'-15' BGS @ 10:40
14				DARK RED/BROWN CLAY NO HC-LIKE ODOR	18.50	@ 15' BGS					
16											

Trihydro CORPORATION

Lithology Log Sheet 1 of 1

LOCID: SNR-02

Project Name: Sour Naphtha Investigation	Project Number: 697-076-003	Site ID: Marathon Gallup Refinery	
Drilling Company: Cascade	Driller:	Ground Elevation:	Total Drilled Depth:
Drilling Equipment: Geoprobe 6620DT	Drilling Method: Direct Push	Borehole Diameter: 2 inch	Date/Time Drilling Started: 5/16/2022 @ 11:00
Date/Time Total Depth Reached: 5/16/2022 8'			
Type of Sampling Device: Continuous Core		Water Level (bgs): First	Final
Sample Hammer: GH62 Type	Driving Wt.	Drop	Geologist/Engineer: Brian McLoughlin / Jim Hageman
Checked by/Date			
Weather		Other Personnel Present	
Site Conditions			

Location Description (include sketch in field logbook): GPS used for location

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	~~ASTM Code~~ PID	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types, times, and depth, odor, organic vapor measurements, etc.)
0				GRAVEL (3/4") ROAD BASE LIGHT BROWN FINES BLACK TAR-LIKE SUBSTANCE @ 1' (NO ODOR)	35.65 @ 1'-2'						NO ODOR, DRY DMIGHT BE ROAD MATERIAL ?? ASPHALT ROAD
				BRAVEL AND SOME DARK GRAY/BLACK ~~SOIL~~ SAND NO ODOR							NO ODOR, DRY
2				LIGHT BROWN/RED SANDY SOIL SOME ROCKS < 0.5"	~~PID~~ 154.2 @ 2'-3'						NO ODOR, SLIGHT MOISTURE (VERY LITTLE)
											S.A.A
4				LIGHT RED SANDY SOIL	432 @ 4'-5'						~~PID~~, SLIGHT HC-LIKE ODOR @ 4' BGS
				REDDISH BROWN SANDY CLAY SOME MOISTURE	366.9 @ 5'-6'						
6				S.A.A.	230.2 @ 6'-7'						SLIGHT HC-LIKE ODOR 6'-~~7~~' INTERVAL
				S.A.A.	180.8 @ 7'-8'						7'-8' INTERVAL STRONGER HC-LIKE ODOR
8											REFUSAL @ 8' BGS
10											

SAMPLE 1'-2' @ 11:30
SAMPLE 4'-5' @ 11:35
SAMPLE 7'-8' @ 11:40

Trihydro CORPORATION

Lithology Log Sheet 1 of 2

LOCID: SNR-03

Project Name: Sour Naphtha Investigation	Project Number: 697-076-003	Site ID: Marathon Gallup Refinery	
Drilling Company: Cascade	Driller:	Ground Elevation:	Total Drilled Depth:
Drilling Equipment: Geoprobe 6620DT	Drilling Method: Direct Push	Borehole Diameter: 2 inch	Date/Time Drilling Started: 5/16/2022 @ 1159
			Date/Time Total Depth Reached: 5/16/2022 13'
Type of Sampling Device: Continuous Core		Water Level (bgs): First	Final
Sample Hammer: GH62 Type	Driving Wt.	Drop	Geologist/Engineer: Brian McLoughlin / Jim Hageman
Weather: Clear, Sunny, 70's			Other Personnel Present
Site Conditions			

Location Description (include sketch in field logbook): GPS used for location

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	~~PID~~ PID/FID	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types, times, and depth, odor, organic vapor measurements, etc.)
				GRAVEL and asphalt @ surface	517/7283 @ 1'-2' BGS						NO ODOR
				Light brown sandy soil, sand / lense, no moisture							
2				REDDISH BROWN SANDY-SOIL LITTLE TO NO MOISTURE	487/2282 @ 2'-3'						
				S.A.A.	714/5.2%						SLIGHT HC-LIKE ODOR @ 4' BGS
4				S.A.A.	805/4.2%						STRONG HC-LIKE ODOR @ 4.5'
				S.A.A.	908/4840						HC-LIKE ODOR
6				RED/BROWN SANDY-SOIL LIGHT MOISTURE.	832/2.6%						
				GRAY GRAVEL LINGER @ 7.5' BGS SOME LIGHT BROWN SAND	805/2.9%						HC-LIKE ODOR
8				CLAY @ ~ 8' BGS RED FAT CLAY LIGHT - MOISTURE	754 3.41%						S.A.A.
				S.A.A.	753/2.11%						VERY MOIST HC-LIKE ODOR
10											

SAMPLES > (1'-2') @ 1230 (10'-11') @ 1240
(5'-6') @ 1235 (12'-13') @ 1245

Trihydro CORPORATION

Lithology Log (continued)

Sheet 2 of 2

LOCID SWR-03

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	~~Analyte~~ PID/FID	Lithology	Water Content	Estimate % of Gr	Estimate % of Sa	Estimate % of Fi	Remarks (Include all sample types & depth, odor, organic vapor measurements, etc.)
				DARK REDDISH BROWN CLAY - VERY MOIST	711/988						HC-LIKE ODOR
				S.A.A.	723/652						
12					253						
				S.A.A.	1021						REFUSAL @ 13' BGS
14											
16											

Trihydro CORPORATION

Lithology Log

Sheet 1 of 2

LOCID: SNR-04

Project Name: Sour Naphtha Investigation	Project Number: 697-076-003	Site ID: Marathon Gallup Refinery	
Drilling Company: Cascade	Driller:	Ground Elevation:	Total Drilled Depth:
Drilling Equipment: Geoprobe 6620DT	Drilling Method: Direct Push	Borehole Diameter: 2 inch	Date/Time Drilling Started:
Date/Time Total Depth Reached: 5/16/2022 @ 1440 15'			
Type of Sampling Device: Continuous Core	Water Level (bgs): First	Final	
Sample Hammer: GH62 Type	Driving Wt.	Drop	Geologist/Engineer: Brian McLoughlin / Jim Hageman
Checked by/Date: 5/16/2022			
Weather:	Other Personnel Present:		
Site Conditions:			

Location Description (include sketch in field logbook): GPS used for location

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	ASTM Code	PID/FID	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types, times, and depth, odor, organic vapor measurements, etc.)
				LIGHT BROWN SANDY SOIL NO ODOR, VERY FINE GRAVEL (< 0.10")							1	NO ODOR
(1'-2') 1445				S.A.A.		3.52/7.15						S.A.A.
2				S.A.A.		3.27/5.05					2	S.A.A.
				S.A.A. W/ SOME REDDISH CLAY		4.04/6.86					3	S.A.A.
4				MEDIUM BROWN SANDY SOIL W/ REDDISH BROWN CLAY INTERMIXED GRAY STAINING		723/2250					4	S.A.A.
(5'-6') 1450				S.A.A.		869/1.24%					5	S.A.A.
6				BLACK/GRAY STAINED LENSE @ 6' BGS		792/1.1%					1	SLIGHT HC-LIKE ODOR SOME MOISTURE
				REDDISH BROWN CLAY, SOME BLACK STREAKS THROUGHOUT VERY FAINT HC-LIKE ODOR		520/4455					7	S.A.A.
8				S.A.A.		2886/21728				8		S.A.A.
				S.A.A.		566/2248					9	S.A.A.
10											10	

Trihydro CORPORATION

Lithology Log (continued)

Sheet 2 of 2

LOCID SNR-04

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	~~ASTM Code~~ PID / FID	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types & depth, odor, organic vapor measurements, etc.)
				REDDISH BROWN CLAY, ~~SAND~~ SAND FROM 10.5'-12' INTERMIXED	755/932						SATURATED FROM 10.5' – 12' BGS
(11'-12') 1455				SAND FROM 11'-12' DARK REDDISH/BROWN SATURATED	790/2.14%						
12				REDDISH BROWN FAT CLAY SOME SAND	466/928						SOME MOISTURE
				S.A.A	185/321						SLIGHT MOISTURE
14 (14'-15') 1500				S.A.A	43/316						HIT REFUSAL @ 15' BGS
16											

Trihydro CORPORATION

Lithology Log Sheet 1 of 2

LOCID: SNR-05

Project Name: Sour Naphtha Investigation	Project Number: 697-076-003	Site ID: Marathon Gallup Refinery	
Drilling Company: Cascade	Driller:	Ground Elevation:	Total Drilled Depth:
Drilling Equipment: Geoprobe 6620DT	Drilling Method: Direct Push	Borehole Diameter: 2 inch	Date/Time Drilling Started:
			Date/Time Total Depth Reached: 5/16/2022 @ 1539 15'
Type of Sampling Device: Continuous Core		Water Level (bgs): First	Final
Sample Hammer: GH62 Type	Driving Wt.	Drop	Geologist/Engineer: Brian McLoughlin / Jim Hageman
			Checked by/Date: 5/16/2022 @ 1530
Weather: SUNNY, CLEAR, WIND @ 15-20 mph			Other Personnel Present
Site Conditions			

Location Description (include sketch in field logbook): GPS used for location

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	~~Headspace~~ PID/FID	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types, times, and depth, odor, organic vapor measurements, etc.)
0				DRY LIGHT RED/BROWN SANDY SOIL (1'-2')	69/67						NO ODOR NO MOISTURE (DRY)
				S.A.A. (2'-3')	191/898						S.A.A
2				S.A.A.	110/425						S.A.A.
				S.A.A. (3'-4')	~~877~~ 704						S.A.A.
4				S.A.A. @ 4.5' SOME BLACK/BROWN STAINING	877/1.45%						S.A.A.
				REDDISH BROWN CLAY/ SANDY CLAY, SOME BLACK STAINING FROM 5'-7' INTERMIXED SAND LENSES (5'-6')	929/2.2%						S.A.A.
6					824 3.62%						LIGHT MOISTURE @ 6.5' BGS, NO ODOR
				FAT CLAY, REDDISH BROWN 7'-10'	798/3.21%						LIGHT MOISTURE TO 10' BGS
8					698/5.89%						
				S.A.A.	515/4089						
10											

SAMPLES

Trihydro CORPORATION

Lithology Log (continued) Sheet 2 of 2

LOCID: SNR-05

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	~~ASTM Code~~ PID/FID	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types & depth, odor, organic vapor measurements, etc.)
				REDDISH/BROWN FAT CLAY SOME LIGHT GRAY SANDY MATERIAL MIXED IN.	376/743						MOISTURE 10'-12' BGS HC-LIKE ODOR
					608/4489						
12				S.A.A.	444/1397						SLIGHT MOISTURE 12'-13.5' BGS HC-LIKE ODOR
				S.A.A.	900/1.9%						WATER @ 13'
14				SANDY INTERVAL DARK REDDISH BROWN 13.5'-15'	44/420						SLIGHT MOISTURE. FAINT HC-LIKE ODOR(?)(?) HIT REFUSAL @ 15'
16											

(13'-14') 1615

(14'-15') 1620

Trihydro CORPORATION

Lithology Log

Sheet 1 of 1

LOCID: SNR-06

Project Name: Sour Naphtha Investigation	Project Number: 697-076-003	Site ID: Marathon Gallup Refinery	
Drilling Company: Cascade	Driller:	Ground Elevation:	Total Drilled Depth:
Drilling Equipment: Geoprobe 6620DT	Drilling Method: Direct Push	Borehole Diameter: 2 inch	Date/Time Drilling Started:	Date/Time Total Depth Reached: 5/16/2022 @ 1400 8'
Type of Sampling Device: Continuous Core		Water Level (bgs): First / Final	
Sample Hammer: GH62 Type / Driving Wt. / Drop		Geologist/Engineer: Brian McLoughlin / Jim Hageman	Checked by/Date: 5/16/2022 @ 1409
Weather: Sunny, 80's, clear, light wind		Other Personnel Present	
Site Conditions			

Location Description (include sketch in field logbook): GPS used for location

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	ASTM Code / PID/FID	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types, times, and depth, odor, organic vapor measurements, etc.)
				GRAVEL/ROAD MATERIAL (3/4")	-						DRY NO ODOR
2				LIGHT BROWN SANDY SOIL WITH INTERMIXED RED CLAY. DRY	504/2100						S.A.A.
				S.A.A.	46/130						S.A.A.
				S.A.A.	81/86						SA.A
4				S.A.A.	62/168						S.A.A.
				S.A.A.	844/2.21%						SLIGHT MOISTURE HC-LIKE ODOR
6				RED SOIL, MOSTLY CLAY MOISTURE @ ~7' BGS	859/1.06%						SLIGHT MOISTURE HC-LIKE ODOR
				S.A.A	907/777						S.A.A.
8											REFUSAL @ 8' BGS
10											

SAMPLES (1'-2') @ 1400 (7'-8') @ 1410

(5'-6') @ 1405

Trihydro CORPORATION

Lithology Log Sheet 1 of 2

LOCID SNR-07

Project Name: Sour Naphtha Investigation	Project Number: 697-076-003	Site ID: Marathon Gallup Refinery	
Drilling Company: Cascade	Driller:	Ground Elevation:	Total Drilled Depth:
Drilling Equipment: Geoprobe 6620DT	Drilling Method: Direct Push	Borehole Diameter: 2 inch	Date/Time Drilling Started:	Date/Time Total Depth Reached: 5/16/2022 15'
Type of Sampling Device: Continuous Core		Water Level (bgs): First / Final	
Sample Hammer: GH62 Type / Driving Wt. / Drop		Geologist/Engineer: Brian McLoughlin / Jim Hageman	Checked by/Date:
Weather:		Other Personnel Present:	
Site Conditions:			
Location Description (include sketch in field logbook): GPS used for location			

SAMPLES

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	ASTM Code	PID / FID	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types, times, and depth, odor, organic vapor measurements, etc.)
				LIGHT BROWN / RED SANDY SOIL, DRY, GRAVEL (< 0.25")								NO ODOR NO STAINING
				REDDISH / MEDIUM BROWN SANDY SOIL, DRY		3.02 / 6.04						S.A.A.
2				S.A.A.		4.18 / 9.48 (2'-5')						S.A.A.
				S.A.A.		(888 / 2116) (5'-6')						S.A.A.
4				S.A.A.		907 / 1,67 (6'-7')						S.A.A.
				REDDISH BROWN SANDY CLAY SLIGHT HC-LIKE ODOR, DRY								SLIGHT HC-LIKE ODOR NO STAINING
6				S.A.A								S.A.A.
				REDDISH BROWN SANDY CLAY HC-LIKE ODOR, MOIST		694 / 10.49% (7'-9')						HC-LIKE ODOR NO STAINING
8				S.A.A. w/ MORE SAND								
				SATURATED INTERVAL @ 9' BGS		745 / 3.1 %						HC-LIKE ODOR
10												

(1'-2') 1700

(6'-7') 1705

Trihydro CORPORATION

Lithology Log (continued) Sheet 2 of 2

LOCID [redacted] SNR-07

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	~~ASTM Code~~ PID/FID	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types & depth, odor, organic vapor measurements, etc.)
				REDDISH BROWN FAT CLAY	829/1,139			(10'-12')			STRONG HC-LIKE ODOR 10' ~ 15'
(10'-12') 1710											SATURATED SAMPLE SLEVE
12				REDDISH BROWN CLAY WITH SAND @ 12.5' BGS	690/10+%			(12'-14')			
											HIT REFUSAL @ 15'
(14'-15') 1715				REDDISH BROWN SANDY CLAY (MORE SAND) 13'-15'	689/10+%			(14'-15')			
14											
16											

Trihydro CORPORATION

Lithology Log Sheet 1 of 2

LOCID SNR-08

Project Name: Sour Naphtha Investigation	Project Number: 697-076-003	Site ID: Marathon Gallup Refinery	
Drilling Company: Cascade	Driller:	Ground Elevation:	Total Drilled Depth:
Drilling Equipment: Geoprobe 6620DT	Drilling Method: Direct Push	Borehole Diameter: 2 inch	Date/Time Drilling Started: 5/17/2022 @ 0915
Date/Time Total Depth Reached: 5/17/2022 @ 1000			
Type of Sampling Device: Continuous Core		Water Level (bgs): First	Final
Sample Hammer: GH62 Type	Driving Wt.	Drop	Geologist/Engineer: Brian McLoughlin / Jim Hageman
Checked by/Date:			
Weather:		Other Personnel Present:	
Site Conditions:			

Location Description (include sketch in field logbook): GPS used for location

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	~~ASTM Code~~ PID / FID	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types, times, and depth, odor, organic vapor measurements, etc.)
				SANDY GRAVELLY ROAD BASE MATERIAL, NO MOISTURE							no odor / no moisture
(1'-2') 1000				REDDISH DENSE CLAY NO MOISTURE	1' 4.15/10.02						S.A.A.
2				RED/BROWN CLAY, NO MOISTURE	2' 109/427						S.A.A
				SANDY SOIL MEDIUM BROWN TRANSITION TO GRAVEL WITH BLACK TAR-LIKE LENSE @ (3.5'-4.0') NO ODOR	3' 191/974						S.A.A.
4				SANDY SOIL MEDIUM BROWN 4.5-5' SOME REDDISH CLAY	4' 232/1066						S.A.A.
(5'-6') 1005				SANDY SOIL, NO MOISTURE MOSTLY ALL SAND	5' 843/4.08%						S.A.A.
6				REDDISH CLAY 6'-6.5'							FAINT HC-like odor
				SANDY SOIL, VERY little moisture, medium Brown to 7.5	7' 870/6.39%						
8				mottled gray/black, reddish Brown sand w/ staining. Black staining layer from 8.75' TO 9.0'	8' 788/>10%						moisture @ 8.5', HC-LIKE ODOR BLACKISH STAINING
(9'-10') 1019				REDDISH SANDY CLAY.	9' 767/NM						
10					10'						

Trihydro CORPORATION

Lithology Log (continued)

Sheet 2 of 2

LOCID: SNR-08

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	~~ASTM Code~~ PID/FID	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types & depth, odor, organic vapor measurements, etc.)
				GRAVELLY SOIL (< 0.5"), saturated GRAY/BROWN COLOR	253/NM						HC-LIKE ODOR
				11'							S.A.A.
				11.25' REDDISH BROWN CLAY, MOIST	11.5' 77.84/NM						
12				12.25'	12.5'						SLIGHT HC LIKE ODOR
				REDDISH BROWN DENSE CLAY LITTLE TO NO MOISTURE	13' 193						REFUSAL @ 13.5 FT
(B-13.5') 1015				13.5'	13.5'						
14											
16											

Trihydro CORPORATION

Lithology Log

Sheet 1 of 2

LOCID ~~SNR-05~~ SNR-09

Project Name: Sour Naphtha Investigation	Project Number: 697-076-003	Site ID: Marathon Gallup Refinery	
Drilling Company: Cascade	Driller:	Ground Elevation:	Total Drilled Depth:
Drilling Equipment: Geoprobe 6620DT	Drilling Method: Direct Push	Borehole Diameter: 2 inch	Date/Time Drilling Started: 5/17/2022 @0815
Date/Time Total Depth Reached: ~~5/17/2022~~ 5/17/2022			
Type of Sampling Device: Continuous Core	Water Level (bgs): First	Final	
Sample Hammer: GH62 Type	Driving Wt.	Drop	Geologist/Engineer: Brian McLoughlin / Jim Hageman
Checked by/Date			
Weather	Other Personnel Present		
Site Conditions			

Location Description (include sketch in field logbook)
GPS used for location

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	ASTM Code	PID / FID	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types, times, and depth, odor, organic vapor measurements, etc.)
				LIGHT BROWN ~~#~~ SILTY SOIL NO MOISTURE								NO ODOR
				S.A.A.		1' 1.65/1.59						S.A.A.
2				REDDISH BROWN SANDY SOIL LITTLE MOISTURE		2'						NO ODOR, LIGHT MOISTURE
				S.A.A.		6S/13.43						S.A.A.
4				SAND LAYER STARTING @ 4' BGS → 5' BGS		4' 395/1512						NO ODOR, SOME MOISTURE
				SAND LAYER CONTINUES 5'-6' BGS		5'						NO ODOR, VERY LITTLE MOISTURE
6				GRAVEL/ROCK LAYER @ 6' BGS		6' 935/1.3%						NO ODOR
				GRAY/BLACK STAINED, SANDY SOIL FROM 6' ~ 7.25'		7'						
				CLAY, REDDISH BROWN,								MOISTURE INCREASING HC-LIKE ODOR
8				S.A.A.		8' 735/4.5%						VERY MOIST
				S.A.A.		9' ~~PARTIALLY~~ SATD						HC-LIKE ODOR
10												

(1'-2') 0840

(6'-7') 0845

(8'-9') 0850

Trihydro CORPORATION

Lithology Log (continued)

Sheet 2 of 2

LOCID: SNR-09

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	~~ASTM Code~~ PID/FID	Lithology	Water Content	Estimate % of Gr	Estimate % of Sa	Estimate % of Fi	Remarks (Include all sample types & depth, odor, organic vapor measurements, etc.)
				REDDISH/BROWN CLAY 10'	~~37~~ 3127						SATURATED 10'-11'
				11'							
				S.A.A.							
12				12'	368/3279						LIGHT MOISTURE
				S.A.A.							
				(13'-14')							VERY LITTLE MOISTURE
				DENSE REDDISH/BROWN CLAY	368/3242						
				0855							
14											REFUSAL @ 14 FT
16											

Trihydro CORPORATION

Lithology Log

Sheet 1 of 2

LOCID: SNR-10

Project Name: Sour Naphtha Investigation	Project Number: 697-076-003		Site ID: Marathon Gallup Refinery
Drilling Company: Cascade	Driller:	Ground Elevation:	Total Drilled Depth:
Drilling Equipment: Geoprobe 6620DT	Drilling Method: Direct Push	Borehole Diameter: 2 inch	Date/Time Drilling Started: 5/17/2022 @ 1109
			Date/Time Total Depth Reached: 5/17/2022 @ 1130
Type of Sampling Device: Continuous Core		Water Level (bgs): First	Final
Sample Hammer: GH62 Type	Driving Wt.	Drop	Geologist/Engineer: Brian McLoughlin / Jim Hageman
Weather: Clear, sunny, light breeze, 80's			Other Personnel Present
Site Conditions			

Location Description (include sketch in field logbook)
GPS used for location

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	ASTM Code	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types, times, and depth, odor, organic vapor measurements, etc.)
				LIGHT BROWN DIRT w/ GRAVEL (ROAD BASE), DRY							no odor
				1.5'							
				REDDISH CLAY, DENSE, DRY							S.A.
2											S.A.
				3.5'							S.A.A.
				GRAVEL MIXED WITH CLAY POSSIBLE ROADS MATERIAL (?)							S.A.A.
4				DRY. 3.5'-4'							
				REDDISH CLAY, DRY							S.A.A.
				DRY SANDY CLAY							
				REDDISH BROWN							S.A.A
6				S.A.A.							
				S.A.A							S.A.A
8				S.A.A.							S.A.A
				S.A.A. w/ INCREASING SAND CONTENT							S.A.A
10											

(1'-2') 1145

(5'-6') 1150

1' 5.64 2' 9.83 3' 11.90 5' 7.84 6' 14.58 8' 213 10'

Trihydro CORPORATION

Lithology Log (continued)

Sheet 2 of 2

LOCID: SNR-10

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	~~ASTM Code~~ PID/FID	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types & depth, odor, organic vapor measurements, etc.)
(10.5'-11.5') 1155				SANDY SOIL, medium brown 10' MOSTLY DRY	820						SLIGHT HC-like ODOR SA.A
12				12' CLAY LENSE ~2" @ 12.5'	674						HC-LIKE ODOR MOIST AREA AND SAND (12.5' - 14.5')
14				SANDY SOIL, SOME MOISTURE THROUGHOUT (12.5' - 14.5') 14' BLACK STAINING IN SAND	729						SA.A.
(14.5'-15') 1200				14.5' @ 14.75' → CLAY LENSE 15'	120						NO ODOR IN CLAY REFUSAL @ 15'
16											

Trihydro CORPORATION

Lithology Log Sheet 1 of 2

LOCID: SNR-11

Project Name: Sour Naphtha Investigation	Project Number: 697-076-003	Site ID: Marathon Gallup Refinery	
Drilling Company: Cascade	Driller:	Ground Elevation:	Total Drilled Depth:
Drilling Equipment: Geoprobe 6620DT	Drilling Method: Direct Push	Borehole Diameter: 2 inch	Date/Time Drilling Started: 5/17/2022 @ 1200
Date/Time Total Depth Reached: 5/17/2022 @ 1220			
Type of Sampling Device: Continuous Core	Water Level (bgs): First	Final	
Sample Hammer: GH62 Type	Driving Wt.	Drop	Geologist/Engineer: Brian McLoughlin / Jim Hageman
Checked by/Date			
Weather	Other Personnel Present		
Site Conditions			

Location Description (include sketch in field logbook): GPS used for location

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	ASTM Code ~~PID~~	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types, times, and depth, odor, organic vapor measurements, etc.)
				ROAD BASE, LIGHT BROWN SOIL WITH GRAVEL							NO ODOR
				LIGHT BROWN SAND SOIL WITH REDDISH BROWN CLAY, SOME SAND, DRY							
2				S.A.A.							NO ODOR
4				S.A.A.							S.A.A.
				GRAVEL/ROCKS (3/4") INTERMIXED REDDISH SAND, NO STAINING, NO ODOR 5'-8'	5' 14.81 6'						NO ODOR
					20.59						
8				REDDISH CLAY, DENSE, DRY SOME SAND (MOSTLY CLAY)	8' 165						
10				INCREASING SAND @ 10'	10'						

(1'-2') 1230

(5'-6') 1235

(9'-10') 1240

Trihydro CORPORATION

Lithology Log (continued)

Sheet 2 of 2

LOCID SVR-11

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	ASTM Code / PID	Lithology	Water Content	Estimate % of Gr	Estimate % of Sa	Estimate % of Fi	Remarks (Include all sample types & depth, odor, organic vapor measurements, etc.)
				REDDISH/BROWN SANDY CLAY	10'						SLIGHT AC-LIKE ODOR
					78.11						
				SAND MOSTLY @ 10.75' TO 12.0'							
12					12'						
				REDDISH BROWN SANDY CLAY W/ LIGHT MOISTURE THROUGHOUT	13'						SLIGHT AC-LIKE ODOR, SOME MOISTURE THROUGHOUT
					814						
					14'						
14					14.5'						
					973						
				BLACK STAINING @ 14.5' - 15'							
					15'						
16											

(14.5'-15') 1245

Trihydro CORPORATION

Lithology Log Sheet 1 of 2

LOCID SNR-12

Project Name: Sour Naphtha Investigation	Project Number: 697-076-003	Site ID: Marathon Gallup Refinery	
Drilling Company: Cascade	Driller:	Ground Elevation:	Total Drilled Depth:
Drilling Equipment: Geoprobe 6620DT	Drilling Method: Direct Push	Borehole Diameter: 2 inch	Date/Time Drilling Started: 5/17/2022 @ 1400
			Date/Time Total Depth Reached: 5/17/2022 @ 1420
Type of Sampling Device: Continuous Core		Water Level (bgs): First	Final
Sample Hammer: GH62 Type	Driving Wt. Drop	Geologist/Engineer: Brian McLoughlin / Jim Hageman	Checked by/Date
Weather: Clear, Sunny, 5 mph wind		Other Personnel Present	
Site Conditions			

Location Description (include sketch in field logbook)
GPS used for location

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	PID	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types, times, and depth, odor, organic vapor measurements, etc.)
				ROAD BASE GRAVEL (<0.5")							NO ODOR
				RED SANDY CLAY INTERMIXED,							
				1'							
(1-2') 1600				REDDISH BROWN CLAY/SAND DRY.	0.0						S.A.A.
2				2'							
				3'	0.65						
				(0.5") GRAVEL MIXED WITH RED SANDY CLAY	0.0						S.A.A.
4				MOSTLY SAND, LITTLE MOISTURE							S.A.A.
				5'							
				REDDISH BROWN SANDY CLAY WITH INTERMIXED GRAVEL (0.5")	4.55						S.A.A.
6				6'							
(6'-7') 1605				DARK RED/BROWN SANDY GRAVEL (0.5") WITH GRAY/BLACK LENSES,	79						HC-LIKE ODOR
				7'							
				S.A.A.	68						S.A.A.
8				8'							
				S.A.A.	116.9						S.A.A.
				9'							
(9.5-10') 1610				9.5' → DARK BLACK SANDY GRAVEL (0.25")	171						STRONG ODOR
10											

Trihydro CORPORATION

Lithology Log (continued) Sheet ___ of ___

LOCID: SNR-12

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	ASTM Code	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types & depth, odor, organic vapor measurements, etc.)
				REDDISH BROWN DENSE CLAY 10' LITTLE TO NO MOISTURE.	91.4						SLIGHT HC-LIKE ODOR
				S.A.A.							S.A.A.
12				S.A.A. 12'	157.9						S.A.A.
				S.A.A.							S.A.A.
14				S.A.A. 14'	130.3						S.A.A.
				BOTTOM OF BORIN							FINAL DEPTH 15'
16											

(14'-15') 1615

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Lithology Log

Sheet 1 of 2

LOCID: SNR-13

Project Name: Sour Naphtha Investigation	Project Number: 697-076-003		Site ID: Marathon Gallup Refinery
Drilling Company: Cascade	Driller:	Ground Elevation:	Total Drilled Depth:
Drilling Equipment: Geoprobe 6620DT	Drilling Method: Direct Push	Borehole Diameter: 2 inch	Date/Time Drilling Started: 5/17/2022 @ 1640
			Date/Time Total Depth Reached: 5/17/2022 @ 1700
Type of Sampling Device: Continuous Core		Water Level (bgs): First	Final
Sample Hammer: GH62 Type	Driving Wt.	Drop	Geologist/Engineer: Brian McLoughlin / Jim Hageman
Weather:			Other Personnel Present:
Site Conditions:			

Location Description (include sketch in field logbook): GPS used for location

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	ASTM Code	PID	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types, times, and depth, odor, organic vapor measurements, etc.)
				ROAD BASE, GRAVEL (3/4") REDDISH BROWN CLAYEY SAND		1'						no odor, DRY
(1'-2') 1705				REDDISH BROWN CLAYEY SAND @ 1.5'		101.4	@ 1'-2'					S.A.A.
2				S.A.A.		2'						S.A.A.
				S.A.A		12.28						S.A.A.
				SAND LAYER 4'-4.25'		4'						S.A.A.
4				GRAVEL CRUSHED (<0.50") Sandy BROWN SOIL		1.65						
				REDDISH BROWN SAND WITH FINE GRAVEL (<0.25")		5' 266.2						NC-Like ODOR, MOSTLY DRY
6						6'						
(6'-7') 1710				RED/BROWN CLAY		332.4						
						7'						S.A.A.
				RED/BROWN CLAY WITH MIXED GRAVEL (3/4") & SAND YELLOW/BLACK STAINING (7'-9')		338.1						S.A.A.
8												
				RED/DARK BROWN DENSE CLAY BLACK STREAKS/SEEDS		9' 287.2						S.A.A.
10												

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Lithology Log (continued) Sheet 2 of 2

LOCID SNR-13

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	ASTM Code	Lithology	Water Content	Estimate % of Gr	Estimate % of Sa	Estimate % of Fi	Remarks (Include all sample types & depth, odor, organic vapor measurements, etc.)
				REDDISH BROWN DENSE CLAY, VERY LITTLE MOISTURE	10'						NO ODOR, VERY LITTLE MOISTURE.
				SOME BLACK STAINS/STREAKS	193.1						S.A.A.
				S.A.A.	12'						S.A.A
12				S.A.A.	66.21						S.A.A.
				S.A.A	14'						S.A.A.
14				S.A.A. W/OUT BLACK STREAKS	46.23						
				15' T.D.	15'						
16											

(14'-15') 1720

TOTAL DEPTH 15'

Trihydro Corporation

Lithology Log

Sheet 1 of 2

LOCID: SNR-14

Project Name: Sour Naphtha Investigation	Project Number: 697-076-003		Site ID: Marathon Gallup Refinery
Drilling Company: Cascade	Driller:	Ground Elevation:	Total Drilled Depth:
Drilling Equipment: Geoprobe 6620DT	Drilling Method: Direct Push	Borehole Diameter: 2 inch	Date/Time Drilling Started: 5/18/2022 @ 0910
			Date/Time Total Depth Reached:
Type of Sampling Device: Continuous Core		Water Level (bgs): First	Final
Sample Hammer: GH62 Type	Driving Wt.	Drop	Geologist/Engineer: Brian McLoughlin / Jim Hageman
			Checked by/Date:
Weather: Clear, sunny, light breeze (<5mph)			Other Personnel Present:
Site Conditions:			

Location Description (include sketch in field logbook): GPS used for location

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	ASTM Code	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types, times, and depth, odor, organic vapor measurements, etc.)
				NO RECOVERY TOP 5', UTILITY CLEARANCE FROM 0'-5' IN STREET, NO U-TRENCH POSSIBLE. SAMPLE COLLECTED FROM 1' TO 2' FROM SIDEWALL IN CLEARED BORING W/ HAND AUGER							NA
				SANDY GRAVEL WITH BLACK STAINING THROUGHOUT,	5' 1258 6'						LIGHT HC-LIKE ODOR
				9.5' – DARK REDDISH BROWN CLAY LAYER, DENSE CLAY	7' 265.2 8' 9' 161.1						HC-LIKE ODOR

(1'-2') 1015

(5'-6') 1020

(9'-10') 1025

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Lithology Log (continued)

Sheet 2 of 2

LOCID SNR-14

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	ASTM Code	PID	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types & depth, odor, organic vapor measurements, etc.)
				RED/BROWN CLAY								Slight BC-like ODOR
				10.5'								S.A.A.
				GRAVEL LAYER/ROCK(?) 10.5'-10.75'								S.A.A.
12				CLAY W/ INTERMIXED GRAVEL (3/4") FROM 10.75'-13'		1232 (11.5'-13')						
				RED/BROWN DENSE CLAY								NO ODOR
14						97.2						
				T.D. @ 15' BGS								
16												

(14-15' 10:30)

Trihydro CORPORATION

Lithology Log

Sheet ___ of ___

LOCID: SNR-ExConf (1.5'-2.5')

Project Name: Sour Naphtha Investigation	Project Number: 697-076-003	Site ID: Marathon Gallup Refinery	
Drilling Company: Cascade	Driller:	Ground Elevation:	Total Drilled Depth:
Drilling Equipment: Geoprobe 6620DT	Drilling Method: Direct Push	Borehole Diameter: 2 inch	Date/Time Drilling Started:
Date/Time Total Depth Reached:			
Type of Sampling Device: Continuous Core		Water Level (bgs): First / Final	
Sample Hammer: GH62 — Type / Driving Wt. / Drop		Geologist/Engineer: Brian McLoughlin / Jim Hageman	Checked by/Date:
Weather:		Other Personnel Present:	
Site Conditions:			
Location Description (include sketch in field logbook): GPS used for location			

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	ASTM Code / PID	Lithology	Water Content	Estimate % of Gr	Sa	Fi	Remarks (Include all sample types, times, and depth, odor, organic vapor measurements, etc.)
2				LOCATION IS ON TOP OF BURIED PIPE LINES. HAND AUGER USED TO COLLECT SAMPLES FROM 1.5' TO 2.5'.	56.24						SAMPLE (1.5'-2.5') 0930
4				NO CONTINUOUS LOGGING. SAMPLE DESCRIPTION: BROWN SILTY SOIL no odor.							
6											
8											
10											

Appendix B – Trihydro/NMED Email Correspondence

From: James Hageman
To: Suzuki, Michiya, ENV
Subject: RE: [EXTERNAL] Sour Naphtha Investigation Location Access Concern - Marathon Gallup
Date: Monday, May 2, 2022 2:54:00 PM
Attachments: image001.jpg
image002.png
image003.png
image004.png
image005.png
image006.png
image007.png

Will do, thank you Michiya.

-Jim

From: Suzuki, Michiya, ENV <Michiya.Suzuki@state.nm.us>
Sent: Monday, May 2, 2022 2:40 PM
To: James Hageman <jhageman@trihydro.com>
Cc: Brian McLoughlin <bmcloughlin@trihydro.com>; Caitlin Fields <CFields@trihydro.com>; Heidi Jones <hjones@trihydro.com>; Luka, Kateri A. <KALuka@Marathonpetroleum.com>; Cobrain, Dave, ENV <dave.cobrain@state.nm.us>
Subject: RE: [EXTERNAL] Sour Naphtha Investigation Location Access Concern - Marathon Gallup

◆ This message was sent from a non-Trihydro address. Please exercise caution when clicking links or opening attachments from external sources.

Hi James,

NMED does not have a problem with the proposed alternate boring locations. Please reference this correspondence when the investigation report is prepared.

Thanks,

Michiya

From: James Hageman <jhageman@trihydro.com>
Sent: Friday, April 29, 2022 2:35 PM
To: Suzuki, Michiya, ENV <Michiya.Suzuki@state.nm.us>
Cc: Brian McLoughlin <bmcloughlin@trihydro.com>; Caitlin Fields <CFields@trihydro.com>; Heidi Jones <hjones@trihydro.com>; Luka, Kateri A. <KALuka@Marathonpetroleum.com>
Subject: [EXTERNAL] Sour Naphtha Investigation Location Access Concern - Marathon Gallup

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Hello Michiya,

In preparation for the upcoming Sour Naphtha Investigation at the Marathon Gallup Refinery we are completing utility clearance activities. During our clearance activities we have run into a bit of a snag with access to a particular location. The location of interest is circled green on the attached figure (just east of the historical excavation extent). This location was originally added to the work plan based on NMED comment #5 disapproval to the Response Action Report Sour Naphtha Release (dated February 21, 2020); comment is included below for reference (particular sentence of interest is in **bold** text).

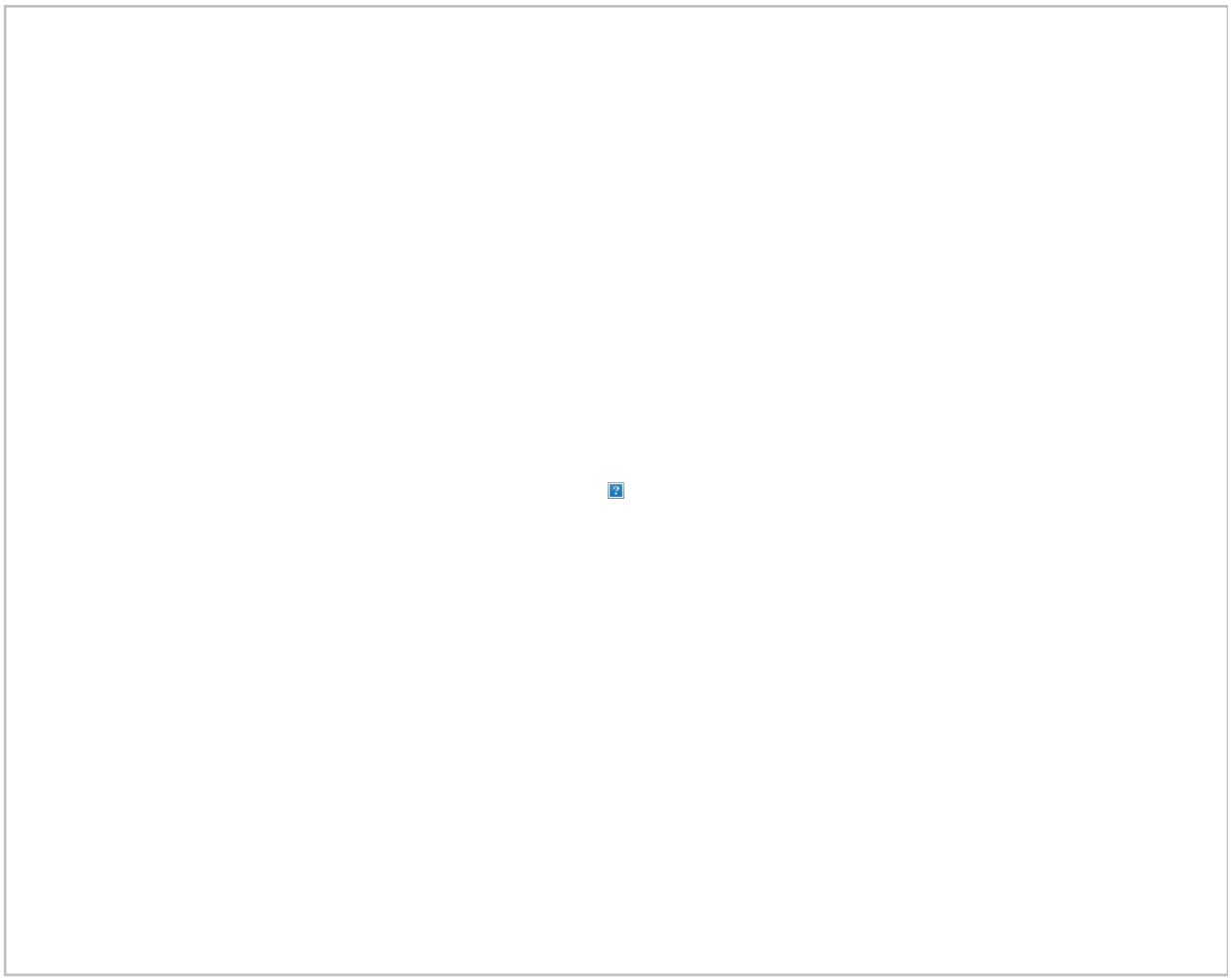
NMED Comment #5 – Disapproval to the Response Action Report Sour Naphtha

-

" In the General Information Section, Site Conditions that Affect the Release, page 7 of 10, the Permittee states, "[t]he release flowed downhill (west) along the middle and sides of the service road and collected in two separate areas at the slope base." The release occurred from a 3-inch diameter carbon steel pipeline located four feet below ground surface (bgs). The product released also followed along the pipeline trench and contaminated soils in the vicinity of the pipeline. According to Table 1, Soil Analytical Results – March 30, 2017, the total petroleum hydrocarbons gasoline range organics (TPH-GRO) concentrations however remained above non-residential soil screening level in the soil samples collected from sample locations #1, 2, 3, and 4. According to Figure 4, Soil Sample Locations, the eastern and western extents of soil exceedance were not delineated because soil samples were not collected west of sample location #4 or east of sample location #2. ***In the revised Report, propose to submit a work plan to install two borings five feet west of sample location #4 and five feet east of sample location #2 to the corresponding sampling depths and collect soil samples for TPH-GRO analysis.*** *If the concentrations still exceed the screening level in the soil samples, additional borings will be necessary to delineate the extent of contamination exceeding the screening level."*

During clearance activities our field staff noted that this location is within a concrete intersection that is roughly 1 foot thick. This concrete is likely reinforced and it would be incredibly difficult to remove a small section of it without causing substantial damage to the rest of the slab (it is too thick to cut through completely with a concrete saw and if a jackhammer was used it would cause irreparable damage to the road). There are also buried pipelines in the immediate vicinity that pose a serious health and safety concern.

We have thought through multiple different options and settled on one that we think best achieves the intended purpose of the investigation while being protective of the refinery property and our personnel. More specifically, we will step to the east off of the concrete intersection and add a sample location there (this would be about 50 to 60 feet further east). We will also attempt to add a location just to the west of the concrete near the edge of the excavation. This location will be close to the previous sample locations but will give us a current snapshot of soil in this area. Here is a zoom in of the figure for help with understanding our proposed solution (concrete boundary in RED, access issue location in ORANGE [circled in green], and proposed new locations as YELLOW circles):



Please let us know when you have read this email and if you would like to discuss any further prior to us completing the sampling event.

Thank you for your time,

Jim Hageman, P.E.
Civil Engineer



OUR SAFETY IS MY RESPONSIBILITY

2707 Broadwater Ave
Helena, MT 59601
(406) 539-5270 (Office)
jhageman@trihydro.com

Connect with us on:



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Appendix C – Data Validation Report

Tier II Data Validation Report Summary

Client: Marathon Oil	Laboratory: Eurofins Houston
Project Name: Sour Naphtha Release IWP	Sample Matrix: Soil
Project Number: 697-076-003 Task: 0002	Sample Start Date: 05/16/2022
Date Validated: 07/05/2022	Sample End Date: 05/18/2022
Parameters Included: ▪ Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste (SW-846) Method 8260D ▪ Polynuclear Aromatic Hydrocarbons (PAH) by SW-846 Method 8270D with Selected Ion Monitoring (SIM) ▪ Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics (GRO), TPH Diesel Range Organics (DRO), and TPH Oil Range Organics (ORO) by SW-846 Method 8015B ▪ Metals by SW-846 Method 6020A ▪ Mercury by SW-846 Method 7471B ▪ Percent Moisture by Standard Methods for the Examination of Water and Wastewater (SM) Method 2540	
Laboratory Project ID: 860-26536-1	
Data Validator: Daran O'Hollearn, Lead Project Scientist	
Reviewer: Charles Ballek, Senior Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services Group on the analytical data report packages generated by Eurofins Houston of Stafford, Texas, evaluating samples from the Marathon Oil site, located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values from:

- Field duplicate pairs
- Matrix spike (MS) and matrix spike duplicate (MSD) pairs
- Laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) pairs

Laboratory accuracy was established by reviewing the demonstrated percent recoveries (%R) of the following items to verify that data are not biased.

- MS/MSD samples
- LCS/LCSD samples
- Organic system monitoring compounds (surrogates)

Method compliance was established by reviewing sample integrity, holding times, detection limits, surrogate recoveries, laboratory blanks, initial and continuing calibrations (where applicable), and the LCS/LCSD percent recoveries against method-specific requirements.

Completeness was evaluated by determining the overall ratio of the number of samples and analyses planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody (CoC), laboratory analytical methods, and other laboratory and field documents associated with this analytical data set.

Tier II Data Validation Report Summary

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
SNR-EX CONF (1.5'-2.5')	860-26536-1
SNR-01 (1'-2')	860-26536-2
SNR-01 (5'-6')	860-26536-3
SNR-01 (9'-10')	860-26536-4
SNR-01 (14'-15')	860-26536-5
SNR-02 (1'-2')	860-26536-6
SNR-02 (4'-5')	860-26536-7
SNR-02 (7'-8')	860-26536-8
SNR-03 (1'-2')	860-26536-9
SNR-03 (5'-6')	860-26536-10
SNR-03 (10'-11')	860-26536-11
SNR-03 (12'-13')	860-26536-12
SNR-06 (1'-2')	860-26536-13
SNR-06 (7'-8')	860-26536-14
SNR-06 (5'-6')	860-26536-15
SNR-04 (1'-2')	860-26536-16
SNR-04 (5'-6')	860-26536-17
SNR-04 (11'-12')	860-26536-18
SNR-04 (14'-15')	860-26536-19
SNR-05 (1'-2')	860-26536-20
SNR-05 (5'-6')	860-26536-21
SNR-05 (13'-14')	860-26536-22
SNR-05 (14'-15')	860-26536-23
SNR-07 (1'-2')	860-26536-24
SNR-07 (6'-7')	860-26536-25
SNR-07 (10'-12')	860-26536-26
SNR-07 (14'-15')	860-26536-27
SNR-09 (1'-2')	860-26536-28
SNR-09 (6'-7')	860-26536-29
SNR-09 (8'-9')	860-26536-30
SNR-09 (13'-14')	860-26536-31
SNR-08 (1'-2')	860-26536-32
SNR-08 (5'-6')	860-26536-33
SNR-08 (9'-10')	860-26536-34

Tier II Data Validation Report Summary

Client Sample ID	Laboratory Sample Number
SNR-08 (13'-13.5')	860-26536-35
SNR-10 (1'-2')	860-26536-36
SNR-10 (5'-6')	860-26536-37
SNR-10 (10.5'-11.5')	860-26536-38
SNR-10 (14.5'-15')	860-26536-39
SNR-11 (1'-2')	860-26536-40
SNR-11 (5'-6')	860-26536-41
SNR-11 (9'-10')	860-26536-42
SNR-11 (14.5'-15')	860-26536-43
SNR-12 (1'-2')	860-26536-44
SNR-12 (6'-7')	860-26536-45
SNR-12 (9.5'-10')	860-26536-46
SNR-12 (14'-15')	860-26536-47
SNR-13 (1'-2')	860-26536-48
SNR-13 (6'-7')	860-26536-49
SNR-13 (14'-15')	860-26536-50
SNR-14 (1'-2')	860-26536-51
SNR-14 (5'-6')	860-26536-52
SNR-14 (9'-10')	860-26536-53
SNR-14 (14'-15')	860-26536-54
BD01-05162022	860-26536-55
BD02-05162022	860-26536-56
BD01-05172022	860-26536-57
BD01-05182022	860-26536-58

Tier II Data Validation Report Summary

The laboratory data were reviewed to evaluate compliance with the methods and the quality of the reported data. Assessment of CoC completeness is included in Item 3 of the Data Validation Checklist. A check mark (✓) indicates that the referenced validation criteria were deemed acceptable, whereas a crossed circle (⊗) indicates validation criteria for which the data have been qualified by the data validator. An empty circle (○) indicates that the specified criterion does not apply to the reviewed data. Details are noted in the tables below.

Validation Criteria

- ✓ Data Completeness
- ✓ CoC Documentation (Item 3)
- ⊗ Holding Times and Preservation (Items 6 and 7)
- ○ Initial and Continuing Calibrations (Items 9 and 10)
- ✓ Laboratory Blanks (Items 11 and 12)
- ⊗ MS/MSD (Items 13 and 14)
- ✓ LCS/LCSD (Items 15 and 16)
- ⊗ System Monitoring Compounds (i.e., Surrogates and Internal Standards) (Item 17)
- ○ Field, Equipment, and Trip Blanks (Items 18 and 19)
- ⊗ Field Duplicates (Items 20 and 21)
- ○ Laboratory Duplicates (Item 22)

Guidance References

Chemical data validation was conducted in accordance with the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for the analyses listed below, or by the appropriate method if not covered in the National Functional Guidelines.

- Data for organic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number EPA-540-R-20-005, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Organic Data Review, document number EPA 540/R-99/008, October 1999.
- Data for inorganic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Inorganic Superfund Methods Data Review, document number EPA-542-R-20-006, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Inorganic Data Review, document number EPA 540-R-04-004, October 2004.
- Review of field duplicates was conducted according to the USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.
- Trihydro Data Validation Variance Documentation, April 2022.

Tier II Data Validation Report Summary

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Item 2 of the Validation Criteria Checklist.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data that are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R (rejected, data not usable), the data may be used for site evaluation; however, consideration should be given to the reasons for qualification when interpreting sample concentrations. Data points that are assigned an R qualifier should not be used for site evaluation purposes.

If applicable, text was identified in **bold font** in the Validation Criteria Checklist to indicate that further action and/or qualification of the data were required. Data may have been qualified with J data flags by the laboratory if the result was greater than or equal to the method detection limit (MDL) but less than the reporting limit (RL). These laboratory-applied J flags were preserved, if present, and included in the Data Qualification Summary table at the end of this report. If applicable, data validation qualifiers were added for the items noted with crossed circles in the Validation Criteria section above. Please see the Data Qualification Summary table at the end of this report for a complete list of samples and analytes qualified.

If data would be qualified with more than one flag, one qualifier was assigned based on the severity; however, all reasons for qualification were retained. Data that would be qualified with both J+ and J- flags were evaluated based on validation criteria and assigned the appropriate flag. The hierarchy of qualifiers from the most to least severe is as follows:

- R > JB/U > NJ > J+/J- > J/UJ

Data qualifiers used during this validation are included in the following table.

Qualifier	Definition
J	Estimated concentration
J+	The result is an estimated concentration, but may be biased high
J-	The result is an estimated concentration, but may be biased low
UJ	Estimated reporting limit
R	

Data Completeness

The analyses were performed as requested on the CoC records. The associated samples were received by the laboratory and analyzed properly unless otherwise noted in the Criteria Checklist below. The complete data package consisted of 1,244 data points. One data point was rejected. The data completeness measure for this data package is calculated to be 99.92% and is acceptable.

VALIDATION CRITERIA CHECKLIST

1. Was the report free of non-conformances identified by the laboratory? No

Comments: The laboratory noted the following analytical non-conformances related to this data set.

Method 8260D: Reanalysis of the following sample was performed outside of the analytical holding time due to confirm 2-butanone results with passing QC: SNR-10 (14.5'-15') (860-26536-39).

The MS recoveries for preparation batch 860-54229 and analytical batch 860-54417 were outside control limits. Sample matrix interference is suspected because the associated LCS recovery was within acceptance limits

The MS recoveries for preparation batch 860-54229 and analytical batch 860-54516 were outside control limits. Sample matrix interference is suspected.

The surrogate, toluene-d_8 recovery for the following samples were outside control limits: SNR-10 (10.5'-11.5') (860-26536-38), SNR-12 (9.5'-10') (860-26536-46), and SNR-13 (6'-7') (860-26536-49). Evidence of matrix interference is present.

The MS recoveries for preparation batch 860-54728 and analytical batch 860-54709 were outside control limits. Sample matrix interference is suspected because the associated LCS recovery was within acceptance limits.

The surrogate, 4-bromofluorobenzene, recovery for the following samples were outside control limits: SNR-14 (5'-6') (860-26536-52) and SNR-14 (9'-10') (860-26536-53). Evidence of matrix interference is present.

The surrogate toluene-d8 recovery for the following sample was outside control limits: SNR-14 (9'-10') (860-26536-53). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

The MS recoveries for preparation batch 860-54229 and analytical batch 860-54260 were outside control limits. Sample matrix interference is suspected because the associated LCS recovery was within acceptance limits.

The surrogate, toluene-d_8 recovery for the following samples were outside control limits: SNR-03 (10'-11') (860-26536-11) and SNR-06 (7'-8') (860-26536-14). Evidence of matrix interference is present.

Internal standard, 1,4-Dichlorobenzene-d_4 responses were outside of acceptance limits for the following samples: SNR-02 (1'-2') (860-26536-6) and SNR-06 (7'-8') (860-26536-14). The sample(s) shows evidence of matrix interference.

1,2-Dichloroethane-d4 (Surrogate) and 4-bromofluorobenzene (Surrogate) recovery for the following sample was outside control limits: SNR-06 (7'-8') (860-26536-14). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

The MS recoveries for preparation batch 860-54229 and analytical batch 860-54367 were outside control limits. Sample matrix interference is suspected because the associated LCS recovery was within acceptance limits.

The MS recoveries for preparation batch 860-54350 and analytical batch 860-54712 were outside control limits. Sample matrix interference is suspected because the associated LCS recovery was within acceptance limits.

Surrogate recovery for the following sample was outside control limits: SNR-05 (13'-14') (860-26536-22). Evidence of matrix interference is present.

The MS recoveries for preparation batch 860-54229 and analytical batch 860-54371 were outside control limits. Sample matrix interference is suspected because the associated LCS recovery was within acceptance limits.

2-Butanone was analyzed and re-analyzed at a 25x, but both instances the CCVIS failed high and sample has a 'J' flag. A 200x is reporting 2-butanone at ND. Sample is already 1 day out of holding time and will be reanalyzed with passing QC to confirm results at a 25x analysis.SNR-10 (14.5'-15') (860-26536-39)

Surrogate recovery for the following samples were outside control limits: SNR-02 (7'-8') (860-26536-8) and (860-26536-B-8-A MS). Evidence of matrix interference is present.

The MS recoveries for preparation batch 860-54391 and analytical batch 860-54844 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

The MS recoveries for preparation batch 860-54618 and analytical batch 860-54846 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

VALIDATION CRITERIA CHECKLIST

Surrogate recovery for the following sample was outside control limits: SNR-06 (5'-6') (860-26536-15). Evidence of matrix interference is present.

Method 8270D SIM: Surrogate recovery for the following sample was outside control limits: SNR-EX CONF (1.5'-2.5') (860-26536-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015: The MS / MSD recoveries for preparation batch 860-54381 and analytical batch 860-54321 were outside control limits. Sample matrix interference is suspected because the associated LCS recovery was within acceptance limits.

Surrogate recovery for the following sample was outside control limits: SNR-01 (5'-6') (860-26536-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Surrogate recovery for the following sample was outside control limits: SNR-02 (7'-8') (860-26536-8). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

2. Were the data free of data qualification flags and/or notes used by the laboratory? No
If no, define.

Comments: The laboratory used the following data qualification flags with this data set.

J – Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

E – Estimated value. *This laboratory flag was applied only to QC sample results in the laboratory report, and qualification of sample data was not required.*

S1+ – Surrogate recovery exceeds control limits, high biased.

*3 – ISTD response or retention time outside acceptable limits. *This laboratory flag was applied only to surrogate sample results in the laboratory report, and qualification of sample data was not required.*

F1 – MS and/or MSD recovery exceeds control limits.

4 – MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

3. Were sample CoC forms and custody procedures complete? No

Comments: The CoC records from field to laboratory were not complete, but custody was maintained as evidenced by laboratory personnel signatures, dates, times of receipt, and the CoC confirmation letter (Attachment A). The laboratory noted that the shipping containers were sealed, and custody seals were present and intact on the shipping containers.

4. Were detection limits in accordance with the quality assurance project plan (QAPP), permit, or method, or indicated as acceptable? Yes

Comments: The detection limits appeared to be acceptable. The following dilutions were applied.

Method	Sample(s)	Analyte(s)	Dilution Factor
8015	SNR-01 (5'-6'), SNR-02 (7'-8')	GRO	10
6020A	SNR-EX CONF (1.5'-2.5')	Metals	10
8015	SNR-02 (1'-2')	GRO, DRO, ORO	20
8260D	Multiple Samples	VOCs	25
8260D	SNR-06 (7'-8')	Benzene, Toluene	100
8260D	Multiple Samples	VOCs	200
8260D	Multiple Samples	VOCs	1,000
8260D	SNR-09 (8'-9'), SNR-12 (14'-15'), SNR-02 (7'-8')	Select VOCs	2,000
8260D	SNR-12 (14'-15')	Toluene	10,000

VALIDATION CRITERIA CHECKLIST	
5. Were the reported analytical methods and constituents in compliance with the QAPP, permit, or CoC?	Yes
Comments: The reported analytical methods were in compliance with the CoC, and the laboratory reported the requested constituents in accordance with the CoC.	
6. Were samples received in good condition within method-specified requirements?	Yes
Comments: Samples were received on ice, in good condition, and with the cooler temperatures within the recommended temperature range of 4°C ± 2°C at 2.0°C and 2.5°C as noted on the CoC and in the Case Narrative.	
7. Were samples extracted/digested and analyzed within method-specified or technical holding times?	No
Comments: The samples were digested/extracted and analyzed within method-specific holding times, with the following exception. **The analysis of TPH-GRO by Method 8015B for sample SNR-05 (1'-2') was performed 2 days after the expiration of the defined 14 day holding time for this analysis. The target analyte was not detected in the sample and the result was assigned an R qualifier and rejected based on the holding time exceedance.**	
8. Were reported units appropriate for the sample matrix/matrices and analytical method(s)? Specify if wet or dry units were used for soil.	Yes
Comments: The results were reported in concentration units of micrograms per kilogram (µg/kg) and milligrams per kilogram (mg/kg), which were acceptable for the sample matrix and the analyses requested. The analytical results for the soil samples in this sample set were reported on a dry weight basis.	
9. Did the laboratory provide any specific initial and/or continuing calibration results?	No
Comments: Initial and continuing calibration data were not included as part of this data set.	
10. If initial and/or continuing calibration results were provided, were the results within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set.	
11. Was the total number of laboratory blank samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method?	Yes
Comments: The total number of laboratory blank samples prepared was equal to at least 5% of the total number of samples.	
12. Were target analytes reported as not detected in the laboratory blanks?	Yes
Comments: Target analytes were reported as not detected in the laboratory blanks.	

VALIDATION CRITERIA CHECKLIST

13. Was the total number of MS samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of matrix spike samples prepared was equal to at least 5% of the total number of samples, although MS samples were not prepared/reported for all analyses and/or batch. The matrix spike sample source for each analytical batch in this sample set has been indicated below.

Method	Analytes	Analysis Batch	Prep Batch	MS Sample Source
6020A	Metals	56916	56688	Not Prepared
7471B	Mercury	55044	54923	Not Prepared
8015	GRO, DRO, ORO	54551, 54553, 54559, 54680	54379	SNR-01 (1'-2')
8015	GRO, DRO, ORO	54321, 54551, 54553, 54946	54381	SNR-05 (13'-14')
Method	Analytes	Analysis Batch	Prep Batch	MS Sample Source
8015	GRO, DRO, ORO	54553, 54680	54573	SNR-11 (9'-10')
8260D	VOCs	54260, 54367, 54371, 54417, 54516	54229	SNR-01 (1'-2'), SNR-01 (5'-6'), SNR-02 (7'-8'), SNR-03 (5'-6'), SNR-02 (7'-8')
8260D	VOCs	54367, 54371, 54417, 54516, 54534, 54709, 54712, 55101	54350	SNR-10 (14.5"-15')
8260D	VOCs	54367, 54371, 54417, 54516, 54534, 54709, 54712, 54844, 54849	54391	SNR-02 (4-5'), SNR-02 (4-5'), SNR-03 (1'-2'), SNR-06 (7'-8)
8260D	VOCs	54516	54523	Not Prepared
8260D	VOCs	54534, 54712, 54846	54618	SNR-05 (13'-14')
8260D	VOCs	54846	54601	Not Prepared
8260D	VOCs	54709	54768	SNR-13 (1'-2')
8260D	VOCs	54844, 54846	54852	Not Prepared
8270D SIM	PAHs	54393, 54483	54197	Not Prepared

Not Prepared – Matrix spikes were not prepared/reported for this batch.

VALIDATION CRITERIA CHECKLIST

14. For MS/MSDs prepared from project samples, were percent recoveries and RPDs within data validation or laboratory quality control (QC) limits? No

Comments: The percent recoveries and RPDs for MS/MSDs prepared from project samples were within data validation and laboratory QC limits or were not applicable because the unspiked amount was more than four times the spike added, with the following exceptions.

Method	Analyte	Batch	MS Recovery	MSD Recovery	MS/MSD QC Limits
8260D	**2-Butanone**	**54229**	**74%**	**-----**	**75-125%**
8260D	**Chlorobenzene**	**54229**	**80%**	**-----**	**83-121%**
8260D	**Ethylbenzene**	**54229**	**79%**	**-----**	**80-123%**
8260D	**Styrene**	**54229**	**77%**	**-----**	**80-126%**
8260D	**Tetrachloroethene**	**54229**	**77%**	**-----**	**79-124%**
8260D	**1,4-Dioxane**	**54350**	**25%**	**-----**	**65-135%**
8260D	**2-Butanone**	**54350**	**144%**	**-----**	**75-125%**
8260D	**m,p-Xylene**	**54229**	**128%**	**-----**	**78-127%**
8260D	**Ethylbenzene**	**54229**	**132%**	**-----**	**80-123%**
8260D	**Toluene**	**54229**	**156%**	**-----**	**74-122%**
8260D	**o-Xylene**	**54229**	**134%**	**-----**	**79-125%**
8260D	**2-Butanone**	**54229**	**72%**	**-----**	**75-125%**
8260D	1,4-Dioxane	54728	30%	-----	65-135%
8260D	**2-Butanone**	**54229**	**131%**	**-----**	**75-125%**
8260D	**2-Butanone**	**54391**	**68%**	**-----**	**75-125%**
8260D	1,1,1-Trichloroethane	54391	132%	-----	71-124%
8260D	1,4-Dioxane	54618	54%	-----	65-135%
8015B	**TPH DRO**	**54381**	**Acceptable**	**61%**	**70-135%**

Analytes with MS or MSD percent recoveries that were less than lower laboratory QC limits were qualified as J- if detected and UJ if not detected in the associated samples due to evidence of potential low bias.

Analytes with MS recoveries greater than the laboratory limits were detected in associated samples and the results were qualified as J+ based on evidence of potential high bias. Non-detections of these analytes in the associated samples did not require qualification.

1,4-Dioxane was not reported from the analyses of samples in Method 8260D batch 54728; therefore, qualification of results was not required based on the MS recovery outside the acceptance limits.

15. Was the total number of LCSs analyzed equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of LCS samples analyzed was equal to at least 5% of the total number of samples.

16. Were LCS/LCSD percent recoveries and LCS/LCSD RPDs within data validation or laboratory QC limits? Yes

Comments: The LCS and LCSD percent recoveries and LCS/LCSD RPDs were within data validation and laboratory QC limits.

VALIDATION CRITERIA CHECKLIST

17. Were surrogate recoveries within laboratory QC limits? No

Comments: Surrogate recoveries were within laboratory QC limits, with the following exceptions.

Method	Surrogate	Sample	Surrogate Recovery	QC Limits
8260D	Toluene-d_8	SNR-02 (7'-8')	134%	70-130%
8260D	**Toluene-d_8**	**SNR-03 (10'-11')**	**133%**	**70-130%**
8260D	**1,2-Dichloroethane-d_4**	**SNR-06 (7'-8')**	**193%**	**56-150%**
8260D	**Bromofluorobenzene**	**SNR-06 (7'-8')**	**1,293%**	**68-152%**
8260D	**Toluene-d_8**	**SNR-06 (7'-8')**	**957%**	**70-130%**
8260D	**Bromofluorobenzene**	**SNR-06 (5'-6')**	**153%**	**68-152%**
8260D	**Toluene-d_8**	**SNR-06 (5'-6')**	**132%**	**70-130%**
8260D	**Bromofluorobenzene**	**SNR-05 (13'-14')**	**155%**	**68-152%**
8260D	**Toluene-d_8**	**SNR-05 (13'-14')**	**170%**	**70-130%**
8260D	**Toluene-d_8**	**SNR-10 (10.5'-11.5')**	**137%**	**70-130%**
8260D	**Bromofluorobenzene**	**SNR-12 (6'-7')**	**171%**	**68-152%**
8260D	**Toluene-d_8**	**SNR-12 (6'-7')**	**136%**	**70-130%**
8260D	**Toluene-d_8**	**SNR-12 (9.5'-10')**	**155%**	**70-130%**
8260D	**Toluene-d_8**	**SNR-13 (6'-7')**	**133%**	**70-130%**
8260D	**Bromofluorobenzene**	**SNR-14 (5'-6')**	**380%**	**68-152%**
8260D	**Bromofluorobenzene**	**SNR-14 (9'-10')**	**157%**	**68-152%**
8260D	**Toluene-d_8**	**SNR-14 (9'-10')**	**139%**	**70-130%**
8270D SIM	p-Terphenyl-d_{14}	SNR-EX CONF (1.5'-2.5')	223%	46-137%
8015B	**1-Chlorooctane**	**SNR-01 (5'-6')**	**146%**	**65-130%**
8015B	**o-Terphenyl**	**SNR-01 (5'-6')**	**131%**	**65-130%**
8015B	**1-Chlorooctane**	**SNR-02 (7'-8')**	**136%**	**65-130%**

Since Method 8260D surrogate associations were not available from the laboratory, qualification was assigned to all of the target analytes when one or more surrogates was outside the acceptance range.

The associated target analytes in the samples with surrogate recoveries that were greater than upper laboratory QC limits were qualified as J+ if detected in affected samples to indicate estimated concentrations that may be biased high. Qualification was not required for non-detected analytes associated with these surrogates.

Since Method 8270D SIM surrogate associations were not available from the laboratory, qualification was assigned to all of the target analytes when two or more surrogates were outside the acceptance range. This condition did not exist for the sample SNR-EX CONF (1.5'-2.5') and qualification of sample data was not required.

Qualification of sample data was not required based on surrogate non-conformances in QC samples as the environmental samples were evaluated based on their specific surrogate recoveries.

18. Were the number of trip blank, field blank, and/or equipment blank samples collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? No

Comments: Trip, field, and equipment blank samples were not collected for this sample set.

19. Were target analytes reported as not detected in the trip blank, field blank, and/or equipment blank samples? N/A

Comments: Trip, field, and equipment blank samples were not collected for this sample set.

VALIDATION CRITERIA CHECKLIST	
20. Was the number of field duplicates collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit?	Yes
Comments: The number of field duplicates collected was equal to at least 10% of the number of samples. • Sample BD01-05162022 was collected as a field duplicate of sample SNR-03 (12'-13'). • Sample BD02-05162022 was collected as a field duplicate of sample SNR-04 (11'-12'). • Sample BD01-05172022 was collected as a field duplicate of sample SNR-09 (6'-7'). • Sample BD01-05182022 was collected as a field duplicate of sample SNR-14 (14'-15').	
21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)?	No
Comments: As indicated in the Field Duplicate Summary Table at the end of this report, field duplicate RPD values were within data validation QC limits of 0-30% for water samples, with the following exceptions. Duplicate pair BD01-05162022 / SNR-03 (12'-13'): **The RPD values for multiple analytes exceeded the data validation limit of 50%. These analyte results were assigned J qualifiers for samples SNR-03 (12'-13') and BD01-05162022 due to evidence of poor precision.** The results for associated samples would typically be qualified based on RPD values greater than 100% but since multiple field duplicates were collected on 05/16/2022 and analyzed, determination of sample associations would be arbitrary. Therefore, the qualification of the indicated results was limited to the identified parent and duplicate samples. Duplicate pair BD02-05162022 / SNR-04 (11'-12'): **The RPD value for TPH DRO and TPH GRO greatly exceeded the data validation limit of 50% at 117.9% and 108.3%, respectively. The TPH DRO and TPH GRO results were qualified as J for the parent and duplicate samples, SNR-04 (11'-12') and BD02-05162022.** The results for associated samples would typically be qualified based on RPD values greater than 100% but since multiple field duplicates were collected on 05/16/2022 and analyzed, determination of sample associations would be arbitrary. Therefore, the qualification of the indicated results was limited to the identified parent and duplicate samples. Duplicate pair BD01-05172022 / SNR-09 (6'-7'): **The RPD values for TPH GRO and toluene exceeded the data validation limit of 50% at 72.3% and 88.4%, respectively, which was evidence of poor precision. The TPH GRO and toluene results were qualified as J for samples SNR-09 (6'-7') and BD01-05172022.** **The RPD value for ethylbenzene, m,p-Xylene, o-xylene, and total xylenes greatly exceeded the data validation limit of 50% at 121.7%, 113.6%, 113.7, and 113.5%. The ethylbenzene, m,p-xylene, o-xylene, and total xylenes results were qualified as J for the parent and duplicate samples, SNR-09 (6'-7')and BD01-05172022, as well as the remaining associated samples based on evidence of extremely poor precision (RPD > 100%). The non-detected results for ethylbenzene, m,p-xylene, o-xylene, and total xylenes in the associated samples collected on 05/17/2022 were assigned UJ qualifiers.** Duplicate pair BD01-05182022 / SNR-14 (14'-15'): **The RPD value for TPH DRO exceeded the data validation limit of 50% at 93.3%. The TPH DRO results for samples SNR-14 (14'-15') and BD01-051822 were assigned J qualifiers based on the evidence of poor precision.**	
22. For laboratory duplicates prepared from project samples, were RPDs within laboratory QC limits?	N/A
Comments: Laboratory duplicate samples were not prepared for this sample set.	

VALIDATION CRITERIA CHECKLIST	
23. Were the following data relationships realistic?	
• Target analytes were reported by more than one method (e.g., 8260/8270, EPH/8270)?	N/A
Comments: Target analytes were not reported by more than one method in this data set.	
• Both total and dissolved metals analyses were performed, and the total metals results were greater than or equal to the dissolved metals results?	N/A
Comments: Dissolved metals analyses were not performed for this data set.	

FIELD DUPLICATE SUMMARY

Client Sample ID: SNR-03 (12'-13') Field Duplicate Sample ID: BD01-05162022				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
2-Butanone	8260D	0.0332 mg/kg	0.920 mg/kg	186.1% +/-RL
Benzene	**8260D**	**0.0831 mg/kg**	**0.392 mg/kg**	**130.0%**
Carbon Disulfide	8260D	0.00204 mg/kg	ND (0.135 mg/kg)	DL
Ethylbenzene	**8260D**	**0.0556 mg/kg**	**0.514 mg/kg**	**161.0%**
m,p-Xylene	**8260D**	**0.0850 mg/kg**	**1.84 mg/kg**	**182.3%**
o-Xylene	**8260D**	**0.0322 mg/kg**	**0.644 mg/kg**	**181.0%**
Toluene	8260D	0.00377 mg/kg	0.190 mg/kg	192.2% +/-RL
Xylenes, Total	**8260D**	**0.117 mg/kg**	**2.48 mg/kg**	**182.0%**
TPH GRO	8015 MOD	38.2 mg/kg	ND (53.5 mg/kg)	DL
TPH DRO	8015 MOD	28.1 mg/kg	ND (53.5 mg/kg)	DL

Field duplicate RPD control limits are not to exceed 50% for soil as established by USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.

DL – Indicates that the analyte was detected in one of the duplicate samples and was undetected in the other sample, and therefore an RPD could not be calculated. Data were not qualified since the detection was within two times the reporting limit. Non-detected results are indicated above with the applicable reporting limit as ND (RL).

+/-RL – Indicates that the detections in both of the samples were within two times the reporting limit. Qualification of data was not required.

The RPD values for multiple analytes exceeded the data validation limit of 50%, which was evidence of poor precision. These analyte results were qualified as J for samples SNR-03 (12'-13') and BD01-05162022.

The results for associated samples would typically be qualified based on RPD values greater than 100% but since multiple field duplicates were collected on 05/16/2022 and analyzed, determination of sample associations would be arbitrary. Therefore, the qualification of the indicated results was limited to the identified samples.

Client Sample ID: SNR-04 (11'-12') Field Duplicate Sample ID: BD02-05162022				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
Benzene	8260D	1.27 mg/kg	1.66 mg/kg	26.6%
Ethylbenzene	8260D	2.79 mg/kg	2.67 mg/kg	4.4%
m,p-Xylene	8260D	12.8 mg/kg	8.71 mg/kg	38.0%
o-Xylene	8260D	4.22 mg/kg	3.10 mg/kg	30.6%
Toluene	8260D	5.10 mg/kg	4.65 mg/kg	9.2%
Xylenes, Total	8260D	17.0 mg/kg	11.8 mg/kg	36.1%
TPH GRO	**8015 MOD**	**49.1 mg/kg**	**165 mg/kg**	**108.3%**
TPH DRO	**8015 MOD**	**80.0 mg/kg**	**310 mg/kg**	**117.9%**

Field duplicate RPD control limits are not to exceed 50% for soil as established by USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.

+/-RL – Indicates that the detections in both of the samples were within two times the reporting limit. Qualification of data was not required.

The RPD value for TPH DRO and TPH GRO greatly exceeded the data validation limit of 50% at 117.9% and 108.3%, respectively. The TPH DRO and TPH GRO results were qualified as J for the parent and duplicate samples, SNR-04 (11'-12') and BD02-05162022.

The results for associated samples would typically be qualified based on RPD values greater than 100% but since multiple field duplicates were collected on 05/16/2022 and analyzed, determination of sample associations would be arbitrary. Therefore, the qualification of the indicated results was limited to the identified samples.

Client Sample ID: SNR-09 (6'-7') Field Duplicate Sample ID: BD01-05172022				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
2-Butanone	8260D	1.04 mg/kg	0.850 mg/kg	20.1% +/-RL
Benzene	8260D	ND (0.200 mg/kg)	0.0161 mg/kg	DL
Ethylbenzene	**8260D**	**8.26 mg/kg**	**2.01 mg/kg**	**121.7%**
m,p-Xylene	**8260D**	**39.9 mg/kg**	**11.0 mg/kg**	**113.6%**
o-Xylene	**8260D**	**17.4 mg/kg**	**4.79 mg/kg**	**113.7%**
Toluene	**8260D**	**1.51 mg/kg**	**0.584 mg/kg**	**88.4%**
Xylenes, Total	**8260D**	**57.3 mg/kg**	**15.8 mg/kg**	**113.5%**
TPH GRO	**8015 MOD**	**1,280 mg/kg**	**600 mg/kg**	**72.3%**
TPH DRO	8015 MOD	575 mg/kg	365 mg/kg	44.7%

Field duplicate RPD control limits are not to exceed 50% for soil as established by USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.

DL – Indicates that the analyte was detected in one of the duplicate samples and was undetected in the other sample, and therefore an RPD could not be calculated. Data were not qualified since the detection was within two times the reporting limit. Non-detected results are indicated above with the applicable reporting limit as ND (RL).

+/-RL – Indicates that the detections in both of the samples were within two times the reporting limit. Qualification of data was not required.

The RPD values for TPH GRO and toluene exceeded the data validation limit of 50% at 72.3% and 88.4%, respectively, which was evidence of poor precision. The TPH GRO and toluene results were qualified as J for samples SNR-09 (6'-7') and BD01-05172022.

The RPD value for ethylbenzene, m,p-Xylene, o-xylene, and total xylenes greatly exceeded the data validation limit of 50% at 121.7%, 113.6%, 113.7, and 113.5%. The ethylbenzene, m,p-xylene, o-xylene, and total xylenes results were qualified as J for the parent and duplicate samples, SNR-09 (6'-7')and BD01-05172022, as well as the remaining associated samples collected on 05/17/2022 based on evidence of extremely poor precision (RPD > 100%). Non-detected results for ethylbenzene, m,p-xylene, o-xylene, and total xylenes in the associated samples were qualified as UJ.

Client Sample ID: SNR-14 (14'-15') Field Duplicate Sample ID: BD01-05182022				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
Benzene	8260D	0.0186 mg/kg	0.0173 mg/kg	7.2%
Carbon Disulfide	8260D	0.00109 mg/kg	ND (0.00531 mg/kg)	DL
Ethylbenzene	8260D	0.137 mg/kg	0.149 mg/kg	8.4%
Toluene	8260D	0.0103 mg/kg	0.00660 mg/kg	43.8% +/-RL
TPH DRO	**8015 MOD**	**143 mg/kg**	**393 mg/kg**	**93.3%**

Field duplicate RPD control limits are not to exceed 50% for soil as established by USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.

DL – Indicates that the analyte was detected in one of the duplicate samples and was undetected in the other sample, and therefore an RPD could not be calculated. Data were not qualified since the detection was within two times the reporting limit. Non-detected results are indicated above with the applicable reporting limit as ND (RL).

+/-RL – Indicates that the detections in both of the samples were within two times the reporting limit. Qualification of data was not required.

The RPD value for TPH DRO exceeded the data validation limit of 50% at 93.3%, which was evidence of poor precision. The TPH DRO results were qualified as J for samples SNR-14 (14'-15') and BD01-051822.

DATA QUALIFICATION SUMMARY

Abbreviation	Reason
ERPD-FD	High field duplicate RPD.
HR-MS	The MS and/or MSD percent recovery was greater than the upper acceptable limit indicating possible matrix interference.
HR-SUR	The surrogate percent recovery was greater than the upper acceptable limit indicating a possible high bias.
HT-AN	Sample was analyzed outside of the method holding time.
LR-MS	The MS and/or MSD percent recovery was less than the lower acceptable limit indicating possible matrix interference.
MDLRL	Flagged by the laboratory: The result was greater than the MDL but less than the RL.

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1,4-Dioxane	8260D	SNR-05 (5'-6')	860-26536-21	ND	20.7	mg/kg	UJ	LR-MS
1,4-Dioxane	8260D	SNR-05 (13'-14')	860-26536-22	ND	0.106	mg/kg	UJ	LR-MS
1,4-Dioxane	8260D	SNR-05 (14'-15')	860-26536-23	ND	0.104	mg/kg	UJ	LR-MS
1,4-Dioxane	8260D	SNR-07 (1'-2')	860-26536-24	ND	0.103	mg/kg	UJ	LR-MS
1,4-Dioxane	8260D	SNR-07 (6'-7')	860-26536-25	ND	21.2	mg/kg	UJ	LR-MS
1,4-Dioxane	8260D	SNR-07 (10'-12')	860-26536-26	ND	20.8	mg/kg	UJ	LR-MS
1,4-Dioxane	8260D	SNR-07 (14'-15')	860-26536-27	ND	20.7	mg/kg	UJ	LR-MS
1,4-Dioxane	8260D	SNR-09 (1'-2')	860-26536-28	ND	0.102	mg/kg	UJ	LR-MS
1,4-Dioxane	8260D	SNR-09 (6'-7')	860-26536-29	ND	20.0	mg/kg	UJ	LR-MS
1,4-Dioxane	8260D	SNR-09 (8'-9')	860-26536-30	ND	21.5	mg/kg	UJ	LR-MS
1,4-Dioxane	8260D	SNR-09 (13'-14')	860-26536-31	ND	20.9	mg/kg	UJ	LR-MS
1,4-Dioxane	8260D	SNR-08 (1'-2')	860-26536-32	ND	0.105	mg/kg	UJ	LR-MS
1,4-Dioxane	8260D	SNR-08 (5'-6')	860-26536-33	ND	0.103	mg/kg	UJ	LR-MS
1,4-Dioxane	8260D	SNR-08 (9'-10')	860-26536-34	ND	20.5	mg/kg	UJ	LR-MS
1,4-Dioxane	8260D	SNR-08 (13'-13.5')	860-26536-35	ND	2.63	mg/kg	UJ	LR-MS
1,4-Dioxane	8260D	SNR-10 (1'-2')	860-26536-36	ND	0.108	mg/kg	UJ	LR-MS

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1,4-Dioxane	8260D	SNR-10 (5'-6')	860-26536-37	ND	0.111	mg/kg	UJ	LR-MS
1,4-Dioxane	8260D	SNR-10 (10.5'-11.5')	860-26536-38	ND	2.91	mg/kg	UJ	LR-MS
1,4-Dioxane	8260D	SNR-10 (14.5'-15')	860-26536-39	ND	2.94	mg/kg	UJ	LR-MS
1,4-Dioxane	8260D	SNR-11 (1'-2')	860-26536-40	ND	0.107	mg/kg	UJ	LR-MS
1,4-Dioxane	8260D	SNR-12 (14'-15')	860-26536-47	ND	208	mg/kg	UJ	LR-MS
1-Methylnaphthalene	8270 SIM	SNR-EX CONF (1.5'-2.5')	860-26536-1	8.44	34.6	ug/kg	J	MDLRL
2-Butanone	8260D	SNR-12 (9.5'-10')	860-26536-46	0.933	0.513	mg/kg	J+	HR-SUR
2-Butanone	8260D	SNR-14 (5'-6')	860-26536-52	0.0055	0.0212	mg/kg	J+	HR-SUR, MDLRL
2-Butanone	8260D	SNR-03 (12'-13')	860-26536-12	0.0332	0.0225	mg/kg	J+	HR-MS
2-Butanone	8260D	SNR-04 (5'-6')	860-26536-17	0.0240	0.0218	mg/kg	J+	HR-MS
2-Butanone	8260D	SNR-08 (13'-13.5')	860-26536-35	0.933	0.525	mg/kg	J+	HR-MS
2-Butanone	8260D	SNR-10 (10.5'-11.5')	860-26536-38	0.978	0.582	mg/kg	J+	HR-MS
2-Butanone	8260D	SNR-02 (1'-2')	860-26536-6	0.0269	0.0201	mg/kg	J+	HR-MS
2-Butanone	8260D	SNR-03 (1'-2')	860-26536-9	0.0313	0.0204	mg/kg	J+	HR-MS
2-Butanone	8260D	SNR-04 (14'-15')	860-26536-19	0.0104	0.0214	mg/kg	J+	HR-MS, MDLRL
2-Butanone	8260D	SNR-05 (5'-6')	860-26536-21	1.09	4.14	mg/kg	J+	HR-MS, MDLRL
2-Butanone	8260D	SNR-07 (6'-7')	860-26536-25	1.18	4.23	mg/kg	J+	HR-MS, MDLRL
2-Butanone	8260D	SNR-07 (10'-12')	860-26536-26	1.08	4.16	mg/kg	J+	HR-MS, MDLRL
2-Butanone	8260D	SNR-07 (14'-15')	860-26536-27	1.15	4.14	mg/kg	J+	HR-MS, MDLRL
2-Butanone	8260D	SNR-09 (6'-7')	860-26536-29	1.04	4.00	mg/kg	J+	HR-MS, MDLRL
2-Butanone	8260D	SNR-09 (8'-9')	860-26536-30	0.804	4.29	mg/kg	J+	HR-MS, MDLRL
2-Butanone	8260D	SNR-09 (13'-14')	860-26536-31	1.05	4.19	mg/kg	J+	HR-MS, MDLRL
2-Butanone	8260D	SNR-01 (9'-10')	860-26536-4	0.865	4.26	mg/kg	J+	HR-MS, MDLRL
2-Butanone	8260D	SNR-01 (14'-15')	860-26536-5	0.0177	0.0219	mg/kg	J+	HR-MS, MDLRL
2-Butanone	8260D	SNR-02 (4'-5')	860-26536-7	0.0088	0.0208	mg/kg	J+	HR-MS, MDLRL
2-Butanone	8260D	SNR-02 (7'-8')	860-26536-8	0.807	4.40	mg/kg	J+	HR-MS, MDLRL
2-Butanone	8260D	BD01-05162022	860-26536-55	0.920	0.541	mg/kg	J-	LR-MS

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
2-Butanone	8260D	BD01-05172022	860-26536-57	0.850	0.503	mg/kg	J-	LR-MS
2-Butanone	8260D	SNR-11 (5'-6')	860-26536-41	ND	0.0218	mg/kg	UJ	LR-MS
2-Butanone	8260D	SNR-11 (9'-10')	860-26536-42	ND	0.0201	mg/kg	UJ	LR-MS
2-Butanone	8260D	SNR-11 (14.5'-15')	860-26536-43	ND	4.14	mg/kg	UJ	LR-MS
2-Butanone	8260D	SNR-12 (1'-2')	860-26536-44	ND	0.0205	mg/kg	UJ	LR-MS
2-Butanone	8260D	SNR-13 (1'-2')	860-26536-48	ND	0.0206	mg/kg	UJ	LR-MS
2-Butanone	8260D	SNR-13 (6'-7')	860-26536-49	ND	4.43	mg/kg	UJ	LR-MS
2-Butanone	8260D	SNR-14 (1'-2')	860-26536-51	ND	0.0221	mg/kg	UJ	LR-MS
2-Butanone	8260D	SNR-14 (14'-15')	860-26536-54	ND	0.0212	mg/kg	UJ	LR-MS
2-Butanone	8260D	BD02-05162022	860-26536-56	ND	4.27	mg/kg	UJ	LR-MS
2-Butanone	8260D	SNR-06 (5'-6')	860-26536-15	0.0200	0.0208	mg/kg	J-	LR-MS, MDLRL
2-Butanone	8260D	SNR-13 (14'-15')	860-26536-50	0.0066	0.0226	mg/kg	J-	LR-MS, MDLRL
2-Methylnaphthalene	8270 SIM	SNR-EX CONF (1.5'-2.5')	860-26536-1	11.7	34.6	ug/kg	J	MDLRL
Arsenic, Total	6020A	SNR-EX CONF (1.5'-2.5')	860-26536-1	2.45	3.78	mg/kg	J	MDLRL
Benzene	8260D	SNR-05 (13'-14')	860-26536-22	0.0172	0.00106	mg/kg	J+	HR-SUR
Benzene	8260D	SNR-13 (6'-7')	860-26536-49	0.548	0.222	mg/kg	J+	HR-SUR
Benzene	8260D	SNR-14 (5'-6')	860-26536-52	0.0015	0.00106	mg/kg	J+	HR-SUR
Benzene	8260D	SNR-14 (9'-10')	860-26536-53	0.0821	0.00109	mg/kg	J+	HR-SUR
Benzene	8260D	SNR-10 (10.5'-11.5')	860-26536-38	0.0161	0.0291	mg/kg	J+	HR-SUR, MDLRL
Benzene	8260D	SNR-03 (12'-13')	860-26536-12	0.0831	0.00112	mg/kg	J	ERPD-FD
Benzene	8260D	BD01-05162022	860-26536-55	0.392	0.0271	mg/kg	J	ERPD-FD
Benzene	8260D	SNR-07 (6'-7')	860-26536-25	0.174	0.212	mg/kg	J	MDLRL
Benzene	8260D	SNR-11 (1'-2')	860-26536-40	0.000481	0.00107	mg/kg	J	MDLRL
Benzene	8260D	SNR-11 (9'-10')	860-26536-42	0.000434	0.00101	mg/kg	J	MDLRL
Benzene	8260D	SNR-12 (1'-2')	860-26536-44	0.000509	0.00103	mg/kg	J	MDLRL
Benzene	8260D	SNR-13 (14'-15')	860-26536-50	0.000974	0.00113	mg/kg	J	MDLRL
Benzene	8260D	BD01-05172022	860-26536-57	0.0161	0.0252	mg/kg	J	MDLRL

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
C28-C36	8015 MOD	SNR-06 (1'-2')	860-26536-13	30.5	50.0	mg/kg	J	MDLRL
Cadmium, Total	6020A	SNR-EX CONF (1.5'-2.5')	860-26536-1	0.114	1.89	mg/kg	J	MDLRL
Carbon Disulfide	8260D	SNR-06 (7'-8')	860-26536-14	0.00575	0.00519	mg/kg	J+	HR-SUR
Carbon Disulfide	8260D	SNR-03 (10'-11')	860-26536-11	0.00415	0.00558	mg/kg	J+	HR-SUR, MDLRL
Carbon Disulfide	8260D	SNR-14 (9'-10')	860-26536-53	0.00368	0.00545	mg/kg	J+	HR-SUR, MDLRL
Carbon Disulfide	8260D	SNR-03 (12'-13')	860-26536-12	0.00204	0.00561	mg/kg	J	MDLRL
Carbon Disulfide	8260D	SNR-06 (5'-6')	860-26536-15	0.000654	0.00521	mg/kg	J	MDLRL
Carbon Disulfide	8260D	SNR-04 (5'-6')	860-26536-17	0.00299	0.00546	mg/kg	J	MDLRL
Carbon Disulfide	8260D	SNR-01 (14'-15')	860-26536-5	0.00316	0.00547	mg/kg	J	MDLRL
Carbon Disulfide	8260D	SNR-13 (14'-15')	860-26536-50	0.000788	0.00565	mg/kg	J	MDLRL
Carbon Disulfide	8260D	SNR-14 (14'-15')	860-26536-54	0.00109	0.00530	mg/kg	J	MDLRL
Carbon Disulfide	8260D	SNR-02 (1'-2')	860-26536-6	0.00258	0.00502	mg/kg	J	MDLRL
Chlorobenzene	8260D	SNR-EX CONF (1.5'-2.5')	860-26536-1	ND	0.00519	mg/kg	UJ	LR-MS
Chlorobenzene	8260D	SNR-03 (5'-6')	860-26536-10	ND	1.02	mg/kg	UJ	LR-MS
Chlorobenzene	8260D	SNR-03 (10'-11')	860-26536-11	ND	0.00558	mg/kg	UJ	LR-MS
Chlorobenzene	8260D	SNR-03 (12'-13')	860-26536-12	ND	0.00561	mg/kg	UJ	LR-MS
Chlorobenzene	8260D	SNR-06 (1'-2')	860-26536-13	ND	0.00507	mg/kg	UJ	LR-MS
Chlorobenzene	8260D	SNR-06 (7'-8')	860-26536-14	ND	0.00519	mg/kg	UJ	LR-MS
Chlorobenzene	8260D	SNR-06 (5'-6')	860-26536-15	ND	0.00521	mg/kg	UJ	LR-MS
Chlorobenzene	8260D	SNR-04 (1'-2')	860-26536-16	ND	0.00517	mg/kg	UJ	LR-MS
Chlorobenzene	8260D	SNR-04 (5'-6')	860-26536-17	ND	0.00546	mg/kg	UJ	LR-MS
Chlorobenzene	8260D	SNR-04 (11'-12')	860-26536-18	ND	0.00530	mg/kg	UJ	LR-MS
Chlorobenzene	8260D	SNR-04 (14'-15')	860-26536-19	ND	0.00534	mg/kg	UJ	LR-MS
Chlorobenzene	8260D	SNR-01 (1'-2')	860-26536-2	ND	0.00502	mg/kg	UJ	LR-MS
Chlorobenzene	8260D	SNR-05 (1'-2')	860-26536-20	ND	0.00497	mg/kg	UJ	LR-MS
Chlorobenzene	8260D	SNR-01 (5'-6')	860-26536-3	ND	1.08	mg/kg	UJ	LR-MS
Chlorobenzene	8260D	SNR-01 (9'-10')	860-26536-4	ND	1.07	mg/kg	UJ	LR-MS

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Chlorobenzene	8260D	SNR-01 (14'-15')	860-26536-5	ND	0.00547	mg/kg	UJ	LR-MS
Chlorobenzene	8260D	SNR-02 (1'-2')	860-26536-6	ND	0.00502	mg/kg	UJ	LR-MS
Chlorobenzene	8260D	SNR-02 (4'-5')	860-26536-7	ND	0.00520	mg/kg	UJ	LR-MS
Chlorobenzene	8260D	SNR-02 (7'-8')	860-26536-8	ND	1.10	mg/kg	UJ	LR-MS
Chlorobenzene	8260D	SNR-03 (1'-2')	860-26536-9	ND	0.00511	mg/kg	UJ	LR-MS
Chloroform	8260D	SNR-05 (5'-6')	860-26536-21	0.0530	1.04	mg/kg	J	MDLRL
Ethylbenzene	8260D	SNR-02 (7'-8')	860-26536-8	32.2	0.220	mg/kg	J+	HR-MS
Ethylbenzene	8260D	SNR-EX CONF (1.5'-2.5')	860-26536-1	0.0183	0.00104	mg/kg	J-	LR-MS
Ethylbenzene	8260D	SNR-03 (5'-6')	860-26536-10	11.1	0.204	mg/kg	J-	LR-MS
Ethylbenzene	8260D	SNR-06 (1'-2')	860-26536-13	0.113	0.00101	mg/kg	J-	LR-MS
Ethylbenzene	8260D	SNR-04 (14'-15')	860-26536-19	0.0117	0.00107	mg/kg	J-	LR-MS
Ethylbenzene	8260D	SNR-05 (1'-2')	860-26536-20	0.00512	0.000994	mg/kg	J-	LR-MS
Ethylbenzene	8260D	SNR-01 (5'-6')	860-26536-3	24.9	0.217	mg/kg	J-	LR-MS
Ethylbenzene	8260D	SNR-01 (9'-10')	860-26536-4	9.6	0.213	mg/kg	J-	LR-MS
Ethylbenzene	8260D	SNR-01 (14'-15')	860-26536-5	0.0041	0.00109	mg/kg	J-	LR-MS
Ethylbenzene	8260D	SNR-01 (1'-2')	860-26536-2	ND	0.00100	mg/kg	UJ	LR-MS
Ethylbenzene	8260D	SNR-09 (6'-7')	860-26536-29	8.26	0.200	mg/kg	J	ERPD-FD
Ethylbenzene	8260D	SNR-09 (8'-9')	860-26536-30DL	63.5	2.15	mg/kg	J	ERPD-FD
Ethylbenzene	8260D	SNR-09 (13'-14')	860-26536-31	12.4	0.209	mg/kg	J	ERPD-FD
Ethylbenzene	8260D	SNR-08 (9'-10')	860-26536-34	7.59	0.205	mg/kg	J	ERPD-FD
Ethylbenzene	8260D	SNR-08 (13'-13.5')	860-26536-35	1.47	0.0263	mg/kg	J	ERPD-FD
Ethylbenzene	8260D	SNR-10 (14.5'-15')	860-26536-39	1.46	0.0294	mg/kg	J	ERPD-FD
Ethylbenzene	8260D	SNR-11 (1'-2')	860-26536-40	0.00268	0.00107	mg/kg	J	ERPD-FD
Ethylbenzene	8260D	SNR-11 (9'-10')	860-26536-42	0.0104	0.00101	mg/kg	J	ERPD-FD
Ethylbenzene	8260D	SNR-11 (14.5'-15')	860-26536-43	9.57	0.207	mg/kg	J	ERPD-FD
Ethylbenzene	8260D	SNR-12 (14'-15')	860-26536-47	56.9	2.08	mg/kg	J	ERPD-FD
Ethylbenzene	8260D	SNR-13 (1'-2')	860-26536-48DL	0.147	0.0256	mg/kg	J	ERPD-FD

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Ethylbenzene	8260D	SNR-13 (14'-15')	860-26536-50	0.00466	0.00113	mg/kg	J	ERPD-FD
Ethylbenzene	8260D	BD01-05162022	860-26536-55	0.514	0.0271	mg/kg	J	ERPD-FD
Ethylbenzene	8260D	BD01-05172022	860-26536-57	2.01	0.0252	mg/kg	J	ERPD-FD
Ethylbenzene	8260D	SNR-09 (1'-2')	860-26536-28	ND	0.00102	mg/kg	UJ	ERPD-FD
Ethylbenzene	8260D	SNR-08 (1'-2')	860-26536-32	ND	0.00105	mg/kg	UJ	ERPD-FD
Ethylbenzene	8260D	SNR-10 (1'-2')	860-26536-36	ND	0.00108	mg/kg	UJ	ERPD-FD
Ethylbenzene	8260D	SNR-11 (5'-6')	860-26536-41	ND	0.00109	mg/kg	UJ	ERPD-FD
Ethylbenzene	8260D	SNR-12 (1'-2')	860-26536-44	ND	0.00103	mg/kg	UJ	ERPD-FD
Ethylbenzene	8260D	SNR-10 (10.5'-11.5')	860-26536-38	1.43	0.0291	mg/kg	J+	ERPD-FD, HR-SUR
Ethylbenzene	8260D	SNR-12 (6'-7')	860-26536-45	0.0675	0.00101	mg/kg	J+	ERPD-FD, HR-SUR
Ethylbenzene	8260D	SNR-12 (9.5'-10')	860-26536-46	0.583	0.0257	mg/kg	J+	ERPD-FD, HR-SUR
Ethylbenzene	8260D	SNR-13 (6'-7')	860-26536-49	11.3	0.222	mg/kg	J+	ERPD-FD, HR-SUR
Ethylbenzene	8260D	SNR-03 (12'-13')	860-26536-12	0.0556	0.00112	mg/kg	J-	ERPD-FD, LR-MS
Ethylbenzene	8260D	SNR-08 (5'-6')	860-26536-33	0.000907	0.00103	mg/kg	J	ERPD-FD, MDLRL
Ethylbenzene	8260D	SNR-10 (5'-6')	860-26536-37	0.000578	0.00111	mg/kg	J	ERPD-FD, MDLRL
m,p-Xylene	8260D	SNR-14 (5'-6')	860-26536-52	0.0623	0.00212	mg/kg	J+	HR-SUR
m,p-Xylene	8260D	SNR-14 (9'-10')	860-26536-53	0.0328	0.00218	mg/kg	J+	HR-SUR
m,p-Xylene	8260D	SNR-01 (5'-6')	860-26536-3DL	144	2.17	mg/kg	J+	HR-MS
m,p-Xylene	8260D	SNR-03 (12'-13')	860-26536-12	0.0850	0.00226	mg/kg	J	ERPD-FD
m,p-Xylene	8260D	SNR-09 (6'-7')	860-26536-29DL	39.9	2.00	mg/kg	J	ERPD-FD
m,p-Xylene	8260D	SNR-09 (8'-9')	860-26536-30DL	204	4.29	mg/kg	J	ERPD-FD
m,p-Xylene	8260D	SNR-09 (13'-14')	860-26536-31DL	23.7	2.09	mg/kg	J	ERPD-FD
m,p-Xylene	8260D	SNR-08 (5'-6')	860-26536-33	0.00415	0.00207	mg/kg	J	ERPD-FD
m,p-Xylene	8260D	SNR-08 (9'-10')	860-26536-34	24.2	0.410	mg/kg	J	ERPD-FD
m,p-Xylene	8260D	SNR-08 (13'-13.5')	860-26536-35	0.506	0.0525	mg/kg	J	ERPD-FD
m,p-Xylene	8260D	SNR-10 (10.5'-11.5')	860-26536-38DL	4.09	0.466	mg/kg	J	ERPD-FD
m,p-Xylene	8260D	SNR-10 (14.5'-15')	860-26536-39	0.338	0.0588	mg/kg	J	ERPD-FD

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
m,p-Xylene	8260D	SNR-11 (1'-2')	860-26536-40	0.00803	0.00213	mg/kg	J	ERPD-FD
m,p-Xylene	8260D	SNR-11 (9'-10')	860-26536-42	0.0244	0.00201	mg/kg	J	ERPD-FD
m,p-Xylene	8260D	SNR-11 (14.5'-15')	860-26536-43	29.1	0.414	mg/kg	J	ERPD-FD
m,p-Xylene	8260D	SNR-12 (6'-7')	860-26536-45DL	0.597	0.0505	mg/kg	J	ERPD-FD
m,p-Xylene	8260D	SNR-12 (14'-15')	860-26536-47	152	4.16	mg/kg	J	ERPD-FD
m,p-Xylene	8260D	SNR-13 (1'-2')	860-26536-48DL	0.655	0.0513	mg/kg	J	ERPD-FD
m,p-Xylene	8260D	SNR-13 (14'-15')	860-26536-50	0.0101	0.00226	mg/kg	J	ERPD-FD
m,p-Xylene	8260D	BD01-05162022	860-26536-55	1.84	0.0541	mg/kg	J	ERPD-FD
m,p-Xylene	8260D	BD01-05172022	860-26536-57DL	11.0	0.403	mg/kg	J	ERPD-FD
m,p-Xylene	8260D	SNR-09 (1'-2')	860-26536-28	ND	0.00204	mg/kg	UJ	ERPD-FD
m,p-Xylene	8260D	SNR-08 (1'-2')	860-26536-32	ND	0.00209	mg/kg	UJ	ERPD-FD
m,p-Xylene	8260D	SNR-10 (1'-2')	860-26536-36	ND	0.00215	mg/kg	UJ	ERPD-FD
m,p-Xylene	8260D	SNR-11 (5'-6')	860-26536-41	ND	0.00218	mg/kg	UJ	ERPD-FD
m,p-Xylene	8260D	SNR-12 (9.5'-10')	860-26536-46	1.68	0.0513	mg/kg	J+	ERPD-FD, HR-SUR
m,p-Xylene	8260D	SNR-13 (6'-7')	860-26536-49	24.3	0.443	mg/kg	J+	ERPD-FD, HR-SUR
m,p-Xylene	8260D	SNR-10 (5'-6')	860-26536-37	0.00219	0.00222	mg/kg	J	ERPD-FD, MDLRL
m,p-Xylene	8260D	SNR-12 (1'-2')	860-26536-44	0.00125	0.00205	mg/kg	J	ERPD-FD, MDLRL
m,p-Xylene	8260D	SNR-04 (1'-2')	860-26536-16	0.00127	0.0021	mg/kg	J	MDLRL
o-Xylene	8260D	SNR-14 (5'-6')	860-26536-52	0.0362	0.00106	mg/kg	J+	HR-SUR
o-Xylene	8260D	SNR-14 (9'-10')	860-26536-53	0.0275	0.00109	mg/kg	J+	HR-SUR
o-Xylene	8260D	SNR-02 (7'-8')	860-26536-8DL2	87.9	2.20	mg/kg	J+	HR-MS
o-Xylene	8260D	SNR-03 (12'-13')	860-26536-12	0.0322	0.00113	mg/kg	J	ERPD-FD
o-Xylene	8260D	SNR-09 (6'-7')	860-26536-29DL	17.4	1.00	mg/kg	J	ERPD-FD
o-Xylene	8260D	SNR-09 (8'-9')	860-26536-30DL	74.8	2.15	mg/kg	J	ERPD-FD
o-Xylene	8260D	SNR-09 (13'-14')	860-26536-31DL	7.90	1.05	mg/kg	J	ERPD-FD
o-Xylene	8260D	SNR-08 (1'-2')	860-26536-32	0.00155	0.00105	mg/kg	J	ERPD-FD
o-Xylene	8260D	SNR-08 (5'-6')	860-26536-33	0.00211	0.00103	mg/kg	J	ERPD-FD

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
o-Xylene	8260D	SNR-08 (9'-10')	860-26536-34	7.91	0.205	mg/kg	J	ERPD-FD
o-Xylene	8260D	SNR-08 (13'-13.5')	860-26536-35	0.141	0.0263	mg/kg	J	ERPD-FD
o-Xylene	8260D	SNR-10 (10.5'-11.5')	860-26536-38DL	1.45	0.233	mg/kg	J	ERPD-FD
o-Xylene	8260D	SNR-10 (14.5'-15')	860-26536-39	0.095	0.0294	mg/kg	J	ERPD-FD
o-Xylene	8260D	SNR-11 (1'-2')	860-26536-40	0.00136	0.00107	mg/kg	J	ERPD-FD
o-Xylene	8260D	SNR-11 (9'-10')	860-26536-42	0.00929	0.00101	mg/kg	J	ERPD-FD
o-Xylene	8260D	SNR-11 (14.5'-15')	860-26536-43	10.1	0.207	mg/kg	J	ERPD-FD
o-Xylene	8260D	SNR-12 (6'-7')	860-26536-45DL	0.201	0.0253	mg/kg	J	ERPD-FD
o-Xylene	8260D	SNR-12 (14'-15')	860-26536-47	52.7	2.08	mg/kg	J	ERPD-FD
o-Xylene	8260D	SNR-13 (1'-2')	860-26536-48DL	0.835	0.0256	mg/kg	J	ERPD-FD
o-Xylene	8260D	SNR-13 (14'-15')	860-26536-50	0.00174	0.00113	mg/kg	J	ERPD-FD
o-Xylene	8260D	BD01-05162022	860-26536-55	0.644	0.0271	mg/kg	J	ERPD-FD
o-Xylene	8260D	BD01-05172022	860-26536-57DL	4.79	0.201	mg/kg	J	ERPD-FD
o-Xylene	8260D	SNR-09 (1'-2')	860-26536-28	ND	0.00102	mg/kg	UJ	ERPD-FD
o-Xylene	8260D	SNR-10 (1'-2')	860-26536-36	ND	0.00108	mg/kg	UJ	ERPD-FD
o-Xylene	8260D	SNR-10 (5'-6')	860-26536-37	ND	0.00111	mg/kg	UJ	ERPD-FD
o-Xylene	8260D	SNR-11 (5'-6')	860-26536-41	ND	0.00109	mg/kg	UJ	ERPD-FD
o-Xylene	8260D	SNR-12 (1'-2')	860-26536-44	ND	0.00103	mg/kg	UJ	ERPD-FD
o-Xylene	8260D	SNR-12 (9.5'-10')	860-26536-46	0.549	0.0257	mg/kg	J+	ERPD-FD, HR-SUR
o-Xylene	8260D	SNR-13 (6'-7')	860-26536-49	8.27	0.222	mg/kg	J+	ERPD-FD, HR-SUR
o-Xylene	8260D	SNR-14 (1'-2')	860-26536-51	0.00109	0.0011	mg/kg	J	MDLRL
Styrene	8260D	SNR-EX CONF (1.5'-2.5')	860-26536-1	ND	0.00519	mg/kg	UJ	LR-MS
Styrene	8260D	SNR-03 (5'-6')	860-26536-10	ND	1.02	mg/kg	UJ	LR-MS
Styrene	8260D	SNR-03 (10'-11')	860-26536-11	ND	0.00558	mg/kg	UJ	LR-MS
Styrene	8260D	SNR-03 (12'-13')	860-26536-12	ND	0.00561	mg/kg	UJ	LR-MS
Styrene	8260D	SNR-06 (1'-2')	860-26536-13	ND	0.00507	mg/kg	UJ	LR-MS
Styrene	8260D	SNR-06 (7'-8')	860-26536-14	ND	0.00519	mg/kg	UJ	LR-MS

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Styrene	8260D	SNR-06 (5'-6')	860-26536-15	ND	0.00521	mg/kg	UJ	LR-MS
Styrene	8260D	SNR-04 (1'-2')	860-26536-16	ND	0.00517	mg/kg	UJ	LR-MS
Styrene	8260D	SNR-04 (5'-6')	860-26536-17	ND	0.00546	mg/kg	UJ	LR-MS
Styrene	8260D	SNR-04 (11'-12')	860-26536-18	ND	0.0053	mg/kg	UJ	LR-MS
Styrene	8260D	SNR-04 (14'-15')	860-26536-19	ND	0.00534	mg/kg	UJ	LR-MS
Styrene	8260D	SNR-01 (1'-2')	860-26536-2	ND	0.00502	mg/kg	UJ	LR-MS
Styrene	8260D	SNR-05 (1'-2')	860-26536-20	ND	0.00497	mg/kg	UJ	LR-MS
Styrene	8260D	SNR-01 (5'-6')	860-26536-3	ND	1.08	mg/kg	UJ	LR-MS
Styrene	8260D	SNR-01 (9'-10')	860-26536-4	ND	1.07	mg/kg	UJ	LR-MS
Styrene	8260D	SNR-01 (14'-15')	860-26536-5	ND	0.00547	mg/kg	UJ	LR-MS
Styrene	8260D	SNR-02 (1'-2')	860-26536-6	ND	0.00502	mg/kg	UJ	LR-MS
Styrene	8260D	SNR-02 (4'-5')	860-26536-7	ND	0.00520	mg/kg	UJ	LR-MS
Styrene	8260D	SNR-02 (7'-8')	860-26536-8	ND	1.100	mg/kg	UJ	LR-MS
Styrene	8260D	SNR-03 (1'-2')	860-26536-9	ND	0.00511	mg/kg	UJ	LR-MS
Tetrachloroethene	8260D	SNR-EX CONF (1.5'-2.5')	860-26536-1	ND	0.00519	mg/kg	UJ	LR-MS
Tetrachloroethene	8260D	SNR-03 (5'-6')	860-26536-10	ND	1.02	mg/kg	UJ	LR-MS
Tetrachloroethene	8260D	SNR-03 (10'-11')	860-26536-11	ND	0.00558	mg/kg	UJ	LR-MS
Tetrachloroethene	8260D	SNR-03 (12'-13')	860-26536-12	ND	0.00561	mg/kg	UJ	LR-MS
Tetrachloroethene	8260D	SNR-06 (1'-2')	860-26536-13	ND	0.00507	mg/kg	UJ	LR-MS
Tetrachloroethene	8260D	SNR-06 (7'-8')	860-26536-14	ND	0.00519	mg/kg	UJ	LR-MS
Tetrachloroethene	8260D	SNR-06 (5'-6')	860-26536-15	ND	0.00521	mg/kg	UJ	LR-MS
Tetrachloroethene	8260D	SNR-04 (1'-2')	860-26536-16	ND	0.00517	mg/kg	UJ	LR-MS
Tetrachloroethene	8260D	SNR-04 (5'-6')	860-26536-17	ND	0.00546	mg/kg	UJ	LR-MS
Tetrachloroethene	8260D	SNR-04 (11'-12')	860-26536-18	ND	0.00530	mg/kg	UJ	LR-MS
Tetrachloroethene	8260D	SNR-04 (14'-15')	860-26536-19	ND	0.00534	mg/kg	UJ	LR-MS
Tetrachloroethene	8260D	SNR-01 (1'-2')	860-26536-2	ND	0.00502	mg/kg	UJ	LR-MS
Tetrachloroethene	8260D	SNR-05 (1'-2')	860-26536-20	ND	0.00497	mg/kg	UJ	LR-MS

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Tetrachloroethene	8260D	SNR-01 (5'-6')	860-26536-3	ND	1.08	mg/kg	UJ	LR-MS
Tetrachloroethene	8260D	SNR-01 (9'-10')	860-26536-4	ND	1.07	mg/kg	UJ	LR-MS
Tetrachloroethene	8260D	SNR-01 (14'-15')	860-26536-5	ND	0.00547	mg/kg	UJ	LR-MS
Tetrachloroethene	8260D	SNR-02 (1'-2')	860-26536-6	ND	0.00502	mg/kg	UJ	LR-MS
Tetrachloroethene	8260D	SNR-02 (4'-5')	860-26536-7	ND	0.00520	mg/kg	UJ	LR-MS
Tetrachloroethene	8260D	SNR-02 (7'-8')	860-26536-8	ND	1.10	mg/kg	UJ	LR-MS
Tetrachloroethene	8260D	SNR-03 (1'-2')	860-26536-9	ND	0.00511	mg/kg	UJ	LR-MS
Toluene	8260D	SNR-06 (5'-6')	860-26536-15	0.0421	0.00528	mg/kg	J+	HR-SUR
Toluene	8260D	SNR-10 (10.5'-11.5')	860-26536-38	1.00	0.146	mg/kg	J+	HR-SUR
Toluene	8260D	SNR-13 (6'-7')	860-26536-49	5.84	1.11	mg/kg	J+	HR-SUR
Toluene	8260D	SNR-14 (5'-6')	860-26536-52	0.0154	0.00531	mg/kg	J+	HR-SUR
Toluene	8260D	SNR-14 (9'-10')	860-26536-53	0.0259	0.00545	mg/kg	J+	HR-SUR
Toluene	8260D	SNR-12 (6'-7')	860-26536-45	0.00136	0.00505	mg/kg	J+	HR-SUR, MDLRL
Toluene	8260D	SNR-12 (9.5'-10')	860-26536-46	0.123	0.128	mg/kg	J+	HR-SUR, MDLRL
Toluene	8260D	SNR-02 (7'-8')	860-26536-8DL2	182	11.0	mg/kg	J+	HR-MS
Toluene	8260D	SNR-09 (6'-7')	860-26536-29	1.51	1.00	mg/kg	J	ERPD-FD
Toluene	8260D	BD01-05172022	860-26536-57	0.584	0.126	mg/kg	J	ERPD-FD
Toluene	8260D	SNR-03 (12'-13')	860-26536-12	0.00377	0.00565	mg/kg	J	MDLRL
Toluene	8260D	SNR-05 (1'-2')	860-26536-20	0.00258	0.00497	mg/kg	J	MDLRL
Toluene	8260D	SNR-08 (13'-13.5')	860-26536-35	0.095	0.131	mg/kg	J	MDLRL
Toluene	8260D	SNR-10 (14.5'-15')	860-26536-39	0.129	0.147	mg/kg	J	MDLRL
Toluene	8260D	SNR-11 (9'-10')	860-26536-42	0.00143	0.00503	mg/kg	J	MDLRL
Toluene	8260D	SNR-12 (1'-2')	860-26536-44	0.00141	0.00513	mg/kg	J	MDLRL
TPH DRO	8015 MOD	SNR-05 (5'-6')	860-26536-21	648	51.3	mg/kg	J-	LR-MS
TPH DRO	8015 MOD	SNR-05 (13'-14')	860-26536-22	882	52.5	mg/kg	J-	LR-MS
TPH DRO	8015 MOD	SNR-07 (10'-12')	860-26536-26	1,240	52.4	mg/kg	J-	LR-MS
TPH DRO	8015 MOD	SNR-07 (14'-15')	860-26536-27	2,050	52.0	mg/kg	J-	LR-MS

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
TPH DRO	8015 MOD	SNR-09 (6'-7')	860-26536-29	575	49.4	mg/kg	J-	LR-MS
TPH DRO	8015 MOD	SNR-09 (8'-9')	860-26536-30	1,750	53.5	mg/kg	J-	LR-MS
TPH DRO	8015 MOD	SNR-09 (13'-14')	860-26536-31	441	52.2	mg/kg	J-	LR-MS
TPH DRO	8015 MOD	SNR-08 (9'-10')	860-26536-34	1,560	51.0	mg/kg	J-	LR-MS
TPH DRO	8015 MOD	SNR-05 (1'-2')	860-26536-20	ND	50.1	mg/kg	UJ	LR-MS
TPH DRO	8015 MOD	SNR-05 (14'-15')	860-26536-23	ND	52.1	mg/kg	UJ	LR-MS
TPH DRO	8015 MOD	SNR-07 (1'-2')	860-26536-24	ND	51.1	mg/kg	UJ	LR-MS
TPH DRO	8015 MOD	SNR-07 (6'-7')	860-26536-25	ND	53.3	mg/kg	UJ	LR-MS
TPH DRO	8015 MOD	SNR-09 (1'-2')	860-26536-28	ND	51.0	mg/kg	UJ	LR-MS
TPH DRO	8015 MOD	SNR-08 (1'-2')	860-26536-32	ND	52.4	mg/kg	UJ	LR-MS
TPH DRO	8015 MOD	SNR-08 (5'-6')	860-26536-33	ND	51.4	mg/kg	UJ	LR-MS
TPH DRO	8015 MOD	SNR-08 (13'-13.5')	860-26536-35	ND	52.4	mg/kg	UJ	LR-MS
TPH DRO	8015 MOD	SNR-10 (5'-6')	860-26536-37	ND	55.7	mg/kg	UJ	LR-MS
TPH DRO	8015 MOD	SNR-10 (10.5'-11.5')	860-26536-38	ND	58.4	mg/kg	UJ	LR-MS
TPH DRO	8015 MOD	SNR-11 (5'-6')	860-26536-41	ND	54.2	mg/kg	UJ	LR-MS
TPH DRO	8015 MOD	SNR-11 (1'-2')	860-26536-40	35.3	53.1	mg/kg	J-	LR-MS, MDLRL
TPH DRO	8015 MOD	SNR-04 (11'-12')	860-26536-18	80.0	52.7	mg/kg	J	ERPD-FD
TPH DRO	8015 MOD	SNR-14 (14'-15')	860-26536-54	143	52.9	mg/kg	J	ERPD-FD
TPH DRO	8015 MOD	BD02-05162022	860-26536-56	310	53.4	mg/kg	J	ERPD-FD
TPH DRO	8015 MOD	BD01-05182022	860-26536-58	393	53.0	mg/kg	J	ERPD-FD
TPH DRO	8015 MOD	SNR-EX CONF (1.5'-2.5')	860-26536-1	35.8	51.7	mg/kg	J	MDLRL
TPH DRO	8015 MOD	SNR-03 (10'-11')	860-26536-11	52.6	55.2	mg/kg	J	MDLRL
TPH DRO	8015 MOD	SNR-03 (12'-13')	860-26536-12	28.1	55.9	mg/kg	J	MDLRL
TPH GRO	8015 MOD	SNR-05 (1'-2')	860-26536-20	ND	50.1	mg/kg	R	HT-AN
TPH GRO	8015 MOD	SNR-01 (5'-6')	860-26536-3	9,070	536	mg/kg	J+	HR-SUR
TPH GRO	8015 MOD	SNR-02 (7'-8')	860-26536-8	9,650	543	mg/kg	J+	HR-SUR
TPH GRO	8015 MOD	SNR-09 (6'-7')	860-26536-29	1,280	49.4	mg/kg	J	ERPD-FD

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
TPH GRO	8015 MOD	BD02-05162022	860-26536-56	165	53.4	mg/kg	J	ERPD-FD
TPH GRO	8015 MOD	BD01-05172022	860-26536-57	600	50.0	mg/kg	J	ERPD-FD
TPH GRO	8015 MOD	SNR-04 (11'-12')	860-26536-18	49.1	52.7	mg/kg	J	ERPD-FD, MDLRL
TPH GRO	8015 MOD	SNR-03 (12'-13')	860-26536-12	38.2	55.9	mg/kg	J	MDLRL
TPH GRO	8015 MOD	SNR-10 (10.5'-11.5')	860-26536-38	43.0	58.4	mg/kg	J	MDLRL
TPH GRO	8015 MOD	SNR-12 (6'-7')	860-26536-45	41.8	50.9	mg/kg	J	MDLRL
TPH GRO	8015 MOD	SNR-12 (9.5'-10')	860-26536-46	38.9	51.4	mg/kg	J	MDLRL
Xylenes, Total	8260D	SNR-14 (5'-6')	860-26536-52	0.0985	0.00212	mg/kg	J+	HR-SUR
Xylenes, Total	8260D	SNR-14 (9'-10')	860-26536-53	0.0603	0.00218	mg/kg	J+	HR-SUR
Xylenes, Total	8260D	SNR-03 (12'-13')	860-26536-12	0.117	0.00226	mg/kg	J	ERPD-FD
Xylenes, Total	8260D	SNR-09 (6'-7')	860-26536-29DL	57.3	2.00	mg/kg	J	ERPD-FD
Xylenes, Total	8260D	SNR-09 (8'-9')	860-26536-30DL	279	4.29	mg/kg	J	ERPD-FD
Xylenes, Total	8260D	SNR-09 (13'-14')	860-26536-31DL	31.6	2.09	mg/kg	J	ERPD-FD
Xylenes, Total	8260D	SNR-08 (5'-6')	860-26536-33	0.00626	0.00207	mg/kg	J	ERPD-FD
Xylenes, Total	8260D	SNR-08 (9'-10')	860-26536-34	32.1	0.410	mg/kg	J	ERPD-FD
Xylenes, Total	8260D	SNR-08 (13'-13.5')	860-26536-35	0.647	0.0525	mg/kg	J	ERPD-FD
Xylenes, Total	8260D	SNR-10 (10.5'-11.5')	860-26536-38DL	5.54	0.466	mg/kg	J	ERPD-FD
Xylenes, Total	8260D	SNR-10 (14.5'-15')	860-26536-39	0.433	0.0588	mg/kg	J	ERPD-FD
Xylenes, Total	8260D	SNR-11 (1'-2')	860-26536-40	0.00939	0.00213	mg/kg	J	ERPD-FD
Xylenes, Total	8260D	SNR-11 (9'-10')	860-26536-42	0.0337	0.00201	mg/kg	J	ERPD-FD
Xylenes, Total	8260D	SNR-11 (14.5'-15')	860-26536-43	39.2	0.414	mg/kg	J	ERPD-FD
Xylenes, Total	8260D	SNR-12 (6'-7')	860-26536-45DL	0.798	0.0505	mg/kg	J	ERPD-FD
Xylenes, Total	8260D	SNR-12 (14'-15')	860-26536-47	205	4.16	mg/kg	J	ERPD-FD
Xylenes, Total	8260D	SNR-13 (1'-2')	860-26536-48DL	1.49	0.0513	mg/kg	J	ERPD-FD
Xylenes, Total	8260D	SNR-13 (14'-15')	860-26536-50	0.0118	0.00226	mg/kg	J	ERPD-FD
Xylenes, Total	8260D	BD01-05162022	860-26536-55	2.48	0.0541	mg/kg	J	ERPD-FD
Xylenes, Total	8260D	BD01-05172022	860-26536-57DL	15.8	0.403	mg/kg	J	ERPD-FD

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Xylenes, Total	8260D	SNR-09 (1'-2')	860-26536-28	ND	0.00204	mg/kg	UJ	ERPD-FD
Xylenes, Total	8260D	SNR-10 (1'-2')	860-26536-36	ND	0.00215	mg/kg	UJ	ERPD-FD
Xylenes, Total	8260D	SNR-11 (5'-6')	860-26536-41	ND	0.00218	mg/kg	UJ	ERPD-FD
Xylenes, Total	8260D	SNR-12 (9.5'-10')	860-26536-46	2.23	0.0513	mg/kg	J+	ERPD-FD, HR-SUR
Xylenes, Total	8260D	SNR-13 (6'-7')	860-26536-49	32.6	0.443	mg/kg	J+	ERPD-FD, HR-SUR
Xylenes, Total	8260D	SNR-08 (1'-2')	860-26536-32	0.00155	0.00209	mg/kg	J	ERPD-FD, MDLRL
Xylenes, Total	8260D	SNR-10 (5'-6')	860-26536-37	0.00219	0.00222	mg/kg	J	ERPD-FD, MDLRL
Xylenes, Total	8260D	SNR-12 (1'-2')	860-26536-44	0.00125	0.00205	mg/kg	J	ERPD-FD, MDLRL
Xylenes, Total	8260D	SNR-04 (1'-2')	860-26536-16	0.00127	0.0021	mg/kg	J	MDLRL

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ANALYTICAL REPORT

Eurofins Houston
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Stafford, TX 77477
Tel: (281)240-4200

Laboratory Job ID: 860-26536-1
Client Project/Site: Investigation # 2 Sour Naphtha

For:
Trihydro Corporation
1252 Commerce Drive
Laramie, Wyoming 82070

Attn: James Hageman

Authorized for release by:
6/14/2022 4:55:00 PM

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Laboratory Job ID: 860-26536-1

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Definitions/Glossary

Client: Trihydro Corporation Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*3	ISTD response or retention time outside acceptable limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit

Definitions/Glossary

Client: Trihydro Corporation Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Job ID: 860-26536-1

Laboratory: Eurofins Houston

Narrative

Job Narrative
860-26536-1

Receipt
The samples were received on 5/20/2022 10:24 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.0°C and 2.5°C

GC/MS VOA
Method 8260D: Reanalysis of the following sample was performed outside of the analytical holding time due to confirm 2-Butanone results with passing QC: SNR-10 (14.5'-15') (860-26536-39).

Method 8260D: The following sample was diluted due to the nature of the sample matrix: SNR-10 (14.5'-15') (860-26536-39). Elevated reporting limits (RLs) are provided.

Method 8260D: The following samples were diluted to bring the concentration of target analytes within the calibration range: SNR-02 (1'-2') (860-26536-6), SNR-03 (5'-6') (860-26536-10) and (860-26536-B-10-A MS). Elevated reporting limits (RLs) are provided.

Method 8260D: The matrix spike (MS) recoveries for preparation batch 860-54229 and analytical batch 860-54417 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8260D: The following samples were diluted to bring the concentration of target analytes within the calibration range: SNR-02 (1'-2') (860-26536-6), SNR-02 (7'-8') (860-26536-8), SNR-12 (6'-7') (860-26536-45) and (860-26536-B-8-A MS). Elevated reporting limits (RLs) are provided.

Method 8260D: The matrix spike (MS) recoveries for preparation batch 860-54229 and analytical batch 860-54516 were outside control limits. Sample matrix interference is suspected.

Method 8260D: The following samples were diluted due to the nature of the sample matrix: SNR-08 (13'-13.5') (860-26536-35) and SNR-10 (10.5'-11.5') (860-26536-38). Elevated reporting limits (RLs) are provided.

Method 8260D: Surrogate, Toluene-d8 (Surrogate) recovery for the following samples were outside control limits: SNR-10 (10.5'-11.5') (860-26536-38), SNR-12 (9.5'-10') (860-26536-46) and SNR-13 (6'-7') (860-26536-49). Evidence of matrix interference is present.

Method 8260D: The following sample was diluted due to the nature of the sample matrix: SNR-10 (14.5'-15') (860-26536-39). Elevated reporting limits (RLs) are provided.

Method 8260D: The following samples were diluted due to the nature of the sample matrix: SNR-12 (14'-15') (860-26536-47) and BD02-05162022 (860-26536-56). Elevated reporting limits (RLs) are provided.

Method 8260D: The following samples were diluted to bring the concentration of target analytes within the calibration range: SNR-02 (7'-8') (860-26536-8), SNR-10 (10.5'-11.5') (860-26536-38), SNR-10 (14.5'-15') (860-26536-39) and (860-26536-B-8-A MS). Elevated reporting limits (RLs) are provided.

Method 8260D: The following samples were diluted due to the nature of the sample matrix: SNR-08 (9'-10') (860-26536-34), SNR-11 (14.5'-15') (860-26536-43) and SNR-13 (6'-7') (860-26536-49). Elevated reporting limits (RLs) are provided.

Method 8260D: The matrix spike (MS) recoveries for preparation batch 860-54728 and analytical batch 860-54709 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8260D: The following samples were diluted due to the nature of the sample matrix: SNR-08 (13'-13.5') (860-26536-35), SNR-10

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Case Narrative

Client: Trihydro Corporation Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1 (Continued)

Laboratory: Eurofins Houston (Continued)

(10.5'-11.5') (860-26536-38), SNR-12 (9.5'-10') (860-26536-46), SNR-13 (6'-7') (860-26536-49), BD01-05162022 (860-26536-55) and BD01-05172022 (860-26536-57). Elevated reporting limits (RLs) are provided.

Method 8260D: The following samples were diluted to bring the concentration of target analytes within the calibration range: SNR-12 (14'-15') (860-26536-47), SNR-13 (1'-2') (860-26536-48), SNR-14 (5'-6') (860-26536-52), SNR-14 (9'-10') (860-26536-53) and (860-26536-B-48-C MS). Elevated reporting limits (RLs) are provided.

Method 8260D: Surrogate, 4-Bromofluorobenzene (Surrogate) recovery for the following samples were outside control limits: SNR-14 (5'-6') (860-26536-52) and SNR-14 (9'-10') (860-26536-53). Evidence of matrix interference is present.

Method 8260D: Surrogate Toluene-d8 (Surrogate) recovery for the following sample was outside control limits: SNR-14 (9'-10') (860-26536-53). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8260D: The matrix spike (MS) recoveries for preparation batch 860-54229 and analytical batch 860-54260 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8260D: The following samples were diluted due to the nature of the sample matrix: SNR-01 (5'-6') (860-26536-3), SNR-01 (9'-10') (860-26536-4), SNR-02 (7'-8') (860-26536-8) and SNR-03 (5'-6') (860-26536-10). Elevated reporting limits (RLs) are provided.

Method 8260D: Surrogate, Toluene-d8 (Surrogate) recovery for the following samples were outside control limits: SNR-03 (10'-11') (860-26536-11) and SNR-06 (7'-8') (860-26536-14). Evidence of matrix interference is present.

Method 8260D: Internal standard, 1,4-Dichlorobenzene-d4 responses were outside of acceptance limits for the following samples: SNR-02 (1'-2') (860-26536-6) and SNR-06 (7'-8') (860-26536-14). The sample(s) shows evidence of matrix interference.

Method 8260D: The following samples were diluted to bring the concentration of target analytes within the calibration range: SNR-06 (7'-8') (860-26536-14), SNR-05 (5'-6') (860-26536-21), SNR-07 (10'-12') (860-26536-26), SNR-07 (14'-15') (860-26536-27), SNR-09 (6'-7') (860-26536-29), SNR-09 (8'-9') (860-26536-30), SNR-09 (13'-14') (860-26536-31), BD01-05172022 (860-26536-57) and (860-26536-B-14-B MS). Elevated reporting limits (RLs) are provided.

Method 8260D: The following samples were diluted due to the nature of the sample matrix: SNR-09 (8'-9') (860-26536-30) and SNR-09 (13'-14') (860-26536-31). Elevated reporting limits (RLs) are provided.

Method 8260D: 1,2-Dichloroethane-d4 (Surrogate) and 4-Bromofluorobenzene (Surrogate) Surrogate <AffectedAnalyte> recovery for the following sample was outside control limits: SNR-06 (7'-8') (860-26536-14). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8260D: The matrix spike (MS) recoveries for preparation batch 860-54229 and analytical batch 860-54367 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8260D: The following samples were diluted to bring the concentration of target analytes within the calibration range: SNR-01 (5'-6') (860-26536-3), SNR-02 (4'-5') (860-26536-7), SNR-03 (1'-2') (860-26536-9), SNR-03 (10'-11') (860-26536-11), SNR-06 (1'-2') (860-26536-13), SNR-06 (7'-8') (860-26536-14), SNR-04 (5'-6') (860-26536-17), SNR-04 (11'-12') (860-26536-18) and (860-26536-B-3-A MS). Elevated reporting limits (RLs) are provided.

Method 8260D: The following samples were diluted due to the nature of the sample matrix: SNR-05 (5'-6') (860-26536-21), SNR-07 (6'-7') (860-26536-25), SNR-07 (10'-12') (860-26536-26), SNR-07 (14'-15') (860-26536-27) and SNR-09 (6'-7') (860-26536-29). Elevated reporting limits (RLs) are provided.

Method 8260D: The following samples were diluted due to the nature of the sample matrix: SNR-10 (14.5'-15') (860-26536-39) and

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Case Narrative

Client: Trihydro Corporation Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1 (Continued)

Laboratory: Eurofins Houston (Continued)

(860-26536-B-39-A MS). Elevated reporting limits (RLs) are provided.

Method 8260D: The matrix spike (MS) recoveries for preparation batch 860-54350 and analytical batch 860-54712 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8260D: The following samples were diluted to bring the concentration of target analytes within the calibration range: SNR-04 (11'-12') (860-26536-18) and SNR-05 (13'-14') (860-26536-22). Elevated reporting limits (RLs) are provided.

Method 8260D: Surrogate recovery for the following sample was outside control limits: SNR-05 (13'-14') (860-26536-22). Evidence of matrix interference is present.

Method 8260D: The matrix spike (MS) recoveries for preparation batch 860-54229 and analytical batch 860-54371 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8260D: 2-Butanone was analyzed and re-analyzed at a 25x, but both instances the CCVIS failed high and sample has a 'J' flag. A 200x is reporting 2-Butanone at ND. Sample is already 1 day out of holding time and will be reanalyzed with passing QC to confirm results at a 25x analysis.SNR-10 (14.5'-15') (860-26536-39)

Method 8260D: Surrogate recovery for the following samples were outside control limits: SNR-02 (7'-8') (860-26536-8) and (860-26536-B-8-A MS). Evidence of matrix interference is present.

Method 8260D: The matrix spike (MS) recoveries for preparation batch 860-54391 and analytical batch 860-54844 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8260D: The following samples were diluted to bring the concentration of target analytes within the calibration range: SNR-02 (4'-5') (860-26536-7) and (860-26536-B-7-B MS). Elevated reporting limits (RLs) are provided.

Method 8260D: The following samples were diluted to bring the concentration of target analytes within the calibration range: SNR-03 (1'-2') (860-26536-9), SNR-03 (10'-11') (860-26536-11) and (860-26536-B-9-B MS). Elevated reporting limits (RLs) are provided.

Method 8260D: The following samples were diluted to bring the concentration of target analytes within the calibration range: SNR-06 (5'-6') (860-26536-15), SNR-05 (13'-14') (860-26536-22) and (860-26536-B-22-C MS). Elevated reporting limits (RLs) are provided.

Method 8260D: The matrix spike (MS) recoveries for preparation batch 860-54618 and analytical batch 860-54846 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8260D: Surrogate recovery for the following sample was outside control limits: SNR-06 (5'-6') (860-26536-15). Evidence of matrix interference is present.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA

Method 8270D_SIM: Surrogate recovery for the following sample was outside control limits: SNR-EX CONF (1.5'-2.5') (860-26536-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

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Case Narrative

Client: Trihydro Corporation Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1 (Continued)

Laboratory: Eurofins Houston (Continued)

Method 8015MOD_NM: The following sample was diluted due to the nature of the sample matrix: SNR-02 (1'-2') (860-26536-6). Elevated reporting limits (RLs) are provided.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 860-54381 and analytical batch 860-54321 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: SNR-01 (5'-6') (860-26536-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The following sample was diluted to bring the concentration of target analytes within the calibration range: SNR-02 (7'-8') (860-26536-8). Elevated reporting limits (RLs) are provided.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: SNR-02 (7'-8') (860-26536-8). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The following sample was diluted to bring the concentration of target analytes within the calibration range: SNR-01 (5'-6') (860-26536-3). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Detection Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Client Sample ID: SNR-EX CONF (1.5'-2.5') — Lab Sample ID: 860-26536-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.0183		0.00104	0.000349	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	0.151		0.00208	0.00102	mg/Kg	1	☼	8260D	Total/NA
m,p-Xylenes	0.0909		0.00208	0.000830	mg/Kg	1	☼	8260D	Total/NA
o-Xylene	0.0602		0.00104	0.00102	mg/Kg	1	☼	8260D	Total/NA
1-Methylnaphthalene	8.44	J	34.6	2.34	ug/Kg	1	☼	8270D SIM	Total/NA
2-Methylnaphthalene	11.7	J	34.6	2.40	ug/Kg	1	☼	8270D SIM	Total/NA
Anthracene	3.61		3.46	2.47	ug/Kg	1	☼	8270D SIM	Total/NA
Benzo[a]anthracene	5.47		3.46	2.22	ug/Kg	1	☼	8270D SIM	Total/NA
Benzo[a]pyrene	6.11		3.46	2.54	ug/Kg	1	☼	8270D SIM	Total/NA
Benzo[b]fluoranthene	9.57		3.46	2.85	ug/Kg	1	☼	8270D SIM	Total/NA
Benzo[g,h,i]perylene	9.09		3.46	2.75	ug/Kg	1	☼	8270D SIM	Total/NA
Chrysene	8.38		3.46	1.92	ug/Kg	1	☼	8270D SIM	Total/NA
Fluoranthene	7.94		3.46	2.43	ug/Kg	1	☼	8270D SIM	Total/NA
Indeno[1,2,3-cd]pyrene	3.67		3.46	2.61	ug/Kg	1	☼	8270D SIM	Total/NA
Phenanthrene	4.31		3.46	2.43	ug/Kg	1	☼	8270D SIM	Total/NA
Pyrene	8.18		3.46	2.46	ug/Kg	1	☼	8270D SIM	Total/NA
Gasoline Range Organics (GRO)-C6-C10	55.5		51.7	21.8	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	35.8	J	51.7	21.8	mg/Kg	1	☼	8015B NM	Total/NA
Arsenic	2.45	J	3.78	0.583	mg/Kg	10	☼	6020A	Total/NA
Barium	574		3.78	0.328	mg/Kg	10	☼	6020A	Total/NA
Cadmium	0.114	J	1.89	0.110	mg/Kg	10	☼	6020A	Total/NA
Chromium	13.8		3.78	0.256	mg/Kg	10	☼	6020A	Total/NA
Lead	12.4		1.89	0.183	mg/Kg	10	☼	6020A	Total/NA
Mercury	0.188		0.0182	0.00351	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: SNR-01 (1'-2') — Lab Sample ID: 860-26536-2

No Detections.

Client Sample ID: SNR-01 (5'-6') — Lab Sample ID: 860-26536-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	9.37		0.217	0.0448	mg/Kg	200	☼	8260D	Total/NA
Ethylbenzene	24.9		0.217	0.0727	mg/Kg	200	☼	8260D	Total/NA
Toluene - DL	86.7		5.41	1.08	mg/Kg	1000	☼	8260D	Total/NA
Xylenes, Total - DL	202		2.17	1.07	mg/Kg	1000	☼	8260D	Total/NA
m,p-Xylenes - DL	144	F1	2.17	0.866	mg/Kg	1000	☼	8260D	Total/NA
o-Xylene - DL	58.1		1.08	1.07	mg/Kg	1000	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	9070		536	226	mg/Kg	10	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	3150		53.6	22.6	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-01 (9'-10') — Lab Sample ID: 860-26536-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.865	J	4.26	0.777	mg/Kg	200	☼	8260D	Total/NA
Benzene	4.11		0.213	0.0441	mg/Kg	200	☼	8260D	Total/NA
Ethylbenzene	9.60		0.213	0.0715	mg/Kg	200	☼	8260D	Total/NA
Toluene	9.48		1.07	0.213	mg/Kg	200	☼	8260D	Total/NA
Xylenes, Total	43.5		0.426	0.210	mg/Kg	200	☼	8260D	Total/NA
m,p-Xylenes	31.0		0.426	0.170	mg/Kg	200	☼	8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Houston

Detection Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Client Sample ID: SNR-01 (9'-10') (Continued) — Lab Sample ID: 860-26536-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
o-Xylene	12.5		0.213	0.210	mg/Kg	200	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	658		53.8	22.7	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	470		53.8	22.7	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-01 (14'-15') — Lab Sample ID: 860-26536-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.0177	J	0.0219	0.00399	mg/Kg	1	☼	8260D	Total/NA
Benzene	0.00586		0.00109	0.000226	mg/Kg	1	☼	8260D	Total/NA
Carbon disulfide	0.00316	J	0.00547	0.000320	mg/Kg	1	☼	8260D	Total/NA
Ethylbenzene	0.00410		0.00109	0.000367	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	0.00471		0.00219	0.00108	mg/Kg	1	☼	8260D	Total/NA
m,p-Xylenes	0.00323		0.00219	0.000874	mg/Kg	1	☼	8260D	Total/NA
o-Xylene	0.00148		0.00109	0.00108	mg/Kg	1	☼	8260D	Total/NA

Client Sample ID: SNR-02 (1'-2') — Lab Sample ID: 860-26536-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.0269		0.0201	0.00366	mg/Kg	1	☼	8260D	Total/NA
Carbon disulfide	0.00258	J	0.00502	0.000294	mg/Kg	1	☼	8260D	Total/NA
Benzene - DL	1.98		0.0253	0.00523	mg/Kg	25	☼	8260D	Total/NA
Ethylbenzene - DL	1.24		0.0253	0.00848	mg/Kg	25	☼	8260D	Total/NA
Toluene - DL2	11.6		1.01	0.202	mg/Kg	200	☼	8260D	Total/NA
Xylenes, Total - DL2	26.5		0.404	0.199	mg/Kg	200	☼	8260D	Total/NA
m,p-Xylenes - DL2	19.3		0.404	0.162	mg/Kg	200	☼	8260D	Total/NA
o-Xylene - DL2	7.21		0.202	0.199	mg/Kg	200	☼	8260D	Total/NA
Diesel Range Organics (Over C10-C28)	4340		1000	423	mg/Kg	20	☼	8015B NM	Total/NA

Client Sample ID: SNR-02 (4'-5') — Lab Sample ID: 860-26536-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.00880	J	0.0208	0.00379	mg/Kg	1	☼	8260D	Total/NA
Benzene	0.00421		0.00104	0.000215	mg/Kg	1	☼	8260D	Total/NA
Ethylbenzene - DL	2.44		0.0258	0.00866	mg/Kg	25	☼	8260D	Total/NA
Toluene - DL	0.865		0.129	0.0258	mg/Kg	25	☼	8260D	Total/NA
Xylenes, Total - DL2	15.7		0.413	0.203	mg/Kg	200	☼	8260D	Total/NA
m,p-Xylenes - DL2	11.1		0.413	0.165	mg/Kg	200	☼	8260D	Total/NA
o-Xylene - DL2	4.56		0.206	0.203	mg/Kg	200	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	1770		51.7	21.8	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	743		51.7	21.8	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-02 (7'-8') — Lab Sample ID: 860-26536-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.807	J	4.40	0.802	mg/Kg	200	☼	8260D	Total/NA
Benzene	17.7		0.220	0.0455	mg/Kg	200	☼	8260D	Total/NA
Ethylbenzene	32.2		0.220	0.0739	mg/Kg	200	☼	8260D	Total/NA
Toluene - DL2	182		11.0	2.20	mg/Kg	2000	☼	8260D	Total/NA
Xylenes, Total - DL2	351		4.40	2.17	mg/Kg	2000	☼	8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Houston

Detection Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Client Sample ID: SNR-02 (7'-8') (Continued) — Lab Sample ID: 860-26536-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
m,p-Xylenes - DL2	263		4.40	1.76	mg/Kg	2000	☼	8260D	Total/NA
o-Xylene - DL2	87.9		2.20	2.17	mg/Kg	2000	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	9650		543	229	mg/Kg	10	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	1360		54.3	22.9	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-03 (1'-2') — Lab Sample ID: 860-26536-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.0313		0.0204	0.00373	mg/Kg	1	☼	8260D	Total/NA
Benzene	0.0390		0.00102	0.000211	mg/Kg	1	☼	8260D	Total/NA
Ethylbenzene - DL	1.67		0.0255	0.00858	mg/Kg	25	☼	8260D	Total/NA
Toluene - DL	3.02		0.128	0.0255	mg/Kg	25	☼	8260D	Total/NA
Xylenes, Total - DL2	24.6		0.409	0.201	mg/Kg	200	☼	8260D	Total/NA
m,p-Xylenes - DL2	17.3		0.409	0.163	mg/Kg	200	☼	8260D	Total/NA
o-Xylene - DL2	7.29		0.204	0.201	mg/Kg	200	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	292		51.0	21.5	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	2110		51.0	21.5	mg/Kg	1	☼	8015B NM	Total/NA
Oil Range Organics (Over C28-C36)	51.6		51.0	21.5	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-03 (5'-6') — Lab Sample ID: 860-26536-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.553		0.204	0.0421	mg/Kg	200	☼	8260D	Total/NA
Ethylbenzene	11.1		0.204	0.0684	mg/Kg	200	☼	8260D	Total/NA
Toluene	14.4		1.02	0.204	mg/Kg	200	☼	8260D	Total/NA
Xylenes, Total - DL	84.3		2.04	1.00	mg/Kg	1000	☼	8260D	Total/NA
m,p-Xylenes - DL	61.3		2.04	0.814	mg/Kg	1000	☼	8260D	Total/NA
o-Xylene - DL	23.0		1.02	1.00	mg/Kg	1000	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	805		51.1	21.6	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	629		51.1	21.6	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-03 (10'-11') — Lab Sample ID: 860-26536-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Carbon disulfide	0.00415	J	0.00558	0.000326	mg/Kg	1	☼	8260D	Total/NA
Benzene - DL	0.728		0.0274	0.00567	mg/Kg	25	☼	8260D	Total/NA
Ethylbenzene - DL	1.98		0.0274	0.00920	mg/Kg	25	☼	8260D	Total/NA
Toluene - DL	0.700		0.137	0.0274	mg/Kg	25	☼	8260D	Total/NA
Xylenes, Total - DL2	15.2		0.438	0.216	mg/Kg	200	☼	8260D	Total/NA
m,p-Xylenes - DL2	11.1		0.438	0.175	mg/Kg	200	☼	8260D	Total/NA
o-Xylene - DL2	4.10		0.219	0.216	mg/Kg	200	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	76.4		55.2	23.3	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	52.6	J	55.2	23.3	mg/Kg	1	☼	8015B NM	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Houston

Detection Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Client Sample ID: SNR-03 (12'-13') Lab Sample ID: 860-26536-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.0332		0.0225	0.00409	mg/Kg	1	☼	8260D	Total/NA
Benzene	0.0831		0.00112	0.000232	mg/Kg	1	☼	8260D	Total/NA
Carbon disulfide	0.00204	J	0.00561	0.000328	mg/Kg	1	☼	8260D	Total/NA
Ethylbenzene	0.0556		0.00112	0.000377	mg/Kg	1	☼	8260D	Total/NA
Toluene	0.00377	J	0.00565	0.00113	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	0.117		0.00226	0.00111	mg/Kg	1	☼	8260D	Total/NA
m,p-Xylenes	0.0850		0.00226	0.000904	mg/Kg	1	☼	8260D	Total/NA
o-Xylene	0.0322		0.00113	0.00111	mg/Kg	1	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	38.2	J	55.9	23.6	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	28.1	J	55.9	23.6	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-06 (1'-2') Lab Sample ID: 860-26536-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.00404		0.00101	0.000210	mg/Kg	1	☼	8260D	Total/NA
Ethylbenzene	0.113		0.00101	0.000341	mg/Kg	1	☼	8260D	Total/NA
Toluene	0.0931		0.00507	0.00101	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total - DL	1.43		0.0501	0.0247	mg/Kg	25	☼	8260D	Total/NA
m,p-Xylenes - DL	0.979		0.0501	0.0201	mg/Kg	25	☼	8260D	Total/NA
o-Xylene - DL	0.450		0.0251	0.0247	mg/Kg	25	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	63.2		50.0	21.1	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	725		50.0	21.1	mg/Kg	1	☼	8015B NM	Total/NA
Oil Range Organics (Over C28-C36)	30.5	J	50.0	21.1	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-06 (7'-8') Lab Sample ID: 860-26536-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Carbon disulfide	0.00575		0.00519	0.000304	mg/Kg	1	☼	8260D	Total/NA
Benzene - DL	3.16		0.105	0.0217	mg/Kg	100	☼	8260D	Total/NA
Toluene - DL	15.4		0.523	0.105	mg/Kg	100	☼	8260D	Total/NA
Ethylbenzene - DL2	26.7		1.05	0.351	mg/Kg	1000	☼	8260D	Total/NA
Xylenes, Total - DL2	111		2.09	1.03	mg/Kg	1000	☼	8260D	Total/NA
m,p-Xylenes - DL2	81.8		2.09	0.837	mg/Kg	1000	☼	8260D	Total/NA
o-Xylene - DL2	29.5		1.05	1.03	mg/Kg	1000	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	3050		52.0	22.0	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	378		52.0	22.0	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-06 (5'-6') Lab Sample ID: 860-26536-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.0200	J	0.0208	0.00380	mg/Kg	1	☼	8260D	Total/NA
Benzene	0.00155		0.00106	0.000219	mg/Kg	1	☼	8260D	Total/NA
Carbon disulfide	0.000654	J	0.00521	0.000304	mg/Kg	1	☼	8260D	Total/NA
Toluene	0.0421		0.00528	0.00106	mg/Kg	1	☼	8260D	Total/NA
Ethylbenzene - DL	0.582		0.0263	0.00884	mg/Kg	25	☼	8260D	Total/NA
Xylenes, Total - DL	4.27		0.0527	0.0259	mg/Kg	25	☼	8260D	Total/NA
m,p-Xylenes - DL	3.03		0.0527	0.0211	mg/Kg	25	☼	8260D	Total/NA
o-Xylene - DL	1.24		0.0263	0.0259	mg/Kg	25	☼	8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Houston

Detection Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Client Sample ID: SNR-06 (5'-6') (Continued) — Lab Sample ID: 860-26536-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO)-C6-C10	342		52.3	22.1	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	116		52.3	22.1	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-04 (1'-2') — Lab Sample ID: 860-26536-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	0.00127	J	0.00210	0.00103	mg/Kg	1	☼	8260D	Total/NA
m,p-Xylenes	0.00127	J	0.00210	0.000841	mg/Kg	1	☼	8260D	Total/NA

Client Sample ID: SNR-04 (5'-6') — Lab Sample ID: 860-26536-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.0240		0.0218	0.00398	mg/Kg	1	☼	8260D	Total/NA
Benzene	0.0241		0.00109	0.000226	mg/Kg	1	☼	8260D	Total/NA
Carbon disulfide	0.00299	J	0.00546	0.000319	mg/Kg	1	☼	8260D	Total/NA
Toluene	0.00930		0.00546	0.00109	mg/Kg	1	☼	8260D	Total/NA
Ethylbenzene - DL	1.77		0.0272	0.00912	mg/Kg	25	☼	8260D	Total/NA
Xylenes, Total - DL	3.26		0.0543	0.0268	mg/Kg	25	☼	8260D	Total/NA
m,p-Xylenes - DL	3.06		0.0543	0.0217	mg/Kg	25	☼	8260D	Total/NA
o-Xylene - DL	0.197		0.0272	0.0268	mg/Kg	25	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	740		54.3	22.9	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	1010		54.3	22.9	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-04 (11'-12') — Lab Sample ID: 860-26536-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene - DL	1.27		0.0264	0.00546	mg/Kg	25	☼	8260D	Total/NA
Ethylbenzene - DL	2.79		0.0264	0.00885	mg/Kg	25	☼	8260D	Total/NA
Toluene - DL	5.10		1.05	0.211	mg/Kg	200	☼	8260D	Total/NA
Xylenes, Total - DL	17.0		0.422	0.208	mg/Kg	200	☼	8260D	Total/NA
m,p-Xylenes - DL	12.8		0.422	0.169	mg/Kg	200	☼	8260D	Total/NA
o-Xylene - DL	4.22		0.211	0.208	mg/Kg	200	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	49.1	J	52.7	22.2	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	80.0		52.7	22.2	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-04 (14'-15') — Lab Sample ID: 860-26536-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.0104	J	0.0214	0.00390	mg/Kg	1	☼	8260D	Total/NA
Benzene	0.0656		0.00107	0.000221	mg/Kg	1	☼	8260D	Total/NA
Ethylbenzene	0.0117		0.00107	0.000359	mg/Kg	1	☼	8260D	Total/NA
Toluene	0.00543		0.00534	0.00107	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	0.0170		0.00214	0.00105	mg/Kg	1	☼	8260D	Total/NA
m,p-Xylenes	0.0104		0.00214	0.000855	mg/Kg	1	☼	8260D	Total/NA
o-Xylene	0.00663		0.00107	0.00105	mg/Kg	1	☼	8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Houston

Detection Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Client Sample ID: SNR-05 (1'-2') Lab Sample ID: 860-26536-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.00245		0.000994	0.000206	mg/Kg	1	☼	8260D	Total/NA
Ethylbenzene	0.00512		0.000994	0.000334	mg/Kg	1	☼	8260D	Total/NA
Toluene	0.00258	J	0.00497	0.000994	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	0.224		0.00199	0.000979	mg/Kg	1	☼	8260D	Total/NA
m,p-Xylenes	0.147		0.00199	0.000795	mg/Kg	1	☼	8260D	Total/NA
o-Xylene	0.0772		0.000994	0.000979	mg/Kg	1	☼	8260D	Total/NA

Client Sample ID: SNR-05 (5'-6') Lab Sample ID: 860-26536-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	1.09	J	4.14	0.755	mg/Kg	200	☼	8260D	Total/NA
Benzene	1.10		0.207	0.0429	mg/Kg	200	☼	8260D	Total/NA
Chloroform	0.0530	J	1.04	0.0358	mg/Kg	200	☼	8260D	Total/NA
Ethylbenzene	18.5		0.207	0.0696	mg/Kg	200	☼	8260D	Total/NA
Toluene	6.31		1.04	0.207	mg/Kg	200	☼	8260D	Total/NA
Xylenes, Total - DL	98.6		2.07	1.02	mg/Kg	1000	☼	8260D	Total/NA
m,p-Xylenes - DL	73.7		2.07	0.829	mg/Kg	1000	☼	8260D	Total/NA
o-Xylene - DL	24.9		1.04	1.02	mg/Kg	1000	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	1070		51.3	21.7	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	648		51.3	21.7	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-05 (13'-14') Lab Sample ID: 860-26536-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.0172		0.00106	0.000219	mg/Kg	1	☼	8260D	Total/NA
Ethylbenzene - DL	3.04		0.0261	0.00877	mg/Kg	25	☼	8260D	Total/NA
Toluene - DL	1.11		0.131	0.0261	mg/Kg	25	☼	8260D	Total/NA
Xylenes, Total - DL2	15.4		0.418	0.206	mg/Kg	200	☼	8260D	Total/NA
m,p-Xylenes - DL2	11.2		0.418	0.167	mg/Kg	200	☼	8260D	Total/NA
o-Xylene - DL2	4.20		0.209	0.206	mg/Kg	200	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	313		52.5	22.2	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	882	F1	52.5	22.2	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-05 (14'-15') Lab Sample ID: 860-26536-23

No Detections.

Client Sample ID: SNR-07 (1'-2') Lab Sample ID: 860-26536-24

No Detections.

Client Sample ID: SNR-07 (6'-7') Lab Sample ID: 860-26536-25

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	1.18	J	4.23	0.771	mg/Kg	200	☼	8260D	Total/NA
Benzene	0.174	J	0.212	0.0438	mg/Kg	200	☼	8260D	Total/NA
Ethylbenzene	2.10		0.212	0.0710	mg/Kg	200	☼	8260D	Total/NA
Toluene	1.78		1.06	0.212	mg/Kg	200	☼	8260D	Total/NA
Xylenes, Total	11.2		0.423	0.208	mg/Kg	200	☼	8260D	Total/NA
m,p-Xylenes	8.24		0.423	0.169	mg/Kg	200	☼	8260D	Total/NA
o-Xylene	2.97		0.212	0.208	mg/Kg	200	☼	8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Houston

Detection Summary

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-07 (6'-7') (Continued) — Lab Sample ID: 860-26536-25

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO)-C6-C10	56.9		53.3	22.5	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-07 (10'-12') — Lab Sample ID: 860-26536-26

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	1.08	J	4.16	0.758	mg/Kg	200	☼	8260D	Total/NA
Benzene	3.67		0.208	0.0430	mg/Kg	200	☼	8260D	Total/NA
Ethylbenzene	14.4		0.208	0.0698	mg/Kg	200	☼	8260D	Total/NA
Toluene	11.8		1.04	0.208	mg/Kg	200	☼	8260D	Total/NA
Xylenes, Total - DL	62.7		2.08	1.02	mg/Kg	1000	☼	8260D	Total/NA
m,p-Xylenes - DL	46.9		2.08	0.832	mg/Kg	1000	☼	8260D	Total/NA
o-Xylene - DL	15.8		1.04	1.02	mg/Kg	1000	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	1060		52.4	22.1	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	1240		52.4	22.1	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-07 (14'-15') — Lab Sample ID: 860-26536-27

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	1.15	J	4.14	0.755	mg/Kg	200	☼	8260D	Total/NA
Benzene	5.52		0.207	0.0428	mg/Kg	200	☼	8260D	Total/NA
Ethylbenzene - DL	39.4		1.04	0.348	mg/Kg	1000	☼	8260D	Total/NA
Toluene - DL	79.0		5.18	1.04	mg/Kg	1000	☼	8260D	Total/NA
Xylenes, Total - DL	195		2.07	1.02	mg/Kg	1000	☼	8260D	Total/NA
m,p-Xylenes - DL	139		2.07	0.828	mg/Kg	1000	☼	8260D	Total/NA
o-Xylene - DL	55.7		1.04	1.02	mg/Kg	1000	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	3060		52.0	21.9	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	2050		52.0	21.9	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-09 (1'-2') — Lab Sample ID: 860-26536-28

No Detections.

Client Sample ID: SNR-09 (6'-7') — Lab Sample ID: 860-26536-29

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	1.04	J	4.00	0.729	mg/Kg	200	☼	8260D	Total/NA
Ethylbenzene	8.26		0.200	0.0671	mg/Kg	200	☼	8260D	Total/NA
Toluene	1.51		1.00	0.200	mg/Kg	200	☼	8260D	Total/NA
Xylenes, Total - DL	57.3		2.00	0.985	mg/Kg	1000	☼	8260D	Total/NA
m,p-Xylenes - DL	39.9		2.00	0.800	mg/Kg	1000	☼	8260D	Total/NA
o-Xylene - DL	17.4		1.00	0.985	mg/Kg	1000	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	1280		49.4	20.8	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	575		49.4	20.8	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-09 (8'-9') — Lab Sample ID: 860-26536-30

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.804	J	4.29	0.782	mg/Kg	200	☼	8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Houston

Detection Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Client Sample ID: SNR-09 (8'-9') (Continued) — Lab Sample ID: 860-26536-30

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	10.8		0.215	0.0444	mg/Kg	200	☼	8260D	Total/NA
Toluene	14.8		1.07	0.215	mg/Kg	200	☼	8260D	Total/NA
Ethylbenzene - DL	63.5		2.15	0.720	mg/Kg	2000	☼	8260D	Total/NA
Xylenes, Total - DL	279		4.29	2.11	mg/Kg	2000	☼	8260D	Total/NA
m,p-Xylenes - DL	204		4.29	1.72	mg/Kg	2000	☼	8260D	Total/NA
o-Xylene - DL	74.8		2.15	2.11	mg/Kg	2000	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	1140		53.5	22.6	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	1750		53.5	22.6	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-09 (13'-14') — Lab Sample ID: 860-26536-31

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	1.05	J	4.19	0.764	mg/Kg	200	☼	8260D	Total/NA
Benzene	1.37		0.209	0.0433	mg/Kg	200	☼	8260D	Total/NA
Ethylbenzene	12.4		0.209	0.0703	mg/Kg	200	☼	8260D	Total/NA
Toluene	2.93		1.05	0.209	mg/Kg	200	☼	8260D	Total/NA
Xylenes, Total - DL	31.6		2.09	1.03	mg/Kg	1000	☼	8260D	Total/NA
m,p-Xylenes - DL	23.7		2.09	0.838	mg/Kg	1000	☼	8260D	Total/NA
o-Xylene - DL	7.90		1.05	1.03	mg/Kg	1000	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	322		52.2	22.0	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	441		52.2	22.0	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-08 (1'-2') — Lab Sample ID: 860-26536-32

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	0.00155	J	0.00209	0.00103	mg/Kg	1	☼	8260D	Total/NA
o-Xylene	0.00155		0.00105	0.00103	mg/Kg	1	☼	8260D	Total/NA

Client Sample ID: SNR-08 (5'-6') — Lab Sample ID: 860-26536-33

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.000907	J	0.00103	0.000347	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	0.00626		0.00207	0.00102	mg/Kg	1	☼	8260D	Total/NA
m,p-Xylenes	0.00415		0.00207	0.000826	mg/Kg	1	☼	8260D	Total/NA
o-Xylene	0.00211		0.00103	0.00102	mg/Kg	1	☼	8260D	Total/NA

Client Sample ID: SNR-08 (9'-10') — Lab Sample ID: 860-26536-34

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.661		0.205	0.0424	mg/Kg	200	☼	8260D	Total/NA
Ethylbenzene	7.59		0.205	0.0688	mg/Kg	200	☼	8260D	Total/NA
Toluene	2.51		1.02	0.205	mg/Kg	200	☼	8260D	Total/NA
Xylenes, Total	32.1		0.410	0.202	mg/Kg	200	☼	8260D	Total/NA
m,p-Xylenes	24.2		0.410	0.164	mg/Kg	200	☼	8260D	Total/NA
o-Xylene	7.91		0.205	0.202	mg/Kg	200	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	302		51.0	21.5	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	1560		51.0	21.5	mg/Kg	1	☼	8015B NM	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Houston

Detection Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Client Sample ID: SNR-08 (13'-13.5') — Lab Sample ID: 860-26536-35

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.933		0.525	0.0957	mg/Kg	25	☼	8260D	Total/NA
Benzene	0.0375		0.0263	0.00543	mg/Kg	25	☼	8260D	Total/NA
Ethylbenzene	1.47		0.0263	0.00881	mg/Kg	25	☼	8260D	Total/NA
Toluene	0.0950	J	0.131	0.0263	mg/Kg	25	☼	8260D	Total/NA
Xylenes, Total	0.647		0.0525	0.0259	mg/Kg	25	☼	8260D	Total/NA
m,p-Xylenes	0.506		0.0525	0.0210	mg/Kg	25	☼	8260D	Total/NA
o-Xylene	0.141		0.0263	0.0259	mg/Kg	25	☼	8260D	Total/NA

Client Sample ID: SNR-10 (1'-2') — Lab Sample ID: 860-26536-36

No Detections.

Client Sample ID: SNR-10 (5'-6') — Lab Sample ID: 860-26536-37

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.000578	J	0.00111	0.000373	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	0.00219	J	0.00222	0.00109	mg/Kg	1	☼	8260D	Total/NA
m,p-Xylenes	0.00219	J	0.00222	0.000888	mg/Kg	1	☼	8260D	Total/NA

Client Sample ID: SNR-10 (10.5'-11.5') — Lab Sample ID: 860-26536-38

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.978		0.582	0.106	mg/Kg	25	☼	8260D	Total/NA
Benzene	0.0161	J	0.0291	0.00603	mg/Kg	25	☼	8260D	Total/NA
Ethylbenzene	1.43		0.0291	0.00978	mg/Kg	25	☼	8260D	Total/NA
Toluene	1.00		0.146	0.0291	mg/Kg	25	☼	8260D	Total/NA
Xylenes, Total - DL	5.54		0.466	0.229	mg/Kg	200	☼	8260D	Total/NA
m,p-Xylenes - DL	4.09		0.466	0.186	mg/Kg	200	☼	8260D	Total/NA
o-Xylene - DL	1.45		0.233	0.229	mg/Kg	200	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	43.0	J	58.4	24.6	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-10 (14.5'-15') — Lab Sample ID: 860-26536-39

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.0729		0.0294	0.00609	mg/Kg	25	☼	8260D	Total/NA
Ethylbenzene	1.46		0.0294	0.00987	mg/Kg	25	☼	8260D	Total/NA
Toluene	0.129	J	0.147	0.0294	mg/Kg	25	☼	8260D	Total/NA
Xylenes, Total	0.433		0.0588	0.0290	mg/Kg	25	☼	8260D	Total/NA
m,p-Xylenes	0.338		0.0588	0.0235	mg/Kg	25	☼	8260D	Total/NA
o-Xylene	0.0950		0.0294	0.0290	mg/Kg	25	☼	8260D	Total/NA
Diesel Range Organics (Over C10-C28)	178		58.9	24.8	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-11 (1'-2') — Lab Sample ID: 860-26536-40

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.000481	J	0.00107	0.000221	mg/Kg	1	☼	8260D	Total/NA
Ethylbenzene	0.00268		0.00107	0.000358	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	0.00939		0.00213	0.00105	mg/Kg	1	☼	8260D	Total/NA
m,p-Xylenes	0.00803		0.00213	0.000853	mg/Kg	1	☼	8260D	Total/NA
o-Xylene	0.00136		0.00107	0.00105	mg/Kg	1	☼	8260D	Total/NA
Diesel Range Organics (Over C10-C28)	35.3	J	53.1	22.4	mg/Kg	1	☼	8015B NM	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Houston

Detection Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Client Sample ID: SNR-11 (5'-6') Lab Sample ID: 860-26536-41

No Detections.

Client Sample ID: SNR-11 (9'-10') Lab Sample ID: 860-26536-42

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.000434	J	0.00101	0.000208	mg/Kg	1	☼	8260D	Total/NA
Ethylbenzene	0.0104		0.00101	0.000338	mg/Kg	1	☼	8260D	Total/NA
Toluene	0.00143	J	0.00503	0.00101	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	0.0337		0.00201	0.000991	mg/Kg	1	☼	8260D	Total/NA
m,p-Xylenes	0.0244		0.00201	0.000805	mg/Kg	1	☼	8260D	Total/NA
o-Xylene	0.00929		0.00101	0.000991	mg/Kg	1	☼	8260D	Total/NA

Client Sample ID: SNR-11 (14.5'-15') Lab Sample ID: 860-26536-43

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.880		0.207	0.0428	mg/Kg	200	☼	8260D	Total/NA
Ethylbenzene	9.57		0.207	0.0695	mg/Kg	200	☼	8260D	Total/NA
Toluene	20.5		1.03	0.207	mg/Kg	200	☼	8260D	Total/NA
Xylenes, Total	39.2		0.414	0.204	mg/Kg	200	☼	8260D	Total/NA
m,p-Xylenes	29.1		0.414	0.166	mg/Kg	200	☼	8260D	Total/NA
o-Xylene	10.1		0.207	0.204	mg/Kg	200	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	161		51.4	21.7	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	115		51.4	21.7	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-12 (1'-2') Lab Sample ID: 860-26536-44

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.000509	J	0.00103	0.000212	mg/Kg	1	☼	8260D	Total/NA
Toluene	0.00141	J	0.00513	0.00103	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	0.00125	J	0.00205	0.00101	mg/Kg	1	☼	8260D	Total/NA
m,p-Xylenes	0.00125	J	0.00205	0.000821	mg/Kg	1	☼	8260D	Total/NA

Client Sample ID: SNR-12 (6'-7') Lab Sample ID: 860-26536-45

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.0675		0.00101	0.000339	mg/Kg	1	☼	8260D	Total/NA
Toluene	0.00136	J	0.00505	0.00101	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total - DL	0.798		0.0505	0.0249	mg/Kg	25	☼	8260D	Total/NA
m,p-Xylenes - DL	0.597		0.0505	0.0202	mg/Kg	25	☼	8260D	Total/NA
o-Xylene - DL	0.201		0.0253	0.0249	mg/Kg	25	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	41.8	J	50.9	21.5	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-12 (9.5'-10') Lab Sample ID: 860-26536-46

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.933		0.513	0.0935	mg/Kg	25	☼	8260D	Total/NA
Ethylbenzene	0.583		0.0257	0.00861	mg/Kg	25	☼	8260D	Total/NA
Toluene	0.123	J	0.128	0.0257	mg/Kg	25	☼	8260D	Total/NA
Xylenes, Total	2.23		0.0513	0.0253	mg/Kg	25	☼	8260D	Total/NA
m,p-Xylenes	1.68		0.0513	0.0205	mg/Kg	25	☼	8260D	Total/NA
o-Xylene	0.549		0.0257	0.0253	mg/Kg	25	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	38.9	J	51.4	21.7	mg/Kg	1	☼	8015B NM	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Houston

Detection Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Client Sample ID: SNR-12 (14'-15') — Lab Sample ID: 860-26536-47

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	45.2		2.08	0.431	mg/Kg	2000	☼	8260D	Total/NA
Ethylbenzene	56.9		2.08	0.699	mg/Kg	2000	☼	8260D	Total/NA
Xylenes, Total	205		4.16	2.05	mg/Kg	2000	☼	8260D	Total/NA
m,p-Xylenes	152		4.16	1.67	mg/Kg	2000	☼	8260D	Total/NA
o-Xylene	52.7		2.08	2.05	mg/Kg	2000	☼	8260D	Total/NA
Toluene - DL	416		52.0	10.4	mg/Kg	10000	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	2430		52.1	22.0	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	707		52.1	22.0	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-13 (1'-2') — Lab Sample ID: 860-26536-48

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene - DL	0.466		0.0256	0.00531	mg/Kg	25	☼	8260D	Total/NA
Ethylbenzene - DL	0.147		0.0256	0.00861	mg/Kg	25	☼	8260D	Total/NA
Toluene - DL	0.747		0.128	0.0256	mg/Kg	25	☼	8260D	Total/NA
Xylenes, Total - DL	1.49		0.0513	0.0252	mg/Kg	25	☼	8260D	Total/NA
m,p-Xylenes - DL	0.655		0.0513	0.0205	mg/Kg	25	☼	8260D	Total/NA
o-Xylene - DL	0.835		0.0256	0.0252	mg/Kg	25	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	98.1		51.9	21.9	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	212		51.9	21.9	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-13 (6'-7') — Lab Sample ID: 860-26536-49

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.548		0.222	0.0459	mg/Kg	200	☼	8260D	Total/NA
Ethylbenzene	11.3		0.222	0.0744	mg/Kg	200	☼	8260D	Total/NA
Toluene	5.84		1.11	0.222	mg/Kg	200	☼	8260D	Total/NA
Xylenes, Total	32.6		0.443	0.218	mg/Kg	200	☼	8260D	Total/NA
m,p-Xylenes	24.3		0.443	0.177	mg/Kg	200	☼	8260D	Total/NA
o-Xylene	8.27		0.222	0.218	mg/Kg	200	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	112		55.3	23.3	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-13 (14'-15') — Lab Sample ID: 860-26536-50

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.00660	J	0.0226	0.00412	mg/Kg	1	☼	8260D	Total/NA
Benzene	0.000974	J	0.00113	0.000234	mg/Kg	1	☼	8260D	Total/NA
Carbon disulfide	0.000788	J	0.00565	0.000330	mg/Kg	1	☼	8260D	Total/NA
Ethylbenzene	0.00466		0.00113	0.000379	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	0.0118		0.00226	0.00111	mg/Kg	1	☼	8260D	Total/NA
m,p-Xylenes	0.0101		0.00226	0.000904	mg/Kg	1	☼	8260D	Total/NA
o-Xylene	0.00174		0.00113	0.00111	mg/Kg	1	☼	8260D	Total/NA

Client Sample ID: SNR-14 (1'-2') — Lab Sample ID: 860-26536-51

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.00226		0.00110	0.000370	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	0.00339		0.00220	0.00108	mg/Kg	1	☼	8260D	Total/NA
m,p-Xylenes	0.00230		0.00220	0.000881	mg/Kg	1	☼	8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Houston

Detection Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Client Sample ID: SNR-14 (1'-2') (Continued) — Lab Sample ID: 860-26536-51

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
o-Xylene	0.00109	J	0.00110	0.00108	mg/Kg	1	☼	8260D	Total/NA

Client Sample ID: SNR-14 (5'-6') — Lab Sample ID: 860-26536-52

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.00550	J	0.0212	0.00387	mg/Kg	1	☼	8260D	Total/NA
Benzene	0.00150		0.00106	0.000220	mg/Kg	1	☼	8260D	Total/NA
Toluene	0.0154		0.00531	0.00106	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	0.0985		0.00212	0.00105	mg/Kg	1	☼	8260D	Total/NA
m,p-Xylenes	0.0623		0.00212	0.000849	mg/Kg	1	☼	8260D	Total/NA
o-Xylene	0.0362		0.00106	0.00105	mg/Kg	1	☼	8260D	Total/NA
Ethylbenzene - DL	0.219		0.0266	0.00895	mg/Kg	25	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	124		52.8	22.3	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	2110		52.8	22.3	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-14 (9'-10') — Lab Sample ID: 860-26536-53

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.0821		0.00109	0.000226	mg/Kg	1	☼	8260D	Total/NA
Carbon disulfide	0.00368	J	0.00545	0.000319	mg/Kg	1	☼	8260D	Total/NA
Toluene	0.0259		0.00545	0.00109	mg/Kg	1	☼	8260D	Total/NA
Xylenes, Total	0.0603		0.00218	0.00107	mg/Kg	1	☼	8260D	Total/NA
m,p-Xylenes	0.0328		0.00218	0.000872	mg/Kg	1	☼	8260D	Total/NA
o-Xylene	0.0275		0.00109	0.00107	mg/Kg	1	☼	8260D	Total/NA
Ethylbenzene - DL	0.838		0.0275	0.00923	mg/Kg	25	☼	8260D	Total/NA
Diesel Range Organics (Over C10-C28)	399		54.6	23.1	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: SNR-14 (14'-15') — Lab Sample ID: 860-26536-54

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.0186		0.00106	0.000219	mg/Kg	1	☼	8260D	Total/NA
Carbon disulfide	0.00109	J	0.00530	0.000310	mg/Kg	1	☼	8260D	Total/NA
Ethylbenzene	0.137		0.00106	0.000356	mg/Kg	1	☼	8260D	Total/NA
Toluene	0.0103		0.00530	0.00106	mg/Kg	1	☼	8260D	Total/NA
Diesel Range Organics (Over C10-C28)	143		52.9	22.3	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: BD01-05162022 — Lab Sample ID: 860-26536-55

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.920		0.541	0.0987	mg/Kg	25	☼	8260D	Total/NA
Benzene	0.392		0.0271	0.00560	mg/Kg	25	☼	8260D	Total/NA
Ethylbenzene	0.514		0.0271	0.00909	mg/Kg	25	☼	8260D	Total/NA
Toluene	0.190		0.135	0.0271	mg/Kg	25	☼	8260D	Total/NA
Xylenes, Total	2.48		0.0541	0.0267	mg/Kg	25	☼	8260D	Total/NA
m,p-Xylenes	1.84		0.0541	0.0217	mg/Kg	25	☼	8260D	Total/NA
o-Xylene	0.644		0.0271	0.0267	mg/Kg	25	☼	8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Houston

Detection Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Client Sample ID: BD02-05162022 Lab Sample ID: 860-26536-56

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.66		0.213	0.0441	mg/Kg	200	☼	8260D	Total/NA
Ethylbenzene	2.67		0.213	0.0716	mg/Kg	200	☼	8260D	Total/NA
Toluene	4.65		1.07	0.213	mg/Kg	200	☼	8260D	Total/NA
Xylenes, Total	11.8		0.427	0.210	mg/Kg	200	☼	8260D	Total/NA
m,p-Xylenes	8.71		0.427	0.171	mg/Kg	200	☼	8260D	Total/NA
o-Xylene	3.10		0.213	0.210	mg/Kg	200	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	165		53.4	22.5	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	310		53.4	22.5	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: BD01-05172022 Lab Sample ID: 860-26536-57

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.850		0.503	0.0918	mg/Kg	25	☼	8260D	Total/NA
Benzene	0.0161	J	0.0252	0.00521	mg/Kg	25	☼	8260D	Total/NA
Ethylbenzene	2.01		0.0252	0.00845	mg/Kg	25	☼	8260D	Total/NA
Toluene	0.584		0.126	0.0252	mg/Kg	25	☼	8260D	Total/NA
Xylenes, Total - DL	15.8		0.403	0.198	mg/Kg	200	☼	8260D	Total/NA
m,p-Xylenes - DL	11.0		0.403	0.161	mg/Kg	200	☼	8260D	Total/NA
o-Xylene - DL	4.79		0.201	0.198	mg/Kg	200	☼	8260D	Total/NA
Gasoline Range Organics (GRO)-C6-C10	600		50.0	21.1	mg/Kg	1	☼	8015B NM	Total/NA
Diesel Range Organics (Over C10-C28)	365		50.0	21.1	mg/Kg	1	☼	8015B NM	Total/NA

Client Sample ID: BD01-05182022 Lab Sample ID: 860-26536-58

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.0173		0.00106	0.000220	mg/Kg	1	☼	8260D	Total/NA
Ethylbenzene	0.149		0.00106	0.000356	mg/Kg	1	☼	8260D	Total/NA
Toluene	0.00660		0.00531	0.00106	mg/Kg	1	☼	8260D	Total/NA
Diesel Range Organics (Over C10-C28)	393		53.0	22.4	mg/Kg	1	☼	8015B NM	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Houston

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-EX CONF (1.5'-2.5')
Lab Sample ID: 860-26536-1
Date Collected: 05/18/22 09:30
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 96.1

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000522	U	0.00519	0.000522	mg/Kg	☼	05/24/22 15:45	05/25/22 07:37	1
1,1-Dichloroethane	<0.000390	U	0.00519	0.000390	mg/Kg	☼	05/24/22 15:45	05/25/22 07:37	1
1,2-Dibromoethane	<0.00108	U	0.00519	0.00108	mg/Kg	☼	05/24/22 15:45	05/25/22 07:37	1
1,2-Dichloroethane	<0.000315	U	0.00519	0.000315	mg/Kg	☼	05/24/22 15:45	05/25/22 07:37	1
1,4-Dioxane (P-Dioxane)	<0.0151	U	0.104	0.0151	mg/Kg	☼	05/24/22 15:45	05/25/22 07:37	1
2-Butanone	<0.00379	U	0.0208	0.00379	mg/Kg	☼	05/24/22 15:45	05/25/22 07:37	1
Benzene	<0.000215	U	0.00104	0.000215	mg/Kg	☼	05/24/22 15:45	05/25/22 07:37	1
Carbon disulfide	<0.000303	U	0.00519	0.000303	mg/Kg	☼	05/24/22 15:45	05/25/22 07:37	1
Chlorobenzene	<0.000246	U	0.00519	0.000246	mg/Kg	☼	05/24/22 15:45	05/25/22 07:37	1
Chloroform	<0.000179	U	0.00519	0.000179	mg/Kg	☼	05/24/22 15:45	05/25/22 07:37	1
Ethylbenzene	**0.0183**		0.00104	0.000349	mg/Kg	☼	05/24/22 15:45	05/25/22 07:37	1
Styrene	<0.000213	U	0.00519	0.000213	mg/Kg	☼	05/24/22 15:45	05/25/22 07:37	1
Tetrachloroethene	<0.000384	U	0.00519	0.000384	mg/Kg	☼	05/24/22 15:45	05/25/22 07:37	1
Toluene	<0.00104	U	0.00519	0.00104	mg/Kg	☼	05/24/22 15:45	05/25/22 07:37	1
Trichloroethene	<0.000513	U	0.00519	0.000513	mg/Kg	☼	05/24/22 15:45	05/25/22 07:37	1
Xylenes, Total	**0.151**		0.00208	0.00102	mg/Kg	☼	05/24/22 15:45	05/25/22 07:37	1
m,p-Xylenes	**0.0909**		0.00208	0.000830	mg/Kg	☼	05/24/22 15:45	05/25/22 07:37	1
o-Xylene	**0.0602**		0.00104	0.00102	mg/Kg	☼	05/24/22 15:45	05/25/22 07:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*117*		*56 - 150*	*05/24/22 15:45*	*05/25/22 07:37*	*1*
4-Bromofluorobenzene (Surr)	*127*		*68 - 152*	*05/24/22 15:45*	*05/25/22 07:37*	*1*
Dibromofluoromethane (Surr)	*103*		*53 - 142*	*05/24/22 15:45*	*05/25/22 07:37*	*1*
Toluene-d8 (Surr)	*115*		*70 - 130*	*05/24/22 15:45*	*05/25/22 07:37*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	**8.44**	**J**	34.6	2.34	ug/Kg	☼	05/24/22 13:21	05/26/22 12:07	1
2-Methylnaphthalene	**11.7**	**J**	34.6	2.40	ug/Kg	☼	05/24/22 13:21	05/26/22 12:07	1
Acenaphthene	<2.41	U	3.46	2.41	ug/Kg	☼	05/24/22 13:21	05/26/22 12:07	1
Acenaphthylene	<2.61	U	3.46	2.61	ug/Kg	☼	05/24/22 13:21	05/26/22 12:07	1
Anthracene	**3.61**		3.46	2.47	ug/Kg	☼	05/24/22 13:21	05/26/22 12:07	1
Benzo[a]anthracene	**5.47**		3.46	2.22	ug/Kg	☼	05/24/22 13:21	05/26/22 12:07	1
Benzo[a]pyrene	**6.11**		3.46	2.54	ug/Kg	☼	05/24/22 13:21	05/26/22 12:07	1
Benzo[b]fluoranthene	**9.57**		3.46	2.85	ug/Kg	☼	05/24/22 13:21	05/26/22 12:07	1
Benzo[g,h,i]perylene	**9.09**		3.46	2.75	ug/Kg	☼	05/24/22 13:21	05/26/22 12:07	1
Benzo[k]fluoranthene	<2.77	U	3.46	2.77	ug/Kg	☼	05/24/22 13:21	05/26/22 12:07	1
Chrysene	**8.38**		3.46	1.92	ug/Kg	☼	05/24/22 13:21	05/26/22 12:07	1
Dibenz(a,h)anthracene	<2.77	U	3.46	2.77	ug/Kg	☼	05/24/22 13:21	05/26/22 12:07	1
Fluoranthene	**7.94**		3.46	2.43	ug/Kg	☼	05/24/22 13:21	05/26/22 12:07	1
Fluorene	<2.43	U	3.46	2.43	ug/Kg	☼	05/24/22 13:21	05/26/22 12:07	1
Indeno[1,2,3-cd]pyrene	**3.67**		3.46	2.61	ug/Kg	☼	05/24/22 13:21	05/26/22 12:07	1
Naphthalene	<2.49	U	34.6	2.49	ug/Kg	☼	05/24/22 13:21	05/26/22 12:07	1
Phenanthrene	**4.31**		3.46	2.43	ug/Kg	☼	05/24/22 13:21	05/26/22 12:07	1
Pyrene	**8.18**		3.46	2.46	ug/Kg	☼	05/24/22 13:21	05/26/22 12:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*85*		*51 - 133*	*05/24/22 13:21*	*05/26/22 12:07*	*1*
Nitrobenzene-d5	*74*		*31 - 130*	*05/24/22 13:21*	*05/26/22 12:07*	*1*
p-Terphenyl-d14	*223*	*S1+*	*46 - 137*	*05/24/22 13:21*	*05/26/22 12:07*	*1*

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-EX CONF (1.5'-2.5')
Lab Sample ID: 860-26536-1
Date Collected: 05/18/22 09:30
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 96.1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	55.5		51.7	21.8	mg/Kg	☼	05/25/22 12:56	05/26/22 15:06	1
Diesel Range Organics (Over C10-C28)	35.8	J	51.7	21.8	mg/Kg	☼	05/25/22 12:56	05/26/22 15:06	1
Oil Range Organics (Over C28-C36)	<21.8	U	51.7	21.8	mg/Kg	☼	05/25/22 12:56	05/26/22 15:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*91*		*65 - 130*	*05/25/22 12:56*	*05/26/22 15:06*	*1*
o-Terphenyl	*95*		*65 - 130*	*05/25/22 12:56*	*05/26/22 15:06*	*1*

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.45	J	3.78	0.583	mg/Kg	☼	06/13/22 13:12	06/14/22 15:34	10
Barium	574		3.78	0.328	mg/Kg	☼	06/13/22 13:12	06/14/22 15:34	10
Cadmium	0.114	J	1.89	0.110	mg/Kg	☼	06/13/22 13:12	06/14/22 15:34	10
Chromium	13.8		3.78	0.256	mg/Kg	☼	06/13/22 13:12	06/14/22 15:34	10
Lead	12.4		1.89	0.183	mg/Kg	☼	06/13/22 13:12	06/14/22 15:34	10
Selenium	<0.469	U	1.89	0.469	mg/Kg	☼	06/13/22 13:12	06/14/22 15:34	10
Silver	<0.150	U	1.89	0.150	mg/Kg	☼	06/13/22 13:12	06/14/22 15:34	10

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.188		0.0182	0.00351	mg/Kg	☼	05/31/22 10:12	05/31/22 16:46	1

Client Sample ID: SNR-01 (1'-2')
Lab Sample ID: 860-26536-2
Date Collected: 05/16/22 10:25
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 98.7

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000505	U	0.00502	0.000505	mg/Kg	☼	05/24/22 15:45	05/25/22 07:14	1
1,1-Dichloroethane	<0.000377	U	0.00502	0.000377	mg/Kg	☼	05/24/22 15:45	05/25/22 07:14	1
1,2-Dibromoethane	<0.00105	U	0.00502	0.00105	mg/Kg	☼	05/24/22 15:45	05/25/22 07:14	1
1,2-Dichloroethane	<0.000305	U	0.00502	0.000305	mg/Kg	☼	05/24/22 15:45	05/25/22 07:14	1
1,4-Dioxane (P-Dioxane)	<0.0146	U	0.100	0.0146	mg/Kg	☼	05/24/22 15:45	05/25/22 07:14	1
2-Butanone	<0.00366	U F1	0.0201	0.00366	mg/Kg	☼	05/24/22 15:45	05/25/22 07:14	1
Benzene	<0.000208	U	0.00100	0.000208	mg/Kg	☼	05/24/22 15:45	05/25/22 07:14	1
Carbon disulfide	<0.000293	U	0.00502	0.000293	mg/Kg	☼	05/24/22 15:45	05/25/22 07:14	1
Chlorobenzene	<0.000238	U F1	0.00502	0.000238	mg/Kg	☼	05/24/22 15:45	05/25/22 07:14	1
Chloroform	<0.000173	U	0.00502	0.000173	mg/Kg	☼	05/24/22 15:45	05/25/22 07:14	1
Ethylbenzene	<0.000337	U F1	0.00100	0.000337	mg/Kg	☼	05/24/22 15:45	05/25/22 07:14	1
Styrene	<0.000206	U F1	0.00502	0.000206	mg/Kg	☼	05/24/22 15:45	05/25/22 07:14	1
Tetrachloroethene	<0.000371	U F1	0.00502	0.000371	mg/Kg	☼	05/24/22 15:45	05/25/22 07:14	1
Toluene	<0.00100	U	0.00502	0.00100	mg/Kg	☼	05/24/22 15:45	05/25/22 07:14	1
Trichloroethene	<0.000496	U	0.00502	0.000496	mg/Kg	☼	05/24/22 15:45	05/25/22 07:14	1
Xylenes, Total	<0.000988	U	0.00201	0.000988	mg/Kg	☼	05/24/22 15:45	05/25/22 07:14	1
m,p-Xylenes	<0.000803	U	0.00201	0.000803	mg/Kg	☼	05/24/22 15:45	05/25/22 07:14	1
o-Xylene	<0.000988	U	0.00100	0.000988	mg/Kg	☼	05/24/22 15:45	05/25/22 07:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*114*		*56 - 150*	*05/24/22 15:45*	*05/25/22 07:14*	*1*

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Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-01 (1'-2')
Lab Sample ID: 860-26536-2
Date Collected: 05/16/22 10:25
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 98.7

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*119*		*68 - 152*	*05/24/22 15:45*	*05/25/22 07:14*	*1*
Dibromofluoromethane (Surr)	*100*		*53 - 142*	*05/24/22 15:45*	*05/25/22 07:14*	*1*
Toluene-d8 (Surr)	*102*		*70 - 130*	*05/24/22 15:45*	*05/25/22 07:14*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<21.4	U	50.7	21.4	mg/Kg	☼	05/25/22 12:56	05/26/22 15:05	1
Diesel Range Organics (Over C10-C28)	<21.4	U	50.7	21.4	mg/Kg	☼	05/25/22 12:56	05/26/22 15:05	1
Oil Range Organics (Over C28-C36)	<21.4	U	50.7	21.4	mg/Kg	☼	05/25/22 12:56	05/26/22 15:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*88*		*65 - 130*	*05/25/22 12:56*	*05/26/22 15:05*	*1*
o-Terphenyl	*95*		*65 - 130*	*05/25/22 12:56*	*05/26/22 15:05*	*1*

Client Sample ID: SNR-01 (5'-6')
Lab Sample ID: 860-26536-3
Date Collected: 05/16/22 10:30
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.1

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.109	U	1.08	0.109	mg/Kg	☼	05/24/22 15:45	05/25/22 13:15	200
1,1-Dichloroethane	<0.0814	U	1.08	0.0814	mg/Kg	☼	05/24/22 15:45	05/25/22 13:15	200
1,2-Dibromoethane	<0.226	U	1.08	0.226	mg/Kg	☼	05/24/22 15:45	05/25/22 13:15	200
1,2-Dichloroethane	<0.0658	U	1.08	0.0658	mg/Kg	☼	05/24/22 15:45	05/25/22 13:15	200
1,4-Dioxane (P-Dioxane)	<3.15	U	21.7	3.15	mg/Kg	☼	05/24/22 15:45	05/25/22 13:15	200
2-Butanone	<0.790	U	4.33	0.790	mg/Kg	☼	05/24/22 15:45	05/25/22 13:15	200
Benzene	**9.37**		0.217	0.0448	mg/Kg	☼	05/24/22 15:45	05/25/22 13:15	200
Carbon disulfide	<0.0633	U	1.08	0.0633	mg/Kg	☼	05/24/22 15:45	05/25/22 13:15	200
Chlorobenzene	<0.0513	U	1.08	0.0513	mg/Kg	☼	05/24/22 15:45	05/25/22 13:15	200
Chloroform	<0.0374	U	1.08	0.0374	mg/Kg	☼	05/24/22 15:45	05/25/22 13:15	200
Ethylbenzene	**24.9**		0.217	0.0727	mg/Kg	☼	05/24/22 15:45	05/25/22 13:15	200
Styrene	<0.0445	U	1.08	0.0445	mg/Kg	☼	05/24/22 15:45	05/25/22 13:15	200
Tetrachloroethene	<0.0800	U	1.08	0.0800	mg/Kg	☼	05/24/22 15:45	05/25/22 13:15	200
Trichloroethene	<0.107	U	1.08	0.107	mg/Kg	☼	05/24/22 15:45	05/25/22 13:15	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*56 - 150*	*05/24/22 15:45*	*05/25/22 13:15*	*200*
4-Bromofluorobenzene (Surr)	*97*		*68 - 152*	*05/24/22 15:45*	*05/25/22 13:15*	*200*
Dibromofluoromethane (Surr)	*87*		*53 - 142*	*05/24/22 15:45*	*05/25/22 13:15*	*200*
Toluene-d8 (Surr)	*107*		*70 - 130*	*05/24/22 15:45*	*05/25/22 13:15*	*200*

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**86.7**		5.41	1.08	mg/Kg	☼	05/24/22 15:45	05/25/22 16:55	1000
Xylenes, Total	**202**		2.17	1.07	mg/Kg	☼	05/24/22 15:45	05/25/22 16:55	1000
m,p-Xylenes	**144**	**F1**	2.17	0.866	mg/Kg	☼	05/24/22 15:45	05/25/22 16:55	1000
o-Xylene	**58.1**		1.08	1.07	mg/Kg	☼	05/24/22 15:45	05/25/22 16:55	1000

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-01 (5'-6')
Lab Sample ID: 860-26536-3
Date Collected: 05/16/22 10:30
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		56 - 150	05/24/22 15:45	05/25/22 16:55	1000
4-Bromofluorobenzene (Surr)	114		68 - 152	05/24/22 15:45	05/25/22 16:55	1000
Dibromofluoromethane (Surr)	90		53 - 142	05/24/22 15:45	05/25/22 16:55	1000
Toluene-d8 (Surr)	106		70 - 130	05/24/22 15:45	05/25/22 16:55	1000

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**9070**		536	226	mg/Kg	☼	05/25/22 12:56	05/27/22 05:33	10
Diesel Range Organics (Over C10-C28)	**3150**		53.6	22.6	mg/Kg	☼	05/25/22 12:56	05/26/22 16:04	1
Oil Range Organics (Over C28-C36)	<22.6	U	53.6	22.6	mg/Kg	☼	05/25/22 12:56	05/26/22 16:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	76		65 - 130	05/25/22 12:56	05/26/22 16:04	1
1-Chlorooctane	146	S1+	65 - 130	05/25/22 12:56	05/27/22 05:33	10
o-Terphenyl	97		65 - 130	05/25/22 12:56	05/26/22 16:04	1
o-Terphenyl	131	S1+	65 - 130	05/25/22 12:56	05/27/22 05:33	10

Client Sample ID: SNR-01 (9'-10')
Lab Sample ID: 860-26536-4
Date Collected: 05/16/22 10:35
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.0

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.107	U	1.07	0.107	mg/Kg	☼	05/24/22 15:45	05/25/22 13:37	200
1,1-Dichloroethane	<0.0801	U	1.07	0.0801	mg/Kg	☼	05/24/22 15:45	05/25/22 13:37	200
1,2-Dibromoethane	<0.222	U	1.07	0.222	mg/Kg	☼	05/24/22 15:45	05/25/22 13:37	200
1,2-Dichloroethane	<0.0647	U	1.07	0.0647	mg/Kg	☼	05/24/22 15:45	05/25/22 13:37	200
1,4-Dioxane (P-Dioxane)	<3.10	U	21.3	3.10	mg/Kg	☼	05/24/22 15:45	05/25/22 13:37	200
2-Butanone	**0.865**	**J**	4.26	0.777	mg/Kg	☼	05/24/22 15:45	05/25/22 13:37	200
Benzene	**4.11**		0.213	0.0441	mg/Kg	☼	05/24/22 15:45	05/25/22 13:37	200
Carbon disulfide	<0.0623	U	1.07	0.0623	mg/Kg	☼	05/24/22 15:45	05/25/22 13:37	200
Chlorobenzene	<0.0504	U	1.07	0.0504	mg/Kg	☼	05/24/22 15:45	05/25/22 13:37	200
Chloroform	<0.0368	U	1.07	0.0368	mg/Kg	☼	05/24/22 15:45	05/25/22 13:37	200
Ethylbenzene	**9.60**		0.213	0.0715	mg/Kg	☼	05/24/22 15:45	05/25/22 13:37	200
Styrene	<0.0438	U	1.07	0.0438	mg/Kg	☼	05/24/22 15:45	05/25/22 13:37	200
Tetrachloroethene	<0.0787	U	1.07	0.0787	mg/Kg	☼	05/24/22 15:45	05/25/22 13:37	200
Toluene	**9.48**		1.07	0.213	mg/Kg	☼	05/24/22 15:45	05/25/22 13:37	200
Trichloroethene	<0.105	U	1.07	0.105	mg/Kg	☼	05/24/22 15:45	05/25/22 13:37	200
Xylenes, Total	**43.5**		0.426	0.210	mg/Kg	☼	05/24/22 15:45	05/25/22 13:37	200
m,p-Xylenes	**31.0**		0.426	0.170	mg/Kg	☼	05/24/22 15:45	05/25/22 13:37	200
o-Xylene	**12.5**		0.213	0.210	mg/Kg	☼	05/24/22 15:45	05/25/22 13:37	200

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		56 - 150	05/24/22 15:45	05/25/22 13:37	200
4-Bromofluorobenzene (Surr)	99		68 - 152	05/24/22 15:45	05/25/22 13:37	200
Dibromofluoromethane (Surr)	86		53 - 142	05/24/22 15:45	05/25/22 13:37	200
Toluene-d8 (Surr)	102		70 - 130	05/24/22 15:45	05/25/22 13:37	200

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-01 (9'-10')
Lab Sample ID: 860-26536-4
Date Collected: 05/16/22 10:35
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.0

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**658**		53.8	22.7	mg/Kg	☼	05/25/22 12:56	05/26/22 16:23	1
Diesel Range Organics (Over C10-C28)	**470**		53.8	22.7	mg/Kg	☼	05/25/22 12:56	05/26/22 16:23	1
Oil Range Organics (Over C28-C36)	<22.7	U	53.8	22.7	mg/Kg	☼	05/25/22 12:56	05/26/22 16:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*96*		*65 - 130*	*05/25/22 12:56*	*05/26/22 16:23*	*1*
o-Terphenyl	*91*		*65 - 130*	*05/25/22 12:56*	*05/26/22 16:23*	*1*

Client Sample ID: SNR-01 (14'-15')
Lab Sample ID: 860-26536-5
Date Collected: 05/16/22 10:40
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 91.7

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000550	U	0.00547	0.000550	mg/Kg	☼	05/24/22 15:45	05/25/22 07:59	1
1,1-Dichloroethane	<0.000411	U	0.00547	0.000411	mg/Kg	☼	05/24/22 15:45	05/25/22 07:59	1
1,2-Dibromoethane	<0.00114	U	0.00547	0.00114	mg/Kg	☼	05/24/22 15:45	05/25/22 07:59	1
1,2-Dichloroethane	<0.000332	U	0.00547	0.000332	mg/Kg	☼	05/24/22 15:45	05/25/22 07:59	1
1,4-Dioxane (P-Dioxane)	<0.0159	U	0.109	0.0159	mg/Kg	☼	05/24/22 15:45	05/25/22 07:59	1
2-Butanone	**0.0177**	**J**	0.0219	0.00399	mg/Kg	☼	05/24/22 15:45	05/25/22 07:59	1
Benzene	**0.00586**		0.00109	0.000226	mg/Kg	☼	05/24/22 15:45	05/25/22 07:59	1
Carbon disulfide	**0.00316**	**J**	0.00547	0.000320	mg/Kg	☼	05/24/22 15:45	05/25/22 07:59	1
Chlorobenzene	<0.000259	U	0.00547	0.000259	mg/Kg	☼	05/24/22 15:45	05/25/22 07:59	1
Chloroform	<0.000189	U	0.00547	0.000189	mg/Kg	☼	05/24/22 15:45	05/25/22 07:59	1
Ethylbenzene	**0.00410**		0.00109	0.000367	mg/Kg	☼	05/24/22 15:45	05/25/22 07:59	1
Styrene	<0.000225	U	0.00547	0.000225	mg/Kg	☼	05/24/22 15:45	05/25/22 07:59	1
Tetrachloroethene	<0.000404	U	0.00547	0.000404	mg/Kg	☼	05/24/22 15:45	05/25/22 07:59	1
Toluene	<0.00109	U	0.00547	0.00109	mg/Kg	☼	05/24/22 15:45	05/25/22 07:59	1
Trichloroethene	<0.000540	U	0.00547	0.000540	mg/Kg	☼	05/24/22 15:45	05/25/22 07:59	1
Xylenes, Total	**0.00471**		0.00219	0.00108	mg/Kg	☼	05/24/22 15:45	05/25/22 07:59	1
m,p-Xylenes	**0.00323**		0.00219	0.000874	mg/Kg	☼	05/24/22 15:45	05/25/22 07:59	1
o-Xylene	**0.00148**		0.00109	0.00108	mg/Kg	☼	05/24/22 15:45	05/25/22 07:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*56 - 150*	*05/24/22 15:45*	*05/25/22 07:59*	*1*
4-Bromofluorobenzene (Surr)	*116*		*68 - 152*	*05/24/22 15:45*	*05/25/22 07:59*	*1*
Dibromofluoromethane (Surr)	*100*		*53 - 142*	*05/24/22 15:45*	*05/25/22 07:59*	*1*
Toluene-d8 (Surr)	*103*		*70 - 130*	*05/24/22 15:45*	*05/25/22 07:59*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<23.0	U	54.5	23.0	mg/Kg	☼	05/25/22 12:56	05/26/22 16:42	1
Diesel Range Organics (Over C10-C28)	<23.0	U	54.5	23.0	mg/Kg	☼	05/25/22 12:56	05/26/22 16:42	1
Oil Range Organics (Over C28-C36)	<23.0	U	54.5	23.0	mg/Kg	☼	05/25/22 12:56	05/26/22 16:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*88*		*65 - 130*	*05/25/22 12:56*	*05/26/22 16:42*	*1*
o-Terphenyl	*97*		*65 - 130*	*05/25/22 12:56*	*05/26/22 16:42*	*1*

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Client Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Client Sample ID: SNR-02 (1'-2')

Date Collected: 05/16/22 11:30
Date Received: 05/20/22 10:24

Lab Sample ID: 860-26536-6

Matrix: Solid
Percent Solids: 99.5

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000505	U	0.00502	0.000505	mg/Kg	☼	05/24/22 15:45	05/25/22 08:22	1
1,1-Dichloroethane	<0.000378	U	0.00502	0.000378	mg/Kg	☼	05/24/22 15:45	05/25/22 08:22	1
1,2-Dibromoethane	<0.00105	U	0.00502	0.00105	mg/Kg	☼	05/24/22 15:45	05/25/22 08:22	1
1,2-Dichloroethane	<0.000305	U	0.00502	0.000305	mg/Kg	☼	05/24/22 15:45	05/25/22 08:22	1
1,4-Dioxane (P-Dioxane)	<0.0146	U	0.100	0.0146	mg/Kg	☼	05/24/22 15:45	05/25/22 08:22	1
2-Butanone	**0.0269**		0.0201	0.00366	mg/Kg	☼	05/24/22 15:45	05/25/22 08:22	1
Carbon disulfide	**0.00258**	**J**	0.00502	0.000294	mg/Kg	☼	05/24/22 15:45	05/25/22 08:22	1
Chlorobenzene	<0.000238	U	0.00502	0.000238	mg/Kg	☼	05/24/22 15:45	05/25/22 08:22	1
Chloroform	<0.000174	U	0.00502	0.000174	mg/Kg	☼	05/24/22 15:45	05/25/22 08:22	1
Styrene	<0.000206	U	0.00502	0.000206	mg/Kg	☼	05/24/22 15:45	05/25/22 08:22	1
Tetrachloroethene	<0.000371	U	0.00502	0.000371	mg/Kg	☼	05/24/22 15:45	05/25/22 08:22	1
Trichloroethene	<0.000496	U	0.00502	0.000496	mg/Kg	☼	05/24/22 15:45	05/25/22 08:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*56 - 150*	*05/24/22 15:45*	*05/25/22 08:22*	*1*
4-Bromofluorobenzene (Surr)	*131*	**3*	*68 - 152*	*05/24/22 15:45*	*05/25/22 08:22*	*1*
Dibromofluoromethane (Surr)	*121*		*53 - 142*	*05/24/22 15:45*	*05/25/22 08:22*	*1*
Toluene-d8 (Surr)	*122*		*70 - 130*	*05/24/22 15:45*	*05/25/22 08:22*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**1.98**		0.0253	0.00523	mg/Kg	☼	05/25/22 13:53	05/26/22 02:37	25
Ethylbenzene	**1.24**		0.0253	0.00848	mg/Kg	☼	05/25/22 13:53	05/26/22 02:37	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*56 - 150*	*05/25/22 13:53*	*05/26/22 02:37*	*25*
4-Bromofluorobenzene (Surr)	*94*		*68 - 152*	*05/25/22 13:53*	*05/26/22 02:37*	*25*
Dibromofluoromethane (Surr)	*83*		*53 - 142*	*05/25/22 13:53*	*05/26/22 02:37*	*25*
Toluene-d8 (Surr)	*95*		*70 - 130*	*05/25/22 13:53*	*05/26/22 02:37*	*25*

Method: 8260D - Volatile Organic Compounds by GC/MS - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**11.6**		1.01	0.202	mg/Kg	☼	05/25/22 13:53	05/26/22 21:56	200
Xylenes, Total	**26.5**		0.404	0.199	mg/Kg	☼	05/25/22 13:53	05/26/22 21:56	200
m,p-Xylenes	**19.3**		0.404	0.162	mg/Kg	☼	05/25/22 13:53	05/26/22 21:56	200
o-Xylene	**7.21**		0.202	0.199	mg/Kg	☼	05/25/22 13:53	05/26/22 21:56	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*56 - 150*	*05/25/22 13:53*	*05/26/22 21:56*	*200*
4-Bromofluorobenzene (Surr)	*117*		*68 - 152*	*05/25/22 13:53*	*05/26/22 21:56*	*200*
Dibromofluoromethane (Surr)	*93*		*53 - 142*	*05/25/22 13:53*	*05/26/22 21:56*	*200*
Toluene-d8 (Surr)	*110*		*70 - 130*	*05/25/22 13:53*	*05/26/22 21:56*	*200*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<423	U	1000	423	mg/Kg	☼	05/25/22 12:56	05/26/22 17:05	20
Diesel Range Organics (Over C10-C28)	**4340**		1000	423	mg/Kg	☼	05/25/22 12:56	05/26/22 17:05	20
Oil Range Organics (Over C28-C36)	<423	U	1000	423	mg/Kg	☼	05/25/22 12:56	05/26/22 17:05	20

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-02 (1'-2')
Lab Sample ID: 860-26536-6
Date Collected: 05/16/22 11:30
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 99.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	98		65 - 130	05/25/22 12:56	05/26/22 17:05	20
o-Terphenyl	86		65 - 130	05/25/22 12:56	05/26/22 17:05	20

Client Sample ID: SNR-02 (4'-5')
Lab Sample ID: 860-26536-7
Date Collected: 05/16/22 11:35
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 96.3

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000523	U	0.00520	0.000523	mg/Kg	☼	05/24/22 15:45	05/25/22 08:44	1
1,1-Dichloroethane	<0.000391	U	0.00520	0.000391	mg/Kg	☼	05/24/22 15:45	05/25/22 08:44	1
1,2-Dibromoethane	<0.00109	U	0.00520	0.00109	mg/Kg	☼	05/24/22 15:45	05/25/22 08:44	1
1,2-Dichloroethane	<0.000316	U	0.00520	0.000316	mg/Kg	☼	05/24/22 15:45	05/25/22 08:44	1
1,4-Dioxane (P-Dioxane)	<0.0151	U	0.104	0.0151	mg/Kg	☼	05/24/22 15:45	05/25/22 08:44	1
2-Butanone	**0.00880**	**J**	0.0208	0.00379	mg/Kg	☼	05/24/22 15:45	05/25/22 08:44	1
Benzene	**0.00421**		0.00104	0.000215	mg/Kg	☼	05/24/22 15:45	05/25/22 08:44	1
Carbon disulfide	<0.000304	U	0.00520	0.000304	mg/Kg	☼	05/24/22 15:45	05/25/22 08:44	1
Chlorobenzene	<0.000246	U	0.00520	0.000246	mg/Kg	☼	05/24/22 15:45	05/25/22 08:44	1
Chloroform	<0.000180	U	0.00520	0.000180	mg/Kg	☼	05/24/22 15:45	05/25/22 08:44	1
Styrene	<0.000214	U	0.00520	0.000214	mg/Kg	☼	05/24/22 15:45	05/25/22 08:44	1
Tetrachloroethene	<0.000384	U	0.00520	0.000384	mg/Kg	☼	05/24/22 15:45	05/25/22 08:44	1
Trichloroethene	<0.000514	U	0.00520	0.000514	mg/Kg	☼	05/24/22 15:45	05/25/22 08:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		56 - 150	05/24/22 15:45	05/25/22 08:44	1
4-Bromofluorobenzene (Surr)	107		68 - 152	05/24/22 15:45	05/25/22 08:44	1
Dibromofluoromethane (Surr)	100		53 - 142	05/24/22 15:45	05/25/22 08:44	1
Toluene-d8 (Surr)	112		70 - 130	05/24/22 15:45	05/25/22 08:44	1

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**2.44**		0.0258	0.00866	mg/Kg	☼	05/25/22 13:53	05/25/22 17:27	25
Toluene	**0.865**		0.129	0.0258	mg/Kg	☼	05/25/22 13:53	05/25/22 17:27	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		56 - 150	05/25/22 13:53	05/25/22 17:27	25
4-Bromofluorobenzene (Surr)	133		68 - 152	05/25/22 13:53	05/25/22 17:27	25
Dibromofluoromethane (Surr)	86		53 - 142	05/25/22 13:53	05/25/22 17:27	25
Toluene-d8 (Surr)	103		70 - 130	05/25/22 13:53	05/25/22 17:27	25

Method: 8260D - Volatile Organic Compounds by GC/MS - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**15.7**		0.413	0.203	mg/Kg	☼	05/25/22 13:53	05/28/22 15:45	200
m,p-Xylenes	**11.1**		0.413	0.165	mg/Kg	☼	05/25/22 13:53	05/28/22 15:45	200
o-Xylene	**4.56**		0.206	0.203	mg/Kg	☼	05/25/22 13:53	05/28/22 15:45	200

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	82		56 - 150	05/25/22 13:53	05/28/22 15:45	200
4-Bromofluorobenzene (Surr)	94		68 - 152	05/25/22 13:53	05/28/22 15:45	200
Dibromofluoromethane (Surr)	90		53 - 142	05/25/22 13:53	05/28/22 15:45	200
Toluene-d8 (Surr)	95		70 - 130	05/25/22 13:53	05/28/22 15:45	200

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-02 (4'-5')
Lab Sample ID: 860-26536-7
Date Collected: 05/16/22 11:35
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 96.3

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**1770**		51.7	21.8	mg/Kg	☼	05/25/22 12:56	05/26/22 16:45	1
Diesel Range Organics (Over C10-C28)	**743**		51.7	21.8	mg/Kg	☼	05/25/22 12:56	05/26/22 16:45	1
Oil Range Organics (Over C28-C36)	<21.8	U	51.7	21.8	mg/Kg	☼	05/25/22 12:56	05/26/22 16:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*97*		*65 - 130*	*05/25/22 12:56*	*05/26/22 16:45*	*1*
o-Terphenyl	*85*		*65 - 130*	*05/25/22 12:56*	*05/26/22 16:45*	*1*

Client Sample ID: SNR-02 (7'-8')
Lab Sample ID: 860-26536-8
Date Collected: 05/16/22 11:40
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 91.8

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.111	U	1.10	0.111	mg/Kg	☼	05/24/22 15:45	05/25/22 14:00	200
1,1-Dichloroethane	<0.0827	U	1.10	0.0827	mg/Kg	☼	05/24/22 15:45	05/25/22 14:00	200
1,2-Dibromoethane	<0.230	U	1.10	0.230	mg/Kg	☼	05/24/22 15:45	05/25/22 14:00	200
1,2-Dichloroethane	<0.0668	U	1.10	0.0668	mg/Kg	☼	05/24/22 15:45	05/25/22 14:00	200
1,4-Dioxane (P-Dioxane)	<3.20	U	22.0	3.20	mg/Kg	☼	05/24/22 15:45	05/25/22 14:00	200
2-Butanone	**0.807**	**J**	4.40	0.802	mg/Kg	☼	05/24/22 15:45	05/25/22 14:00	200
Benzene	**17.7**		0.220	0.0455	mg/Kg	☼	05/24/22 15:45	05/25/22 14:00	200
Carbon disulfide	<0.0643	U	1.10	0.0643	mg/Kg	☼	05/24/22 15:45	05/25/22 14:00	200
Chlorobenzene	<0.0521	U	1.10	0.0521	mg/Kg	☼	05/24/22 15:45	05/25/22 14:00	200
Chloroform	<0.0380	U	1.10	0.0380	mg/Kg	☼	05/24/22 15:45	05/25/22 14:00	200
Ethylbenzene	**32.2**		0.220	0.0739	mg/Kg	☼	05/24/22 15:45	05/25/22 14:00	200
Styrene	<0.0452	U	1.10	0.0452	mg/Kg	☼	05/24/22 15:45	05/25/22 14:00	200
Tetrachloroethene	<0.0813	U	1.10	0.0813	mg/Kg	☼	05/24/22 15:45	05/25/22 14:00	200
Trichloroethene	<0.109	U	1.10	0.109	mg/Kg	☼	05/24/22 15:45	05/25/22 14:00	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*56 - 150*	*05/24/22 15:45*	*05/25/22 14:00*	*200*
4-Bromofluorobenzene (Surr)	*103*		*68 - 152*	*05/24/22 15:45*	*05/25/22 14:00*	*200*
Dibromofluoromethane (Surr)	*83*		*53 - 142*	*05/24/22 15:45*	*05/25/22 14:00*	*200*
Toluene-d8 (Surr)	*114*		*70 - 130*	*05/24/22 15:45*	*05/25/22 14:00*	*200*

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*56 - 150*	*05/24/22 15:45*	*05/25/22 20:19*	*1000*
4-Bromofluorobenzene (Surr)	*124*		*68 - 152*	*05/24/22 15:45*	*05/25/22 20:19*	*1000*
Dibromofluoromethane (Surr)	*96*		*53 - 142*	*05/24/22 15:45*	*05/25/22 20:19*	*1000*
Toluene-d8 (Surr)	*134*	*S1+*	*70 - 130*	*05/24/22 15:45*	*05/25/22 20:19*	*1000*

Method: 8260D - Volatile Organic Compounds by GC/MS - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**182**		11.0	2.20	mg/Kg	☼	05/24/22 15:45	05/26/22 16:06	2000
Xylenes, Total	**351**		4.40	2.17	mg/Kg	☼	05/24/22 15:45	05/26/22 16:06	2000
m,p-Xylenes	**263**		4.40	1.76	mg/Kg	☼	05/24/22 15:45	05/26/22 16:06	2000
o-Xylene	**87.9**		2.20	2.17	mg/Kg	☼	05/24/22 15:45	05/26/22 16:06	2000

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-02 (7'-8')
Lab Sample ID: 860-26536-8
Date Collected: 05/16/22 11:40
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 91.8

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		56 - 150	05/24/22 15:45	05/26/22 16:06	2000
4-Bromofluorobenzene (Surr)	119		68 - 152	05/24/22 15:45	05/26/22 16:06	2000
Dibromofluoromethane (Surr)	93		53 - 142	05/24/22 15:45	05/26/22 16:06	2000
Toluene-d8 (Surr)	125		70 - 130	05/24/22 15:45	05/26/22 16:06	2000

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**9650**		543	229	mg/Kg	☼	05/25/22 12:56	05/27/22 11:59	10
Diesel Range Organics (Over C10-C28)	**1360**		54.3	22.9	mg/Kg	☼	05/25/22 12:56	05/26/22 17:02	1
Oil Range Organics (Over C28-C36)	<22.9	U	54.3	22.9	mg/Kg	☼	05/25/22 12:56	05/26/22 17:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	129		65 - 130	05/25/22 12:56	05/26/22 17:02	1
1-Chlorooctane	136	S1+	65 - 130	05/25/22 12:56	05/27/22 11:59	10
o-Terphenyl	94		65 - 130	05/25/22 12:56	05/26/22 17:02	1
o-Terphenyl	105		65 - 130	05/25/22 12:56	05/27/22 11:59	10

Client Sample ID: SNR-03 (1'-2')
Lab Sample ID: 860-26536-9
Date Collected: 05/16/22 12:30
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 98.3

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000514	U	0.00511	0.000514	mg/Kg	☼	05/24/22 15:45	05/25/22 09:07	1
1,1-Dichloroethane	<0.000384	U	0.00511	0.000384	mg/Kg	☼	05/24/22 15:45	05/25/22 09:07	1
1,2-Dibromoethane	<0.00107	U	0.00511	0.00107	mg/Kg	☼	05/24/22 15:45	05/25/22 09:07	1
1,2-Dichloroethane	<0.000310	U	0.00511	0.000310	mg/Kg	☼	05/24/22 15:45	05/25/22 09:07	1
1,4-Dioxane (P-Dioxane)	<0.0149	U	0.102	0.0149	mg/Kg	☼	05/24/22 15:45	05/25/22 09:07	1
2-Butanone	**0.0313**		0.0204	0.00373	mg/Kg	☼	05/24/22 15:45	05/25/22 09:07	1
Benzene	**0.0390**		0.00102	0.000211	mg/Kg	☼	05/24/22 15:45	05/25/22 09:07	1
Carbon disulfide	<0.000299	U	0.00511	0.000299	mg/Kg	☼	05/24/22 15:45	05/25/22 09:07	1
Chlorobenzene	<0.000242	U	0.00511	0.000242	mg/Kg	☼	05/24/22 15:45	05/25/22 09:07	1
Chloroform	<0.000177	U	0.00511	0.000177	mg/Kg	☼	05/24/22 15:45	05/25/22 09:07	1
Styrene	<0.000210	U	0.00511	0.000210	mg/Kg	☼	05/24/22 15:45	05/25/22 09:07	1
Tetrachloroethene	<0.000378	U	0.00511	0.000378	mg/Kg	☼	05/24/22 15:45	05/25/22 09:07	1
Trichloroethene	<0.000505	U	0.00511	0.000505	mg/Kg	☼	05/24/22 15:45	05/25/22 09:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		56 - 150	05/24/22 15:45	05/25/22 09:07	1
4-Bromofluorobenzene (Surr)	116		68 - 152	05/24/22 15:45	05/25/22 09:07	1
Dibromofluoromethane (Surr)	93		53 - 142	05/24/22 15:45	05/25/22 09:07	1
Toluene-d8 (Surr)	105		70 - 130	05/24/22 15:45	05/25/22 09:07	1

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**1.67**		0.0255	0.00858	mg/Kg	☼	05/25/22 13:53	05/25/22 17:47	25
Toluene	**3.02**		0.128	0.0255	mg/Kg	☼	05/25/22 13:53	05/25/22 17:47	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		56 - 150	05/25/22 13:53	05/25/22 17:47	25

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Client Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Client Sample ID: SNR-03 (1'-2')

Lab Sample ID: 860-26536-9
Date Collected: 05/16/22 12:30
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 98.3

Method: 8260D - Volatile Organic Compounds by GC/MS - DL (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		68 - 152	05/25/22 13:53	05/25/22 17:47	25
Dibromofluoromethane (Surr)	88		53 - 142	05/25/22 13:53	05/25/22 17:47	25
Toluene-d8 (Surr)	104		70 - 130	05/25/22 13:53	05/25/22 17:47	25

Method: 8260D - Volatile Organic Compounds by GC/MS - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**24.6**		0.409	0.201	mg/Kg	☼	05/25/22 13:53	05/28/22 14:42	200
m,p-Xylenes	**17.3**		0.409	0.163	mg/Kg	☼	05/25/22 13:53	05/28/22 14:42	200
o-Xylene	**7.29**		0.204	0.201	mg/Kg	☼	05/25/22 13:53	05/28/22 14:42	200

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	127		56 - 150	05/25/22 13:53	05/28/22 14:42	200
4-Bromofluorobenzene (Surr)	109		68 - 152	05/25/22 13:53	05/28/22 14:42	200
Dibromofluoromethane (Surr)	97		53 - 142	05/25/22 13:53	05/28/22 14:42	200
Toluene-d8 (Surr)	104		70 - 130	05/25/22 13:53	05/28/22 14:42	200

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**292**		51.0	21.5	mg/Kg	☼	05/25/22 12:56	05/26/22 15:45	1
Diesel Range Organics (Over C10-C28)	**2110**		51.0	21.5	mg/Kg	☼	05/25/22 12:56	05/26/22 15:45	1
Oil Range Organics (Over C28-C36)	**51.6**		51.0	21.5	mg/Kg	☼	05/25/22 12:56	05/26/22 15:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	93		65 - 130	05/25/22 12:56	05/26/22 15:45	1
o-Terphenyl	108		65 - 130	05/25/22 12:56	05/26/22 15:45	1

Client Sample ID: SNR-03 (5'-6')

Lab Sample ID: 860-26536-10
Date Collected: 05/16/22 12:35
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 97.4

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.102	U	1.02	0.102	mg/Kg	☼	05/24/22 15:45	05/25/22 14:22	200
1,1-Dichloroethane	<0.0766	U	1.02	0.0766	mg/Kg	☼	05/24/22 15:45	05/25/22 14:22	200
1,2-Dibromoethane	<0.212	U	1.02	0.212	mg/Kg	☼	05/24/22 15:45	05/25/22 14:22	200
1,2-Dichloroethane	<0.0619	U	1.02	0.0619	mg/Kg	☼	05/24/22 15:45	05/25/22 14:22	200
1,4-Dioxane (P-Dioxane)	<2.96	U	20.4	2.96	mg/Kg	☼	05/24/22 15:45	05/25/22 14:22	200
2-Butanone	<0.742	U	4.07	0.742	mg/Kg	☼	05/24/22 15:45	05/25/22 14:22	200
Benzene	**0.553**		0.204	0.0421	mg/Kg	☼	05/24/22 15:45	05/25/22 14:22	200
Carbon disulfide	<0.0595	U	1.02	0.0595	mg/Kg	☼	05/24/22 15:45	05/25/22 14:22	200
Chlorobenzene	<0.0482	U	1.02	0.0482	mg/Kg	☼	05/24/22 15:45	05/25/22 14:22	200
Chloroform	<0.0352	U	1.02	0.0352	mg/Kg	☼	05/24/22 15:45	05/25/22 14:22	200
Ethylbenzene	**11.1**		0.204	0.0684	mg/Kg	☼	05/24/22 15:45	05/25/22 14:22	200
Styrene	<0.0418	U	1.02	0.0418	mg/Kg	☼	05/24/22 15:45	05/25/22 14:22	200
Tetrachloroethene	<0.0753	U	1.02	0.0753	mg/Kg	☼	05/24/22 15:45	05/25/22 14:22	200
Toluene	**14.4**		1.02	0.204	mg/Kg	☼	05/24/22 15:45	05/25/22 14:22	200
Trichloroethene	<0.101	U	1.02	0.101	mg/Kg	☼	05/24/22 15:45	05/25/22 14:22	200

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-03 (5'-6')
Lab Sample ID: 860-26536-10
Date Collected: 05/16/22 12:35
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 97.4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		56 - 150	05/24/22 15:45	05/25/22 14:22	200
4-Bromofluorobenzene (Surr)	100		68 - 152	05/24/22 15:45	05/25/22 14:22	200
Dibromofluoromethane (Surr)	85		53 - 142	05/24/22 15:45	05/25/22 14:22	200
Toluene-d8 (Surr)	103		70 - 130	05/24/22 15:45	05/25/22 14:22	200

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**84.3**		2.04	1.00	mg/Kg	☼	05/24/22 15:45	05/25/22 20:15	1000
m,p-Xylenes	**61.3**		2.04	0.814	mg/Kg	☼	05/24/22 15:45	05/25/22 20:15	1000
o-Xylene	**23.0**		1.02	1.00	mg/Kg	☼	05/24/22 15:45	05/25/22 20:15	1000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		56 - 150	05/24/22 15:45	05/25/22 20:15	1000
4-Bromofluorobenzene (Surr)	103		68 - 152	05/24/22 15:45	05/25/22 20:15	1000
Dibromofluoromethane (Surr)	89		53 - 142	05/24/22 15:45	05/25/22 20:15	1000
Toluene-d8 (Surr)	101		70 - 130	05/24/22 15:45	05/25/22 20:15	1000

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**805**		51.1	21.6	mg/Kg	☼	05/25/22 12:56	05/26/22 14:46	1
Diesel Range Organics (Over C10-C28)	**629**		51.1	21.6	mg/Kg	☼	05/25/22 12:56	05/26/22 14:46	1
Oil Range Organics (Over C28-C36)	<21.6	U	51.1	21.6	mg/Kg	☼	05/25/22 12:56	05/26/22 14:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	102		65 - 130	05/25/22 12:56	05/26/22 14:46	1
o-Terphenyl	106		65 - 130	05/25/22 12:56	05/26/22 14:46	1

Client Sample ID: SNR-03 (10'-11')
Lab Sample ID: 860-26536-11
Date Collected: 05/16/22 12:40
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 90.4

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000561	U	0.00558	0.000561	mg/Kg	☼	05/24/22 15:45	05/25/22 09:29	1
1,1-Dichloroethane	<0.000420	U	0.00558	0.000420	mg/Kg	☼	05/24/22 15:45	05/25/22 09:29	1
1,2-Dibromoethane	<0.00116	U	0.00558	0.00116	mg/Kg	☼	05/24/22 15:45	05/25/22 09:29	1
1,2-Dichloroethane	<0.000339	U	0.00558	0.000339	mg/Kg	☼	05/24/22 15:45	05/25/22 09:29	1
1,4-Dioxane (P-Dioxane)	<0.0162	U	0.112	0.0162	mg/Kg	☼	05/24/22 15:45	05/25/22 09:29	1
2-Butanone	<0.00407	U	0.0223	0.00407	mg/Kg	☼	05/24/22 15:45	05/25/22 09:29	1
Carbon disulfide	**0.00415**	**J**	0.00558	0.000326	mg/Kg	☼	05/24/22 15:45	05/25/22 09:29	1
Chlorobenzene	<0.000264	U	0.00558	0.000264	mg/Kg	☼	05/24/22 15:45	05/25/22 09:29	1
Chloroform	<0.000193	U	0.00558	0.000193	mg/Kg	☼	05/24/22 15:45	05/25/22 09:29	1
Styrene	<0.000229	U	0.00558	0.000229	mg/Kg	☼	05/24/22 15:45	05/25/22 09:29	1
Tetrachloroethene	<0.000412	U	0.00558	0.000412	mg/Kg	☼	05/24/22 15:45	05/25/22 09:29	1
Trichloroethene	<0.000551	U	0.00558	0.000551	mg/Kg	☼	05/24/22 15:45	05/25/22 09:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		56 - 150	05/24/22 15:45	05/25/22 09:29	1
4-Bromofluorobenzene (Surr)	111		68 - 152	05/24/22 15:45	05/25/22 09:29	1
Dibromofluoromethane (Surr)	129		53 - 142	05/24/22 15:45	05/25/22 09:29	1

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-03 (10'-11')
Lab Sample ID: 860-26536-11
Date Collected: 05/16/22 12:40
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 90.4

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	133	S1+	70 - 130	05/24/22 15:45	05/25/22 09:29	1

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.728		0.0274	0.00567	mg/Kg	☼	05/25/22 13:53	05/25/22 18:08	25
Ethylbenzene	1.98		0.0274	0.00920	mg/Kg	☼	05/25/22 13:53	05/25/22 18:08	25
Toluene	0.700		0.137	0.0274	mg/Kg	☼	05/25/22 13:53	05/25/22 18:08	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		56 - 150	05/25/22 13:53	05/25/22 18:08	25
4-Bromofluorobenzene (Surr)	102		68 - 152	05/25/22 13:53	05/25/22 18:08	25
Dibromofluoromethane (Surr)	88		53 - 142	05/25/22 13:53	05/25/22 18:08	25
Toluene-d8 (Surr)	104		70 - 130	05/25/22 13:53	05/25/22 18:08	25

Method: 8260D - Volatile Organic Compounds by GC/MS - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	15.2		0.438	0.216	mg/Kg	☼	05/25/22 13:53	05/28/22 15:02	200
m,p-Xylenes	11.1		0.438	0.175	mg/Kg	☼	05/25/22 13:53	05/28/22 15:02	200
o-Xylene	4.10		0.219	0.216	mg/Kg	☼	05/25/22 13:53	05/28/22 15:02	200

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	128		56 - 150	05/25/22 13:53	05/28/22 15:02	200
4-Bromofluorobenzene (Surr)	109		68 - 152	05/25/22 13:53	05/28/22 15:02	200
Dibromofluoromethane (Surr)	95		53 - 142	05/25/22 13:53	05/28/22 15:02	200
Toluene-d8 (Surr)	106		70 - 130	05/25/22 13:53	05/28/22 15:02	200

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	76.4		55.2	23.3	mg/Kg	☼	05/25/22 12:56	05/26/22 12:29	1
Diesel Range Organics (Over C10-C28)	52.6	J	55.2	23.3	mg/Kg	☼	05/25/22 12:56	05/26/22 12:29	1
OII Range Organics (Over C28-C36)	<23.3	U	55.2	23.3	mg/Kg	☼	05/25/22 12:56	05/26/22 12:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	97		65 - 130	05/25/22 12:56	05/26/22 12:29	1
o-Terphenyl	111		65 - 130	05/25/22 12:56	05/26/22 12:29	1

Client Sample ID: SNR-03 (12'-13')
Lab Sample ID: 860-26536-12
Date Collected: 05/16/22 12:45
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 89.4

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000565	U	0.00561	0.000565	mg/Kg	☼	05/24/22 15:45	05/25/22 09:52	1
1,1-Dichloroethane	<0.000422	U	0.00561	0.000422	mg/Kg	☼	05/24/22 15:45	05/25/22 09:52	1
1,2-Dibromoethane	<0.00117	U	0.00561	0.00117	mg/Kg	☼	05/24/22 15:45	05/25/22 09:52	1
1,2-Dichloroethane	<0.000341	U	0.00561	0.000341	mg/Kg	☼	05/24/22 15:45	05/25/22 09:52	1
1,4-Dioxane (P-Dioxane)	<0.0163	U	0.112	0.0163	mg/Kg	☼	05/24/22 15:45	05/25/22 09:52	1
2-Butanone	0.0332		0.0225	0.00409	mg/Kg	☼	05/24/22 15:45	05/25/22 09:52	1
Benzene	0.0831		0.00112	0.000232	mg/Kg	☼	05/24/22 15:45	05/25/22 09:52	1

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-03 (12'-13')
Lab Sample ID: 860-26536-12
Date Collected: 05/16/22 12:45
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 89.4

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon disulfide	**0.00204**	**J**	0.00561	0.000328	mg/Kg	☼	05/24/22 15:45	05/25/22 09:52	1
Chlorobenzene	<0.000266	U	0.00561	0.000266	mg/Kg	☼	05/24/22 15:45	05/25/22 09:52	1
Chloroform	<0.000194	U	0.00561	0.000194	mg/Kg	☼	05/24/22 15:45	05/25/22 09:52	1
Ethylbenzene	**0.0556**		0.00112	0.000377	mg/Kg	☼	05/24/22 15:45	05/25/22 09:52	1
Styrene	<0.000231	U	0.00561	0.000231	mg/Kg	☼	05/24/22 15:45	05/25/22 09:52	1
Tetrachloroethene	<0.000415	U	0.00561	0.000415	mg/Kg	☼	05/24/22 15:45	05/25/22 09:52	1
Toluene	**0.00377**	**J**	0.00565	0.00113	mg/Kg	☼	05/28/22 11:53	05/28/22 15:23	1
Trichloroethene	<0.000555	U	0.00561	0.000555	mg/Kg	☼	05/24/22 15:45	05/25/22 09:52	1
Xylenes, Total	**0.117**		0.00226	0.00111	mg/Kg	☼	05/28/22 11:53	05/28/22 15:23	1
m,p-Xylenes	**0.0850**		0.00226	0.000904	mg/Kg	☼	05/28/22 11:53	05/28/22 15:23	1
o-Xylene	**0.0322**		0.00113	0.00111	mg/Kg	☼	05/28/22 11:53	05/28/22 15:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*56 - 150*	*05/24/22 15:45*	*05/25/22 09:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*83*		*56 - 150*	*05/28/22 11:53*	*05/28/22 15:23*	*1*
4-Bromofluorobenzene (Surr)	*101*		*68 - 152*	*05/24/22 15:45*	*05/25/22 09:52*	*1*
4-Bromofluorobenzene (Surr)	*97*		*68 - 152*	*05/28/22 11:53*	*05/28/22 15:23*	*1*
Dibromofluoromethane (Surr)	*87*		*53 - 142*	*05/24/22 15:45*	*05/25/22 09:52*	*1*
Dibromofluoromethane (Surr)	*89*		*53 - 142*	*05/28/22 11:53*	*05/28/22 15:23*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*	*05/24/22 15:45*	*05/25/22 09:52*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*	*05/28/22 11:53*	*05/28/22 15:23*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**38.2**	**J**	55.9	23.6	mg/Kg	☼	05/25/22 12:56	05/26/22 12:48	1
Diesel Range Organics (Over C10-C28)	**28.1**	**J**	55.9	23.6	mg/Kg	☼	05/25/22 12:56	05/26/22 12:48	1
Oil Range Organics (Over C28-C36)	<23.6	U	55.9	23.6	mg/Kg	☼	05/25/22 12:56	05/26/22 12:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*95*		*65 - 130*	*05/25/22 12:56*	*05/26/22 12:48*	*1*
o-Terphenyl	*109*		*65 - 130*	*05/25/22 12:56*	*05/26/22 12:48*	*1*

Client Sample ID: SNR-06 (1'-2')
Lab Sample ID: 860-26536-13
Date Collected: 05/16/22 14:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 99.5

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000510	U	0.00507	0.000510	mg/Kg	☼	05/24/22 15:45	05/25/22 10:15	1
1,1-Dichloroethane	<0.000382	U	0.00507	0.000382	mg/Kg	☼	05/24/22 15:45	05/25/22 10:15	1
1,2-Dibromoethane	<0.00106	U	0.00507	0.00106	mg/Kg	☼	05/24/22 15:45	05/25/22 10:15	1
1,2-Dichloroethane	<0.000308	U	0.00507	0.000308	mg/Kg	☼	05/24/22 15:45	05/25/22 10:15	1
1,4-Dioxane (P-Dioxane)	<0.0148	U	0.101	0.0148	mg/Kg	☼	05/24/22 15:45	05/25/22 10:15	1
2-Butanone	<0.00370	U	0.0203	0.00370	mg/Kg	☼	05/24/22 15:45	05/25/22 10:15	1
Benzene	**0.00404**		0.00101	0.000210	mg/Kg	☼	05/24/22 15:45	05/25/22 10:15	1
Carbon disulfide	<0.000297	U	0.00507	0.000297	mg/Kg	☼	05/24/22 15:45	05/25/22 10:15	1
Chlorobenzene	<0.000240	U	0.00507	0.000240	mg/Kg	☼	05/24/22 15:45	05/25/22 10:15	1
Chloroform	<0.000175	U	0.00507	0.000175	mg/Kg	☼	05/24/22 15:45	05/25/22 10:15	1
Ethylbenzene	**0.113**		0.00101	0.000341	mg/Kg	☼	05/24/22 15:45	05/25/22 10:15	1

Client Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Client Sample ID: SNR-06 (1'-2')

Lab Sample ID: 860-26536-13
Date Collected: 05/16/22 14:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 99.5

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	<0.000208	U	0.00507	0.000208	mg/Kg	☼	05/24/22 15:45	05/25/22 10:15	1
Tetrachloroethene	<0.000375	U	0.00507	0.000375	mg/Kg	☼	05/24/22 15:45	05/25/22 10:15	1
Toluene	**0.0931**		0.00507	0.00101	mg/Kg	☼	05/24/22 15:45	05/25/22 10:15	1
Trichloroethene	<0.000501	U	0.00507	0.000501	mg/Kg	☼	05/24/22 15:45	05/25/22 10:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*56 - 150*	*05/24/22 15:45*	*05/25/22 10:15*	*1*
4-Bromofluorobenzene (Surr)	*105*		*68 - 152*	*05/24/22 15:45*	*05/25/22 10:15*	*1*
Dibromofluoromethane (Surr)	*93*		*53 - 142*	*05/24/22 15:45*	*05/25/22 10:15*	*1*
Toluene-d8 (Surr)	*111*		*70 - 130*	*05/24/22 15:45*	*05/25/22 10:15*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**1.43**		0.0501	0.0247	mg/Kg	☼	05/25/22 13:53	05/25/22 18:28	25
m,p-Xylenes	**0.979**		0.0501	0.0201	mg/Kg	☼	05/25/22 13:53	05/25/22 18:28	25
o-Xylene	**0.450**		0.0251	0.0247	mg/Kg	☼	05/25/22 13:53	05/25/22 18:28	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*56 - 150*	*05/25/22 13:53*	*05/25/22 18:28*	*25*
4-Bromofluorobenzene (Surr)	*103*		*68 - 152*	*05/25/22 13:53*	*05/25/22 18:28*	*25*
Dibromofluoromethane (Surr)	*89*		*53 - 142*	*05/25/22 13:53*	*05/25/22 18:28*	*25*
Toluene-d8 (Surr)	*101*		*70 - 130*	*05/25/22 13:53*	*05/25/22 18:28*	*25*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**63.2**		50.0	21.1	mg/Kg	☼	05/25/22 12:56	05/26/22 16:05	1
Diesel Range Organics (Over C10-C28)	**725**		50.0	21.1	mg/Kg	☼	05/25/22 12:56	05/26/22 16:05	1
Oil Range Organics (Over C28-C36)	**30.5**	**J**	50.0	21.1	mg/Kg	☼	05/25/22 12:56	05/26/22 16:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*94*		*65 - 130*	*05/25/22 12:56*	*05/26/22 16:05*	*1*
o-Terphenyl	*85*		*65 - 130*	*05/25/22 12:56*	*05/26/22 16:05*	*1*

Client Sample ID: SNR-06 (7'-8')

Lab Sample ID: 860-26536-14
Date Collected: 05/16/22 14:10
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.5

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000522	U	0.00519	0.000522	mg/Kg	☼	05/24/22 15:45	05/25/22 10:37	1
1,1-Dichloroethane	<0.000391	U	0.00519	0.000391	mg/Kg	☼	05/24/22 15:45	05/25/22 10:37	1
1,2-Dibromoethane	<0.00108	U	0.00519	0.00108	mg/Kg	☼	05/24/22 15:45	05/25/22 10:37	1
1,2-Dichloroethane	<0.000315	U	0.00519	0.000315	mg/Kg	☼	05/24/22 15:45	05/25/22 10:37	1
1,4-Dioxane (P-Dioxane)	<0.0151	U	0.104	0.0151	mg/Kg	☼	05/24/22 15:45	05/25/22 10:37	1
2-Butanone	<0.00379	U	0.0208	0.00379	mg/Kg	☼	05/24/22 15:45	05/25/22 10:37	1
Carbon disulfide	**0.00575**		0.00519	0.000304	mg/Kg	☼	05/24/22 15:45	05/25/22 10:37	1
Chlorobenzene	<0.000246	U	0.00519	0.000246	mg/Kg	☼	05/24/22 15:45	05/25/22 10:37	1
Chloroform	<0.000179	U	0.00519	0.000179	mg/Kg	☼	05/24/22 15:45	05/25/22 10:37	1
Styrene	<0.000213	U	0.00519	0.000213	mg/Kg	☼	05/24/22 15:45	05/25/22 10:37	1

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-06 (7'-8')
Lab Sample ID: 860-26536-14
Date Collected: 05/16/22 14:10
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.5

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<0.000384	U	0.00519	0.000384	mg/Kg	☼	05/24/22 15:45	05/25/22 10:37	1
Trichloroethene	<0.000513	U	0.00519	0.000513	mg/Kg	☼	05/24/22 15:45	05/25/22 10:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*193*	*S1+*	*56 - 150*	*05/24/22 15:45*	*05/25/22 10:37*	*1*
4-Bromofluorobenzene (Surr)	*1293*	**3 S1+*	*68 - 152*	*05/24/22 15:45*	*05/25/22 10:37*	*1*
Dibromofluoromethane (Surr)	*139*		*53 - 142*	*05/24/22 15:45*	*05/25/22 10:37*	*1*
Toluene-d8 (Surr)	*957*	*S1+*	*70 - 130*	*05/24/22 15:45*	*05/25/22 10:37*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**3.16**		0.105	0.0217	mg/Kg	☼	05/25/22 13:53	05/25/22 19:29	100
Toluene	**15.4**		0.523	0.105	mg/Kg	☼	05/25/22 13:53	05/25/22 19:29	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*56 - 150*	*05/25/22 13:53*	*05/25/22 19:29*	*100*
4-Bromofluorobenzene (Surr)	*116*		*68 - 152*	*05/25/22 13:53*	*05/25/22 19:29*	*100*
Dibromofluoromethane (Surr)	*91*		*53 - 142*	*05/25/22 13:53*	*05/25/22 19:29*	*100*
Toluene-d8 (Surr)	*118*		*70 - 130*	*05/25/22 13:53*	*05/25/22 19:29*	*100*

Method: 8260D - Volatile Organic Compounds by GC/MS - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**26.7**		1.05	0.351	mg/Kg	☼	05/25/22 13:53	05/26/22 16:53	1000
Xylenes, Total	**111**		2.09	1.03	mg/Kg	☼	05/25/22 13:53	05/26/22 16:53	1000
m,p-Xylenes	**81.8**		2.09	0.837	mg/Kg	☼	05/25/22 13:53	05/26/22 16:53	1000
o-Xylene	**29.5**		1.05	1.03	mg/Kg	☼	05/25/22 13:53	05/26/22 16:53	1000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*56 - 150*	*05/25/22 13:53*	*05/26/22 16:53*	*1000*
4-Bromofluorobenzene (Surr)	*102*		*68 - 152*	*05/25/22 13:53*	*05/26/22 16:53*	*1000*
Dibromofluoromethane (Surr)	*89*		*53 - 142*	*05/25/22 13:53*	*05/26/22 16:53*	*1000*
Toluene-d8 (Surr)	*101*		*70 - 130*	*05/25/22 13:53*	*05/26/22 16:53*	*1000*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**3050**		52.0	22.0	mg/Kg	☼	05/25/22 12:56	05/26/22 13:08	1
Diesel Range Organics (Over C10-C28)	**378**		52.0	22.0	mg/Kg	☼	05/25/22 12:56	05/26/22 13:08	1
Oil Range Organics (Over C28-C36)	<22.0	U	52.0	22.0	mg/Kg	☼	05/25/22 12:56	05/26/22 13:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*107*		*65 - 130*	*05/25/22 12:56*	*05/26/22 13:08*	*1*
o-Terphenyl	*107*		*65 - 130*	*05/25/22 12:56*	*05/26/22 13:08*	*1*

Client Sample ID: SNR-06 (5'-6')
Lab Sample ID: 860-26536-15
Date Collected: 05/16/22 14:05
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.1

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000524	U	0.00521	0.000524	mg/Kg	☼	05/24/22 15:45	05/25/22 10:59	1

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-06 (5'-6')
Lab Sample ID: 860-26536-15
Date Collected: 05/16/22 14:05
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	<0.000392	U	0.00521	0.000392	mg/Kg	☼	05/24/22 15:45	05/25/22 10:59	1
1,2-Dibromoethane	<0.00109	U	0.00521	0.00109	mg/Kg	☼	05/24/22 15:45	05/25/22 10:59	1
1,2-Dichloroethane	<0.000316	U	0.00521	0.000316	mg/Kg	☼	05/24/22 15:45	05/25/22 10:59	1
1,4-Dioxane (P-Dioxane)	<0.0152	U	0.104	0.0152	mg/Kg	☼	05/24/22 15:45	05/25/22 10:59	1
2-Butanone	**0.0200**	**J**	0.0208	0.00380	mg/Kg	☼	05/24/22 15:45	05/25/22 10:59	1
Benzene	**0.00155**		0.00106	0.000219	mg/Kg	☼	05/28/22 11:53	05/28/22 15:39	1
Carbon disulfide	**0.000654**	**J**	0.00521	0.000304	mg/Kg	☼	05/24/22 15:45	05/25/22 10:59	1
Chlorobenzene	<0.000246	U	0.00521	0.000246	mg/Kg	☼	05/24/22 15:45	05/25/22 10:59	1
Chloroform	<0.000180	U	0.00521	0.000180	mg/Kg	☼	05/24/22 15:45	05/25/22 10:59	1
Styrene	<0.000214	U	0.00521	0.000214	mg/Kg	☼	05/24/22 15:45	05/25/22 10:59	1
Tetrachloroethene	<0.000385	U	0.00521	0.000385	mg/Kg	☼	05/24/22 15:45	05/25/22 10:59	1
Toluene	**0.0421**		0.00528	0.00106	mg/Kg	☼	05/28/22 11:53	05/28/22 15:39	1
Trichloroethene	<0.000514	U	0.00521	0.000514	mg/Kg	☼	05/24/22 15:45	05/25/22 10:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*56 - 150*	*05/24/22 15:45*	*05/25/22 10:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*56 - 150*	*05/28/22 11:53*	*05/28/22 15:39*	*1*
4-Bromofluorobenzene (Surr)	*98*		*68 - 152*	*05/24/22 15:45*	*05/25/22 10:59*	*1*
4-Bromofluorobenzene (Surr)	*153*	*S1+*	*68 - 152*	*05/28/22 11:53*	*05/28/22 15:39*	*1*
Dibromofluoromethane (Surr)	*82*		*53 - 142*	*05/24/22 15:45*	*05/25/22 10:59*	*1*
Dibromofluoromethane (Surr)	*96*		*53 - 142*	*05/28/22 11:53*	*05/28/22 15:39*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*	*05/24/22 15:45*	*05/25/22 10:59*	*1*
Toluene-d8 (Surr)	*132*	*S1+*	*70 - 130*	*05/28/22 11:53*	*05/28/22 15:39*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**0.582**		0.0263	0.00884	mg/Kg	☼	05/27/22 15:08	05/28/22 16:02	25
Xylenes, Total	**4.27**		0.0527	0.0259	mg/Kg	☼	05/27/22 15:08	05/28/22 16:02	25
m,p-Xylenes	**3.03**		0.0527	0.0211	mg/Kg	☼	05/27/22 15:08	05/28/22 16:02	25
o-Xylene	**1.24**		0.0263	0.0259	mg/Kg	☼	05/27/22 15:08	05/28/22 16:02	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*56 - 150*	*05/27/22 15:08*	*05/28/22 16:02*	*25*
4-Bromofluorobenzene (Surr)	*123*		*68 - 152*	*05/27/22 15:08*	*05/28/22 16:02*	*25*
Dibromofluoromethane (Surr)	*86*		*53 - 142*	*05/27/22 15:08*	*05/28/22 16:02*	*25*
Toluene-d8 (Surr)	*115*		*70 - 130*	*05/27/22 15:08*	*05/28/22 16:02*	*25*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**342**		52.3	22.1	mg/Kg	☼	05/25/22 12:56	05/26/22 13:27	1
Diesel Range Organics (Over C10-C28)	**116**		52.3	22.1	mg/Kg	☼	05/25/22 12:56	05/26/22 13:27	1
Oil Range Organics (Over C28-C36)	<22.1	U	52.3	22.1	mg/Kg	☼	05/25/22 12:56	05/26/22 13:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*101*		*65 - 130*	*05/25/22 12:56*	*05/26/22 13:27*	*1*
o-Terphenyl	*107*		*65 - 130*	*05/25/22 12:56*	*05/26/22 13:27*	*1*

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-04 (1'-2')
Lab Sample ID: 860-26536-16
Date Collected: 05/16/22 14:45
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.7

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000520	U	0.00517	0.000520	mg/Kg	☼	05/24/22 15:45	05/25/22 11:22	1
1,1-Dichloroethane	<0.000389	U	0.00517	0.000389	mg/Kg	☼	05/24/22 15:45	05/25/22 11:22	1
1,2-Dibromoethane	<0.00108	U	0.00517	0.00108	mg/Kg	☼	05/24/22 15:45	05/25/22 11:22	1
1,2-Dichloroethane	<0.000314	U	0.00517	0.000314	mg/Kg	☼	05/24/22 15:45	05/25/22 11:22	1
1,4-Dioxane (P-Dioxane)	<0.0151	U	0.103	0.0151	mg/Kg	☼	05/24/22 15:45	05/25/22 11:22	1
2-Butanone	<0.00377	U	0.0207	0.00377	mg/Kg	☼	05/24/22 15:45	05/25/22 11:22	1
Benzene	<0.000214	U	0.00103	0.000214	mg/Kg	☼	05/24/22 15:45	05/25/22 11:22	1
Carbon disulfide	<0.000302	U	0.00517	0.000302	mg/Kg	☼	05/24/22 15:45	05/25/22 11:22	1
Chlorobenzene	<0.000245	U	0.00517	0.000245	mg/Kg	☼	05/24/22 15:45	05/25/22 11:22	1
Chloroform	<0.000179	U	0.00517	0.000179	mg/Kg	☼	05/24/22 15:45	05/25/22 11:22	1
Ethylbenzene	<0.000353	U	0.00105	0.000353	mg/Kg	☼	05/28/22 11:53	05/28/22 14:52	1
Styrene	<0.000212	U	0.00517	0.000212	mg/Kg	☼	05/24/22 15:45	05/25/22 11:22	1
Tetrachloroethene	<0.000382	U	0.00517	0.000382	mg/Kg	☼	05/24/22 15:45	05/25/22 11:22	1
Toluene	<0.00103	U	0.00517	0.00103	mg/Kg	☼	05/24/22 15:45	05/25/22 11:22	1
Trichloroethene	<0.000511	U	0.00517	0.000511	mg/Kg	☼	05/24/22 15:45	05/25/22 11:22	1
Xylenes, Total	**0.00127**	**J**	0.00210	0.00103	mg/Kg	☼	05/28/22 11:53	05/28/22 14:52	1
m,p-Xylenes	**0.00127**	**J**	0.00210	0.000841	mg/Kg	☼	05/28/22 11:53	05/28/22 14:52	1
o-Xylene	<0.00103	U	0.00105	0.00103	mg/Kg	☼	05/28/22 11:53	05/28/22 14:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*56 - 150*	*05/24/22 15:45*	*05/25/22 11:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*56 - 150*	*05/28/22 11:53*	*05/28/22 14:52*	*1*
4-Bromofluorobenzene (Surr)	*108*		*68 - 152*	*05/24/22 15:45*	*05/25/22 11:22*	*1*
4-Bromofluorobenzene (Surr)	*112*		*68 - 152*	*05/28/22 11:53*	*05/28/22 14:52*	*1*
Dibromofluoromethane (Surr)	*84*		*53 - 142*	*05/24/22 15:45*	*05/25/22 11:22*	*1*
Dibromofluoromethane (Surr)	*94*		*53 - 142*	*05/28/22 11:53*	*05/28/22 14:52*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*	*05/24/22 15:45*	*05/25/22 11:22*	*1*
Toluene-d8 (Surr)	*109*		*70 - 130*	*05/28/22 11:53*	*05/28/22 14:52*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<22.1	U	52.3	22.1	mg/Kg	☼	05/25/22 12:56	05/26/22 15:25	1
Diesel Range Organics (Over C10-C28)	<22.1	U	52.3	22.1	mg/Kg	☼	05/25/22 12:56	05/26/22 15:25	1
Oil Range Organics (Over C28-C36)	<22.1	U	52.3	22.1	mg/Kg	☼	05/25/22 12:56	05/26/22 15:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*93*		*65 - 130*	*05/25/22 12:56*	*05/26/22 15:25*	*1*
o-Terphenyl	*100*		*65 - 130*	*05/25/22 12:56*	*05/26/22 15:25*	*1*

Client Sample ID: SNR-04 (5'-6')
Lab Sample ID: 860-26536-17
Date Collected: 05/16/22 14:50
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 92.2

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000549	U	0.00546	0.000549	mg/Kg	☼	05/24/22 15:45	05/25/22 11:44	1
1,1-Dichloroethane	<0.000410	U	0.00546	0.000410	mg/Kg	☼	05/24/22 15:45	05/25/22 11:44	1
1,2-Dibromoethane	<0.00114	U	0.00546	0.00114	mg/Kg	☼	05/24/22 15:45	05/25/22 11:44	1
1,2-Dichloroethane	<0.000332	U	0.00546	0.000332	mg/Kg	☼	05/24/22 15:45	05/25/22 11:44	1

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-04 (5'-6')
Lab Sample ID: 860-26536-17
Date Collected: 05/16/22 14:50
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 92.2

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane (P-Dioxane)	<0.0159	U	0.109	0.0159	mg/Kg	☼	05/24/22 15:45	05/25/22 11:44	1
2-Butanone	**0.0240**		0.0218	0.00398	mg/Kg	☼	05/24/22 15:45	05/25/22 11:44	1
Benzene	**0.0241**		0.00109	0.000226	mg/Kg	☼	05/24/22 15:45	05/25/22 11:44	1
Carbon disulfide	**0.00299**	**J**	0.00546	0.000319	mg/Kg	☼	05/24/22 15:45	05/25/22 11:44	1
Chlorobenzene	<0.000258	U	0.00546	0.000258	mg/Kg	☼	05/24/22 15:45	05/25/22 11:44	1
Chloroform	<0.000189	U	0.00546	0.000189	mg/Kg	☼	05/24/22 15:45	05/25/22 11:44	1
Styrene	<0.000224	U	0.00546	0.000224	mg/Kg	☼	05/24/22 15:45	05/25/22 11:44	1
Tetrachloroethene	<0.000403	U	0.00546	0.000403	mg/Kg	☼	05/24/22 15:45	05/25/22 11:44	1
Toluene	**0.00930**		0.00546	0.00109	mg/Kg	☼	05/24/22 15:45	05/25/22 11:44	1
Trichloroethene	<0.000539	U	0.00546	0.000539	mg/Kg	☼	05/24/22 15:45	05/25/22 11:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*56 - 150*	*05/24/22 15:45*	*05/25/22 11:44*	*1*
4-Bromofluorobenzene (Surr)	*105*		*68 - 152*	*05/24/22 15:45*	*05/25/22 11:44*	*1*
Dibromofluoromethane (Surr)	*91*		*53 - 142*	*05/24/22 15:45*	*05/25/22 11:44*	*1*
Toluene-d8 (Surr)	*115*		*70 - 130*	*05/24/22 15:45*	*05/25/22 11:44*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**1.77**		0.0272	0.00912	mg/Kg	☼	05/25/22 13:53	05/25/22 18:48	25
Xylenes, Total	**3.26**		0.0543	0.0268	mg/Kg	☼	05/25/22 13:53	05/25/22 18:48	25
m,p-Xylenes	**3.06**		0.0543	0.0217	mg/Kg	☼	05/25/22 13:53	05/25/22 18:48	25
o-Xylene	**0.197**		0.0272	0.0268	mg/Kg	☼	05/25/22 13:53	05/25/22 18:48	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*56 - 150*	*05/25/22 13:53*	*05/25/22 18:48*	*25*
4-Bromofluorobenzene (Surr)	*100*		*68 - 152*	*05/25/22 13:53*	*05/25/22 18:48*	*25*
Dibromofluoromethane (Surr)	*89*		*53 - 142*	*05/25/22 13:53*	*05/25/22 18:48*	*25*
Toluene-d8 (Surr)	*108*		*70 - 130*	*05/25/22 13:53*	*05/25/22 18:48*	*25*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**740**		54.3	22.9	mg/Kg	☼	05/25/22 12:56	05/26/22 13:47	1
Diesel Range Organics (Over C10-C28)	**1010**		54.3	22.9	mg/Kg	☼	05/25/22 12:56	05/26/22 13:47	1
Oil Range Organics (Over C28-C36)	<22.9	U	54.3	22.9	mg/Kg	☼	05/25/22 12:56	05/26/22 13:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*112*		*65 - 130*	*05/25/22 12:56*	*05/26/22 13:47*	*1*
o-Terphenyl	*113*		*65 - 130*	*05/25/22 12:56*	*05/26/22 13:47*	*1*

Client Sample ID: SNR-04 (11'-12')
Lab Sample ID: 860-26536-18
Date Collected: 05/16/22 14:55
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 94.8

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000534	U	0.00530	0.000534	mg/Kg	☼	05/24/22 15:45	05/25/22 12:07	1
1,1-Dichloroethane	<0.000399	U	0.00530	0.000399	mg/Kg	☼	05/24/22 15:45	05/25/22 12:07	1
1,2-Dibromoethane	<0.00111	U	0.00530	0.00111	mg/Kg	☼	05/24/22 15:45	05/25/22 12:07	1
1,2-Dichloroethane	<0.000322	U	0.00530	0.000322	mg/Kg	☼	05/24/22 15:45	05/25/22 12:07	1

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-04 (11'-12')
Lab Sample ID: 860-26536-18
Date Collected: 05/16/22 14:55
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 94.8

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane (P-Dioxane)	<0.0154	U	0.106	0.0154	mg/Kg	☼	05/24/22 15:45	05/25/22 12:07	1
2-Butanone	<0.00387	U	0.0212	0.00387	mg/Kg	☼	05/24/22 15:45	05/25/22 12:07	1
Carbon disulfide	<0.000310	U	0.00530	0.000310	mg/Kg	☼	05/24/22 15:45	05/25/22 12:07	1
Chlorobenzene	<0.000251	U	0.00530	0.000251	mg/Kg	☼	05/24/22 15:45	05/25/22 12:07	1
Chloroform	<0.000183	U	0.00530	0.000183	mg/Kg	☼	05/24/22 15:45	05/25/22 12:07	1
Styrene	<0.000218	U	0.00530	0.000218	mg/Kg	☼	05/24/22 15:45	05/25/22 12:07	1
Tetrachloroethene	<0.000392	U	0.00530	0.000392	mg/Kg	☼	05/24/22 15:45	05/25/22 12:07	1
Trichloroethene	<0.000524	U	0.00530	0.000524	mg/Kg	☼	05/24/22 15:45	05/25/22 12:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*56 - 150*	*05/24/22 15:45*	*05/25/22 12:07*	*1*
4-Bromofluorobenzene (Surr)	*134*		*68 - 152*	*05/24/22 15:45*	*05/25/22 12:07*	*1*
Dibromofluoromethane (Surr)	*117*		*53 - 142*	*05/24/22 15:45*	*05/25/22 12:07*	*1*
Toluene-d8 (Surr)	*114*		*70 - 130*	*05/24/22 15:45*	*05/25/22 12:07*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**1.27**		0.0264	0.00546	mg/Kg	☼	05/25/22 13:53	05/25/22 19:09	25
Ethylbenzene	**2.79**		0.0264	0.00885	mg/Kg	☼	05/25/22 13:53	05/25/22 19:09	25
Toluene	**5.10**		1.05	0.211	mg/Kg	☼	05/25/22 13:53	05/27/22 20:23	200
Xylenes, Total	**17.0**		0.422	0.208	mg/Kg	☼	05/25/22 13:53	05/27/22 20:23	200
m,p-Xylenes	**12.8**		0.422	0.169	mg/Kg	☼	05/25/22 13:53	05/27/22 20:23	200
o-Xylene	**4.22**		0.211	0.208	mg/Kg	☼	05/25/22 13:53	05/27/22 20:23	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*56 - 150*	*05/25/22 13:53*	*05/25/22 19:09*	*25*
1,2-Dichloroethane-d4 (Surr)	*110*		*56 - 150*	*05/25/22 13:53*	*05/27/22 20:23*	*200*
4-Bromofluorobenzene (Surr)	*110*		*68 - 152*	*05/25/22 13:53*	*05/25/22 19:09*	*25*
4-Bromofluorobenzene (Surr)	*120*		*68 - 152*	*05/25/22 13:53*	*05/27/22 20:23*	*200*
Dibromofluoromethane (Surr)	*89*		*53 - 142*	*05/25/22 13:53*	*05/25/22 19:09*	*25*
Dibromofluoromethane (Surr)	*95*		*53 - 142*	*05/25/22 13:53*	*05/27/22 20:23*	*200*
Toluene-d8 (Surr)	*101*		*70 - 130*	*05/25/22 13:53*	*05/25/22 19:09*	*25*
Toluene-d8 (Surr)	*112*		*70 - 130*	*05/25/22 13:53*	*05/27/22 20:23*	*200*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**49.1**	**J**	52.7	22.2	mg/Kg	☼	05/25/22 12:56	05/26/22 14:07	1
Diesel Range Organics (Over C10-C28)	**80.0**		52.7	22.2	mg/Kg	☼	05/25/22 12:56	05/26/22 14:07	1
Oil Range Organics (Over C28-C36)	<22.2	U	52.7	22.2	mg/Kg	☼	05/25/22 12:56	05/26/22 14:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*95*		*65 - 130*	*05/25/22 12:56*	*05/26/22 14:07*	*1*
o-Terphenyl	*112*		*65 - 130*	*05/25/22 12:56*	*05/26/22 14:07*	*1*

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-04 (14'-15')
Lab Sample ID: 860-26536-19
Date Collected: 05/16/22 15:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.9

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000538	U	0.00534	0.000538	mg/Kg	☼	05/24/22 15:45	05/25/22 12:30	1
1,1-Dichloroethane	<0.000402	U	0.00534	0.000402	mg/Kg	☼	05/24/22 15:45	05/25/22 12:30	1
1,2-Dibromoethane	<0.00112	U	0.00534	0.00112	mg/Kg	☼	05/24/22 15:45	05/25/22 12:30	1
1,2-Dichloroethane	<0.000325	U	0.00534	0.000325	mg/Kg	☼	05/24/22 15:45	05/25/22 12:30	1
1,4-Dioxane (P-Dioxane)	<0.0156	U	0.107	0.0156	mg/Kg	☼	05/24/22 15:45	05/25/22 12:30	1
2-Butanone	**0.0104**	**J**	0.0214	0.00390	mg/Kg	☼	05/24/22 15:45	05/25/22 12:30	1
Benzene	**0.0656**		0.00107	0.000221	mg/Kg	☼	05/24/22 15:45	05/25/22 12:30	1
Carbon disulfide	<0.000312	U	0.00534	0.000312	mg/Kg	☼	05/24/22 15:45	05/25/22 12:30	1
Chlorobenzene	<0.000253	U	0.00534	0.000253	mg/Kg	☼	05/24/22 15:45	05/25/22 12:30	1
Chloroform	<0.000185	U	0.00534	0.000185	mg/Kg	☼	05/24/22 15:45	05/25/22 12:30	1
Ethylbenzene	**0.0117**		0.00107	0.000359	mg/Kg	☼	05/24/22 15:45	05/25/22 12:30	1
Styrene	<0.000220	U	0.00534	0.000220	mg/Kg	☼	05/24/22 15:45	05/25/22 12:30	1
Tetrachloroethene	<0.000395	U	0.00534	0.000395	mg/Kg	☼	05/24/22 15:45	05/25/22 12:30	1
Toluene	**0.00543**		0.00534	0.00107	mg/Kg	☼	05/24/22 15:45	05/25/22 12:30	1
Trichloroethene	<0.000528	U	0.00534	0.000528	mg/Kg	☼	05/24/22 15:45	05/25/22 12:30	1
Xylenes, Total	**0.0170**		0.00214	0.00105	mg/Kg	☼	05/24/22 15:45	05/25/22 12:30	1
m,p-Xylenes	**0.0104**		0.00214	0.000855	mg/Kg	☼	05/24/22 15:45	05/25/22 12:30	1
o-Xylene	**0.00663**		0.00107	0.00105	mg/Kg	☼	05/24/22 15:45	05/25/22 12:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*56 - 150*	*05/24/22 15:45*	*05/25/22 12:30*	*1*
4-Bromofluorobenzene (Surr)	*102*		*68 - 152*	*05/24/22 15:45*	*05/25/22 12:30*	*1*
Dibromofluoromethane (Surr)	*80*		*53 - 142*	*05/24/22 15:45*	*05/25/22 12:30*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*	*05/24/22 15:45*	*05/25/22 12:30*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<22.4	U	53.1	22.4	mg/Kg	☼	05/25/22 12:56	05/26/22 14:26	1
Diesel Range Organics (Over C10-C28)	<22.4	U	53.1	22.4	mg/Kg	☼	05/25/22 12:56	05/26/22 14:26	1
Oil Range Organics (Over C28-C36)	<22.4	U	53.1	22.4	mg/Kg	☼	05/25/22 12:56	05/26/22 14:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*65 - 130*	*05/25/22 12:56*	*05/26/22 14:26*	*1*
o-Terphenyl	*111*		*65 - 130*	*05/25/22 12:56*	*05/26/22 14:26*	*1*

Client Sample ID: SNR-05 (1'-2')
Lab Sample ID: 860-26536-20
Date Collected: 05/16/22 16:05
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 99.6

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000500	U	0.00497	0.000500	mg/Kg	☼	05/24/22 15:45	05/25/22 12:52	1
1,1-Dichloroethane	<0.000374	U	0.00497	0.000374	mg/Kg	☼	05/24/22 15:45	05/25/22 12:52	1
1,2-Dibromoethane	<0.00104	U	0.00497	0.00104	mg/Kg	☼	05/24/22 15:45	05/25/22 12:52	1
1,2-Dichloroethane	<0.000302	U	0.00497	0.000302	mg/Kg	☼	05/24/22 15:45	05/25/22 12:52	1
1,4-Dioxane (P-Dioxane)	<0.0145	U	0.0994	0.0145	mg/Kg	☼	05/24/22 15:45	05/25/22 12:52	1
2-Butanone	<0.00362	U	0.0199	0.00362	mg/Kg	☼	05/24/22 15:45	05/25/22 12:52	1
Benzene	**0.00245**		0.000994	0.000206	mg/Kg	☼	05/24/22 15:45	05/25/22 12:52	1
Carbon disulfide	<0.000290	U	0.00497	0.000290	mg/Kg	☼	05/24/22 15:45	05/25/22 12:52	1

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-05 (1'-2')
Lab Sample ID: 860-26536-20
Date Collected: 05/16/22 16:05
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 99.6

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	<0.000235	U	0.00497	0.000235	mg/Kg	☼	05/24/22 15:45	05/25/22 12:52	1
Chloroform	<0.000172	U	0.00497	0.000172	mg/Kg	☼	05/24/22 15:45	05/25/22 12:52	1
Ethylbenzene	**0.00512**		0.000994	0.000334	mg/Kg	☼	05/24/22 15:45	05/25/22 12:52	1
Styrene	<0.000204	U	0.00497	0.000204	mg/Kg	☼	05/24/22 15:45	05/25/22 12:52	1
Tetrachloroethene	<0.000367	U	0.00497	0.000367	mg/Kg	☼	05/24/22 15:45	05/25/22 12:52	1
Toluene	**0.00258**	**J**	0.00497	0.000994	mg/Kg	☼	05/24/22 15:45	05/25/22 12:52	1
Trichloroethene	<0.000491	U	0.00497	0.000491	mg/Kg	☼	05/24/22 15:45	05/25/22 12:52	1
Xylenes, Total	**0.224**		0.00199	0.000979	mg/Kg	☼	05/24/22 15:45	05/25/22 12:52	1
m,p-Xylenes	**0.147**		0.00199	0.000795	mg/Kg	☼	05/24/22 15:45	05/25/22 12:52	1
o-Xylene	**0.0772**		0.000994	0.000979	mg/Kg	☼	05/24/22 15:45	05/25/22 12:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*56 - 150*	*05/24/22 15:45*	*05/25/22 12:52*	*1*
4-Bromofluorobenzene (Surr)	*121*		*68 - 152*	*05/24/22 15:45*	*05/25/22 12:52*	*1*
Dibromofluoromethane (Surr)	*92*		*53 - 142*	*05/24/22 15:45*	*05/25/22 12:52*	*1*
Toluene-d8 (Surr)	*106*		*70 - 130*	*05/24/22 15:45*	*05/25/22 12:52*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<21.2	U	50.1	21.2	mg/Kg	☼	05/25/22 13:08	06/01/22 06:13	1
Diesel Range Organics (Over C10-C28)	<21.2	U	50.1	21.2	mg/Kg	☼	05/25/22 13:08	06/01/22 06:13	1
OII Range Organics (Over C28-C36)	<21.2	U	50.1	21.2	mg/Kg	☼	05/25/22 13:08	06/01/22 06:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*107*		*65 - 130*	*05/25/22 13:08*	*06/01/22 06:13*	*1*
o-Terphenyl	*109*		*65 - 130*	*05/25/22 13:08*	*06/01/22 06:13*	*1*

Client Sample ID: SNR-05 (5'-6')
Lab Sample ID: 860-26536-21
Date Collected: 05/16/22 16:10
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 96.9

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.104	U	1.04	0.104	mg/Kg	☼	05/25/22 10:49	05/25/22 20:10	200
1,1-Dichloroethane	<0.0779	U	1.04	0.0779	mg/Kg	☼	05/25/22 10:49	05/25/22 20:10	200
1,2-Dibromoethane	<0.216	U	1.04	0.216	mg/Kg	☼	05/25/22 10:49	05/25/22 20:10	200
1,2-Dichloroethane	<0.0629	U	1.04	0.0629	mg/Kg	☼	05/25/22 10:49	05/25/22 20:10	200
1,4-Dioxane (P-Dioxane)	<3.02	U	20.7	3.02	mg/Kg	☼	05/25/22 10:49	05/25/22 20:10	200
2-Butanone	**1.09**	**J**	4.14	0.755	mg/Kg	☼	05/25/22 10:49	05/25/22 20:10	200
Benzene	**1.10**		0.207	0.0429	mg/Kg	☼	05/25/22 10:49	05/25/22 20:10	200
Carbon disulfide	<0.0606	U	1.04	0.0606	mg/Kg	☼	05/25/22 10:49	05/25/22 20:10	200
Chlorobenzene	<0.0490	U	1.04	0.0490	mg/Kg	☼	05/25/22 10:49	05/25/22 20:10	200
Chloroform	**0.0530**	**J**	1.04	0.0358	mg/Kg	☼	05/25/22 10:49	05/25/22 20:10	200
Ethylbenzene	**18.5**		0.207	0.0696	mg/Kg	☼	05/25/22 10:49	05/25/22 20:10	200
Styrene	<0.0426	U	1.04	0.0426	mg/Kg	☼	05/25/22 10:49	05/25/22 20:10	200
Tetrachloroethene	<0.0766	U	1.04	0.0766	mg/Kg	☼	05/25/22 10:49	05/25/22 20:10	200
Toluene	**6.31**		1.04	0.207	mg/Kg	☼	05/25/22 10:49	05/25/22 20:10	200
Trichloroethene	<0.102	U	1.04	0.102	mg/Kg	☼	05/25/22 10:49	05/25/22 20:10	200

Client Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Client Sample ID: SNR-05 (5'-6')

Lab Sample ID: 860-26536-21
Matrix: Solid
Percent Solids: 96.9

Date Collected: 05/16/22 16:10
Date Received: 05/20/22 10:24

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		56 - 150	05/25/22 10:49	05/25/22 20:10	200
4-Bromofluorobenzene (Surr)	101		68 - 152	05/25/22 10:49	05/25/22 20:10	200
Dibromofluoromethane (Surr)	91		53 - 142	05/25/22 10:49	05/25/22 20:10	200
Toluene-d8 (Surr)	110		70 - 130	05/25/22 10:49	05/25/22 20:10	200

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**98.6**		2.07	1.02	mg/Kg	☼	05/25/22 10:49	05/26/22 17:15	1000
m,p-Xylenes	**73.7**		2.07	0.829	mg/Kg	☼	05/25/22 10:49	05/26/22 17:15	1000
o-Xylene	**24.9**		1.04	1.02	mg/Kg	☼	05/25/22 10:49	05/26/22 17:15	1000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		56 - 150	05/25/22 10:49	05/26/22 17:15	1000
4-Bromofluorobenzene (Surr)	98		68 - 152	05/25/22 10:49	05/26/22 17:15	1000
Dibromofluoromethane (Surr)	89		53 - 142	05/25/22 10:49	05/26/22 17:15	1000
Toluene-d8 (Surr)	96		70 - 130	05/25/22 10:49	05/26/22 17:15	1000

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**1070**		51.3	21.7	mg/Kg	☼	05/25/22 13:08	05/25/22 23:46	1
Diesel Range Organics (Over C10-C28)	**648**		51.3	21.7	mg/Kg	☼	05/25/22 13:08	05/25/22 23:46	1
Oil Range Organics (Over C28-C36)	<21.7	U	51.3	21.7	mg/Kg	☼	05/25/22 13:08	05/25/22 23:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	97		65 - 130	05/25/22 13:08	05/25/22 23:46	1
o-Terphenyl	93		65 - 130	05/25/22 13:08	05/25/22 23:46	1

Client Sample ID: SNR-05 (13'-14')

Lab Sample ID: 860-26536-22
Matrix: Solid
Percent Solids: 95.3

Date Collected: 05/16/22 16:15
Date Received: 05/20/22 10:24

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000532	U	0.00529	0.000532	mg/Kg	☼	05/26/22 15:50	05/27/22 19:13	1
1,1-Dichloroethane	<0.000398	U	0.00529	0.000398	mg/Kg	☼	05/26/22 15:50	05/27/22 19:13	1
1,2-Dibromoethane	<0.00110	U	0.00529	0.00110	mg/Kg	☼	05/26/22 15:50	05/27/22 19:13	1
1,2-Dichloroethane	<0.000321	U	0.00529	0.000321	mg/Kg	☼	05/26/22 15:50	05/27/22 19:13	1
1,4-Dioxane (P-Dioxane)	<0.0154	U	0.106	0.0154	mg/Kg	☼	05/26/22 15:50	05/27/22 19:13	1
2-Butanone	<0.00386	U	0.0211	0.00386	mg/Kg	☼	05/26/22 15:50	05/27/22 19:13	1
Benzene	**0.0172**		0.00106	0.000219	mg/Kg	☼	05/26/22 15:50	05/27/22 19:13	1
Carbon disulfide	<0.000309	U	0.00529	0.000309	mg/Kg	☼	05/26/22 15:50	05/27/22 19:13	1
Chlorobenzene	<0.000250	U	0.00529	0.000250	mg/Kg	☼	05/26/22 15:50	05/27/22 19:13	1
Chloroform	<0.000183	U	0.00529	0.000183	mg/Kg	☼	05/26/22 15:50	05/27/22 19:13	1
Styrene	<0.000217	U	0.00529	0.000217	mg/Kg	☼	05/26/22 15:50	05/27/22 19:13	1
Tetrachloroethene	<0.000391	U	0.00529	0.000391	mg/Kg	☼	05/26/22 15:50	05/27/22 19:13	1
Trichloroethene	<0.000522	U	0.00529	0.000522	mg/Kg	☼	05/26/22 15:50	05/27/22 19:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		56 - 150	05/26/22 15:50	05/27/22 19:13	1
4-Bromofluorobenzene (Surr)	155	S1+	68 - 152	05/26/22 15:50	05/27/22 19:13	1

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Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-05 (13'-14')
Lab Sample ID: 860-26536-22
Date Collected: 05/16/22 16:15
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.3

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	74		53 - 142	05/26/22 15:50	05/27/22 19:13	1
Toluene-d8 (Surr)	170	S1+	70 - 130	05/26/22 15:50	05/27/22 19:13	1

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	3.04		0.0261	0.00877	mg/Kg	☼	05/26/22 15:50	05/27/22 19:36	25
Toluene	1.11		0.131	0.0261	mg/Kg	☼	05/26/22 15:50	05/27/22 19:36	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		56 - 150	05/26/22 15:50	05/27/22 19:36	25
4-Bromofluorobenzene (Surr)	123		68 - 152	05/26/22 15:50	05/27/22 19:36	25
Dibromofluoromethane (Surr)	88		53 - 142	05/26/22 15:50	05/27/22 19:36	25
Toluene-d8 (Surr)	119		70 - 130	05/26/22 15:50	05/27/22 19:36	25

Method: 8260D - Volatile Organic Compounds by GC/MS - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	15.4		0.418	0.206	mg/Kg	☼	05/26/22 15:50	05/28/22 16:26	200
m,p-Xylenes	11.2		0.418	0.167	mg/Kg	☼	05/26/22 15:50	05/28/22 16:26	200
o-Xylene	4.20		0.209	0.206	mg/Kg	☼	05/26/22 15:50	05/28/22 16:26	200

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		56 - 150	05/26/22 15:50	05/28/22 16:26	200
4-Bromofluorobenzene (Surr)	113		68 - 152	05/26/22 15:50	05/28/22 16:26	200
Dibromofluoromethane (Surr)	94		53 - 142	05/26/22 15:50	05/28/22 16:26	200
Toluene-d8 (Surr)	108		70 - 130	05/26/22 15:50	05/28/22 16:26	200

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	313		52.5	22.2	mg/Kg	☼	05/25/22 13:08	05/25/22 18:32	1
Diesel Range Organics (Over C10-C28)	882	F1	52.5	22.2	mg/Kg	☼	05/25/22 13:08	05/25/22 18:32	1
Oil Range Organics (Over C28-C36)	<22.2	U	52.5	22.2	mg/Kg	☼	05/25/22 13:08	05/25/22 18:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		65 - 130	05/25/22 13:08	05/25/22 18:32	1
o-Terphenyl	100		65 - 130	05/25/22 13:08	05/25/22 18:32	1

Client Sample ID: SNR-05 (14'-15')
Lab Sample ID: 860-26536-23
Date Collected: 05/16/22 16:20
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.4

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000522	U	0.00519	0.000522	mg/Kg	☼	05/25/22 10:49	05/25/22 21:00	1
1,1-Dichloroethane	<0.000390	U	0.00519	0.000390	mg/Kg	☼	05/25/22 10:49	05/25/22 21:00	1
1,2-Dibromoethane	<0.00108	U	0.00519	0.00108	mg/Kg	☼	05/25/22 10:49	05/25/22 21:00	1
1,2-Dichloroethane	<0.000315	U	0.00519	0.000315	mg/Kg	☼	05/25/22 10:49	05/25/22 21:00	1
1,4-Dioxane (P-Dioxane)	<0.0151	U	0.104	0.0151	mg/Kg	☼	05/25/22 10:49	05/25/22 21:00	1
2-Butanone	<0.00378	U	0.0208	0.00378	mg/Kg	☼	05/25/22 10:49	05/25/22 21:00	1
Benzene	<0.000215	U	0.00104	0.000215	mg/Kg	☼	05/25/22 10:49	05/25/22 21:00	1

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Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-05 (14'-15')
Lab Sample ID: 860-26536-23
Date Collected: 05/16/22 16:20
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.4

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon disulfide	<0.000303	U	0.00519	0.000303	mg/Kg	☼	05/25/22 10:49	05/25/22 21:00	1
Chlorobenzene	<0.000246	U	0.00519	0.000246	mg/Kg	☼	05/25/22 10:49	05/25/22 21:00	1
Chloroform	<0.000179	U	0.00519	0.000179	mg/Kg	☼	05/25/22 10:49	05/25/22 21:00	1
Ethylbenzene	<0.000348	U	0.00104	0.000348	mg/Kg	☼	05/25/22 10:49	05/25/22 21:00	1
Styrene	<0.000213	U	0.00519	0.000213	mg/Kg	☼	05/25/22 10:49	05/25/22 21:00	1
Tetrachloroethene	<0.000383	U	0.00519	0.000383	mg/Kg	☼	05/25/22 10:49	05/25/22 21:00	1
Toluene	<0.00104	U	0.00519	0.00104	mg/Kg	☼	05/25/22 10:49	05/25/22 21:00	1
Trichloroethene	<0.000513	U	0.00519	0.000513	mg/Kg	☼	05/25/22 10:49	05/25/22 21:00	1
Xylenes, Total	<0.00104	U	0.00211	0.00104	mg/Kg	☼	05/28/22 11:53	05/28/22 15:16	1
m,p-Xylenes	<0.000845	U	0.00211	0.000845	mg/Kg	☼	05/28/22 11:53	05/28/22 15:16	1
o-Xylene	<0.00104	U	0.00106	0.00104	mg/Kg	☼	05/28/22 11:53	05/28/22 15:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*56 - 150*	*05/25/22 10:49*	*05/25/22 21:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*56 - 150*	*05/28/22 11:53*	*05/28/22 15:16*	*1*
4-Bromofluorobenzene (Surr)	*105*		*68 - 152*	*05/25/22 10:49*	*05/25/22 21:00*	*1*
4-Bromofluorobenzene (Surr)	*108*		*68 - 152*	*05/28/22 11:53*	*05/28/22 15:16*	*1*
Dibromofluoromethane (Surr)	*93*		*53 - 142*	*05/25/22 10:49*	*05/25/22 21:00*	*1*
Dibromofluoromethane (Surr)	*98*		*53 - 142*	*05/28/22 11:53*	*05/28/22 15:16*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*	*05/25/22 10:49*	*05/25/22 21:00*	*1*
Toluene-d8 (Surr)	*108*		*70 - 130*	*05/28/22 11:53*	*05/28/22 15:16*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<22.0	U	52.1	22.0	mg/Kg	☼	05/25/22 13:08	05/25/22 19:30	1
Diesel Range Organics (Over C10-C28)	<22.0	U	52.1	22.0	mg/Kg	☼	05/25/22 13:08	05/25/22 19:30	1
Oil Range Organics (Over C28-C36)	<22.0	U	52.1	22.0	mg/Kg	☼	05/25/22 13:08	05/25/22 19:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*89*		*65 - 130*	*05/25/22 13:08*	*05/25/22 19:30*	*1*
o-Terphenyl	*103*		*65 - 130*	*05/25/22 13:08*	*05/25/22 19:30*	*1*

Client Sample ID: SNR-07 (1'-2')
Lab Sample ID: 860-26536-24
Date Collected: 05/16/22 17:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 98.1

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000517	U	0.00514	0.000517	mg/Kg	☼	05/25/22 10:49	05/25/22 21:22	1
1,1-Dichloroethane	<0.000387	U	0.00514	0.000387	mg/Kg	☼	05/25/22 10:49	05/25/22 21:22	1
1,2-Dibromoethane	<0.00107	U	0.00514	0.00107	mg/Kg	☼	05/25/22 10:49	05/25/22 21:22	1
1,2-Dichloroethane	<0.000312	U	0.00514	0.000312	mg/Kg	☼	05/25/22 10:49	05/25/22 21:22	1
1,4-Dioxane (P-Dioxane)	<0.0150	U	0.103	0.0150	mg/Kg	☼	05/25/22 10:49	05/25/22 21:22	1
2-Butanone	<0.00375	U	0.0206	0.00375	mg/Kg	☼	05/25/22 10:49	05/25/22 21:22	1
Benzene	<0.000213	U	0.00103	0.000213	mg/Kg	☼	05/25/22 10:49	05/25/22 21:22	1
Carbon disulfide	<0.000300	U	0.00514	0.000300	mg/Kg	☼	05/25/22 10:49	05/25/22 21:22	1
Chlorobenzene	<0.000243	U	0.00514	0.000243	mg/Kg	☼	05/25/22 10:49	05/25/22 21:22	1
Chloroform	<0.000178	U	0.00514	0.000178	mg/Kg	☼	05/25/22 10:49	05/25/22 21:22	1
Ethylbenzene	<0.000345	U	0.00103	0.000345	mg/Kg	☼	05/25/22 10:49	05/25/22 21:22	1

Client Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Client Sample ID: SNR-07 (1'-2')

Lab Sample ID: 860-26536-24
Date Collected: 05/16/22 17:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 98.1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	<0.000211	U	0.00514	0.000211	mg/Kg	☼	05/25/22 10:49	05/25/22 21:22	1
Tetrachloroethene	<0.000380	U	0.00514	0.000380	mg/Kg	☼	05/25/22 10:49	05/25/22 21:22	1
Toluene	<0.00103	U	0.00514	0.00103	mg/Kg	☼	05/25/22 10:49	05/25/22 21:22	1
Trichloroethene	<0.000508	U	0.00514	0.000508	mg/Kg	☼	05/25/22 10:49	05/25/22 21:22	1
Xylenes, Total	<0.00101	U	0.00206	0.00101	mg/Kg	☼	05/25/22 10:49	05/25/22 21:22	1
m,p-Xylenes	<0.000822	U	0.00206	0.000822	mg/Kg	☼	05/25/22 10:49	05/25/22 21:22	1
o-Xylene	<0.00101	U	0.00103	0.00101	mg/Kg	☼	05/25/22 10:49	05/25/22 21:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*56 - 150*	*05/25/22 10:49*	*05/25/22 21:22*	*1*
4-Bromofluorobenzene (Surr)	*123*		*68 - 152*	*05/25/22 10:49*	*05/25/22 21:22*	*1*
Dibromofluoromethane (Surr)	*96*		*53 - 142*	*05/25/22 10:49*	*05/25/22 21:22*	*1*
Toluene-d8 (Surr)	*105*		*70 - 130*	*05/25/22 10:49*	*05/25/22 21:22*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<21.6	U	51.1	21.6	mg/Kg	☼	05/25/22 13:08	05/26/22 16:25	1
Diesel Range Organics (Over C10-C28)	<21.6	U	51.1	21.6	mg/Kg	☼	05/25/22 13:08	05/26/22 16:25	1
Oil Range Organics (Over C28-C36)	<21.6	U	51.1	21.6	mg/Kg	☼	05/25/22 13:08	05/26/22 16:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*89*		*65 - 130*	*05/25/22 13:08*	*05/26/22 16:25*	*1*
o-Terphenyl	*99*		*65 - 130*	*05/25/22 13:08*	*05/26/22 16:25*	*1*

Client Sample ID: SNR-07 (6'-7')

Lab Sample ID: 860-26536-25
Date Collected: 05/16/22 17:05
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.6

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.106	U	1.06	0.106	mg/Kg	☼	05/25/22 10:49	05/25/22 20:30	200
1,1-Dichloroethane	<0.0796	U	1.06	0.0796	mg/Kg	☼	05/25/22 10:49	05/25/22 20:30	200
1,2-Dibromoethane	<0.221	U	1.06	0.221	mg/Kg	☼	05/25/22 10:49	05/25/22 20:30	200
1,2-Dichloroethane	<0.0643	U	1.06	0.0643	mg/Kg	☼	05/25/22 10:49	05/25/22 20:30	200
1,4-Dioxane (P-Dioxane)	<3.08	U	21.2	3.08	mg/Kg	☼	05/25/22 10:49	05/25/22 20:30	200
2-Butanone	**1.18**	**J**	4.23	0.771	mg/Kg	☼	05/25/22 10:49	05/25/22 20:30	200
Benzene	**0.174**	**J**	0.212	0.0438	mg/Kg	☼	05/25/22 10:49	05/25/22 20:30	200
Carbon disulfide	<0.0618	U	1.06	0.0618	mg/Kg	☼	05/25/22 10:49	05/25/22 20:30	200
Chlorobenzene	<0.0501	U	1.06	0.0501	mg/Kg	☼	05/25/22 10:49	05/25/22 20:30	200
Chloroform	<0.0366	U	1.06	0.0366	mg/Kg	☼	05/25/22 10:49	05/25/22 20:30	200
Ethylbenzene	**2.10**		0.212	0.0710	mg/Kg	☼	05/25/22 10:49	05/25/22 20:30	200
Styrene	<0.0435	U	1.06	0.0435	mg/Kg	☼	05/25/22 10:49	05/25/22 20:30	200
Tetrachloroethene	<0.0782	U	1.06	0.0782	mg/Kg	☼	05/25/22 10:49	05/25/22 20:30	200
Toluene	**1.78**		1.06	0.212	mg/Kg	☼	05/25/22 10:49	05/25/22 20:30	200
Trichloroethene	<0.104	U	1.06	0.104	mg/Kg	☼	05/25/22 10:49	05/25/22 20:30	200
Xylenes, Total	**11.2**		0.423	0.208	mg/Kg	☼	05/25/22 10:49	05/25/22 20:30	200
m,p-Xylenes	**8.24**		0.423	0.169	mg/Kg	☼	05/25/22 10:49	05/25/22 20:30	200
o-Xylene	**2.97**		0.212	0.208	mg/Kg	☼	05/25/22 10:49	05/25/22 20:30	200

Client Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Client Sample ID: SNR-07 (6'-7')

Lab Sample ID: 860-26536-25
Date Collected: 05/16/22 17:05
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.6

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		56 - 150	05/25/22 10:49	05/25/22 20:30	200
4-Bromofluorobenzene (Surr)	104		68 - 152	05/25/22 10:49	05/25/22 20:30	200
Dibromofluoromethane (Surr)	91		53 - 142	05/25/22 10:49	05/25/22 20:30	200
Toluene-d8 (Surr)	102		70 - 130	05/25/22 10:49	05/25/22 20:30	200

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**56.9**		53.3	22.5	mg/Kg	☼	05/25/22 13:08	05/25/22 19:49	1
Diesel Range Organics (Over C10-C28)	<22.5	U	53.3	22.5	mg/Kg	☼	05/25/22 13:08	05/25/22 19:49	1
OII Range Organics (Over C28-C36)	<22.5	U	53.3	22.5	mg/Kg	☼	05/25/22 13:08	05/25/22 19:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	94		65 - 130	05/25/22 13:08	05/25/22 19:49	1
o-Terphenyl	109		65 - 130	05/25/22 13:08	05/25/22 19:49	1

Client Sample ID: SNR-07 (10'-12')

Lab Sample ID: 860-26536-26
Date Collected: 05/16/22 17:10
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.2

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.105	U	1.04	0.105	mg/Kg	☼	05/25/22 10:49	05/25/22 20:51	200
1,1-Dichloroethane	<0.0782	U	1.04	0.0782	mg/Kg	☼	05/25/22 10:49	05/25/22 20:51	200
1,2-Dibromoethane	<0.217	U	1.04	0.217	mg/Kg	☼	05/25/22 10:49	05/25/22 20:51	200
1,2-Dichloroethane	<0.0632	U	1.04	0.0632	mg/Kg	☼	05/25/22 10:49	05/25/22 20:51	200
1,4-Dioxane (P-Dioxane)	<3.03	U	20.8	3.03	mg/Kg	☼	05/25/22 10:49	05/25/22 20:51	200
2-Butanone	**1.08**	**J**	4.16	0.758	mg/Kg	☼	05/25/22 10:49	05/25/22 20:51	200
Benzene	**3.67**		0.208	0.0430	mg/Kg	☼	05/25/22 10:49	05/25/22 20:51	200
Carbon disulfide	<0.0608	U	1.04	0.0608	mg/Kg	☼	05/25/22 10:49	05/25/22 20:51	200
Chlorobenzene	<0.0492	U	1.04	0.0492	mg/Kg	☼	05/25/22 10:49	05/25/22 20:51	200
Chloroform	<0.0359	U	1.04	0.0359	mg/Kg	☼	05/25/22 10:49	05/25/22 20:51	200
Ethylbenzene	**14.4**		0.208	0.0698	mg/Kg	☼	05/25/22 10:49	05/25/22 20:51	200
Styrene	<0.0427	U	1.04	0.0427	mg/Kg	☼	05/25/22 10:49	05/25/22 20:51	200
Tetrachloroethene	<0.0769	U	1.04	0.0769	mg/Kg	☼	05/25/22 10:49	05/25/22 20:51	200
Toluene	**11.8**		1.04	0.208	mg/Kg	☼	05/25/22 10:49	05/25/22 20:51	200
Trichloroethene	<0.103	U	1.04	0.103	mg/Kg	☼	05/25/22 10:49	05/25/22 20:51	200

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		56 - 150	05/25/22 10:49	05/25/22 20:51	200
4-Bromofluorobenzene (Surr)	80		68 - 152	05/25/22 10:49	05/25/22 20:51	200
Dibromofluoromethane (Surr)	91		53 - 142	05/25/22 10:49	05/25/22 20:51	200
Toluene-d8 (Surr)	105		70 - 130	05/25/22 10:49	05/25/22 20:51	200

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**62.7**		2.08	1.02	mg/Kg	☼	05/25/22 10:49	05/26/22 18:04	1000
m,p-Xylenes	**46.9**		2.08	0.832	mg/Kg	☼	05/25/22 10:49	05/26/22 18:04	1000
o-Xylene	**15.8**		1.04	1.02	mg/Kg	☼	05/25/22 10:49	05/26/22 18:04	1000

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-07 (10'-12')
Lab Sample ID: 860-26536-26
Date Collected: 05/16/22 17:10
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		56 - 150	05/25/22 10:49	05/26/22 18:04	1000
4-Bromofluorobenzene (Surr)	100		68 - 152	05/25/22 10:49	05/26/22 18:04	1000
Dibromofluoromethane (Surr)	92		53 - 142	05/25/22 10:49	05/26/22 18:04	1000
Toluene-d8 (Surr)	97		70 - 130	05/25/22 10:49	05/26/22 18:04	1000

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**1060**		52.4	22.1	mg/Kg	☼	05/25/22 13:08	05/25/22 20:09	1
Diesel Range Organics (Over C10-C28)	**1240**		52.4	22.1	mg/Kg	☼	05/25/22 13:08	05/25/22 20:09	1
Oil Range Organics (Over C28-C36)	<22.1	U	52.4	22.1	mg/Kg	☼	05/25/22 13:08	05/25/22 20:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	109		65 - 130	05/25/22 13:08	05/25/22 20:09	1
o-Terphenyl	108		65 - 130	05/25/22 13:08	05/25/22 20:09	1

Client Sample ID: SNR-07 (14'-15')
Lab Sample ID: 860-26536-27
Date Collected: 05/16/22 17:15
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 96.0

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.104	U	1.04	0.104	mg/Kg	☼	05/25/22 10:49	05/25/22 21:11	200
1,1-Dichloroethane	<0.0779	U	1.04	0.0779	mg/Kg	☼	05/25/22 10:49	05/25/22 21:11	200
1,2-Dibromoethane	<0.216	U	1.04	0.216	mg/Kg	☼	05/25/22 10:49	05/25/22 21:11	200
1,2-Dichloroethane	<0.0629	U	1.04	0.0629	mg/Kg	☼	05/25/22 10:49	05/25/22 21:11	200
1,4-Dioxane (P-Dioxane)	<3.01	U	20.7	3.01	mg/Kg	☼	05/25/22 10:49	05/25/22 21:11	200
2-Butanone	**1.15**	**J**	4.14	0.755	mg/Kg	☼	05/25/22 10:49	05/25/22 21:11	200
Benzene	**5.52**		0.207	0.0428	mg/Kg	☼	05/25/22 10:49	05/25/22 21:11	200
Carbon disulfide	<0.0605	U	1.04	0.0605	mg/Kg	☼	05/25/22 10:49	05/25/22 21:11	200
Chlorobenzene	<0.0490	U	1.04	0.0490	mg/Kg	☼	05/25/22 10:49	05/25/22 21:11	200
Chloroform	<0.0358	U	1.04	0.0358	mg/Kg	☼	05/25/22 10:49	05/25/22 21:11	200
Styrene	<0.0425	U	1.04	0.0425	mg/Kg	☼	05/25/22 10:49	05/25/22 21:11	200
Tetrachloroethene	<0.0765	U	1.04	0.0765	mg/Kg	☼	05/25/22 10:49	05/25/22 21:11	200
Trichloroethene	<0.102	U	1.04	0.102	mg/Kg	☼	05/25/22 10:49	05/25/22 21:11	200

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		56 - 150	05/25/22 10:49	05/25/22 21:11	200
4-Bromofluorobenzene (Surr)	105		68 - 152	05/25/22 10:49	05/25/22 21:11	200
Dibromofluoromethane (Surr)	90		53 - 142	05/25/22 10:49	05/25/22 21:11	200
Toluene-d8 (Surr)	112		70 - 130	05/25/22 10:49	05/25/22 21:11	200

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**39.4**		1.04	0.348	mg/Kg	☼	05/25/22 10:49	05/26/22 18:26	1000
Toluene	**79.0**		5.18	1.04	mg/Kg	☼	05/25/22 10:49	05/26/22 18:26	1000
Xylenes, Total	**195**		2.07	1.02	mg/Kg	☼	05/25/22 10:49	05/26/22 18:26	1000
m,p-Xylenes	**139**		2.07	0.828	mg/Kg	☼	05/25/22 10:49	05/26/22 18:26	1000
o-Xylene	**55.7**		1.04	1.02	mg/Kg	☼	05/25/22 10:49	05/26/22 18:26	1000

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-07 (14'-15')
Lab Sample ID: 860-26536-27
Date Collected: 05/16/22 17:15
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 96.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		56 - 150	05/25/22 10:49	05/26/22 18:26	1000
4-Bromofluorobenzene (Surr)	95		68 - 152	05/25/22 10:49	05/26/22 18:26	1000
Dibromofluoromethane (Surr)	89		53 - 142	05/25/22 10:49	05/26/22 18:26	1000
Toluene-d8 (Surr)	97		70 - 130	05/25/22 10:49	05/26/22 18:26	1000

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	3060		52.0	21.9	mg/Kg	☼	05/25/22 13:08	05/25/22 20:28	1
Diesel Range Organics (Over C10-C28)	2050		52.0	21.9	mg/Kg	☼	05/25/22 13:08	05/25/22 20:28	1
Oil Range Organics (Over C28-C36)	<21.9	U	52.0	21.9	mg/Kg	☼	05/25/22 13:08	05/25/22 20:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	113		65 - 130	05/25/22 13:08	05/25/22 20:28	1
o-Terphenyl	121		65 - 130	05/25/22 13:08	05/25/22 20:28	1

Client Sample ID: SNR-09 (1'-2')
Lab Sample ID: 860-26536-28
Date Collected: 05/17/22 08:40
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 98.0

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000513	U	0.00510	0.000513	mg/Kg	☼	05/25/22 10:49	05/25/22 21:45	1
1,1-Dichloroethane	<0.000384	U	0.00510	0.000384	mg/Kg	☼	05/25/22 10:49	05/25/22 21:45	1
1,2-Dibromoethane	<0.00107	U	0.00510	0.00107	mg/Kg	☼	05/25/22 10:49	05/25/22 21:45	1
1,2-Dichloroethane	<0.000310	U	0.00510	0.000310	mg/Kg	☼	05/25/22 10:49	05/25/22 21:45	1
1,4-Dioxane (P-Dioxane)	<0.0149	U	0.102	0.0149	mg/Kg	☼	05/25/22 10:49	05/25/22 21:45	1
2-Butanone	<0.00372	U	0.0204	0.00372	mg/Kg	☼	05/25/22 10:49	05/25/22 21:45	1
Benzene	<0.000211	U	0.00102	0.000211	mg/Kg	☼	05/25/22 10:49	05/25/22 21:45	1
Carbon disulfide	<0.000298	U	0.00510	0.000298	mg/Kg	☼	05/25/22 10:49	05/25/22 21:45	1
Chlorobenzene	<0.000242	U	0.00510	0.000242	mg/Kg	☼	05/25/22 10:49	05/25/22 21:45	1
Chloroform	<0.000176	U	0.00510	0.000176	mg/Kg	☼	05/25/22 10:49	05/25/22 21:45	1
Ethylbenzene	<0.000343	U	0.00102	0.000343	mg/Kg	☼	05/25/22 10:49	05/25/22 21:45	1
Styrene	<0.000210	U	0.00510	0.000210	mg/Kg	☼	05/25/22 10:49	05/25/22 21:45	1
Tetrachloroethene	<0.000377	U	0.00510	0.000377	mg/Kg	☼	05/25/22 10:49	05/25/22 21:45	1
Toluene	<0.00102	U	0.00510	0.00102	mg/Kg	☼	05/25/22 10:49	05/25/22 21:45	1
Trichloroethene	<0.000504	U	0.00510	0.000504	mg/Kg	☼	05/25/22 10:49	05/25/22 21:45	1
Xylenes, Total	<0.00101	U	0.00204	0.00101	mg/Kg	☼	05/25/22 10:49	05/25/22 21:45	1
m,p-Xylenes	<0.000817	U	0.00204	0.000817	mg/Kg	☼	05/25/22 10:49	05/25/22 21:45	1
o-Xylene	<0.00101	U	0.00102	0.00101	mg/Kg	☼	05/25/22 10:49	05/25/22 21:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		56 - 150	05/25/22 10:49	05/25/22 21:45	1
4-Bromofluorobenzene (Surr)	111		68 - 152	05/25/22 10:49	05/25/22 21:45	1
Dibromofluoromethane (Surr)	95		53 - 142	05/25/22 10:49	05/25/22 21:45	1
Toluene-d8 (Surr)	100		70 - 130	05/25/22 10:49	05/25/22 21:45	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<21.5	U	51.0	21.5	mg/Kg	☼	05/25/22 13:08	05/25/22 21:07	1

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-09 (1'-2')
Lab Sample ID: 860-26536-28
Date Collected: 05/17/22 08:40
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 98.0

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<21.5	U	51.0	21.5	mg/Kg	☼	05/25/22 13:08	05/25/22 21:07	1
Oil Range Organics (Over C28-C36)	<21.5	U	51.0	21.5	mg/Kg	☼	05/25/22 13:08	05/25/22 21:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*65 - 130*	*05/25/22 13:08*	*05/25/22 21:07*	*1*
o-Terphenyl	*106*		*65 - 130*	*05/25/22 13:08*	*05/25/22 21:07*	*1*

Client Sample ID: SNR-09 (6'-7')
Lab Sample ID: 860-26536-29
Date Collected: 05/17/22 08:45
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 101.0

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.101	U	1.00	0.101	mg/Kg	☼	05/25/22 10:49	05/25/22 21:32	200
1,1-Dichloroethane	<0.0752	U	1.00	0.0752	mg/Kg	☼	05/25/22 10:49	05/25/22 21:32	200
1,2-Dibromoethane	<0.209	U	1.00	0.209	mg/Kg	☼	05/25/22 10:49	05/25/22 21:32	200
1,2-Dichloroethane	<0.0607	U	1.00	0.0607	mg/Kg	☼	05/25/22 10:49	05/25/22 21:32	200
1,4-Dioxane (P-Dioxane)	<2.91	U	20.0	2.91	mg/Kg	☼	05/25/22 10:49	05/25/22 21:32	200
2-Butanone	**1.04**	**J**	4.00	0.729	mg/Kg	☼	05/25/22 10:49	05/25/22 21:32	200
Benzene	<0.0414	U	0.200	0.0414	mg/Kg	☼	05/25/22 10:49	05/25/22 21:32	200
Carbon disulfide	<0.0584	U	1.00	0.0584	mg/Kg	☼	05/25/22 10:49	05/25/22 21:32	200
Chlorobenzene	<0.0473	U	1.00	0.0473	mg/Kg	☼	05/25/22 10:49	05/25/22 21:32	200
Chloroform	<0.0345	U	1.00	0.0345	mg/Kg	☼	05/25/22 10:49	05/25/22 21:32	200
Ethylbenzene	**8.26**		0.200	0.0671	mg/Kg	☼	05/25/22 10:49	05/25/22 21:32	200
Styrene	<0.0411	U	1.00	0.0411	mg/Kg	☼	05/25/22 10:49	05/25/22 21:32	200
Tetrachloroethene	<0.0739	U	1.00	0.0739	mg/Kg	☼	05/25/22 10:49	05/25/22 21:32	200
Toluene	**1.51**		1.00	0.200	mg/Kg	☼	05/25/22 10:49	05/25/22 21:32	200
Trichloroethene	<0.0988	U	1.00	0.0988	mg/Kg	☼	05/25/22 10:49	05/25/22 21:32	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*56 - 150*	*05/25/22 10:49*	*05/25/22 21:32*	*200*
4-Bromofluorobenzene (Surr)	*102*		*68 - 152*	*05/25/22 10:49*	*05/25/22 21:32*	*200*
Dibromofluoromethane (Surr)	*92*		*53 - 142*	*05/25/22 10:49*	*05/25/22 21:32*	*200*
Toluene-d8 (Surr)	*106*		*70 - 130*	*05/25/22 10:49*	*05/25/22 21:32*	*200*

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**57.3**		2.00	0.985	mg/Kg	☼	05/25/22 10:49	05/26/22 18:49	1000
m,p-Xylenes	**39.9**		2.00	0.800	mg/Kg	☼	05/25/22 10:49	05/26/22 18:49	1000
o-Xylene	**17.4**		1.00	0.985	mg/Kg	☼	05/25/22 10:49	05/26/22 18:49	1000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*56 - 150*	*05/25/22 10:49*	*05/26/22 18:49*	*1000*
4-Bromofluorobenzene (Surr)	*97*		*68 - 152*	*05/25/22 10:49*	*05/26/22 18:49*	*1000*
Dibromofluoromethane (Surr)	*90*		*53 - 142*	*05/25/22 10:49*	*05/26/22 18:49*	*1000*
Toluene-d8 (Surr)	*94*		*70 - 130*	*05/25/22 10:49*	*05/26/22 18:49*	*1000*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**1280**		49.4	20.8	mg/Kg	☼	05/25/22 13:08	05/25/22 21:27	1

Eurofins Houston

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-09 (6'-7')
Lab Sample ID: 860-26536-29
Date Collected: 05/17/22 08:45
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 101.0

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	**575**		49.4	20.8	mg/Kg	☼	05/25/22 13:08	05/25/22 21:27	1
Oil Range Organics (Over C28-C36)	<20.8	U	49.4	20.8	mg/Kg	☼	05/25/22 13:08	05/25/22 21:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*107*		*65 - 130*	*05/25/22 13:08*	*05/25/22 21:27*	*1*
o-Terphenyl	*103*		*65 - 130*	*05/25/22 13:08*	*05/25/22 21:27*	*1*

Client Sample ID: SNR-09 (8'-9')
Lab Sample ID: 860-26536-30
Date Collected: 05/17/22 08:50
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.0

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.108	U	1.07	0.108	mg/Kg	☼	05/25/22 10:49	05/26/22 19:11	200
1,1-Dichloroethane	<0.0807	U	1.07	0.0807	mg/Kg	☼	05/25/22 10:49	05/26/22 19:11	200
1,2-Dibromoethane	<0.224	U	1.07	0.224	mg/Kg	☼	05/25/22 10:49	05/26/22 19:11	200
1,2-Dichloroethane	<0.0652	U	1.07	0.0652	mg/Kg	☼	05/25/22 10:49	05/26/22 19:11	200
1,4-Dioxane (P-Dioxane)	<3.12	U	21.5	3.12	mg/Kg	☼	05/25/22 10:49	05/26/22 19:11	200
2-Butanone	**0.804**	**J**	4.29	0.782	mg/Kg	☼	05/25/22 10:49	05/26/22 19:11	200
Benzene	**10.8**		0.215	0.0444	mg/Kg	☼	05/25/22 10:49	05/26/22 19:11	200
Carbon disulfide	<0.0627	U	1.07	0.0627	mg/Kg	☼	05/25/22 10:49	05/26/22 19:11	200
Chlorobenzene	<0.0508	U	1.07	0.0508	mg/Kg	☼	05/25/22 10:49	05/26/22 19:11	200
Chloroform	<0.0371	U	1.07	0.0371	mg/Kg	☼	05/25/22 10:49	05/26/22 19:11	200
Styrene	<0.0441	U	1.07	0.0441	mg/Kg	☼	05/25/22 10:49	05/26/22 19:11	200
Tetrachloroethene	<0.0793	U	1.07	0.0793	mg/Kg	☼	05/25/22 10:49	05/26/22 19:11	200
Toluene	**14.8**		1.07	0.215	mg/Kg	☼	05/25/22 10:49	05/26/22 19:11	200
Trichloroethene	<0.106	U	1.07	0.106	mg/Kg	☼	05/25/22 10:49	05/26/22 19:11	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*56 - 150*	*05/25/22 10:49*	*05/26/22 19:11*	*200*
4-Bromofluorobenzene (Surr)	*91*		*68 - 152*	*05/25/22 10:49*	*05/26/22 19:11*	*200*
Dibromofluoromethane (Surr)	*85*		*53 - 142*	*05/25/22 10:49*	*05/26/22 19:11*	*200*
Toluene-d8 (Surr)	*106*		*70 - 130*	*05/25/22 10:49*	*05/26/22 19:11*	*200*

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**63.5**		2.15	0.720	mg/Kg	☼	05/25/22 10:49	05/26/22 19:34	2000
Xylenes, Total	**279**		4.29	2.11	mg/Kg	☼	05/25/22 10:49	05/26/22 19:34	2000
m,p-Xylenes	**204**		4.29	1.72	mg/Kg	☼	05/25/22 10:49	05/26/22 19:34	2000
o-Xylene	**74.8**		2.15	2.11	mg/Kg	☼	05/25/22 10:49	05/26/22 19:34	2000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*56 - 150*	*05/25/22 10:49*	*05/26/22 19:34*	*2000*
4-Bromofluorobenzene (Surr)	*96*		*68 - 152*	*05/25/22 10:49*	*05/26/22 19:34*	*2000*
Dibromofluoromethane (Surr)	*86*		*53 - 142*	*05/25/22 10:49*	*05/26/22 19:34*	*2000*
Toluene-d8 (Surr)	*97*		*70 - 130*	*05/25/22 10:49*	*05/26/22 19:34*	*2000*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**1140**		53.5	22.6	mg/Kg	☼	05/25/22 13:08	05/25/22 21:47	1

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-09 (8'-9')
Lab Sample ID: 860-26536-30
Date Collected: 05/17/22 08:50
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.0

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	**1750**		53.5	22.6	mg/Kg	☼	05/25/22 13:08	05/25/22 21:47	1
Oil Range Organics (Over C28-C36)	<22.6	U	53.5	22.6	mg/Kg	☼	05/25/22 13:08	05/25/22 21:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*107*		*65 - 130*	*05/25/22 13:08*	*05/25/22 21:47*	*1*
o-Terphenyl	*110*		*65 - 130*	*05/25/22 13:08*	*05/25/22 21:47*	*1*

Client Sample ID: SNR-09 (13'-14')
Lab Sample ID: 860-26536-31
Date Collected: 05/17/22 08:55
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.3

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.105	U	1.05	0.105	mg/Kg	☼	05/25/22 10:49	05/26/22 19:56	200
1,1-Dichloroethane	<0.0788	U	1.05	0.0788	mg/Kg	☼	05/25/22 10:49	05/26/22 19:56	200
1,2-Dibromoethane	<0.218	U	1.05	0.218	mg/Kg	☼	05/25/22 10:49	05/26/22 19:56	200
1,2-Dichloroethane	<0.0636	U	1.05	0.0636	mg/Kg	☼	05/25/22 10:49	05/26/22 19:56	200
1,4-Dioxane (P-Dioxane)	<3.05	U	20.9	3.05	mg/Kg	☼	05/25/22 10:49	05/26/22 19:56	200
2-Butanone	**1.05**	**J**	4.19	0.764	mg/Kg	☼	05/25/22 10:49	05/26/22 19:56	200
Benzene	**1.37**		0.209	0.0433	mg/Kg	☼	05/25/22 10:49	05/26/22 19:56	200
Carbon disulfide	<0.0612	U	1.05	0.0612	mg/Kg	☼	05/25/22 10:49	05/26/22 19:56	200
Chlorobenzene	<0.0496	U	1.05	0.0496	mg/Kg	☼	05/25/22 10:49	05/26/22 19:56	200
Chloroform	<0.0362	U	1.05	0.0362	mg/Kg	☼	05/25/22 10:49	05/26/22 19:56	200
Ethylbenzene	**12.4**		0.209	0.0703	mg/Kg	☼	05/25/22 10:49	05/26/22 19:56	200
Styrene	<0.0430	U	1.05	0.0430	mg/Kg	☼	05/25/22 10:49	05/26/22 19:56	200
Tetrachloroethene	<0.0774	U	1.05	0.0774	mg/Kg	☼	05/25/22 10:49	05/26/22 19:56	200
Toluene	**2.93**		1.05	0.209	mg/Kg	☼	05/25/22 10:49	05/26/22 19:56	200
Trichloroethene	<0.103	U	1.05	0.103	mg/Kg	☼	05/25/22 10:49	05/26/22 19:56	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*56 - 150*	*05/25/22 10:49*	*05/26/22 19:56*	*200*
4-Bromofluorobenzene (Surr)	*90*		*68 - 152*	*05/25/22 10:49*	*05/26/22 19:56*	*200*
Dibromofluoromethane (Surr)	*84*		*53 - 142*	*05/25/22 10:49*	*05/26/22 19:56*	*200*
Toluene-d8 (Surr)	*101*		*70 - 130*	*05/25/22 10:49*	*05/26/22 19:56*	*200*

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**31.6**		2.09	1.03	mg/Kg	☼	05/25/22 10:49	05/26/22 20:19	1000
m,p-Xylenes	**23.7**		2.09	0.838	mg/Kg	☼	05/25/22 10:49	05/26/22 20:19	1000
o-Xylene	**7.90**		1.05	1.03	mg/Kg	☼	05/25/22 10:49	05/26/22 20:19	1000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*56 - 150*	*05/25/22 10:49*	*05/26/22 20:19*	*1000*
4-Bromofluorobenzene (Surr)	*97*		*68 - 152*	*05/25/22 10:49*	*05/26/22 20:19*	*1000*
Dibromofluoromethane (Surr)	*85*		*53 - 142*	*05/25/22 10:49*	*05/26/22 20:19*	*1000*
Toluene-d8 (Surr)	*94*		*70 - 130*	*05/25/22 10:49*	*05/26/22 20:19*	*1000*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**322**		52.2	22.0	mg/Kg	☼	05/25/22 13:08	05/25/22 22:07	1

Eurofins Houston

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-09 (13'-14')
Lab Sample ID: 860-26536-31
Date Collected: 05/17/22 08:55
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.3

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	**441**		52.2	22.0	mg/Kg	☼	05/25/22 13:08	05/25/22 22:07	1
Oil Range Organics (Over C28-C36)	<22.0	U	52.2	22.0	mg/Kg	☼	05/25/22 13:08	05/25/22 22:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*98*		*65 - 130*	*05/25/22 13:08*	*05/25/22 22:07*	*1*
o-Terphenyl	*102*		*65 - 130*	*05/25/22 13:08*	*05/25/22 22:07*	*1*

Client Sample ID: SNR-08 (1'-2')
Lab Sample ID: 860-26536-32
Date Collected: 05/17/22 10:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.6

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000526	U	0.00523	0.000526	mg/Kg	☼	05/25/22 10:49	05/25/22 22:07	1
1,1-Dichloroethane	<0.000394	U	0.00523	0.000394	mg/Kg	☼	05/25/22 10:49	05/25/22 22:07	1
1,2-Dibromoethane	<0.00109	U	0.00523	0.00109	mg/Kg	☼	05/25/22 10:49	05/25/22 22:07	1
1,2-Dichloroethane	<0.000318	U	0.00523	0.000318	mg/Kg	☼	05/25/22 10:49	05/25/22 22:07	1
1,4-Dioxane (P-Dioxane)	<0.0152	U	0.105	0.0152	mg/Kg	☼	05/25/22 10:49	05/25/22 22:07	1
2-Butanone	<0.00382	U	0.0209	0.00382	mg/Kg	☼	05/25/22 10:49	05/25/22 22:07	1
Benzene	<0.000217	U	0.00105	0.000217	mg/Kg	☼	05/25/22 10:49	05/25/22 22:07	1
Carbon disulfide	<0.000306	U	0.00523	0.000306	mg/Kg	☼	05/25/22 10:49	05/25/22 22:07	1
Chlorobenzene	<0.000248	U	0.00523	0.000248	mg/Kg	☼	05/25/22 10:49	05/25/22 22:07	1
Chloroform	<0.000181	U	0.00523	0.000181	mg/Kg	☼	05/25/22 10:49	05/25/22 22:07	1
Ethylbenzene	<0.000351	U	0.00105	0.000351	mg/Kg	☼	05/25/22 10:49	05/25/22 22:07	1
Styrene	<0.000215	U	0.00523	0.000215	mg/Kg	☼	05/25/22 10:49	05/25/22 22:07	1
Tetrachloroethene	<0.000387	U	0.00523	0.000387	mg/Kg	☼	05/25/22 10:49	05/25/22 22:07	1
Toluene	<0.00105	U	0.00523	0.00105	mg/Kg	☼	05/25/22 10:49	05/25/22 22:07	1
Trichloroethene	<0.000517	U	0.00523	0.000517	mg/Kg	☼	05/25/22 10:49	05/25/22 22:07	1
Xylenes, Total	**0.00155**	**J**	0.00209	0.00103	mg/Kg	☼	05/25/22 10:49	05/25/22 22:07	1
m,p-Xylenes	<0.000837	U	0.00209	0.000837	mg/Kg	☼	05/25/22 10:49	05/25/22 22:07	1
o-Xylene	**0.00155**		0.00105	0.00103	mg/Kg	☼	05/25/22 10:49	05/25/22 22:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*56 - 150*	*05/25/22 10:49*	*05/25/22 22:07*	*1*
4-Bromofluorobenzene (Surr)	*113*		*68 - 152*	*05/25/22 10:49*	*05/25/22 22:07*	*1*
Dibromofluoromethane (Surr)	*92*		*53 - 142*	*05/25/22 10:49*	*05/25/22 22:07*	*1*
Toluene-d8 (Surr)	*103*		*70 - 130*	*05/25/22 10:49*	*05/25/22 22:07*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<22.1	U	52.4	22.1	mg/Kg	☼	05/25/22 13:08	05/25/22 22:26	1
Diesel Range Organics (Over C10-C28)	<22.1	U	52.4	22.1	mg/Kg	☼	05/25/22 13:08	05/25/22 22:26	1
Oil Range Organics (Over C28-C36)	<22.1	U	52.4	22.1	mg/Kg	☼	05/25/22 13:08	05/25/22 22:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*91*		*65 - 130*	*05/25/22 13:08*	*05/25/22 22:26*	*1*
o-Terphenyl	*108*		*65 - 130*	*05/25/22 13:08*	*05/25/22 22:26*	*1*

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-08 (5'-6')
Lab Sample ID: 860-26536-33
Date Collected: 05/17/22 10:05
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 97.4

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000519	U	0.00516	0.000519	mg/Kg	☼	05/26/22 15:50	05/27/22 20:00	1
1,1-Dichloroethane	<0.000388	U	0.00516	0.000388	mg/Kg	☼	05/26/22 15:50	05/27/22 20:00	1
1,2-Dibromoethane	<0.00108	U	0.00516	0.00108	mg/Kg	☼	05/26/22 15:50	05/27/22 20:00	1
1,2-Dichloroethane	<0.000314	U	0.00516	0.000314	mg/Kg	☼	05/26/22 15:50	05/27/22 20:00	1
1,4-Dioxane (P-Dioxane)	<0.0150	U	0.103	0.0150	mg/Kg	☼	05/26/22 15:50	05/27/22 20:00	1
2-Butanone	<0.00377	U	0.0207	0.00377	mg/Kg	☼	05/26/22 15:50	05/27/22 20:00	1
Benzene	<0.000214	U	0.00103	0.000214	mg/Kg	☼	05/26/22 15:50	05/27/22 20:00	1
Carbon disulfide	<0.000302	U	0.00516	0.000302	mg/Kg	☼	05/26/22 15:50	05/27/22 20:00	1
Chlorobenzene	<0.000244	U	0.00516	0.000244	mg/Kg	☼	05/26/22 15:50	05/27/22 20:00	1
Chloroform	<0.000178	U	0.00516	0.000178	mg/Kg	☼	05/26/22 15:50	05/27/22 20:00	1
Ethylbenzene	**0.000907**	**J**	0.00103	0.000347	mg/Kg	☼	05/26/22 15:50	05/27/22 20:00	1
Styrene	<0.000212	U	0.00516	0.000212	mg/Kg	☼	05/26/22 15:50	05/27/22 20:00	1
Tetrachloroethene	<0.000382	U	0.00516	0.000382	mg/Kg	☼	05/26/22 15:50	05/27/22 20:00	1
Toluene	<0.00103	U	0.00516	0.00103	mg/Kg	☼	05/26/22 15:50	05/27/22 20:00	1
Trichloroethene	<0.000510	U	0.00516	0.000510	mg/Kg	☼	05/26/22 15:50	05/27/22 20:00	1
Xylenes, Total	**0.00626**		0.00207	0.00102	mg/Kg	☼	05/26/22 15:50	05/27/22 20:00	1
m,p-Xylenes	**0.00415**		0.00207	0.000826	mg/Kg	☼	05/26/22 15:50	05/27/22 20:00	1
o-Xylene	**0.00211**		0.00103	0.00102	mg/Kg	☼	05/26/22 15:50	05/27/22 20:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*56 - 150*	*05/26/22 15:50*	*05/27/22 20:00*	*1*
4-Bromofluorobenzene (Surr)	*125*		*68 - 152*	*05/26/22 15:50*	*05/27/22 20:00*	*1*
Dibromofluoromethane (Surr)	*95*		*53 - 142*	*05/26/22 15:50*	*05/27/22 20:00*	*1*
Toluene-d8 (Surr)	*115*		*70 - 130*	*05/26/22 15:50*	*05/27/22 20:00*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<21.7	U	51.4	21.7	mg/Kg	☼	05/25/22 13:08	05/25/22 22:46	1
Diesel Range Organics (Over C10-C28)	<21.7	U	51.4	21.7	mg/Kg	☼	05/25/22 13:08	05/25/22 22:46	1
OII Range Organics (Over C28-C36)	<21.7	U	51.4	21.7	mg/Kg	☼	05/25/22 13:08	05/25/22 22:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*94*		*65 - 130*	*05/25/22 13:08*	*05/25/22 22:46*	*1*
o-Terphenyl	*112*		*65 - 130*	*05/25/22 13:08*	*05/25/22 22:46*	*1*

Client Sample ID: SNR-08 (9'-10')
Lab Sample ID: 860-26536-34
Date Collected: 05/17/22 10:10
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 97.4

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.103	U	1.02	0.103	mg/Kg	☼	05/25/22 10:49	05/25/22 20:42	200
1,1-Dichloroethane	<0.0771	U	1.02	0.0771	mg/Kg	☼	05/25/22 10:49	05/25/22 20:42	200
1,2-Dibromoethane	<0.214	U	1.02	0.214	mg/Kg	☼	05/25/22 10:49	05/25/22 20:42	200
1,2-Dichloroethane	<0.0622	U	1.02	0.0622	mg/Kg	☼	05/25/22 10:49	05/25/22 20:42	200
1,4-Dioxane (P-Dioxane)	<2.98	U	20.5	2.98	mg/Kg	☼	05/25/22 10:49	05/25/22 20:42	200
2-Butanone	<0.747	U	4.10	0.747	mg/Kg	☼	05/25/22 10:49	05/25/22 20:42	200
Benzene	**0.661**		0.205	0.0424	mg/Kg	☼	05/25/22 10:49	05/25/22 20:42	200
Carbon disulfide	<0.0599	U	1.02	0.0599	mg/Kg	☼	05/25/22 10:49	05/25/22 20:42	200

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-08 (9'-10')
Lab Sample ID: 860-26536-34
Date Collected: 05/17/22 10:10
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 97.4

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	<0.0485	U	1.02	0.0485	mg/Kg	☼	05/25/22 10:49	05/25/22 20:42	200
Chloroform	<0.0354	U	1.02	0.0354	mg/Kg	☼	05/25/22 10:49	05/25/22 20:42	200
Ethylbenzene	**7.59**		0.205	0.0688	mg/Kg	☼	05/25/22 10:49	05/25/22 20:42	200
Styrene	<0.0421	U	1.02	0.0421	mg/Kg	☼	05/25/22 10:49	05/25/22 20:42	200
Tetrachloroethene	<0.0757	U	1.02	0.0757	mg/Kg	☼	05/25/22 10:49	05/25/22 20:42	200
Toluene	**2.51**		1.02	0.205	mg/Kg	☼	05/25/22 10:49	05/25/22 20:42	200
Trichloroethene	<0.101	U	1.02	0.101	mg/Kg	☼	05/25/22 10:49	05/25/22 20:42	200
Xylenes, Total	**32.1**		0.410	0.202	mg/Kg	☼	05/25/22 10:49	05/25/22 20:42	200
m,p-Xylenes	**24.2**		0.410	0.164	mg/Kg	☼	05/25/22 10:49	05/25/22 20:42	200
o-Xylene	**7.91**		0.205	0.202	mg/Kg	☼	05/25/22 10:49	05/25/22 20:42	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*56 - 150*	*05/25/22 10:49*	*05/25/22 20:42*	*200*
4-Bromofluorobenzene (Surr)	*119*		*68 - 152*	*05/25/22 10:49*	*05/25/22 20:42*	*200*
Dibromofluoromethane (Surr)	*96*		*53 - 142*	*05/25/22 10:49*	*05/25/22 20:42*	*200*
Toluene-d8 (Surr)	*117*		*70 - 130*	*05/25/22 10:49*	*05/25/22 20:42*	*200*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**302**		51.0	21.5	mg/Kg	☼	05/25/22 13:08	05/25/22 23:05	1
Diesel Range Organics (Over C10-C28)	**1560**		51.0	21.5	mg/Kg	☼	05/25/22 13:08	05/25/22 23:05	1
Oil Range Organics (Over C28-C36)	<21.5	U	51.0	21.5	mg/Kg	☼	05/25/22 13:08	05/25/22 23:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*106*		*65 - 130*	*05/25/22 13:08*	*05/25/22 23:05*	*1*
o-Terphenyl	*111*		*65 - 130*	*05/25/22 13:08*	*05/25/22 23:05*	*1*

Client Sample ID: SNR-08 (13'-13.5')
Lab Sample ID: 860-26536-35
Date Collected: 05/17/22 10:15
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.6

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.0132	U	0.131	0.0132	mg/Kg	☼	05/25/22 10:49	05/26/22 19:13	25
1,1-Dichloroethane	<0.00987	U	0.131	0.00987	mg/Kg	☼	05/25/22 10:49	05/26/22 19:13	25
1,2-Dibromoethane	<0.0274	U	0.131	0.0274	mg/Kg	☼	05/25/22 10:49	05/26/22 19:13	25
1,2-Dichloroethane	<0.00797	U	0.131	0.00797	mg/Kg	☼	05/25/22 10:49	05/26/22 19:13	25
1,4-Dioxane (P-Dioxane)	<0.382	U	2.63	0.382	mg/Kg	☼	05/25/22 10:49	05/26/22 19:13	25
2-Butanone	**0.933**		0.525	0.0957	mg/Kg	☼	05/25/22 10:49	05/27/22 16:00	25
Benzene	**0.0375**		0.0263	0.00543	mg/Kg	☼	05/25/22 10:49	05/26/22 19:13	25
Carbon disulfide	<0.00767	U	0.131	0.00767	mg/Kg	☼	05/25/22 10:49	05/26/22 19:13	25
Chlorobenzene	<0.00621	U	0.131	0.00621	mg/Kg	☼	05/25/22 10:49	05/27/22 16:00	25
Chloroform	<0.00454	U	0.131	0.00454	mg/Kg	☼	05/25/22 10:49	05/26/22 19:13	25
Ethylbenzene	**1.47**		0.0263	0.00881	mg/Kg	☼	05/25/22 10:49	05/26/22 19:13	25
Styrene	<0.00539	U	0.131	0.00539	mg/Kg	☼	05/25/22 10:49	05/26/22 19:13	25
Tetrachloroethene	<0.00970	U	0.131	0.00970	mg/Kg	☼	05/25/22 10:49	05/26/22 19:13	25
Toluene	**0.0950**	**J**	0.131	0.0263	mg/Kg	☼	05/25/22 10:49	05/26/22 19:13	25
Trichloroethene	<0.0130	U	0.131	0.0130	mg/Kg	☼	05/25/22 10:49	05/26/22 19:13	25
Xylenes, Total	**0.647**		0.0525	0.0259	mg/Kg	☼	05/25/22 10:49	05/26/22 19:13	25

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-08 (13'-13.5')
Lab Sample ID: 860-26536-35
Date Collected: 05/17/22 10:15
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.6

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m,p-Xylenes	0.506		0.0525	0.0210	mg/Kg	☼	05/25/22 10:49	05/26/22 19:13	25
o-Xylene	0.141		0.0263	0.0259	mg/Kg	☼	05/25/22 10:49	05/26/22 19:13	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*56 - 150*	*05/25/22 10:49*	*05/26/22 19:13*	*25*
1,2-Dichloroethane-d4 (Surr)	*87*		*56 - 150*	*05/25/22 10:49*	*05/27/22 16:00*	*25*
4-Bromofluorobenzene (Surr)	*136*		*68 - 152*	*05/25/22 10:49*	*05/26/22 19:13*	*25*
4-Bromofluorobenzene (Surr)	*102*		*68 - 152*	*05/25/22 10:49*	*05/27/22 16:00*	*25*
Dibromofluoromethane (Surr)	*87*		*53 - 142*	*05/25/22 10:49*	*05/26/22 19:13*	*25*
Dibromofluoromethane (Surr)	*88*		*53 - 142*	*05/25/22 10:49*	*05/27/22 16:00*	*25*
Toluene-d8 (Surr)	*125*		*70 - 130*	*05/25/22 10:49*	*05/26/22 19:13*	*25*
Toluene-d8 (Surr)	*90*		*70 - 130*	*05/25/22 10:49*	*05/27/22 16:00*	*25*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<22.1	U	52.4	22.1	mg/Kg	☼	05/25/22 13:08	05/25/22 23:26	1
Diesel Range Organics (Over C10-C28)	<22.1	U	52.4	22.1	mg/Kg	☼	05/25/22 13:08	05/25/22 23:26	1
Oil Range Organics (Over C28-C36)	<22.1	U	52.4	22.1	mg/Kg	☼	05/25/22 13:08	05/25/22 23:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*87*		*65 - 130*	*05/25/22 13:08*	*05/25/22 23:26*	*1*
o-Terphenyl	*105*		*65 - 130*	*05/25/22 13:08*	*05/25/22 23:26*	*1*

Client Sample ID: SNR-10 (1'-2')
Lab Sample ID: 860-26536-36
Date Collected: 05/17/22 11:45
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.5

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000541	U	0.00538	0.000541	mg/Kg	☼	05/25/22 10:49	05/25/22 22:30	1
1,1-Dichloroethane	<0.000405	U	0.00538	0.000405	mg/Kg	☼	05/25/22 10:49	05/25/22 22:30	1
1,2-Dibromoethane	<0.00112	U	0.00538	0.00112	mg/Kg	☼	05/25/22 10:49	05/25/22 22:30	1
1,2-Dichloroethane	<0.000327	U	0.00538	0.000327	mg/Kg	☼	05/25/22 10:49	05/25/22 22:30	1
1,4-Dioxane (P-Dioxane)	<0.0157	U	0.108	0.0157	mg/Kg	☼	05/25/22 10:49	05/25/22 22:30	1
2-Butanone	<0.00392	U	0.0215	0.00392	mg/Kg	☼	05/25/22 10:49	05/25/22 22:30	1
Benzene	<0.000223	U	0.00108	0.000223	mg/Kg	☼	05/25/22 10:49	05/25/22 22:30	1
Carbon disulfide	<0.000314	U	0.00538	0.000314	mg/Kg	☼	05/25/22 10:49	05/25/22 22:30	1
Chlorobenzene	<0.000255	U	0.00538	0.000255	mg/Kg	☼	05/25/22 10:49	05/25/22 22:30	1
Chloroform	<0.000186	U	0.00538	0.000186	mg/Kg	☼	05/25/22 10:49	05/25/22 22:30	1
Ethylbenzene	<0.000361	U	0.00108	0.000361	mg/Kg	☼	05/25/22 10:49	05/25/22 22:30	1
Styrene	<0.000221	U	0.00538	0.000221	mg/Kg	☼	05/25/22 10:49	05/25/22 22:30	1
Tetrachloroethene	<0.000398	U	0.00538	0.000398	mg/Kg	☼	05/25/22 10:49	05/25/22 22:30	1
Toluene	<0.00108	U	0.00538	0.00108	mg/Kg	☼	05/25/22 10:49	05/25/22 22:30	1
Trichloroethene	<0.000532	U	0.00538	0.000532	mg/Kg	☼	05/25/22 10:49	05/25/22 22:30	1
Xylenes, Total	<0.00106	U	0.00215	0.00106	mg/Kg	☼	05/25/22 10:49	05/25/22 22:30	1
m,p-Xylenes	<0.000861	U	0.00215	0.000861	mg/Kg	☼	05/25/22 10:49	05/25/22 22:30	1
o-Xylene	<0.00106	U	0.00108	0.00106	mg/Kg	☼	05/25/22 10:49	05/25/22 22:30	1

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-10 (1'-2')
Lab Sample ID: 860-26536-36
Date Collected: 05/17/22 11:45
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		56 - 150	05/25/22 10:49	05/25/22 22:30	1
4-Bromofluorobenzene (Surr)	115		68 - 152	05/25/22 10:49	05/25/22 22:30	1
Dibromofluoromethane (Surr)	94		53 - 142	05/25/22 10:49	05/25/22 22:30	1
Toluene-d8 (Surr)	103		70 - 130	05/25/22 10:49	05/25/22 22:30	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<22.5	U	53.2	22.5	mg/Kg	☼	05/26/22 10:00	05/27/22 02:19	1
Diesel Range Organics (Over C10-C28)	<22.5	U	53.2	22.5	mg/Kg	☼	05/26/22 10:00	05/27/22 02:19	1
Oil Range Organics (Over C28-C36)	<22.5	U	53.2	22.5	mg/Kg	☼	05/26/22 10:00	05/27/22 02:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	82		65 - 130	05/26/22 10:00	05/27/22 02:19	1
o-Terphenyl	89		65 - 130	05/26/22 10:00	05/27/22 02:19	1

Client Sample ID: SNR-10 (5'-6')
Lab Sample ID: 860-26536-37
Date Collected: 05/17/22 11:50
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 89.9

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000558	U	0.00555	0.000558	mg/Kg	☼	05/25/22 10:49	05/25/22 22:52	1
1,1-Dichloroethane	<0.000417	U	0.00555	0.000417	mg/Kg	☼	05/25/22 10:49	05/25/22 22:52	1
1,2-Dibromoethane	<0.00116	U	0.00555	0.00116	mg/Kg	☼	05/25/22 10:49	05/25/22 22:52	1
1,2-Dichloroethane	<0.000337	U	0.00555	0.000337	mg/Kg	☼	05/25/22 10:49	05/25/22 22:52	1
1,4-Dioxane (P-Dioxane)	<0.0162	U	0.111	0.0162	mg/Kg	☼	05/25/22 10:49	05/25/22 22:52	1
2-Butanone	<0.00405	U	0.0222	0.00405	mg/Kg	☼	05/25/22 10:49	05/25/22 22:52	1
Benzene	<0.000230	U	0.00111	0.000230	mg/Kg	☼	05/25/22 10:49	05/25/22 22:52	1
Carbon disulfide	<0.000324	U	0.00555	0.000324	mg/Kg	☼	05/25/22 10:49	05/25/22 22:52	1
Chlorobenzene	<0.000263	U	0.00555	0.000263	mg/Kg	☼	05/25/22 10:49	05/25/22 22:52	1
Chloroform	<0.000192	U	0.00555	0.000192	mg/Kg	☼	05/25/22 10:49	05/25/22 22:52	1
Ethylbenzene	**0.000578**	**J**	0.00111	0.000373	mg/Kg	☼	05/25/22 10:49	05/25/22 22:52	1
Styrene	<0.000228	U	0.00555	0.000228	mg/Kg	☼	05/25/22 10:49	05/25/22 22:52	1
Tetrachloroethene	<0.000410	U	0.00555	0.000410	mg/Kg	☼	05/25/22 10:49	05/25/22 22:52	1
Toluene	<0.00111	U	0.00555	0.00111	mg/Kg	☼	05/25/22 10:49	05/25/22 22:52	1
Trichloroethene	<0.000548	U	0.00555	0.000548	mg/Kg	☼	05/25/22 10:49	05/25/22 22:52	1
Xylenes, Total	**0.00219**	**J**	0.00222	0.00109	mg/Kg	☼	05/25/22 10:49	05/25/22 22:52	1
m,p-Xylenes	**0.00219**	**J**	0.00222	0.000888	mg/Kg	☼	05/25/22 10:49	05/25/22 22:52	1
o-Xylene	<0.00109	U	0.00111	0.00109	mg/Kg	☼	05/25/22 10:49	05/25/22 22:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		56 - 150	05/25/22 10:49	05/25/22 22:52	1
4-Bromofluorobenzene (Surr)	112		68 - 152	05/25/22 10:49	05/25/22 22:52	1
Dibromofluoromethane (Surr)	91		53 - 142	05/25/22 10:49	05/25/22 22:52	1
Toluene-d8 (Surr)	101		70 - 130	05/25/22 10:49	05/25/22 22:52	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<23.5	U	55.7	23.5	mg/Kg	☼	05/25/22 10:50	05/27/22 02:38	1

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-10 (5'-6')
Lab Sample ID: 860-26536-37
Date Collected: 05/17/22 11:50
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 89.9

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<23.5	U	55.7	23.5	mg/Kg	☼	05/25/22 10:50	05/27/22 02:38	1
Oil Range Organics (Over C28-C36)	<23.5	U	55.7	23.5	mg/Kg	☼	05/25/22 10:50	05/27/22 02:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*86*		*65 - 130*	*05/25/22 10:50*	*05/27/22 02:38*	*1*
o-Terphenyl	*95*		*65 - 130*	*05/25/22 10:50*	*05/27/22 02:38*	*1*

Client Sample ID: SNR-10 (10.5'-11.5')
Lab Sample ID: 860-26536-38
Date Collected: 05/17/22 11:55
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 85.5

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.0146	U	0.146	0.0146	mg/Kg	☼	05/25/22 10:49	05/26/22 19:36	25
1,1-Dichloroethane	<0.0110	U	0.146	0.0110	mg/Kg	☼	05/25/22 10:49	05/26/22 19:36	25
1,2-Dibromoethane	<0.0304	U	0.146	0.0304	mg/Kg	☼	05/25/22 10:49	05/26/22 19:36	25
1,2-Dichloroethane	<0.00885	U	0.146	0.00885	mg/Kg	☼	05/25/22 10:49	05/26/22 19:36	25
1,4-Dioxane (P-Dioxane)	<0.424	U	2.91	0.424	mg/Kg	☼	05/25/22 10:49	05/26/22 19:36	25
2-Butanone	**0.978**		0.582	0.106	mg/Kg	☼	05/25/22 10:49	05/27/22 16:22	25
Benzene	**0.0161**	**J**	0.0291	0.00603	mg/Kg	☼	05/25/22 10:49	05/26/22 19:36	25
Carbon disulfide	<0.00851	U	0.146	0.00851	mg/Kg	☼	05/25/22 10:49	05/26/22 19:36	25
Chlorobenzene	<0.00689	U	0.146	0.00689	mg/Kg	☼	05/25/22 10:49	05/27/22 16:22	25
Chloroform	<0.00503	U	0.146	0.00503	mg/Kg	☼	05/25/22 10:49	05/26/22 19:36	25
Ethylbenzene	**1.43**		0.0291	0.00978	mg/Kg	☼	05/25/22 10:49	05/26/22 19:36	25
Styrene	<0.00598	U	0.146	0.00598	mg/Kg	☼	05/25/22 10:49	05/26/22 19:36	25
Tetrachloroethene	<0.0108	U	0.146	0.0108	mg/Kg	☼	05/25/22 10:49	05/26/22 19:36	25
Toluene	**1.00**		0.146	0.0291	mg/Kg	☼	05/25/22 10:49	05/26/22 19:36	25
Trichloroethene	<0.0144	U	0.146	0.0144	mg/Kg	☼	05/25/22 10:49	05/26/22 19:36	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*56 - 150*	*05/25/22 10:49*	*05/26/22 19:36*	*25*
1,2-Dichloroethane-d4 (Surr)	*82*		*56 - 150*	*05/25/22 10:49*	*05/27/22 16:22*	*25*
4-Bromofluorobenzene (Surr)	*133*		*68 - 152*	*05/25/22 10:49*	*05/26/22 19:36*	*25*
4-Bromofluorobenzene (Surr)	*92*		*68 - 152*	*05/25/22 10:49*	*05/27/22 16:22*	*25*
Dibromofluoromethane (Surr)	*87*		*53 - 142*	*05/25/22 10:49*	*05/26/22 19:36*	*25*
Dibromofluoromethane (Surr)	*84*		*53 - 142*	*05/25/22 10:49*	*05/27/22 16:22*	*25*
Toluene-d8 (Surr)	*137*	*S1+*	*70 - 130*	*05/25/22 10:49*	*05/26/22 19:36*	*25*
Toluene-d8 (Surr)	*100*		*70 - 130*	*05/25/22 10:49*	*05/27/22 16:22*	*25*

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**5.54**		0.466	0.229	mg/Kg	☼	05/25/22 10:49	05/25/22 21:29	200
m,p-Xylenes	**4.09**		0.466	0.186	mg/Kg	☼	05/25/22 10:49	05/25/22 21:29	200
o-Xylene	**1.45**		0.233	0.229	mg/Kg	☼	05/25/22 10:49	05/25/22 21:29	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*56 - 150*	*05/25/22 10:49*	*05/25/22 21:29*	*200*
4-Bromofluorobenzene (Surr)	*121*		*68 - 152*	*05/25/22 10:49*	*05/25/22 21:29*	*200*
Dibromofluoromethane (Surr)	*94*		*53 - 142*	*05/25/22 10:49*	*05/25/22 21:29*	*200*
Toluene-d8 (Surr)	*113*		*70 - 130*	*05/25/22 10:49*	*05/25/22 21:29*	*200*

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-10 (10.5'-11.5')
Lab Sample ID: 860-26536-38
Date Collected: 05/17/22 11:55
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 85.5

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**43.0**	**J**	58.4	24.6	mg/Kg	☼	05/26/22 10:50	05/27/22 02:57	1
Diesel Range Organics (Over C10-C28)	<24.6	U	58.4	24.6	mg/Kg	☼	05/26/22 10:50	05/27/22 02:57	1
Oil Range Organics (Over C28-C36)	<24.6	U	58.4	24.6	mg/Kg	☼	05/26/22 10:50	05/27/22 02:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*85*		*65 - 130*	*05/26/22 10:50*	*05/27/22 02:57*	*1*
o-Terphenyl	*91*		*65 - 130*	*05/26/22 10:50*	*05/27/22 02:57*	*1*

Client Sample ID: SNR-10 (14.5'-15')
Lab Sample ID: 860-26536-39
Date Collected: 05/17/22 12:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 84.5

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.0148	U	0.147	0.0148	mg/Kg	☼	05/25/22 10:49	05/26/22 19:59	25
1,1-Dichloroethane	<0.0111	U	0.147	0.0111	mg/Kg	☼	05/25/22 10:49	05/26/22 19:59	25
1,2-Dibromoethane	<0.0307	U	0.147	0.0307	mg/Kg	☼	05/25/22 10:49	05/26/22 19:59	25
1,2-Dichloroethane	<0.00893	U	0.147	0.00893	mg/Kg	☼	05/25/22 10:49	05/26/22 19:59	25
1,4-Dioxane (P-Dioxane)	<0.428	U	2.94	0.428	mg/Kg	☼	05/25/22 10:49	05/26/22 19:59	25
Benzene	**0.0729**		0.0294	0.00609	mg/Kg	☼	05/25/22 10:49	05/26/22 19:59	25
Carbon disulfide	<0.00860	U	0.147	0.00860	mg/Kg	☼	05/25/22 10:49	05/26/22 19:59	25
Chlorobenzene	<0.00696	U	0.147	0.00696	mg/Kg	☼	05/25/22 10:49	05/27/22 18:50	25
Chloroform	<0.00508	U	0.147	0.00508	mg/Kg	☼	05/25/22 10:49	05/26/22 19:59	25
Ethylbenzene	**1.46**		0.0294	0.00987	mg/Kg	☼	05/25/22 10:49	05/26/22 19:59	25
Styrene	<0.00604	U	0.147	0.00604	mg/Kg	☼	05/25/22 10:49	05/26/22 19:59	25
Tetrachloroethene	<0.0109	U	0.147	0.0109	mg/Kg	☼	05/25/22 10:49	05/26/22 19:59	25
Toluene	**0.129**	**J**	0.147	0.0294	mg/Kg	☼	05/25/22 10:49	05/26/22 19:59	25
Trichloroethene	<0.0145	U	0.147	0.0145	mg/Kg	☼	05/25/22 10:49	05/26/22 19:59	25
Xylenes, Total	**0.433**		0.0588	0.0290	mg/Kg	☼	05/25/22 10:49	05/26/22 19:59	25
m,p-Xylenes	**0.338**		0.0588	0.0235	mg/Kg	☼	05/25/22 10:49	05/26/22 19:59	25
o-Xylene	**0.0950**		0.0294	0.0290	mg/Kg	☼	05/25/22 10:49	05/26/22 19:59	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*56 - 150*	*05/25/22 10:49*	*05/26/22 19:59*	*25*
1,2-Dichloroethane-d4 (Surr)	*106*		*56 - 150*	*05/25/22 10:49*	*05/27/22 18:50*	*25*
1,2-Dichloroethane-d4 (Surr)	*88*		*56 - 150*	*05/25/22 10:49*	*06/01/22 14:56*	*25*
4-Bromofluorobenzene (Surr)	*125*		*68 - 152*	*05/25/22 10:49*	*05/26/22 19:59*	*25*
4-Bromofluorobenzene (Surr)	*121*		*68 - 152*	*05/25/22 10:49*	*05/27/22 18:50*	*25*
4-Bromofluorobenzene (Surr)	*82*		*68 - 152*	*05/25/22 10:49*	*06/01/22 14:56*	*25*
Dibromofluoromethane (Surr)	*88*		*53 - 142*	*05/25/22 10:49*	*05/26/22 19:59*	*25*
Dibromofluoromethane (Surr)	*87*		*53 - 142*	*05/25/22 10:49*	*05/27/22 18:50*	*25*
Dibromofluoromethane (Surr)	*92*		*53 - 142*	*05/25/22 10:49*	*06/01/22 14:56*	*25*
Toluene-d8 (Surr)	*117*		*70 - 130*	*05/25/22 10:49*	*05/26/22 19:59*	*25*
Toluene-d8 (Surr)	*116*		*70 - 130*	*05/25/22 10:49*	*05/27/22 18:50*	*25*
Toluene-d8 (Surr)	*92*		*70 - 130*	*05/25/22 10:49*	*06/01/22 14:56*	*25*

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone	<0.858	U	4.71	0.858	mg/Kg	☼	05/25/22 10:49	05/25/22 21:52	200

Eurofins Houston

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-10 (14.5'-15')
Lab Sample ID: 860-26536-39
Date Collected: 05/17/22 12:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 84.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		56 - 150	05/25/22 10:49	05/25/22 21:52	200
4-Bromofluorobenzene (Surr)	122		68 - 152	05/25/22 10:49	05/25/22 21:52	200
Dibromofluoromethane (Surr)	95		53 - 142	05/25/22 10:49	05/25/22 21:52	200
Toluene-d8 (Surr)	111		70 - 130	05/25/22 10:49	05/25/22 21:52	200

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<24.8	U	58.9	24.8	mg/Kg	☼	05/26/22 13:06	05/27/22 01:01	1
Diesel Range Organics (Over C10-C28)	**178**		58.9	24.8	mg/Kg	☼	05/26/22 13:06	05/27/22 01:01	1
Oil Range Organics (Over C28-C36)	<24.8	U	58.9	24.8	mg/Kg	☼	05/26/22 13:06	05/27/22 01:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	89		65 - 130	05/26/22 13:06	05/27/22 01:01	1
o-Terphenyl	99		65 - 130	05/26/22 13:06	05/27/22 01:01	1

Client Sample ID: SNR-11 (1'-2')
Lab Sample ID: 860-26536-40
Date Collected: 05/17/22 12:30
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.6

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000536	U	0.00533	0.000536	mg/Kg	☼	05/25/22 13:07	05/25/22 23:15	1
1,1-Dichloroethane	<0.000401	U	0.00533	0.000401	mg/Kg	☼	05/25/22 13:07	05/25/22 23:15	1
1,2-Dibromoethane	<0.00111	U	0.00533	0.00111	mg/Kg	☼	05/25/22 13:07	05/25/22 23:15	1
1,2-Dichloroethane	<0.000324	U	0.00533	0.000324	mg/Kg	☼	05/25/22 13:07	05/25/22 23:15	1
1,4-Dioxane (P-Dioxane)	<0.0155	U	0.107	0.0155	mg/Kg	☼	05/25/22 13:07	05/25/22 23:15	1
2-Butanone	<0.00389	U	0.0213	0.00389	mg/Kg	☼	05/25/22 13:07	05/25/22 23:15	1
Benzene	**0.000481**	**J**	0.00107	0.000221	mg/Kg	☼	05/25/22 13:07	05/25/22 23:15	1
Carbon disulfide	<0.000312	U	0.00533	0.000312	mg/Kg	☼	05/25/22 13:07	05/25/22 23:15	1
Chlorobenzene	<0.000252	U	0.00533	0.000252	mg/Kg	☼	05/25/22 13:07	05/25/22 23:15	1
Chloroform	<0.000184	U	0.00533	0.000184	mg/Kg	☼	05/25/22 13:07	05/25/22 23:15	1
Ethylbenzene	**0.00268**		0.00107	0.000358	mg/Kg	☼	05/25/22 13:07	05/25/22 23:15	1
Styrene	<0.000219	U	0.00533	0.000219	mg/Kg	☼	05/25/22 13:07	05/25/22 23:15	1
Tetrachloroethene	<0.000394	U	0.00533	0.000394	mg/Kg	☼	05/25/22 13:07	05/25/22 23:15	1
Toluene	<0.00107	U	0.00533	0.00107	mg/Kg	☼	05/25/22 13:07	05/25/22 23:15	1
Trichloroethene	<0.000527	U	0.00533	0.000527	mg/Kg	☼	05/25/22 13:07	05/25/22 23:15	1
Xylenes, Total	**0.00939**		0.00213	0.00105	mg/Kg	☼	05/25/22 13:07	05/25/22 23:15	1
m,p-Xylenes	**0.00803**		0.00213	0.000853	mg/Kg	☼	05/25/22 13:07	05/25/22 23:15	1
o-Xylene	**0.00136**		0.00107	0.00105	mg/Kg	☼	05/25/22 13:07	05/25/22 23:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		56 - 150	05/25/22 13:07	05/25/22 23:15	1
4-Bromofluorobenzene (Surr)	114		68 - 152	05/25/22 13:07	05/25/22 23:15	1
Dibromofluoromethane (Surr)	93		53 - 142	05/25/22 13:07	05/25/22 23:15	1
Toluene-d8 (Surr)	101		70 - 130	05/25/22 13:07	05/25/22 23:15	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<22.4	U	53.1	22.4	mg/Kg	☼	05/26/22 10:50	05/27/22 11:40	1

Eurofins Houston

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-11 (1'-2')
Lab Sample ID: 860-26536-40
Date Collected: 05/17/22 12:30
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.6

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	**35.3**	**J**	53.1	22.4	mg/Kg	☼	05/26/22 10:50	05/27/22 11:40	1
Oil Range Organics (Over C28-C36)	<22.4	U	53.1	22.4	mg/Kg	☼	05/26/22 10:50	05/27/22 11:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*88*		*65 - 130*	*05/26/22 10:50*	*05/27/22 11:40*	*1*
o-Terphenyl	*98*		*65 - 130*	*05/26/22 10:50*	*05/27/22 11:40*	*1*

Client Sample ID: SNR-11 (5'-6')
Lab Sample ID: 860-26536-41
Date Collected: 05/17/22 12:35
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 92.5

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000548	U	0.00545	0.000548	mg/Kg	☼	05/25/22 13:53	05/25/22 23:37	1
1,1-Dichloroethane	<0.000410	U	0.00545	0.000410	mg/Kg	☼	05/25/22 13:53	05/25/22 23:37	1
1,2-Dibromoethane	<0.00114	U	0.00545	0.00114	mg/Kg	☼	05/25/22 13:53	05/25/22 23:37	1
1,2-Dichloroethane	<0.000331	U	0.00545	0.000331	mg/Kg	☼	05/25/22 13:53	05/25/22 23:37	1
1,4-Dioxane (P-Dioxane)	<0.0159	U	0.109	0.0159	mg/Kg	☼	05/25/22 13:53	05/25/22 23:37	1
2-Butanone	<0.00397	U	0.0218	0.00397	mg/Kg	☼	05/25/22 13:53	05/25/22 23:37	1
Benzene	<0.000226	U	0.00109	0.000226	mg/Kg	☼	05/25/22 13:53	05/25/22 23:37	1
Carbon disulfide	<0.000319	U	0.00545	0.000319	mg/Kg	☼	05/25/22 13:53	05/25/22 23:37	1
Chlorobenzene	<0.000258	U	0.00545	0.000258	mg/Kg	☼	05/25/22 13:53	05/25/22 23:37	1
Chloroform	<0.000188	U	0.00545	0.000188	mg/Kg	☼	05/25/22 13:53	05/25/22 23:37	1
Ethylbenzene	<0.000366	U	0.00109	0.000366	mg/Kg	☼	05/25/22 13:53	05/25/22 23:37	1
Styrene	<0.000224	U	0.00545	0.000224	mg/Kg	☼	05/25/22 13:53	05/25/22 23:37	1
Tetrachloroethene	<0.000403	U	0.00545	0.000403	mg/Kg	☼	05/25/22 13:53	05/25/22 23:37	1
Toluene	<0.00109	U	0.00545	0.00109	mg/Kg	☼	05/25/22 13:53	05/25/22 23:37	1
Trichloroethene	<0.000538	U	0.00545	0.000538	mg/Kg	☼	05/25/22 13:53	05/25/22 23:37	1
Xylenes, Total	<0.00107	U	0.00218	0.00107	mg/Kg	☼	05/25/22 13:53	05/25/22 23:37	1
m,p-Xylenes	<0.000872	U	0.00218	0.000872	mg/Kg	☼	05/25/22 13:53	05/25/22 23:37	1
o-Xylene	<0.00107	U	0.00109	0.00107	mg/Kg	☼	05/25/22 13:53	05/25/22 23:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*56 - 150*	*05/25/22 13:53*	*05/25/22 23:37*	*1*
4-Bromofluorobenzene (Surr)	*113*		*68 - 152*	*05/25/22 13:53*	*05/25/22 23:37*	*1*
Dibromofluoromethane (Surr)	*96*		*53 - 142*	*05/25/22 13:53*	*05/25/22 23:37*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*	*05/25/22 13:53*	*05/25/22 23:37*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<22.9	U	54.2	22.9	mg/Kg	☼	05/26/22 10:50	05/27/22 03:17	1
Diesel Range Organics (Over C10-C28)	<22.9	U	54.2	22.9	mg/Kg	☼	05/26/22 10:50	05/27/22 03:17	1
Oil Range Organics (Over C28-C36)	<22.9	U	54.2	22.9	mg/Kg	☼	05/26/22 10:50	05/27/22 03:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*86*		*65 - 130*	*05/26/22 10:50*	*05/27/22 03:17*	*1*
o-Terphenyl	*95*		*65 - 130*	*05/26/22 10:50*	*05/27/22 03:17*	*1*

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-11 (9'-10')
Lab Sample ID: 860-26536-42
Date Collected: 05/17/22 12:40
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 99.7

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000506	U	0.00503	0.000506	mg/Kg	☼	05/25/22 13:53	05/26/22 00:00	1
1,1-Dichloroethane	<0.000379	U	0.00503	0.000379	mg/Kg	☼	05/25/22 13:53	05/26/22 00:00	1
1,2-Dibromoethane	<0.00105	U	0.00503	0.00105	mg/Kg	☼	05/25/22 13:53	05/26/22 00:00	1
1,2-Dichloroethane	<0.000306	U	0.00503	0.000306	mg/Kg	☼	05/25/22 13:53	05/26/22 00:00	1
1,4-Dioxane (P-Dioxane)	<0.0147	U	0.101	0.0147	mg/Kg	☼	05/25/22 13:53	05/26/22 00:00	1
2-Butanone	<0.00367	U	0.0201	0.00367	mg/Kg	☼	05/25/22 13:53	05/26/22 00:00	1
Benzene	**0.000434**	**J**	0.00101	0.000208	mg/Kg	☼	05/25/22 13:53	05/26/22 00:00	1
Carbon disulfide	<0.000294	U	0.00503	0.000294	mg/Kg	☼	05/25/22 13:53	05/26/22 00:00	1
Chlorobenzene	<0.000238	U	0.00503	0.000238	mg/Kg	☼	05/25/22 13:53	05/26/22 00:00	1
Chloroform	<0.000174	U	0.00503	0.000174	mg/Kg	☼	05/25/22 13:53	05/26/22 00:00	1
Ethylbenzene	**0.0104**		0.00101	0.000338	mg/Kg	☼	05/25/22 13:53	05/26/22 00:00	1
Styrene	<0.000207	U	0.00503	0.000207	mg/Kg	☼	05/25/22 13:53	05/26/22 00:00	1
Tetrachloroethene	<0.000372	U	0.00503	0.000372	mg/Kg	☼	05/25/22 13:53	05/26/22 00:00	1
Toluene	**0.00143**	**J**	0.00503	0.00101	mg/Kg	☼	05/25/22 13:53	05/26/22 00:00	1
Trichloroethene	<0.000497	U	0.00503	0.000497	mg/Kg	☼	05/25/22 13:53	05/26/22 00:00	1
Xylenes, Total	**0.0337**		0.00201	0.000991	mg/Kg	☼	05/25/22 13:53	05/26/22 00:00	1
m,p-Xylenes	**0.0244**		0.00201	0.000805	mg/Kg	☼	05/25/22 13:53	05/26/22 00:00	1
o-Xylene	**0.00929**		0.00101	0.000991	mg/Kg	☼	05/25/22 13:53	05/26/22 00:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*56 - 150*	*05/25/22 13:53*	*05/26/22 00:00*	*1*
4-Bromofluorobenzene (Surr)	*110*		*68 - 152*	*05/25/22 13:53*	*05/26/22 00:00*	*1*
Dibromofluoromethane (Surr)	*95*		*53 - 142*	*05/25/22 13:53*	*05/26/22 00:00*	*1*
Toluene-d8 (Surr)	*102*		*70 - 130*	*05/25/22 13:53*	*05/26/22 00:00*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<21.2	U	50.2	21.2	mg/Kg	☼	05/26/22 13:06	05/26/22 18:49	1
Diesel Range Organics (Over C10-C28)	<21.2	U	50.2	21.2	mg/Kg	☼	05/26/22 13:06	05/26/22 18:49	1
Oil Range Organics (Over C28-C36)	<21.2	U	50.2	21.2	mg/Kg	☼	05/26/22 13:06	05/26/22 18:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*90*		*65 - 130*	*05/26/22 13:06*	*05/26/22 18:49*	*1*
o-Terphenyl	*100*		*65 - 130*	*05/26/22 13:06*	*05/26/22 18:49*	*1*

Client Sample ID: SNR-11 (14.5'-15')
Lab Sample ID: 860-26536-43
Date Collected: 05/17/22 12:45
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 97.1

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.104	U	1.03	0.104	mg/Kg	☼	05/25/22 13:53	05/25/22 22:15	200
1,1-Dichloroethane	<0.0778	U	1.03	0.0778	mg/Kg	☼	05/25/22 13:53	05/25/22 22:15	200
1,2-Dibromoethane	<0.216	U	1.03	0.216	mg/Kg	☼	05/25/22 13:53	05/25/22 22:15	200
1,2-Dichloroethane	<0.0629	U	1.03	0.0629	mg/Kg	☼	05/25/22 13:53	05/25/22 22:15	200
1,4-Dioxane (P-Dioxane)	<3.01	U	20.7	3.01	mg/Kg	☼	05/25/22 13:53	05/25/22 22:15	200
2-Butanone	<0.754	U	4.14	0.754	mg/Kg	☼	05/25/22 13:53	05/25/22 22:15	200
Benzene	**0.880**		0.207	0.0428	mg/Kg	☼	05/25/22 13:53	05/25/22 22:15	200
Carbon disulfide	<0.0605	U	1.03	0.0605	mg/Kg	☼	05/25/22 13:53	05/25/22 22:15	200

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-11 (14.5'-15')
Lab Sample ID: 860-26536-43
Date Collected: 05/17/22 12:45
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 97.1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	<0.0490	U	1.03	0.0490	mg/Kg	☼	05/25/22 13:53	05/25/22 22:15	200
Chloroform	<0.0358	U	1.03	0.0358	mg/Kg	☼	05/25/22 13:53	05/25/22 22:15	200
Ethylbenzene	**9.57**		0.207	0.0695	mg/Kg	☼	05/25/22 13:53	05/25/22 22:15	200
Styrene	<0.0425	U	1.03	0.0425	mg/Kg	☼	05/25/22 13:53	05/25/22 22:15	200
Tetrachloroethene	<0.0765	U	1.03	0.0765	mg/Kg	☼	05/25/22 13:53	05/25/22 22:15	200
Toluene	**20.5**		1.03	0.207	mg/Kg	☼	05/25/22 13:53	05/25/22 22:15	200
Trichloroethene	<0.102	U	1.03	0.102	mg/Kg	☼	05/25/22 13:53	05/25/22 22:15	200
Xylenes, Total	**39.2**		0.414	0.204	mg/Kg	☼	05/25/22 13:53	05/25/22 22:15	200
m,p-Xylenes	**29.1**		0.414	0.166	mg/Kg	☼	05/25/22 13:53	05/25/22 22:15	200
o-Xylene	**10.1**		0.207	0.204	mg/Kg	☼	05/25/22 13:53	05/25/22 22:15	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*56 - 150*	*05/25/22 13:53*	*05/25/22 22:15*	*200*
4-Bromofluorobenzene (Surr)	*124*		*68 - 152*	*05/25/22 13:53*	*05/25/22 22:15*	*200*
Dibromofluoromethane (Surr)	*96*		*53 - 142*	*05/25/22 13:53*	*05/25/22 22:15*	*200*
Toluene-d8 (Surr)	*123*		*70 - 130*	*05/25/22 13:53*	*05/25/22 22:15*	*200*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**161**		51.4	21.7	mg/Kg	☼	05/26/22 13:06	05/26/22 19:48	1
Diesel Range Organics (Over C10-C28)	**115**		51.4	21.7	mg/Kg	☼	05/26/22 13:06	05/26/22 19:48	1
Oil Range Organics (Over C28-C36)	<21.7	U	51.4	21.7	mg/Kg	☼	05/26/22 13:06	05/26/22 19:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*86*		*65 - 130*	*05/26/22 13:06*	*05/26/22 19:48*	*1*
o-Terphenyl	*92*		*65 - 130*	*05/26/22 13:06*	*05/26/22 19:48*	*1*

Client Sample ID: SNR-12 (1'-2')
Lab Sample ID: 860-26536-44
Date Collected: 05/17/22 16:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 97.6

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000516	U	0.00513	0.000516	mg/Kg	☼	05/25/22 13:53	05/26/22 00:22	1
1,1-Dichloroethane	<0.000386	U	0.00513	0.000386	mg/Kg	☼	05/25/22 13:53	05/26/22 00:22	1
1,2-Dibromoethane	<0.00107	U	0.00513	0.00107	mg/Kg	☼	05/25/22 13:53	05/26/22 00:22	1
1,2-Dichloroethane	<0.000312	U	0.00513	0.000312	mg/Kg	☼	05/25/22 13:53	05/26/22 00:22	1
1,4-Dioxane (P-Dioxane)	<0.0149	U	0.103	0.0149	mg/Kg	☼	05/25/22 13:53	05/26/22 00:22	1
2-Butanone	<0.00374	U	0.0205	0.00374	mg/Kg	☼	05/25/22 13:53	05/26/22 00:22	1
Benzene	**0.000509**	**J**	0.00103	0.000212	mg/Kg	☼	05/25/22 13:53	05/26/22 00:22	1
Carbon disulfide	<0.000300	U	0.00513	0.000300	mg/Kg	☼	05/25/22 13:53	05/26/22 00:22	1
Chlorobenzene	<0.000243	U	0.00513	0.000243	mg/Kg	☼	05/25/22 13:53	05/26/22 00:22	1
Chloroform	<0.000177	U	0.00513	0.000177	mg/Kg	☼	05/25/22 13:53	05/26/22 00:22	1
Ethylbenzene	<0.000345	U	0.00103	0.000345	mg/Kg	☼	05/25/22 13:53	05/26/22 00:22	1
Styrene	<0.000211	U	0.00513	0.000211	mg/Kg	☼	05/25/22 13:53	05/26/22 00:22	1
Tetrachloroethene	<0.000379	U	0.00513	0.000379	mg/Kg	☼	05/25/22 13:53	05/26/22 00:22	1
Toluene	**0.00141**	**J**	0.00513	0.00103	mg/Kg	☼	05/25/22 13:53	05/26/22 00:22	1
Trichloroethene	<0.000507	U	0.00513	0.000507	mg/Kg	☼	05/25/22 13:53	05/26/22 00:22	1
Xylenes, Total	**0.00125**	**J**	0.00205	0.00101	mg/Kg	☼	05/25/22 13:53	05/26/22 00:22	1

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-12 (1'-2')
Lab Sample ID: 860-26536-44
Date Collected: 05/17/22 16:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 97.6

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m,p-Xylenes	**0.00125**	**J**	0.00205	0.000821	mg/Kg	☼	05/25/22 13:53	05/26/22 00:22	1
o-Xylene	<0.00101	U	0.00103	0.00101	mg/Kg	☼	05/25/22 13:53	05/26/22 00:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*56 - 150*	*05/25/22 13:53*	*05/26/22 00:22*	*1*
4-Bromofluorobenzene (Surr)	*117*		*68 - 152*	*05/25/22 13:53*	*05/26/22 00:22*	*1*
Dibromofluoromethane (Surr)	*100*		*53 - 142*	*05/25/22 13:53*	*05/26/22 00:22*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*	*05/25/22 13:53*	*05/26/22 00:22*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<21.5	U	51.0	21.5	mg/Kg	☼	05/26/22 13:06	05/26/22 20:08	1
Diesel Range Organics (Over C10-C28)	<21.5	U	51.0	21.5	mg/Kg	☼	05/26/22 13:06	05/26/22 20:08	1
Oil Range Organics (Over C28-C36)	<21.5	U	51.0	21.5	mg/Kg	☼	05/26/22 13:06	05/26/22 20:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*85*		*65 - 130*	*05/26/22 13:06*	*05/26/22 20:08*	*1*
o-Terphenyl	*95*		*65 - 130*	*05/26/22 13:06*	*05/26/22 20:08*	*1*

Client Sample ID: SNR-12 (6'-7')
Lab Sample ID: 860-26536-45
Date Collected: 05/17/22 16:05
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 98.0

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000508	U	0.00505	0.000508	mg/Kg	☼	05/26/22 12:55	05/26/22 20:23	1
1,1-Dichloroethane	<0.000380	U	0.00505	0.000380	mg/Kg	☼	05/26/22 12:55	05/26/22 20:23	1
1,2-Dibromoethane	<0.00105	U	0.00505	0.00105	mg/Kg	☼	05/26/22 12:55	05/26/22 20:23	1
1,2-Dichloroethane	<0.000307	U	0.00505	0.000307	mg/Kg	☼	05/26/22 12:55	05/26/22 20:23	1
1,4-Dioxane (P-Dioxane)	<0.0147	U	0.101	0.0147	mg/Kg	☼	05/26/22 12:55	05/26/22 20:23	1
2-Butanone	<0.00369	U	0.0202	0.00369	mg/Kg	☼	05/26/22 12:55	05/26/22 20:23	1
Benzene	<0.000209	U	0.00101	0.000209	mg/Kg	☼	05/26/22 12:55	05/26/22 20:23	1
Carbon disulfide	<0.000295	U	0.00505	0.000295	mg/Kg	☼	05/26/22 12:55	05/26/22 20:23	1
Chlorobenzene	<0.000240	U	0.00506	0.000240	mg/Kg	☼	05/27/22 14:52	05/27/22 17:07	1
Chloroform	<0.000175	U	0.00505	0.000175	mg/Kg	☼	05/26/22 12:55	05/26/22 20:23	1
Ethylbenzene	**0.0675**		0.00101	0.000339	mg/Kg	☼	05/26/22 12:55	05/26/22 20:23	1
Styrene	<0.000208	U	0.00505	0.000208	mg/Kg	☼	05/26/22 12:55	05/26/22 20:23	1
Tetrachloroethene	<0.000374	U	0.00505	0.000374	mg/Kg	☼	05/26/22 12:55	05/26/22 20:23	1
Toluene	**0.00136**	**J**	0.00505	0.00101	mg/Kg	☼	05/26/22 12:55	05/26/22 20:23	1
Trichloroethene	<0.000499	U	0.00505	0.000499	mg/Kg	☼	05/26/22 12:55	05/26/22 20:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*56 - 150*	*05/26/22 12:55*	*05/26/22 20:23*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*56 - 150*	*05/27/22 14:52*	*05/27/22 17:07*	*1*
4-Bromofluorobenzene (Surr)	*171*	*S1+*	*68 - 152*	*05/26/22 12:55*	*05/26/22 20:23*	*1*
4-Bromofluorobenzene (Surr)	*110*		*68 - 152*	*05/27/22 14:52*	*05/27/22 17:07*	*1*
Dibromofluoromethane (Surr)	*96*		*53 - 142*	*05/26/22 12:55*	*05/26/22 20:23*	*1*
Dibromofluoromethane (Surr)	*87*		*53 - 142*	*05/27/22 14:52*	*05/27/22 17:07*	*1*
Toluene-d8 (Surr)	*136*	*S1+*	*70 - 130*	*05/26/22 12:55*	*05/26/22 20:23*	*1*

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-12 (6'-7')
Lab Sample ID: 860-26536-45
Date Collected: 05/17/22 16:05
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 98.0

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	94		70 - 130	05/27/22 14:52	05/27/22 17:07	1

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**0.798**		0.0505	0.0249	mg/Kg	☼	05/25/22 13:53	05/26/22 20:46	25
m,p-Xylenes	**0.597**		0.0505	0.0202	mg/Kg	☼	05/25/22 13:53	05/26/22 20:46	25
o-Xylene	**0.201**		0.0253	0.0249	mg/Kg	☼	05/25/22 13:53	05/26/22 20:46	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		56 - 150	05/25/22 13:53	05/26/22 20:46	25
4-Bromofluorobenzene (Surr)	129		68 - 152	05/25/22 13:53	05/26/22 20:46	25
Dibromofluoromethane (Surr)	85		53 - 142	05/25/22 13:53	05/26/22 20:46	25
Toluene-d8 (Surr)	121		70 - 130	05/25/22 13:53	05/26/22 20:46	25

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**41.8**	**J**	50.9	21.5	mg/Kg	☼	05/26/22 13:06	05/27/22 03:36	1
Diesel Range Organics (Over C10-C28)	<21.5	U	50.9	21.5	mg/Kg	☼	05/26/22 13:06	05/27/22 03:36	1
Oil Range Organics (Over C28-C36)	<21.5	U	50.9	21.5	mg/Kg	☼	05/26/22 13:06	05/27/22 03:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	87		65 - 130	05/26/22 13:06	05/27/22 03:36	1
o-Terphenyl	92		65 - 130	05/26/22 13:06	05/27/22 03:36	1

Client Sample ID: SNR-12 (9.5'-10')
Lab Sample ID: 860-26536-46
Date Collected: 05/17/22 16:10
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 96.9

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.0129	U	0.128	0.0129	mg/Kg	☼	05/25/22 13:53	05/26/22 21:10	25
1,1-Dichloroethane	<0.00965	U	0.128	0.00965	mg/Kg	☼	05/25/22 13:53	05/26/22 21:10	25
1,2-Dibromoethane	<0.0268	U	0.128	0.0268	mg/Kg	☼	05/25/22 13:53	05/26/22 21:10	25
1,2-Dichloroethane	<0.00779	U	0.128	0.00779	mg/Kg	☼	05/25/22 13:53	05/26/22 21:10	25
1,4-Dioxane (P-Dioxane)	<0.374	U	2.57	0.374	mg/Kg	☼	05/25/22 13:53	05/26/22 21:10	25
2-Butanone	**0.933**		0.513	0.0935	mg/Kg	☼	05/25/22 13:53	05/27/22 16:45	25
Benzene	<0.00531	U	0.0257	0.00531	mg/Kg	☼	05/25/22 13:53	05/26/22 21:10	25
Carbon disulfide	<0.00750	U	0.128	0.00750	mg/Kg	☼	05/25/22 13:53	05/26/22 21:10	25
Chlorobenzene	<0.00607	U	0.128	0.00607	mg/Kg	☼	05/25/22 13:53	05/27/22 16:45	25
Chloroform	<0.00443	U	0.128	0.00443	mg/Kg	☼	05/25/22 13:53	05/26/22 21:10	25
Ethylbenzene	**0.583**		0.0257	0.00861	mg/Kg	☼	05/25/22 13:53	05/26/22 21:10	25
Styrene	<0.00527	U	0.128	0.00527	mg/Kg	☼	05/25/22 13:53	05/26/22 21:10	25
Tetrachloroethene	<0.00948	U	0.128	0.00948	mg/Kg	☼	05/25/22 13:53	05/26/22 21:10	25
Toluene	**0.123**	**J**	0.128	0.0257	mg/Kg	☼	05/25/22 13:53	05/26/22 21:10	25
Trichloroethene	<0.0127	U	0.128	0.0127	mg/Kg	☼	05/25/22 13:53	05/26/22 21:10	25
Xylenes, Total	**2.23**		0.0513	0.0253	mg/Kg	☼	05/25/22 13:53	05/26/22 21:10	25
m,p-Xylenes	**1.68**		0.0513	0.0205	mg/Kg	☼	05/25/22 13:53	05/26/22 21:10	25
o-Xylene	**0.549**		0.0257	0.0253	mg/Kg	☼	05/25/22 13:53	05/26/22 21:10	25

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-12 (9.5'-10')
Lab Sample ID: 860-26536-46
Date Collected: 05/17/22 16:10
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 96.9

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		56 - 150	05/25/22 13:53	05/26/22 21:10	25
1,2-Dichloroethane-d4 (Surr)	85		56 - 150	05/25/22 13:53	05/27/22 16:45	25
4-Bromofluorobenzene (Surr)	127		68 - 152	05/25/22 13:53	05/26/22 21:10	25
4-Bromofluorobenzene (Surr)	99		68 - 152	05/25/22 13:53	05/27/22 16:45	25
Dibromofluoromethane (Surr)	85		53 - 142	05/25/22 13:53	05/26/22 21:10	25
Dibromofluoromethane (Surr)	85		53 - 142	05/25/22 13:53	05/27/22 16:45	25
Toluene-d8 (Surr)	155	S1+	70 - 130	05/25/22 13:53	05/26/22 21:10	25
Toluene-d8 (Surr)	102		70 - 130	05/25/22 13:53	05/27/22 16:45	25

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**38.9**	**J**	51.4	21.7	mg/Kg	☼	05/26/22 13:06	05/26/22 20:27	1
Diesel Range Organics (Over C10-C28)	<21.7	U	51.4	21.7	mg/Kg	☼	05/26/22 13:06	05/26/22 20:27	1
Oil Range Organics (Over C28-C36)	<21.7	U	51.4	21.7	mg/Kg	☼	05/26/22 13:06	05/26/22 20:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	91		65 - 130	05/26/22 13:06	05/26/22 20:27	1
o-Terphenyl	100		65 - 130	05/26/22 13:06	05/26/22 20:27	1

Client Sample ID: SNR-12 (14'-15')
Lab Sample ID: 860-26536-47
Date Collected: 05/17/22 16:15
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.9

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<1.05	U	10.4	1.05	mg/Kg	☼	05/26/22 15:50	05/27/22 00:25	2000
1,1-Dichloroethane	<0.783	U	10.4	0.783	mg/Kg	☼	05/26/22 15:50	05/27/22 00:25	2000
1,2-Dibromoethane	<2.17	U	10.4	2.17	mg/Kg	☼	05/26/22 15:50	05/27/22 00:25	2000
1,2-Dichloroethane	<0.632	U	10.4	0.632	mg/Kg	☼	05/26/22 15:50	05/27/22 00:25	2000
1,4-Dioxane (P-Dioxane)	<30.3	U	208	30.3	mg/Kg	☼	05/26/22 15:50	05/27/22 00:25	2000
2-Butanone	<7.59	U	41.6	7.59	mg/Kg	☼	05/26/22 15:50	05/27/22 00:25	2000
Benzene	**45.2**		2.08	0.431	mg/Kg	☼	05/26/22 15:50	05/27/22 00:25	2000
Carbon disulfide	<0.609	U	10.4	0.609	mg/Kg	☼	05/26/22 15:50	05/27/22 00:25	2000
Chlorobenzene	<0.493	U	10.4	0.493	mg/Kg	☼	05/26/22 15:50	05/27/22 00:25	2000
Chloroform	<0.360	U	10.4	0.360	mg/Kg	☼	05/26/22 15:50	05/27/22 00:25	2000
Ethylbenzene	**56.9**		2.08	0.699	mg/Kg	☼	05/26/22 15:50	05/27/22 00:25	2000
Styrene	<0.428	U	10.4	0.428	mg/Kg	☼	05/26/22 15:50	05/27/22 00:25	2000
Tetrachloroethene	<0.769	U	10.4	0.769	mg/Kg	☼	05/26/22 15:50	05/27/22 00:25	2000
Trichloroethene	<1.03	U	10.4	1.03	mg/Kg	☼	05/26/22 15:50	05/27/22 00:25	2000
Xylenes, Total	**205**		4.16	2.05	mg/Kg	☼	05/26/22 15:50	05/27/22 00:25	2000
m,p-Xylenes	**152**		4.16	1.67	mg/Kg	☼	05/26/22 15:50	05/27/22 00:25	2000
o-Xylene	**52.7**		2.08	2.05	mg/Kg	☼	05/26/22 15:50	05/27/22 00:25	2000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		56 - 150	05/26/22 15:50	05/27/22 00:25	2000
4-Bromofluorobenzene (Surr)	96		68 - 152	05/26/22 15:50	05/27/22 00:25	2000
Dibromofluoromethane (Surr)	86		53 - 142	05/26/22 15:50	05/27/22 00:25	2000
Toluene-d8 (Surr)	95		70 - 130	05/26/22 15:50	05/27/22 00:25	2000

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-12 (14'-15')
Lab Sample ID: 860-26536-47
Date Collected: 05/17/22 16:15
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.9

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**416**		52.0	10.4	mg/Kg	☼	05/26/22 15:50	05/27/22 15:37	10000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*56 - 150*	*05/26/22 15:50*	*05/27/22 15:37*	*10000*
4-Bromofluorobenzene (Surr)	*102*		*68 - 152*	*05/26/22 15:50*	*05/27/22 15:37*	*10000*
Dibromofluoromethane (Surr)	*91*		*53 - 142*	*05/26/22 15:50*	*05/27/22 15:37*	*10000*
Toluene-d8 (Surr)	*96*		*70 - 130*	*05/26/22 15:50*	*05/27/22 15:37*	*10000*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**2430**		52.1	22.0	mg/Kg	☼	05/26/22 13:06	05/26/22 20:47	1
Diesel Range Organics (Over C10-C28)	**707**		52.1	22.0	mg/Kg	☼	05/26/22 13:06	05/26/22 20:47	1
Oil Range Organics (Over C28-C36)	<22.0	U	52.1	22.0	mg/Kg	☼	05/26/22 13:06	05/26/22 20:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*106*		*65 - 130*	*05/26/22 13:06*	*05/26/22 20:47*	*1*
o-Terphenyl	*92*		*65 - 130*	*05/26/22 13:06*	*05/26/22 20:47*	*1*

Client Sample ID: SNR-13 (1'-2')
Lab Sample ID: 860-26536-48
Date Collected: 05/17/22 17:05
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 96.6

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000519	U	0.00516	0.000519	mg/Kg	☼	05/25/22 13:53	05/26/22 01:07	1
1,1-Dichloroethane	<0.000388	U	0.00516	0.000388	mg/Kg	☼	05/25/22 13:53	05/26/22 01:07	1
1,2-Dibromoethane	<0.00108	U	0.00516	0.00108	mg/Kg	☼	05/25/22 13:53	05/26/22 01:07	1
1,2-Dichloroethane	<0.000313	U	0.00516	0.000313	mg/Kg	☼	05/25/22 13:53	05/26/22 01:07	1
1,4-Dioxane (P-Dioxane)	<0.0150	U	0.103	0.0150	mg/Kg	☼	05/25/22 13:53	05/26/22 01:07	1
2-Butanone	<0.00376	U	0.0206	0.00376	mg/Kg	☼	05/25/22 13:53	05/26/22 01:07	1
Carbon disulfide	<0.000301	U	0.00516	0.000301	mg/Kg	☼	05/25/22 13:53	05/26/22 01:07	1
Chlorobenzene	<0.000244	U	0.00516	0.000244	mg/Kg	☼	05/25/22 13:53	05/26/22 01:07	1
Chloroform	<0.000178	U	0.00516	0.000178	mg/Kg	☼	05/25/22 13:53	05/26/22 01:07	1
Styrene	<0.000212	U	0.00516	0.000212	mg/Kg	☼	05/25/22 13:53	05/26/22 01:07	1
Tetrachloroethene	<0.000381	U	0.00516	0.000381	mg/Kg	☼	05/25/22 13:53	05/26/22 01:07	1
Trichloroethene	<0.000510	U	0.00516	0.000510	mg/Kg	☼	05/25/22 13:53	05/26/22 01:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*56 - 150*	*05/25/22 13:53*	*05/26/22 01:07*	*1*
4-Bromofluorobenzene (Surr)	*110*		*68 - 152*	*05/25/22 13:53*	*05/26/22 01:07*	*1*
Dibromofluoromethane (Surr)	*87*		*53 - 142*	*05/25/22 13:53*	*05/26/22 01:07*	*1*
Toluene-d8 (Surr)	*116*		*70 - 130*	*05/25/22 13:53*	*05/26/22 01:07*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.466**		0.0256	0.00531	mg/Kg	☼	05/27/22 11:28	05/27/22 15:15	25
Ethylbenzene	**0.147**		0.0256	0.00861	mg/Kg	☼	05/27/22 11:28	05/27/22 15:15	25
Toluene	**0.747**		0.128	0.0256	mg/Kg	☼	05/27/22 11:28	05/27/22 15:15	25
Xylenes, Total	**1.49**		0.0513	0.0252	mg/Kg	☼	05/27/22 11:28	05/27/22 15:15	25
m,p-Xylenes	**0.655**		0.0513	0.0205	mg/Kg	☼	05/27/22 11:28	05/27/22 15:15	25

Client Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Client Sample ID: SNR-13 (1'-2')

Date Collected: 05/17/22 17:05
Date Received: 05/20/22 10:24

Lab Sample ID: 860-26536-48

Matrix: Solid
Percent Solids: 96.6

Method: 8260D - Volatile Organic Compounds by GC/MS - DL (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	**0.835**		0.0256	0.0252	mg/Kg	☼	05/27/22 11:28	05/27/22 15:15	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*56 - 150*	*05/27/22 11:28*	*05/27/22 15:15*	*25*
4-Bromofluorobenzene (Surr)	*103*		*68 - 152*	*05/27/22 11:28*	*05/27/22 15:15*	*25*
Dibromofluoromethane (Surr)	*90*		*53 - 142*	*05/27/22 11:28*	*05/27/22 15:15*	*25*
Toluene-d8 (Surr)	*103*		*70 - 130*	*05/27/22 11:28*	*05/27/22 15:15*	*25*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**98.1**		51.9	21.9	mg/Kg	☼	05/26/22 13:06	05/27/22 13:25	1
Diesel Range Organics (Over C10-C28)	**212**		51.9	21.9	mg/Kg	☼	05/26/22 13:06	05/27/22 13:25	1
Oil Range Organics (Over C28-C36)	<21.9	U	51.9	21.9	mg/Kg	☼	05/26/22 13:06	05/27/22 13:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*85*		*65 - 130*	*05/26/22 13:06*	*05/27/22 13:25*	*1*
o-Terphenyl	*93*		*65 - 130*	*05/26/22 13:06*	*05/27/22 13:25*	*1*

Client Sample ID: SNR-13 (6'-7')

Date Collected: 05/17/22 17:10
Date Received: 05/20/22 10:24

Lab Sample ID: 860-26536-49

Matrix: Solid
Percent Solids: 90.3

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.111	U	1.11	0.111	mg/Kg	☼	05/25/22 13:53	05/26/22 21:33	200
1,1-Dichloroethane	<0.0833	U	1.11	0.0833	mg/Kg	☼	05/25/22 13:53	05/26/22 21:33	200
1,2-Dibromoethane	<0.231	U	1.11	0.231	mg/Kg	☼	05/25/22 13:53	05/26/22 21:33	200
1,2-Dichloroethane	<0.0673	U	1.11	0.0673	mg/Kg	☼	05/25/22 13:53	05/26/22 21:33	200
1,4-Dioxane (P-Dioxane)	<3.23	U	22.2	3.23	mg/Kg	☼	05/25/22 13:53	05/26/22 21:33	200
2-Butanone	<0.808	U	4.43	0.808	mg/Kg	☼	05/25/22 13:53	05/26/22 21:33	200
Benzene	**0.548**		0.222	0.0459	mg/Kg	☼	05/25/22 13:53	05/26/22 21:33	200
Carbon disulfide	<0.0648	U	1.11	0.0648	mg/Kg	☼	05/25/22 13:53	05/26/22 21:33	200
Chlorobenzene	<0.0525	U	1.11	0.0525	mg/Kg	☼	05/25/22 13:53	05/27/22 17:29	200
Chloroform	<0.0383	U	1.11	0.0383	mg/Kg	☼	05/25/22 13:53	05/26/22 21:33	200
Ethylbenzene	**11.3**		0.222	0.0744	mg/Kg	☼	05/25/22 13:53	05/26/22 21:33	200
Styrene	<0.0455	U	1.11	0.0455	mg/Kg	☼	05/25/22 13:53	05/26/22 21:33	200
Tetrachloroethene	<0.0819	U	1.11	0.0819	mg/Kg	☼	05/25/22 13:53	05/26/22 21:33	200
Toluene	**5.84**		1.11	0.222	mg/Kg	☼	05/25/22 13:53	05/26/22 21:33	200
Trichloroethene	<0.109	U	1.11	0.109	mg/Kg	☼	05/25/22 13:53	05/26/22 21:33	200
Xylenes, Total	**32.6**		0.443	0.218	mg/Kg	☼	05/25/22 13:53	05/26/22 21:33	200
m,p-Xylenes	**24.3**		0.443	0.177	mg/Kg	☼	05/25/22 13:53	05/26/22 21:33	200
o-Xylene	**8.27**		0.222	0.218	mg/Kg	☼	05/25/22 13:53	05/26/22 21:33	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*56 - 150*	*05/25/22 13:53*	*05/26/22 21:33*	*200*
1,2-Dichloroethane-d4 (Surr)	*85*		*56 - 150*	*05/25/22 13:53*	*05/27/22 17:29*	*200*
4-Bromofluorobenzene (Surr)	*130*		*68 - 152*	*05/25/22 13:53*	*05/26/22 21:33*	*200*
4-Bromofluorobenzene (Surr)	*100*		*68 - 152*	*05/25/22 13:53*	*05/27/22 17:29*	*200*
Dibromofluoromethane (Surr)	*95*		*53 - 142*	*05/25/22 13:53*	*05/26/22 21:33*	*200*

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-13 (6'-7')
Lab Sample ID: 860-26536-49
Date Collected: 05/17/22 17:10
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 90.3

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	88		53 - 142	05/25/22 13:53	05/27/22 17:29	200
Toluene-d8 (Surr)	133	S1+	70 - 130	05/25/22 13:53	05/26/22 21:33	200
Toluene-d8 (Surr)	97		70 - 130	05/25/22 13:53	05/27/22 17:29	200

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**112**		55.3	23.3	mg/Kg	☼	05/26/22 13:06	05/26/22 21:26	1
Diesel Range Organics (Over C10-C28)	<23.3	U	55.3	23.3	mg/Kg	☼	05/26/22 13:06	05/26/22 21:26	1
OII Range Organics (Over C28-C36)	<23.3	U	55.3	23.3	mg/Kg	☼	05/26/22 13:06	05/26/22 21:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	86		65 - 130	05/26/22 13:06	05/26/22 21:26	1
o-Terphenyl	92		65 - 130	05/26/22 13:06	05/26/22 21:26	1

Client Sample ID: SNR-13 (14'-15')
Lab Sample ID: 860-26536-50
Date Collected: 05/17/22 17:20
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 89.2

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000568	U	0.00565	0.000568	mg/Kg	☼	05/25/22 13:53	05/26/22 01:29	1
1,1-Dichloroethane	<0.000425	U	0.00565	0.000425	mg/Kg	☼	05/25/22 13:53	05/26/22 01:29	1
1,2-Dibromoethane	<0.00118	U	0.00565	0.00118	mg/Kg	☼	05/25/22 13:53	05/26/22 01:29	1
1,2-Dichloroethane	<0.000343	U	0.00565	0.000343	mg/Kg	☼	05/25/22 13:53	05/26/22 01:29	1
1,4-Dioxane (P-Dioxane)	<0.0165	U	0.113	0.0165	mg/Kg	☼	05/25/22 13:53	05/26/22 01:29	1
2-Butanone	**0.00660**	**J**	0.0226	0.00412	mg/Kg	☼	05/25/22 13:53	05/26/22 01:29	1
Benzene	**0.000974**	**J**	0.00113	0.000234	mg/Kg	☼	05/28/22 11:53	05/28/22 14:38	1
Carbon disulfide	**0.000788**	**J**	0.00565	0.000330	mg/Kg	☼	05/25/22 13:53	05/26/22 01:29	1
Chlorobenzene	<0.000268	U	0.00565	0.000268	mg/Kg	☼	05/25/22 13:53	05/26/22 01:29	1
Chloroform	<0.000195	U	0.00565	0.000195	mg/Kg	☼	05/25/22 13:53	05/26/22 01:29	1
Ethylbenzene	**0.00466**		0.00113	0.000379	mg/Kg	☼	05/28/22 11:53	05/28/22 14:38	1
Styrene	<0.000232	U	0.00565	0.000232	mg/Kg	☼	05/25/22 13:53	05/26/22 01:29	1
Tetrachloroethene	<0.000418	U	0.00565	0.000418	mg/Kg	☼	05/25/22 13:53	05/26/22 01:29	1
Toluene	<0.00113	U	0.00565	0.00113	mg/Kg	☼	05/28/22 11:53	05/28/22 14:38	1
Trichloroethene	<0.000558	U	0.00565	0.000558	mg/Kg	☼	05/25/22 13:53	05/26/22 01:29	1
Xylenes, Total	**0.0118**		0.00226	0.00111	mg/Kg	☼	05/28/22 11:53	05/28/22 14:38	1
m,p-Xylenes	**0.0101**		0.00226	0.000904	mg/Kg	☼	05/28/22 11:53	05/28/22 14:38	1
o-Xylene	**0.00174**		0.00113	0.00111	mg/Kg	☼	05/28/22 11:53	05/28/22 14:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		56 - 150	05/25/22 13:53	05/26/22 01:29	1
1,2-Dichloroethane-d4 (Surr)	88		56 - 150	05/28/22 11:53	05/28/22 14:38	1
4-Bromofluorobenzene (Surr)	98		68 - 152	05/25/22 13:53	05/26/22 01:29	1
4-Bromofluorobenzene (Surr)	104		68 - 152	05/28/22 11:53	05/28/22 14:38	1
Dibromofluoromethane (Surr)	84		53 - 142	05/25/22 13:53	05/26/22 01:29	1
Dibromofluoromethane (Surr)	90		53 - 142	05/28/22 11:53	05/28/22 14:38	1
Toluene-d8 (Surr)	99		70 - 130	05/25/22 13:53	05/26/22 01:29	1
Toluene-d8 (Surr)	99		70 - 130	05/28/22 11:53	05/28/22 14:38	1

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-13 (14'-15')
Lab Sample ID: 860-26536-50
Date Collected: 05/17/22 17:20
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 89.2

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<23.6	U	56.0	23.6	mg/Kg	☼	05/26/22 13:06	05/26/22 21:46	1
Diesel Range Organics (Over C10-C28)	<23.6	U	56.0	23.6	mg/Kg	☼	05/26/22 13:06	05/26/22 21:46	1
Oil Range Organics (Over C28-C36)	<23.6	U	56.0	23.6	mg/Kg	☼	05/26/22 13:06	05/26/22 21:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*88*		*65 - 130*	*05/26/22 13:06*	*05/26/22 21:46*	*1*
o-Terphenyl	*100*		*65 - 130*	*05/26/22 13:06*	*05/26/22 21:46*	*1*

Client Sample ID: SNR-14 (1'-2')
Lab Sample ID: 860-26536-51
Date Collected: 05/18/22 10:15
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 91.3

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000556	U	0.00553	0.000556	mg/Kg	☼	05/25/22 14:18	05/26/22 01:52	1
1,1-Dichloroethane	<0.000416	U	0.00553	0.000416	mg/Kg	☼	05/25/22 14:18	05/26/22 01:52	1
1,2-Dibromoethane	<0.00115	U	0.00553	0.00115	mg/Kg	☼	05/25/22 14:18	05/26/22 01:52	1
1,2-Dichloroethane	<0.000336	U	0.00553	0.000336	mg/Kg	☼	05/25/22 14:18	05/26/22 01:52	1
1,4-Dioxane (P-Dioxane)	<0.0161	U	0.111	0.0161	mg/Kg	☼	05/25/22 14:18	05/26/22 01:52	1
2-Butanone	<0.00403	U	0.0221	0.00403	mg/Kg	☼	05/25/22 14:18	05/26/22 01:52	1
Benzene	<0.000228	U	0.00110	0.000228	mg/Kg	☼	05/28/22 11:53	05/28/22 15:00	1
Carbon disulfide	<0.000323	U	0.00553	0.000323	mg/Kg	☼	05/25/22 14:18	05/26/22 01:52	1
Chlorobenzene	<0.000262	U	0.00553	0.000262	mg/Kg	☼	05/25/22 14:18	05/26/22 01:52	1
Chloroform	<0.000191	U	0.00553	0.000191	mg/Kg	☼	05/25/22 14:18	05/26/22 01:52	1
Ethylbenzene	**0.00226**		0.00110	0.000370	mg/Kg	☼	05/28/22 11:53	05/28/22 15:00	1
Styrene	<0.000227	U	0.00553	0.000227	mg/Kg	☼	05/25/22 14:18	05/26/22 01:52	1
Tetrachloroethene	<0.000409	U	0.00553	0.000409	mg/Kg	☼	05/25/22 14:18	05/26/22 01:52	1
Toluene	<0.00110	U	0.00551	0.00110	mg/Kg	☼	05/28/22 11:53	05/28/22 15:00	1
Trichloroethene	<0.000546	U	0.00553	0.000546	mg/Kg	☼	05/25/22 14:18	05/26/22 01:52	1
Xylenes, Total	**0.00339**		0.00220	0.00108	mg/Kg	☼	05/28/22 11:53	05/28/22 15:00	1
m,p-Xylenes	**0.00230**		0.00220	0.000881	mg/Kg	☼	05/28/22 11:53	05/28/22 15:00	1
o-Xylene	**0.00109**	**J**	0.00110	0.00108	mg/Kg	☼	05/28/22 11:53	05/28/22 15:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*56 - 150*	*05/25/22 14:18*	*05/26/22 01:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*56 - 150*	*05/28/22 11:53*	*05/28/22 15:00*	*1*
4-Bromofluorobenzene (Surr)	*102*		*68 - 152*	*05/25/22 14:18*	*05/26/22 01:52*	*1*
4-Bromofluorobenzene (Surr)	*114*		*68 - 152*	*05/28/22 11:53*	*05/28/22 15:00*	*1*
Dibromofluoromethane (Surr)	*82*		*53 - 142*	*05/25/22 14:18*	*05/26/22 01:52*	*1*
Dibromofluoromethane (Surr)	*91*		*53 - 142*	*05/28/22 11:53*	*05/28/22 15:00*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*	*05/25/22 14:18*	*05/26/22 01:52*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*	*05/28/22 11:53*	*05/28/22 15:00*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<23.0	U	54.5	23.0	mg/Kg	☼	05/26/22 13:06	05/26/22 22:05	1
Diesel Range Organics (Over C10-C28)	<23.0	U	54.5	23.0	mg/Kg	☼	05/26/22 13:06	05/26/22 22:05	1
Oil Range Organics (Over C28-C36)	<23.0	U	54.5	23.0	mg/Kg	☼	05/26/22 13:06	05/26/22 22:05	1

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Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-14 (1'-2')
Lab Sample ID: 860-26536-51
Date Collected: 05/18/22 10:15
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 91.3

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	88		65 - 130	05/26/22 13:06	05/26/22 22:05	1
o-Terphenyl	96		65 - 130	05/26/22 13:06	05/26/22 22:05	1

Client Sample ID: SNR-14 (5'-6')
Lab Sample ID: 860-26536-52
Date Collected: 05/18/22 10:20
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 94.8

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000534	U	0.00531	0.000534	mg/Kg	☼	05/27/22 14:10	05/27/22 18:14	1
1,1-Dichloroethane	<0.000399	U	0.00531	0.000399	mg/Kg	☼	05/27/22 14:10	05/27/22 18:14	1
1,2-Dibromoethane	<0.00111	U	0.00531	0.00111	mg/Kg	☼	05/27/22 14:10	05/27/22 18:14	1
1,2-Dichloroethane	<0.000322	U	0.00531	0.000322	mg/Kg	☼	05/27/22 14:10	05/27/22 18:14	1
1,4-Dioxane (P-Dioxane)	<0.0155	U	0.106	0.0155	mg/Kg	☼	05/27/22 14:10	05/27/22 18:14	1
2-Butanone	**0.00550**	**J**	0.0212	0.00387	mg/Kg	☼	05/27/22 14:10	05/27/22 18:14	1
Benzene	**0.00150**		0.00106	0.000220	mg/Kg	☼	05/27/22 14:10	05/27/22 18:14	1
Carbon disulfide	<0.000310	U	0.00531	0.000310	mg/Kg	☼	05/27/22 14:10	05/27/22 18:14	1
Chlorobenzene	<0.000251	U	0.00531	0.000251	mg/Kg	☼	05/27/22 14:10	05/27/22 18:14	1
Chloroform	<0.000183	U	0.00531	0.000183	mg/Kg	☼	05/27/22 14:10	05/27/22 18:14	1
Styrene	<0.000218	U	0.00531	0.000218	mg/Kg	☼	05/27/22 14:10	05/27/22 18:14	1
Tetrachloroethene	<0.000392	U	0.00531	0.000392	mg/Kg	☼	05/27/22 14:10	05/27/22 18:14	1
Toluene	**0.0154**		0.00531	0.00106	mg/Kg	☼	05/27/22 14:10	05/27/22 18:14	1
Trichloroethene	<0.000524	U	0.00531	0.000524	mg/Kg	☼	05/27/22 14:10	05/27/22 18:14	1
Xylenes, Total	**0.0985**		0.00212	0.00105	mg/Kg	☼	05/27/22 14:10	05/27/22 18:14	1
m,p-Xylenes	**0.0623**		0.00212	0.000849	mg/Kg	☼	05/27/22 14:10	05/27/22 18:14	1
o-Xylene	**0.0362**		0.00106	0.00105	mg/Kg	☼	05/27/22 14:10	05/27/22 18:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		56 - 150	05/27/22 14:10	05/27/22 18:14	1
4-Bromofluorobenzene (Surr)	380	S1+	68 - 152	05/27/22 14:10	05/27/22 18:14	1
Dibromofluoromethane (Surr)	93		53 - 142	05/27/22 14:10	05/27/22 18:14	1
Toluene-d8 (Surr)	116		70 - 130	05/27/22 14:10	05/27/22 18:14	1

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**0.219**		0.0266	0.00895	mg/Kg	☼	05/25/22 14:18	05/27/22 18:37	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		56 - 150	05/25/22 14:18	05/27/22 18:37	25
4-Bromofluorobenzene (Surr)	88		68 - 152	05/25/22 14:18	05/27/22 18:37	25
Dibromofluoromethane (Surr)	81		53 - 142	05/25/22 14:18	05/27/22 18:37	25
Toluene-d8 (Surr)	94		70 - 130	05/25/22 14:18	05/27/22 18:37	25

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**124**		52.8	22.3	mg/Kg	☼	05/26/22 13:06	05/26/22 22:25	1
Diesel Range Organics (Over C10-C28)	**2110**		52.8	22.3	mg/Kg	☼	05/26/22 13:06	05/26/22 22:25	1
Oil Range Organics (Over C28-C36)	<22.3	U	52.8	22.3	mg/Kg	☼	05/26/22 13:06	05/26/22 22:25	1

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-14 (5'-6')
Lab Sample ID: 860-26536-52
Date Collected: 05/18/22 10:20
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 94.8

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	91		65 - 130	05/26/22 13:06	05/26/22 22:25	1
o-Terphenyl	94		65 - 130	05/26/22 13:06	05/26/22 22:25	1

Client Sample ID: SNR-14 (9'-10')
Lab Sample ID: 860-26536-53
Date Collected: 05/18/22 10:25
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 91.7

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000549	U	0.00545	0.000549	mg/Kg	☼	05/27/22 14:10	05/27/22 18:59	1
1,1-Dichloroethane	<0.000410	U	0.00545	0.000410	mg/Kg	☼	05/27/22 14:10	05/27/22 18:59	1
1,2-Dibromoethane	<0.00114	U	0.00545	0.00114	mg/Kg	☼	05/27/22 14:10	05/27/22 18:59	1
1,2-Dichloroethane	<0.000331	U	0.00545	0.000331	mg/Kg	☼	05/27/22 14:10	05/27/22 18:59	1
1,4-Dioxane (P-Dioxane)	<0.0159	U	0.109	0.0159	mg/Kg	☼	05/27/22 14:10	05/27/22 18:59	1
2-Butanone	<0.00398	U	0.0218	0.00398	mg/Kg	☼	05/27/22 14:10	05/27/22 18:59	1
Benzene	**0.0821**		0.00109	0.000226	mg/Kg	☼	05/27/22 14:10	05/27/22 18:59	1
Carbon disulfide	**0.00368**	**J**	0.00545	0.000319	mg/Kg	☼	05/27/22 14:10	05/27/22 18:59	1
Chlorobenzene	<0.000258	U	0.00545	0.000258	mg/Kg	☼	05/27/22 14:10	05/27/22 18:59	1
Chloroform	<0.000188	U	0.00545	0.000188	mg/Kg	☼	05/27/22 14:10	05/27/22 18:59	1
Styrene	<0.000224	U	0.00545	0.000224	mg/Kg	☼	05/27/22 14:10	05/27/22 18:59	1
Tetrachloroethene	<0.000403	U	0.00545	0.000403	mg/Kg	☼	05/27/22 14:10	05/27/22 18:59	1
Toluene	**0.0259**		0.00545	0.00109	mg/Kg	☼	05/27/22 14:10	05/27/22 18:59	1
Trichloroethene	<0.000539	U	0.00545	0.000539	mg/Kg	☼	05/27/22 14:10	05/27/22 18:59	1
Xylenes, Total	**0.0603**		0.00218	0.00107	mg/Kg	☼	05/27/22 14:10	05/27/22 18:59	1
m,p-Xylenes	**0.0328**		0.00218	0.000872	mg/Kg	☼	05/27/22 14:10	05/27/22 18:59	1
o-Xylene	**0.0275**		0.00109	0.00107	mg/Kg	☼	05/27/22 14:10	05/27/22 18:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		56 - 150	05/27/22 14:10	05/27/22 18:59	1
4-Bromofluorobenzene (Surr)	157	S1+	68 - 152	05/27/22 14:10	05/27/22 18:59	1
Dibromofluoromethane (Surr)	94		53 - 142	05/27/22 14:10	05/27/22 18:59	1
Toluene-d8 (Surr)	139	S1+	70 - 130	05/27/22 14:10	05/27/22 18:59	1

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**0.838**		0.0275	0.00923	mg/Kg	☼	05/25/22 14:18	05/27/22 19:22	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		56 - 150	05/25/22 14:18	05/27/22 19:22	25
4-Bromofluorobenzene (Surr)	87		68 - 152	05/25/22 14:18	05/27/22 19:22	25
Dibromofluoromethane (Surr)	78		53 - 142	05/25/22 14:18	05/27/22 19:22	25
Toluene-d8 (Surr)	98		70 - 130	05/25/22 14:18	05/27/22 19:22	25

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<23.1	U	54.6	23.1	mg/Kg	☼	05/26/22 13:06	05/26/22 22:45	1
Diesel Range Organics (Over C10-C28)	**399**		54.6	23.1	mg/Kg	☼	05/26/22 13:06	05/26/22 22:45	1
Oil Range Organics (Over C28-C36)	<23.1	U	54.6	23.1	mg/Kg	☼	05/26/22 13:06	05/26/22 22:45	1

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-14 (9'-10')
Lab Sample ID: 860-26536-53
Date Collected: 05/18/22 10:25
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 91.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	87		65 - 130	05/26/22 13:06	05/26/22 22:45	1
o-Terphenyl	90		65 - 130	05/26/22 13:06	05/26/22 22:45	1

Client Sample ID: SNR-14 (14'-15')
Lab Sample ID: 860-26536-54
Date Collected: 05/18/22 10:30
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 94.3

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000533	U	0.00530	0.000533	mg/Kg	☼	05/25/22 14:18	05/26/22 02:14	1
1,1-Dichloroethane	<0.000399	U	0.00530	0.000399	mg/Kg	☼	05/25/22 14:18	05/26/22 02:14	1
1,2-Dibromoethane	<0.00111	U	0.00530	0.00111	mg/Kg	☼	05/25/22 14:18	05/26/22 02:14	1
1,2-Dichloroethane	<0.000322	U	0.00530	0.000322	mg/Kg	☼	05/25/22 14:18	05/26/22 02:14	1
1,4-Dioxane (P-Dioxane)	<0.0154	U	0.106	0.0154	mg/Kg	☼	05/25/22 14:18	05/26/22 02:14	1
2-Butanone	<0.00387	U	0.0212	0.00387	mg/Kg	☼	05/25/22 14:18	05/26/22 02:14	1
Benzene	**0.0186**		0.00106	0.000219	mg/Kg	☼	05/25/22 14:18	05/26/22 02:14	1
Carbon disulfide	**0.00109**	**J**	0.00530	0.000310	mg/Kg	☼	05/25/22 14:18	05/26/22 02:14	1
Chlorobenzene	<0.000251	U	0.00530	0.000251	mg/Kg	☼	05/25/22 14:18	05/26/22 02:14	1
Chloroform	<0.000183	U	0.00530	0.000183	mg/Kg	☼	05/25/22 14:18	05/26/22 02:14	1
Ethylbenzene	**0.137**		0.00106	0.000356	mg/Kg	☼	05/25/22 14:18	05/26/22 02:14	1
Styrene	<0.000218	U	0.00530	0.000218	mg/Kg	☼	05/25/22 14:18	05/26/22 02:14	1
Tetrachloroethene	<0.000392	U	0.00530	0.000392	mg/Kg	☼	05/25/22 14:18	05/26/22 02:14	1
Toluene	**0.0103**		0.00530	0.00106	mg/Kg	☼	05/25/22 14:18	05/26/22 02:14	1
Trichloroethene	<0.000524	U	0.00530	0.000524	mg/Kg	☼	05/25/22 14:18	05/26/22 02:14	1
Xylenes, Total	<0.00104	U	0.00212	0.00104	mg/Kg	☼	05/25/22 14:18	05/26/22 02:14	1
m,p-Xylenes	<0.000848	U	0.00212	0.000848	mg/Kg	☼	05/25/22 14:18	05/26/22 02:14	1
o-Xylene	<0.00104	U	0.00106	0.00104	mg/Kg	☼	05/25/22 14:18	05/26/22 02:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		56 - 150	05/25/22 14:18	05/26/22 02:14	1
4-Bromofluorobenzene (Surr)	141		68 - 152	05/25/22 14:18	05/26/22 02:14	1
Dibromofluoromethane (Surr)	78		53 - 142	05/25/22 14:18	05/26/22 02:14	1
Toluene-d8 (Surr)	120		70 - 130	05/25/22 14:18	05/26/22 02:14	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<22.3	U	52.9	22.3	mg/Kg	☼	05/26/22 13:06	05/26/22 23:04	1
Diesel Range Organics (Over C10-C28)	**143**		52.9	22.3	mg/Kg	☼	05/26/22 13:06	05/26/22 23:04	1
OII Range Organics (Over C28-C36)	<22.3	U	52.9	22.3	mg/Kg	☼	05/26/22 13:06	05/26/22 23:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	84		65 - 130	05/26/22 13:06	05/26/22 23:04	1
o-Terphenyl	91		65 - 130	05/26/22 13:06	05/26/22 23:04	1

Client Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Client Sample ID: BD01-05162022

Date Collected: 05/16/22 00:00
Date Received: 05/20/22 10:24

Lab Sample ID: 860-26536-55

Matrix: Solid
Percent Solids: 92.9

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.0136	U	0.135	0.0136	mg/Kg	☼	05/25/22 14:18	05/27/22 19:44	25
1,1-Dichloroethane	<0.0102	U	0.135	0.0102	mg/Kg	☼	05/25/22 14:18	05/27/22 19:44	25
1,2-Dibromoethane	<0.0282	U	0.135	0.0282	mg/Kg	☼	05/25/22 14:18	05/27/22 19:44	25
1,2-Dichloroethane	<0.00822	U	0.135	0.00822	mg/Kg	☼	05/25/22 14:18	05/27/22 19:44	25
1,4-Dioxane (P-Dioxane)	<0.394	U	2.71	0.394	mg/Kg	☼	05/25/22 14:18	05/27/22 19:44	25
2-Butanone	**0.920**		0.541	0.0987	mg/Kg	☼	05/25/22 14:18	05/27/22 19:44	25
Benzene	**0.392**		0.0271	0.00560	mg/Kg	☼	05/25/22 14:18	05/27/22 19:44	25
Carbon disulfide	<0.00791	U	0.135	0.00791	mg/Kg	☼	05/25/22 14:18	05/27/22 19:44	25
Chlorobenzene	<0.00641	U	0.135	0.00641	mg/Kg	☼	05/25/22 14:18	05/27/22 19:44	25
Chloroform	<0.00468	U	0.135	0.00468	mg/Kg	☼	05/25/22 14:18	05/27/22 19:44	25
Ethylbenzene	**0.514**		0.0271	0.00909	mg/Kg	☼	05/25/22 14:18	05/27/22 19:44	25
Styrene	<0.00556	U	0.135	0.00556	mg/Kg	☼	05/25/22 14:18	05/27/22 19:44	25
Tetrachloroethene	<0.0100	U	0.135	0.0100	mg/Kg	☼	05/25/22 14:18	05/27/22 19:44	25
Toluene	**0.190**		0.135	0.0271	mg/Kg	☼	05/25/22 14:18	05/27/22 19:44	25
Trichloroethene	<0.0134	U	0.135	0.0134	mg/Kg	☼	05/25/22 14:18	05/27/22 19:44	25
Xylenes, Total	**2.48**		0.0541	0.0267	mg/Kg	☼	05/25/22 14:18	05/27/22 19:44	25
m,p-Xylenes	**1.84**		0.0541	0.0217	mg/Kg	☼	05/25/22 14:18	05/27/22 19:44	25
o-Xylene	**0.644**		0.0271	0.0267	mg/Kg	☼	05/25/22 14:18	05/27/22 19:44	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*56 - 150*	*05/25/22 14:18*	*05/27/22 19:44*	*25*
4-Bromofluorobenzene (Surr)	*96*		*68 - 152*	*05/25/22 14:18*	*05/27/22 19:44*	*25*
Dibromofluoromethane (Surr)	*78*		*53 - 142*	*05/25/22 14:18*	*05/27/22 19:44*	*25*
Toluene-d8 (Surr)	*93*		*70 - 130*	*05/25/22 14:18*	*05/27/22 19:44*	*25*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<22.6	U	53.5	22.6	mg/Kg	☼	05/26/22 13:06	05/26/22 23:24	1
Diesel Range Organics (Over C10-C28)	<22.6	U	53.5	22.6	mg/Kg	☼	05/26/22 13:06	05/26/22 23:24	1
OII Range Organics (Over C28-C36)	<22.6	U	53.5	22.6	mg/Kg	☼	05/26/22 13:06	05/26/22 23:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*88*		*65 - 130*	*05/26/22 13:06*	*05/26/22 23:24*	*1*
o-Terphenyl	*96*		*65 - 130*	*05/26/22 13:06*	*05/26/22 23:24*	*1*

Client Sample ID: BD02-05162022

Date Collected: 05/16/22 00:00
Date Received: 05/20/22 10:24

Lab Sample ID: 860-26536-56

Matrix: Solid
Percent Solids: 93.4

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.107	U	1.07	0.107	mg/Kg	☼	05/25/22 14:18	05/26/22 21:48	200
1,1-Dichloroethane	<0.0802	U	1.07	0.0802	mg/Kg	☼	05/25/22 14:18	05/26/22 21:48	200
1,2-Dibromoethane	<0.223	U	1.07	0.223	mg/Kg	☼	05/25/22 14:18	05/26/22 21:48	200
1,2-Dichloroethane	<0.0648	U	1.07	0.0648	mg/Kg	☼	05/25/22 14:18	05/26/22 21:48	200
1,4-Dioxane (P-Dioxane)	<3.11	U	21.3	3.11	mg/Kg	☼	05/25/22 14:18	05/26/22 21:48	200
2-Butanone	<0.778	U	4.27	0.778	mg/Kg	☼	05/25/22 14:18	05/26/22 21:48	200
Benzene	**1.66**		0.213	0.0441	mg/Kg	☼	05/25/22 14:18	05/26/22 21:48	200
Carbon disulfide	<0.0623	U	1.07	0.0623	mg/Kg	☼	05/25/22 14:18	05/26/22 21:48	200

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: BD02-05162022
Lab Sample ID: 860-26536-56
Date Collected: 05/16/22 00:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.4

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	<0.0505	U	1.07	0.0505	mg/Kg	☼	05/25/22 14:18	05/26/22 21:48	200
Chloroform	<0.0369	U	1.07	0.0369	mg/Kg	☼	05/25/22 14:18	05/26/22 21:48	200
Ethylbenzene	**2.67**		0.213	0.0716	mg/Kg	☼	05/25/22 14:18	05/26/22 21:48	200
Styrene	<0.0438	U	1.07	0.0438	mg/Kg	☼	05/25/22 14:18	05/26/22 21:48	200
Tetrachloroethene	<0.0788	U	1.07	0.0788	mg/Kg	☼	05/25/22 14:18	05/26/22 21:48	200
Toluene	**4.65**		1.07	0.213	mg/Kg	☼	05/25/22 14:18	05/26/22 21:48	200
Trichloroethene	<0.105	U	1.07	0.105	mg/Kg	☼	05/25/22 14:18	05/26/22 21:48	200
Xylenes, Total	**11.8**		0.427	0.210	mg/Kg	☼	05/25/22 14:18	05/26/22 21:48	200
m,p-Xylenes	**8.71**		0.427	0.171	mg/Kg	☼	05/25/22 14:18	05/26/22 21:48	200
o-Xylene	**3.10**		0.213	0.210	mg/Kg	☼	05/25/22 14:18	05/26/22 21:48	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*56 - 150*	*05/25/22 14:18*	*05/26/22 21:48*	*200*
4-Bromofluorobenzene (Surr)	*97*		*68 - 152*	*05/25/22 14:18*	*05/26/22 21:48*	*200*
Dibromofluoromethane (Surr)	*86*		*53 - 142*	*05/25/22 14:18*	*05/26/22 21:48*	*200*
Toluene-d8 (Surr)	*94*		*70 - 130*	*05/25/22 14:18*	*05/26/22 21:48*	*200*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**165**		53.4	22.5	mg/Kg	☼	05/26/22 13:06	05/26/22 23:43	1
Diesel Range Organics (Over C10-C28)	**310**		53.4	22.5	mg/Kg	☼	05/26/22 13:06	05/26/22 23:43	1
Oil Range Organics (Over C28-C36)	<22.5	U	53.4	22.5	mg/Kg	☼	05/26/22 13:06	05/26/22 23:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*95*		*65 - 130*	*05/26/22 13:06*	*05/26/22 23:43*	*1*
o-Terphenyl	*103*		*65 - 130*	*05/26/22 13:06*	*05/26/22 23:43*	*1*

Client Sample ID: BD01-05172022
Lab Sample ID: 860-26536-57
Date Collected: 05/17/22 00:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 99.7

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.0127	U	0.126	0.0127	mg/Kg	☼	05/25/22 14:18	05/27/22 20:06	25
1,1-Dichloroethane	<0.00947	U	0.126	0.00947	mg/Kg	☼	05/25/22 14:18	05/27/22 20:06	25
1,2-Dibromoethane	<0.0263	U	0.126	0.0263	mg/Kg	☼	05/25/22 14:18	05/27/22 20:06	25
1,2-Dichloroethane	<0.00765	U	0.126	0.00765	mg/Kg	☼	05/25/22 14:18	05/27/22 20:06	25
1,4-Dioxane (P-Dioxane)	<0.366	U	2.52	0.366	mg/Kg	☼	05/25/22 14:18	05/27/22 20:06	25
2-Butanone	**0.850**		0.503	0.0918	mg/Kg	☼	05/25/22 14:18	05/27/22 20:06	25
Benzene	**0.0161**	**J**	0.0252	0.00521	mg/Kg	☼	05/25/22 14:18	05/27/22 20:06	25
Carbon disulfide	<0.00736	U	0.126	0.00736	mg/Kg	☼	05/25/22 14:18	05/27/22 20:06	25
Chlorobenzene	<0.00596	U	0.126	0.00596	mg/Kg	☼	05/25/22 14:18	05/27/22 20:06	25
Chloroform	<0.00435	U	0.126	0.00435	mg/Kg	☼	05/25/22 14:18	05/27/22 20:06	25
Ethylbenzene	**2.01**		0.0252	0.00845	mg/Kg	☼	05/25/22 14:18	05/27/22 20:06	25
Styrene	<0.00517	U	0.126	0.00517	mg/Kg	☼	05/25/22 14:18	05/27/22 20:06	25
Tetrachloroethene	<0.00930	U	0.126	0.00930	mg/Kg	☼	05/25/22 14:18	05/27/22 20:06	25
Toluene	**0.584**		0.126	0.0252	mg/Kg	☼	05/25/22 14:18	05/27/22 20:06	25
Trichloroethene	<0.0124	U	0.126	0.0124	mg/Kg	☼	05/25/22 14:18	05/27/22 20:06	25

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: BD01-05172022
Lab Sample ID: 860-26536-57
Date Collected: 05/17/22 00:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 99.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		56 - 150	05/25/22 14:18	05/27/22 20:06	25
4-Bromofluorobenzene (Surr)	95		68 - 152	05/25/22 14:18	05/27/22 20:06	25
Dibromofluoromethane (Surr)	77		53 - 142	05/25/22 14:18	05/27/22 20:06	25
Toluene-d8 (Surr)	100		70 - 130	05/25/22 14:18	05/27/22 20:06	25

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**15.8**		0.403	0.198	mg/Kg	☼	05/25/22 14:18	05/26/22 22:10	200
m,p-Xylenes	**11.0**		0.403	0.161	mg/Kg	☼	05/25/22 14:18	05/26/22 22:10	200
o-Xylene	**4.79**		0.201	0.198	mg/Kg	☼	05/25/22 14:18	05/26/22 22:10	200

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		56 - 150	05/25/22 14:18	05/26/22 22:10	200
4-Bromofluorobenzene (Surr)	93		68 - 152	05/25/22 14:18	05/26/22 22:10	200
Dibromofluoromethane (Surr)	87		53 - 142	05/25/22 14:18	05/26/22 22:10	200
Toluene-d8 (Surr)	96		70 - 130	05/25/22 14:18	05/26/22 22:10	200

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**600**		50.0	21.1	mg/Kg	☼	05/26/22 13:06	05/27/22 00:03	1
Diesel Range Organics (Over C10-C28)	**365**		50.0	21.1	mg/Kg	☼	05/26/22 13:06	05/27/22 00:03	1
Oil Range Organics (Over C28-C36)	<21.1	U	50.0	21.1	mg/Kg	☼	05/26/22 13:06	05/27/22 00:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	93		65 - 130	05/26/22 13:06	05/27/22 00:03	1
o-Terphenyl	98		65 - 130	05/26/22 13:06	05/27/22 00:03	1

Client Sample ID: BD01-05182022
Lab Sample ID: 860-26536-58
Date Collected: 05/18/22 00:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 94.4

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000534	U	0.00531	0.000534	mg/Kg	☼	05/27/22 14:52	05/27/22 17:52	1
1,1-Dichloroethane	<0.000399	U	0.00531	0.000399	mg/Kg	☼	05/27/22 14:52	05/27/22 17:52	1
1,2-Dibromoethane	<0.00111	U	0.00531	0.00111	mg/Kg	☼	05/27/22 14:52	05/27/22 17:52	1
1,2-Dichloroethane	<0.000323	U	0.00531	0.000323	mg/Kg	☼	05/27/22 14:52	05/27/22 17:52	1
1,4-Dioxane (P-Dioxane)	<0.0155	U	0.106	0.0155	mg/Kg	☼	05/27/22 14:52	05/27/22 17:52	1
2-Butanone	<0.00387	U	0.0212	0.00387	mg/Kg	☼	05/27/22 14:52	05/27/22 17:52	1
Benzene	**0.0173**		0.00106	0.000220	mg/Kg	☼	05/27/22 14:52	05/27/22 17:52	1
Carbon disulfide	<0.000310	U	0.00531	0.000310	mg/Kg	☼	05/27/22 14:52	05/27/22 17:52	1
Chlorobenzene	<0.000251	U	0.00531	0.000251	mg/Kg	☼	05/27/22 14:52	05/27/22 17:52	1
Chloroform	<0.000183	U	0.00531	0.000183	mg/Kg	☼	05/27/22 14:52	05/27/22 17:52	1
Ethylbenzene	**0.149**		0.00106	0.000356	mg/Kg	☼	05/27/22 14:52	05/27/22 17:52	1
Styrene	<0.000218	U	0.00531	0.000218	mg/Kg	☼	05/27/22 14:52	05/27/22 17:52	1
Tetrachloroethene	<0.000392	U	0.00531	0.000392	mg/Kg	☼	05/27/22 14:52	05/27/22 17:52	1
Toluene	**0.00660**		0.00531	0.00106	mg/Kg	☼	05/27/22 14:52	05/27/22 17:52	1
Trichloroethene	<0.000524	U	0.00531	0.000524	mg/Kg	☼	05/27/22 14:52	05/27/22 17:52	1
Xylenes, Total	<0.00105	U	0.00212	0.00105	mg/Kg	☼	05/27/22 14:52	05/27/22 17:52	1
m,p-Xylenes	<0.000849	U	0.00212	0.000849	mg/Kg	☼	05/27/22 14:52	05/27/22 17:52	1

Client Sample Results

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: BD01-05182022 **Lab Sample ID: 860-26536-58**
Date Collected: 05/18/22 00:00 **Matrix: Solid**
Date Received: 05/20/22 10:24 **Percent Solids: 94.4**

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.00105	U	0.00106	0.00105	mg/Kg	☼	05/27/22 14:52	05/27/22 17:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*56 - 150*	*05/27/22 14:52*	*05/27/22 17:52*	*1*
4-Bromofluorobenzene (Surr)	*114*		*68 - 152*	*05/27/22 14:52*	*05/27/22 17:52*	*1*
Dibromofluoromethane (Surr)	*97*		*53 - 142*	*05/27/22 14:52*	*05/27/22 17:52*	*1*
Toluene-d8 (Surr)	*109*		*70 - 130*	*05/27/22 14:52*	*05/27/22 17:52*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<22.4	U	53.0	22.4	mg/Kg	☼	05/26/22 13:06	05/27/22 00:22	1
Diesel Range Organics (Over C10-C28)	**393**		53.0	22.4	mg/Kg	☼	05/26/22 13:06	05/27/22 00:22	1
Oil Range Organics (Over C28-C36)	<22.4	U	53.0	22.4	mg/Kg	☼	05/26/22 13:06	05/27/22 00:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*89*		*65 - 130*	*05/26/22 13:06*	*05/27/22 00:22*	*1*
o-Terphenyl	*93*		*65 - 130*	*05/26/22 13:06*	*05/27/22 00:22*	*1*

Surrogate Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	DCA (56-150)	BFB (68-152)	DBFM (53-142)	TOL (70-130)
860-26536-1	SNR-EX CONF (1.5'-2.5')	117	127	103	115
860-26536-2	SNR-01 (1'-2')	114	119	100	102
860-26536-2 MS	SNR-01 (1'-2')	101	113	102	102
860-26536-3	SNR-01 (5'-6')	98	97	87	107
860-26536-3 - DL	SNR-01 (5'-6')	98	114	90	106
860-26536-3 MS - DL	SNR-01 (5'-6')	92	89	96	108
860-26536-4	SNR-01 (9'-10')	97	99	86	102
860-26536-5	SNR-01 (14'-15')	111	116	100	103
860-26536-6	SNR-02 (1'-2')	112	131 *3	121	122
860-26536-6 - DL	SNR-02 (1'-2')	108	94	83	95
860-26536-6 - DL2	SNR-02 (1'-2')	111	117	93	110
860-26536-7	SNR-02 (4'-5')	102	107	100	112
860-26536-7 - DL	SNR-02 (4'-5')	87	133	86	103
860-26536-7 - DL2	SNR-02 (4'-5')	82	94	90	95
860-26536-7 MS - DL2	SNR-02 (4'-5')	79	92	84	94
860-26536-8	SNR-02 (7'-8')	92	103	83	114
860-26536-8 - DL	SNR-02 (7'-8')	106	124	96	134 S1+
860-26536-8 - DL2	SNR-02 (7'-8')	104	119	93	125
860-26536-8 MS - DL	SNR-02 (7'-8')	108	122	101	134 S1+
860-26536-8 MS - DL2	SNR-02 (7'-8')	105	116	102	120
860-26536-9	SNR-03 (1'-2')	104	116	93	105
860-26536-9 - DL	SNR-03 (1'-2')	94	107	88	104
860-26536-9 - DL2	SNR-03 (1'-2')	127	109	97	104
860-26536-9 MS - DL2	SNR-03 (1'-2')	118	111	102	110
860-26536-10	SNR-03 (5'-6')	98	100	85	103
860-26536-10 - DL	SNR-03 (5'-6')	90	103	89	101
860-26536-10 MS - DL	SNR-03 (5'-6')	85	98	86	98
860-26536-11	SNR-03 (10'-11')	94	111	129	133 S1+
860-26536-11 - DL	SNR-03 (10'-11')	91	102	88	104
860-26536-11 - DL2	SNR-03 (10'-11')	128	109	95	106
860-26536-12	SNR-03 (12'-13')	97	101	87	101
860-26536-12	SNR-03 (12'-13')	83	97	89	97
860-26536-13	SNR-06 (1'-2')	102	105	93	111
860-26536-13 - DL	SNR-06 (1'-2')	93	103	89	101
860-26536-14	SNR-06 (7'-8')	193 S1+	1293 *3 S1+	139	957 S1+
860-26536-14 - DL	SNR-06 (7'-8')	89	116	91	118
860-26536-14 - DL2	SNR-06 (7'-8')	92	102	89	101
860-26536-14 MS - DL2	SNR-06 (7'-8')	93	101	88	98
860-26536-15	SNR-06 (5'-6')	100	98	82	100
860-26536-15	SNR-06 (5'-6')	102	153 S1+	96	132 S1+
860-26536-15 - DL	SNR-06 (5'-6')	106	123	86	115
860-26536-16	SNR-04 (1'-2')	100	108	84	101
860-26536-16	SNR-04 (1'-2')	105	112	94	109
860-26536-17	SNR-04 (5'-6')	97	105	91	115
860-26536-17 - DL	SNR-04 (5'-6')	95	100	89	108
860-26536-18	SNR-04 (11'-12')	103	134	117	114
860-26536-18 - DL	SNR-04 (11'-12')	93	110	89	101
860-26536-18 - DL	SNR-04 (11'-12')	110	120	95	112
860-26536-19	SNR-04 (14'-15')	100	102	80	101

Surrogate Summary

Client: Trihydro Corporation Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(56-150)	(68-152)	(53-142)	(70-130)
860-26536-20	SNR-05 (1'-2')	101	121	92	106
860-26536-21	SNR-05 (5'-6')	91	101	91	110
860-26536-21 - DL	SNR-05 (5'-6')	94	98	89	96
860-26536-22	SNR-05 (13'-14')	100	155 S1+	74	170 S1+
860-26536-22 - DL	SNR-05 (13'-14')	104	123	88	119
860-26536-22 - DL2	SNR-05 (13'-14')	111	113	94	108
860-26536-22 MS - DL2	SNR-05 (13'-14')	100	113	102	105
860-26536-23	SNR-05 (14'-15')	91	105	93	101
860-26536-23	SNR-05 (14'-15')	111	108	98	108
860-26536-24	SNR-07 (1'-2')	91	123	96	105
860-26536-25	SNR-07 (6'-7')	94	104	91	102
860-26536-26	SNR-07 (10'-12')	94	80	91	105
860-26536-26 - DL	SNR-07 (10'-12')	95	100	92	97
860-26536-27	SNR-07 (14'-15')	89	105	90	112
860-26536-27 - DL	SNR-07 (14'-15')	92	95	89	97
860-26536-28	SNR-09 (1'-2')	96	111	95	100
860-26536-29	SNR-09 (6'-7')	95	102	92	106
860-26536-29 - DL	SNR-09 (6'-7')	94	97	90	94
860-26536-30	SNR-09 (8'-9')	90	91	85	106
860-26536-30 - DL	SNR-09 (8'-9')	91	96	86	97
860-26536-31	SNR-09 (13'-14')	90	90	84	101
860-26536-31 - DL	SNR-09 (13'-14')	92	97	85	94
860-26536-32	SNR-08 (1'-2')	93	113	92	103
860-26536-33	SNR-08 (5'-6')	108	125	95	115
860-26536-34	SNR-08 (9'-10')	105	119	96	117
860-26536-35	SNR-08 (13'-13.5')	105	136	87	125
860-26536-35	SNR-08 (13'-13.5')	87	102	88	90
860-26536-36	SNR-10 (1'-2')	91	115	94	103
860-26536-37	SNR-10 (5'-6')	95	112	91	101
860-26536-38 - DL	SNR-10 (10.5'-11.5')	110	121	94	113
860-26536-38	SNR-10 (10.5'-11.5')	103	133	87	137 S1+
860-26536-38	SNR-10 (10.5'-11.5')	82	92	84	100
860-26536-39 - DL	SNR-10 (14.5'-15')	104	122	95	111
860-26536-39	SNR-10 (14.5'-15')	108	125	88	117
860-26536-39	SNR-10 (14.5'-15')	106	121	87	116
860-26536-39	SNR-10 (14.5'-15')	88	82	92	92
860-26536-39 MS	SNR-10 (14.5'-15')	104	120	99	112
860-26536-40	SNR-11 (1'-2')	94	114	93	101
860-26536-41	SNR-11 (5'-6')	94	113	96	100
860-26536-42	SNR-11 (9'-10')	95	110	95	102
860-26536-43	SNR-11 (14.5'-15')	108	124	96	123
860-26536-44	SNR-12 (1'-2')	105	117	100	99
860-26536-45 - DL	SNR-12 (6'-7')	103	129	85	121
860-26536-45	SNR-12 (6'-7')	113	171 S1+	96	136 S1+
860-26536-45	SNR-12 (6'-7')	87	110	87	94
860-26536-46	SNR-12 (9.5'-10')	108	127	85	155 S1+
860-26536-46	SNR-12 (9.5'-10')	85	99	85	102
860-26536-47	SNR-12 (14'-15')	88	96	86	95
860-26536-47 - DL	SNR-12 (14'-15')	96	102	91	96
860-26536-48	SNR-13 (1'-2')	103	110	87	116

Surrogate Summary

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(56-150)	(68-152)	(53-142)	(70-130)
860-26536-48 - DL	SNR-13 (1'-2')	94	103	90	103
860-26536-48 MS - DL	SNR-13 (1'-2')	90	95	88	102
860-26536-49	SNR-13 (6'-7')	111	130	95	133 S1+
860-26536-49	SNR-13 (6'-7')	85	100	88	97
860-26536-50	SNR-13 (14'-15')	107	98	84	99
860-26536-50	SNR-13 (14'-15')	88	104	90	99
860-26536-51	SNR-14 (1'-2')	100	102	82	98
860-26536-51	SNR-14 (1'-2')	89	114	91	97
860-26536-52	SNR-14 (5'-6')	88	380 S1+	93	116
860-26536-52 - DL	SNR-14 (5'-6')	91	88	81	94
860-26536-53	SNR-14 (9'-10')	96	157 S1+	94	139 S1+
860-26536-53 - DL	SNR-14 (9'-10')	92	87	78	98
860-26536-54	SNR-14 (14'-15')	94	141	78	120
860-26536-55	BD01-05162022	91	96	78	93
860-26536-56	BD02-05162022	92	97	86	94
860-26536-57 - DL	BD01-05172022	90	93	87	96
860-26536-57	BD01-05172022	90	95	77	100
860-26536-58	BD01-05182022	90	114	97	109
LCS 860-54260/3	Lab Control Sample	101	107	104	103
LCS 860-54367/5	Lab Control Sample	94	102	96	105
LCS 860-54371/10	Lab Control Sample	107	109	101	105
LCS 860-54417/3	Lab Control Sample	92	101	88	97
LCS 860-54516/3	Lab Control Sample	106	120	103	108
LCS 860-54534/3	Lab Control Sample	103	99	92	97
LCS 860-54709/3	Lab Control Sample	81	96	88	97
LCS 860-54712/5	Lab Control Sample	99	110	103	106
LCS 860-54844/3	Lab Control Sample	83	96	90	94
LCS 860-54846/3	Lab Control Sample	106	111	102	106
LCS 860-54849/3	Lab Control Sample	122	110	104	107
LCS 860-55101/3	Lab Control Sample	90	90	88	93
LCSD 860-54260/4	Lab Control Sample Dup	95	108	97	102
LCSD 860-54367/6	Lab Control Sample Dup	96	100	98	106
LCSD 860-54371/11	Lab Control Sample Dup	102	112	102	105
LCSD 860-54417/4	Lab Control Sample Dup	95	100	87	97
LCSD 860-54516/4	Lab Control Sample Dup	110	116	103	105
LCSD 860-54534/4	Lab Control Sample Dup	102	103	94	97
LCSD 860-54709/4	Lab Control Sample Dup	84	97	87	96
LCSD 860-54712/6	Lab Control Sample Dup	104	110	103	106
LCSD 860-54844/4	Lab Control Sample Dup	84	96	88	95
LCSD 860-54846/4	Lab Control Sample Dup	103	114	102	104
LCSD 860-54849/4	Lab Control Sample Dup	119	114	103	110
LCSD 860-55101/4	Lab Control Sample Dup	92	90	89	91
MB 860-54260/9	Method Blank	112	115	97	103
MB 860-54367/10	Method Blank	99	100	97	99
MB 860-54371/8	Method Blank	98	119	93	112
MB 860-54417/9	Method Blank	91	109	92	100
MB 860-54516/11	Method Blank	111	113	98	112
MB 860-54534/8	Method Blank	107	107	95	97
MB 860-54709/8	Method Blank	92	105	95	96
MB 860-54712/10	Method Blank	101	112	99	110

Surrogate Summary

Client: Trihydro Corporation Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(56-150)	(68-152)	(53-142)	(70-130)
MB 860-54844/8	Method Blank	87	103	94	96
MB 860-54846/8	Method Blank	102	110	98	108
MB 860-54849/8	Method Blank	131	109	101	103
MB 860-55101/9	Method Blank	89	96	94	91

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(51-133)	(31-130)	(46-137)
860-26536-1	SNR-EX CONF (1.5'-2.5')	85	74	223 S1+
LCS 860-54197/2-A	Lab Control Sample	90	75	101
LCSD 860-54197/3-A	Lab Control Sample Dup	89	92	99
MB 860-54197/1-A	Method Blank	86	77	97

Surrogate Legend

FBP = 2-Fluorobiphenyl
NBZ = Nitrobenzene-d5
TPHd14 = p-Terphenyl-d14

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(65-130)	(65-130)
860-26536-1	SNR-EX CONF (1.5'-2.5')	91	95
860-26536-2	SNR-01 (1'-2')	88	95
860-26536-2 MS	SNR-01 (1'-2')	95	88
860-26536-2 MSD	SNR-01 (1'-2')	100	93
860-26536-3	SNR-01 (5'-6')	146 S1+	131 S1+
860-26536-3	SNR-01 (5'-6')	76	97
860-26536-4	SNR-01 (9'-10')	96	91
860-26536-5	SNR-01 (14'-15')	88	97
860-26536-6	SNR-02 (1'-2')	98	86
860-26536-7	SNR-02 (4'-5')	97	85
860-26536-8	SNR-02 (7'-8')	129	94
860-26536-8	SNR-02 (7'-8')	136 S1+	105
860-26536-9	SNR-03 (1'-2')	93	108
860-26536-10	SNR-03 (5'-6')	102	106
860-26536-11	SNR-03 (10'-11')	97	111
860-26536-12	SNR-03 (12'-13')	95	109
860-26536-13	SNR-06 (1'-2')	94	85
860-26536-14	SNR-06 (7'-8')	107	107
860-26536-15	SNR-06 (5'-6')	101	107

Surrogate Summary

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	1CO1 (65-130)	OTPH1 (65-130)								
860-26536-16	SNR-04 (1'-2')	93	100								
860-26536-17	SNR-04 (5'-6')	112	113								
860-26536-18	SNR-04 (11'-12')	95	112								
860-26536-19	SNR-04 (14'-15')	92	111								
860-26536-20	SNR-05 (1'-2')	107	109								
860-26536-21	SNR-05 (5'-6')	97	93								
860-26536-22	SNR-05 (13'-14')	100	100								
860-26536-22 MS	SNR-05 (13'-14')	111	117								
860-26536-22 MSD	SNR-05 (13'-14')	93	109								
860-26536-23	SNR-05 (14'-15')	89	103								
860-26536-24	SNR-07 (1'-2')	89	99								
860-26536-25	SNR-07 (6'-7')	94	109								
860-26536-26	SNR-07 (10'-12')	109	108								
860-26536-27	SNR-07 (14'-15')	113	121								
860-26536-28	SNR-09 (1'-2')	92	106								
860-26536-29	SNR-09 (6'-7')	107	103								
860-26536-30	SNR-09 (8'-9')	107	110								
860-26536-31	SNR-09 (13'-14')	98	102								
860-26536-32	SNR-08 (1'-2')	91	108								
860-26536-33	SNR-08 (5'-6')	94	112								
860-26536-34	SNR-08 (9'-10')	106	111								
860-26536-35	SNR-08 (13'-13.5')	87	105								
860-26536-36	SNR-10 (1'-2')	82	89								
860-26536-37	SNR-10 (5'-6')	86	95								
860-26536-38	SNR-10 (10.5'-11.5')	85	91								
860-26536-39	SNR-10 (14.5'-15')	89	99								
860-26536-40	SNR-11 (1'-2')	88	98								
860-26536-41	SNR-11 (5'-6')	86	95								
860-26536-42	SNR-11 (9'-10')	90	100								
860-26536-42 MS	SNR-11 (9'-10')	83	96								
860-26536-42 MSD	SNR-11 (9'-10')	84	99								
860-26536-43	SNR-11 (14.5'-15')	86	92								
860-26536-44	SNR-12 (1'-2')	85	95								
860-26536-45	SNR-12 (6'-7')	87	92								
860-26536-46	SNR-12 (9.5'-10')	91	100								
860-26536-47	SNR-12 (14'-15')	106	92								
860-26536-48	SNR-13 (1'-2')	85	93								
860-26536-49	SNR-13 (6'-7')	86	92								
860-26536-50	SNR-13 (14'-15')	88	100								
860-26536-51	SNR-14 (1'-2')	88	96								
860-26536-52	SNR-14 (5'-6')	91	94								
860-26536-53	SNR-14 (9'-10')	87	90								
860-26536-54	SNR-14 (14'-15')	84	91								
860-26536-55	BD01-05162022	88	96								
860-26536-56	BD02-05162022	95	103								
860-26536-57	BD01-05172022	93	98								
860-26536-58	BD01-05182022	89	93								
LCS 860-54379/2-A	Lab Control Sample	97	88								
LCS 860-54381/2-A	Lab Control Sample	90	104								
LCS 860-54573/2-A	Lab Control Sample	85	98								

Surrogate Summary

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	1CO1 (65-130)	OTPH1 (65-130)								
LCSD 860-54379/3-A	Lab Control Sample Dup	101	92								
LCSD 860-54381/3-A	Lab Control Sample Dup	87	96								
LCSD 860-54573/3-A	Lab Control Sample Dup	86	100								
MB 860-54379/1-A	Method Blank	84	91								
MB 860-54381/1-A	Method Blank	90	104								
MB 860-54573/1-A	Method Blank	84	94								

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: 860-26536-2 MS
Matrix: Solid
Analysis Batch: 54260

Client Sample ID: SNR-01 (1'-2')
Prep Type: Total/NA
Prep Batch: 54229

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	<0.000505	U	0.0512	0.05124		mg/Kg	☼	100	71 - 124
1,1-Dichloroethane	<0.000377	U	0.0512	0.05317		mg/Kg	☼	104	73 - 124
1,2-Dibromoethane	<0.00105	U	0.0512	0.05178		mg/Kg	☼	101	73 - 125
1,2-Dichloroethane	<0.000305	U	0.0512	0.05234		mg/Kg	☼	102	70 - 123
1,4-Dioxane (P-Dioxane)	<0.0146	U	1.02	1.184		mg/Kg	☼	116	65 - 135
2-Butanone	<0.00366	U F1	0.256	0.1895	F1	mg/Kg	☼	74	75 - 125
Benzene	<0.000208	U	0.0512	0.04787		mg/Kg	☼	94	71 - 119
Carbon disulfide	<0.000293	U	0.0512	0.04399		mg/Kg	☼	86	65 - 135
Chlorobenzene	<0.000238	U F1	0.0512	0.04108	F1	mg/Kg	☼	80	83 - 121
Chloroform	<0.000173	U	0.0512	0.05179		mg/Kg	☼	101	74 - 118
Ethylbenzene	<0.000337	U F1	0.0512	0.04043	F1	mg/Kg	☼	79	80 - 123
Styrene	<0.000206	U F1	0.0512	0.03947	F1	mg/Kg	☼	77	80 - 126
Tetrachloroethene	<0.000371	U F1	0.0512	0.03935	F1	mg/Kg	☼	77	79 - 124
Toluene	<0.00100	U	0.0512	0.04339		mg/Kg	☼	85	74 - 122
Trichloroethene	<0.000496	U	0.0512	0.04555		mg/Kg	☼	89	78 - 119
m,p-Xylenes	<0.000803	U	0.0512	0.04001		mg/Kg	☼	78	78 - 127
o-Xylene	<0.000988	U	0.0512	0.04124		mg/Kg	☼	81	79 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*56 - 150*
4-Bromofluorobenzene (Surr)	*113*		*68 - 152*
Dibromofluoromethane (Surr)	*102*		*53 - 142*
Toluene-d8 (Surr)	*102*		*70 - 130*

Lab Sample ID: MB 860-54260/9
Matrix: Solid
Analysis Batch: 54260

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000503	U	0.00500	0.000503	mg/Kg			05/25/22 06:52	1
1,1-Dichloroethane	<0.000376	U	0.00500	0.000376	mg/Kg			05/25/22 06:52	1
1,2-Dibromoethane	<0.00104	U	0.00500	0.00104	mg/Kg			05/25/22 06:52	1
1,2-Dichloroethane	<0.000304	U	0.00500	0.000304	mg/Kg			05/25/22 06:52	1
1,4-Dioxane (P-Dioxane)	<0.0146	U	0.100	0.0146	mg/Kg			05/25/22 06:52	1
2-Butanone	<0.00365	U	0.0200	0.00365	mg/Kg			05/25/22 06:52	1
Benzene	<0.000207	U	0.00100	0.000207	mg/Kg			05/25/22 06:52	1
Carbon disulfide	<0.000292	U	0.00500	0.000292	mg/Kg			05/25/22 06:52	1
Chlorobenzene	<0.000237	U	0.00500	0.000237	mg/Kg			05/25/22 06:52	1
Chloroform	<0.000173	U	0.00500	0.000173	mg/Kg			05/25/22 06:52	1
Ethylbenzene	<0.000336	U	0.00100	0.000336	mg/Kg			05/25/22 06:52	1
Styrene	<0.000205	U	0.00500	0.000205	mg/Kg			05/25/22 06:52	1
Tetrachloroethene	<0.000370	U	0.00500	0.000370	mg/Kg			05/25/22 06:52	1
Toluene	<0.00100	U	0.00500	0.00100	mg/Kg			05/25/22 06:52	1
Trichloroethene	<0.000494	U	0.00500	0.000494	mg/Kg			05/25/22 06:52	1
Xylenes, Total	<0.000985	U	0.00200	0.000985	mg/Kg			05/25/22 06:52	1
m,p-Xylenes	<0.000800	U	0.00200	0.000800	mg/Kg			05/25/22 06:52	1
o-Xylene	<0.000985	U	0.00100	0.000985	mg/Kg			05/25/22 06:52	1

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 860-54260/9
Matrix: Solid
Analysis Batch: 54260

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		56 - 150		05/25/22 06:52	1
4-Bromofluorobenzene (Surr)	115		68 - 152		05/25/22 06:52	1
Dibromofluoromethane (Surr)	97		53 - 142		05/25/22 06:52	1
Toluene-d8 (Surr)	103		70 - 130		05/25/22 06:52	1

Lab Sample ID: LCS 860-54260/3
Matrix: Solid
Analysis Batch: 54260

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0500	0.05164		mg/Kg		103	71 - 130
1,1-Dichloroethane	0.0500	0.05392		mg/Kg		108	73 - 130
1,2-Dibromoethane	0.0500	0.05283		mg/Kg		106	73 - 130
1,2-Dichloroethane	0.0500	0.05079		mg/Kg		102	70 - 130
1,4-Dioxane (P-Dioxane)	1.00	0.8377		mg/Kg		84	65 - 135
2-Butanone	0.250	0.2590		mg/Kg		104	75 - 130
Benzene	0.0500	0.05022		mg/Kg		100	66 - 142
Carbon disulfide	0.0500	0.04936		mg/Kg		99	65 - 135
Chlorobenzene	0.0500	0.04892		mg/Kg		98	83 - 130
Chloroform	0.0500	0.05299		mg/Kg		106	74 - 130
Ethylbenzene	0.0500	0.04967		mg/Kg		99	80 - 130
Styrene	0.0500	0.04979		mg/Kg		100	80 - 130
Tetrachloroethene	0.0500	0.04716		mg/Kg		94	79 - 130
Toluene	0.0500	0.04929		mg/Kg		99	74 - 130
Trichloroethene	0.0500	0.04740		mg/Kg		95	78 - 130
m,p-Xylenes	0.0500	0.04958		mg/Kg		99	78 - 130
o-Xylene	0.0500	0.04984		mg/Kg		100	79 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		56 - 150
4-Bromofluorobenzene (Surr)	107		68 - 152
Dibromofluoromethane (Surr)	104		53 - 142
Toluene-d8 (Surr)	103		70 - 130

Lab Sample ID: LCSD 860-54260/4
Matrix: Solid
Analysis Batch: 54260

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	0.0500	0.04885		mg/Kg		98	71 - 130	6	25
1,1-Dichloroethane	0.0500	0.05037		mg/Kg		101	73 - 130	7	25
1,2-Dibromoethane	0.0500	0.05042		mg/Kg		101	73 - 130	5	25
1,2-Dichloroethane	0.0500	0.04776		mg/Kg		96	70 - 130	6	25
1,4-Dioxane (P-Dioxane)	1.00	0.8988		mg/Kg		90	65 - 135	7	25
2-Butanone	0.250	0.2298		mg/Kg		92	75 - 130	12	25
Benzene	0.0500	0.04916		mg/Kg		98	66 - 142	2	25
Carbon disulfide	0.0500	0.04618		mg/Kg		92	65 - 135	7	25
Chlorobenzene	0.0500	0.04980		mg/Kg		100	83 - 130	2	25

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 860-54260/4
Matrix: Solid
Analysis Batch: 54260

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloroform			0.0500	0.04947		mg/Kg		99	74 - 130	7	25
Ethylbenzene			0.0500	0.04981		mg/Kg		100	80 - 130	0	25
Styrene			0.0500	0.04936		mg/Kg		99	80 - 130	1	25
Tetrachloroethene			0.0500	0.04572		mg/Kg		91	79 - 130	3	25
Toluene			0.0500	0.04973		mg/Kg		99	74 - 130	1	25
Trichloroethene			0.0500	0.04673		mg/Kg		93	78 - 130	1	25
m,p-Xylenes			0.0500	0.04952		mg/Kg		99	78 - 130	0	25
o-Xylene			0.0500	0.04992		mg/Kg		100	79 - 130	0	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*56 - 150*
4-Bromofluorobenzene (Surr)	*108*		*68 - 152*
Dibromofluoromethane (Surr)	*97*		*53 - 142*
Toluene-d8 (Surr)	*102*		*70 - 130*

Lab Sample ID: 860-26536-39 MS
Matrix: Solid
Analysis Batch: 54712

Client Sample ID: SNR-10 (14.5'-15')
Prep Type: Total/NA
Prep Batch: 54350

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	<0.0148	U	1.47	1.495		mg/Kg	☼	102	71 - 124
1,1-Dichloroethane	<0.0111	U	1.47	1.539		mg/Kg	☼	105	73 - 124
1,2-Dibromoethane	<0.0307	U	1.47	1.450		mg/Kg	☼	99	73 - 125
1,2-Dichloroethane	<0.00893	U	1.47	1.447		mg/Kg	☼	98	70 - 123
1,4-Dioxane (P-Dioxane)	<0.428	U F1	29.4	7.463	F1	mg/Kg	☼	25	65 - 135
2-Butanone	0.570	J F1	7.35	11.14	F1	mg/Kg	☼	144	75 - 125
Benzene	0.0689		1.47	1.566		mg/Kg	☼	102	71 - 119
Carbon disulfide	<0.00860	U	1.47	1.346		mg/Kg	☼	92	65 - 135
Chlorobenzene	<0.00696	U	1.47	1.385		mg/Kg	☼	94	83 - 121
Chloroform	<0.00508	U	1.47	1.507		mg/Kg	☼	103	74 - 118
Ethylbenzene	1.40		1.47	2.948		mg/Kg	☼	105	80 - 123
Styrene	<0.00604	U	1.47	1.578		mg/Kg	☼	107	80 - 126
Tetrachloroethene	<0.0109	U	1.47	1.335		mg/Kg	☼	91	79 - 124
Toluene	0.126	J	1.47	1.585		mg/Kg	☼	99	74 - 122
Trichloroethene	<0.0145	U	1.47	1.434		mg/Kg	☼	98	78 - 119
m,p-Xylenes	0.304		1.47	1.855		mg/Kg	☼	106	78 - 127
o-Xylene	0.0912		1.47	1.655		mg/Kg	☼	106	79 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*56 - 150*
4-Bromofluorobenzene (Surr)	*120*		*68 - 152*
Dibromofluoromethane (Surr)	*99*		*53 - 142*
Toluene-d8 (Surr)	*112*		*70 - 130*

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 860-54367/10
Matrix: Solid
Analysis Batch: 54367

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.0126	U	0.125	0.0126	mg/Kg			05/25/22 12:57	25
1,1-Dichloroethane	<0.00940	U	0.125	0.00940	mg/Kg			05/25/22 12:57	25
1,2-Dibromoethane	<0.0261	U	0.125	0.0261	mg/Kg			05/25/22 12:57	25
1,2-Dichloroethane	<0.00760	U	0.125	0.00760	mg/Kg			05/25/22 12:57	25
1,4-Dioxane (P-Dioxane)	<0.364	U	2.50	0.364	mg/Kg			05/25/22 12:57	25
2-Butanone	<0.0912	U	0.500	0.0912	mg/Kg			05/25/22 12:57	25
Benzene	<0.00517	U	0.0250	0.00517	mg/Kg			05/25/22 12:57	25
Carbon disulfide	<0.00731	U	0.125	0.00731	mg/Kg			05/25/22 12:57	25
Chlorobenzene	<0.00592	U	0.125	0.00592	mg/Kg			05/25/22 12:57	25
Chloroform	<0.00432	U	0.125	0.00432	mg/Kg			05/25/22 12:57	25
Ethylbenzene	<0.00839	U	0.0250	0.00839	mg/Kg			05/25/22 12:57	25
Styrene	<0.00514	U	0.125	0.00514	mg/Kg			05/25/22 12:57	25
Tetrachloroethene	<0.00924	U	0.125	0.00924	mg/Kg			05/25/22 12:57	25
Toluene	<0.0250	U	0.125	0.0250	mg/Kg			05/25/22 12:57	25
Trichloroethene	<0.0123	U	0.125	0.0123	mg/Kg			05/25/22 12:57	25
Xylenes, Total	<0.0246	U	0.0500	0.0246	mg/Kg			05/25/22 12:57	25
m,p-Xylenes	<0.0200	U	0.0500	0.0200	mg/Kg			05/25/22 12:57	25
o-Xylene	<0.0246	U	0.0250	0.0246	mg/Kg			05/25/22 12:57	25

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*56 - 150*		*05/25/22 12:57*	*25*
4-Bromofluorobenzene (Surr)	*100*		*68 - 152*		*05/25/22 12:57*	*25*
Dibromofluoromethane (Surr)	*97*		*53 - 142*		*05/25/22 12:57*	*25*
Toluene-d8 (Surr)	*99*		*70 - 130*		*05/25/22 12:57*	*25*

Lab Sample ID: LCS 860-54367/5
Matrix: Solid
Analysis Batch: 54367

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0500	0.04420		mg/Kg		88	71 - 130
1,1-Dichloroethane	0.0500	0.04471		mg/Kg		89	73 - 130
1,2-Dibromoethane	0.0500	0.05027		mg/Kg		101	73 - 130
1,2-Dichloroethane	0.0500	0.04435		mg/Kg		89	70 - 130
1,4-Dioxane (P-Dioxane)	1.00	1.043		mg/Kg		104	65 - 135
2-Butanone	0.250	0.2382		mg/Kg		95	75 - 130
Benzene	0.0500	0.04709		mg/Kg		94	66 - 142
Carbon disulfide	0.0500	0.04854		mg/Kg		97	65 - 135
Chlorobenzene	0.0500	0.04864		mg/Kg		97	83 - 130
Chloroform	0.0500	0.04401		mg/Kg		88	74 - 130
Ethylbenzene	0.0500	0.04879		mg/Kg		98	80 - 130
Styrene	0.0500	0.05112		mg/Kg		102	80 - 130
Tetrachloroethene	0.0500	0.05256		mg/Kg		105	79 - 130
Toluene	0.0500	0.04692		mg/Kg		94	74 - 130
Trichloroethene	0.0500	0.05025		mg/Kg		101	78 - 130
m,p-Xylenes	0.0500	0.04907		mg/Kg		98	78 - 130
o-Xylene	0.0500	0.04811		mg/Kg		96	79 - 130

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 860-54367/5
Matrix: Solid
Analysis Batch: 54367

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*94*		*56 - 150*
4-Bromofluorobenzene (Surr)	*102*		*68 - 152*
Dibromofluoromethane (Surr)	*96*		*53 - 142*
Toluene-d8 (Surr)	*105*		*70 - 130*

Lab Sample ID: LCSD 860-54367/6
Matrix: Solid
Analysis Batch: 54367

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane			0.0500	0.05243		mg/Kg		105	71 - 130	17	25
1,1-Dichloroethane			0.0500	0.05202		mg/Kg		104	73 - 130	15	25
1,2-Dibromoethane			0.0500	0.06001		mg/Kg		120	73 - 130	18	25
1,2-Dichloroethane			0.0500	0.05243		mg/Kg		105	70 - 130	17	25
1,4-Dioxane (P-Dioxane)			1.00	1.122		mg/Kg		112	65 - 135	7	25
2-Butanone			0.250	0.2843		mg/Kg		114	75 - 130	18	25
Benzene			0.0500	0.05545		mg/Kg		111	66 - 142	16	25
Carbon disulfide			0.0500	0.05745		mg/Kg		115	65 - 135	17	25
Chlorobenzene			0.0500	0.05663		mg/Kg		113	83 - 130	15	25
Chloroform			0.0500	0.05300		mg/Kg		106	74 - 130	19	25
Ethylbenzene			0.0500	0.05795		mg/Kg		116	80 - 130	17	25
Styrene			0.0500	0.06075		mg/Kg		122	80 - 130	17	25
Tetrachloroethene			0.0500	0.06192		mg/Kg		124	79 - 130	16	25
Toluene			0.0500	0.05638		mg/Kg		113	74 - 130	18	25
Trichloroethene			0.0500	0.05966		mg/Kg		119	78 - 130	17	25
m,p-Xylenes			0.0500	0.05846		mg/Kg		117	78 - 130	17	25
o-Xylene			0.0500	0.05712		mg/Kg		114	79 - 130	17	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*96*		*56 - 150*
4-Bromofluorobenzene (Surr)	*100*		*68 - 152*
Dibromofluoromethane (Surr)	*98*		*53 - 142*
Toluene-d8 (Surr)	*106*		*70 - 130*

Lab Sample ID: MB 860-54371/8
Matrix: Solid
Analysis Batch: 54371

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000503	U	0.00500	0.000503	mg/Kg			05/25/22 15:15	1
1,1-Dichloroethane	<0.000376	U	0.00500	0.000376	mg/Kg			05/25/22 15:15	1
1,2-Dibromoethane	<0.00104	U	0.00500	0.00104	mg/Kg			05/25/22 15:15	1
1,2-Dichloroethane	<0.000304	U	0.00500	0.000304	mg/Kg			05/25/22 15:15	1
1,4-Dioxane (P-Dioxane)	<0.0146	U	0.100	0.0146	mg/Kg			05/25/22 15:15	1
2-Butanone	<0.00365	U	0.0200	0.00365	mg/Kg			05/25/22 15:15	1
Benzene	<0.000207	U	0.00100	0.000207	mg/Kg			05/25/22 15:15	1
Carbon disulfide	<0.000292	U	0.00500	0.000292	mg/Kg			05/25/22 15:15	1
Chlorobenzene	<0.000237	U	0.00500	0.000237	mg/Kg			05/25/22 15:15	1

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 860-54371/8
Matrix: Solid
Analysis Batch: 54371

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	<0.000173	U	0.00500	0.000173	mg/Kg			05/25/22 15:15	1
Ethylbenzene	<0.000336	U	0.00100	0.000336	mg/Kg			05/25/22 15:15	1
Styrene	<0.000205	U	0.00500	0.000205	mg/Kg			05/25/22 15:15	1
Tetrachloroethene	<0.000370	U	0.00500	0.000370	mg/Kg			05/25/22 15:15	1
Toluene	<0.00100	U	0.00500	0.00100	mg/Kg			05/25/22 15:15	1
Trichloroethene	<0.000494	U	0.00500	0.000494	mg/Kg			05/25/22 15:15	1
Xylenes, Total	<0.000985	U	0.00200	0.000985	mg/Kg			05/25/22 15:15	1
m,p-Xylenes	<0.000800	U	0.00200	0.000800	mg/Kg			05/25/22 15:15	1
o-Xylene	<0.000985	U	0.00100	0.000985	mg/Kg			05/25/22 15:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*56 - 150*		*05/25/22 15:15*	*1*
4-Bromofluorobenzene (Surr)	*119*		*68 - 152*		*05/25/22 15:15*	*1*
Dibromofluoromethane (Surr)	*93*		*53 - 142*		*05/25/22 15:15*	*1*
Toluene-d8 (Surr)	*112*		*70 - 130*		*05/25/22 15:15*	*1*

Lab Sample ID: LCS 860-54371/10
Matrix: Solid
Analysis Batch: 54371

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0500	0.05266		mg/Kg		105	71 - 130
1,1-Dichloroethane	0.0500	0.05069		mg/Kg		101	73 - 130
1,2-Dibromoethane	0.0500	0.04843		mg/Kg		97	73 - 130
1,2-Dichloroethane	0.0500	0.04831		mg/Kg		97	70 - 130
1,4-Dioxane (P-Dioxane)	1.00	0.8153		mg/Kg		82	65 - 135
2-Butanone	0.250	0.3129		mg/Kg		125	75 - 130
Benzene	0.0500	0.04987		mg/Kg		100	66 - 142
Carbon disulfide	0.0500	0.05607		mg/Kg		112	65 - 135
Chlorobenzene	0.0500	0.04731		mg/Kg		95	83 - 130
Chloroform	0.0500	0.04851		mg/Kg		97	74 - 130
Ethylbenzene	0.0500	0.05236		mg/Kg		105	80 - 130
Styrene	0.0500	0.05212		mg/Kg		104	80 - 130
Tetrachloroethene	0.0500	0.04943		mg/Kg		99	79 - 130
Toluene	0.0500	0.04921		mg/Kg		98	74 - 130
Trichloroethene	0.0500	0.05136		mg/Kg		103	78 - 130
m,p-Xylenes	0.0500	0.05271		mg/Kg		105	78 - 130
o-Xylene	0.0500	0.05290		mg/Kg		106	79 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*56 - 150*
4-Bromofluorobenzene (Surr)	*109*		*68 - 152*
Dibromofluoromethane (Surr)	*101*		*53 - 142*
Toluene-d8 (Surr)	*105*		*70 - 130*

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 860-54371/11
Matrix: Solid
Analysis Batch: 54371

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane			0.0500	0.05064		mg/Kg		101	71 - 130	4	25
1,1-Dichloroethane			0.0500	0.04774		mg/Kg		95	73 - 130	6	25
1,2-Dibromoethane			0.0500	0.04680		mg/Kg		94	73 - 130	3	25
1,2-Dichloroethane			0.0500	0.04515		mg/Kg		90	70 - 130	7	25
1,4-Dioxane (P-Dioxane)			1.00	0.6729		mg/Kg		67	65 - 135	19	25
2-Butanone			0.250	0.3001		mg/Kg		120	75 - 130	4	25
Benzene			0.0500	0.04711		mg/Kg		94	66 - 142	6	25
Carbon disulfide			0.0500	0.05277		mg/Kg		106	65 - 135	6	25
Chlorobenzene			0.0500	0.04498		mg/Kg		90	83 - 130	5	25
Chloroform			0.0500	0.04640		mg/Kg		93	74 - 130	4	25
Ethylbenzene			0.0500	0.05009		mg/Kg		100	80 - 130	4	25
Styrene			0.0500	0.05012		mg/Kg		100	80 - 130	4	25
Tetrachloroethene			0.0500	0.04725		mg/Kg		95	79 - 130	5	25
Toluene			0.0500	0.04786		mg/Kg		96	74 - 130	3	25
Trichloroethene			0.0500	0.04921		mg/Kg		98	78 - 130	4	25
m,p-Xylenes			0.0500	0.05005		mg/Kg		100	78 - 130	5	25
o-Xylene			0.0500	0.05028		mg/Kg		101	79 - 130	5	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*56 - 150*
4-Bromofluorobenzene (Surr)	*112*		*68 - 152*
Dibromofluoromethane (Surr)	*102*		*53 - 142*
Toluene-d8 (Surr)	*105*		*70 - 130*

Lab Sample ID: MB 860-54417/9
Matrix: Solid
Analysis Batch: 54417

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000503	U	0.00500	0.000503	mg/Kg			05/25/22 19:08	1
1,1-Dichloroethane	<0.000376	U	0.00500	0.000376	mg/Kg			05/25/22 19:08	1
1,2-Dibromoethane	<0.00104	U	0.00500	0.00104	mg/Kg			05/25/22 19:08	1
1,2-Dichloroethane	<0.000304	U	0.00500	0.000304	mg/Kg			05/25/22 19:08	1
1,4-Dioxane (P-Dioxane)	<0.0146	U	0.100	0.0146	mg/Kg			05/25/22 19:08	1
2-Butanone	<0.00365	U	0.0200	0.00365	mg/Kg			05/25/22 19:08	1
Benzene	<0.000207	U	0.00100	0.000207	mg/Kg			05/25/22 19:08	1
Carbon disulfide	<0.000292	U	0.00500	0.000292	mg/Kg			05/25/22 19:08	1
Chlorobenzene	<0.000237	U	0.00500	0.000237	mg/Kg			05/25/22 19:08	1
Chloroform	<0.000173	U	0.00500	0.000173	mg/Kg			05/25/22 19:08	1
Ethylbenzene	<0.000336	U	0.00100	0.000336	mg/Kg			05/25/22 19:08	1
Styrene	<0.000205	U	0.00500	0.000205	mg/Kg			05/25/22 19:08	1
Tetrachloroethene	<0.000370	U	0.00500	0.000370	mg/Kg			05/25/22 19:08	1
Toluene	<0.00100	U	0.00500	0.00100	mg/Kg			05/25/22 19:08	1
Trichloroethene	<0.000494	U	0.00500	0.000494	mg/Kg			05/25/22 19:08	1
Xylenes, Total	<0.000985	U	0.00200	0.000985	mg/Kg			05/25/22 19:08	1
m,p-Xylenes	<0.000800	U	0.00200	0.000800	mg/Kg			05/25/22 19:08	1
o-Xylene	<0.000985	U	0.00100	0.000985	mg/Kg			05/25/22 19:08	1

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 860-54417/9
Matrix: Solid
Analysis Batch: 54417

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		56 - 150		05/25/22 19:08	1
4-Bromofluorobenzene (Surr)	109		68 - 152		05/25/22 19:08	1
Dibromofluoromethane (Surr)	92		53 - 142		05/25/22 19:08	1
Toluene-d8 (Surr)	100		70 - 130		05/25/22 19:08	1

Lab Sample ID: LCS 860-54417/3
Matrix: Solid
Analysis Batch: 54417

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0500	0.04516		mg/Kg		90	71 - 130
1,1-Dichloroethane	0.0500	0.04452		mg/Kg		89	73 - 130
1,2-Dibromoethane	0.0500	0.04906		mg/Kg		98	73 - 130
1,2-Dichloroethane	0.0500	0.04916		mg/Kg		98	70 - 130
1,4-Dioxane (P-Dioxane)	1.00	0.8914		mg/Kg		89	65 - 135
2-Butanone	0.250	0.1920		mg/Kg		77	75 - 130
Benzene	0.0500	0.04862		mg/Kg		97	66 - 142
Carbon disulfide	0.0500	0.04275		mg/Kg		86	65 - 135
Chlorobenzene	0.0500	0.04835		mg/Kg		97	83 - 130
Chloroform	0.0500	0.04362		mg/Kg		87	74 - 130
Ethylbenzene	0.0500	0.04855		mg/Kg		97	80 - 130
Styrene	0.0500	0.04873		mg/Kg		97	80 - 130
Tetrachloroethene	0.0500	0.05179		mg/Kg		104	79 - 130
Toluene	0.0500	0.04752		mg/Kg		95	74 - 130
Trichloroethene	0.0500	0.04899		mg/Kg		98	78 - 130
m,p-Xylenes	0.0500	0.04930		mg/Kg		99	78 - 130
o-Xylene	0.0500	0.04901		mg/Kg		98	79 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	92		56 - 150
4-Bromofluorobenzene (Surr)	101		68 - 152
Dibromofluoromethane (Surr)	88		53 - 142
Toluene-d8 (Surr)	97		70 - 130

Lab Sample ID: LCSD 860-54417/4
Matrix: Solid
Analysis Batch: 54417

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	0.0500	0.04456		mg/Kg		89	71 - 130	1	25
1,1-Dichloroethane	0.0500	0.04322		mg/Kg		86	73 - 130	3	25
1,2-Dibromoethane	0.0500	0.04858		mg/Kg		97	73 - 130	1	25
1,2-Dichloroethane	0.0500	0.04768		mg/Kg		95	70 - 130	3	25
1,4-Dioxane (P-Dioxane)	1.00	0.8144		mg/Kg		81	65 - 135	9	25
2-Butanone	0.250	0.2068		mg/Kg		83	75 - 130	7	25
Benzene	0.0500	0.04826		mg/Kg		97	66 - 142	1	25
Carbon disulfide	0.0500	0.04146		mg/Kg		83	65 - 135	3	25
Chlorobenzene	0.0500	0.04848		mg/Kg		97	83 - 130	0	25

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 860-54417/4
Matrix: Solid
Analysis Batch: 54417

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloroform			0.0500	0.04226		mg/Kg		85	74 - 130	3	25
Ethylbenzene			0.0500	0.04862		mg/Kg		97	80 - 130	0	25
Styrene			0.0500	0.04856		mg/Kg		97	80 - 130	0	25
Tetrachloroethene			0.0500	0.05176		mg/Kg		104	79 - 130	0	25
Toluene			0.0500	0.04765		mg/Kg		95	74 - 130	0	25
Trichloroethene			0.0500	0.04953		mg/Kg		99	78 - 130	1	25
m,p-Xylenes			0.0500	0.04802		mg/Kg		96	78 - 130	3	25
o-Xylene			0.0500	0.04898		mg/Kg		98	79 - 130	0	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*56 - 150*
4-Bromofluorobenzene (Surr)	*100*		*68 - 152*
Dibromofluoromethane (Surr)	*87*		*53 - 142*
Toluene-d8 (Surr)	*97*		*70 - 130*

Lab Sample ID: MB 860-54516/11
Matrix: Solid
Analysis Batch: 54516

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000503	U	0.00500	0.000503	mg/Kg			05/26/22 15:20	1
1,1-Dichloroethane	<0.000376	U	0.00500	0.000376	mg/Kg			05/26/22 15:20	1
1,2-Dibromoethane	<0.00104	U	0.00500	0.00104	mg/Kg			05/26/22 15:20	1
1,2-Dichloroethane	<0.000304	U	0.00500	0.000304	mg/Kg			05/26/22 15:20	1
1,4-Dioxane (P-Dioxane)	<0.0146	U	0.100	0.0146	mg/Kg			05/26/22 15:20	1
2-Butanone	<0.00365	U	0.0200	0.00365	mg/Kg			05/26/22 15:20	1
Benzene	<0.000207	U	0.00100	0.000207	mg/Kg			05/26/22 15:20	1
Carbon disulfide	<0.000292	U	0.00500	0.000292	mg/Kg			05/26/22 15:20	1
Chlorobenzene	<0.000237	U	0.00500	0.000237	mg/Kg			05/26/22 15:20	1
Chloroform	<0.000173	U	0.00500	0.000173	mg/Kg			05/26/22 15:20	1
Ethylbenzene	<0.000336	U	0.00100	0.000336	mg/Kg			05/26/22 15:20	1
Styrene	<0.000205	U	0.00500	0.000205	mg/Kg			05/26/22 15:20	1
Tetrachloroethene	<0.000370	U	0.00500	0.000370	mg/Kg			05/26/22 15:20	1
Toluene	<0.00100	U	0.00500	0.00100	mg/Kg			05/26/22 15:20	1
Trichloroethene	<0.000494	U	0.00500	0.000494	mg/Kg			05/26/22 15:20	1
Xylenes, Total	<0.000985	U	0.00200	0.000985	mg/Kg			05/26/22 15:20	1
m,p-Xylenes	<0.000800	U	0.00200	0.000800	mg/Kg			05/26/22 15:20	1
o-Xylene	<0.000985	U	0.00100	0.000985	mg/Kg			05/26/22 15:20	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*56 - 150*		*05/26/22 15:20*	*1*
4-Bromofluorobenzene (Surr)	*113*		*68 - 152*		*05/26/22 15:20*	*1*
Dibromofluoromethane (Surr)	*98*		*53 - 142*		*05/26/22 15:20*	*1*
Toluene-d8 (Surr)	*112*		*70 - 130*		*05/26/22 15:20*	*1*

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 860-54516/3
Matrix: Solid
Analysis Batch: 54516

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0500	0.04898		mg/Kg		98	71 - 130
1,1-Dichloroethane	0.0500	0.04761		mg/Kg		95	73 - 130
1,2-Dibromoethane	0.0500	0.04115		mg/Kg		82	73 - 130
1,2-Dichloroethane	0.0500	0.04206		mg/Kg		84	70 - 130
1,4-Dioxane (P-Dioxane)	1.00	0.7114		mg/Kg		71	65 - 135
2-Butanone	0.250	0.2679		mg/Kg		107	75 - 130
Benzene	0.0500	0.04403		mg/Kg		88	66 - 142
Carbon disulfide	0.0500	0.05034		mg/Kg		101	65 - 135
Chloroform	0.0500	0.04400		mg/Kg		88	74 - 130
Ethylbenzene	0.0500	0.04648		mg/Kg		93	80 - 130
Styrene	0.0500	0.04576		mg/Kg		92	80 - 130
Tetrachloroethene	0.0500	0.04209		mg/Kg		84	79 - 130
Toluene	0.0500	0.04439		mg/Kg		89	74 - 130
Trichloroethene	0.0500	0.04358		mg/Kg		87	78 - 130
m,p-Xylenes	0.0500	0.04736		mg/Kg		95	78 - 130
o-Xylene	0.0500	0.04630		mg/Kg		93	79 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*56 - 150*
4-Bromofluorobenzene (Surr)	*120*		*68 - 152*
Dibromofluoromethane (Surr)	*103*		*53 - 142*
Toluene-d8 (Surr)	*108*		*70 - 130*

Lab Sample ID: LCSD 860-54516/4
Matrix: Solid
Analysis Batch: 54516

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	0.0500	0.05251		mg/Kg		105	71 - 130	7	25
1,1-Dichloroethane	0.0500	0.04949		mg/Kg		99	73 - 130	4	25
1,2-Dibromoethane	0.0500	0.04335		mg/Kg		87	73 - 130	5	25
1,2-Dichloroethane	0.0500	0.04497		mg/Kg		90	70 - 130	7	25
1,4-Dioxane (P-Dioxane)	1.00	0.7405		mg/Kg		74	65 - 135	4	25
2-Butanone	0.250	0.2972		mg/Kg		119	75 - 130	10	25
Benzene	0.0500	0.04723		mg/Kg		94	66 - 142	7	25
Carbon disulfide	0.0500	0.05439		mg/Kg		109	65 - 135	8	25
Chlorobenzene	0.0500	0.04317		mg/Kg		86	83 - 130	6	25
Chloroform	0.0500	0.04783		mg/Kg		96	74 - 130	8	25
Ethylbenzene	0.0500	0.04942		mg/Kg		99	80 - 130	6	25
Styrene	0.0500	0.04836		mg/Kg		97	80 - 130	6	25
Tetrachloroethene	0.0500	0.04436		mg/Kg		89	79 - 130	5	25
Toluene	0.0500	0.04744		mg/Kg		95	74 - 130	7	25
Trichloroethene	0.0500	0.04680		mg/Kg		94	78 - 130	7	25
m,p-Xylenes	0.0500	0.04954		mg/Kg		99	78 - 130	4	25
o-Xylene	0.0500	0.04991		mg/Kg		100	79 - 130	7	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*110*		*56 - 150*

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 860-54516/4
Matrix: Solid
Analysis Batch: 54516

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	*116*		*68 - 152*
Dibromofluoromethane (Surr)	*103*		*53 - 142*
Toluene-d8 (Surr)	*105*		*70 - 130*

Lab Sample ID: MB 860-54534/8
Matrix: Solid
Analysis Batch: 54534

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000503	U	0.00500	0.000503	mg/Kg			05/26/22 15:58	1
1,1-Dichloroethane	<0.000376	U	0.00500	0.000376	mg/Kg			05/26/22 15:58	1
1,2-Dibromoethane	<0.00104	U	0.00500	0.00104	mg/Kg			05/26/22 15:58	1
1,2-Dichloroethane	<0.000304	U	0.00500	0.000304	mg/Kg			05/26/22 15:58	1
1,4-Dioxane (P-Dioxane)	<0.0146	U	0.100	0.0146	mg/Kg			05/26/22 15:58	1
2-Butanone	<0.00365	U	0.0200	0.00365	mg/Kg			05/26/22 15:58	1
Benzene	<0.000207	U	0.00100	0.000207	mg/Kg			05/26/22 15:58	1
Carbon disulfide	<0.000292	U	0.00500	0.000292	mg/Kg			05/26/22 15:58	1
Chlorobenzene	<0.000237	U	0.00500	0.000237	mg/Kg			05/26/22 15:58	1
Chloroform	<0.000173	U	0.00500	0.000173	mg/Kg			05/26/22 15:58	1
Ethylbenzene	<0.000336	U	0.00100	0.000336	mg/Kg			05/26/22 15:58	1
Styrene	<0.000205	U	0.00500	0.000205	mg/Kg			05/26/22 15:58	1
Tetrachloroethene	<0.000370	U	0.00500	0.000370	mg/Kg			05/26/22 15:58	1
Toluene	<0.00100	U	0.00500	0.00100	mg/Kg			05/26/22 15:58	1
Trichloroethene	<0.000494	U	0.00500	0.000494	mg/Kg			05/26/22 15:58	1
Xylenes, Total	<0.000985	U	0.00200	0.000985	mg/Kg			05/26/22 15:58	1
m,p-Xylenes	<0.000800	U	0.00200	0.000800	mg/Kg			05/26/22 15:58	1
o-Xylene	<0.000985	U	0.00100	0.000985	mg/Kg			05/26/22 15:58	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*107*		*56 - 150*		*05/26/22 15:58*	*1*
4-Bromofluorobenzene (Surr)	*107*		*68 - 152*		*05/26/22 15:58*	*1*
Dibromofluoromethane (Surr)	*95*		*53 - 142*		*05/26/22 15:58*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*05/26/22 15:58*	*1*

Lab Sample ID: LCS 860-54534/3
Matrix: Solid
Analysis Batch: 54534

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0500	0.04573		mg/Kg		91	71 - 130
1,1-Dichloroethane	0.0500	0.04342		mg/Kg		87	73 - 130
1,2-Dibromoethane	0.0500	0.05323		mg/Kg		106	73 - 130
1,2-Dichloroethane	0.0500	0.05246		mg/Kg		105	70 - 130
1,4-Dioxane (P-Dioxane)	1.00	1.081		mg/Kg		108	65 - 135
2-Butanone	0.250	0.2490		mg/Kg		100	75 - 130
Benzene	0.0500	0.04833		mg/Kg		97	66 - 142
Carbon disulfide	0.0500	0.04084		mg/Kg		82	65 - 135
Chlorobenzene	0.0500	0.04731		mg/Kg		95	83 - 130

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 860-54534/3
Matrix: Solid
Analysis Batch: 54534

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloroform			0.0500	0.04424		mg/Kg		88	74 - 130		
Ethylbenzene			0.0500	0.04708		mg/Kg		94	80 - 130		
Styrene			0.0500	0.04770		mg/Kg		95	80 - 130		
Tetrachloroethene			0.0500	0.04903		mg/Kg		98	79 - 130		
Toluene			0.0500	0.04672		mg/Kg		93	74 - 130		
Trichloroethene			0.0500	0.04886		mg/Kg		98	78 - 130		
m,p-Xylenes			0.0500	0.04727		mg/Kg		95	78 - 130		
o-Xylene			0.0500	0.04774		mg/Kg		95	79 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*56 - 150*
4-Bromofluorobenzene (Surr)	*99*		*68 - 152*
Dibromofluoromethane (Surr)	*92*		*53 - 142*
Toluene-d8 (Surr)	*97*		*70 - 130*

Lab Sample ID: LCSD 860-54534/4
Matrix: Solid
Analysis Batch: 54534

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane			0.0500	0.04518		mg/Kg		90	71 - 130	1	25
1,1-Dichloroethane			0.0500	0.04376		mg/Kg		88	73 - 130	1	25
1,2-Dibromoethane			0.0500	0.05204		mg/Kg		104	73 - 130	2	25
1,2-Dichloroethane			0.0500	0.05018		mg/Kg		100	70 - 130	4	25
1,4-Dioxane (P-Dioxane)			1.00	1.207		mg/Kg		121	65 - 135	11	25
2-Butanone			0.250	0.2541		mg/Kg		102	75 - 130	2	25
Benzene			0.0500	0.04692		mg/Kg		94	66 - 142	3	25
Carbon disulfide			0.0500	0.04043		mg/Kg		81	65 - 135	1	25
Chlorobenzene			0.0500	0.04550		mg/Kg		91	83 - 130	4	25
Chloroform			0.0500	0.04347		mg/Kg		87	74 - 130	2	25
Ethylbenzene			0.0500	0.04525		mg/Kg		91	80 - 130	4	25
Styrene			0.0500	0.04582		mg/Kg		92	80 - 130	4	25
Tetrachloroethene			0.0500	0.04600		mg/Kg		92	79 - 130	6	25
Toluene			0.0500	0.04462		mg/Kg		89	74 - 130	5	25
Trichloroethene			0.0500	0.04606		mg/Kg		92	78 - 130	6	25
m,p-Xylenes			0.0500	0.04518		mg/Kg		90	78 - 130	5	25
o-Xylene			0.0500	0.04560		mg/Kg		91	79 - 130	5	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*56 - 150*
4-Bromofluorobenzene (Surr)	*103*		*68 - 152*
Dibromofluoromethane (Surr)	*94*		*53 - 142*
Toluene-d8 (Surr)	*97*		*70 - 130*

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 860-54709/8
Matrix: Solid
Analysis Batch: 54709

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000503	U	0.00500	0.000503	mg/Kg			05/27/22 14:52	1
1,1-Dichloroethane	<0.000376	U	0.00500	0.000376	mg/Kg			05/27/22 14:52	1
1,2-Dibromoethane	<0.00104	U	0.00500	0.00104	mg/Kg			05/27/22 14:52	1
1,2-Dichloroethane	<0.000304	U	0.00500	0.000304	mg/Kg			05/27/22 14:52	1
1,4-Dioxane (P-Dioxane)	<0.0146	U	0.100	0.0146	mg/Kg			05/27/22 14:52	1
2-Butanone	<0.00365	U	0.0200	0.00365	mg/Kg			05/27/22 14:52	1
Benzene	<0.000207	U	0.00100	0.000207	mg/Kg			05/27/22 14:52	1
Carbon disulfide	<0.000292	U	0.00500	0.000292	mg/Kg			05/27/22 14:52	1
Chlorobenzene	<0.000237	U	0.00500	0.000237	mg/Kg			05/27/22 14:52	1
Chloroform	<0.000173	U	0.00500	0.000173	mg/Kg			05/27/22 14:52	1
Ethylbenzene	<0.000336	U	0.00100	0.000336	mg/Kg			05/27/22 14:52	1
Styrene	<0.000205	U	0.00500	0.000205	mg/Kg			05/27/22 14:52	1
Tetrachloroethene	<0.000370	U	0.00500	0.000370	mg/Kg			05/27/22 14:52	1
Toluene	<0.00100	U	0.00500	0.00100	mg/Kg			05/27/22 14:52	1
Trichloroethene	<0.000494	U	0.00500	0.000494	mg/Kg			05/27/22 14:52	1
Xylenes, Total	<0.000985	U	0.00200	0.000985	mg/Kg			05/27/22 14:52	1
m,p-Xylenes	<0.000800	U	0.00200	0.000800	mg/Kg			05/27/22 14:52	1
o-Xylene	<0.000985	U	0.00100	0.000985	mg/Kg			05/27/22 14:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*56 - 150*		*05/27/22 14:52*	*1*
4-Bromofluorobenzene (Surr)	*105*		*68 - 152*		*05/27/22 14:52*	*1*
Dibromofluoromethane (Surr)	*95*		*53 - 142*		*05/27/22 14:52*	*1*
Toluene-d8 (Surr)	*96*		*70 - 130*		*05/27/22 14:52*	*1*

Lab Sample ID: LCS 860-54709/3
Matrix: Solid
Analysis Batch: 54709

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0500	0.05204		mg/Kg		104	71 - 130
1,1-Dichloroethane	0.0500	0.04874		mg/Kg		97	73 - 130
1,2-Dibromoethane	0.0500	0.05039		mg/Kg		101	73 - 130
1,2-Dichloroethane	0.0500	0.04791		mg/Kg		96	70 - 130
1,4-Dioxane (P-Dioxane)	1.00	0.8509		mg/Kg		85	65 - 135
2-Butanone	0.250	0.1962		mg/Kg		78	75 - 130
Benzene	0.0500	0.05227		mg/Kg		105	66 - 142
Carbon disulfide	0.0500	0.04493		mg/Kg		90	65 - 135
Chlorobenzene	0.0500	0.05494		mg/Kg		110	83 - 130
Chloroform	0.0500	0.05048		mg/Kg		101	74 - 130
Ethylbenzene	0.0500	0.05356		mg/Kg		107	80 - 130
Styrene	0.0500	0.05421		mg/Kg		108	80 - 130
Tetrachloroethene	0.0500	0.05522		mg/Kg		110	79 - 130
Toluene	0.0500	0.05246		mg/Kg		105	74 - 130
Trichloroethene	0.0500	0.05517		mg/Kg		110	78 - 130
m,p-Xylenes	0.0500	0.05409		mg/Kg		108	78 - 130
o-Xylene	0.0500	0.05368		mg/Kg		107	79 - 130

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 860-54709/3
Matrix: Solid
Analysis Batch: 54709

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*81*		*56 - 150*
4-Bromofluorobenzene (Surr)	*96*		*68 - 152*
Dibromofluoromethane (Surr)	*88*		*53 - 142*
Toluene-d8 (Surr)	*97*		*70 - 130*

Lab Sample ID: LCSD 860-54709/4
Matrix: Solid
Analysis Batch: 54709

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane			0.0500	0.04983		mg/Kg		100	71 - 130	4	25
1,1-Dichloroethane			0.0500	0.04672		mg/Kg		93	73 - 130	4	25
1,2-Dibromoethane			0.0500	0.04898		mg/Kg		98	73 - 130	3	25
1,2-Dichloroethane			0.0500	0.04864		mg/Kg		97	70 - 130	2	25
1,4-Dioxane (P-Dioxane)			1.00	0.8291		mg/Kg		83	65 - 135	3	25
2-Butanone			0.250	0.1945		mg/Kg		78	75 - 130	1	25
Benzene			0.0500	0.05171		mg/Kg		103	66 - 142	1	25
Carbon disulfide			0.0500	0.04349		mg/Kg		87	65 - 135	3	25
Chlorobenzene			0.0500	0.05258		mg/Kg		105	83 - 130	4	25
Chloroform			0.0500	0.04797		mg/Kg		96	74 - 130	5	25
Ethylbenzene			0.0500	0.05157		mg/Kg		103	80 - 130	4	25
Styrene			0.0500	0.05226		mg/Kg		105	80 - 130	4	25
Tetrachloroethene			0.0500	0.05298		mg/Kg		106	79 - 130	4	25
Toluene			0.0500	0.05045		mg/Kg		101	74 - 130	4	25
Trichloroethene			0.0500	0.05425		mg/Kg		108	78 - 130	2	25
m,p-Xylenes			0.0500	0.05106		mg/Kg		102	78 - 130	6	25
o-Xylene			0.0500	0.05200		mg/Kg		104	79 - 130	3	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*84*		*56 - 150*
4-Bromofluorobenzene (Surr)	*97*		*68 - 152*
Dibromofluoromethane (Surr)	*87*		*53 - 142*
Toluene-d8 (Surr)	*96*		*70 - 130*

Lab Sample ID: MB 860-54712/10
Matrix: Solid
Analysis Batch: 54712

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000503	U	0.00500	0.000503	mg/Kg			05/27/22 15:43	1
1,1-Dichloroethane	<0.000376	U	0.00500	0.000376	mg/Kg			05/27/22 15:43	1
1,2-Dibromoethane	<0.00104	U	0.00500	0.00104	mg/Kg			05/27/22 15:43	1
1,2-Dichloroethane	<0.000304	U	0.00500	0.000304	mg/Kg			05/27/22 15:43	1
1,4-Dioxane (P-Dioxane)	<0.0146	U	0.100	0.0146	mg/Kg			05/27/22 15:43	1
2-Butanone	<0.00365	U	0.0200	0.00365	mg/Kg			05/27/22 15:43	1
Benzene	<0.000207	U	0.00100	0.000207	mg/Kg			05/27/22 15:43	1
Carbon disulfide	<0.000292	U	0.00500	0.000292	mg/Kg			05/27/22 15:43	1
Chlorobenzene	<0.000237	U	0.00500	0.000237	mg/Kg			05/27/22 15:43	1

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 860-54712/10
Matrix: Solid
Analysis Batch: 54712

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	<0.000173	U	0.00500	0.000173	mg/Kg			05/27/22 15:43	1
Ethylbenzene	<0.000336	U	0.00100	0.000336	mg/Kg			05/27/22 15:43	1
Styrene	<0.000205	U	0.00500	0.000205	mg/Kg			05/27/22 15:43	1
Tetrachloroethene	<0.000370	U	0.00500	0.000370	mg/Kg			05/27/22 15:43	1
Toluene	<0.00100	U	0.00500	0.00100	mg/Kg			05/27/22 15:43	1
Trichloroethene	<0.000494	U	0.00500	0.000494	mg/Kg			05/27/22 15:43	1
Xylenes, Total	<0.000985	U	0.00200	0.000985	mg/Kg			05/27/22 15:43	1
m,p-Xylenes	<0.000800	U	0.00200	0.000800	mg/Kg			05/27/22 15:43	1
o-Xylene	<0.000985	U	0.00100	0.000985	mg/Kg			05/27/22 15:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*56 - 150*		*05/27/22 15:43*	*1*
4-Bromofluorobenzene (Surr)	*112*		*68 - 152*		*05/27/22 15:43*	*1*
Dibromofluoromethane (Surr)	*99*		*53 - 142*		*05/27/22 15:43*	*1*
Toluene-d8 (Surr)	*110*		*70 - 130*		*05/27/22 15:43*	*1*

Lab Sample ID: LCS 860-54712/5
Matrix: Solid
Analysis Batch: 54712

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0500	0.04738		mg/Kg		95	71 - 130
1,1-Dichloroethane	0.0500	0.04681		mg/Kg		94	73 - 130
1,2-Dibromoethane	0.0500	0.04291		mg/Kg		86	73 - 130
1,2-Dichloroethane	0.0500	0.04155		mg/Kg		83	70 - 130
1,4-Dioxane (P-Dioxane)	1.00	0.7510		mg/Kg		75	65 - 135
2-Butanone	0.250	0.2778		mg/Kg		111	75 - 130
Benzene	0.0500	0.04398		mg/Kg		88	66 - 142
Carbon disulfide	0.0500	0.04710		mg/Kg		94	65 - 135
Chlorobenzene	0.0500	0.04195		mg/Kg		84	83 - 130
Chloroform	0.0500	0.04384		mg/Kg		88	74 - 130
Ethylbenzene	0.0500	0.04725		mg/Kg		95	80 - 130
Styrene	0.0500	0.04729		mg/Kg		95	80 - 130
Tetrachloroethene	0.0500	0.04414		mg/Kg		88	79 - 130
Toluene	0.0500	0.04458		mg/Kg		89	74 - 130
Trichloroethene	0.0500	0.04534		mg/Kg		91	78 - 130
m,p-Xylenes	0.0500	0.04735		mg/Kg		95	78 - 130
o-Xylene	0.0500	0.04789		mg/Kg		96	79 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*56 - 150*
4-Bromofluorobenzene (Surr)	*110*		*68 - 152*
Dibromofluoromethane (Surr)	*103*		*53 - 142*
Toluene-d8 (Surr)	*106*		*70 - 130*

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 860-54712/6
Matrix: Solid
Analysis Batch: 54712

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane			0.0500	0.04677		mg/Kg		94	71 - 130	1	25
1,1-Dichloroethane			0.0500	0.04438		mg/Kg		89	73 - 130	5	25
1,2-Dibromoethane			0.0500	0.04395		mg/Kg		88	73 - 130	2	25
1,2-Dichloroethane			0.0500	0.04279		mg/Kg		86	70 - 130	3	25
1,4-Dioxane (P-Dioxane)			1.00	0.6839		mg/Kg		68	65 - 135	9	25
2-Butanone			0.250	0.2898		mg/Kg		116	75 - 130	4	25
Benzene			0.0500	0.04344		mg/Kg		87	66 - 142	1	25
Carbon disulfide			0.0500	0.04589		mg/Kg		92	65 - 135	3	25
Chlorobenzene			0.0500	0.04129		mg/Kg		83	83 - 130	2	25
Chloroform			0.0500	0.04316		mg/Kg		86	74 - 130	2	25
Ethylbenzene			0.0500	0.04581		mg/Kg		92	80 - 130	3	25
Styrene			0.0500	0.04657		mg/Kg		93	80 - 130	2	25
Tetrachloroethene			0.0500	0.04289		mg/Kg		86	79 - 130	3	25
Toluene			0.0500	0.04305		mg/Kg		86	74 - 130	3	25
Trichloroethene			0.0500	0.04469		mg/Kg		89	78 - 130	1	25
m,p-Xylenes			0.0500	0.04557		mg/Kg		91	78 - 130	4	25
o-Xylene			0.0500	0.04706		mg/Kg		94	79 - 130	2	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*56 - 150*
4-Bromofluorobenzene (Surr)	*110*		*68 - 152*
Dibromofluoromethane (Surr)	*103*		*53 - 142*
Toluene-d8 (Surr)	*106*		*70 - 130*

Lab Sample ID: MB 860-54844/8
Matrix: Solid
Analysis Batch: 54844

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000503	U	0.00500	0.000503	mg/Kg			05/28/22 14:15	1
1,1-Dichloroethane	<0.000376	U	0.00500	0.000376	mg/Kg			05/28/22 14:15	1
1,2-Dibromoethane	<0.00104	U	0.00500	0.00104	mg/Kg			05/28/22 14:15	1
1,2-Dichloroethane	<0.000304	U	0.00500	0.000304	mg/Kg			05/28/22 14:15	1
1,4-Dioxane (P-Dioxane)	<0.0146	U	0.100	0.0146	mg/Kg			05/28/22 14:15	1
2-Butanone	<0.00365	U	0.0200	0.00365	mg/Kg			05/28/22 14:15	1
Benzene	<0.000207	U	0.00100	0.000207	mg/Kg			05/28/22 14:15	1
Carbon disulfide	<0.000292	U	0.00500	0.000292	mg/Kg			05/28/22 14:15	1
Chlorobenzene	<0.000237	U	0.00500	0.000237	mg/Kg			05/28/22 14:15	1
Chloroform	<0.000173	U	0.00500	0.000173	mg/Kg			05/28/22 14:15	1
Ethylbenzene	<0.000336	U	0.00100	0.000336	mg/Kg			05/28/22 14:15	1
Styrene	<0.000205	U	0.00500	0.000205	mg/Kg			05/28/22 14:15	1
Tetrachloroethene	<0.000370	U	0.00500	0.000370	mg/Kg			05/28/22 14:15	1
Toluene	<0.00100	U	0.00500	0.00100	mg/Kg			05/28/22 14:15	1
Trichloroethene	<0.000494	U	0.00500	0.000494	mg/Kg			05/28/22 14:15	1
Xylenes, Total	<0.000985	U	0.00200	0.000985	mg/Kg			05/28/22 14:15	1
m,p-Xylenes	<0.000800	U	0.00200	0.000800	mg/Kg			05/28/22 14:15	1
o-Xylene	<0.000985	U	0.00100	0.000985	mg/Kg			05/28/22 14:15	1

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 860-54844/8
Matrix: Solid
Analysis Batch: 54844

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		56 - 150		05/28/22 14:15	1
4-Bromofluorobenzene (Surr)	103		68 - 152		05/28/22 14:15	1
Dibromofluoromethane (Surr)	94		53 - 142		05/28/22 14:15	1
Toluene-d8 (Surr)	96		70 - 130		05/28/22 14:15	1

Lab Sample ID: LCS 860-54844/3
Matrix: Solid
Analysis Batch: 54844

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0500	0.04818		mg/Kg		96	71 - 130
1,1-Dichloroethane	0.0500	0.04403		mg/Kg		88	73 - 130
1,2-Dibromoethane	0.0500	0.04614		mg/Kg		92	73 - 130
1,2-Dichloroethane	0.0500	0.04407		mg/Kg		88	70 - 130
1,4-Dioxane (P-Dioxane)	1.00	0.8078		mg/Kg		81	65 - 135
2-Butanone	0.250	0.1897		mg/Kg		76	75 - 130
Benzene	0.0500	0.04821		mg/Kg		96	66 - 142
Carbon disulfide	0.0500	0.03964		mg/Kg		79	65 - 135
Chlorobenzene	0.0500	0.05014		mg/Kg		100	83 - 130
Chloroform	0.0500	0.04635		mg/Kg		93	74 - 130
Ethylbenzene	0.0500	0.04956		mg/Kg		99	80 - 130
Styrene	0.0500	0.04998		mg/Kg		100	80 - 130
Tetrachloroethene	0.0500	0.05208		mg/Kg		104	79 - 130
Toluene	0.0500	0.04779		mg/Kg		96	74 - 130
Trichloroethene	0.0500	0.05107		mg/Kg		102	78 - 130
m,p-Xylenes	0.0500	0.04920		mg/Kg		98	78 - 130
o-Xylene	0.0500	0.04916		mg/Kg		98	79 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	83		56 - 150
4-Bromofluorobenzene (Surr)	96		68 - 152
Dibromofluoromethane (Surr)	90		53 - 142
Toluene-d8 (Surr)	94		70 - 130

Lab Sample ID: LCSD 860-54844/4
Matrix: Solid
Analysis Batch: 54844

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	0.0500	0.04767		mg/Kg		95	71 - 130	1	25
1,1-Dichloroethane	0.0500	0.04345		mg/Kg		87	73 - 130	1	25
1,2-Dibromoethane	0.0500	0.04705		mg/Kg		94	73 - 130	2	25
1,2-Dichloroethane	0.0500	0.04633		mg/Kg		93	70 - 130	5	25
1,4-Dioxane (P-Dioxane)	1.00	0.8982		mg/Kg		90	65 - 135	11	25
2-Butanone	0.250	0.1921		mg/Kg		77	75 - 130	1	25
Benzene	0.0500	0.04817		mg/Kg		96	66 - 142	0	25
Carbon disulfide	0.0500	0.03930		mg/Kg		79	65 - 135	1	25
Chlorobenzene	0.0500	0.05031		mg/Kg		101	83 - 130	0	25

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 860-54844/4
Matrix: Solid
Analysis Batch: 54844

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloroform			0.0500	0.04597		mg/Kg		92	74 - 130	1	25
Ethylbenzene			0.0500	0.04886		mg/Kg		98	80 - 130	1	25
Styrene			0.0500	0.04957		mg/Kg		99	80 - 130	1	25
Tetrachloroethene			0.0500	0.05069		mg/Kg		101	79 - 130	3	25
Toluene			0.0500	0.04756		mg/Kg		95	74 - 130	1	25
Trichloroethene			0.0500	0.05134		mg/Kg		103	78 - 130	1	25
m,p-Xylenes			0.0500	0.04879		mg/Kg		98	78 - 130	1	25
o-Xylene			0.0500	0.04924		mg/Kg		98	79 - 130	0	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*84*		*56 - 150*
4-Bromofluorobenzene (Surr)	*96*		*68 - 152*
Dibromofluoromethane (Surr)	*88*		*53 - 142*
Toluene-d8 (Surr)	*95*		*70 - 130*

Lab Sample ID: MB 860-54846/8
Matrix: Solid
Analysis Batch: 54846

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000503	U	0.00500	0.000503	mg/Kg			05/28/22 14:29	1
1,1-Dichloroethane	<0.000376	U	0.00500	0.000376	mg/Kg			05/28/22 14:29	1
1,2-Dibromoethane	<0.00104	U	0.00500	0.00104	mg/Kg			05/28/22 14:29	1
1,2-Dichloroethane	<0.000304	U	0.00500	0.000304	mg/Kg			05/28/22 14:29	1
1,4-Dioxane (P-Dioxane)	<0.0146	U	0.100	0.0146	mg/Kg			05/28/22 14:29	1
2-Butanone	<0.00365	U	0.0200	0.00365	mg/Kg			05/28/22 14:29	1
Benzene	<0.000207	U	0.00100	0.000207	mg/Kg			05/28/22 14:29	1
Carbon disulfide	<0.000292	U	0.00500	0.000292	mg/Kg			05/28/22 14:29	1
Chlorobenzene	<0.000237	U	0.00500	0.000237	mg/Kg			05/28/22 14:29	1
Chloroform	<0.000173	U	0.00500	0.000173	mg/Kg			05/28/22 14:29	1
Ethylbenzene	<0.000336	U	0.00100	0.000336	mg/Kg			05/28/22 14:29	1
Styrene	<0.000205	U	0.00500	0.000205	mg/Kg			05/28/22 14:29	1
Tetrachloroethene	<0.000370	U	0.00500	0.000370	mg/Kg			05/28/22 14:29	1
Toluene	<0.00100	U	0.00500	0.00100	mg/Kg			05/28/22 14:29	1
Trichloroethene	<0.000494	U	0.00500	0.000494	mg/Kg			05/28/22 14:29	1
Xylenes, Total	<0.000985	U	0.00200	0.000985	mg/Kg			05/28/22 14:29	1
m,p-Xylenes	<0.000800	U	0.00200	0.000800	mg/Kg			05/28/22 14:29	1
o-Xylene	<0.000985	U	0.00100	0.000985	mg/Kg			05/28/22 14:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*56 - 150*		*05/28/22 14:29*	*1*
4-Bromofluorobenzene (Surr)	*110*		*68 - 152*		*05/28/22 14:29*	*1*
Dibromofluoromethane (Surr)	*98*		*53 - 142*		*05/28/22 14:29*	*1*
Toluene-d8 (Surr)	*108*		*70 - 130*		*05/28/22 14:29*	*1*

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 860-54846/3
Matrix: Solid
Analysis Batch: 54846

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0500	0.05923		mg/Kg		118	71 - 130
1,1-Dichloroethane	0.0500	0.05564		mg/Kg		111	73 - 130
1,2-Dibromoethane	0.0500	0.04848		mg/Kg		97	73 - 130
1,2-Dichloroethane	0.0500	0.04928		mg/Kg		99	70 - 130
1,4-Dioxane (P-Dioxane)	1.00	0.7415		mg/Kg		74	65 - 135
2-Butanone	0.250	0.3033		mg/Kg		121	75 - 130
Benzene	0.0500	0.05372		mg/Kg		107	66 - 142
Carbon disulfide	0.0500	0.05657		mg/Kg		113	65 - 135
Chlorobenzene	0.0500	0.05088		mg/Kg		102	83 - 130
Chloroform	0.0500	0.05399		mg/Kg		108	74 - 130
Ethylbenzene	0.0500	0.05705		mg/Kg		114	80 - 130
Styrene	0.0500	0.05754		mg/Kg		115	80 - 130
Tetrachloroethene	0.0500	0.05360		mg/Kg		107	79 - 130
Toluene	0.0500	0.05351		mg/Kg		107	74 - 130
Trichloroethene	0.0500	0.05492		mg/Kg		110	78 - 130
m,p-Xylenes	0.0500	0.05738		mg/Kg		115	78 - 130
o-Xylene	0.0500	0.05769		mg/Kg		115	79 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*56 - 150*
4-Bromofluorobenzene (Surr)	*111*		*68 - 152*
Dibromofluoromethane (Surr)	*102*		*53 - 142*
Toluene-d8 (Surr)	*106*		*70 - 130*

Lab Sample ID: LCSD 860-54846/4
Matrix: Solid
Analysis Batch: 54846

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	0.0500	0.05393		mg/Kg		108	71 - 130	9	25
1,1-Dichloroethane	0.0500	0.05109		mg/Kg		102	73 - 130	9	25
1,2-Dibromoethane	0.0500	0.04395		mg/Kg		88	73 - 130	10	25
1,2-Dichloroethane	0.0500	0.04579		mg/Kg		92	70 - 130	7	25
1,4-Dioxane (P-Dioxane)	1.00	0.7876		mg/Kg		79	65 - 135	6	25
2-Butanone	0.250	0.2711		mg/Kg		108	75 - 130	11	25
Benzene	0.0500	0.04898		mg/Kg		98	66 - 142	9	25
Carbon disulfide	0.0500	0.05147		mg/Kg		103	65 - 135	9	25
Chlorobenzene	0.0500	0.04588		mg/Kg		92	83 - 130	10	25
Chloroform	0.0500	0.04928		mg/Kg		99	74 - 130	9	25
Ethylbenzene	0.0500	0.05124		mg/Kg		102	80 - 130	11	25
Styrene	0.0500	0.05162		mg/Kg		103	80 - 130	11	25
Tetrachloroethene	0.0500	0.04745		mg/Kg		95	79 - 130	12	25
Toluene	0.0500	0.04859		mg/Kg		97	74 - 130	10	25
Trichloroethene	0.0500	0.04928		mg/Kg		99	78 - 130	11	25
m,p-Xylenes	0.0500	0.05144		mg/Kg		103	78 - 130	11	25
o-Xylene	0.0500	0.05167		mg/Kg		103	79 - 130	11	25

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 860-54846/4
Matrix: Solid
Analysis Batch: 54846

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*103*		*56 - 150*
4-Bromofluorobenzene (Surr)	*114*		*68 - 152*
Dibromofluoromethane (Surr)	*102*		*53 - 142*
Toluene-d8 (Surr)	*104*		*70 - 130*

Lab Sample ID: MB 860-54849/8
Matrix: Solid
Analysis Batch: 54849

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000503	U	0.00500	0.000503	mg/Kg			05/28/22 14:22	1
1,1-Dichloroethane	<0.000376	U	0.00500	0.000376	mg/Kg			05/28/22 14:22	1
1,2-Dibromoethane	<0.00104	U	0.00500	0.00104	mg/Kg			05/28/22 14:22	1
1,2-Dichloroethane	<0.000304	U	0.00500	0.000304	mg/Kg			05/28/22 14:22	1
1,4-Dioxane (P-Dioxane)	<0.0146	U	0.100	0.0146	mg/Kg			05/28/22 14:22	1
2-Butanone	<0.00365	U	0.0200	0.00365	mg/Kg			05/28/22 14:22	1
Benzene	<0.000207	U	0.00100	0.000207	mg/Kg			05/28/22 14:22	1
Carbon disulfide	<0.000292	U	0.00500	0.000292	mg/Kg			05/28/22 14:22	1
Chlorobenzene	<0.000237	U	0.00500	0.000237	mg/Kg			05/28/22 14:22	1
Chloroform	<0.000173	U	0.00500	0.000173	mg/Kg			05/28/22 14:22	1
Ethylbenzene	<0.000336	U	0.00100	0.000336	mg/Kg			05/28/22 14:22	1
Styrene	<0.000205	U	0.00500	0.000205	mg/Kg			05/28/22 14:22	1
Tetrachloroethene	<0.000370	U	0.00500	0.000370	mg/Kg			05/28/22 14:22	1
Toluene	<0.00100	U	0.00500	0.00100	mg/Kg			05/28/22 14:22	1
Trichloroethene	<0.000494	U	0.00500	0.000494	mg/Kg			05/28/22 14:22	1
Xylenes, Total	<0.000985	U	0.00200	0.000985	mg/Kg			05/28/22 14:22	1
m,p-Xylenes	<0.000800	U	0.00200	0.000800	mg/Kg			05/28/22 14:22	1
o-Xylene	<0.000985	U	0.00100	0.000985	mg/Kg			05/28/22 14:22	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*131*		*56 - 150*		*05/28/22 14:22*	*1*
4-Bromofluorobenzene (Surr)	*109*		*68 - 152*		*05/28/22 14:22*	*1*
Dibromofluoromethane (Surr)	*101*		*53 - 142*		*05/28/22 14:22*	*1*
Toluene-d8 (Surr)	*103*		*70 - 130*		*05/28/22 14:22*	*1*

Lab Sample ID: LCS 860-54849/3
Matrix: Solid
Analysis Batch: 54849

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0500	0.05744		mg/Kg		115	71 - 130
1,1-Dichloroethane	0.0500	0.04075		mg/Kg		82	73 - 130
1,2-Dibromoethane	0.0500	0.04671		mg/Kg		93	73 - 130
1,2-Dichloroethane	0.0500	0.05466		mg/Kg		109	70 - 130
1,4-Dioxane (P-Dioxane)	1.00	0.7321		mg/Kg		73	65 - 135
2-Butanone	0.250	0.1957		mg/Kg		78	75 - 130
Benzene	0.0500	0.04664		mg/Kg		93	66 - 142
Carbon disulfide	0.0500	0.03907		mg/Kg		78	65 - 135

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 860-54849/3
Matrix: Solid
Analysis Batch: 54849

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorobenzene			0.0500	0.04711		mg/Kg		94	83 - 130		
Chloroform			0.0500	0.05148		mg/Kg		103	74 - 130		
Ethylbenzene			0.0500	0.05273		mg/Kg		105	80 - 130		
Styrene			0.0500	0.04974		mg/Kg		99	80 - 130		
Tetrachloroethene			0.0500	0.05476		mg/Kg		110	79 - 130		
Toluene			0.0500	0.04719		mg/Kg		94	74 - 130		
Trichloroethene			0.0500	0.05002		mg/Kg		100	78 - 130		
m,p-Xylenes			0.0500	0.05456		mg/Kg		109	78 - 130		
o-Xylene			0.0500	0.05292		mg/Kg		106	79 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*122*		*56 - 150*
4-Bromofluorobenzene (Surr)	*110*		*68 - 152*
Dibromofluoromethane (Surr)	*104*		*53 - 142*
Toluene-d8 (Surr)	*107*		*70 - 130*

Lab Sample ID: LCSD 860-54849/4
Matrix: Solid
Analysis Batch: 54849

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane			0.0500	0.05742		mg/Kg		115	71 - 130	0	25
1,1-Dichloroethane			0.0500	0.04291		mg/Kg		86	73 - 130	5	25
1,2-Dibromoethane			0.0500	0.04523		mg/Kg		90	73 - 130	3	25
1,2-Dichloroethane			0.0500	0.05236		mg/Kg		105	70 - 130	4	25
1,4-Dioxane (P-Dioxane)			1.00	0.6883		mg/Kg		69	65 - 135	6	25
Benzene			0.0500	0.04632		mg/Kg		93	66 - 142	1	25
Carbon disulfide			0.0500	0.03852		mg/Kg		77	65 - 135	1	25
Chlorobenzene			0.0500	0.04693		mg/Kg		94	83 - 130	0	25
Chloroform			0.0500	0.04984		mg/Kg		100	74 - 130	3	25
Ethylbenzene			0.0500	0.05288		mg/Kg		106	80 - 130	0	25
Styrene			0.0500	0.04961		mg/Kg		99	80 - 130	0	25
Tetrachloroethene			0.0500	0.05532		mg/Kg		111	79 - 130	1	25
Toluene			0.0500	0.04744		mg/Kg		95	74 - 130	1	25
Trichloroethene			0.0500	0.04948		mg/Kg		99	78 - 130	1	25
m,p-Xylenes			0.0500	0.05452		mg/Kg		109	78 - 130	0	25
o-Xylene			0.0500	0.05336		mg/Kg		107	79 - 130	1	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*119*		*56 - 150*
4-Bromofluorobenzene (Surr)	*114*		*68 - 152*
Dibromofluoromethane (Surr)	*103*		*53 - 142*
Toluene-d8 (Surr)	*110*		*70 - 130*

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 860-55101/9
Matrix: Solid
Analysis Batch: 55101

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.000503	U	0.00500	0.000503	mg/Kg			06/01/22 14:34	1
1,1-Dichloroethane	<0.000376	U	0.00500	0.000376	mg/Kg			06/01/22 14:34	1
1,2-Dibromoethane	<0.00104	U	0.00500	0.00104	mg/Kg			06/01/22 14:34	1
1,2-Dichloroethane	<0.000304	U	0.00500	0.000304	mg/Kg			06/01/22 14:34	1
1,4-Dioxane (P-Dioxane)	<0.0146	U	0.100	0.0146	mg/Kg			06/01/22 14:34	1
2-Butanone	<0.00365	U	0.0200	0.00365	mg/Kg			06/01/22 14:34	1
Benzene	<0.000207	U	0.00100	0.000207	mg/Kg			06/01/22 14:34	1
Carbon disulfide	<0.000292	U	0.00500	0.000292	mg/Kg			06/01/22 14:34	1
Chlorobenzene	<0.000237	U	0.00500	0.000237	mg/Kg			06/01/22 14:34	1
Chloroform	<0.000173	U	0.00500	0.000173	mg/Kg			06/01/22 14:34	1
Ethylbenzene	<0.000336	U	0.00100	0.000336	mg/Kg			06/01/22 14:34	1
Styrene	<0.000205	U	0.00500	0.000205	mg/Kg			06/01/22 14:34	1
Tetrachloroethene	<0.000370	U	0.00500	0.000370	mg/Kg			06/01/22 14:34	1
Toluene	<0.00100	U	0.00500	0.00100	mg/Kg			06/01/22 14:34	1
Trichloroethene	<0.000494	U	0.00500	0.000494	mg/Kg			06/01/22 14:34	1
Xylenes, Total	<0.000985	U	0.00200	0.000985	mg/Kg			06/01/22 14:34	1
m,p-Xylenes	<0.000800	U	0.00200	0.000800	mg/Kg			06/01/22 14:34	1
o-Xylene	<0.000985	U	0.00100	0.000985	mg/Kg			06/01/22 14:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*56 - 150*		*06/01/22 14:34*	*1*
4-Bromofluorobenzene (Surr)	*96*		*68 - 152*		*06/01/22 14:34*	*1*
Dibromofluoromethane (Surr)	*94*		*53 - 142*		*06/01/22 14:34*	*1*
Toluene-d8 (Surr)	*91*		*70 - 130*		*06/01/22 14:34*	*1*

Lab Sample ID: LCS 860-55101/3
Matrix: Solid
Analysis Batch: 55101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.0500	0.04324		mg/Kg		86	71 - 130
1,1-Dichloroethane	0.0500	0.04002		mg/Kg		80	73 - 130
1,2-Dibromoethane	0.0500	0.05029		mg/Kg		101	73 - 130
1,2-Dichloroethane	0.0500	0.04685		mg/Kg		94	70 - 130
1,4-Dioxane (P-Dioxane)	1.00	1.244		mg/Kg		124	65 - 135
2-Butanone	0.250	0.2308		mg/Kg		92	75 - 130
Benzene	0.0500	0.04516		mg/Kg		90	66 - 142
Chlorobenzene	0.0500	0.04854		mg/Kg		97	83 - 130
Chloroform	0.0500	0.04269		mg/Kg		85	74 - 130
Ethylbenzene	0.0500	0.04525		mg/Kg		91	80 - 130
Styrene	0.0500	0.04767		mg/Kg		95	80 - 130
Tetrachloroethene	0.0500	0.05000		mg/Kg		100	79 - 130
Toluene	0.0500	0.04415		mg/Kg		88	74 - 130
Trichloroethene	0.0500	0.05000		mg/Kg		100	78 - 130
m,p-Xylenes	0.0500	0.04542		mg/Kg		91	78 - 130
o-Xylene	0.0500	0.04600		mg/Kg		92	79 - 130

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 860-55101/3
Matrix: Solid
Analysis Batch: 55101

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*90*		*56 - 150*
4-Bromofluorobenzene (Surr)	*90*		*68 - 152*
Dibromofluoromethane (Surr)	*88*		*53 - 142*
Toluene-d8 (Surr)	*93*		*70 - 130*

Lab Sample ID: LCSD 860-55101/4
Matrix: Solid
Analysis Batch: 55101

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane			0.0500	0.04705		mg/Kg		94	71 - 130	8	25
1,1-Dichloroethane			0.0500	0.04380		mg/Kg		88	73 - 130	9	25
1,2-Dibromoethane			0.0500	0.05538		mg/Kg		111	73 - 130	10	25
1,2-Dichloroethane			0.0500	0.05146		mg/Kg		103	70 - 130	9	25
1,4-Dioxane (P-Dioxane)			1.00	1.141		mg/Kg		114	65 - 135	9	25
2-Butanone			0.250	0.2681		mg/Kg		107	75 - 130	15	25
Benzene			0.0500	0.04879		mg/Kg		98	66 - 142	8	25
Chlorobenzene			0.0500	0.05163		mg/Kg		103	83 - 130	6	25
Chloroform			0.0500	0.04663		mg/Kg		93	74 - 130	9	25
Ethylbenzene			0.0500	0.04825		mg/Kg		96	80 - 130	6	25
Styrene			0.0500	0.05163		mg/Kg		103	80 - 130	8	25
Tetrachloroethene			0.0500	0.05330		mg/Kg		107	79 - 130	6	25
Toluene			0.0500	0.04657		mg/Kg		93	74 - 130	5	25
Trichloroethene			0.0500	0.05381		mg/Kg		108	78 - 130	7	25
m,p-Xylenes			0.0500	0.04836		mg/Kg		97	78 - 130	6	25
o-Xylene			0.0500	0.04916		mg/Kg		98	79 - 130	7	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*92*		*56 - 150*
4-Bromofluorobenzene (Surr)	*90*		*68 - 152*
Dibromofluoromethane (Surr)	*89*		*53 - 142*
Toluene-d8 (Surr)	*91*		*70 - 130*

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Lab Sample ID: 860-26536-3 MS
Matrix: Solid
Analysis Batch: 54367

Client Sample ID: SNR-01 (5'-6')
Prep Type: Total/NA
Prep Batch: 54229

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane - DL	<0.545	U	54.1	51.33		mg/Kg	☼	95	71 - 124
1,1-Dichloroethane - DL	<0.407	U	54.1	53.33		mg/Kg	☼	99	73 - 124
1,2-Dibromoethane - DL	<1.13	U	54.1	56.01		mg/Kg	☼	103	73 - 125
1,2-Dichloroethane - DL	<0.329	U	54.1	50.92		mg/Kg	☼	94	70 - 123
1,4-Dioxane (P-Dioxane) - DL	<15.8	U	1080	983.2		mg/Kg	☼	91	65 - 135
2-Butanone - DL	<3.95	U	271	266.0		mg/Kg	☼	98	75 - 125
Benzene - DL	10.8		54.1	65.78		mg/Kg	☼	102	71 - 119
Carbon disulfide - DL	<0.316	U	54.1	57.46		mg/Kg	☼	106	65 - 135

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS - DL (Continued)

Lab Sample ID: 860-26536-3 MS
Matrix: Solid
Analysis Batch: 54367

Client Sample ID: SNR-01 (5'-6')
Prep Type: Total/NA
Prep Batch: 54229

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorobenzene - DL	<0.256	U	54.1	55.80		mg/Kg	☼	103	83 - 121
Chloroform - DL	<0.187	U	54.1	52.15		mg/Kg	☼	96	74 - 118
Ethylbenzene - DL	42.6		54.1	102.6		mg/Kg	☼	111	80 - 123
Styrene - DL	<0.222	U	54.1	60.41		mg/Kg	☼	112	80 - 126
Tetrachloroethene - DL	<0.400	U	54.1	61.16		mg/Kg	☼	113	79 - 124
Toluene - DL	86.7		54.1	149.9		mg/Kg	☼	117	74 - 122
Trichloroethene - DL	<0.535	U	54.1	57.73		mg/Kg	☼	107	78 - 119
m,p-Xylenes - DL	144	F1	54.1	213.5	E F1	mg/Kg	☼	128	78 - 127
o-Xylene - DL	58.1		54.1	117.3		mg/Kg	☼	109	79 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr) - DL	*92*		*56 - 150*
4-Bromofluorobenzene (Surr) - DL	*89*		*68 - 152*
Dibromofluoromethane (Surr) - DL	*96*		*53 - 142*
Toluene-d8 (Surr) - DL	*108*		*70 - 130*

Lab Sample ID: 860-26536-8 MS
Matrix: Solid
Analysis Batch: 54371

Client Sample ID: SNR-02 (7'-8')
Prep Type: Total/NA
Prep Batch: 54229

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane - DL	<0.553	U	55.0	62.00		mg/Kg	☼	113	71 - 124
1,1-Dichloroethane - DL	<0.414	U	55.0	64.96		mg/Kg	☼	118	73 - 124
1,2-Dibromoethane - DL	<1.15	U	55.0	52.19		mg/Kg	☼	95	73 - 125
1,2-Dichloroethane - DL	<0.334	U	55.0	55.87		mg/Kg	☼	102	70 - 123
1,4-Dioxane (P-Dioxane) - DL	<16.0	U	1100	797.6		mg/Kg	☼	73	65 - 135
2-Butanone - DL	<4.01	U	275	334.5		mg/Kg	☼	122	75 - 125
Benzene - DL	25.8		55.0	90.09		mg/Kg	☼	117	71 - 119
Carbon disulfide - DL	<0.322	U	55.0	65.53		mg/Kg	☼	119	65 - 135
Chlorobenzene - DL	<0.260	U	55.0	53.80		mg/Kg	☼	98	83 - 121
Chloroform - DL	<0.190	U	55.0	59.04		mg/Kg	☼	107	74 - 118
Ethylbenzene - DL	82.9	F1	55.0	155.5	F1	mg/Kg	☼	132	80 - 123
Styrene - DL	2.56	J	55.0	65.94		mg/Kg	☼	115	80 - 126
Tetrachloroethene - DL	<0.407	U	55.0	53.60		mg/Kg	☼	97	79 - 124
Toluene - DL	177	E F1	55.0	263.2	E F1	mg/Kg	☼	156	74 - 122
Trichloroethene - DL	<0.543	U	55.0	57.26		mg/Kg	☼	104	78 - 119
m,p-Xylenes - DL	250	E	55.0	337.8	E 4	mg/Kg	☼	160	78 - 127
o-Xylene - DL	83.3	F1	55.0	156.7	F1	mg/Kg	☼	134	79 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr) - DL	*108*		*56 - 150*
4-Bromofluorobenzene (Surr) - DL	*122*		*68 - 152*
Dibromofluoromethane (Surr) - DL	*101*		*53 - 142*

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS - DL (Continued)

Lab Sample ID: 860-26536-8 MS
Matrix: Solid
Analysis Batch: 54371

Client Sample ID: SNR-02 (7'-8')
Prep Type: Total/NA
Prep Batch: 54229

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr) - DL	*134*	*S1+*	*70 - 130*

Lab Sample ID: 860-26536-10 MS
Matrix: Solid
Analysis Batch: 54417

Client Sample ID: SNR-03 (5'-6')
Prep Type: Total/NA
Prep Batch: 54229

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane - DL	<0.512	U	50.9	47.66		mg/Kg	☼	94	71 - 124
1,1-Dichloroethane - DL	<0.383	U	50.9	46.92		mg/Kg	☼	92	73 - 124
1,2-Dibromoethane - DL	<1.06	U	50.9	48.34		mg/Kg	☼	95	73 - 125
1,2-Dichloroethane - DL	<0.309	U	50.9	48.34		mg/Kg	☼	95	70 - 123
1,4-Dioxane (P-Dioxane) - DL	<14.8	U	1020	724.3		mg/Kg	☼	71	65 - 135
2-Butanone - DL	<3.71	U F1	255	183.0	F1	mg/Kg	☼	72	75 - 125
Benzene - DL	0.576	J	50.9	50.40		mg/Kg	☼	98	71 - 119
Carbon disulfide - DL	<0.298	U	50.9	44.08		mg/Kg	☼	87	65 - 135
Chlorobenzene - DL	<0.241	U	50.9	51.66		mg/Kg	☼	101	83 - 121
Chloroform - DL	<0.176	U	50.9	45.09		mg/Kg	☼	89	74 - 118
Ethylbenzene - DL	15.4		50.9	65.83		mg/Kg	☼	99	80 - 123
Styrene - DL	<0.209	U	50.9	52.60		mg/Kg	☼	103	80 - 126
Tetrachloroethene - DL	<0.376	U	50.9	54.55		mg/Kg	☼	107	79 - 124
Toluene - DL	18.1		50.9	67.42		mg/Kg	☼	97	74 - 122
Trichloroethene - DL	<0.503	U	50.9	51.66		mg/Kg	☼	101	78 - 119
m,p-Xylenes - DL	61.3		50.9	110.4		mg/Kg	☼	96	78 - 127
o-Xylene - DL	23.0		50.9	75.12		mg/Kg	☼	102	79 - 125

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr) - DL	*85*		*56 - 150*
4-Bromofluorobenzene (Surr) - DL	*98*		*68 - 152*
Dibromofluoromethane (Surr) - DL	*86*		*53 - 142*
Toluene-d8 (Surr) - DL	*98*		*70 - 130*

Lab Sample ID: 860-26536-48 MS
Matrix: Solid
Analysis Batch: 54709

Client Sample ID: SNR-13 (1'-2')
Prep Type: Total/NA
Prep Batch: 54728

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane - DL	<0.0129	U	1.28	1.240		mg/Kg	☼	97	71 - 124
1,1-Dichloroethane - DL	<0.00964	U	1.28	1.194		mg/Kg	☼	93	73 - 124
1,2-Dibromoethane - DL	<0.0267	U	1.28	1.430		mg/Kg	☼	112	73 - 125
1,2-Dichloroethane - DL	<0.00779	U	1.28	1.407		mg/Kg	☼	110	70 - 123
1,4-Dioxane (P-Dioxane) - DL	<0.373	U F1	25.6	7.815	F1	mg/Kg	☼	30	65 - 135
2-Butanone - DL	1.34		6.41	7.739		mg/Kg	☼	100	75 - 125
Benzene - DL	0.466		1.28	1.787		mg/Kg	☼	103	71 - 119
Carbon disulfide - DL	<0.00749	U	1.28	1.096		mg/Kg	☼	85	65 - 135
Chlorobenzene - DL	<0.00607	U	1.28	1.402		mg/Kg	☼	109	83 - 121
Chloroform - DL	<0.00443	U	1.28	1.251		mg/Kg	☼	98	74 - 118

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS - DL (Continued)

Lab Sample ID: 860-26536-48 MS
Matrix: Solid
Analysis Batch: 54709

Client Sample ID: SNR-13 (1'-2')
Prep Type: Total/NA
Prep Batch: 54728

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene - DL	0.147		1.28	1.451		mg/Kg	☼	102	80 - 123
Styrene - DL	<0.00527	U	1.28	1.434		mg/Kg	☼	112	80 - 126
Tetrachloroethene - DL	<0.00947	U	1.28	1.410		mg/Kg	☼	110	79 - 124
Toluene - DL	0.747		1.28	2.019		mg/Kg	☼	99	74 - 122
Trichloroethene - DL	<0.0127	U	1.28	1.397		mg/Kg	☼	109	78 - 119
m,p-Xylenes - DL	0.655		1.28	1.943		mg/Kg	☼	100	78 - 127
o-Xylene - DL	0.835		1.28	2.116		mg/Kg	☼	100	79 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr) - DL	*90*		*56 - 150*
4-Bromofluorobenzene (Surr) - DL	*95*		*68 - 152*
Dibromofluoromethane (Surr) - DL	*88*		*53 - 142*
Toluene-d8 (Surr) - DL	*102*		*70 - 130*

Method: 8260D - Volatile Organic Compounds by GC/MS - DL2

Lab Sample ID: 860-26536-8 MS
Matrix: Solid
Analysis Batch: 54516

Client Sample ID: SNR-02 (7'-8')
Prep Type: Total/NA
Prep Batch: 54229

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane - DL2	<1.11	U	110	122.2		mg/Kg	☼	111	71 - 124
1,1-Dichloroethane - DL2	<0.827	U	110	122.3		mg/Kg	☼	111	73 - 124
1,2-Dibromoethane - DL2	<2.30	U	110	109.3		mg/Kg	☼	99	73 - 125
1,2-Dichloroethane - DL2	<0.668	U	110	110.1		mg/Kg	☼	100	70 - 123
1,4-Dioxane (P-Dioxane) - DL2	<32.0	U	2200	1985		mg/Kg	☼	90	65 - 135
2-Butanone - DL2	<8.02	U F1	550	720.7	F1	mg/Kg	☼	131	75 - 125
Benzene - DL2	25.9		110	142.0		mg/Kg	☼	106	71 - 119
Carbon disulfide - DL2	<0.643	U	110	127.0		mg/Kg	☼	115	65 - 135
Chlorobenzene - DL2	<0.521	U *-	110	108.5		mg/Kg	☼	99	83 - 121
Chloroform - DL2	<0.380	U	110	113.0		mg/Kg	☼	103	74 - 118
Ethylbenzene - DL2	86.9		110	213.8		mg/Kg	☼	115	80 - 123
Styrene - DL2	<0.452	U	110	128.1		mg/Kg	☼	116	80 - 126
Tetrachloroethene - DL2	<0.813	U	110	110.3		mg/Kg	☼	100	79 - 124
Toluene - DL2	182		110	302.9		mg/Kg	☼	110	74 - 122
Trichloroethene - DL2	<1.09	U	110	115.2		mg/Kg	☼	105	78 - 119
m,p-Xylenes - DL2	263		110	391.3	E	mg/Kg	☼	117	78 - 127
o-Xylene - DL2	87.9		110	213.1		mg/Kg	☼	114	79 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr) - DL2	*105*		*56 - 150*
4-Bromofluorobenzene (Surr) - DL2	*116*		*68 - 152*
Dibromofluoromethane (Surr) - DL2	*102*		*53 - 142*
Toluene-d8 (Surr) - DL2	*120*		*70 - 130*

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS - DL2

Lab Sample ID: 860-26536-7 MS
Matrix: Solid
Analysis Batch: 54844

Client Sample ID: SNR-02 (4'-5')
Prep Type: Total/NA
Prep Batch: 54391

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane - DL2	<0.104	U	10.3	10.34		mg/Kg	☼	100	71 - 124
1,1-Dichloroethane - DL2	<0.0776	U	10.3	9.393		mg/Kg	☼	91	73 - 124
1,2-Dibromoethane - DL2	<0.215	U	10.3	9.543		mg/Kg	☼	92	73 - 125
1,2-Dichloroethane - DL2	<0.0627	U	10.3	9.286		mg/Kg	☼	90	70 - 123
1,4-Dioxane (P-Dioxane) - DL2	<3.01	U	206	171.3		mg/Kg	☼	83	65 - 135
2-Butanone - DL2	<0.753	U F1	51.6	35.19	F1	mg/Kg	☼	68	75 - 125
Benzene - DL2	<0.0427	U	10.3	10.51		mg/Kg	☼	102	71 - 119
Carbon disulfide - DL2	<0.0603	U	10.3	8.471		mg/Kg	☼	82	65 - 135
Chlorobenzene - DL2	<0.0489	U	10.3	11.00		mg/Kg	☼	107	83 - 121
Chloroform - DL2	<0.0357	U	10.3	9.669		mg/Kg	☼	94	74 - 118
Ethylbenzene - DL2	2.40		10.3	13.27		mg/Kg	☼	105	80 - 123
Styrene - DL2	<0.0424	U	10.3	11.47		mg/Kg	☼	111	80 - 126
Tetrachloroethene - DL2	<0.0763	U	10.3	11.06		mg/Kg	☼	107	79 - 124
Toluene - DL2	0.762	J	10.3	11.10		mg/Kg	☼	100	74 - 122
Trichloroethene - DL2	<0.102	U	10.3	11.46		mg/Kg	☼	111	78 - 119
m,p-Xylenes - DL2	11.1		10.3	21.73		mg/Kg	☼	103	78 - 127
o-Xylene - DL2	4.56		10.3	15.60		mg/Kg	☼	107	79 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr) - DL2	*79*		*56 - 150*
4-Bromofluorobenzene (Surr) - DL2	*92*		*68 - 152*
Dibromofluoromethane (Surr) - DL2	*84*		*53 - 142*
Toluene-d8 (Surr) - DL2	*94*		*70 - 130*

Lab Sample ID: 860-26536-9 MS
Matrix: Solid
Analysis Batch: 54849

Client Sample ID: SNR-03 (1'-2')
Prep Type: Total/NA
Prep Batch: 54391

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane - DL2	<0.103	U F1	10.2	13.46	F1	mg/Kg	☼	132	71 - 124
1,1-Dichloroethane - DL2	<0.0768	U	10.2	11.85		mg/Kg	☼	116	73 - 124
1,2-Dibromoethane - DL2	<0.213	U	10.2	11.23		mg/Kg	☼	110	73 - 125
1,2-Dichloroethane - DL2	<0.0621	U	10.2	12.55		mg/Kg	☼	123	70 - 123
1,4-Dioxane (P-Dioxane) - DL2	<2.97	U	204	180.2		mg/Kg	☼	88	65 - 135
2-Butanone - DL2	1.04	J *-	51.1	45.63		mg/Kg	☼	87	75 - 125
Benzene - DL2	0.0902	J	10.2	10.85		mg/Kg	☼	105	71 - 119
Carbon disulfide - DL2	<0.0597	U	10.2	8.728		mg/Kg	☼	85	65 - 135
Chlorobenzene - DL2	<0.0484	U	10.2	10.88		mg/Kg	☼	107	83 - 121
Chloroform - DL2	<0.0353	U	10.2	11.79		mg/Kg	☼	115	74 - 118
Ethylbenzene - DL2	2.25		10.2	14.47		mg/Kg	☼	120	80 - 123
Styrene - DL2	<0.0420	U	10.2	11.67		mg/Kg	☼	114	80 - 126
Tetrachloroethene - DL2	<0.0755	U	10.2	12.62		mg/Kg	☼	124	79 - 124
Toluene - DL2	3.55		10.2	14.82		mg/Kg	☼	110	74 - 122
Trichloroethene - DL2	<0.101	U	10.2	11.50		mg/Kg	☼	113	78 - 119
m,p-Xylenes - DL2	17.3		10.2	30.29		mg/Kg	☼	127	78 - 127
o-Xylene - DL2	7.29		10.2	19.46		mg/Kg	☼	119	79 - 125

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS - DL2 (Continued)

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr) - DL2	118		56 - 150
4-Bromofluorobenzene (Surr) - DL2	111		68 - 152
Dibromofluoromethane (Surr) - DL2	102		53 - 142
Toluene-d8 (Surr) - DL2	110		70 - 130

Lab Sample ID: 860-26536-14 MS
Matrix: Solid
Analysis Batch: 54534

Client Sample ID: SNR-06 (7'-8')
Prep Type: Total/NA
Prep Batch: 54391

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane - DL2	<0.527	U	52.3	51.70		mg/Kg	☼	99	71 - 124
1,1-Dichloroethane - DL2	<0.394	U	52.3	50.01		mg/Kg	☼	96	73 - 124
1,2-Dibromoethane - DL2	<1.09	U	52.3	58.53		mg/Kg	☼	112	73 - 125
1,2-Dichloroethane - DL2	<0.318	U	52.3	57.71		mg/Kg	☼	110	70 - 123
1,4-Dioxane (P-Dioxane) - DL2	<15.2	U	1050	1087		mg/Kg	☼	104	65 - 135
2-Butanone - DL2	<3.82	U	262	251.5		mg/Kg	☼	96	75 - 125
Benzene - DL2	3.09		52.3	57.88		mg/Kg	☼	105	71 - 119
Carbon disulfide - DL2	<0.306	U	52.3	46.54		mg/Kg	☼	89	65 - 135
Chlorobenzene - DL2	<0.248	U	52.3	55.87		mg/Kg	☼	107	83 - 121
Chloroform - DL2	<0.181	U	52.3	50.61		mg/Kg	☼	97	74 - 118
Ethylbenzene - DL2	26.7		52.3	79.92		mg/Kg	☼	102	80 - 123
Styrene - DL2	<0.215	U	52.3	57.62		mg/Kg	☼	110	80 - 126
Tetrachloroethene - DL2	<0.387	U	52.3	56.81		mg/Kg	☼	109	79 - 124
Toluene - DL2	17.0		52.3	69.99		mg/Kg	☼	101	74 - 122
Trichloroethene - DL2	<0.517	U	52.3	55.96		mg/Kg	☼	107	78 - 119
m,p-Xylenes - DL2	81.8		52.3	130.2		mg/Kg	☼	92	78 - 127
o-Xylene - DL2	29.5		52.3	84.29		mg/Kg	☼	105	79 - 125

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr) - DL2	93		56 - 150
4-Bromofluorobenzene (Surr) - DL2	101		68 - 152
Dibromofluoromethane (Surr) - DL2	88		53 - 142
Toluene-d8 (Surr) - DL2	98		70 - 130

Lab Sample ID: 860-26536-22 MS
Matrix: Solid
Analysis Batch: 54846

Client Sample ID: SNR-05 (13'-14')
Prep Type: Total/NA
Prep Batch: 54618

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane - DL2	<0.105	U	10.4	11.91		mg/Kg	☼	114	71 - 124
1,1-Dichloroethane - DL2	<0.0786	U	10.4	11.56		mg/Kg	☼	111	73 - 124
1,2-Dibromoethane - DL2	<0.218	U	10.4	8.603		mg/Kg	☼	82	73 - 125
1,2-Dichloroethane - DL2	<0.0635	U	10.4	9.278		mg/Kg	☼	89	70 - 123
1,4-Dioxane (P-Dioxane) - DL2	<3.04	U F1	209	112.5	F1	mg/Kg	☼	54	65 - 135
2-Butanone - DL2	<0.762	U	52.2	54.01		mg/Kg	☼	103	75 - 125
Benzene - DL2	<0.0432	U	10.4	10.55		mg/Kg	☼	101	71 - 119
Carbon disulfide - DL2	<0.0611	U	10.4	11.46		mg/Kg	☼	110	65 - 135

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8260D - Volatile Organic Compounds by GC/MS - DL2 (Continued)

Lab Sample ID: 860-26536-22 MS
Matrix: Solid
Analysis Batch: 54846

Client Sample ID: SNR-05 (13'-14')
Prep Type: Total/NA
Prep Batch: 54618

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorobenzene - DL2	<0.0495	U	10.4	9.625		mg/Kg	☼	92	83 - 121
Chloroform - DL2	<0.0361	U	10.4	10.59		mg/Kg	☼	101	74 - 118
Ethylbenzene - DL2	2.77		10.4	14.02		mg/Kg	☼	108	80 - 123
Styrene - DL2	<0.0429	U	10.4	11.01		mg/Kg	☼	105	80 - 126
Tetrachloroethene - DL2	<0.0772	U	10.4	10.32		mg/Kg	☼	99	79 - 124
Toluene - DL2	<0.209	U	10.4	11.50		mg/Kg	☼	110	74 - 122
Trichloroethene - DL2	<0.103	U	10.4	10.79		mg/Kg	☼	103	78 - 119
m,p-Xylenes - DL2	11.2		10.4	22.52		mg/Kg	☼	108	78 - 127
o-Xylene - DL2	4.20		10.4	15.18		mg/Kg	☼	105	79 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr) - DL2	*100*		*56 - 150*
4-Bromofluorobenzene (Surr) - DL2	*113*		*68 - 152*
Dibromofluoromethane (Surr) - DL2	*102*		*53 - 142*
Toluene-d8 (Surr) - DL2	*105*		*70 - 130*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 860-54197/1-A
Matrix: Solid
Analysis Batch: 54393

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 54197

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<2.26	U	33.3	2.26	ug/Kg		05/24/22 13:21	05/25/22 15:51	1
2-Methylnaphthalene	<2.32	U	33.3	2.32	ug/Kg		05/24/22 13:21	05/25/22 15:51	1
Acenaphthene	<2.32	U	3.33	2.32	ug/Kg		05/24/22 13:21	05/25/22 15:51	1
Acenaphthylene	<2.51	U	3.33	2.51	ug/Kg		05/24/22 13:21	05/25/22 15:51	1
Anthracene	<2.38	U	3.33	2.38	ug/Kg		05/24/22 13:21	05/25/22 15:51	1
Benzo[a]anthracene	<2.14	U	3.33	2.14	ug/Kg		05/24/22 13:21	05/25/22 15:51	1
Benzo[a]pyrene	<2.45	U	3.33	2.45	ug/Kg		05/24/22 13:21	05/25/22 15:51	1
Benzo[b]fluoranthene	<2.75	U	3.33	2.75	ug/Kg		05/24/22 13:21	05/25/22 15:51	1
Benzo[g,h,i]perylene	<2.64	U	3.33	2.64	ug/Kg		05/24/22 13:21	05/25/22 15:51	1
Benzo[k]fluoranthene	<2.66	U	3.33	2.66	ug/Kg		05/24/22 13:21	05/25/22 15:51	1
Chrysene	<1.85	U	3.33	1.85	ug/Kg		05/24/22 13:21	05/25/22 15:51	1
Dibenz(a,h)anthracene	<2.66	U	3.33	2.66	ug/Kg		05/24/22 13:21	05/25/22 15:51	1
Fluoranthene	<2.34	U	3.33	2.34	ug/Kg		05/24/22 13:21	05/25/22 15:51	1
Fluorene	<2.34	U	3.33	2.34	ug/Kg		05/24/22 13:21	05/25/22 15:51	1
Indeno[1,2,3-cd]pyrene	<2.51	U	3.33	2.51	ug/Kg		05/24/22 13:21	05/25/22 15:51	1
Naphthalene	<2.40	U	33.3	2.40	ug/Kg		05/24/22 13:21	05/25/22 15:51	1
Phenanthrene	<2.34	U	3.33	2.34	ug/Kg		05/24/22 13:21	05/25/22 15:51	1
Pyrene	<2.37	U	3.33	2.37	ug/Kg		05/24/22 13:21	05/25/22 15:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*86*		*51 - 133*	*05/24/22 13:21*	*05/25/22 15:51*	*1*
Nitrobenzene-d5	*77*		*31 - 130*	*05/24/22 13:21*	*05/25/22 15:51*	*1*
p-Terphenyl-d14	*97*		*46 - 137*	*05/24/22 13:21*	*05/25/22 15:51*	*1*

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: LCS 860-54197/2-A
Matrix: Solid
Analysis Batch: 54393

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54197

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1-Methylnaphthalene			33.3	30.47	J	ug/Kg		91	39 - 145		
2-Methylnaphthalene			33.3	32.11	J	ug/Kg		96	39 - 145		
Acenaphthene			33.3	30.53		ug/Kg		92	55 - 144		
Acenaphthylene			33.3	29.67		ug/Kg		89	53 - 145		
Anthracene			33.3	32.05		ug/Kg		96	53 - 145		
Benzo[a]anthracene			33.3	32.28		ug/Kg		97	47 - 145		
Benzo[a]pyrene			33.3	31.39		ug/Kg		94	52 - 142		
Benzo[b]fluoranthene			33.3	33.16		ug/Kg		99	45 - 143		
Benzo[g,h,i]perylene			33.3	30.82		ug/Kg		92	48 - 146		
Benzo[k]fluoranthene			33.3	31.85		ug/Kg		96	54 - 153		
Chrysene			33.3	30.49		ug/Kg		91	55 - 156		
Dibenz(a,h)anthracene			33.3	32.66		ug/Kg		98	41 - 157		
Fluoranthene			33.3	33.56		ug/Kg		101	54 - 148		
Fluorene			33.3	30.51		ug/Kg		92	54 - 149		
Indeno[1,2,3-cd]pyrene			33.3	31.93		ug/Kg		96	42 - 165		
Naphthalene			33.3	29.96	J	ug/Kg		90	54 - 167		
Phenanthrene			33.3	31.42		ug/Kg		94	53 - 163		
Pyrene			33.3	34.92		ug/Kg		105	53 - 159		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*90*		*51 - 133*
Nitrobenzene-d5	*75*		*31 - 130*
p-Terphenyl-d14	*101*		*46 - 137*

Lab Sample ID: LCSD 860-54197/3-A
Matrix: Solid
Analysis Batch: 54393

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 54197

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene			33.3	29.36	J	ug/Kg		88	39 - 145	4	25
2-Methylnaphthalene			33.3	30.59	J	ug/Kg		92	39 - 145	5	25
Acenaphthene			33.3	29.64		ug/Kg		89	55 - 144	3	25
Acenaphthylene			33.3	29.57		ug/Kg		89	53 - 145	0	25
Anthracene			33.3	32.18		ug/Kg		97	53 - 145	0	25
Benzo[a]anthracene			33.3	32.28		ug/Kg		97	47 - 145	0	25
Benzo[a]pyrene			33.3	31.45		ug/Kg		94	52 - 142	0	25
Benzo[b]fluoranthene			33.3	32.81		ug/Kg		98	45 - 143	1	25
Benzo[g,h,i]perylene			33.3	30.17		ug/Kg		91	48 - 146	2	25
Benzo[k]fluoranthene			33.3	31.78		ug/Kg		95	54 - 153	0	25
Chrysene			33.3	30.76		ug/Kg		92	55 - 156	1	25
Dibenz(a,h)anthracene			33.3	31.41		ug/Kg		94	41 - 157	4	25
Fluoranthene			33.3	32.06		ug/Kg		96	54 - 148	5	25
Fluorene			33.3	30.47		ug/Kg		91	54 - 149	0	25
Indeno[1,2,3-cd]pyrene			33.3	30.87		ug/Kg		93	42 - 165	3	25
Naphthalene			33.3	29.14	J	ug/Kg		87	54 - 167	3	25
Phenanthrene			33.3	30.93		ug/Kg		93	53 - 163	2	25
Pyrene			33.3	31.95		ug/Kg		96	53 - 159	9	25

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCSD 860-54197/3-A
Matrix: Solid
Analysis Batch: 54393

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 54197

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Fluorobiphenyl	89		51 - 133
Nitrobenzene-d5	92		31 - 130
p-Terphenyl-d14	99		46 - 137

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 860-54379/1-A
Matrix: Solid
Analysis Batch: 54559

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 54379

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<21.1	U	50.0	21.1	mg/Kg		05/25/22 12:56	05/26/22 14:46	1
Diesel Range Organics (Over C10-C28)	<21.1	U	50.0	21.1	mg/Kg		05/25/22 12:56	05/26/22 14:46	1
Oil Range Organics (Over C28-C36)	<21.1	U	50.0	21.1	mg/Kg		05/25/22 12:56	05/26/22 14:46	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	84		65 - 130	05/25/22 12:56	05/26/22 14:46	1
o-Terphenyl	91		65 - 130	05/25/22 12:56	05/26/22 14:46	1

Lab Sample ID: LCS 860-54379/2-A
Matrix: Solid
Analysis Batch: 54559

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54379

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	976.1		mg/Kg		98	70 - 135
Diesel Range Organics (Over C10-C28)	1000	902.7		mg/Kg		90	70 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	97		65 - 130
o-Terphenyl	88		65 - 130

Lab Sample ID: LCSD 860-54379/3-A
Matrix: Solid
Analysis Batch: 54559

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 54379

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1021		mg/Kg		102	70 - 135	5	35
Diesel Range Organics (Over C10-C28)	1000	974.7		mg/Kg		98	70 - 135	8	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	101		65 - 130
o-Terphenyl	92		65 - 130

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 860-26536-2 MS
Matrix: Solid
Analysis Batch: 54559

Client Sample ID: SNR-01 (1'-2')
Prep Type: Total/NA
Prep Batch: 54379

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<21.4	U	1010	977.4		mg/Kg	☼	97	70 - 135
Diesel Range Organics (Over C10-C28)	<21.4	U	1010	930.6		mg/Kg	☼	92	70 - 135

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*95*		*65 - 130*
o-Terphenyl	*88*		*65 - 130*

Lab Sample ID: 860-26536-2 MSD
Matrix: Solid
Analysis Batch: 54559

Client Sample ID: SNR-01 (1'-2')
Prep Type: Total/NA
Prep Batch: 54379

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<21.4	U	1010	996.7		mg/Kg	☼	98	70 - 135	2	35
Diesel Range Organics (Over C10-C28)	<21.4	U	1010	981.4		mg/Kg	☼	97	70 - 135	5	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*100*		*65 - 130*
o-Terphenyl	*93*		*65 - 130*

Lab Sample ID: MB 860-54381/1-A
Matrix: Solid
Analysis Batch: 54321

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 54381

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<21.1	U	50.0	21.1	mg/Kg		05/25/22 13:08	05/25/22 18:12	1
Diesel Range Organics (Over C10-C28)	<21.1	U	50.0	21.1	mg/Kg		05/25/22 13:08	05/25/22 18:12	1
Oil Range Organics (Over C28-C36)	<21.1	U	50.0	21.1	mg/Kg		05/25/22 13:08	05/25/22 18:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*90*		*65 - 130*	*05/25/22 13:08*	*05/25/22 18:12*	*1*
o-Terphenyl	*104*		*65 - 130*	*05/25/22 13:08*	*05/25/22 18:12*	*1*

Lab Sample ID: LCS 860-54381/2-A
Matrix: Solid
Analysis Batch: 54321

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54381

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1138		mg/Kg		114	70 - 135
Diesel Range Organics (Over C10-C28)	1000	1029		mg/Kg		103	70 - 135

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 860-54381/2-A
Matrix: Solid
Analysis Batch: 54321

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54381

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	90		65 - 130
o-Terphenyl	104		65 - 130

Lab Sample ID: LCSD 860-54381/3-A
Matrix: Solid
Analysis Batch: 54321

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 54381

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1101		mg/Kg		110	70 - 135	3	35
Diesel Range Organics (Over C10-C28)			1000	1028		mg/Kg		103	70 - 135	0	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	87		65 - 130
o-Terphenyl	96		65 - 130

Lab Sample ID: 860-26536-22 MS
Matrix: Solid
Analysis Batch: 54321

Client Sample ID: SNR-05 (13'-14')
Prep Type: Total/NA
Prep Batch: 54381

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	313		1050	1389		mg/Kg	☼	103	70 - 135
Diesel Range Organics (Over C10-C28)	882	F1	1050	1623		mg/Kg	☼	71	70 - 135

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	111		65 - 130
o-Terphenyl	117		65 - 130

Lab Sample ID: 860-26536-22 MSD
Matrix: Solid
Analysis Batch: 54321

Client Sample ID: SNR-05 (13'-14')
Prep Type: Total/NA
Prep Batch: 54381

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	313		1050	1338		mg/Kg	☼	98	70 - 135	4	35
Diesel Range Organics (Over C10-C28)	882	F1	1050	1516	F1	mg/Kg	☼	61	70 - 135	7	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	93		65 - 130
o-Terphenyl	109		65 - 130

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 860-54573/1-A
Matrix: Solid
Analysis Batch: 54553

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 54573

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<21.1	U	50.0	21.1	mg/Kg		05/26/22 13:06	05/26/22 18:29	1
Diesel Range Organics (Over C10-C28)	<21.1	U	50.0	21.1	mg/Kg		05/26/22 13:06	05/26/22 18:29	1
Oil Range Organics (Over C28-C36)	<21.1	U	50.0	21.1	mg/Kg		05/26/22 13:06	05/26/22 18:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*84*		*65 - 130*	*05/26/22 13:06*	*05/26/22 18:29*	*1*
o-Terphenyl	*94*		*65 - 130*	*05/26/22 13:06*	*05/26/22 18:29*	*1*

Lab Sample ID: LCS 860-54573/2-A
Matrix: Solid
Analysis Batch: 54553

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54573

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	961.6		mg/Kg		96	70 - 135
Diesel Range Organics (Over C10-C28)	1000	906.6		mg/Kg		91	70 - 135

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*85*		*65 - 130*
o-Terphenyl	*98*		*65 - 130*

Lab Sample ID: LCSD 860-54573/3-A
Matrix: Solid
Analysis Batch: 54553

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 54573

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	975.4		mg/Kg		98	70 - 135	1	35
Diesel Range Organics (Over C10-C28)	1000	932.1		mg/Kg		93	70 - 135	3	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*86*		*65 - 130*
o-Terphenyl	*100*		*65 - 130*

Lab Sample ID: 860-26536-42 MS
Matrix: Solid
Analysis Batch: 54553

Client Sample ID: SNR-11 (9'-10')
Prep Type: Total/NA
Prep Batch: 54573

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<21.2	U	1000	962.7		mg/Kg	☼	96	70 - 135
Diesel Range Organics (Over C10-C28)	<21.2	U	1000	909.3		mg/Kg	☼	91	70 - 135

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 860-26536-42 MS
Matrix: Solid
Analysis Batch: 54553

Client Sample ID: SNR-11 (9'-10')
Prep Type: Total/NA
Prep Batch: 54573

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	83		65 - 130
o-Terphenyl	96		65 - 130

Lab Sample ID: 860-26536-42 MSD
Matrix: Solid
Analysis Batch: 54553

Client Sample ID: SNR-11 (9'-10')
Prep Type: Total/NA
Prep Batch: 54573

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<21.2	U	998	941.9		mg/Kg	☼	94	70 - 135	2	35
Diesel Range Organics (Over C10-C28)	<21.2	U	997	892.5		mg/Kg	☼	90	70 - 135	2	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	84		65 - 130
o-Terphenyl	99		65 - 130

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 860-56688/1-A
Matrix: Solid
Analysis Batch: 56916

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 56688

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.0617	U	0.400	0.0617	mg/Kg		06/13/22 13:12	06/14/22 14:00	1
Barium	<0.0347	U	0.400	0.0347	mg/Kg		06/13/22 13:12	06/14/22 14:00	1
Cadmium	<0.0116	U	0.200	0.0116	mg/Kg		06/13/22 13:12	06/14/22 14:00	1
Chromium	<0.0271	U	0.400	0.0271	mg/Kg		06/13/22 13:12	06/14/22 14:00	1
Lead	<0.0194	U	0.200	0.0194	mg/Kg		06/13/22 13:12	06/14/22 14:00	1
Selenium	<0.0496	U	0.200	0.0496	mg/Kg		06/13/22 13:12	06/14/22 14:00	1
Silver	<0.0159	U	0.200	0.0159	mg/Kg		06/13/22 13:12	06/14/22 14:00	1

Lab Sample ID: LCS 860-56688/2-A
Matrix: Solid
Analysis Batch: 56916

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 56688

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	10.0	9.849		mg/Kg		98	80 - 120
Barium	10.0	10.02		mg/Kg		100	80 - 120
Cadmium	10.0	10.10		mg/Kg		101	80 - 120
Chromium	10.0	9.945		mg/Kg		99	80 - 120
Lead	10.0	9.833		mg/Kg		98	80 - 120
Selenium	10.0	9.543		mg/Kg		95	80 - 120
Silver	5.00	5.043		mg/Kg		101	80 - 120

QC Sample Results

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 860-56688/3-A
Matrix: Solid
Analysis Batch: 56916

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 56688

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic			9.80	9.718		mg/Kg		99	80 - 120	1	20
Barium			9.80	9.701		mg/Kg		99	80 - 120	3	20
Cadmium			9.80	9.823		mg/Kg		100	80 - 120	3	20
Chromium			9.80	9.593		mg/Kg		98	80 - 120	4	20
Lead			9.80	9.611		mg/Kg		98	80 - 120	2	20
Selenium			9.80	9.448		mg/Kg		96	80 - 120	1	20
Silver			4.90	4.856		mg/Kg		99	80 - 120	4	20

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 860-54923/10-A
Matrix: Solid
Analysis Batch: 55044

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 54923

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00384	U	0.0200	0.00384	mg/Kg		05/31/22 10:00	05/31/22 15:22	1

Lab Sample ID: LCS 860-54923/11-A
Matrix: Solid
Analysis Batch: 55044

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 54923

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.182	0.1840		mg/Kg		101	80 - 120		

Lab Sample ID: LCSD 860-54923/12-A
Matrix: Solid
Analysis Batch: 55044

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 54923

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.182	0.1859		mg/Kg		102	80 - 120	1	20

QC Association Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

GC/MS VOA

Prep Batch: 54229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-1	SNR-EX CONF (1.5'-2.5')	Total/NA	Solid	5030C	
860-26536-2	SNR-01 (1'-2')	Total/NA	Solid	5030C	
860-26536-3	SNR-01 (5'-6')	Total/NA	Solid	5030C	
860-26536-3 - DL	SNR-01 (5'-6')	Total/NA	Solid	5030C	
860-26536-4	SNR-01 (9'-10')	Total/NA	Solid	5030C	
860-26536-5	SNR-01 (14'-15')	Total/NA	Solid	5030C	
860-26536-6	SNR-02 (1'-2')	Total/NA	Solid	5030C	
860-26536-7	SNR-02 (4'-5')	Total/NA	Solid	5030C	
860-26536-8	SNR-02 (7'-8')	Total/NA	Solid	5030C	
860-26536-8 - DL	SNR-02 (7'-8')	Total/NA	Solid	5030C	
860-26536-8 - DL2	SNR-02 (7'-8')	Total/NA	Solid	5030C	
860-26536-9	SNR-03 (1'-2')	Total/NA	Solid	5030C	
860-26536-10	SNR-03 (5'-6')	Total/NA	Solid	5030C	
860-26536-10 - DL	SNR-03 (5'-6')	Total/NA	Solid	5030C	
860-26536-11	SNR-03 (10'-11')	Total/NA	Solid	5030C	
860-26536-12	SNR-03 (12'-13')	Total/NA	Solid	5030C	
860-26536-13	SNR-06 (1'-2')	Total/NA	Solid	5030C	
860-26536-14	SNR-06 (7'-8')	Total/NA	Solid	5030C	
860-26536-15	SNR-06 (5'-6')	Total/NA	Solid	5030C	
860-26536-16	SNR-04 (1'-2')	Total/NA	Solid	5030C	
860-26536-17	SNR-04 (5'-6')	Total/NA	Solid	5030C	
860-26536-18	SNR-04 (11'-12')	Total/NA	Solid	5030C	
860-26536-19	SNR-04 (14'-15')	Total/NA	Solid	5030C	
860-26536-20	SNR-05 (1'-2')	Total/NA	Solid	5030C	
860-26536-2 MS	SNR-01 (1'-2')	Total/NA	Solid	5030C	
860-26536-3 MS - DL	SNR-01 (5'-6')	Total/NA	Solid	5030C	
860-26536-8 MS - DL2	SNR-02 (7'-8')	Total/NA	Solid	5030C	
860-26536-8 MS - DL	SNR-02 (7'-8')	Total/NA	Solid	5030C	
860-26536-10 MS - DL	SNR-03 (5'-6')	Total/NA	Solid	5030C	

Analysis Batch: 54260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-1	SNR-EX CONF (1.5'-2.5')	Total/NA	Solid	8260D	54229
860-26536-2	SNR-01 (1'-2')	Total/NA	Solid	8260D	54229
860-26536-3	SNR-01 (5'-6')	Total/NA	Solid	8260D	54229
860-26536-4	SNR-01 (9'-10')	Total/NA	Solid	8260D	54229
860-26536-5	SNR-01 (14'-15')	Total/NA	Solid	8260D	54229
860-26536-6	SNR-02 (1'-2')	Total/NA	Solid	8260D	54229
860-26536-7	SNR-02 (4'-5')	Total/NA	Solid	8260D	54229
860-26536-8	SNR-02 (7'-8')	Total/NA	Solid	8260D	54229
860-26536-9	SNR-03 (1'-2')	Total/NA	Solid	8260D	54229
860-26536-10	SNR-03 (5'-6')	Total/NA	Solid	8260D	54229
860-26536-11	SNR-03 (10'-11')	Total/NA	Solid	8260D	54229
860-26536-12	SNR-03 (12'-13')	Total/NA	Solid	8260D	54229
860-26536-13	SNR-06 (1'-2')	Total/NA	Solid	8260D	54229
860-26536-14	SNR-06 (7'-8')	Total/NA	Solid	8260D	54229
860-26536-15	SNR-06 (5'-6')	Total/NA	Solid	8260D	54229
860-26536-16	SNR-04 (1'-2')	Total/NA	Solid	8260D	54229
860-26536-17	SNR-04 (5'-6')	Total/NA	Solid	8260D	54229
860-26536-18	SNR-04 (11'-12')	Total/NA	Solid	8260D	54229
860-26536-19	SNR-04 (14'-15')	Total/NA	Solid	8260D	54229

QC Association Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

GC/MS VOA (Continued)

Analysis Batch: 54260 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-20	SNR-05 (1'-2')	Total/NA	Solid	8260D	54229
MB 860-54260/9	Method Blank	Total/NA	Solid	8260D	
LCS 860-54260/3	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 860-54260/4	Lab Control Sample Dup	Total/NA	Solid	8260D	
860-26536-2 MS	SNR-01 (1'-2')	Total/NA	Solid	8260D	54229

Prep Batch: 54350

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-21 - DL	SNR-05 (5'-6')	Total/NA	Solid	5030C	
860-26536-21	SNR-05 (5'-6')	Total/NA	Solid	5030C	
860-26536-23	SNR-05 (14'-15')	Total/NA	Solid	5030C	
860-26536-24	SNR-07 (1'-2')	Total/NA	Solid	5030C	
860-26536-25	SNR-07 (6'-7')	Total/NA	Solid	5030C	
860-26536-26 - DL	SNR-07 (10'-12')	Total/NA	Solid	5030C	
860-26536-26	SNR-07 (10'-12')	Total/NA	Solid	5030C	
860-26536-27 - DL	SNR-07 (14'-15')	Total/NA	Solid	5030C	
860-26536-27	SNR-07 (14'-15')	Total/NA	Solid	5030C	
860-26536-28	SNR-09 (1'-2')	Total/NA	Solid	5030C	
860-26536-29 - DL	SNR-09 (6'-7')	Total/NA	Solid	5030C	
860-26536-29	SNR-09 (6'-7')	Total/NA	Solid	5030C	
860-26536-30	SNR-09 (8'-9')	Total/NA	Solid	5030C	
860-26536-30 - DL	SNR-09 (8'-9')	Total/NA	Solid	5030C	
860-26536-31 - DL	SNR-09 (13'-14')	Total/NA	Solid	5030C	
860-26536-31	SNR-09 (13'-14')	Total/NA	Solid	5030C	
860-26536-32	SNR-08 (1'-2')	Total/NA	Solid	5030C	
860-26536-34	SNR-08 (9'-10')	Total/NA	Solid	5030C	
860-26536-35	SNR-08 (13'-13.5')	Total/NA	Solid	5030C	
860-26536-36	SNR-10 (1'-2')	Total/NA	Solid	5030C	
860-26536-37	SNR-10 (5'-6')	Total/NA	Solid	5030C	
860-26536-38	SNR-10 (10.5'-11.5')	Total/NA	Solid	5030C	
860-26536-38 - DL	SNR-10 (10.5'-11.5')	Total/NA	Solid	5030C	
860-26536-39	SNR-10 (14.5'-15')	Total/NA	Solid	5030C	
860-26536-39 - DL	SNR-10 (14.5'-15')	Total/NA	Solid	5030C	
860-26536-40	SNR-11 (1'-2')	Total/NA	Solid	5030C	
860-26536-39 MS	SNR-10 (14.5'-15')	Total/NA	Solid	5030C	

Analysis Batch: 54367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-3 - DL	SNR-01 (5'-6')	Total/NA	Solid	8260D	54229
860-26536-7 - DL	SNR-02 (4'-5')	Total/NA	Solid	8260D	54391
860-26536-9 - DL	SNR-03 (1'-2')	Total/NA	Solid	8260D	54391
860-26536-11 - DL	SNR-03 (10'-11')	Total/NA	Solid	8260D	54391
860-26536-13 - DL	SNR-06 (1'-2')	Total/NA	Solid	8260D	54391
860-26536-14 - DL	SNR-06 (7'-8')	Total/NA	Solid	8260D	54391
860-26536-17 - DL	SNR-04 (5'-6')	Total/NA	Solid	8260D	54391
860-26536-18 - DL	SNR-04 (11'-12')	Total/NA	Solid	8260D	54391
860-26536-21	SNR-05 (5'-6')	Total/NA	Solid	8260D	54350
860-26536-25	SNR-07 (6'-7')	Total/NA	Solid	8260D	54350
860-26536-26	SNR-07 (10'-12')	Total/NA	Solid	8260D	54350
860-26536-27	SNR-07 (14'-15')	Total/NA	Solid	8260D	54350
860-26536-29	SNR-09 (6'-7')	Total/NA	Solid	8260D	54350

QC Association Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

GC/MS VOA (Continued)

Analysis Batch: 54367 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 860-54367/10	Method Blank	Total/NA	Solid	8260D	
LCS 860-54367/5	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 860-54367/6	Lab Control Sample Dup	Total/NA	Solid	8260D	
860-26536-3 MS - DL	SNR-01 (5'-6')	Total/NA	Solid	8260D	54229

Analysis Batch: 54371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-8 - DL	SNR-02 (7'-8')	Total/NA	Solid	8260D	54229
860-26536-34	SNR-08 (9'-10')	Total/NA	Solid	8260D	54350
860-26536-38 - DL	SNR-10 (10.5'-11.5')	Total/NA	Solid	8260D	54350
860-26536-39 - DL	SNR-10 (14.5'-15')	Total/NA	Solid	8260D	54350
860-26536-43	SNR-11 (14.5'-15')	Total/NA	Solid	8260D	54391
MB 860-54371/8	Method Blank	Total/NA	Solid	8260D	
LCS 860-54371/10	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 860-54371/11	Lab Control Sample Dup	Total/NA	Solid	8260D	
860-26536-8 MS - DL	SNR-02 (7'-8')	Total/NA	Solid	8260D	54229

Prep Batch: 54391

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-6 - DL	SNR-02 (1'-2')	Total/NA	Solid	5030C	
860-26536-6 - DL2	SNR-02 (1'-2')	Total/NA	Solid	5030C	
860-26536-7 - DL2	SNR-02 (4'-5')	Total/NA	Solid	5030C	
860-26536-7 - DL	SNR-02 (4'-5')	Total/NA	Solid	5030C	
860-26536-9 - DL2	SNR-03 (1'-2')	Total/NA	Solid	5030C	
860-26536-9 - DL	SNR-03 (1'-2')	Total/NA	Solid	5030C	
860-26536-11 - DL2	SNR-03 (10'-11')	Total/NA	Solid	5030C	
860-26536-11 - DL	SNR-03 (10'-11')	Total/NA	Solid	5030C	
860-26536-13 - DL	SNR-06 (1'-2')	Total/NA	Solid	5030C	
860-26536-14 - DL2	SNR-06 (7'-8')	Total/NA	Solid	5030C	
860-26536-14 - DL	SNR-06 (7'-8')	Total/NA	Solid	5030C	
860-26536-17 - DL	SNR-04 (5'-6')	Total/NA	Solid	5030C	
860-26536-18 - DL	SNR-04 (11'-12')	Total/NA	Solid	5030C	
860-26536-41	SNR-11 (5'-6')	Total/NA	Solid	5030C	
860-26536-42	SNR-11 (9'-10')	Total/NA	Solid	5030C	
860-26536-43	SNR-11 (14.5'-15')	Total/NA	Solid	5030C	
860-26536-44	SNR-12 (1'-2')	Total/NA	Solid	5030C	
860-26536-45 - DL	SNR-12 (6'-7')	Total/NA	Solid	5030C	
860-26536-46	SNR-12 (9.5'-10')	Total/NA	Solid	5030C	
860-26536-48	SNR-13 (1'-2')	Total/NA	Solid	5030C	
860-26536-49	SNR-13 (6'-7')	Total/NA	Solid	5030C	
860-26536-50	SNR-13 (14'-15')	Total/NA	Solid	5030C	
860-26536-51	SNR-14 (1'-2')	Total/NA	Solid	5030C	
860-26536-52 - DL	SNR-14 (5'-6')	Total/NA	Solid	5030C	
860-26536-53 - DL	SNR-14 (9'-10')	Total/NA	Solid	5030C	
860-26536-54	SNR-14 (14'-15')	Total/NA	Solid	5030C	
860-26536-55	BD01-05162022	Total/NA	Solid	5030C	
860-26536-56	BD02-05162022	Total/NA	Solid	5030C	
860-26536-57 - DL	BD01-05172022	Total/NA	Solid	5030C	
860-26536-57	BD01-05172022	Total/NA	Solid	5030C	
860-26536-7 MS - DL2	SNR-02 (4'-5')	Total/NA	Solid	5030C	
860-26536-9 MS - DL2	SNR-03 (1'-2')	Total/NA	Solid	5030C	

QC Association Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

GC/MS VOA (Continued)

Prep Batch: 54391 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-14 MS - DL2	SNR-06 (7'-8')	Total/NA	Solid	5030C	

Analysis Batch: 54417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-6 - DL	SNR-02 (1'-2')	Total/NA	Solid	8260D	54391
860-26536-10 - DL	SNR-03 (5'-6')	Total/NA	Solid	8260D	54229
860-26536-23	SNR-05 (14'-15')	Total/NA	Solid	8260D	54350
860-26536-24	SNR-07 (1'-2')	Total/NA	Solid	8260D	54350
860-26536-28	SNR-09 (1'-2')	Total/NA	Solid	8260D	54350
860-26536-32	SNR-08 (1'-2')	Total/NA	Solid	8260D	54350
860-26536-36	SNR-10 (1'-2')	Total/NA	Solid	8260D	54350
860-26536-37	SNR-10 (5'-6')	Total/NA	Solid	8260D	54350
860-26536-40	SNR-11 (1'-2')	Total/NA	Solid	8260D	54350
860-26536-41	SNR-11 (5'-6')	Total/NA	Solid	8260D	54391
860-26536-42	SNR-11 (9'-10')	Total/NA	Solid	8260D	54391
860-26536-44	SNR-12 (1'-2')	Total/NA	Solid	8260D	54391
860-26536-48	SNR-13 (1'-2')	Total/NA	Solid	8260D	54391
860-26536-50	SNR-13 (14'-15')	Total/NA	Solid	8260D	54391
860-26536-51	SNR-14 (1'-2')	Total/NA	Solid	8260D	54391
860-26536-54	SNR-14 (14'-15')	Total/NA	Solid	8260D	54391
MB 860-54417/9	Method Blank	Total/NA	Solid	8260D	
LCS 860-54417/3	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 860-54417/4	Lab Control Sample Dup	Total/NA	Solid	8260D	
860-26536-10 MS - DL	SNR-03 (5'-6')	Total/NA	Solid	8260D	54229

Analysis Batch: 54516

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-6 - DL2	SNR-02 (1'-2')	Total/NA	Solid	8260D	54391
860-26536-8 - DL2	SNR-02 (7'-8')	Total/NA	Solid	8260D	54229
860-26536-35	SNR-08 (13'-13.5')	Total/NA	Solid	8260D	54350
860-26536-38	SNR-10 (10.5'-11.5')	Total/NA	Solid	8260D	54350
860-26536-39	SNR-10 (14.5'-15')	Total/NA	Solid	8260D	54350
860-26536-45	SNR-12 (6'-7')	Total/NA	Solid	8260D	54523
860-26536-45 - DL	SNR-12 (6'-7')	Total/NA	Solid	8260D	54391
860-26536-46	SNR-12 (9.5'-10')	Total/NA	Solid	8260D	54391
860-26536-49	SNR-13 (6'-7')	Total/NA	Solid	8260D	54391
MB 860-54516/11	Method Blank	Total/NA	Solid	8260D	
LCS 860-54516/3	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 860-54516/4	Lab Control Sample Dup	Total/NA	Solid	8260D	
860-26536-8 MS - DL2	SNR-02 (7'-8')	Total/NA	Solid	8260D	54229

Prep Batch: 54523

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-45	SNR-12 (6'-7')	Total/NA	Solid	5030C	

Analysis Batch: 54534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-14 - DL2	SNR-06 (7'-8')	Total/NA	Solid	8260D	54391
860-26536-21 - DL	SNR-05 (5'-6')	Total/NA	Solid	8260D	54350
860-26536-26 - DL	SNR-07 (10'-12')	Total/NA	Solid	8260D	54350
860-26536-27 - DL	SNR-07 (14'-15')	Total/NA	Solid	8260D	54350

QC Association Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

GC/MS VOA (Continued)

Analysis Batch: 54534 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-29 - DL	SNR-09 (6'-7')	Total/NA	Solid	8260D	54350
860-26536-30	SNR-09 (8'-9')	Total/NA	Solid	8260D	54350
860-26536-30 - DL	SNR-09 (8'-9')	Total/NA	Solid	8260D	54350
860-26536-31	SNR-09 (13'-14')	Total/NA	Solid	8260D	54350
860-26536-31 - DL	SNR-09 (13'-14')	Total/NA	Solid	8260D	54350
860-26536-47	SNR-12 (14'-15')	Total/NA	Solid	8260D	54618
860-26536-56	BD02-05162022	Total/NA	Solid	8260D	54391
860-26536-57 - DL	BD01-05172022	Total/NA	Solid	8260D	54391
MB 860-54534/8	Method Blank	Total/NA	Solid	8260D	
LCS 860-54534/3	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 860-54534/4	Lab Control Sample Dup	Total/NA	Solid	8260D	
860-26536-14 MS - DL2	SNR-06 (7'-8')	Total/NA	Solid	8260D	54391

Prep Batch: 54601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-15 - DL	SNR-06 (5'-6')	Total/NA	Solid	5030C	

Prep Batch: 54618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-22	SNR-05 (13'-14')	Total/NA	Solid	5030C	
860-26536-22 - DL	SNR-05 (13'-14')	Total/NA	Solid	5030C	
860-26536-22 - DL2	SNR-05 (13'-14')	Total/NA	Solid	5030C	
860-26536-33	SNR-08 (5'-6')	Total/NA	Solid	5030C	
860-26536-47	SNR-12 (14'-15')	Total/NA	Solid	5030C	
860-26536-47 - DL	SNR-12 (14'-15')	Total/NA	Solid	5030C	
860-26536-22 MS - DL2	SNR-05 (13'-14')	Total/NA	Solid	5030C	

Analysis Batch: 54709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-35	SNR-08 (13'-13.5')	Total/NA	Solid	8260D	54350
860-26536-38	SNR-10 (10.5'-11.5')	Total/NA	Solid	8260D	54350
860-26536-45	SNR-12 (6'-7')	Total/NA	Solid	8260D	54768
860-26536-46	SNR-12 (9.5'-10')	Total/NA	Solid	8260D	54391
860-26536-47 - DL	SNR-12 (14'-15')	Total/NA	Solid	8260D	54618
860-26536-48 - DL	SNR-13 (1'-2')	Total/NA	Solid	8260D	54728
860-26536-49	SNR-13 (6'-7')	Total/NA	Solid	8260D	54391
860-26536-52	SNR-14 (5'-6')	Total/NA	Solid	8260D	54768
860-26536-52 - DL	SNR-14 (5'-6')	Total/NA	Solid	8260D	54391
860-26536-53	SNR-14 (9'-10')	Total/NA	Solid	8260D	54768
860-26536-53 - DL	SNR-14 (9'-10')	Total/NA	Solid	8260D	54391
860-26536-55	BD01-05162022	Total/NA	Solid	8260D	54391
860-26536-57	BD01-05172022	Total/NA	Solid	8260D	54391
860-26536-58	BD01-05182022	Total/NA	Solid	8260D	54768
MB 860-54709/8	Method Blank	Total/NA	Solid	8260D	
LCS 860-54709/3	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 860-54709/4	Lab Control Sample Dup	Total/NA	Solid	8260D	
860-26536-48 MS - DL	SNR-13 (1'-2')	Total/NA	Solid	8260D	54728

Analysis Batch: 54712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-18 - DL	SNR-04 (11'-12')	Total/NA	Solid	8260D	54391

QC Association Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

GC/MS VOA (Continued)

Analysis Batch: 54712 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-22	SNR-05 (13'-14')	Total/NA	Solid	8260D	54618
860-26536-22 - DL	SNR-05 (13'-14')	Total/NA	Solid	8260D	54618
860-26536-33	SNR-08 (5'-6')	Total/NA	Solid	8260D	54618
860-26536-39	SNR-10 (14.5'-15')	Total/NA	Solid	8260D	54350
MB 860-54712/10	Method Blank	Total/NA	Solid	8260D	
LCS 860-54712/5	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 860-54712/6	Lab Control Sample Dup	Total/NA	Solid	8260D	
860-26536-39 MS	SNR-10 (14.5'-15')	Total/NA	Solid	8260D	54350

Prep Batch: 54728

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-48 - DL	SNR-13 (1'-2')	Total/NA	Solid	5030C	
860-26536-48 MS - DL	SNR-13 (1'-2')	Total/NA	Solid	5030C	

Prep Batch: 54768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-45	SNR-12 (6'-7')	Total/NA	Solid	5030C	
860-26536-52	SNR-14 (5'-6')	Total/NA	Solid	5030C	
860-26536-53	SNR-14 (9'-10')	Total/NA	Solid	5030C	
860-26536-58	BD01-05182022	Total/NA	Solid	5030C	

Analysis Batch: 54844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-7 - DL2	SNR-02 (4'-5')	Total/NA	Solid	8260D	54391
860-26536-12	SNR-03 (12'-13')	Total/NA	Solid	8260D	54852
860-26536-50	SNR-13 (14'-15')	Total/NA	Solid	8260D	54852
860-26536-51	SNR-14 (1'-2')	Total/NA	Solid	8260D	54852
MB 860-54844/8	Method Blank	Total/NA	Solid	8260D	
LCS 860-54844/3	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 860-54844/4	Lab Control Sample Dup	Total/NA	Solid	8260D	
860-26536-7 MS - DL2	SNR-02 (4'-5')	Total/NA	Solid	8260D	54391

Analysis Batch: 54846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-15	SNR-06 (5'-6')	Total/NA	Solid	8260D	54852
860-26536-15 - DL	SNR-06 (5'-6')	Total/NA	Solid	8260D	54601
860-26536-16	SNR-04 (1'-2')	Total/NA	Solid	8260D	54852
860-26536-22 - DL2	SNR-05 (13'-14')	Total/NA	Solid	8260D	54618
860-26536-23	SNR-05 (14'-15')	Total/NA	Solid	8260D	54852
MB 860-54846/8	Method Blank	Total/NA	Solid	8260D	
LCS 860-54846/3	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 860-54846/4	Lab Control Sample Dup	Total/NA	Solid	8260D	
860-26536-22 MS - DL2	SNR-05 (13'-14')	Total/NA	Solid	8260D	54618

Analysis Batch: 54849

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-9 - DL2	SNR-03 (1'-2')	Total/NA	Solid	8260D	54391
860-26536-11 - DL2	SNR-03 (10'-11')	Total/NA	Solid	8260D	54391
MB 860-54849/8	Method Blank	Total/NA	Solid	8260D	
LCS 860-54849/3	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 860-54849/4	Lab Control Sample Dup	Total/NA	Solid	8260D	

QC Association Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

GC/MS VOA (Continued)

Analysis Batch: 54849 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-9 MS - DL2	SNR-03 (1'-2')	Total/NA	Solid	8260D	54391

Prep Batch: 54852

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-12	SNR-03 (12'-13')	Total/NA	Solid	5030C	
860-26536-15	SNR-06 (5'-6')	Total/NA	Solid	5030C	
860-26536-16	SNR-04 (1'-2')	Total/NA	Solid	5030C	
860-26536-23	SNR-05 (14'-15')	Total/NA	Solid	5030C	
860-26536-50	SNR-13 (14'-15')	Total/NA	Solid	5030C	
860-26536-51	SNR-14 (1'-2')	Total/NA	Solid	5030C	

Analysis Batch: 55101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-39	SNR-10 (14.5'-15')	Total/NA	Solid	8260D	54350
MB 860-55101/9	Method Blank	Total/NA	Solid	8260D	
LCS 860-55101/3	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 860-55101/4	Lab Control Sample Dup	Total/NA	Solid	8260D	

GC/MS Semi VOA

Prep Batch: 54197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-1	SNR-EX CONF (1.5'-2.5')	Total/NA	Solid	3546	
MB 860-54197/1-A	Method Blank	Total/NA	Solid	3546	
LCS 860-54197/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 860-54197/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	

Analysis Batch: 54393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 860-54197/1-A	Method Blank	Total/NA	Solid	8270D SIM	54197
LCS 860-54197/2-A	Lab Control Sample	Total/NA	Solid	8270D SIM	54197
LCSD 860-54197/3-A	Lab Control Sample Dup	Total/NA	Solid	8270D SIM	54197

Analysis Batch: 54483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-1	SNR-EX CONF (1.5'-2.5')	Total/NA	Solid	8270D SIM	54197

GC Semi VOA

Analysis Batch: 54321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-21	SNR-05 (5'-6')	Total/NA	Solid	8015B NM	54381
860-26536-22	SNR-05 (13'-14')	Total/NA	Solid	8015B NM	54381
860-26536-23	SNR-05 (14'-15')	Total/NA	Solid	8015B NM	54381
860-26536-25	SNR-07 (6'-7')	Total/NA	Solid	8015B NM	54381
860-26536-26	SNR-07 (10'-12')	Total/NA	Solid	8015B NM	54381
860-26536-27	SNR-07 (14'-15')	Total/NA	Solid	8015B NM	54381
860-26536-28	SNR-09 (1'-2')	Total/NA	Solid	8015B NM	54381
860-26536-29	SNR-09 (6'-7')	Total/NA	Solid	8015B NM	54381
860-26536-30	SNR-09 (8'-9')	Total/NA	Solid	8015B NM	54381
860-26536-31	SNR-09 (13'-14')	Total/NA	Solid	8015B NM	54381
860-26536-32	SNR-08 (1'-2')	Total/NA	Solid	8015B NM	54381

QC Association Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

GC Semi VOA (Continued)

Analysis Batch: 54321 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-33	SNR-08 (5'-6')	Total/NA	Solid	8015B NM	54381
860-26536-34	SNR-08 (9'-10')	Total/NA	Solid	8015B NM	54381
860-26536-35	SNR-08 (13'-13.5')	Total/NA	Solid	8015B NM	54381
MB 860-54381/1-A	Method Blank	Total/NA	Solid	8015B NM	54381
LCS 860-54381/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	54381
LCSD 860-54381/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	54381
860-26536-22 MS	SNR-05 (13'-14')	Total/NA	Solid	8015B NM	54381
860-26536-22 MSD	SNR-05 (13'-14')	Total/NA	Solid	8015B NM	54381

Prep Batch: 54379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-1	SNR-EX CONF (1.5'-2.5')	Total/NA	Solid	8015NM Prep	
860-26536-2	SNR-01 (1'-2')	Total/NA	Solid	8015NM Prep	
860-26536-3	SNR-01 (5'-6')	Total/NA	Solid	8015NM Prep	
860-26536-4	SNR-01 (9'-10')	Total/NA	Solid	8015NM Prep	
860-26536-5	SNR-01 (14'-15')	Total/NA	Solid	8015NM Prep	
860-26536-6	SNR-02 (1'-2')	Total/NA	Solid	8015NM Prep	
860-26536-7	SNR-02 (4'-5')	Total/NA	Solid	8015NM Prep	
860-26536-8	SNR-02 (7'-8')	Total/NA	Solid	8015NM Prep	
860-26536-9	SNR-03 (1'-2')	Total/NA	Solid	8015NM Prep	
860-26536-10	SNR-03 (5'-6')	Total/NA	Solid	8015NM Prep	
860-26536-11	SNR-03 (10'-11')	Total/NA	Solid	8015NM Prep	
860-26536-12	SNR-03 (12'-13')	Total/NA	Solid	8015NM Prep	
860-26536-13	SNR-06 (1'-2')	Total/NA	Solid	8015NM Prep	
860-26536-14	SNR-06 (7'-8')	Total/NA	Solid	8015NM Prep	
860-26536-15	SNR-06 (5'-6')	Total/NA	Solid	8015NM Prep	
860-26536-16	SNR-04 (1'-2')	Total/NA	Solid	8015NM Prep	
860-26536-17	SNR-04 (5'-6')	Total/NA	Solid	8015NM Prep	
860-26536-18	SNR-04 (11'-12')	Total/NA	Solid	8015NM Prep	
860-26536-19	SNR-04 (14'-15')	Total/NA	Solid	8015NM Prep	
860-26536-36	SNR-10 (1'-2')	Total/NA	Solid	8015NM Prep	
MB 860-54379/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 860-54379/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 860-54379/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
860-26536-2 MS	SNR-01 (1'-2')	Total/NA	Solid	8015NM Prep	
860-26536-2 MSD	SNR-01 (1'-2')	Total/NA	Solid	8015NM Prep	

Prep Batch: 54381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-20	SNR-05 (1'-2')	Total/NA	Solid	8015NM Prep	
860-26536-21	SNR-05 (5'-6')	Total/NA	Solid	8015NM Prep	
860-26536-22	SNR-05 (13'-14')	Total/NA	Solid	8015NM Prep	
860-26536-23	SNR-05 (14'-15')	Total/NA	Solid	8015NM Prep	
860-26536-24	SNR-07 (1'-2')	Total/NA	Solid	8015NM Prep	
860-26536-25	SNR-07 (6'-7')	Total/NA	Solid	8015NM Prep	
860-26536-26	SNR-07 (10'-12')	Total/NA	Solid	8015NM Prep	
860-26536-27	SNR-07 (14'-15')	Total/NA	Solid	8015NM Prep	
860-26536-28	SNR-09 (1'-2')	Total/NA	Solid	8015NM Prep	
860-26536-29	SNR-09 (6'-7')	Total/NA	Solid	8015NM Prep	
860-26536-30	SNR-09 (8'-9')	Total/NA	Solid	8015NM Prep	
860-26536-31	SNR-09 (13'-14')	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

GC Semi VOA (Continued)

Prep Batch: 54381 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-32	SNR-08 (1'-2')	Total/NA	Solid	8015NM Prep	
860-26536-33	SNR-08 (5'-6')	Total/NA	Solid	8015NM Prep	
860-26536-34	SNR-08 (9'-10')	Total/NA	Solid	8015NM Prep	
860-26536-35	SNR-08 (13'-13.5')	Total/NA	Solid	8015NM Prep	
860-26536-37	SNR-10 (5'-6')	Total/NA	Solid	8015NM Prep	
860-26536-38	SNR-10 (10.5'-11.5')	Total/NA	Solid	8015NM Prep	
860-26536-40	SNR-11 (1'-2')	Total/NA	Solid	8015NM Prep	
860-26536-41	SNR-11 (5'-6')	Total/NA	Solid	8015NM Prep	
MB 860-54381/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 860-54381/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 860-54381/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
860-26536-22 MS	SNR-05 (13'-14')	Total/NA	Solid	8015NM Prep	
860-26536-22 MSD	SNR-05 (13'-14')	Total/NA	Solid	8015NM Prep	

Analysis Batch: 54551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-1	SNR-EX CONF (1.5'-2.5')	Total/NA	Solid	8015B NM	54379
860-26536-6	SNR-02 (1'-2')	Total/NA	Solid	8015B NM	54379
860-26536-7	SNR-02 (4'-5')	Total/NA	Solid	8015B NM	54379
860-26536-9	SNR-03 (1'-2')	Total/NA	Solid	8015B NM	54379
860-26536-10	SNR-03 (5'-6')	Total/NA	Solid	8015B NM	54379
860-26536-11	SNR-03 (10'-11')	Total/NA	Solid	8015B NM	54379
860-26536-12	SNR-03 (12'-13')	Total/NA	Solid	8015B NM	54379
860-26536-13	SNR-06 (1'-2')	Total/NA	Solid	8015B NM	54379
860-26536-14	SNR-06 (7'-8')	Total/NA	Solid	8015B NM	54379
860-26536-15	SNR-06 (5'-6')	Total/NA	Solid	8015B NM	54379
860-26536-16	SNR-04 (1'-2')	Total/NA	Solid	8015B NM	54379
860-26536-17	SNR-04 (5'-6')	Total/NA	Solid	8015B NM	54379
860-26536-18	SNR-04 (11'-12')	Total/NA	Solid	8015B NM	54379
860-26536-19	SNR-04 (14'-15')	Total/NA	Solid	8015B NM	54379
860-26536-24	SNR-07 (1'-2')	Total/NA	Solid	8015B NM	54381

Analysis Batch: 54553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-3	SNR-01 (5'-6')	Total/NA	Solid	8015B NM	54379
860-26536-36	SNR-10 (1'-2')	Total/NA	Solid	8015B NM	54379
860-26536-37	SNR-10 (5'-6')	Total/NA	Solid	8015B NM	54381
860-26536-38	SNR-10 (10.5'-11.5')	Total/NA	Solid	8015B NM	54381
860-26536-39	SNR-10 (14.5'-15')	Total/NA	Solid	8015B NM	54573
860-26536-41	SNR-11 (5'-6')	Total/NA	Solid	8015B NM	54381
860-26536-42	SNR-11 (9'-10')	Total/NA	Solid	8015B NM	54573
860-26536-43	SNR-11 (14.5'-15')	Total/NA	Solid	8015B NM	54573
860-26536-44	SNR-12 (1'-2')	Total/NA	Solid	8015B NM	54573
860-26536-45	SNR-12 (6'-7')	Total/NA	Solid	8015B NM	54573
860-26536-46	SNR-12 (9.5'-10')	Total/NA	Solid	8015B NM	54573
860-26536-47	SNR-12 (14'-15')	Total/NA	Solid	8015B NM	54573
860-26536-49	SNR-13 (6'-7')	Total/NA	Solid	8015B NM	54573
860-26536-50	SNR-13 (14'-15')	Total/NA	Solid	8015B NM	54573
860-26536-51	SNR-14 (1'-2')	Total/NA	Solid	8015B NM	54573
860-26536-52	SNR-14 (5'-6')	Total/NA	Solid	8015B NM	54573
860-26536-53	SNR-14 (9'-10')	Total/NA	Solid	8015B NM	54573

QC Association Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

GC Semi VOA (Continued)

Analysis Batch: 54553 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-54	SNR-14 (14'-15')	Total/NA	Solid	8015B NM	54573
860-26536-55	BD01-05162022	Total/NA	Solid	8015B NM	54573
860-26536-56	BD02-05162022	Total/NA	Solid	8015B NM	54573
860-26536-57	BD01-05172022	Total/NA	Solid	8015B NM	54573
860-26536-58	BD01-05182022	Total/NA	Solid	8015B NM	54573
MB 860-54573/1-A	Method Blank	Total/NA	Solid	8015B NM	54573
LCS 860-54573/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	54573
LCSD 860-54573/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	54573
860-26536-42 MS	SNR-11 (9'-10')	Total/NA	Solid	8015B NM	54573
860-26536-42 MSD	SNR-11 (9'-10')	Total/NA	Solid	8015B NM	54573

Analysis Batch: 54559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-2	SNR-01 (1'-2')	Total/NA	Solid	8015B NM	54379
860-26536-3	SNR-01 (5'-6')	Total/NA	Solid	8015B NM	54379
860-26536-4	SNR-01 (9'-10')	Total/NA	Solid	8015B NM	54379
860-26536-5	SNR-01 (14'-15')	Total/NA	Solid	8015B NM	54379
860-26536-8	SNR-02 (7'-8')	Total/NA	Solid	8015B NM	54379
MB 860-54379/1-A	Method Blank	Total/NA	Solid	8015B NM	54379
LCS 860-54379/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	54379
LCSD 860-54379/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	54379
860-26536-2 MS	SNR-01 (1'-2')	Total/NA	Solid	8015B NM	54379
860-26536-2 MSD	SNR-01 (1'-2')	Total/NA	Solid	8015B NM	54379

Prep Batch: 54573

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-39	SNR-10 (14.5'-15')	Total/NA	Solid	8015NM Prep	
860-26536-42	SNR-11 (9'-10')	Total/NA	Solid	8015NM Prep	
860-26536-43	SNR-11 (14.5'-15')	Total/NA	Solid	8015NM Prep	
860-26536-44	SNR-12 (1'-2')	Total/NA	Solid	8015NM Prep	
860-26536-45	SNR-12 (6'-7')	Total/NA	Solid	8015NM Prep	
860-26536-46	SNR-12 (9.5'-10')	Total/NA	Solid	8015NM Prep	
860-26536-47	SNR-12 (14'-15')	Total/NA	Solid	8015NM Prep	
860-26536-48	SNR-13 (1'-2')	Total/NA	Solid	8015NM Prep	
860-26536-49	SNR-13 (6'-7')	Total/NA	Solid	8015NM Prep	
860-26536-50	SNR-13 (14'-15')	Total/NA	Solid	8015NM Prep	
860-26536-51	SNR-14 (1'-2')	Total/NA	Solid	8015NM Prep	
860-26536-52	SNR-14 (5'-6')	Total/NA	Solid	8015NM Prep	
860-26536-53	SNR-14 (9'-10')	Total/NA	Solid	8015NM Prep	
860-26536-54	SNR-14 (14'-15')	Total/NA	Solid	8015NM Prep	
860-26536-55	BD01-05162022	Total/NA	Solid	8015NM Prep	
860-26536-56	BD02-05162022	Total/NA	Solid	8015NM Prep	
860-26536-57	BD01-05172022	Total/NA	Solid	8015NM Prep	
860-26536-58	BD01-05182022	Total/NA	Solid	8015NM Prep	
MB 860-54573/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 860-54573/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 860-54573/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
860-26536-42 MS	SNR-11 (9'-10')	Total/NA	Solid	8015NM Prep	
860-26536-42 MSD	SNR-11 (9'-10')	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

GC Semi VOA

Analysis Batch: 54680

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-8	SNR-02 (7'-8')	Total/NA	Solid	8015B NM	54379
860-26536-40	SNR-11 (1'-2')	Total/NA	Solid	8015B NM	54381
860-26536-48	SNR-13 (1'-2')	Total/NA	Solid	8015B NM	54573

Analysis Batch: 54946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-20	SNR-05 (1'-2')	Total/NA	Solid	8015B NM	54381

Metals

Prep Batch: 54923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-1	SNR-EX CONF (1.5'-2.5')	Total/NA	Solid	7471B	
MB 860-54923/10-A	Method Blank	Total/NA	Solid	7471B	
LCS 860-54923/11-A	Lab Control Sample	Total/NA	Solid	7471B	
LCSD 860-54923/12-A	Lab Control Sample Dup	Total/NA	Solid	7471B	

Analysis Batch: 55044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-1	SNR-EX CONF (1.5'-2.5')	Total/NA	Solid	7471B	54923
MB 860-54923/10-A	Method Blank	Total/NA	Solid	7471B	54923
LCS 860-54923/11-A	Lab Control Sample	Total/NA	Solid	7471B	54923
LCSD 860-54923/12-A	Lab Control Sample Dup	Total/NA	Solid	7471B	54923

Prep Batch: 56688

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-1	SNR-EX CONF (1.5'-2.5')	Total/NA	Solid	3051A	
MB 860-56688/1-A	Method Blank	Total/NA	Solid	3051A	
LCS 860-56688/2-A	Lab Control Sample	Total/NA	Solid	3051A	
LCSD 860-56688/3-A	Lab Control Sample Dup	Total/NA	Solid	3051A	

Analysis Batch: 56916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-1	SNR-EX CONF (1.5'-2.5')	Total/NA	Solid	6020A	56688
MB 860-56688/1-A	Method Blank	Total/NA	Solid	6020A	56688
LCS 860-56688/2-A	Lab Control Sample	Total/NA	Solid	6020A	56688
LCSD 860-56688/3-A	Lab Control Sample Dup	Total/NA	Solid	6020A	56688

General Chemistry

Analysis Batch: 54423

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-1	SNR-EX CONF (1.5'-2.5')	Total/NA	Solid	Moisture - 2540	
860-26536-36	SNR-10 (1'-2')	Total/NA	Solid	Moisture - 2540	
860-26536-37	SNR-10 (5'-6')	Total/NA	Solid	Moisture - 2540	
860-26536-38	SNR-10 (10.5'-11.5')	Total/NA	Solid	Moisture - 2540	
860-26536-39	SNR-10 (14.5'-15')	Total/NA	Solid	Moisture - 2540	
860-26536-40	SNR-11 (1'-2')	Total/NA	Solid	Moisture - 2540	
MB 860-54423/1	Method Blank	Total/NA	Solid	Moisture - 2540	

QC Association Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

General Chemistry

Analysis Batch: 54460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-41	SNR-11 (5'-6')	Total/NA	Solid	Moisture - 2540	
860-26536-42	SNR-11 (9'-10')	Total/NA	Solid	Moisture - 2540	
860-26536-43	SNR-11 (14.5'-15')	Total/NA	Solid	Moisture - 2540	
860-26536-44	SNR-12 (1'-2')	Total/NA	Solid	Moisture - 2540	
860-26536-45	SNR-12 (6'-7')	Total/NA	Solid	Moisture - 2540	
860-26536-46	SNR-12 (9.5'-10')	Total/NA	Solid	Moisture - 2540	
860-26536-47	SNR-12 (14'-15')	Total/NA	Solid	Moisture - 2540	
860-26536-48	SNR-13 (1'-2')	Total/NA	Solid	Moisture - 2540	
860-26536-49	SNR-13 (6'-7')	Total/NA	Solid	Moisture - 2540	
860-26536-50	SNR-13 (14'-15')	Total/NA	Solid	Moisture - 2540	
860-26536-51	SNR-14 (1'-2')	Total/NA	Solid	Moisture - 2540	
860-26536-52	SNR-14 (5'-6')	Total/NA	Solid	Moisture - 2540	
860-26536-53	SNR-14 (9'-10')	Total/NA	Solid	Moisture - 2540	
860-26536-54	SNR-14 (14'-15')	Total/NA	Solid	Moisture - 2540	
860-26536-55	BD01-05162022	Total/NA	Solid	Moisture - 2540	
860-26536-56	BD02-05162022	Total/NA	Solid	Moisture - 2540	
860-26536-57	BD01-05172022	Total/NA	Solid	Moisture - 2540	
860-26536-58	BD01-05182022	Total/NA	Solid	Moisture - 2540	
MB 860-54460/1	Method Blank	Total/NA	Solid	Moisture - 2540	
860-26536-41 DU	SNR-11 (5'-6')	Total/NA	Solid	Moisture - 2540	
860-26536-51 DU	SNR-14 (1'-2')	Total/NA	Solid	Moisture - 2540	

Analysis Batch: 54655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-2	SNR-01 (1'-2')	Total/NA	Solid	Moisture - 2540	
860-26536-3	SNR-01 (5'-6')	Total/NA	Solid	Moisture - 2540	
860-26536-4	SNR-01 (9'-10')	Total/NA	Solid	Moisture - 2540	
860-26536-5	SNR-01 (14'-15')	Total/NA	Solid	Moisture - 2540	
860-26536-6	SNR-02 (1'-2')	Total/NA	Solid	Moisture - 2540	
860-26536-7	SNR-02 (4'-5')	Total/NA	Solid	Moisture - 2540	
860-26536-8	SNR-02 (7'-8')	Total/NA	Solid	Moisture - 2540	
860-26536-9	SNR-03 (1'-2')	Total/NA	Solid	Moisture - 2540	
860-26536-10	SNR-03 (5'-6')	Total/NA	Solid	Moisture - 2540	
860-26536-11	SNR-03 (10'-11')	Total/NA	Solid	Moisture - 2540	
860-26536-12	SNR-03 (12'-13')	Total/NA	Solid	Moisture - 2540	
860-26536-13	SNR-06 (1'-2')	Total/NA	Solid	Moisture - 2540	
860-26536-14	SNR-06 (7'-8')	Total/NA	Solid	Moisture - 2540	
860-26536-15	SNR-06 (5'-6')	Total/NA	Solid	Moisture - 2540	
860-26536-16	SNR-04 (1'-2')	Total/NA	Solid	Moisture - 2540	
860-26536-17	SNR-04 (5'-6')	Total/NA	Solid	Moisture - 2540	
MB 860-54655/1	Method Blank	Total/NA	Solid	Moisture - 2540	
860-26536-2 DU	SNR-01 (1'-2')	Total/NA	Solid	Moisture - 2540	
860-26536-2 DU	SNR-01 (1'-2')	Total/NA	Solid	Moisture - 2540	
860-26536-2 DU	SNR-01 (1'-2')	Total/NA	Solid	Moisture - 2540	
860-26536-2 DU	SNR-01 (1'-2')	Total/NA	Solid	Moisture - 2540	

Analysis Batch: 54660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-18	SNR-04 (11'-12')	Total/NA	Solid	Moisture - 2540	
860-26536-19	SNR-04 (14'-15')	Total/NA	Solid	Moisture - 2540	
860-26536-20	SNR-05 (1'-2')	Total/NA	Solid	Moisture - 2540	

QC Association Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

General Chemistry (Continued)

Analysis Batch: 54660 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
860-26536-21	SNR-05 (5'-6')	Total/NA	Solid	Moisture - 2540	
860-26536-22	SNR-05 (13'-14')	Total/NA	Solid	Moisture - 2540	
860-26536-23	SNR-05 (14'-15')	Total/NA	Solid	Moisture - 2540	
860-26536-24	SNR-07 (1'-2')	Total/NA	Solid	Moisture - 2540	
860-26536-25	SNR-07 (6'-7')	Total/NA	Solid	Moisture - 2540	
860-26536-26	SNR-07 (10'-12')	Total/NA	Solid	Moisture - 2540	
860-26536-27	SNR-07 (14'-15')	Total/NA	Solid	Moisture - 2540	
860-26536-28	SNR-09 (1'-2')	Total/NA	Solid	Moisture - 2540	
860-26536-29	SNR-09 (6'-7')	Total/NA	Solid	Moisture - 2540	
860-26536-30	SNR-09 (8'-9')	Total/NA	Solid	Moisture - 2540	
860-26536-31	SNR-09 (13'-14')	Total/NA	Solid	Moisture - 2540	
860-26536-32	SNR-08 (1'-2')	Total/NA	Solid	Moisture - 2540	
860-26536-33	SNR-08 (5'-6')	Total/NA	Solid	Moisture - 2540	
860-26536-34	SNR-08 (9'-10')	Total/NA	Solid	Moisture - 2540	
860-26536-35	SNR-08 (13'-13.5')	Total/NA	Solid	Moisture - 2540	
MB 860-54660/1	Method Blank	Total/NA	Solid	Moisture - 2540	
860-26536-27 DU	SNR-07 (14'-15')	Total/NA	Solid	Moisture - 2540	
860-26536-33 DU	SNR-08 (5'-6')	Total/NA	Solid	Moisture - 2540	

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-EX CONF (1.5'-2.5')
Lab Sample ID: 860-26536-1
Date Collected: 05/18/22 09:30
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54423	05/25/22 16:09	KBN	XEN STF

Client Sample ID: SNR-EX CONF (1.5'-2.5')
Lab Sample ID: 860-26536-1
Date Collected: 05/18/22 09:30
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 96.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.01 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54260	05/25/22 07:37	KLV	XEN STF
Total/NA	Prep	3546			15.02 g	1 mL	54197	05/24/22 13:21	TH	XEN STF
Total/NA	Analysis	8270D SIM		1			54483	05/26/22 12:07	IS	XEN STF
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	54379	05/25/22 12:56	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54551	05/26/22 15:06	SAR	XEN STF
Total/NA	Prep	3051A			.55 g	50 mL	56688	06/13/22 13:12	PB	XEN STF
Total/NA	Analysis	6020A		10			56916	06/14/22 15:34	SHZ	XEN STF
Total/NA	Prep	7471B			.57 g	50 mL	54923	05/31/22 10:12	AGR	XEN STF
Total/NA	Analysis	7471B		1			55044	05/31/22 16:46	SHZ	XEN STF

Client Sample ID: SNR-01 (1'-2')
Lab Sample ID: 860-26536-2
Date Collected: 05/16/22 10:25
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54655	05/26/22 18:08	KBN	XEN STF

Client Sample ID: SNR-01 (1'-2')
Lab Sample ID: 860-26536-2
Date Collected: 05/16/22 10:25
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 98.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.05 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54260	05/25/22 07:14	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10 g	10 mL	54379	05/25/22 12:56	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54559	05/26/22 15:05	SAR	XEN STF

Client Sample ID: SNR-01 (5'-6')
Lab Sample ID: 860-26536-3
Date Collected: 05/16/22 10:30
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54655	05/26/22 18:08	KBN	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-01 (5'-6')
Lab Sample ID: 860-26536-3
Date Collected: 05/16/22 10:30
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.96 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D		200	5 mL	5 mL	54260	05/25/22 13:15	KLV	XEN STF
Total/NA	Prep	5030C	DL		4.96 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D	DL	1000	5 mL	5 mL	54367	05/25/22 16:55	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	54379	05/25/22 12:56	SYH	XEN STF
Total/NA	Analysis	8015B NM		10			54553	05/27/22 05:33	W1N	XEN STF
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	54379	05/25/22 12:56	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54559	05/26/22 16:04	SAR	XEN STF

Client Sample ID: SNR-01 (9'-10')
Lab Sample ID: 860-26536-4
Date Collected: 05/16/22 10:35
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54655	05/26/22 18:08	KBN	XEN STF

Client Sample ID: SNR-01 (9'-10')
Lab Sample ID: 860-26536-4
Date Collected: 05/16/22 10:35
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.05 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D		200	5 mL	5 mL	54260	05/25/22 13:37	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10 g	10 mL	54379	05/25/22 12:56	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54559	05/26/22 16:23	SAR	XEN STF

Client Sample ID: SNR-01 (14'-15')
Lab Sample ID: 860-26536-5
Date Collected: 05/16/22 10:40
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54655	05/26/22 18:08	KBN	XEN STF

Client Sample ID: SNR-01 (14'-15')
Lab Sample ID: 860-26536-5
Date Collected: 05/16/22 10:40
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 91.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.99 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54260	05/25/22 07:59	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	54379	05/25/22 12:56	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54559	05/26/22 16:42	SAR	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-02 (1'-2')
Lab Sample ID: 860-26536-6
Date Collected: 05/16/22 11:30
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54655	05/26/22 18:08	KBN	XEN STF

Client Sample ID: SNR-02 (1'-2')
Lab Sample ID: 860-26536-6
Date Collected: 05/16/22 11:30
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 99.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.00 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54260	05/25/22 08:22	KLV	XEN STF
Total/NA	Prep	5030C	DL		4.97 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	25	5 mL	5 mL	54417	05/26/22 02:37	KLV	XEN STF
Total/NA	Prep	5030C	DL2		4.97 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D	DL2	200	5 mL	5 mL	54516	05/26/22 21:56	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	54379	05/25/22 12:56	SYH	XEN STF
Total/NA	Analysis	8015B NM		20			54551	05/26/22 17:05	SAR	XEN STF

Client Sample ID: SNR-02 (4'-5')
Lab Sample ID: 860-26536-7
Date Collected: 05/16/22 11:35
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54655	05/26/22 18:08	KBN	XEN STF

Client Sample ID: SNR-02 (4'-5')
Lab Sample ID: 860-26536-7
Date Collected: 05/16/22 11:35
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 96.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.99 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54260	05/25/22 08:44	KLV	XEN STF
Total/NA	Prep	5030C	DL2		5.03 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D	DL2	200	5 mL	5 mL	54844	05/28/22 15:45	KLV	XEN STF
Total/NA	Prep	5030C	DL		5.03 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	25	5 mL	5 mL	54367	05/25/22 17:27	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	54379	05/25/22 12:56	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54551	05/26/22 16:45	SAR	XEN STF

Client Sample ID: SNR-02 (7'-8')
Lab Sample ID: 860-26536-8
Date Collected: 05/16/22 11:40
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54655	05/26/22 18:08	KBN	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-02 (7'-8')
Lab Sample ID: 860-26536-8
Date Collected: 05/16/22 11:40
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 91.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.95 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D		200	5 mL	5 mL	54260	05/25/22 14:00	KLV	XEN STF
Total/NA	Prep	5030C	DL		4.95 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D	DL	1000	5 mL	5 mL	54371	05/25/22 20:19	KLV	XEN STF
Total/NA	Prep	5030C	DL2		4.95 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D	DL2	2000	5 mL	5 mL	54516	05/26/22 16:06	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	54379	05/25/22 12:56	SYH	XEN STF
Total/NA	Analysis	8015B NM		10			54680	05/27/22 11:59	T1S	XEN STF
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	54379	05/25/22 12:56	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54559	05/26/22 17:02	SAR	XEN STF

Client Sample ID: SNR-03 (1'-2')
Lab Sample ID: 860-26536-9
Date Collected: 05/16/22 12:30
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54655	05/26/22 18:08	KBN	XEN STF

Client Sample ID: SNR-03 (1'-2')
Lab Sample ID: 860-26536-9
Date Collected: 05/16/22 12:30
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 98.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.98 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54260	05/25/22 09:07	KLV	XEN STF
Total/NA	Prep	5030C	DL		4.98 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	25	5 mL	5 mL	54367	05/25/22 17:47	KLV	XEN STF
Total/NA	Prep	5030C	DL2		4.98 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D	DL2	200	5 mL	5 mL	54849	05/28/22 14:42	KLV	XEN STF
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	54379	05/25/22 12:56	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54551	05/26/22 15:45	SAR	XEN STF

Client Sample ID: SNR-03 (5'-6')
Lab Sample ID: 860-26536-10
Date Collected: 05/16/22 12:35
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54655	05/26/22 18:08	KBN	XEN STF

Client Sample ID: SNR-03 (5'-6')
Lab Sample ID: 860-26536-10
Date Collected: 05/16/22 12:35
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 97.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.04 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D		200	5 mL	5 mL	54260	05/25/22 14:22	KLV	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-03 (5'-6')
Lab Sample ID: 860-26536-10
Date Collected: 05/16/22 12:35
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 97.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C	DL		5.04 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D	DL	1000	5 mL	5 mL	54417	05/25/22 20:15	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	54379	05/25/22 12:56	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54551	05/26/22 14:46	SAR	XEN STF

Client Sample ID: SNR-03 (10'-11')
Lab Sample ID: 860-26536-11
Date Collected: 05/16/22 12:40
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54655	05/26/22 18:08	KBN	XEN STF

Client Sample ID: SNR-03 (10'-11')
Lab Sample ID: 860-26536-11
Date Collected: 05/16/22 12:40
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 90.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.96 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54260	05/25/22 09:29	KLV	XEN STF
Total/NA	Prep	5030C	DL		5.05 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	25	5 mL	5 mL	54367	05/25/22 18:08	KLV	XEN STF
Total/NA	Prep	5030C	DL2		5.05 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D	DL2	200	5 mL	5 mL	54849	05/28/22 15:02	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	54379	05/25/22 12:56	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54551	05/26/22 12:29	SAR	XEN STF

Client Sample ID: SNR-03 (12'-13')
Lab Sample ID: 860-26536-12
Date Collected: 05/16/22 12:45
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54655	05/26/22 18:08	KBN	XEN STF

Client Sample ID: SNR-03 (12'-13')
Lab Sample ID: 860-26536-12
Date Collected: 05/16/22 12:45
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 89.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.98 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54260	05/25/22 09:52	KLV	XEN STF
Total/NA	Prep	5030C			4.95 g	5 mL	54852	05/28/22 11:53	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54844	05/28/22 15:23	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	54379	05/25/22 12:56	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54551	05/26/22 12:48	SAR	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-06 (1'-2')
Lab Sample ID: 860-26536-13
Date Collected: 05/16/22 14:00
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54655	05/26/22 18:08	KBN	XEN STF

Client Sample ID: SNR-06 (1'-2')
Lab Sample ID: 860-26536-13
Date Collected: 05/16/22 14:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 99.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.95 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54260	05/25/22 10:15	KLV	XEN STF
Total/NA	Prep	5030C	DL		5.01 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	25	5 mL	5 mL	54367	05/25/22 18:28	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	54379	05/25/22 12:56	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54551	05/26/22 16:05	SAR	XEN STF

Client Sample ID: SNR-06 (7'-8')
Lab Sample ID: 860-26536-14
Date Collected: 05/16/22 14:10
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54655	05/26/22 18:08	KBN	XEN STF

Client Sample ID: SNR-06 (7'-8')
Lab Sample ID: 860-26536-14
Date Collected: 05/16/22 14:10
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.04 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54260	05/25/22 10:37	KLV	XEN STF
Total/NA	Prep	5030C	DL2		5.00 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D	DL2	1000	5 mL	5 mL	54534	05/26/22 16:53	KLV	XEN STF
Total/NA	Prep	5030C	DL		5.00 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	100	5 mL	5 mL	54367	05/25/22 19:29	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	54379	05/25/22 12:56	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54551	05/26/22 13:08	SAR	XEN STF

Client Sample ID: SNR-06 (5'-6')
Lab Sample ID: 860-26536-15
Date Collected: 05/16/22 14:05
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54655	05/26/22 18:08	KBN	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-06 (5'-6')
Lab Sample ID: 860-26536-15
Date Collected: 05/16/22 14:05
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.05 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54260	05/25/22 10:59	KLV	XEN STF
Total/NA	Prep	5030C			4.98 g	5 mL	54852	05/28/22 11:53	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54846	05/28/22 15:39	KLV	XEN STF
Total/NA	Prep	5030C	DL		4.99 g	5 mL	54601	05/27/22 15:08	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	25	5 mL	5 mL	54846	05/28/22 16:02	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	54379	05/25/22 12:56	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54551	05/26/22 13:27	SAR	XEN STF

Client Sample ID: SNR-04 (1'-2')
Lab Sample ID: 860-26536-16
Date Collected: 05/16/22 14:45
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54655	05/26/22 18:08	KBN	XEN STF

Client Sample ID: SNR-04 (1'-2')
Lab Sample ID: 860-26536-16
Date Collected: 05/16/22 14:45
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.05 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54260	05/25/22 11:22	KLV	XEN STF
Total/NA	Prep	5030C			4.97 g	5 mL	54852	05/28/22 11:53	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54846	05/28/22 14:52	KLV	XEN STF
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	54379	05/25/22 12:56	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54551	05/26/22 15:25	SAR	XEN STF

Client Sample ID: SNR-04 (5'-6')
Lab Sample ID: 860-26536-17
Date Collected: 05/16/22 14:50
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54655	05/26/22 18:12	KBN	XEN STF

Client Sample ID: SNR-04 (5'-6')
Lab Sample ID: 860-26536-17
Date Collected: 05/16/22 14:50
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 92.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.97 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54260	05/25/22 11:44	KLV	XEN STF
Total/NA	Prep	5030C	DL		4.99 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	25	5 mL	5 mL	54367	05/25/22 18:48	KLV	XEN STF
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	54379	05/25/22 12:56	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54551	05/26/22 13:47	SAR	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-04 (11'-12')
Lab Sample ID: 860-26536-18
Date Collected: 05/16/22 14:55
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54660	05/26/22 19:40	KBN	XEN STF

Client Sample ID: SNR-04 (11'-12')
Lab Sample ID: 860-26536-18
Date Collected: 05/16/22 14:55
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 94.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.97 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54260	05/25/22 12:07	KLV	XEN STF
Total/NA	Prep	5030C	DL		5.00 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	25	5 mL	5 mL	54367	05/25/22 19:09	KLV	XEN STF
Total/NA	Prep	5030C	DL		5.00 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	200	5 mL	5 mL	54712	05/27/22 20:23	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	54379	05/25/22 12:56	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54551	05/26/22 14:07	SAR	XEN STF

Client Sample ID: SNR-04 (14'-15')
Lab Sample ID: 860-26536-19
Date Collected: 05/16/22 15:00
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54660	05/26/22 19:40	KBN	XEN STF

Client Sample ID: SNR-04 (14'-15')
Lab Sample ID: 860-26536-19
Date Collected: 05/16/22 15:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.98 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54260	05/25/22 12:30	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	54379	05/25/22 12:56	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54551	05/26/22 14:26	SAR	XEN STF

Client Sample ID: SNR-05 (1'-2')
Lab Sample ID: 860-26536-20
Date Collected: 05/16/22 16:05
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54660	05/26/22 19:40	KBN	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-05 (1'-2')
Lab Sample ID: 860-26536-20
Date Collected: 05/16/22 16:05
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 99.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.05 g	5 mL	54229	05/24/22 15:45	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54260	05/25/22 12:52	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	54381	05/25/22 13:08	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54946	06/01/22 06:13	T1S	XEN STF

Client Sample ID: SNR-05 (5'-6')
Lab Sample ID: 860-26536-21
Date Collected: 05/16/22 16:10
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54660	05/26/22 19:40	KBN	XEN STF

Client Sample ID: SNR-05 (5'-6')
Lab Sample ID: 860-26536-21
Date Collected: 05/16/22 16:10
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 96.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C	DL		4.98 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	1000	5 mL	5 mL	54534	05/26/22 17:15	KLV	XEN STF
Total/NA	Prep	5030C			4.98 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D		200	5 mL	5 mL	54367	05/25/22 20:10	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	54381	05/25/22 13:08	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54321	05/25/22 23:46	W1N	XEN STF

Client Sample ID: SNR-05 (13'-14')
Lab Sample ID: 860-26536-22
Date Collected: 05/16/22 16:15
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54660	05/26/22 19:40	KBN	XEN STF

Client Sample ID: SNR-05 (13'-14')
Lab Sample ID: 860-26536-22
Date Collected: 05/16/22 16:15
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.96 g	5 mL	54618	05/26/22 15:50	MTMG	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54712	05/27/22 19:13	KLV	XEN STF
Total/NA	Prep	5030C	DL		5.02 g	5 mL	54618	05/26/22 15:50	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	25	5 mL	5 mL	54712	05/27/22 19:36	KLV	XEN STF
Total/NA	Prep	5030C	DL2		5.02 g	5 mL	54618	05/26/22 15:50	MTMG	XEN STF
Total/NA	Analysis	8260D	DL2	200	5 mL	5 mL	54846	05/28/22 16:26	KLV	XEN STF
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	54381	05/25/22 13:08	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54321	05/25/22 18:32	W1N	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-05 (14'-15')
Lab Sample ID: 860-26536-23
Date Collected: 05/16/22 16:20
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54660	05/26/22 19:40	KBN	XEN STF

Client Sample ID: SNR-05 (14'-15')
Lab Sample ID: 860-26536-23
Date Collected: 05/16/22 16:20
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.05 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54417	05/25/22 21:00	KLV	XEN STF
Total/NA	Prep	5030C			4.96 g	5 mL	54852	05/28/22 11:53	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54846	05/28/22 15:16	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	54381	05/25/22 13:08	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54321	05/25/22 19:30	W1N	XEN STF

Client Sample ID: SNR-07 (1'-2')
Lab Sample ID: 860-26536-24
Date Collected: 05/16/22 17:00
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54660	05/26/22 19:40	KBN	XEN STF

Client Sample ID: SNR-07 (1'-2')
Lab Sample ID: 860-26536-24
Date Collected: 05/16/22 17:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 98.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.96 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54417	05/25/22 21:22	KLV	XEN STF
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	54381	05/25/22 13:08	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54551	05/26/22 16:25	SAR	XEN STF

Client Sample ID: SNR-07 (6'-7')
Lab Sample ID: 860-26536-25
Date Collected: 05/16/22 17:05
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54660	05/26/22 19:40	KBN	XEN STF

Client Sample ID: SNR-07 (6'-7')
Lab Sample ID: 860-26536-25
Date Collected: 05/16/22 17:05
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.05 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D		200	5 mL	5 mL	54367	05/25/22 20:30	KLV	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-07 (6'-7')
Lab Sample ID: 860-26536-25
Date Collected: 05/16/22 17:05
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	54381	05/25/22 13:08	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54321	05/25/22 19:49	W1N	XEN STF

Client Sample ID: SNR-07 (10'-12')
Lab Sample ID: 860-26536-26
Date Collected: 05/16/22 17:10
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54660	05/26/22 19:40	KBN	XEN STF

Client Sample ID: SNR-07 (10'-12')
Lab Sample ID: 860-26536-26
Date Collected: 05/16/22 17:10
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C	DL		5.05 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	1000	5 mL	5 mL	54534	05/26/22 18:04	KLV	XEN STF
Total/NA	Prep	5030C			5.05 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D		200	5 mL	5 mL	54367	05/25/22 20:51	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	54381	05/25/22 13:08	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54321	05/25/22 20:09	W1N	XEN STF

Client Sample ID: SNR-07 (14'-15')
Lab Sample ID: 860-26536-27
Date Collected: 05/16/22 17:15
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54660	05/26/22 19:40	KBN	XEN STF

Client Sample ID: SNR-07 (14'-15')
Lab Sample ID: 860-26536-27
Date Collected: 05/16/22 17:15
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 96.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C	DL		5.03 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	1000	5 mL	5 mL	54534	05/26/22 18:26	KLV	XEN STF
Total/NA	Prep	5030C			5.03 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D		200	5 mL	5 mL	54367	05/25/22 21:11	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	54381	05/25/22 13:08	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54321	05/25/22 20:28	W1N	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-09 (1'-2')
Lab Sample ID: 860-26536-28
Date Collected: 05/17/22 08:40
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54660	05/26/22 19:40	KBN	XEN STF

Client Sample ID: SNR-09 (1'-2')
Lab Sample ID: 860-26536-28
Date Collected: 05/17/22 08:40
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 98.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.00 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54417	05/25/22 21:45	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	54381	05/25/22 13:08	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54321	05/25/22 21:07	W1N	XEN STF

Client Sample ID: SNR-09 (6'-7')
Lab Sample ID: 860-26536-29
Date Collected: 05/17/22 08:45
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54660	05/26/22 19:40	KBN	XEN STF

Client Sample ID: SNR-09 (6'-7')
Lab Sample ID: 860-26536-29
Date Collected: 05/17/22 08:45
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 101.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C	DL		4.95 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	1000	5 mL	5 mL	54534	05/26/22 18:49	KLV	XEN STF
Total/NA	Prep	5030C			4.95 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D		200	5 mL	5 mL	54367	05/25/22 21:32	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	54381	05/25/22 13:08	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54321	05/25/22 21:27	W1N	XEN STF

Client Sample ID: SNR-09 (8'-9')
Lab Sample ID: 860-26536-30
Date Collected: 05/17/22 08:50
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54660	05/26/22 19:40	KBN	XEN STF

Client Sample ID: SNR-09 (8'-9')
Lab Sample ID: 860-26536-30
Date Collected: 05/17/22 08:50
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.01 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D		200	5 mL	5 mL	54534	05/26/22 19:11	KLV	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-09 (8'-9')
Lab Sample ID: 860-26536-30
Date Collected: 05/17/22 08:50
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C	DL		5.01 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	2000	5 mL	5 mL	54534	05/26/22 19:34	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	54381	05/25/22 13:08	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54321	05/25/22 21:47	W1N	XEN STF

Client Sample ID: SNR-09 (13'-14')
Lab Sample ID: 860-26536-31
Date Collected: 05/17/22 08:55
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54660	05/26/22 19:40	KBN	XEN STF

Client Sample ID: SNR-09 (13'-14')
Lab Sample ID: 860-26536-31
Date Collected: 05/17/22 08:55
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.01 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D		200	5 mL	5 mL	54534	05/26/22 19:56	KLV	XEN STF
Total/NA	Prep	5030C	DL		5.01 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	1000	5 mL	5 mL	54534	05/26/22 20:19	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	54381	05/25/22 13:08	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54321	05/25/22 22:07	W1N	XEN STF

Client Sample ID: SNR-08 (1'-2')
Lab Sample ID: 860-26536-32
Date Collected: 05/17/22 10:00
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54660	05/26/22 19:40	KBN	XEN STF

Client Sample ID: SNR-08 (1'-2')
Lab Sample ID: 860-26536-32
Date Collected: 05/17/22 10:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.00 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54417	05/25/22 22:07	KLV	XEN STF
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	54381	05/25/22 13:08	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54321	05/25/22 22:26	W1N	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-08 (5'-6')
Lab Sample ID: 860-26536-33
Date Collected: 05/17/22 10:05
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54660	05/26/22 19:40	KBN	XEN STF

Client Sample ID: SNR-08 (5'-6')
Lab Sample ID: 860-26536-33
Date Collected: 05/17/22 10:05
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 97.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.97 g	5 mL	54618	05/26/22 15:50	MTMG	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54712	05/27/22 20:00	KLV	XEN STF
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	54381	05/25/22 13:08	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54321	05/25/22 22:46	W1N	XEN STF

Client Sample ID: SNR-08 (9'-10')
Lab Sample ID: 860-26536-34
Date Collected: 05/17/22 10:10
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54660	05/26/22 19:40	KBN	XEN STF

Client Sample ID: SNR-08 (9'-10')
Lab Sample ID: 860-26536-34
Date Collected: 05/17/22 10:10
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 97.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.01 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D		200	5 mL	5 mL	54371	05/25/22 20:42	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	54381	05/25/22 13:08	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54321	05/25/22 23:05	W1N	XEN STF

Client Sample ID: SNR-08 (13'-13.5')
Lab Sample ID: 860-26536-35
Date Collected: 05/17/22 10:15
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54660	05/26/22 19:40	KBN	XEN STF

Client Sample ID: SNR-08 (13'-13.5')
Lab Sample ID: 860-26536-35
Date Collected: 05/17/22 10:15
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.98 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D		25	5 mL	5 mL	54709	05/27/22 16:00	KLV	XEN STF
Total/NA	Prep	5030C			4.98 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D		25	5 mL	5 mL	54516	05/26/22 19:13	KLV	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-08 (13'-13.5')
Lab Sample ID: 860-26536-35
Date Collected: 05/17/22 10:15
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	54381	05/25/22 13:08	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54321	05/25/22 23:26	W1N	XEN STF

Client Sample ID: SNR-10 (1'-2')
Lab Sample ID: 860-26536-36
Date Collected: 05/17/22 11:45
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54423	05/25/22 16:09	KBN	XEN STF

Client Sample ID: SNR-10 (1'-2')
Lab Sample ID: 860-26536-36
Date Collected: 05/17/22 11:45
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.97 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54417	05/25/22 22:30	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	54379	05/26/22 10:00	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54553	05/27/22 02:19	W1N	XEN STF

Client Sample ID: SNR-10 (5'-6')
Lab Sample ID: 860-26536-37
Date Collected: 05/17/22 11:50
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54423	05/25/22 16:09	KBN	XEN STF

Client Sample ID: SNR-10 (5'-6')
Lab Sample ID: 860-26536-37
Date Collected: 05/17/22 11:50
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 89.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.01 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54417	05/25/22 22:52	KLV	XEN STF
Total/NA	Prep	8015NM Prep			9.99 g	10 mL	54381	05/25/22 10:50	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54553	05/27/22 02:38	W1N	XEN STF

Client Sample ID: SNR-10 (10.5'-11.5')
Lab Sample ID: 860-26536-38
Date Collected: 05/17/22 11:55
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54423	05/25/22 16:09	KBN	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-10 (10.5'-11.5')
Lab Sample ID: 860-26536-38
Date Collected: 05/17/22 11:55
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 85.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.02 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D		25	5 mL	5 mL	54709	05/27/22 16:22	KLV	XEN STF
Total/NA	Prep	5030C	DL		5.02 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	200	5 mL	5 mL	54371	05/25/22 21:29	KLV	XEN STF
Total/NA	Prep	5030C			5.02 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D		25	5 mL	5 mL	54516	05/26/22 19:36	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	54381	05/26/22 10:50	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54553	05/27/22 02:57	W1N	XEN STF

Client Sample ID: SNR-10 (14.5'-15')
Lab Sample ID: 860-26536-39
Date Collected: 05/17/22 12:00
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54423	05/25/22 16:09	KBN	XEN STF

Client Sample ID: SNR-10 (14.5'-15')
Lab Sample ID: 860-26536-39
Date Collected: 05/17/22 12:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 84.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.03 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D		25	5 mL	5 mL	55101	06/01/22 14:56	KLV	XEN STF
Total/NA	Prep	5030C	DL		5.03 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	200	5 mL	5 mL	54371	05/25/22 21:52	KLV	XEN STF
Total/NA	Prep	5030C			5.03 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D		25	5 mL	5 mL	54516	05/26/22 19:59	KLV	XEN STF
Total/NA	Prep	5030C			5.03 g	5 mL	54350	05/25/22 10:49	MTMG	XEN STF
Total/NA	Analysis	8260D		25	5 mL	5 mL	54712	05/27/22 18:50	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	54573	05/26/22 13:06	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54553	05/27/22 01:01	W1N	XEN STF

Client Sample ID: SNR-11 (1'-2')
Lab Sample ID: 860-26536-40
Date Collected: 05/17/22 12:30
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54423	05/25/22 16:09	KBN	XEN STF

Client Sample ID: SNR-11 (1'-2')
Lab Sample ID: 860-26536-40
Date Collected: 05/17/22 12:30
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.01 g	5 mL	54350	05/25/22 13:07	MTMG	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54417	05/25/22 23:15	KLV	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-11 (1'-2')
Lab Sample ID: 860-26536-40
Date Collected: 05/17/22 12:30
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	54381	05/26/22 10:50	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54680	05/27/22 11:40	T1S	XEN STF

Client Sample ID: SNR-11 (5'-6')
Lab Sample ID: 860-26536-41
Date Collected: 05/17/22 12:35
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54460	05/25/22 17:50	KBN	XEN STF

Client Sample ID: SNR-11 (5'-6')
Lab Sample ID: 860-26536-41
Date Collected: 05/17/22 12:35
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 92.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.96 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54417	05/25/22 23:37	KLV	XEN STF
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	54381	05/26/22 10:50	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54553	05/27/22 03:17	W1N	XEN STF

Client Sample ID: SNR-11 (9'-10')
Lab Sample ID: 860-26536-42
Date Collected: 05/17/22 12:40
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54460	05/25/22 17:50	KBN	XEN STF

Client Sample ID: SNR-11 (9'-10')
Lab Sample ID: 860-26536-42
Date Collected: 05/17/22 12:40
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 99.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.98 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54417	05/26/22 00:00	KLV	XEN STF
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	54573	05/26/22 13:06	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54553	05/26/22 18:49	W1N	XEN STF

Client Sample ID: SNR-11 (14.5'-15')
Lab Sample ID: 860-26536-43
Date Collected: 05/17/22 12:45
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54460	05/25/22 17:50	KBN	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-11 (14.5'-15')
Lab Sample ID: 860-26536-43
Date Collected: 05/17/22 12:45
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 97.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.98 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D		200	5 mL	5 mL	54371	05/25/22 22:15	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	54573	05/26/22 13:06	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54553	05/26/22 19:48	W1N	XEN STF

Client Sample ID: SNR-12 (1'-2')
Lab Sample ID: 860-26536-44
Date Collected: 05/17/22 16:00
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54460	05/25/22 17:50	KBN	XEN STF

Client Sample ID: SNR-12 (1'-2')
Lab Sample ID: 860-26536-44
Date Collected: 05/17/22 16:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 97.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.99 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54417	05/26/22 00:22	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	54573	05/26/22 13:06	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54553	05/26/22 20:08	W1N	XEN STF

Client Sample ID: SNR-12 (6'-7')
Lab Sample ID: 860-26536-45
Date Collected: 05/17/22 16:05
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54460	05/25/22 17:50	KBN	XEN STF

Client Sample ID: SNR-12 (6'-7')
Lab Sample ID: 860-26536-45
Date Collected: 05/17/22 16:05
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 98.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.04 g	5 mL	54768	05/27/22 14:52	MTMG	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54709	05/27/22 17:07	KLV	XEN STF
Total/NA	Prep	5030C			5.05 g	5 mL	54523	05/26/22 12:55	MTMG	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54516	05/26/22 20:23	KLV	XEN STF
Total/NA	Prep	5030C	DL		5.05 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	25	5 mL	5 mL	54516	05/26/22 20:46	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	54573	05/26/22 13:06	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54553	05/27/22 03:36	W1N	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-12 (9.5'-10')
Lab Sample ID: 860-26536-46
Date Collected: 05/17/22 16:10
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54460	05/25/22 17:50	KBN	XEN STF

Client Sample ID: SNR-12 (9.5'-10')
Lab Sample ID: 860-26536-46
Date Collected: 05/17/22 16:10
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 96.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.03 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D		25	5 mL	5 mL	54709	05/27/22 16:45	KLV	XEN STF
Total/NA	Prep	5030C			5.03 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D		25	5 mL	5 mL	54516	05/26/22 21:10	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	54573	05/26/22 13:06	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54553	05/26/22 20:27	W1N	XEN STF

Client Sample ID: SNR-12 (14'-15')
Lab Sample ID: 860-26536-47
Date Collected: 05/17/22 16:15
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54460	05/25/22 17:50	KBN	XEN STF

Client Sample ID: SNR-12 (14'-15')
Lab Sample ID: 860-26536-47
Date Collected: 05/17/22 16:15
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 95.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.01 g	5 mL	54618	05/26/22 15:50	MTMG	XEN STF
Total/NA	Analysis	8260D		2000	5 mL	5 mL	54534	05/27/22 00:25	KLV	XEN STF
Total/NA	Prep	5030C	DL		5.01 g	5 mL	54618	05/26/22 15:50	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	10000	5 mL	5 mL	54709	05/27/22 15:37	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	54573	05/26/22 13:06	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54553	05/26/22 20:47	W1N	XEN STF

Client Sample ID: SNR-13 (1'-2')
Lab Sample ID: 860-26536-48
Date Collected: 05/17/22 17:05
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54460	05/25/22 17:50	KBN	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-13 (1'-2')
Lab Sample ID: 860-26536-48
Date Collected: 05/17/22 17:05
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 96.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.02 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54417	05/26/22 01:07	KLV	XEN STF
Total/NA	Prep	5030C	DL		5.05 g	5 mL	54728	05/27/22 11:28	KLV	XEN STF
Total/NA	Analysis	8260D	DL	25	5 mL	5 mL	54709	05/27/22 15:15	KLV	XEN STF
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	54573	05/26/22 13:06	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54680	05/27/22 13:25	T1S	XEN STF

Client Sample ID: SNR-13 (6'-7')
Lab Sample ID: 860-26536-49
Date Collected: 05/17/22 17:10
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54460	05/25/22 17:50	KBN	XEN STF

Client Sample ID: SNR-13 (6'-7')
Lab Sample ID: 860-26536-49
Date Collected: 05/17/22 17:10
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 90.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.00 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D		200	5 mL	5 mL	54709	05/27/22 17:29	KLV	XEN STF
Total/NA	Prep	5030C			5.00 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D		200	5 mL	5 mL	54516	05/26/22 21:33	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	54573	05/26/22 13:06	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54553	05/26/22 21:26	W1N	XEN STF

Client Sample ID: SNR-13 (14'-15')
Lab Sample ID: 860-26536-50
Date Collected: 05/17/22 17:20
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54460	05/25/22 17:50	KBN	XEN STF

Client Sample ID: SNR-13 (14'-15')
Lab Sample ID: 860-26536-50
Date Collected: 05/17/22 17:20
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 89.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.96 g	5 mL	54391	05/25/22 13:53	MTMG	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54417	05/26/22 01:29	KLV	XEN STF
Total/NA	Prep	5030C			4.96 g	5 mL	54852	05/28/22 11:53	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54844	05/28/22 14:38	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	54573	05/26/22 13:06	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54553	05/26/22 21:46	W1N	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-14 (1'-2')
Lab Sample ID: 860-26536-51
Date Collected: 05/18/22 10:15
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54460	05/25/22 17:50	KBN	XEN STF

Client Sample ID: SNR-14 (1'-2')
Lab Sample ID: 860-26536-51
Date Collected: 05/18/22 10:15
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 91.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.95 g	5 mL	54391	05/25/22 14:18	MTMG	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54417	05/26/22 01:52	KLV	XEN STF
Total/NA	Prep	5030C			4.97 g	5 mL	54852	05/28/22 11:53	KLV	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54844	05/28/22 15:00	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	54573	05/26/22 13:06	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54553	05/26/22 22:05	W1N	XEN STF

Client Sample ID: SNR-14 (5'-6')
Lab Sample ID: 860-26536-52
Date Collected: 05/18/22 10:20
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54460	05/25/22 17:50	KBN	XEN STF

Client Sample ID: SNR-14 (5'-6')
Lab Sample ID: 860-26536-52
Date Collected: 05/18/22 10:20
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 94.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.97 g	5 mL	54768	05/27/22 14:10	MTMG	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54709	05/27/22 18:14	KLV	XEN STF
Total/NA	Prep	5030C	DL		4.95 g	5 mL	54391	05/25/22 14:18	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	25	5 mL	5 mL	54709	05/27/22 18:37	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10 g	10 mL	54573	05/26/22 13:06	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54553	05/26/22 22:25	W1N	XEN STF

Client Sample ID: SNR-14 (9'-10')
Lab Sample ID: 860-26536-53
Date Collected: 05/18/22 10:25
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54460	05/25/22 17:50	KBN	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: SNR-14 (9'-10')
Lab Sample ID: 860-26536-53
Date Collected: 05/18/22 10:25
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 91.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.00 g	5 mL	54768	05/27/22 14:10	MTMG	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54709	05/27/22 18:59	KLV	XEN STF
Total/NA	Prep	5030C	DL		4.96 g	5 mL	54391	05/25/22 14:18	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	25	5 mL	5 mL	54709	05/27/22 19:22	KLV	XEN STF
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	54573	05/26/22 13:06	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54553	05/26/22 22:45	W1N	XEN STF

Client Sample ID: SNR-14 (14'-15')
Lab Sample ID: 860-26536-54
Date Collected: 05/18/22 10:30
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54460	05/25/22 17:50	KBN	XEN STF

Client Sample ID: SNR-14 (14'-15')
Lab Sample ID: 860-26536-54
Date Collected: 05/18/22 10:30
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 94.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.00 g	5 mL	54391	05/25/22 14:18	MTMG	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54417	05/26/22 02:14	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	54573	05/26/22 13:06	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54553	05/26/22 23:04	W1N	XEN STF

Client Sample ID: BD01-05162022
Lab Sample ID: 860-26536-55
Date Collected: 05/16/22 00:00
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54460	05/25/22 17:50	KBN	XEN STF

Client Sample ID: BD01-05162022
Lab Sample ID: 860-26536-55
Date Collected: 05/16/22 00:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 92.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.97 g	5 mL	54391	05/25/22 14:18	MTMG	XEN STF
Total/NA	Analysis	8260D		25	5 mL	5 mL	54709	05/27/22 19:44	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	54573	05/26/22 13:06	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54553	05/26/22 23:24	W1N	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: BD02-05162022
Lab Sample ID: 860-26536-56
Date Collected: 05/16/22 00:00
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54460	05/25/22 17:50	KBN	XEN STF

Client Sample ID: BD02-05162022
Lab Sample ID: 860-26536-56
Date Collected: 05/16/22 00:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 93.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.02 g	5 mL	54391	05/25/22 14:18	MTMG	XEN STF
Total/NA	Analysis	8260D		200	5 mL	5 mL	54534	05/26/22 21:48	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	54573	05/26/22 13:06	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54553	05/26/22 23:43	W1N	XEN STF

Client Sample ID: BD01-05172022
Lab Sample ID: 860-26536-57
Date Collected: 05/17/22 00:00
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54460	05/25/22 17:50	KBN	XEN STF

Client Sample ID: BD01-05172022
Lab Sample ID: 860-26536-57
Date Collected: 05/17/22 00:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 99.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C	DL		4.98 g	5 mL	54391	05/25/22 14:18	MTMG	XEN STF
Total/NA	Analysis	8260D	DL	200	5 mL	5 mL	54534	05/26/22 22:10	KLV	XEN STF
Total/NA	Prep	5030C			4.98 g	5 mL	54391	05/25/22 14:18	MTMG	XEN STF
Total/NA	Analysis	8260D		25	5 mL	5 mL	54709	05/27/22 20:06	KLV	XEN STF
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	54573	05/26/22 13:06	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54553	05/27/22 00:03	W1N	XEN STF

Client Sample ID: BD01-05182022
Lab Sample ID: 860-26536-58
Date Collected: 05/18/22 00:00
Matrix: Solid
Date Received: 05/20/22 10:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture - 2540		1			54460	05/25/22 17:50	KBN	XEN STF

Client Sample ID: BD01-05182022
Lab Sample ID: 860-26536-58
Date Collected: 05/18/22 00:00
Matrix: Solid
Date Received: 05/20/22 10:24
Percent Solids: 94.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			4.99 g	5 mL	54768	05/27/22 14:52	MTMG	XEN STF
Total/NA	Analysis	8260D		1	5 mL	5 mL	54709	05/27/22 17:52	KLV	XEN STF

Lab Chronicle

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Client Sample ID: BD01-05182022 **Lab Sample ID: 860-26536-58**
Date Collected: 05/18/22 00:00 **Matrix: Solid**
Date Received: 05/20/22 10:24 **Percent Solids: 94.4**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8015NM Prep			10 g	10 mL	54573	05/26/22 13:06	SYH	XEN STF
Total/NA	Analysis	8015B NM		1			54553	05/27/22 00:22	W1N	XEN STF

Laboratory References:

XEN STF = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Accreditation/Certification Summary

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Laboratory: Eurofins Houston

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	21-038-0	08-04-22
Florida	NELAP	E871002	06-30-22
Louisiana	NELAP	03054	06-30-22
Oklahoma	State	2021-168	08-31-22
Texas	NELAP	T104704215-21-44	06-30-22
Texas	TCEQ Water Supply	T104704215	06-30-22
USDA	US Federal Programs	P330-22-00025	03-02-23

Method Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	XEN STF
8270D SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	XEN STF
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	XEN STF
6020A	Metals (ICP/MS)	SW846	XEN STF
7471B	Mercury (CVAA)	SW846	XEN STF
Moisture - 2540	Percent Moisture	SM	XEN STF
3051A	Preparation, Metals, Microwave Assisted	SW846	XEN STF
3546	Microwave Extraction	SW846	XEN STF
5030C	Purge and Trap	SW846	XEN STF
7471B	Preparation, Mercury	SW846	XEN STF
8015NM Prep	Microextraction	SW846	XEN STF

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

XEN STF = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Sample Summary

Client: Trihydro Corporation
Project/Site: Investigation # 2 Sour Naphtha

Job ID: 860-26536-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
860-26536-1	SNR-EX CONF (1.5'-2.5')	Solid	05/18/22 09:30	05/20/22 10:24
860-26536-2	SNR-01 (1'-2')	Solid	05/16/22 10:25	05/20/22 10:24
860-26536-3	SNR-01 (5'-6')	Solid	05/16/22 10:30	05/20/22 10:24
860-26536-4	SNR-01 (9'-10')	Solid	05/16/22 10:35	05/20/22 10:24
860-26536-5	SNR-01 (14'-15')	Solid	05/16/22 10:40	05/20/22 10:24
860-26536-6	SNR-02 (1'-2')	Solid	05/16/22 11:30	05/20/22 10:24
860-26536-7	SNR-02 (4'-5')	Solid	05/16/22 11:35	05/20/22 10:24
860-26536-8	SNR-02 (7'-8')	Solid	05/16/22 11:40	05/20/22 10:24
860-26536-9	SNR-03 (1'-2')	Solid	05/16/22 12:30	05/20/22 10:24
860-26536-10	SNR-03 (5'-6')	Solid	05/16/22 12:35	05/20/22 10:24
860-26536-11	SNR-03 (10'-11')	Solid	05/16/22 12:40	05/20/22 10:24
860-26536-12	SNR-03 (12'-13')	Solid	05/16/22 12:45	05/20/22 10:24
860-26536-13	SNR-06 (1'-2')	Solid	05/16/22 14:00	05/20/22 10:24
860-26536-14	SNR-06 (7'-8')	Solid	05/16/22 14:10	05/20/22 10:24
860-26536-15	SNR-06 (5'-6')	Solid	05/16/22 14:05	05/20/22 10:24
860-26536-16	SNR-04 (1'-2')	Solid	05/16/22 14:45	05/20/22 10:24
860-26536-17	SNR-04 (5'-6')	Solid	05/16/22 14:50	05/20/22 10:24
860-26536-18	SNR-04 (11'-12')	Solid	05/16/22 14:55	05/20/22 10:24
860-26536-19	SNR-04 (14'-15')	Solid	05/16/22 15:00	05/20/22 10:24
860-26536-20	SNR-05 (1'-2')	Solid	05/16/22 16:05	05/20/22 10:24
860-26536-21	SNR-05 (5'-6')	Solid	05/16/22 16:10	05/20/22 10:24
860-26536-22	SNR-05 (13'-14')	Solid	05/16/22 16:15	05/20/22 10:24
860-26536-23	SNR-05 (14'-15')	Solid	05/16/22 16:20	05/20/22 10:24
860-26536-24	SNR-07 (1'-2')	Solid	05/16/22 17:00	05/20/22 10:24
860-26536-25	SNR-07 (6'-7')	Solid	05/16/22 17:05	05/20/22 10:24
860-26536-26	SNR-07 (10'-12')	Solid	05/16/22 17:10	05/20/22 10:24
860-26536-27	SNR-07 (14'-15')	Solid	05/16/22 17:15	05/20/22 10:24
860-26536-28	SNR-09 (1'-2')	Solid	05/17/22 08:40	05/20/22 10:24
860-26536-29	SNR-09 (6'-7')	Solid	05/17/22 08:45	05/20/22 10:24
860-26536-30	SNR-09 (8'-9')	Solid	05/17/22 08:50	05/20/22 10:24
860-26536-31	SNR-09 (13'-14')	Solid	05/17/22 08:55	05/20/22 10:24
860-26536-32	SNR-08 (1'-2')	Solid	05/17/22 10:00	05/20/22 10:24
860-26536-33	SNR-08 (5'-6')	Solid	05/17/22 10:05	05/20/22 10:24
860-26536-34	SNR-08 (9'-10')	Solid	05/17/22 10:10	05/20/22 10:24
860-26536-35	SNR-08 (13'-13.5')	Solid	05/17/22 10:15	05/20/22 10:24
860-26536-36	SNR-10 (1'-2')	Solid	05/17/22 11:45	05/20/22 10:24
860-26536-37	SNR-10 (5'-6')	Solid	05/17/22 11:50	05/20/22 10:24
860-26536-38	SNR-10 (10.5'-11.5')	Solid	05/17/22 11:55	05/20/22 10:24
860-26536-39	SNR-10 (14.5'-15')	Solid	05/17/22 12:00	05/20/22 10:24
860-26536-40	SNR-11 (1'-2')	Solid	05/17/22 12:30	05/20/22 10:24
860-26536-41	SNR-11 (5'-6')	Solid	05/17/22 12:35	05/20/22 10:24
860-26536-42	SNR-11 (9'-10')	Solid	05/17/22 12:40	05/20/22 10:24
860-26536-43	SNR-11 (14.5'-15')	Solid	05/17/22 12:45	05/20/22 10:24
860-26536-44	SNR-12 (1'-2')	Solid	05/17/22 16:00	05/20/22 10:24
860-26536-45	SNR-12 (6'-7')	Solid	05/17/22 16:05	05/20/22 10:24
860-26536-46	SNR-12 (9.5'-10')	Solid	05/17/22 16:10	05/20/22 10:24
860-26536-47	SNR-12 (14'-15')	Solid	05/17/22 16:15	05/20/22 10:24
860-26536-48	SNR-13 (1'-2')	Solid	05/17/22 17:05	05/20/22 10:24
860-26536-49	SNR-13 (6'-7')	Solid	05/17/22 17:10	05/20/22 10:24
860-26536-50	SNR-13 (14'-15')	Solid	05/17/22 17:20	05/20/22 10:24
860-26536-51	SNR-14 (1'-2')	Solid	05/18/22 10:15	05/20/22 10:24
860-26536-52	SNR-14 (5'-6')	Solid	05/18/22 10:20	05/20/22 10:24
860-26536-53	SNR-14 (9'-10')	Solid	05/18/22 10:25	05/20/22 10:24
860-26536-54	SNR-14 (14'-15')	Solid	05/18/22 10:30	05/20/22 10:24
860-26536-55	BD01-05162022	Solid	05/16/22 00:00	05/20/22 10:24
860-26536-56	BD02-05162022	Solid	05/16/22 00:00	05/20/22 10:24

Sample Summary

Client: Trihydro Corporation
Job ID: 860-26536-1
Project/Site: Investigation # 2 Sour Naphtha

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
860-26536-57	BD01-05172022	Solid	05/17/22 00:00	05/20/22 10:24
860-26536-58	BD01-05182022	Solid	05/18/22 00:00	05/20/22 10:24

Released to Imaging: 7/25/2024 3:44:05 PM
Received by OCD: 4/16/2024 4:14:15 PM

Eurofins Houston
4145 Greenbriar Dr
Stafford TX 77477
Phone (281) 240-4200

Chain of Custody Record

eurofins

Client Information	Sampler: James Hageman / Brian McLoughlin	Lab PM: Kudchadkar Sachin G	Carrier Tracking No(s):	COC No: 860-10089-3529 1
Client Contact: James Hageman	Phone:	E-Mail: Sachin.Kudchadkar@et.eurofinsus.com	State of Origin:	Page: Page
Company: Trihydro Corporation	PWSID:			Job #:

Address: 1252 Commerce Drive	Due Date Requested:	
City: Laramie	TAT Requested (days):	
State, Zip: WY 82070	Compliance Project: Δ Yes Δ No	
Phone: 406-558-4853(Tel)	PO #:	
Email: jhageman@trihydro.com	WO #:	
Project Name: Investigation # 2 Sour Naphtha	Project #: 86003274	
Site:	SSOW#:	

Analysis Requested

Preservation Codes.

A	HCL	M	Hexane
B	NaOH	N	None
C	Zn Acetate	O	AsNaO2
D	Nitric Acid	P	Na2O4S
E	NaHSO4	Q	Na2SO3
F	MeOH	R	Na2S2O3
G	Amchlor	S	H2SO4
H	Ascorbic Acid	T	TSP Dodecahydrate
I	Ice	U	Acetone
J	DI Water	V	MCAA
K	EDTA	W	pH 4-5
L	EDA	Z	other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	8260D Volatiles* SKINNER LIST	8015MOD_NM DRO/ ORO and GRO	6010D, 7471B, RCRA metals	8270D- PAH	moisture	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
SNR- EX CONF (1.5'-2.5')	5/18/2022	0930	G	S		X	X	X	X	X	3	
SNR-01 (1'-2')	5/16/2022	1025	G	S		X	X			X	2	
SNR 01 (5' 6')	5/16/2022	1030	G	S		X	X			X	2	
SNR-01 (9'-10)	5/16/2022	1035	G	S		X	X			X	2	
SNR-01 (14 -15)	5/16/2022	1040	G	S		X	X			X	2	
SNR-02 (1' 2')	5/16/2022	1130	G	S		X	X			X	2	
SNR-02 (4' 5')	5/16/2022	1135	G	S		X	X			X	2	
SNR-02 (7'-8')	5/16/2022	1140	G	S		X	X			X	2	
SNR-03 (1'-2')	5/16/2022	1230	G	S		X	X			X	2	
SNR-03 (5'-6')	5/16/2022	1235	G	S		X	X			X	2	
SNR-03 (10'-11')	5/16/2022	1240	G	S		X	X			X	2	
SNR-03 (12'-13')	5/16/2022	1245	G	S		X	X			X	2	
SNR-06 (1-2')	5/16/2022	1400	G	S		X	X			X	2	
SNR-06 (7-8')	5/16/2022	1410	G	S		X	X			X	2	
SNR-06 (5'-6')	5/16/2022	1405	G	S		X	X			X	2	
SNR-04 (1'-2')	5/16/2022	1445	G	S		X	X			X	2	
SNR-04 (5'-6')	5/16/2022	1450	G	S		X	X			X	2	

Temp: 2.9 IR ID HOU-323
C/F:-0.9
Corrected Temp: 2.0

Temp: 3.4 IR ID HOU-323
C/F:-0.9
Corrected Temp: 2.5

860-26536 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I II III, IV Other (specify)

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: YCR	Date/Time: 5/20/22 1024	Company E
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Released to Imaging: 7/25/2024 3:44:05 PM
Received by OCD: 4/16/2024 4:14:15 PM

Eurofins H ton
4145 Greenbriar Dr
Stafford TX 77477
Phone (281) 240-4200

Chain of Custody Record

eurofins E men Testing Ar a

Client Information	Sampler: James Hageman / Brian McLoughlin	Lab PM: Kudchadkar Sachin G	Carrier Tracking No(s):	COC No: 860-10089-3529.1
Client Contact: James Hageman	Phone:	E-Mail: Sachin.Kudchadkar@et.eurofinsus.com	State of Origin:	Page: Page
Company: Trihydro Corporation	PWSID:			Job #:
Address: 1252 Commerce Drive	Due Date Requested:			
City: Laramie	TAT Requested (days):			
State, Zip: WY 82070	Compliance Project: Δ Yes Δ No			
Phone: 406-558-4853(Tel)	PO #:			
Email: jhageman@trihydro.com	WO #:			
Project Name: Investigation # 2 Sour Naphtha	Project #: 86003274			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A	HCL	M	Hexane
B	NaOH	N	None
C	Zn Acetate	O	AsNaO2
D	Nitric Acid	P	Na2O4S
E	NaHSO4	Q	Na2SO3
F	MeOH	R	Na2S2O3
G	Amchlor	S	H2SO4
H	Ascorbic Acid	T	TSP Dodecahydrate
I	Ice	U	Acetone
J	DI Water	V	MCAA
K	EDTA	W	pH 4-5
L	EDA	Z	other (specify)

Other

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260D Volatiles* SKINNER LIST	8015MOD_NM DRO/ORO and GRO	6010D, 7471B, RCRA metals	8270D- PAH	moisture	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
SNR-04 (11'-12')	5/16/2022	1455	G	S			X	X			X	2	
SNR-04 (14'-15')	5/16/2022	1500	G	S			X	X			X	2	
SNR 05 (1-2)	5/16/2022	1605	G	S			X	X			X	2	
SNR 05 (5'-6')	5/16/2022	1610	G	S			X	X			X	2	
SNR-05 (13 14)	5/16/2022	1615	G	S			X	X			X	2	
SNR 05 (14'-15')	5/16/2022	1620	G	S			X	X			X	2	
SNR-07 (1'-2')	5/16/2022	1700	G	S			X	X			X	2	
SNR-07 (6'-7')	5/16/2022	1705	G	S			X	X			X	2	
SNR-07 (10'-12')	5/16/2022	1710	G	S			X	X			X	2	
SNR-07 (14'-15')	5/16/2022	1715	G	S			X	X			X	2	
SNR-09 (1'-2')	5/17/2022	0840	G	S			X	X			X	2	
SNR-09 (6-7')	5/17/2022	0845	G	S			X	X			X	2	
SNR-09 (8' 9')	5/17/2022	0850	G	S			X	X			X	2	
SNR-09 (13' 14')	5/17/2022	0855	G	S			X	X			X	2	
SNR-08 (1'-2')	5/17/2022	1000	G	S			X	X			X	2	
SNR-08 (5'-6')	5/17/2022	1005	G	S			X	X			X	2	
SNR-08 (9'-10')	5/17/2022	1010	G	S			X	X			X	2	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I II, III IV Other (specify)

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: YCRS	Date/Time: 5/20/22 1024	Company E
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks

Ver: 01/16/2019

Released to Imaging: 7/25/2024 3:44:05 PM
Received by OCD: 4/16/2024 4:14:15 PM

Eurofins H ton
4145 Greenbriar Dr
Stafford TX 77477
Phone (281) 240-4200

Chain of Custody Record

eurofins ment Testing America

Client Information	Sampler: James Hageman / Brian McLoughlin	Lab PM: Kudchadkar Sachin G	Carrier Tracking No(s):	COC No: 860-10089-3529.1
Client Contact: James Hageman	Phone:	E-Mail: Sachin Kudchadkar@et.eurofinsus.com	State of Origin:	Page: Page
Company: Trihydro Corporation	PWSID:			Job #:
Address: 1252 Commerce Drive	Due Date Requested:			
City: Laramie	TAT Requested (days):			
State, Zip: WY 82070	Compliance Project: Δ Yes Δ No			
Phone: 406-558-4853(Tel)	PO #:			
Email: jhageman@trihydro.com	WO #:			
Project Name: Investigation # 2 Sour Naphtha	Project #: 86003274			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Z other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	8260D Volatiles* SKINNER LIST	8015MOD_NM DRO/ ORO and GRO	6010D, 7471B, RCRA metals	8270D- PAH	Moisture	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
SNR-08 (13'-13.5')	5/17/2022	1015	G	S		X	X			X	2	
SNR-10 (1'-2')	5/17/2022	1145	G	S		X	X			X	2	
SNR-10 (5'-6')	5/17/2022	1150	G	S		X	X			X	2	
SNR-10 (10.5'-11.5')	5/17/2022	1155	G	S		X	X			X	2	
SNR-10 (14.5'-15')	5/17/2022	1200	G	S		X	X			X	2	
SNR-11 (1'-2')	5/17/2022	1230	G	S		X	X			X	2	
SNR-11 (5'-6')	5/17/2022	1235	G	S		X	X			X	2	
SNR-11 (9-10')	5/17/2022	1240	G	S		X	X			X	2	
SNR-11 (14.5'-15')	5/17/2022	1245	G	S		X	X			X	2	
SNR-12 (1'-2')	5/17/2022	1600	G	S		X	X			X	2	
SNR-12 (6'-7')	5/17/2022	1605	G	S		X	X			X	2	
SNR-12 (9.5'-10')	5/17/2022	1610	G	S		X	X			X	2	
SNR-12 (14'-15')	5/17/2022	1615	G	S		X	X			X	2	
SNR-13 (1'-2')	5/17/2022	1705	G	S		X	X			X	2	
SNR-13 (6'-7')	5/17/2022	1710	G	S		X	X			X	2	
SNR-13 (14'-15')	5/17/2022	1720	G	S		X	X			X	2	
SNR-14 (1'-2')	5/18/2022	1015	G	S		X	X			X	2	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I II III IV Other (specify)

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: YCRS	Date/Time: 5/20/22 1024	Company E
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Released to Imaging: 7/25/2024 3:44:05 PM
Received by OCD: 4/16/2024 4:14:15 PM

Eurofins H ton
4145 Greenbriar Dr
Stafford, TX 77477
Phone (281) 240-4200

Chain of Custody Record

eurofins E ment Testing America

Client Information	Sampler: James Hageman / Brian McLoughlin	Lab PM: Kudchadkar Sachin G	Carrier Tracking No(s):	COC No: 860-10089-3529.1
Client Contact: James Hageman	Phone:	E-Mai: Sachin.Kudchadkar@et.eurofinsus.com	State of Origin:	Page: Page
Company: Trihydro Corporation	PWSID:			Job #:
Address: 1252 Commerce Drive	Due Date Requested:			
City: Laramie	TAT Requested (days):			
State, Zip: WY 82070	Compliance Project: Δ Yes Δ No			
Phone: 406-558-4853(Tel)	PO #:			
Emai: jhageman@trihydro.com	WO #:			
Project Name: Investigation # 2 Sour Naphtha	Project #: 86003274			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL	M Hexane		
B NaOH	N None		
C Zn Acetate	O AsNaO2		
D Nitric Acid	P Na2O4S		
E NaHSO4	Q Na2SO3		
F MeOH	R Na2S2O3		
G Amchlor	S H2SO4		
H Ascorbic Acid	T TSP Dodecahydrate		
I Ice	U Acetone		
J DI Water	V MCAA		
K EDTA	W pH 4-5		
L EDA	Z other (specify)		

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	[redacted]	8260D Volatiles' SKINNER LIST	8016MOD_NM DRO/ ORO and GRO	6010D, 7471B, RCRA metals	8270D- PAH	moisture %moisture									Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
SNR-14 (5'-6')	5/18/2022	1020	G	S			X	X			X									2	
SNR-14 (9'-10)	5/18/2022	1025	G	S			X	X			X									2	
SNR-14 (14'-15)	5/18/2022	1030	G	S			X	X			X									2	
BD01-05162022	5/16/2022	—	G	S			X	X			X									2	
BD02-05162022	5/16/2022	—	G	S			X	X			X									2	
BD01-05172022	5/17/2022	—	G	S			X	X			X									2	
BD01-05182022	5/18/2022	—	G	S			X	X			X									2	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I, II, III IV Other (specify)

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: CRS	Date/Time: 5/20/22 1024	Company E
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Trihydro Corporation Job Number: 860-26536-1

Login Number: 26536 **List Source: Eurofins Houston**
List Number: 1
Creator: Rubio, Yuri

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

Appendix D – Sour Naphtha Response Action Report

Western Refining Southwest LLC
A subsidiary of Marathon Petroleum Corporation
I-40 Exit 39
Jamestown, NM 87347

September 24, 2021

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
Response Action Report Sour Naphtha Release
Marathon Gallup Refinery
(dba Western Refining Southwest LLC)
EPA ID# NMD000333211
HWB-WRG-20-002

Dear Mr. Pierard:

Attached please find the response to comments contained in the New Mexico Environment Department (NMED) Approval with Modifications letter dated October 13, 2020. A timeline of the reports for the sour naphtha release is provided below.

- Response Action Report, submitted December 12, 2019
- Disapproval, Response Action Report, received February 21, 2020
- Response to Disapproval, submitted September 15, 2020
- Approval with Modifications, received October 13, 2020

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
M. Suzuki, NMED HWB
L. Barr, NMOCD
G. McCartney, Marathon Petroleum Company
K. Luka, Marathon Petroleum Company
J. Moore, Marathon Gallup Refinery
H. Jones, Trihydro Corporation

TABLE

New Mexico Environment Department to Western Refining Southwest LLC Comment Letter "Approval with Modifications, Response Action Report Sour Naphtha Release" (October 13, 2020)

New Mexico Environment Department (NMED) Comment	Western Refining Southwest LLC Response
Comment 1:	**Response 1:**
The Permittee's response to NMED's Comment 3 states, "[t]he environmentally-mindful THUNDERSTORM W813A 1x3 AR-AFFF Concentrate formulation contains short-chain, C-6 fluorochemicals manufactured using a telomer-based process. The telomer process produces no [perfluorooctanesulfonic acid] PFOS, and these C-6 materials do not breakdown to yield [perfluorooctanoic acid] PFOA." It is not clear whether the aqueous film foaming foam (AFFF) used to minimize vapor release yields any per- and polyfluoroalkyl substances (PFAS). Clarify whether or not the product yields any PFAS in a response letter. PFAS compounds are known to cause adverse human health effects and EPA considers PFAS to be an emerging contaminant. Requirements for the evaluation of PFAS are included in NMED's Risk Assessment Guidance for Site Investigation and Remediation (2019). Submit a work plan to investigate potential PFAS groundwater contamination downgradient of the release location that addresses the PFAS listed in NMED's Risk Assessment Guidance, if deemed necessary.	The Environmental Protection Agency's (EPA) Office of Pollution Prevention and Toxics (OPPT), which implements the Toxic Substance Control Act (TSCA), was contacted to determine how to best proceed in regard to potential polyfluoroalkyl substance (PFAS) sampling after using THUNDERSTORM W813A 1x3 AR-AFFF Concentrate. The EPA representative for issues relating to PFAS, Tyler Lloyd (llloyd.tyler@epa.gov), confirmed that, while PFAS may be present in the foam that was used, there are no regulatory requirements under TSCA requiring users of the product to sample the short-chain, C-6 fluorochemicals, used in this product. Furthermore, he stated, that if the lab was able to test for the specific PFAS used in this product, there are currently no Federal requirements for clean-up or monitoring of the PFAS chemical product in the foam. Until requirements are adopted under federal or state law a workplan is premature.

New Mexico Environment Department to Western Refining Southwest LLC Comment Letter "Approval with Modifications, Response Action Report Sour Naphtha Release" (October 13, 2020)

New Mexico Environment Department (NMED) Comment	Western Refining Southwest LLC Response
Comment 2:	**Response 2:**
The Permittee's response to NMED's Comment 5 states, "MPC has added a statement indicating that they will collect samples from 11 surficial locations and from two soil borings, as described above, to fully delineate the horizontal and vertical extent of contamination and will propose to submit an Investigation Work Plan outlining this approach." The pertinent revisions were made in the Conclusion and Recommendations Section, Figures 6 and 7; however, the response does not state where the revisions were made. Indicate all section(s) where pertinent revisions were made to the documents in all future responses. In addition, Figure 7, Proposed Surface Sampling Locations, depicts only 9 proposed locations where surface samples are proposed to be collected rather than 11 proposed locations. Resolve the discrepancy and provide replacement pages.	The comment is acknowledged. All sections where pertinent revisions are made to documents in all future responses will be indicated in the response. In addition, a revised Figure 7 that includes the additional two sampling locations has been attached.
Comment 3:	**Response 3:**
The Permittee's response to NMED's Comment 6 states, "[t]herefore, additional sampling is required and following the additional sampling an investigation summary report and remediation plan for these surficial soils will be submitted to NMED." The results of the additional sampling must be summarized in a letter report and submitted to NMED no later than June 1, 2021. No revision required.	This comment is acknowledged. To clarify, the additional sampling that was referred to is sampling that was proposed in the report to be included in the Sour Naphtha Investigation Workplan. This sampling has not yet occurred and will take place after the Workplan has been submitted and approved by NMED. The Workplan will be submitted no later than September 15, 2021. The report summarizing the investigation results will be submitted by December 31, 2021.

New Mexico Environment Department to Western Refining Southwest LLC Comment Letter "Approval with Modifications, Response Action Report Sour Naphtha Release" (October 13, 2020)

New Mexico Environment Department (NMED) Comment	Western Refining Southwest LLC Response
Comment 4:	**Response 4:**
The Permittee's response to NMED's Comment 7 states, "[t]he backfill source was not documented in the release documentation. However, refinery maintenance personnel indicated that the backfill source likely originated from an off-site sand and gravel company." In order to confirm that the backfill was not contaminated, collect one backfill sample and analyze for VOCs, PAHs, TPH, and metals. Include the analytical results in the letter report required by Comment 3. No revision required.	The comment is acknowledged. One backfill sample will be included in the Sour Naphtha Investigation Workplan. The sample will be analyzed for volatile organic compounds (VOC), polycyclic aromatic hydrocarbons (PAH), total petroleum hydrocarbons (TPH), and metals.
Comment 5:	**Response 5:**
The Permittee's response to NMED's Comment 8 states, "the statement has been revised to say [that a] description of each sample location (Figure 4) is provided below..." The typographical error was not corrected in the Report. The text still states, "[a] description of each sample location (Figure 5) is provided below..." Correct the error and provide replacement pages.	The error in the Remediation Activities Section, Assessment – Soil Confirmation Sampling, page 8 of 10 has been corrected in the attached replacement page to state that a "description of each sample location (Figure 4) is provided below..."
Comment 6:	**Response 6:**
The Permittee's response to NMED's Comment 9 states, "the statement has been revised to say [that] Sample Location #2 —excavation floor [is located] northeast of the pipeline hole." The statement was not corrected in the Report. The text still states, "[s]ample Location #2 excavation floor [is located] southeast of the pipeline hole." Correct the error and provide replacement pages.	The error has been corrected on the attached replacement page. The error in the Remediation Activities Section, Assessment – Soil Confirmation Sampling, page 8 of 10 has been corrected in the attached replacement page to state "Sample Location #2 excavation floor, northeast of the pipeline hole."

New Mexico Environment Department to Western Refining Southwest LLC Comment Letter "Approval with Modifications, Response Action Report Sour Naphtha Release" (October 13, 2020)

New Mexico Environment Department (NMED) Comment	Western Refining Southwest LLC Response
Comment 7:	**Response 7:**
The Permittee's response to NMED's Comment 10 states, "[s]ample location #4 contained the highest concentration for Toxicity Characteristic Leaching Procedure (TCLP) benzene, and Total VOCs (8260B soils) were analyzed in the sample for use in Benzene Waste Operations NESHAP (BWON) calculations." Explain the purpose of BWON calculations in the response letter. In addition, according to Table 1, Soil Analytical Results — March 30, 2017, page 1 of 2, the concentrations of several VOCs (e.g., 1,2-dibromo-3-chloropropane) in the soil sample collected from sample location #4 exceed applicable screening levels. Conduct VOC analysis for all additional confirmation samples that are proposed to be collected in order to delineate the extent of contamination. Provide the analytical results in the letter report required by Comment 3. No revision required.	Western maintains compliance under the benzene waste operations National Emission Standards for Benzene Waste Operation (BWON) federal regulation (40 CFR Subpart FF). Sampling takes place to quantify benzene waste on an annual basis. VOC analysis will be conducted for all additional confirmation samples that will be proposed in the Sour Naphtha Investigation Workplan to delineate the extent of contamination.. The Workplan will be submitted no later than September 15, 2021. The report summarizing the investigation results will be submitted by December 31, 2021.
Comment 8:	**Response 8:**
The Permittee's response to NMED's Comment 12 states, "[t]he sampling procedure for waste characterization will be discussed in the investigation work plan." NMED's Comment 12 states, "the sampling procedure for waste characterization is not discussed in the Report. Include the discussion in the revised Report." The Permittee is directed to discuss the sampling procedure for waste characterization in the revised Report rather than the investigation work plan. Revise the Report accordingly and provide replacement pages.	To address the NMED's comment regarding waste characterization, the section titled "Soil Sampling Analytical Results", on page 8 of the repot, has been revised to state, "On April 5, 2017, the samples collected for soil confirmation and waste determination were delivered to Hall Environmental Analysis Laboratory (Hall) and analyzed for the following constituents…". In addition, the final paragraph of this section was revised, adding the statement "The toxicity characteristic leaching procedure (TCLP), metals, and VOC results were used to determine waste characterization for soil disposal."

New Mexico Environment Department to Western Refining Southwest LLC Comment Letter "Approval with Modifications, Response Action Report Sour Naphtha Release" (October 13, 2020)

New Mexico Environment Department (NMED) Comment	Western Refining Southwest LLC Response
Comment 9:	**Response 9:**
The Permittee's response to NMED's Comment 13 states, "[t]hese statements have been removed in the revised Report." The statements were appropriately removed from the Regulatory Criteria Comparisons Section, page 10 of 11; however, Attachment B, Redline, does not show the deletions in the pertinent section. The redline strikeout (RLSO) version must show all changes made to the original documents. No revision required.	The comment is acknowledged. Western will ensure that all changes are included in the redline strikeout versions of future reports.
Comment 10:	**Response 10:**
The Permittee's response to NMED's Comment 14 states, "if further excavation is warranted, the excavation area and excavated soils will be monitored for VOCs during excavation." The confirmation samples must be analyzed for VOCs, PAHs, TPH, and metals at a minimum if excavation is warranted. Acknowledge the provision in the response letter.	The comment is acknowledged. If additional excavation is warranted, confirmation samples will be analyzed, at a minimum, for VOCs, PAHs, TPH, and metals.

ATTACHMENT A

CLEAN

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
☒	☐	Table of Contents
☒	☐	Section 1 - Introduction
☒	☐	• 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
☒	☐	• Groundwater Conditions – detailed discussion well installation and groundwater sample collection and analysis
☒	☐	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



☒	☐	Tables – Soil and/or Groundwater Data
☒	☐	Figures ☒ Figure – Affected Area - Topo Map ☒ Figure - Area Affected by Release – Aerial Photo ☒ Figure - Aerial Photo – Tank – Unit – Process Area ☒ Figure - Extent of Excavation Activities ☒ Figure - Sampling Locations (Soil, Wells, Surface Water) ☒ Figure - Proposed Soil Boring Locations ☒ Figure - Proposed Surface Sampling Locations (Soil)
☒	☐	Appendices
☒	☐	• Appendix – Analytical
☒	☐	• Appendix – Photos
☒	☐	• Appendix – Waste Manifests
☒	☐	• Appendix – Calculations for Reportable Quantities
☒	☐	• Appendix – Form C-141 Release Notification and Corrective Action
☐	☒	• Appendix – Boring Logs/Monitoring Well Completion Logs
☐	☒	• Appendix – Standard Operating Procedures
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RESPONSE TO DISAPPROVAL

RESPONSE ACTION REPORT SOUR NAPHTHA RELEASE

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 TPH-gasoline range organics (GRO) results exceed the industrial/occupational screening levels. These confirmation samples were collected either from the excavation side walls or floor. The reported exceedances are from depths greater than one foot (ft) where exposure to industrial workers is not likely but exposure to construction workers may be possible as the exceedances are in the one to ten ft below ground surface (bgs) range.

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. Williams Thunderstorm foam was applied to the release area to minimize vapors (Appendix G). 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 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. Based on TPH GRO, TPH-diesel range organics (DRO), and TPH- oil range organics (ORO) analyses of five soil samples, the sour naphtha averaged 96.7% TPH-GRO, 3.0% TPH-DRO, and 0.3 % TPH-ORO. These results suggest that the sour naphtha consisted of predominantly TPH-GRO compounds.

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. The pipelines have not been relocated to an aboveground crossing.

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. Additional documentation that soils along the release pathway to the west of the release area was not available at this time, therefore additional sampling is proposed to verify impacted soils have been remediated.

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. The backfill source was not documented in the release documentation. However, refinery maintenance personnel indicated that the backfill source likely originated from an off site sand and gravel company. Most backfill work is done by subcontractors who provide their own source of materials.

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 4) is provided below:

- Sample Location #1 – excavation floor, southeast of the pipeline hole
- Sample Location #2 – excavation floor, northeast 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 – outside of the excavation extent, 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 samples collected for soil confirmation and waste determination were delivered to Hall Environmental Analysis Laboratory (Hall) and analyzed for the following constituents:

- TPH – Environmental Protection Agency (EPA) Method 8015D
- Polycyclic Aromatic Hydrocarbons (PAH) – EPA Method 8310
- Anions (chloride and sulfate) – EPA Method 300.0
- TCLP Mercury – EPA Method 7470

- TCLP 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. Sample location #4 had the highest concentration for Toxicity Characteristic Leaching Procedure (TCLP) benzene, and Total VOCs (8260B soils) and was analyzed in that sample for use in Benzene Waste Operation NESHAP (BWON) calculations.

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. The TCLP, metals, and VOC results were used to determine waste characterization for soil disposal.

Subsurface Soil Conditions

No soil borings or monitoring 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. . Williams Thunderstorm was the foam applied to the release area to minimize the vapors. The Safety Data Sheet for Williams Thunderstorm W813A-FP 1x3 AR-AFFFF, 5G E (Appendix G). According to the Data Sheet for the foam, "The environmentally-mindful THUNDERSTORM W813A 1x3 AR-AFFF Concentrate formulation contains short-chain, C-6 fluorochemicals manufactured using a telomer-based process. The telomer process produces no PFOS, and these C-6 materials do not breakdown to yield PFOA. The fluorochemicals used in the concentrate meet the goals of the U.S. Environmental Protection Agency 2010/15 PFOA Stewardship Program and the current ECHA Directive (EU) 2017/1000".

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 TPH analytical results indicates exceedances of the Residential Soil Screening Level (1,000 milligrams per kilogram [mg/kg]) and/or the industrial/occupational screening level (3,800 mg/kg), assuming unknown oil. TPH-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 TPH-GRO concentrations exceeded NMED screening levels. The confirmation samples were collected either from the excavation side walls or floor. The reported exceedances are from depths greater than one ft where exposure to industrial workers is not likely but exposure to construction workers may be possible as the exceedances are in the one to ten ft bgs range.

Recommendations

An investigation work plan will be submitted proposing that a minimum of two soil borings (Figure 6) will be advanced to a minimum depth of 10 ft bgs for delineation of the vertical and horizontal extent of hydrocarbon contamination in the release area. A minimum of one boring will be installed five feet west of sample location #4 and one boring will be installed five feet east of sample location #2. These locations will be sampled for TPH-GRO analysis at the depths corresponding to the sample depths in locations #2 and #4. If the TPH-GRO concentrations exceed the screening level, additional borings will be installed to fully delineate the concentration extent exceeding screening levels. Additionally, if further excavation is warranted, the excavation area and excavated soils will be monitored for VOCs during excavation.

In the investigation work plan an additional 11 locations (Figure 7) will be proposed to be sampled at the surface and at a depth of one ft bgs. These samples will be analyzed for TPH-GRO. Following the investigation, the results will be summarized in an investigation report as well as recommendations for additional soils remediation.

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

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2 SOUR NAPHTHA RELEASE
SCALE: 1" = 100'

N

0 100'



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

1 KEY MAP
SCALE: 1" = 800'

N

0 800'

EXPLANATION

- TANK
- SOUR NAPHTHA RELEASE

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FIGURE 1

SITE LOCATION

GALLUP REFINERY
GALLUP, NEW MEXICO

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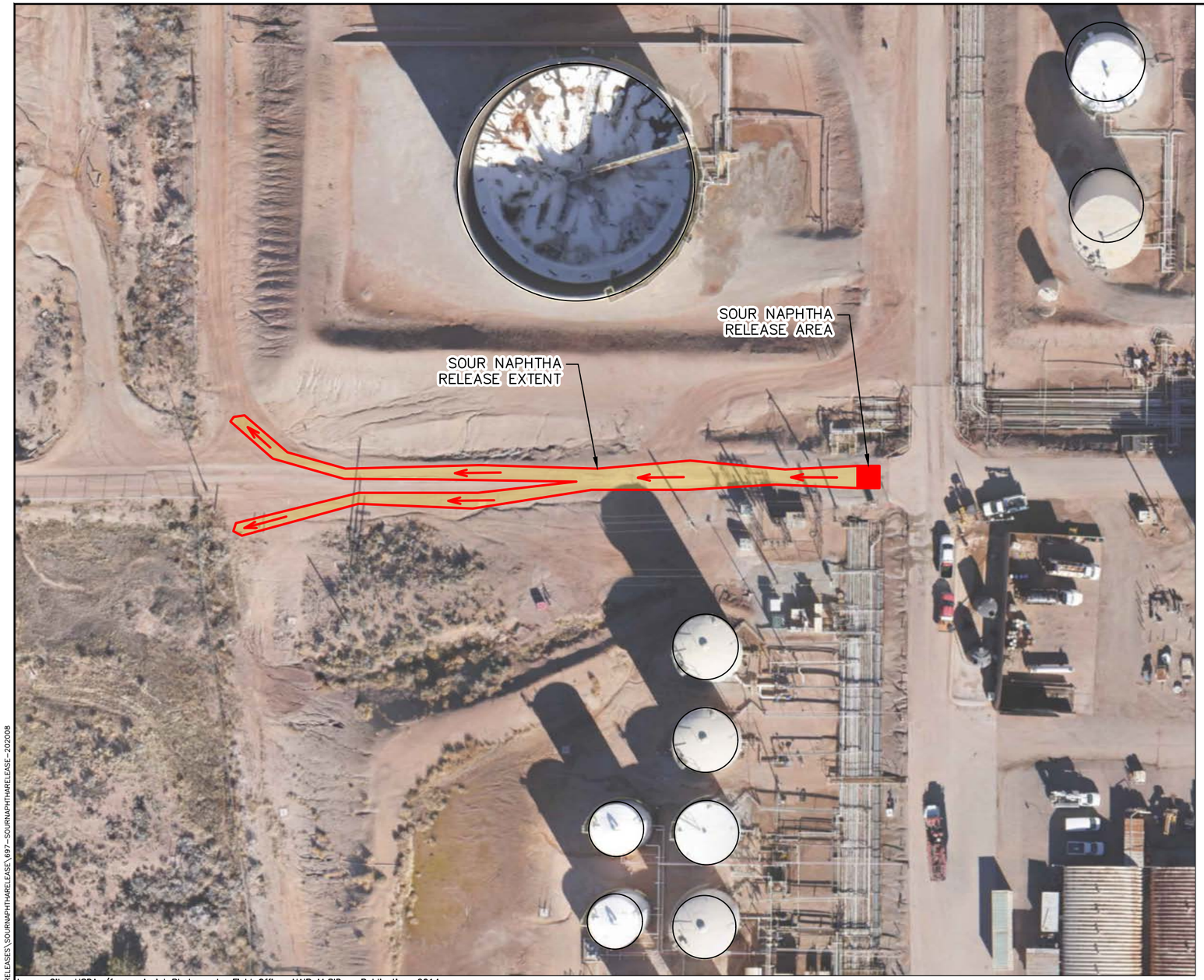


Image Cite: USDA /fsa – Aerial Photography Field Office, NAIP MrSID – Publication: 2014

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

N
0 60'



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

1 KEY MAP
SCALE: 1" = 800'

N
0 800'

EXPLANATION

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

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FIGURE 2

RELEASE EXTENT

GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: PH	Scale: AS SHOWN	Date: 8/27/20	File: 697-SOURNAPHTHARELEASE-202008

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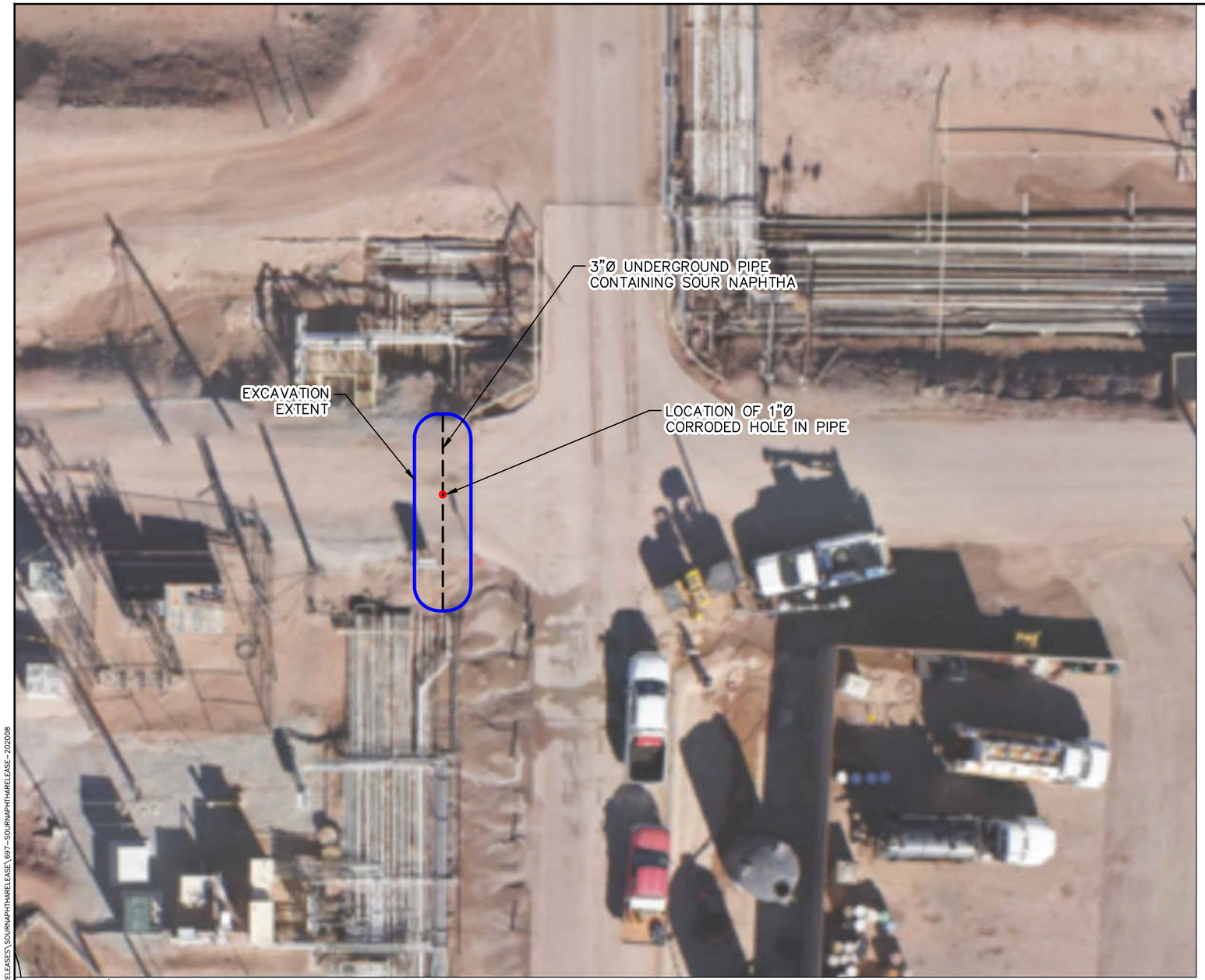


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2 SOUR NAPHTHA RELEASE EXCAVATION EXTENT
SCALE: 1" = 20'

N

0 20'

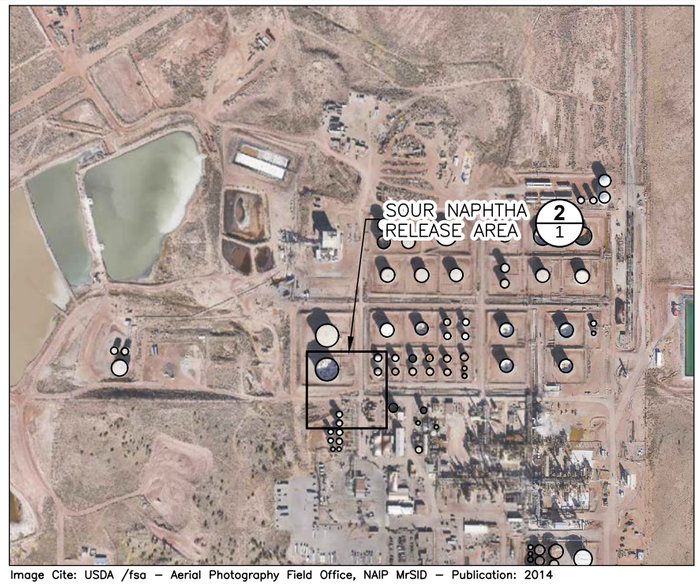


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1 KEY MAP
SCALE: 1" = 800'

N

0 800'

EXPLANATION

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

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FIGURE 3

EXCAVATION EXTENT

GALLUP REFINERY
GALLUP, NEW MEXICO

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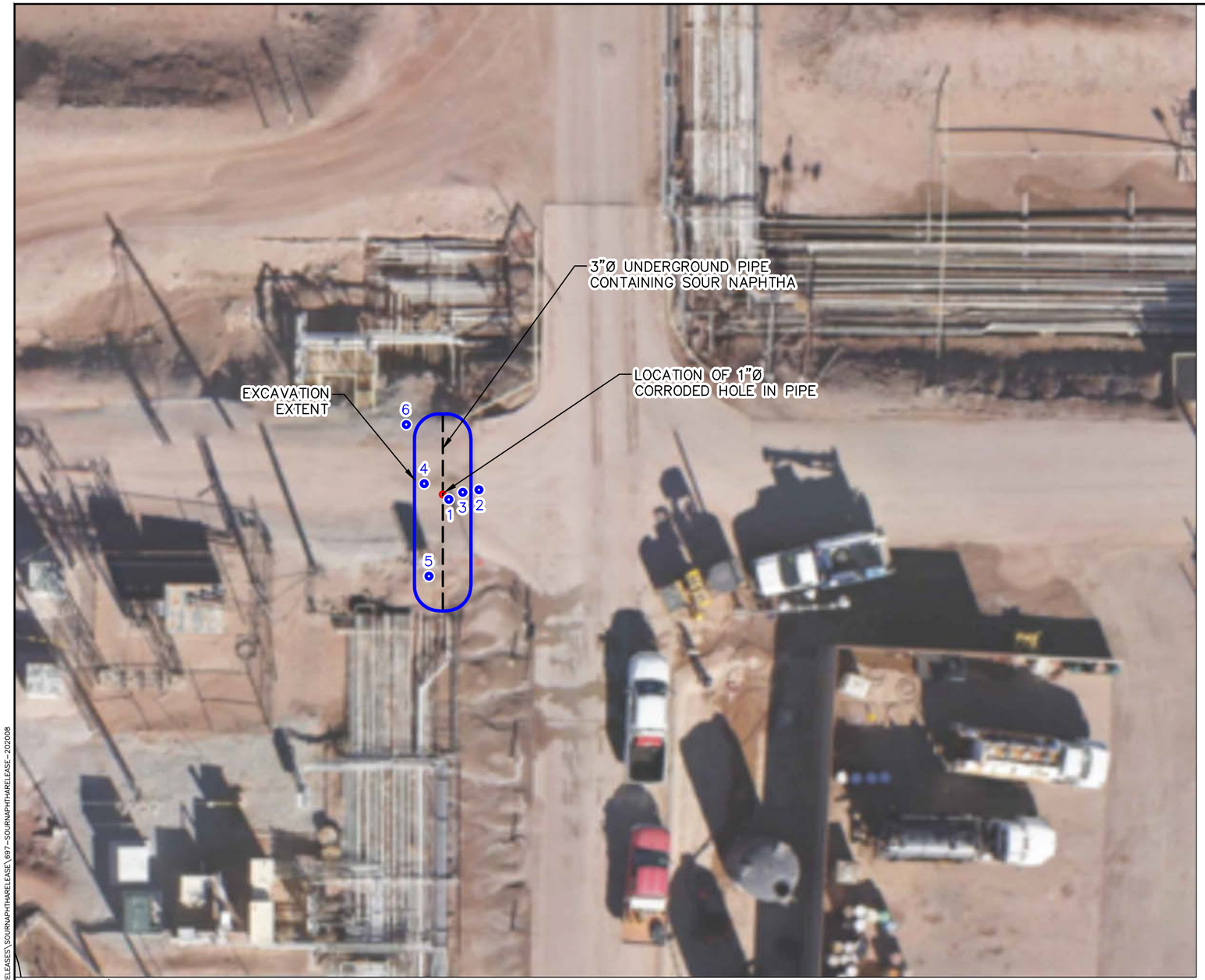


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2 SOUR NAPHTHA RELEASE SOIL SAMPLE LOCATIONS
SCALE: 1" = 20'

N

0 20'

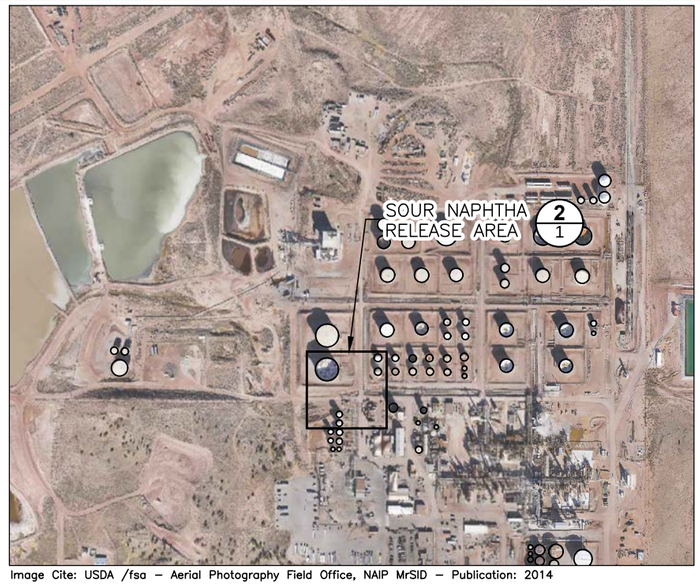


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1 KEY MAP
SCALE: 1" = 800'

N

0 800'

EXPLANATION

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

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FIGURE 4

SOIL SAMPLE LOCATIONS

GALLUP REFINERY
GALLUP, NEW MEXICO

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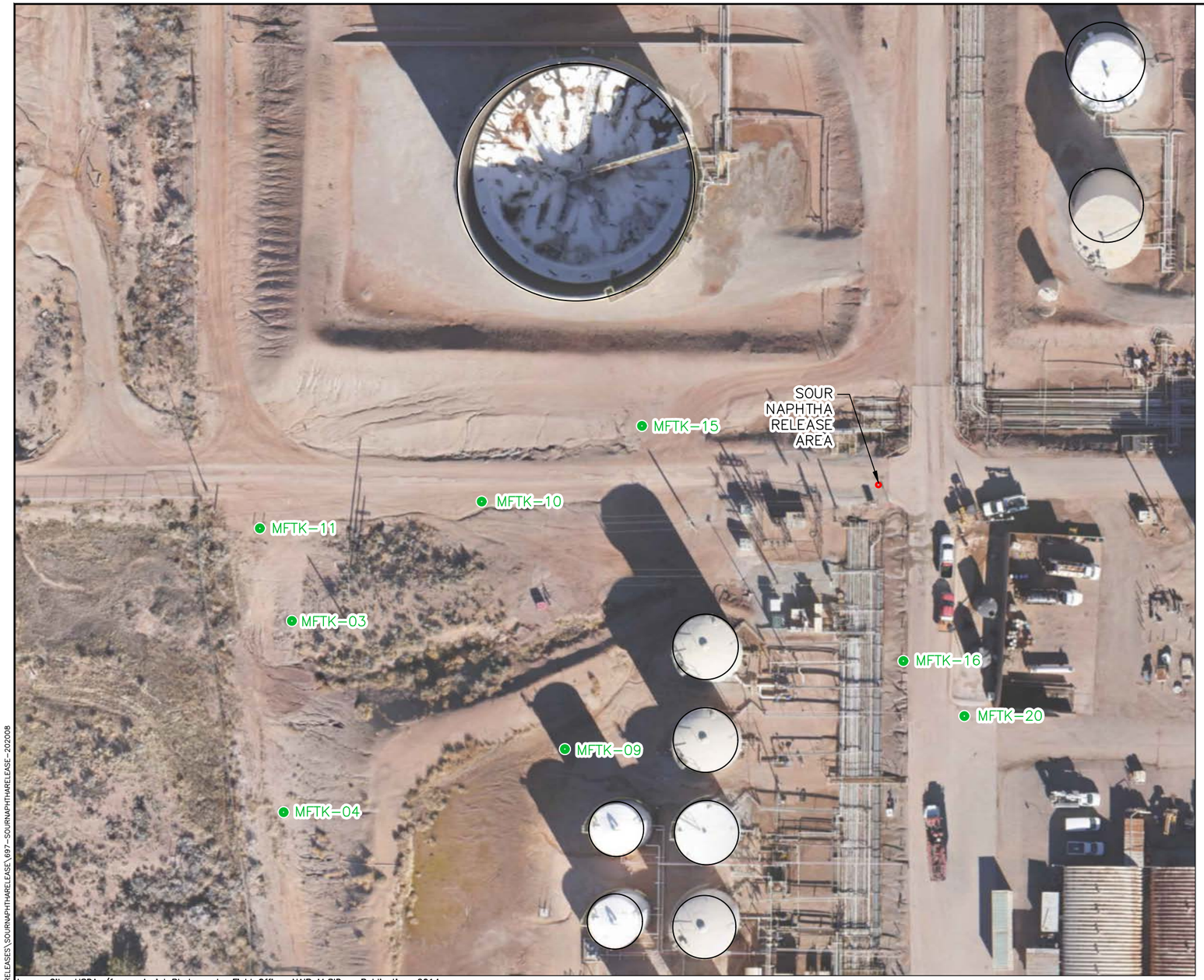


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2 SOUR NAPHTHA RELEASE MONITORING WELL LOCATIONS
SCALE: 1" = 60'

N
0 60'



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

1 KEY MAP
SCALE: 1" = 800'

N
0 800'

EXPLANATION

- TANK
- SOUR NAPHTHA RELEASE
- MONITORING WELL LOCATION

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FIGURE 5

MONITORING WELL LOCATIONS

GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: PH	Scale: AS SHOWN	Date: 8/27/20	File: 697-SOURNAPHTHARELEASE-202008

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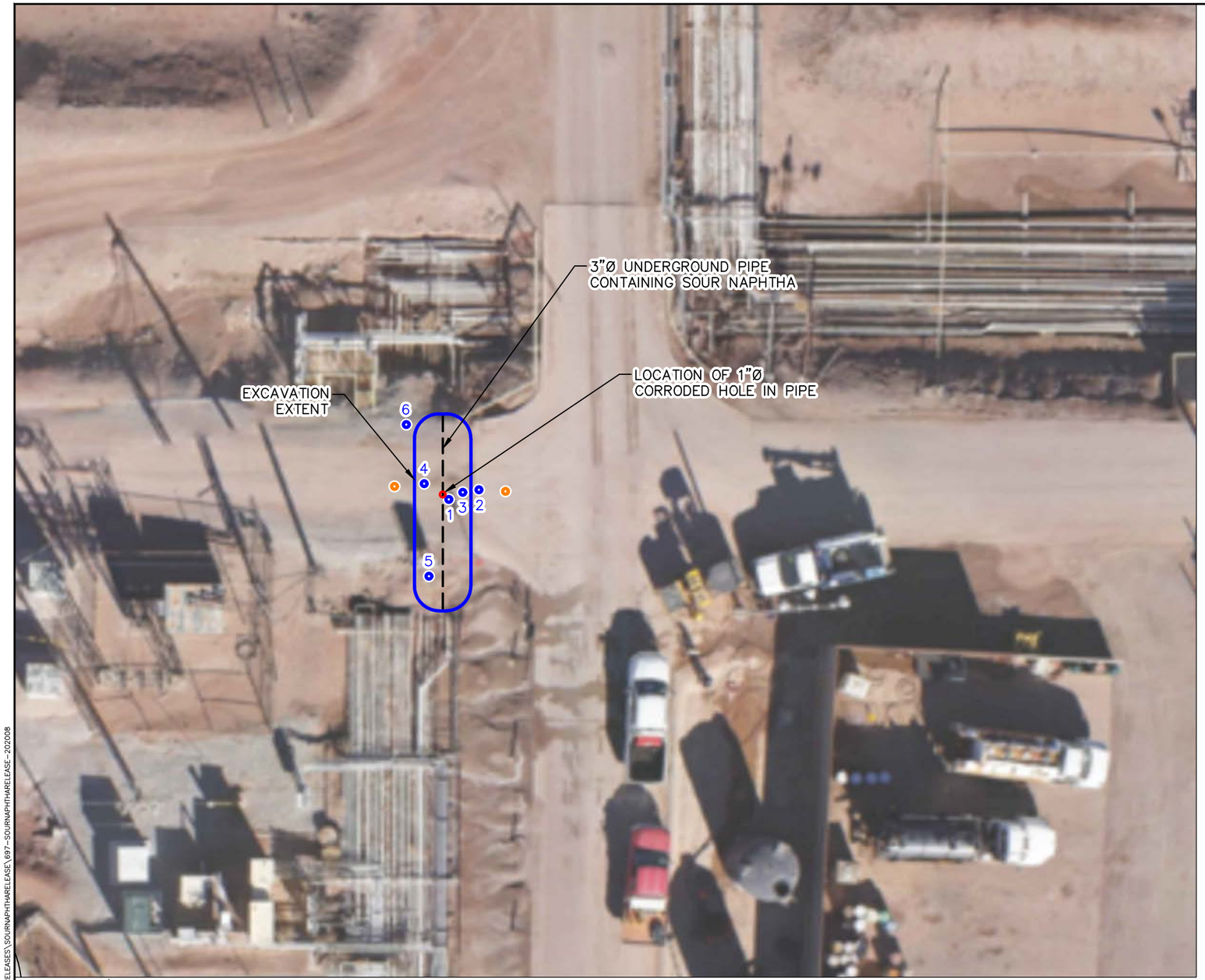


Image Cite: USDA /fsa – Aerial Photography Field Office, NAIP MrSID – Publication: 2014

2 PROPOSED SOIL BORING LOCATIONS
SCALE: 1" = 20'

N
0 20'



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

1 KEY MAP
SCALE: 1" = 800'

N
0 800'

EXPLANATION

- TANK
- SOUR NAPHTHA RELEASE
- UNDERGROUND PRODUCT PIPELINE
- SOUR NAPHTHA RELEASE EXCAVATION EXTENT AREA
- SOIL SAMPLE LOCATION
- PROPOSED SOIL BORING LOCATION

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FIGURE 6

PROPOSED SOIL BORING LOCATIONS

GALLUP REFINERY
GALLUP, NEW MEXICO

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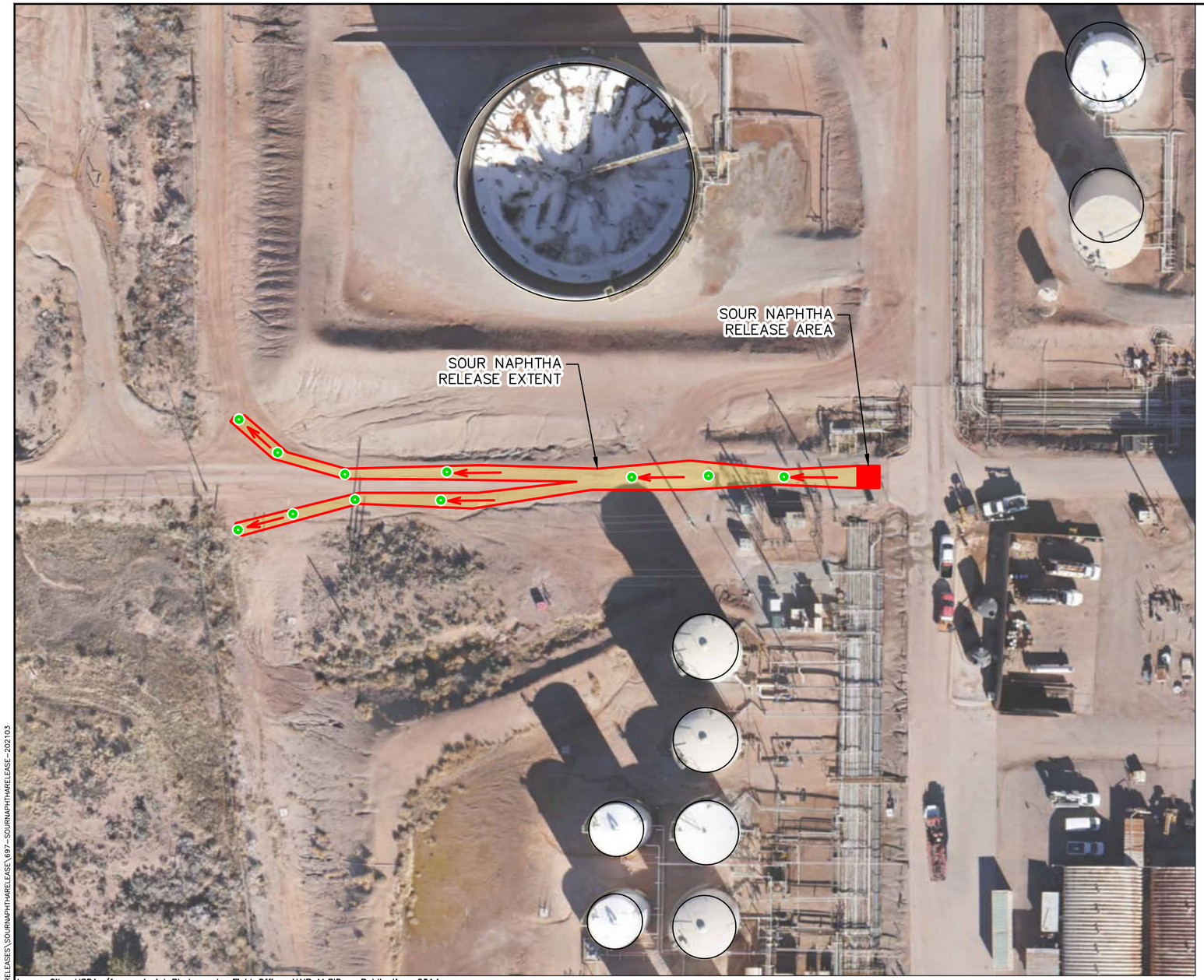


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2 PROPOSED SURFACE SAMPLE LOCATIONS
SCALE: 1" = 60'

N
0 60'



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

1 KEY MAP
SCALE: 1" = 800'

N
0 800'

EXPLANATION

- TANK
- SOUR NAPHTHA RELEASE
- SOUR NAPHTHA RELEASE EXTENT
- RELEASE FLOW DIRECTION
- PROPOSED SURFACE SAMPLE LOCATION

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FIGURE 7

PROPOSED SURFACE SAMPLE LOCATIONS

GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: PH	Scale: AS SHOWN	Date: 4/5/21	File: 697-SOURNAPHTHARELEASE-202103

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Appendix A
Photographs of Release

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Sour Naphtha Release - Looking North

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Sour Naphtha Release - Looking West

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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

Xylene	**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.
Hydrogen sulphide	**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. **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.

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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

Naphth 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.
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he symbol(s)

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Appendix D
Photograph During Remediation

2017/03/29

Sour Naphtha Release - Looking South

Appendix E
Analytical Data Report

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

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

Analytical Report
Lab Order **1704176**
Date Reported: **4/21/2017**

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

Analytical Report
Lab Order **1704176**
Date Reported: **4/21/2017**

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

Analytical Report
Lab Order **1704176**
Date Reported: **4/21/2017**

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

Analytical Report
Lab Order **1704176**
Date Reported: **4/21/2017**

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

Analytical Report
Lab Order **1704176**
Date Reported: **4/21/2017**

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

Analytical Report
Lab Order **1704176**
Date Reported: **4/21/2017**

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

Analytical Report
Lab Order **1704176**
Date Reported: **4/21/2017**

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

Analytical Report
Lab Order **1704176**
Date Reported: **4/21/2017**

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

Analytical Report
Lab Order **1704176**
Date Reported: **4/21/2017**

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

Analytical Report
Lab Order **1704176**
Date Reported: **4/21/2017**

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

Analytical Report
Lab Order **1704176**
Date Reported: **4/21/2017**

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

Analytical Report
Lab Order **1704176**
Date Reported: **4/21/2017**

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

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

Analytical Report
Lab Order **1704176**
Date Reported: **4/21/2017**

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

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

Analytical Report
Lab Order **1704176**
Date Reported: **4/21/2017**

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:

*	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

1704176-001B SAMPLE LOCATION #1
Collected date/time: 03/30/17 11:30

SAMPLE RESULTS - 01
L901160

ONE LAB. NATIONWIDE.

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

1704176-002B SAMPLE LOCATION #2
Collected date/time: 03/30/17 11:35

SAMPLE RESULTS - 02

L901160

ONE LAB. NATIONWIDE.

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 09:15	WG968433

Wet Chemistry by Method 9034-9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulfide	42.7		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	8.86	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 Deg. F	Qualifier	Dilution	Analysis date / time	Batch
Ignitability	77.7		1	04/07/2017 19:00	WG968557

1704176-003B SAMPLE LOCATION #3
Collected date/time: 03/30/17 11:40

SAMPLE RESULTS - 03
L901160

ONE LAB. NATIONWIDE.

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

1704176-004B SAMPLE LOCATION #4
Collected date/time: 03/30/17 11:45

SAMPLE RESULTS - 04

L901160

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9012 B

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

Wet Chemistry by Method 9034-9030B

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

Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
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

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

Released to Imaging: 7/25/2024 3:44:05 PM

1704176-005B SAMPLE LOCATION #5
Collected date/time: 03/30/17 11:50

SAMPLE RESULTS - 05

L901160

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9012 B

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

Wet Chemistry by Method 9034-9030B

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

Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	su			date / time	
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

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

1704176-006B SAMPLE LOCATION #6
Collected date/time: 03/30/17 11:55

SAMPLE RESULTS - 06
L901160

ONE LAB. NATIONWIDE.

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

Released to Imaging: 7/25/2024 3:44:05 PM
Received by OCD: 4/16/2024 4:14:15 PM

Method Blank (MB)

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

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL 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 mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
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 mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
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 mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
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 mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Reactive Cyanide	1.67	ND	1.52	1.57	87	90	1	75-125			3	20

Released to Imaging: 7/25/2024 3:44:05 PM
Received by OCD: 4/16/2024 4:14:15 PM

QUALITY CONTROL SUMMARY

L901160-01,02,03,04,05,06

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

Released to Imaging: 7/25/2024 3:44:05 PM

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

Received by OCD: 4/16/2024 4:14:15 PM

Released to Imaging: 7/25/2024 3:44:05 PM

QUALITY CONTROL SUMMARY

L901160-01,02,03,04,05,06

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

Received by OCD: 4/16/2024 4:14:15 PM

Released to Imaging: 7/25/2024 3:44:05 PM

Received by OCD: 4/16/2024 4:14:15 PM

WG968557

Wet Chemistry by Method D93/1010A

QUALITY CONTROL SUMMARY

L901160-01,02,03,04,05,06

ONE LAB. NATIONWIDE.

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

ACCOUNT:	PROJECT:	SDG:	DATE/TIME:
Hall Environmental Analysis Laboratory		L901160	04/10/17 10:59

GLOSSARY OF TERMS

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:

*	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-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			

Released to Imaging: 7/25/2024 3:44:05 PM

Received by OCD: 4/16/2024 4:14:15 PM

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: 39

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	R6015 D (DRO/GRO/MRO)CI		8260B - TCLP	8270 - TCLP	RCRA 8 METALS - TCLP	RCI	PAINT FILTER	8310 PAH	SULFATES			Add 8260 full list to 4 of 4 pages			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						

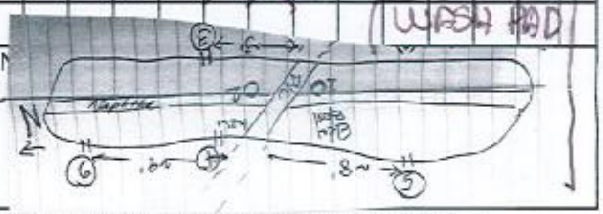
Date: 03-10-17 Time: 11:00 Relinquished by: Alvin Dorsey

Received by: Date 04/05/17 Time 1445

Date: Time: Relinquished by:

Received by: Date Time

Remarks: TIO1/102 (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 Manifests

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

U.S. EPA ID Number
TXD069452340

Facility's Phone: 800 242-9208

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 | Day | Year

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

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	888-466-7077	002837255 GBF

GENERATOR

5. Generator's Name and Mailing Address
Western Refining Company - Gallup Refinery
I-40 @ Exit 39
Jamestown, NM 87347
Attn: ATTN: Janelle Yoder
Generator's Phone: 505-722-3833

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

6. Transporter 1 Company Name
CHEMICAL TRANSPORTATION, INC.

U.S. EPA ID Number
AZT050010008

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
TXD088945340

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# 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 04 Day 29 Year 24

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 4 Day 29 Year 24

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

Appendix G
Safety Data Sheet for Williams Thunderstorm W813A-FP 1x3 AR-AFFFF, 5G E

Safety Data Sheet

This safety data sheet complies with the requirements of: 2012 OSHA Hazard Communication Standard (29CFR 1910.1200)

Product name THUNDERSTORM W813A-FP 1x3 AR-AFFF, 5G E

1. Identification

1.1. Product Identifier

Product name THUNDERSTORM W813A-FP 1x3 AR-AFFF, 5G E

1.2. Other means of identification

Product code 704641E
Synonyms None
Chemical Family No information available

1.3. Recommended use of the chemical and restrictions on use

Recommended use Fire extinguishing agent.
Uses advised against Consumer use.

1.4. Details of the Supplier of the Safety Data Sheet

Company Name Tyco Fire Protection Products
One Stanton Street
Marinette, WI 54143-2542
Telephone: 715-735-7411
Contact point Product Stewardship at 1-715-735-7411
E-mail address psra@tycofp.com

1.5. Emergency Telephone Number

Emergency telephone Chemtrec 1-800-424-9300

2. Hazards Identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral - Category 4
Serious eye damage/eye irritation - Category 1
Skin Sensitization - Category 1B

2.2. Label Elements

Signal Word
DANGER

Hazard Statements
Harmful if swallowed
Causes serious eye damage
May cause an allergic skin reaction



Precautionary Statements

Prevention
Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing should not be allowed out of the workplace.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

Disposal
Dispose of contents/container to an approved waste disposal plant.

2.3. Hazards Not Otherwise Classified (HNOC)
Not Applicable.

2.4. Other Information

3. Composition/information on Ingredients

3.1. Mixture
The following component(s) in this product are considered hazardous under applicable OSHA(USA)

Chemical name	CAS No.	weight-%
Ethylene Glycol	107-21-1	10 - 30
2-(2-Butoxyethoxy)ethanol	112-34-5	1 - 5
D-Glucopyranoside, C9-C11 Oligomer	132778-08-6	1 - 5
Polyfluorinated alkyl polyamide	Proprietary	1 - 5
Polyfluorinated alkyl betaine	Proprietary	1 - 5
Sodium Decyl Sulfate	142-87-0	1 - 5
Sodium Octyl Sulfate	142-31-4	1 - 5
1-Propanaminium, N-(3-Aminopropyl)-2-hydroxy-N,N-dimethyl-3-sulfo-, N-Coco-acylderivates	68139-30-0	1 - 5
Polyfluorinated alkyl quaternary amine chloride	Proprietary	0.1 - 1

4. First aid measures

4.1. Description of first aid measures

General Advice If symptoms persist, call a physician. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.

Eye Contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water. Get medical attention if irritation develops and persists.

Inhalation Remove to fresh air. If breathing is difficult, give oxygen. (Get medical attention immediately

if symptoms occur.).

Ingestion Rinse mouth. Do not induce vomiting without medical advice. If swallowed, call a poison control center or physician immediately.

4.2. Most Important Symptoms and Effects, Both Acute and Delayed

Symptoms No information available.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

Note to physicians Treat symptomatically.

5. Fire-fighting measures

5.1. Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2. Unsuitable Extinguishing Media

None.

5.3. Specific Hazards Arising from the Chemical

None known.

Hazardous Combustion Products Carbon oxides, Fluorinated oxides, Nitrogen oxides (NOx), Oxides of sulfur

5.4. Explosion Data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

5.5. Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal Precautions Ensure adequate ventilation, especially in confined areas.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental Precautions

Environmental Precautions Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas. See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up Pick up and transfer to properly labeled containers.

7. Handling and Storage

7.1. Precautions for Safe Handling

Advice on safe handling Avoid contact with skin and eyes. Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible Materials Strong oxidizing agents. Strong acids. Strong bases.

8. Exposure Controls/Personal Protection

8.1. Control Parameters

Exposure guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL
Ethylene Glycol 107-21-1	STEL: 50 ppm vapor fraction STEL: 10 mg/m³ inhalable particulate matter, aerosol only TWA: 25 ppm vapor fraction	-	-	100 mg/m³ (Ceiling)
2-(2-Butoxyethoxy)ethanol 112-34-5	TWA: 10 ppm inhalable fraction and vapor	-	-	-

ACGIH (American Conference of Governmental Industrial Hygienists) OSHA (Occupational Safety and Health Administration of the US Department of Labor) NIOSH IDLH Immediately Dangerous to Life or Health

8.2. Appropriate Engineering Controls

Engineering controls Ensure adequate ventilation, especially in confined areas.

8.3. Individual protection measures, such as personal protective equipment

Eye/Face Protection Avoid contact with eyes. Tight sealing safety goggles.

Skin and Body Protection Wear protective gloves and protective clothing.

Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Ventilation Use local exhaust or general dilution ventilation to control exposure with applicable limits

8.4. General hygiene considerations

Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State	Liquid		
Odor	Characteristic	**Color**	Amber
Odor Threshold	No data available		

Property	**Values**	**Remarks • Method**
pH	7 - 8.5	
Melting point/freezing point	No data available	
Boiling point / boiling range	No data available	
Flash Point	No data available	
Evaporation Rate	No data available	
Flammability (solid, gas)	No data available	
Flammability limit in air		
Upper flammability limit:	No data available	
Lower flammability limit:	No data available	
Vapor Pressure	No data available	
Vapor Density	No data available	
Specific gravity	No data available	
Water Solubility	No data available	
Solubility in Other Solvents	No data available	
Partition coefficient	No data available	
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
Kinematic viscosity	No data available	
VOC content (%)	30.63605	
Density	1.08	

10. Stability and Reactivity

10.1. Chemical Stability

Stable under recommended storage conditions.

10.2. Reactivity

No data available

10.3. Possibility of hazardous reactions

None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

10.4. Conditions to Avoid

Extremes of temperature and direct sunlight.

10.5. Incompatible Materials

Strong oxidizing agents. Strong acids. Strong bases.

10.6. Hazardous decomposition products

Carbon oxides. Nitrogen oxides (NOx). Oxides of sulfur. Fluorinated oxides.

11. Toxicological Information

11.1. Information on Likely Routes of Exposure

Product information No data available

Inhalation No data available.

Eye Contact Corrosive to the eyes and may cause severe damage including blindness.

Skin contact May cause irritation.

Ingestion Harmful if swallowed.

Component Information
Acute Toxicity

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Ethylene Glycol 107-21-1	= 4700 mg/kg (Rat)	= 9530 µL/kg (Rabbit) = 10600 mg/kg (Rat)	-
2-(2-Butoxyethoxy)ethanol 112-34-5	= 5660 mg/kg (Rat)	= 2700 mg/kg (Rabbit)	-
Polyfluorinated alkyl polyamide	>2000 mg/kg	>2000 mg/kg	>5.11 mg/l
Sodium Decyl Sulfate 142-87-0	= 1950 mg/kg (Rat)	-	-
Sodium Octyl Sulfate 142-31-4	= 3200 mg/kg (Rat)	-	-
Polyfluorinated alkyl quaternary amine chloride	>300 - <2000 mg/kg	-	-

11.2. Information on Toxicological Effects

Symptoms No information available.

11.3. Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin Corrosion/Irritation Irritating to skin.

Component Information					
Polyfluorinated alkyl quaternary amine chloride					
Method	species	Exposure Route	Effective dose	Exposure time	Results
OECD Test No. 439: In Vitro Skin Irritation: Reconstructed Human Epidermis Test Method	EPISKIN™	in vitro			Non-irritant

Serious eye damage/eye irritation Risk of serious damage to eyes.

Component Information					
Polyfluorinated alkyl polyamide					
Method	species	Exposure Route	Effective dose	Exposure time	Results
OECD Test No. 405: Acute Eye Irritation/Corrosion	Rabbit	eye			Class 4 on a 1 to 8 scale according to a modified Kay and

					Calandra classification system. Mild eye irritation

Sensitization May cause sensitization by skin contact.

Component Information			
Polyfluorinated alkyl polyamide			
Method	species	Exposure Route	Results
OECD Test No. 429: Skin Sensitisation: Local Lymph Node Assay	mouse	dermal	sensitizing

Polyfluorinated alkyl quaternary amine chloride			
Method	species	Exposure Route	Results
OECD Test No. 429: Skin Sensitisation: Local Lymph Node Assay	mouse	dermal	sensitizing

Component Information		
Polyfluorinated alkyl polyamide		
Method	species	Results
OECD Test No. 473: In vitro Mammalian Chromosome Aberration Test	in vitro	Non-clastogenic to human lymphocytes in vitro.

Carcinogenicity No information available.
Reproductive Toxicity No information available.
STOT - Single Exposure No information available.
STOT - Repeated Exposure No information available.
Target organ effects Central Nervous System, Eyes, Respiratory System, Skin.
Aspiration Hazard No information available.

11.4. Numerical Measures of Toxicity - Product information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 1774 mg/kg
ATEmix (dermal) 36717 mg/kg
ATEmix (inhalation-dust/mist) 169.7 mg/l

12. Ecological Information

12.1. Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Crustacea
Ethylene Glycol 107-21-1	EC50 (96h) 6500 - 13000 mg/L Pseudokirchneriella subcapitata	LC50 (96h) static = 27540 mg/L Lepomis macrochirus LC50 (96h) static = 40761 mg/L Oncorhynchus mykiss LC50 (96h) = 41000 mg/L Oncorhynchus mykiss LC50 (96h) static 14 - 18 mL/L Oncorhynchus mykiss LC50 (96h) static = 16000 mg/L Poecilia reticulata LC50 (96h) static 40000 - 60000 mg/L Pimephales promelas	EC50 (48h) = 46300 mg/L Daphnia magna
2-(2-Butoxyethoxy)ethanol 112-34-5	EC50 (96h) > 100 mg/L Desmodesmus subspicatus	LC50 (96h) static = 1300 mg/L Lepomis macrochirus	EC50 (48h) > 100 mg/L Daphnia magna EC50 (24h) = 2850 mg/L Daphnia magna
1,2-Propanediol 57-55-6	EC50 (96h) = 19000 mg/L Pseudokirchneriella subcapitata	LC50 (96h) static = 51600 mg/L Oncorhynchus mykiss LC50 (96h) static = 51400 mg/L Pimephales	EC50 (48h) Static > 1000 mg/L Daphnia magna EC50 (24h) > 10000 mg/L Daphnia magna

		promelas LC50 (96h) = 710 mg/L Pimephales promelas LC50 (96h) static 41 - 47 mL/L Oncorhynchus mykiss	
n-Butanol 71-36-3	EC50 (96h) > 500 mg/L Desmodesmus subspicatus EC50 (72h) > 500 mg/L Desmodesmus subspicatus	LC50 (96h) static = 1910000 µg/L Pimephales promelas LC50 (96h) static 1730 - 1910 mg/L Pimephales promelas LC50 (96h) flow-through = 1740 mg/L Pimephales promelas LC50 (96h) static 100000 - 500000 µg/L Lepomis macrochirus	EC50 (48h) Static 1897 - 2072 mg/L Daphnia magna EC50 (48h) = 1983 mg/L Daphnia magna
2-Methyl-2,4-pentanediol 107-41-5	-	LC50 (96h) static = 10700 mg/L Pimephales promelas LC50 (96h) static = 10000 mg/L Lepomis macrochirus LC50 (96h) flow-through = 8690 mg/L Pimephales promelas LC50 (96h) flow-through 10500 - 11000 mg/L Pimephales promelas	EC50 (48h) 2700 - 3700 mg/L Daphnia magna
t-Butanol 75-65-0	EC50 (72h) > 1000 mg/L Desmodesmus subspicatus	LC50 (96h) flow-through 6130 - 6700 mg/L Pimephales promelas	EC50 (48h) = 933 mg/L Daphnia magna EC50 (48h) Static 4607 - 6577 mg/L Daphnia magna
1-Octanol 111-87-5	EC50 (48h) static = 14 mg/L Desmodesmus subspicatus	LC50 (96h) static = 17.68 mg/L Oncorhynchus mykiss LC50 (96h) flow-through 11.4 - 12.9 mg/L Pimephales promelas	EC50 (24h) 15 - 26 mg/L Daphnia magna
Sodium chloride 7647-14-5	-	LC50 (96h) flow-through 4747 - 7824 mg/L Oncorhynchus mykiss LC50 (96h) semi-static = 7050 mg/L Pimephales promelas LC50 (96h) static = 12946 mg/L Lepomis macrochirus LC50 (96h) static 6020 - 7070 mg/L Pimephales promelas LC50 (96h) flow-through 5560 - 6080 mg/L Lepomis macrochirus LC50 (96h) static 6420 - 6700 mg/L Pimephales promelas	EC50 (48h) Static 340.7 - 469.2 mg/L Daphnia magna EC50 (48h) = 1000 mg/L Daphnia magna
Sodium Hydrogen Carbonate 144-55-8	EC50 (120h) = 650 mg/L Nitzschia linearis	LC50 (96h) static 8250 - 9000 mg/L Lepomis macrochirus	EC50 (48h) = 2350 mg/L Daphnia magna
Formaldehyde 50-00-0	-	LC50 (96h) static 100 - 136 mg/L Oncorhynchus mykiss LC50 (96h) flow-through 0.032 - 0.226 mL/L Oncorhynchus mykiss LC50 (96h) flow-through 22.6 - 25.7 mg/L Pimephales promelas LC50 (96h) static 23.2 - 29.7 mg/L Pimephales promelas LC50 (96h) static = 41 mg/L Brachydanio rerio LC50 (96h) static = 1510 µg/L Lepomis macrochirus	LC50 (48h) = 2 mg/L Daphnia magna EC50 (48h) Static 11.3 - 18 mg/L Daphnia magna
Hexamethylenetetramine 100-97-0	-	LC50 (96h) flow-through 44600 - 55600 mg/L Pimephales promelas	EC50 (48h) 29868 - 43390 mg/L Daphnia magna
Methylene chloride 75-09-2	EC50 (72h) > 500 mg/L Pseudokirchneriella subcapitata EC50 (96h) > 500 mg/L Pseudokirchneriella subcapitata	LC50 (96h) static = 193 mg/L Lepomis macrochirus LC50 (96h) flow-through = 193 mg/L Lepomis macrochirus LC50 (96h) static 262 - 855 mg/L Pimephales promelas LC50 (96h) flow-through 140.8 - 277.8 mg/L Pimephales promelas	EC50 (48h) Static 1532 - 1847 mg/L Daphnia magna EC50 (48h) = 190 mg/L Daphnia magna
1,3-Dichloropropene	EC50 (96h) 2.45 - 6.45 mg/L	LC50 (96h) semi-static = 4.5 mg/L	EC50 (48h) Static 0.063 - 0.129

542-75-6	Pseudokirchneriella subcapitata EC50 (72h) 3.12 - 10.5 mg/L Pseudokirchneriella subcapitata	Oncorhynchus mykiss LC50 (96h) = 2 mg/L Oncorhynchus mykiss LC50 (96h) static 1.52 - 2.68 mg/L Pimephales promelas LC50 (96h) static 5.1 - 6.8 mg/L Lepomis macrochirus LC50 (96h) static 3.1 - 4.9 mg/L Oncorhynchus mykiss LC50 (96h) flow-through 0.211 - 0.271 mg/L Pimephales promelas	mg/L Daphnia magna EC50 (48h) = 0.09 mg/L Daphnia magna
4,4'-bis-(sulfostyryl)-biphenyl disodium salt 27344-41-8	EC50 (72h) = 10 mg/L Desmodesmus subspicatus EC50 (96h) 10.0 - 11.0 mg/L Desmodesmus subspicatus	LC50 (96h) static = 76 mg/L Brachydanio rerio	EC50 (48h) = 1000 mg/L Daphnia magna

Polyfluorinated alkyl polyamide					
Method	Species	Endpoint type	Effective dose	Exposure time	Results
OECD Test No. 203: Fish, Acute Toxicity Test	Oncorhynchus mykiss (rainbow trout)	LC50	>14 mg/l	96h	NOEC: 14 mg/L No toxic effects at saturation.
OECD Test No. 201: Freshwater Alga and Cyanobacteria, Growth Inhibition Test	Algae	ErC50	>15 mg/l	72h	Growth rate >15, Yield 13. NOEC: 4.0 mg/L, LOEC: 8.5 mg/L
OECD Test No. 202: Daphnia sp., Acute Immobilization Test	Daphnia magna	EC50	>20 mg/l	48h	NOEC: 20 mg/L No toxic effects at saturation.

Polyfluorinated alkyl quaternary amine chloride					
Method	Species	Endpoint type	Effective dose	Exposure time	Results
OECD Test No. 211: Daphnia magna Reproduction Test	Daphnia magna	NOEC	5.38 mg/L	21 days	
OECD Test No. 202: Daphnia sp., Acute Immobilization Test	Daphnia magna	EC50	2.6 mg/L	48h	
OECD Test No. 210: Fish, Early-Life Stage Toxicity Test	Pimephales promelas	NOEC	11.8 mg/L	33 days	
OECD Test No. 203: Fish, Acute Toxicity Test	Cyprinus carpio	LC50	98 mg/L	96h	
OECD Test No. 201: Freshwater Alga and Cyanobacteria, Growth Inhibition Test	Pseudokirchneriella subcapitata	EC50	788 mg/L	96h	

12.2. Persistence and Degradability

No information available.

12.3. Bioaccumulation

No information available.

Chemical name	Partition coefficient
Ethylene Glycol 107-21-1	-1.93

12.4. Other Adverse Effects

No information available

13. Disposal Considerations

13.1. Waste Treatment Methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging Do not reuse container.

14. Transport Information

DOT NOT REGULATED

TDG NOT REGULATED

MEX NOT REGULATED

ICAO (air) NOT REGULATED

IATA NOT REGULATED

IMDG NOT REGULATED

15. Regulatory Information

15.1. International Inventories

TSCA	Complies
DSL/NDSL	Does not comply
ENCS	Does not comply
IECSC	Does not comply
KECL	Does not comply
PICCS	Does not comply
AICS	Does not comply

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

15.2. US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	SARA 313 - Threshold Values %
Ethylene Glycol - 107-21-1	1.0
2-(2-Butoxyethoxy)ethanol - 112-34-5	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard Yes

Chronic health hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Ethylene Glycol 107-21-1	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

15.3. US State Regulations

California Proposition 65
This product contains the following Proposition 65 chemicals

Chemical name	California Proposition 65
Ethylene Glycol - 107-21-1	Developmental
Formaldehyde - 50-00-0	Carcinogen
Perfluorooctanoic acid - 335-67-1	Developmental Toxicity
Methylene chloride - 75-09-2	Carcinogen
1,3-Dichloropropene - 542-75-6	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Ethylene Glycol 107-21-1	X	X	X
2-(2-Butoxyethoxy)ethanol 112-34-5	X	-	X
n-Butanol 71-36-3	X	X	X
t-Butanol 75-65-0	X	X	X
Hexamethylenetetramine 100-97-0	X	-	-
Methylene chloride 75-09-2	X	X	X
1,3-Dichloropropene 542-75-6	X	X	X

16. Other information, including date of preparation of the last revision

NFPA	**Health Hazards** 2	**Flammability** 0	**Instability** 0	**Physical and chemical properties** -
HMIS	**Health Hazards** 2	**Flammability** 0	**Physical Hazards** 0	**Personal Protection** X

Revision date 28-Mar-2019 **Version** 3

Revision date 28-Mar-2019
Revision note No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Appendix E – Marathon Naphtha Safety Data Sheet

SAFETY DATA SHEET

SDS ID NO.: 0135MAR020
Revision Date 05/21/2015

1. IDENTIFICATION

Product Name: Marathon Petroleum Naphtha, Straight Run Heavy

Synonym: Heavy Naphtha; Heavy Straight Run Naphtha; LCO Straight Run Heavy; Naphtha Heavy Straight Run; Naphtha Straight Run Heavy; No. 4 Topper Heavy Naphtha; Naphtha; 0137MAR020; Sour Naphtha; Heavy Naphtha
Product Code: 0135MAR020
Chemical Family: Aliphatic Naphtha

Recommended Use: Feedstock.
Restrictions on Use: All others.

Manufacturer, Importer, or Responsible Party Name and Address:

MARATHON PETROLEUM COMPANY LP
539 South Main Street
Findlay, OH 45840

SDS information: 1-419-421-3070

Emergency Telephone: 1-877-627-5463

2. HAZARD IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 3
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1A
Reproductive toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2
Aspiration toxicity	Category 1
Acute aquatic toxicity	Category 2
Chronic aquatic toxicity	Category 2

Hazards Not Otherwise Classified (HNOC)
Static accumulating flammable liquid

Label elements

EMERGENCY OVERVIEW

Danger

FLAMMABLE LIQUID AND VAPOR
May accumulate electrostatic charge and ignite or explode
May be fatal if swallowed and enters airways
Causes skin irritation
May cause respiratory irritation
May cause drowsiness or dizziness
May cause genetic defects
May cause cancer
Suspected of damaging fertility or the unborn child
May cause damage to organs (nervous system, auditory system) through prolonged or repeated exposure
Toxic to aquatic life with long lasting effects



Appearance Colorless Liquid **Physical State** Liquid **Odor** Hydrocarbon

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/equipment
Use only non-sparking tools.
Take precautionary measures against static discharge
Do not breathe mist/vapors/spray
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Wash hands and any possibly exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Avoid release to the environment

Precautionary Statements - Response
IF exposed or concerned: Get medical attention
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical attention
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
If skin irritation occurs: Get medical attention
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor if you feel unwell
IF SWALLOWED: Immediately call a POISON CENTER or doctor
Do NOT induce vomiting
In case of fire: Use water spray, fog or regular foam for extinction
Collect spillage

Precautionary Statements - Storage
Store in a well-ventilated place. Keep container tightly closed
Keep cool
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container at an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Heavy Naphtha is a complex mixture of paraffinic, cycloparaffinic and aromatic hydrocarbons (predominantly C4 through C12) produced by the distillation or crude oil.

Composition Information:

Name	CAS Number	% Concentration
Naphtha (petroleum), heavy straight-run	64741-41-9	0-100
Naphtha (petroleum), unsweetened	68783-12-0	0-100
Paraffins	68551-20-2	40-70
Xylene (mixed isomers)	1330-20-7	5-10
n-Hexane	110-54-3	0.1-5
Cyclohexane	110-82-7	2-3
Sulfur	7704-34-9	0.5-2
1,2,4-Trimethylbenzene	95-63-6	1-2
Toluene	108-88-3	0.5-1.5
Ethylbenzene	100-41-4	0.5-1.0
Naphthalene	91-20-3	0.01-0.5
Benzene	71-43-2	0.1-0.5
Cumene	98-82-8	0.0-0.2

All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

4. FIRST AID MEASURES

First Aid Measures

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show directions for use or safety data sheet if possible).

Inhalation: Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear, give oxygen and continue to monitor. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR). Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

Skin Contact: Immediately wash exposed skin with plenty of soap and water while removing contaminated clothing and shoes. May be absorbed through the skin in harmful amounts. Get medical attention if irritation persists.

Place contaminated clothing in closed container until cleaned or discarded. If clothing is to be laundered, inform the person performing the operation of contaminant's hazardous properties. Destroy contaminated, non-chemical resistant footwear.

Eye Contact: Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Gently remove contacts while flushing. Get medical attention if irritation persists.

Ingestion: Do not induce vomiting because of danger of aspirating liquid into lungs, causing serious damage and chemical pneumonitis. If spontaneous vomiting occurs, keep head below hips, or if patient is lying down, turn body and head to side to prevent aspiration and monitor for breathing difficulty. Never give anything by mouth to an unconscious person. Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

Most important signs and symptoms, both short-term and delayed with overexposure

Adverse Effects: Acute: Headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue. May cause eye, skin and respiratory irritation. Delayed: Dry skin and possible irritation with

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repeated or prolonged exposure.

Indication of any immediate medical attention and special treatment needed

Notes To Physician: INHALATION: This material (or a component) sensitizes the myocardium to the effects of sympathomimetic amines. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in individuals exposed to this material. Administration of sympathomimetic drugs should be avoided.

INGESTION: This material represents a significant aspiration and chemical pneumonitis hazard. Induction of emesis is not recommended.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
For small fires, Class B fire extinguishing media such as CO2, dry chemical, foam (AFFF/ATC) or water spray can be used. For large fires, water spray, fog or foam (AFFF/ATC) can be used. Firefighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.

Unsuitable extinguishing media
Do not use straight water streams to avoid spreading fire.

Specific hazards arising from the chemical
This product has been determined to be an extremely flammable liquid per the OSHA Hazard Communication Standard and should be handled accordingly. May accumulate electrostatic charge and ignite or explode. Vapors may travel along the ground or be moved by ventilation and ignited by many sources such as pilot lights, sparks, electric motors, static discharge, or other ignition sources at locations distant from material handling. Flashback can occur along vapor trail. For additional fire related information, see NFPA 30 or the Emergency Response Guidebook 128.

Hazardous combustion products
Smoke, carbon monoxide, and other products of incomplete combustion.

Explosion data
Sensitivity to Mechanical Impact No.
Sensitivity to Static Discharge Yes.

Special protective equipment and precautions for firefighters
Firefighters should wear full protective clothing and positive-pressure self-contained breathing apparatus (SCBA) with a full face-piece, as appropriate. Avoid using straight water streams. Water may be ineffective in extinguishing low flash point fires, but can be used to cool exposed surfaces. Avoid excessive water spray application. Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and from as far a distance as possible. Keep run-off water out of sewers and water sources.

Additional firefighting tactics
FIRES INVOLVING TANKS OR CAR/TRAILER LOADS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after the fire is out. Do not direct water at source of leak or safety devices; icing may occur. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles: if this is impossible, withdraw from area and let fire burn.

EVACUATION: Consider initial downwind evacuation for at least 1000 feet. If tank, rail car or tank truck is involved in a fire, ISOLATE for 5280 feet (1 mile) in all directions; also, consider initial evacuation of 5280 feet (1 mile) in all directions.

NFPA	Health 2	Flammability 2	Instability 0	Special Hazard -

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep public away. Isolate and evacuate area. Shut off source if safe to do so. Eliminate all ignition sources.

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Protective equipment: Use personal protection measures as recommended in Section 8.

Emergency procedures: Advise authorities and National Response Center (800-424-8802) if the product has entered a water course or sewer. Notify local health and pollution control agencies, if appropriate.

Environmental precautions: Avoid release to the environment. Avoid subsoil penetration.

Methods and materials for containment: Contain liquid with sand or soil.

Methods and materials for cleaning up: Use suitable absorbent materials such as vermiculite, sand, or clay to clean up residual liquids. Recover and return free product to proper containers. When recovering free liquids ensure all equipment is grounded and bonded. Use only non-sparking tools.

7. HANDLING AND STORAGE

Safe Handling Precautions: Use appropriate grounding and bonding practices. Static accumulating flammable liquid. Bonding and grounding may be insufficient to eliminate the hazard from static electricity. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. Do not cut, drill, grind, puncture, weld or incinerate container. Empty container may contain hazardous residue. Avoid contact with skin, eyes and clothing. Use personal protection recommended in Section 8. Exercise good personal hygiene including removal of soiled clothing and prompt washing with soap and water. Comply with all applicable EPA, OSHA, NFPA and consistent state and local requirements.

Components of this product are basically non-conductors of electricity and can become electrostatically charged during mixing, filtering or pumping at high flow rates. If this charge reaches a sufficiently high level, sparks can form that may ignite the vapors of flammable liquids. Sudden release of hot organic vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment, may result in ignitions without the presence of obvious ignition sources.

Storage Conditions: Store in properly closed containers that are appropriately labeled and in a cool, well-ventilated area. Do not store near an open flame, heat or other sources of ignition.

Incompatible Materials Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	ACGIH TLV	OSHA PELS:	OSHA - Vacated PELs	NIOSH IDLH
Naphtha (petroleum), heavy straight-run 64741-41-9	-	-	-	-
Naphtha (petroleum), unsweetened 68783-12-0	-	-	-	-
Paraffins 68551-20-2	-	-	-	-
Xylene (mixed isomers) 1330-20-7	100 ppm TWA 150 ppm STEL	TWA: 100 ppm TWA: 435 mg/m^3	100 ppm TWA 435 mg/m^3 TWA 150 ppm STEL 655 mg/m^3 STEL	900 ppm
n-Hexane 110-54-3	50 ppm TWA Skin - potential significant contribution to overall exposure by the cutaneous route	TWA: 500 ppm TWA: 1800 mg/m^3	50 ppm TWA 180 mg/m^3 TWA	1100 ppm
Cyclohexane	100 ppm TWA	TWA: 300 ppm TWA: 1050 mg/m^3	300 ppm TWA 1050 mg/m^3 TWA	1300 ppm

110-82-7				
Sulfur 7704-34-9	-	-	-	-
1,2,4-Trimethylbenzene 95-63-6	25 ppm TWA	-	25 ppm TWA 125 mg/m³ TWA	-
Toluene 108-88-3	20 ppm TWA	TWA: 200 ppm Ceiling: 300 ppm	100 ppm TWA 375 mg/m³ TWA 150 ppm STEL 560 mg/m³ STEL	500 ppm
Ethylbenzene 100-41-4	20 ppm TWA	TWA: 100 ppm TWA: 435 mg/m³	100 ppm TWA 435 mg/m³ TWA 125 ppm STEL 545 mg/m³ STEL	800 ppm
Naphthalene 91-20-3	10 ppm TWA Skin - potential significant contribution to overall exposure by the cutaneous route	TWA: 10 ppm TWA: 50 mg/m³	10 ppm TWA 50 mg/m³ TWA 15 ppm STEL 75 mg/m³ STEL	250 ppm
Benzene 71-43-2	0.5 ppm TWA 2.5 ppm STEL Skin - potential significant contribution to overall exposure by the cutaneous route	TWA: 10 ppm (applies to industry segments exempt from the benzene standard) TWA: 1 ppm STEL: 5 ppm (see 29 CFR 1910.1028)	25 ppm Ceiling 1 ppm TWA 5 ppm STEL	500 ppm
Cumene 98-82-8	50 ppm TWA	TWA: 50 ppm TWA: 245 mg/m³ Skin	50 ppm TWA 245 mg/m³ TWA Limit applies to skin	900 ppm

Notes: The manufacturer has voluntarily elected to provide exposure limits contained in OSHA's 1989 air contaminants standard in its SDSs, even though certain of those exposure limits were vacated in 1992.

Engineering measures: Local or general exhaust required in an enclosed area or when there is inadequate ventilation. Use mechanical ventilation equipment that is explosion-proof.

Personal protective equipment

Eye protection: Use goggles or face-shield if the potential for splashing exists.

Skin and body protection: Use nitrile rubber, Viton®, or PVA gloves to prevent skin exposure. Glove suitability is based on workplace conditions and usage. Contact the glove manufacturer for specific advice on glove selection and breakthrough times. Depending upon the conditions of use and specific work situations, additional protective equipment and/or clothing may be required to control exposures.

Respiratory protection: Approved organic vapor chemical cartridge or supplied air respirators should be worn for exposures to any components exceeding the established exposure limits. Self-contained breathing apparatus should be used for fire fighting.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Colorless Liquid
Color	Colorless
Odor	Hydrocarbon
Odor Threshold	No data available.

Property	Values (Method)
Melting Point / Freezing Point	No data available.
Initial Boiling Point / Boiling Range	65-230 °C / 146-446 °F
Flash Point	> 37.8 °C / > 100 °F
Evaporation Rate	No data available.
Flammability (solid, gas)	Not applicable.
Flammability Limit in Air (%):	
Upper Flammability Limit:	No data available.
Lower Flammability Limit:	No data available.
Explosion limits:	No data available.
Vapor Pressure	No data available.
Vapor Density	No data available.
Specific Gravity / Relative Density	0.75
Water Solubility	No data available.
Solubility in other solvents	No data available.
Partition Coefficient	No data available.
Decomposition temperature	No data available.
pH:	Not applicable.
Autoignition Temperature	No data available.
Kinematic Viscosity	No data available.
Dynamic Viscosity	No data available.
Explosive Properties	No data available.
VOC Content (%)	No data available.
Density	6.3 lbs/gal
Bulk Density	Not applicable.

10. STABILITY AND REACTIVITY

Reactivity The product is non-reactive under normal conditions.

Chemical stability The material is stable at 70°F (21°C), 760 mmHg pressure.

Possibility of hazardous reactions None under normal processing.

Hazardous polymerization Will not occur.

Conditions to avoid Excessive heat, sources of ignition, open flame.

Incompatible Materials Strong oxidizing agents.

Hazardous decomposition products None known under normal conditions of use.

11. TOXICOLOGICAL INFORMATION

Potential short-term adverse effects from overexposures

Inhalation May cause irritation of respiratory tract. May cause central nervous system depression or effects. Breathing high concentrations of this material, for example, in a confined space or by intentional abuse, can cause irregular heartbeats which can cause death.

Eye contact Irritating to eyes. Contact may cause pain and severe reddening and inflammation of the conjunctiva.

Skin contact Irritating to skin. Contact may cause reddening, itching and inflammation. May be absorbed through the skin in harmful amounts. Effects may become more serious with repeated or prolonged contact.

Ingestion May be fatal if swallowed or vomited and enters airways. May cause irritation of the mouth, throat and gastrointestinal tract.

Acute toxicological data

Name	Oral LD50	Dermal LD50	Inhalation LC50
Naphtha (petroleum), heavy straight-run 64741-41-9	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5 mg/L (Rat) 4 h
Naphtha (petroleum), unsweetened 68783-12-0	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.0 mg/L (Rat) 4 h
Paraffins 68551-20-2	-	-	-
Xylene (mixed isomers) 1330-20-7	> 2000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.04 mg/L (Rat) 4 h
n-Hexane 110-54-3	15000 mg/kg (Rat)	3000 mg/kg (Rabbit)	48000 ppm (Rat) 4 h
Cyclohexane 110-82-7	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	13.9 mg/L (Rat) 4 h
Sulfur 7704-34-9	> 3000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 9.23 mg/L (Rat) 4 h
1,2,4-Trimethylbenzene 95-63-6	3280 mg/kg (Rat)	> 3160 mg/kg (Rabbit)	18,000 mg/m³ (Rat) 4 h
Toluene 108-88-3	> 2000 mg/kg (Rat)	8390 mg/kg (Rabbit)	12.5 mg/L (Rat) 4 h
Ethylbenzene 100-41-4	> 2000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	17.2 mg/L (Rat) 4 h
Naphthalene 91-20-3	490 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 340 mg/m³ (Rat) 1 h
Benzene 71-43-2	> 2000 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	> 20 mg/l (Rat) 4 h
Cumene 98-82-8	> 2000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 20 mg/L (Rat) 6 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Altered mental state, drowsiness, peripheral motor neuropathy, irreversible brain damage (so-called Petrol Sniffer's Encephalopathy), delirium, seizures, and sudden death have been reported from repeated overexposure to some hydrocarbon solvents, naphthas, and gasoline.

LIGHT NAPHTHA: No deaths or treatment related signs of toxicity were observed in rats exposed to light alkylate naphtha (paraffinic hydrocarbons) at concentrations of 668, 2220 and 6646 ppm for 6 hrs/day, 5 days/wk for 13 weeks. Increased liver weights and kidney toxicity (male rats) was observed in high dose animals. Exposure to pregnant rats at concentrations of 137, 3425 and 6850 ppm did not adversely affect reproduction or cause maternal or fetal toxicity. Lifetime skin painting studies in mice with similar naphthas have shown weak or no carcinogenic activity following prolonged and repeated exposure. Similar naphthas/distillates, when tested at nonirritating dose levels, did not show any significant carcinogenic activity indicating that this tumorigenic response is likely related to chronic irritation and not to dose. The mutagenic potential of naphthas has been reported to be largely negative in a variety of mutagenicity tests. The exact relationship between these results and human health is not known. Some components of this product have been shown to produce a species specific, sex hormonal dependent kidney lesion in male rats from repeated oral or inhalation exposure. Subsequent research has shown that the kidney damage develops via the formation of a alpha-2µ-globulin, a mechanism unique to the male rat. Humans do not form alpha-2µ-globulin, therefore, the kidney effects resulting from this mechanism are not relevant in humans.

XYLENES, ALL ISOMERS: Overexposure to xylene may cause upper respiratory tract irritation, headache, cyanosis, blood serum changes, nervous system damage and narcosis. Effects may be increased by the use of alcoholic beverages. Evidence of liver and kidney impairment were reported in workers recovering from a gross overexposure. Effects from Prolonged or Repeated Exposure: Impaired neurological function was reported in workers exposed to solvents including xylene. Studies in laboratory animals have shown evidence of impaired hearing following high levels of exposure. Studies in laboratory

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animals suggest some changes in reproductive organs following high levels of exposure but no significant effects on reproduction were observed. Studies in laboratory animals indicate skeletal and visceral malformations, developmental delays, and increased fetal resorptions following extremely high levels of maternal exposure with evidence of maternal toxicity. The relevance of these observations to humans is not clear at this time. Adverse effects on the liver, kidney, bone marrow (changes in blood cell parameters) were observed in laboratory animals following high levels of exposure. The relevance of these observations to humans is not clear at this time.

N-HEXANE: Long-term or repeated exposure to n-hexane can cause peripheral nerve damage. Initial symptoms are numbness of the fingers and toes. Also, motor weakness can occur in the digits, but may also involve muscles of the arms, thighs and forearms. The onset of these symptoms may be delayed for several months to a year after the beginning of exposure. Testicular atrophy and partial to full loss of the germ cell line were observed in sub-chronic high-dose inhalation studies of laboratory rodents. These effects appeared irreversible. Rodent reproduction studies have shown evidence of reduced fetal weight but no frank malformations.

CYCLOHEXANE: Cyclohexane has been the focus of substantial testing in laboratory animals. Cyclohexane tested negative in various genotoxicity tests including unscheduled DNA synthesis, bacterial and mammalian cell mutation assays, and in vivo chromosomal aberration. An increase in chromosomal aberrations in bone marrow cells of rats exposed to cyclohexane was reported in the 1980's but a careful re-evaluation of slides from this study by the laboratory which conducted the study indicates these findings were in error, and that no significant chromosomal effects were observed in animals exposed to cyclohexane. Findings indicate long-term exposure to cyclohexane does not promote dermal tumorigenesis.

1,2,4-TRIMETHYLBENZENE: The following information pertains to a mixture of C9 aromatic hydrocarbons, over 40% of which was composed of 1,2,4-trimethylbenzene. A developmental inhalation study was conducted in laboratory mice. Increased implantation losses, reduced fetal weights, delayed ossification and an increased incidence of cleft palate were observed at the highest exposure level (1,500 ppm). This exposure level was extremely toxic to pregnant female mice (44% mortality). Reduced fetal body weights were also observed at 500 ppm. A multi-generation reproduction inhalation study was conducted in laboratory rats. Reductions in pup weights, pup weight gain, litter size, and pup survival were observed at 1,500 ppm, an exposure level at which significant maternal toxicity was observed. Reduced pup weight gain was also observed at 500 ppm. Embryotoxicity has been reported in studies of laboratory animals. Adverse effects included increased implantation losses, reduced fetal weights, delayed ossification and an increased incidence of cleft palate.<n><n>

TOLUENE: Abuse of toluene at high concentrations (e.g., glue sniffing and solvent abuse) has been associated with adverse effects on the liver, kidney and nervous system, and can cause nervous system depression, cardiac arrhythmias, and death. Studies of workers indicate long-term exposure may be related to impaired color vision and hearing. Some studies of workers suggest long-term exposure may be related to neurobehavioral and cognitive changes. Some of these effects have been observed in laboratory animals following repeated exposure to high levels of toluene. Several studies of workers suggest long-term exposure may be related to small increases in spontaneous abortions and changes in some gonadotropic hormones. However, the weight of evidence does not indicate toluene is a reproductive hazard to humans. Studies in laboratory animals indicate some changes in reproductive organs following high levels of exposure, but no significant effects on mating performance or reproduction were observed. Case studies of persons abusing toluene suggest isolated incidences of adverse effects on the fetus including birth defects. Findings in laboratory animals have been largely negative. Positive findings include small increases in minor skeletal and visceral malformations and developmental delays following very high levels of maternal exposure. Studies of workers indicate long term exposure may be related to effects on the liver, kidney and blood, but these appear to be limited to changes in serum enzymes and decreased leukocyte counts. Adverse effects on the liver, kidney, thymus and nervous system were observed in animal studies following

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very high levels of exposure. The relevance of these findings to humans is not clear at this time.

ETHYLBENZENE: Findings from a 2-year inhalation study in rodents conducted by NTP were as follows: Effects were observed only at the highest exposure level (750 ppm). At this level the incidence of renal tumors was elevated in male rats (tubular carcinomas) and female rats (tubular adenomas). The incidence of tumors was also elevated in male mice (alveolar and bronchiolar carcinomas) and female mice (hepatocellular carcinomas). IARC has classified ethyl benzene as "possibly carcinogenic to humans" (Group 2B). Studies in laboratory animals indicate some evidence of post-implantation deaths following high levels of maternal exposure. The relevance of these findings to humans is not clear at this time. Studies in laboratory animals indicate limited evidence of renal malformations, resorptions, and developmental delays following high levels of maternal exposure with evidence of maternal toxicity. The relevance of these findings to humans is not clear at this time. Studies in laboratory animals have demonstrated evidence of ototoxicity (hearing loss) following exposure levels as low as 300 ppm for 5 days. Studies in laboratory animals indicate some evidence of adverse effects on the liver, kidney, thyroid, and pituitary gland.

NAPHTHALENE: Severe jaundice, neurotoxicity (kernicterus) and fatalities have been reported in young children and infants as a result of hemolytic anemia from overexposure to naphthalene. Persons with glucose 6-phosphate dehydrogenase (G6PD) deficiency are more prone to the hemolytic effects of naphthalene. Adverse effects on the kidney have been reported in persons overexposed to naphthalene but these effects are believed to be a consequence of hemolytic anemia, and not a direct effect. Hemolytic anemia has been observed in laboratory animals exposed to naphthalene. Laboratory rodents exposed to naphthalene vapor for 2 years (lifetime studies) developed non-neoplastic and neoplastic tumors and inflammatory lesions of the nasal and respiratory tract. Cataracts and other adverse effects on the eye have been observed in laboratory animals exposed to high levels of naphthalene. Findings from a large number of bacterial and mammalian cell mutation assays have been negative. A few studies have shown chromosomal effects (elevated levels of Sister Chromatid Exchange or chromosomal aberrations) in vitro. Naphthalene has been classified as Possibly Carcinogenic to Humans (2B) by IARC, based on findings from studies in laboratory animals.

BENZENE: Studies of workers exposed to benzene show clear evidence that overexposure can cause cancer and other diseases of the blood forming organs including Acute Myelogenous Leukemia (AML), and Aplastic Anemia (AA), an often fatal disease. Some studies suggest overexposure to benzene may also be associated with Myelodysplastic Syndrome (MDS). Findings from a case control study of workers exposed to benzene was reported during the 2009 Benzene Symposium in Munich included an increase in Acute Myeloid Leukemias and Non-Hodgkins Lymphoid Neoplasms (NHLN) of the subtype follicular lymphoma (FL) in some occupational categories. Some studies of workers exposed to benzene have shown an association with increased rates of chromosome aberrations in circulating lymphocytes. One study of women workers exposed to benzene suggested a weak association with irregular menstruation. However, other studies of workers exposed to benzene have not demonstrated clear evidence of an effect on fertility or reproductive outcome in humans. Benzene can cross the placenta and affect the developing fetus. Cases of AA have been reported in the offspring of persons severely overexposed to benzene. Studies in laboratory animals indicate that prolonged, repeated exposure to high levels of benzene vapor can cause bone marrow suppression and cancer in multiple organ systems. Studies in laboratory animals show evidence of adverse effects on male reproductive organs following high levels of exposure but no significant effects on reproduction have been observed. Embryotoxicity has been reported in studies of laboratory animals but effects were limited to reduced fetal weight and minor skeletal variations. Benzene has been classified as a proven human carcinogen by OSHA and a Group 1 (Carcinogenic to Humans) material by IARC. The current proposed IARC classification for benzene is summarized as follows: Sufficient evidence for Acute Myeloid Leukemia; limited evidence for Acute Lymphatic Leukemia, Chronic Lymphatic Leukemia, Non-Hodgkin Lymphoma, and Multiple Myeloma.

CUMENE: Overexposure to cumene may cause upper respiratory tract irritation and CNS

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depression. Studies in laboratory animals indicate evidence of respiratory tract hyperplasia, and adverse effects on the liver, kidney and adrenal glands following high level exposure. The relevance of these findings to humans is not clear at this time. Findings from lifetime laboratory rodent inhalation studies were as follows: In F344/N rats: an increased incidence of renal carcinomas and adenomas, respiratory epithelial adenomas, and interstitial cell adenomas of the testes. In B6C3F1 mice: an increased incidence of carcinomas and adenomas of the bronchi and lung, liver neoplasms, hemangiosarcomas of the spleen, and adenomas of the thyroid.

Adverse effects related to the physical, chemical and toxicological characteristics

Signs and Symptoms Overexposure to vapors may cause eye, skin and respiratory irritation. Nausea, vomiting, diarrhea, and signs of nervous system depression: headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue.

Sensitization Not expected to be a skin or respiratory sensitizer.

Mutagenic effects May cause genetic defects.

Carcinogenicity Cancer designations are listed in the table below

Name	ACGIH (Class)	IARC (Class)	NTP	OSHA
Naphtha (petroleum), heavy straight-run 64741-41-9	Not Listed	Not Listed	Not Listed	Not Listed
Naphtha (petroleum), unsweetened 68783-12-0	Not Listed	Not Listed	Not Listed	Not Listed
Paraffins 68551-20-2	Not Listed	Not Listed	Not Listed	Not Listed
Xylene (mixed isomers) 1330-20-7	Not classifiable (A4)	Not classifiable (3)	Not Listed	Not Listed
n-Hexane 110-54-3	Not Listed	Not Listed	Not Listed	Not Listed
Cyclohexane 110-82-7	Not Listed	Not Listed	Not Listed	Not Listed
Sulfur 7704-34-9	Not Listed	Not Listed	Not Listed	Not Listed
1,2,4-Trimethylbenzene 95-63-6	Not Listed	Not Listed	Not Listed	Not Listed
Toluene 108-88-3	Not Classifiable (A4)	Not Classifiable (3)	Not Listed	Not Listed
Ethylbenzene 100-41-4	Confirmed animal carcinogen (A3)	Possible human carcinogen (2B)	Not Listed	Not Listed
Naphthalene 91-20-3	Confirmed animal carcinogen (A3)	Possible human carcinogen (2B)	Reasonably anticipated to be a human carcinogen	Not Listed
Benzene 71-43-2	Confirmed human carcinogen (A1)	Carcinogenic to humans (1)	Known to be human carcinogen	Known carcinogen
Cumene 98-82-8	Not listed	Possible human carcinogen (2B)	Reasonably anticipated to be a human carcinogen	Not listed

Reproductive toxicity Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity (STOT) - single exposure Respiratory system. Central nervous system.

Specific Target Organ Toxicity (STOT) - repeated exposure Nervous system. Auditory system.

Aspiration hazard May be fatal if swallowed or vomited and enters airways.

12. ECOLOGICAL INFORMATION

Ecotoxicity This product should be considered toxic to aquatic organisms, with the potential to cause long lasting adverse effects in the aquatic environment.

Name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
Naphtha (petroleum), heavy straight-run 64741-41-9	-	96-hr LL50 = 1-10 mg/l Fish	-	48-hr EL50 = 1-10 mg/l Daphnia
Naphtha (petroleum), unsweetened 68783-12-0	-	96-hr LL50 = 1-10 mg/l Fish	-	48-hr EL50 = 1-10 mg/l Daphnia
Paraffins 68551-20-2	-	-	-	-
Xylene (mixed isomers) 1330-20-7	72-hr EC50 = 11 mg/l Algae	96-hr LC50 = 8 mg/l Rainbow trout	-	48-hr LC50 = 3.82 mg/l Daphnia magna
n-Hexane 110-54-3	-	96-hr LC50 = 2.5 mg/l Fathead minnow	-	-
Cyclohexane 110-82-7	72-hr EC50 = 500 mg/l Algae	96-hr LC50 = 3.96-5.18 mg/l Fathead minnow	-	48-hr EC50 = 1.7-3.5 mg/L Bay shrimp
Sulfur 7704-34-9	-	96-hr LC50 >10,000 mg/L Western mosquitofish 96-hr LC50 = 866 mg/L Zebrafish	-	-
1,2,4-Trimethylbenzene 95-63-6	-	96-hr LC50 = 7.19-8.28 mg/l Fathead minnow (flow-through)	-	48-hr EC50 = 6.14 mg/L Daphnia magna
Toluene 108-88-3	72-hr EC50 = 12.5 mg/l Algae	96-hr LC50 <= 10 mg/l Rainbow trout	-	48-hr EC50 = 5.46-9.83 mg/l Daphnia magna 48-hr EC50 = 11.5 mg/l Daphnia magna (Static)
Ethylbenzene 100-41-4	72-hr EC50 = 1.7-7.6 mg/l Algae	96-hr LC50 = 4 mg/L Rainbow trout	-	48-hr EC50 = 1-4 mg/L Daphnia magna
Naphthalene 91-20-3	-	96-hr LC50 = 0.91-2.82 mg/l Rainbow trout (static) 96-hr LC50 = 1.99 mg/l Fathead minnow (static)	-	48-hr LC50 = 1.6 mg/l Daphnia magna
Benzene 71-43-2	72-hr EC50 = 29 mg/l Algae	96-hr LC50 = 5.3 mg/l Rainbow trout (flow-through)	-	48-hr EC50 = 8.76-15.6 mg/l Daphnia magna (Static)
Cumene 98-82-8	72-hr EC50 = 2.6 mg/l Algae	96-hr LC50 = 6.04-6.61 mg/l Fathead minnow (Flow-through) 96-hr LC50 = 2.7 mg/l Rainbow trout (semi-static)	-	48-hr EC50 = 7.9-14.1 mg/l Daphnia magna (static)

Persistence and degradability Expected to be inherently biodegradable.

Bioaccumulation Has the potential to bioaccumulate.

Mobility in soil May partition into air, soil and water.

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Description of Waste Residues
This material may be a flammable liquid waste.

Safe Handling of Wastes
Handle in accordance with applicable local, state, and federal regulations. Use personal protection measures as required. Use appropriate grounding and bonding practices. Use only non-sparking tools. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. No smoking.

Disposal of Wastes / Methods of Disposal

The user is responsible for determining if any discarded material is a hazardous waste (40 CFR 262.11). Dispose of in accordance with federal, state and local regulations.

Methods of Contaminated Packaging Disposal
Empty containers should be completely drained and then discarded or recycled, if possible. Do not cut, drill, grind or weld on empty containers since explosive residues may be present. Dispose of in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT (49 CFR 172.101):

UN Proper Shipping Name:	Petroleum Distillates, N.O.S.
UN/Identification No:	UN 1268
Class:	3
Packing Group:	III

TDG (Canada):

UN Proper Shipping Name:	Petroleum Distillates, N.O.S.
UN/Identification No:	UN 1268
Transport Hazard Class(es):	3
Packing Group:	III

15. REGULATORY INFORMATION

US Federal Regulatory Information:

US TSCA Chemical Inventory Section 8(b): This product and/or its components are listed on the TSCA Chemical Inventory.

EPA Superfund Amendment & Reauthorization Act (SARA):

SARA Section 302: This product may contain component(s) that have been listed on EPA's Extremely Hazardous Substance (EHS) List:

Name	CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs
Naphtha (petroleum), heavy straight-run	NA
Naphtha (petroleum), unsweetened	NA
Paraffins	NA
Xylene (mixed isomers)	NA
n-Hexane	NA
Cyclohexane	NA
Sulfur	NA
1,2,4-Trimethylbenzene	NA
Toluene	NA
Ethylbenzene	NA
Naphthalene	NA
Benzene	NA
Cumene	NA

SARA Section 304: This product may contain component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

Name	Hazardous Substances RQs
Naphtha (petroleum), heavy straight-run	NA
Naphtha (petroleum), unsweetened	NA
Paraffins	NA
Xylene (mixed isomers)	100
n-Hexane	5000
Cyclohexane	1000

Sulfur	NA
1,2,4-Trimethylbenzene	NA
Toluene	1000 lb final RQ 454 kg final RQ
Ethylbenzene	1000
Naphthalene	100 lb final RQ 45.4 kg final RQ
Benzene	10
Cumene	5000

SARA Section 311/312: The following EPA hazard categories apply to this product:

Acute Health Hazard
Chronic Health Hazard
Fire Hazard

SARA Section 313: This product may contain component(s), which if in exceedance of the de minimus threshold, may be subject to the reporting requirements of SARA Title III Section 313 Toxic Release Reporting (Form R).

Name	CERCLA/SARA 313 Emission reporting:
Naphtha (petroleum), heavy straight-run	None
Naphtha (petroleum), unsweetened	None
Paraffins	None
Xylene (mixed isomers)	1.0 % de minimis concentration
n-Hexane	1.0 % de minimis concentration
Cyclohexane	1.0 % de minimis concentration
Sulfur	None
1,2,4-Trimethylbenzene	1.0 % de minimis concentration
Toluene	1.0 % de minimis concentration
Ethylbenzene	0.1 % de minimis concentration
Naphthalene	0.1 % de minimis concentration
Benzene	0.1 % de minimis concentration
Cumene	1.0 % de minimis concentration

State and Community Right-To-Know Regulations:
The following component(s) of this material are identified on the regulatory lists below:

Naphtha (petroleum), heavy straight-run

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed
Pennsylvania Right-To-Know:	Not Listed
Massachusetts Right-To Know:	Not Listed
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Naphtha (petroleum), unsweetened

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed

New Jersey Right-To-Know:	Not Listed	
Pennsylvania Right-To-Know:	Not Listed	
Massachusetts Right-To Know:	Not Listed	
Florida Substance List:	Not Listed	
Rhode Island Right-To-Know:	Not Listed	
Michigan Critical Materials Register List:	Not Listed	
Massachusetts Extraordinarily Hazardous Substances:	Not Listed	
California - Regulated Carcinogens:	Not Listed	
Pennsylvania RTK - Special Hazardous Substances:	Not Listed	
New Jersey - Special Hazardous Substances:	Not Listed	
New Jersey - Environmental Hazardous Substances List:	Not Listed	
Illinois - Toxic Air Contaminants:	Not Listed	
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed	

Paraffins

Louisiana Right-To-Know:	Not Listed	
California Proposition 65:	Not Listed	
New Jersey Right-To-Know:	Not Listed	
Pennsylvania Right-To-Know:	Not Listed	
Massachusetts Right-To Know:	Not Listed	
Florida Substance List:	Not Listed	
Rhode Island Right-To-Know:	Not Listed	
Michigan Critical Materials Register List:	Not Listed	
Massachusetts Extraordinarily Hazardous Substances:	Not Listed	
California - Regulated Carcinogens:	Not Listed	
Pennsylvania RTK - Special Hazardous Substances:	Not Listed	
New Jersey - Special Hazardous Substances:	Not Listed	
New Jersey - Environmental Hazardous Substances List:	Not Listed	
Illinois - Toxic Air Contaminants:	Not Listed	
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed	

Xylene (mixed isomers)

Louisiana Right-To-Know:	Not Listed	
California Proposition 65:	Not Listed	
New Jersey Right-To-Know:	SN 2014	
Pennsylvania Right-To-Know:	Environmental hazard	
Massachusetts Right-To Know:	Present	
Florida Substance List:	Not Listed	
Rhode Island Right-To-Know:	Toxic (skin); Flammable (skin)	
Michigan Critical Materials Register List:	100 lb Annual usage threshold	all isomers
Massachusetts Extraordinarily Hazardous Substances:	Not Listed	
California - Regulated Carcinogens:	Not Listed	
Pennsylvania RTK - Special Hazardous Substances:	Not Listed	
New Jersey - Special Hazardous Substances:	Flammable - third degree	
New Jersey - Environmental Hazardous Substances List:	SN 2014 TPQ: 500 lb	
Illinois - Toxic Air Contaminants:	Present	
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	1000 lb RQ (air); 1 lb RQ (land/water)	

n-Hexane

Louisiana Right-To-Know:	Not Listed	
California Proposition 65:	Not Listed	
New Jersey Right-To-Know:	SN 1340	
Pennsylvania Right-To-Know:	Present	
Massachusetts Right-To Know:	Present	
Florida Substance List:	Not Listed	

Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - third degree
New Jersey - Environmental Hazardous Substances List:	SN 1340 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	1 lb RQ (air); 1 lb RQ (land/water)

Cyclohexane

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 0565
Pennsylvania Right-To-Know:	Environmental hazard
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - third degree
New Jersey - Environmental Hazardous Substances List:	SN 0565 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	1000 lb RQ (air); 1 lb RQ (land/water)

Sulfur

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 1757
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Listed
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

1,2,4-Trimethylbenzene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 1929
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed

Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Toluene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Developmental toxicity, initial date 1/1/91 Female reproductive toxicity, initial date 8/7/09
New Jersey Right-To-Know:	SN 1866
Pennsylvania Right-To-Know:	Environmental hazard
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic (skin); Flammable (skin)
Michigan Critical Materials Register List:	100 lb Annual usage threshold
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - third degree; Teratogen
New Jersey - Environmental Hazardous Substances List:	SN 1866 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	1000 lb RQ (air); 1 lb RQ (land/water)

Ethylbenzene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Carcinogen, initial date 6/11/04
New Jersey Right-To-Know:	SN 0851
Pennsylvania Right-To-Know:	Environmental hazard
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Carcinogen; flammable - Third degree
New Jersey - Environmental Hazardous Substances List:	SN 0851 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	1000 lb RQ (air); 1 lb RQ (land/water)

Naphthalene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Carcinogen, initial date 4/19/02
New Jersey Right-To-Know:	SN 1322 SN 3758
Pennsylvania Right-To-Know:	Environmental hazard Present (particulate)
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Carcinogen

New Jersey - Environmental Hazardous Substances List:	SN 1322 TPQ: 500 lb (Reportable at the de minimis quantity of >0.1%)
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	100 lb RQ (air); 1 lb RQ (land/water)

Benzene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Carcinogen, initial date 2/27/87 Developmental toxicity, initial date 12/26/97 Male reproductive toxicity, initial date 12/26/97
New Jersey Right-To-Know:	SN 0197
Pennsylvania Right-To-Know:	Environmental hazard; Special hazardous substance
Massachusetts Right-To Know:	Carcinogen; Extraordinarily hazardous
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic (skin); Flammable (skin); Carcinogen (skin)
Michigan Critical Materials Register List:	100 lb Annual usage threshold
Massachusetts Extraordinarily Hazardous Substances:	Carcinogen; Extraordinarily hazardous
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Present
New Jersey - Special Hazardous Substances:	Carcinogen; Flammable - third degree; Mutagen
New Jersey - Environmental Hazardous Substances List:	SN 0197 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	10 lb RQ (air); 1 lb RQ (land/water)

Cumene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Carcinogen, initial date 4/6/10
New Jersey Right-To-Know:	SN 0542
Pennsylvania Right-To-Know:	Environmental hazard
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic (skin); Flammable (skin)
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - third degree
New Jersey - Environmental Hazardous Substances List:	SN 0542 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	5000 lb RQ (air); 1 lb RQ (land/water)

Canada DSL/NDSL Inventory: This product and/or its components are listed either on the Domestic Substances List (DSL) or are exempt.

Canadian Regulatory Information: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by those regulations.

Name	Canada - WHMIS: Classifications of Substances:	Canada - WHMIS: Ingredient Disclosure:
Naphtha (petroleum), heavy straight-run	B2,D2A,D2B	0.1%
Naphtha (petroleum), unsweetened	B2,D2A,D2B	0.1%
Xylene (mixed isomers)	B2,D2A,D2B	m-, o-isomers 1.0%; p-isomer 0.1%
n-Hexane	B2,D2A,D2B	1%
Cyclohexane	B2,D2B	1%

Sulfur	B4,D2B	1%
1,2,4-Trimethylbenzene	B3,D2B	1%
Toluene	B2,D2A,D2B	0.1%
Ethylbenzene	B2,D2A,D2B	0.1%
Naphthalene	B4,D2A	0.1%
Benzene	B2,D2A,D2B	0.1%
Cumene	B2,D2A	0.1%



Note: Not applicable.

16. OTHER INFORMATION

Prepared By Toxicology and Product Safety

Revision Notes

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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is intended as guidance for safe handling, use, processing, storage, transportation, accidental release, clean-up and disposal and is not considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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

CONDITIONS

Action 334189

CONDITIONS

Operator: Western Refining Southwest LLC 539 South Main Street Findlay, OH 45840	OGRID: 267595
	Action Number: 334189
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

CONDITIONS

Created By	Condition	Condition Date
joel.stone	Approved for OCD record retention purposes.	7/25/2024