AP - 111

C-141s
(8)

From:	Caitlin Fields
To:	Cobrain, Dave, NMENV; Chavez, Carl J, EMNRD
Cc:	McCartney, Gregory J.; Moore, John; Heidi Jones; Paul Hildebrandt
Subject:	[EXT] Flare KOD IWP
Date:	Monday, November 23, 2020 9:24:41 AM
Attachments:	image001.png 202011_FlareKODRelease_IWP_RPT.pdf

Good Morning,

Attached is the Flare KOD Release Investigation Work Plan. Please let John Moore know if you have any questions.

Thank you,
Caitlin

Caitlin Fields
Associate Engineer

1252 Commerce Drive
Laramie, Wyoming 82070
(307) 745-7474 (phone)
(307) 745-7729 (fax)
www.trihydro.com

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Western Refining Southwest, Inc.
A subsidiary of Marathon Petroleum Corporation
92 Giant Crossing Road
Jamestown, NM 87347
Tel: 505.722.3833

November 30, 2020

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

RE: Flare KOD Pump Sodium Hydroxide Release Investigation Work Plan
Western Refining Southwest Inc., Gallup Refinery
EPA ID #NMD000333211
HWB-WRG-20-003

Dear Mr. Pierard,

Attached please find an Investigation Work Plan for the Flare KOD Pump Sodium Hydroxide Release as requested in the New Mexico Environment Department (NMED) Approval with Modifications letter dated February 21, 2020.

If you have any questions or comments regarding the information contained herein, please do not hesitate to contact Mr. John Moore at (505) 722-0205.

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,
Marathon Petroleum Company LP, Gallup Refinery

Robert S. Hanks
Refinery General Manager

Enclosure

cc: D. Cobrain, NMED HWB
M. Suzuki, NMED HWB
C. Chavez, NMOCD
L. King, EPA Region 6
G. McCartney, Marathon Petroleum Company
J. Moore, Marathon Gallup Refinery
H. Jones, Trihydro Corporation

MARATHON PETROLEUM CORPORATION

GALLUP REFINING DIVISION

FLARE KOD PUMP CAUSTIC RELEASE

SOIL SAMPLING INVESTIGATION WORK PLAN

NOVEMBER 30, 2020

Approval to Proceed

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

Name: John Moore

11-20-20
Date

Title: Environmental Supervisor

Executive Summary

The Marathon Petroleum Company (MPC), Gallup Refining Division is submitting this Investigation Work Plan for the investigation of soils in the flare knockout drum (KOD) area for caustic and hydrocarbon impacts.

On April 20, 2017, a hose attached to a sandpiper (double diaphragm) pump at the flare KOD tank ruptured which resulted in a release of approximately 80 barrels of caustic (approximately 20-30 percent [%] sodium hydroxide) (pH – 12.0) to the surrounding area.

Approximately 20-30 gallons of caustic were pumped from the area into a vacuum truck, which had been diluted with approximately 100 gallons of water and pumped into the refinery sewer system at a pH of 8.0.

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

Table of Contents

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List of Appendices

Introduction

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

Trihydro Corporation has prepared this Investigation Work Plan for the investigation of soils around the flare knockout drum (KOD) sodium hydroxide (caustic) pump, located on the western portion of the Refinery. A leak in April 2017 caused caustic to be released to the ground and soil. The sandpiper pump, from which the 2017 release occurred, is located on the west side of the refinery (Figure 2).

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

Background

As detailed in the "Response Action Report, Flare KOD Pump Sodium Hydroxide Release" (Marathon 2020), on April 20, 2017, an operator noticed the hose to the sandpiper pump had ruptured spraying caustic (20-30% sodium hydroxide) from the hose. The sandpiper pump was turned off and blocked in. Maintenance personnel used a vacuum truck with approximately 100 gallons of water in the tank, to collect approximately 20-30 gallons of caustic. The collected water/caustic mixture, with a pH value of 8, was discharged to a sewer drain to tank T-35. Maintenance personnel also sprayed water on surrounding equipment in an attempt to clean the equipment of caustic. Pumping and transfer of the caustic from the sandpiper pump was switched to the east caustic pump.

The initial estimate of the release was four barrels (bbls). After further investigation on the morning of April 21, 2017, it was apparent that the release was larger than initially estimated. Based on mass balance calculations of the KOD tank, where the caustic was stored, the release volume was estimated to be 80 bbls.

The purpose of this Investigation Work Plan is to collect soil samples to delineate the horizontal and vertical extend of any contamination and determine if further investigation or remediation is necessary.

Site Conditions

Surface Conditions

Local site topographic features include high ground in the southeast gradually decreasing to a lowland fluvial plain to the northwest. Elevations on the refinery property range from 6,860 feet (ft) above mean sea level (amsl) to 7,040 ft amsl. The area near the flare KOD pump caustic release area is approximately 6,920 ft amsl.

Subsurface Conditions

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

Scope of Activities

The investigative activities of the flare KOD pump caustic release area will be completed in order to delineate horizontal and vertical caustic and hydrocarbon impacts and collect soil samples. Pending New Mexico Environment Department (NMED) approval, MPC anticipates investigation work to be completed by the second quarter of 2021.

Field Screening

Soil samples will be collected using a hand trowel or a hand auger. Samples will be collected at 1 ft bgs and placed in a 1-gallon Ziploc bag, letting the soils warm to approximately 70 degrees Fahrenheit (F). The head space will be measured for petroleum hydrocarbons with a photo-ionization detector (PID). In addition, the sample will also be wetted, and a field pH will be taken. The total organic vapor (TOV) and measured pH will be recorded on the field log. Lastly, a field paint filter test will be collected for saturated samples to determine the percentage of free liquids in the waste and to establish whether the waste is hazardous based on the corrosivity (20% free liquids or more).

If the soil pH field screening is greater than or equal to 12.5 at the proposed sampling locations soil samples will be collected at two and a half ft intervals and screened for pH until the pH no longer exceeds 12.5. Once the sampling location's pH no longer exceeds 12.5, a soil sample will be collected for laboratory hydrocarbon analysis.

Laboratory Analysis

Soil samples will be collected at the shallowest depth with a pH of less than 12.5. These samples will be packaged and shipped to a laboratory to be analyzed for hydrocarbon impacts via Method 8015M/D (total petroleum hydrocarbons-diesel range organics [TPH-DRO] and TPH-oil range organics [TPH-ORO]), Method 8015D (TPH-gasoline range organics [TPH-GRO]).

Investigation Methods

The proposed field screening and soil sampling locations are shown on Figure 2. The proposed locations include 10 primary screening and 10 secondary soil screening sample locations around the old API separator and the KOD area. The secondary samples are to verify that the release extent did not extend past the anticipated area and will only be collected if the primary soil screening sample pH field results at 1-ft depth are greater than or equal to 12.5.

Soils obtained will be visually inspected and classified in general accordance with American Society for Testing and Materials (ASTM) D2487 (Unified Soil Classification System) and D2488 (Description and Identification of Soils). Detailed sample logs will be completed in the field by qualified field staff. Samples will be field screened at 1-foot depths using a PID and a soil pH meter for evidence of contaminants and will be recorded in the sample logs.

Sample Collection Procedures

Samples will be collected in accordance with the soil sampling Standard Operating Procedure (SOP) (Appendix A) and screened in accordance with the soil screening SOP (Appendix B). Details related to sample collection will be documented on the soil screening field forms which will be included in the Investigation Report. General observations recorded on the field forms for each soil sample location will include sampling start and end times, weather, site conditions, sampling team members, and other affiliations present. Sample-specific information will include field sample identification, time of sample collection, sample start and end

depth, collection method, sample type (i.e., composite or aliquot), soil classification and characteristics, any deviations from or clarification of sampling procedures, and other observations. A summary of the sampling activities is shown below:

1. Collection of soil samples at 10 to 20 locations for field screening of pH, TOV, and, if necessary, free liquid percentage in order to delineate horizontal and vertical extent of caustic and hydrocarbon impacts.
2. Field analysis will consist of soil pH measurements, TOV screening, and a field paint filter test.
3. The shallowest sample not exceeding a pH of 12.5 at the proposed sampling locations will also be submitted for laboratory analysis.
4. Laboratory analyses will consist of:
    - TPH-ORO, Method 8015M/D
    - TPH-DRO, Method 8015M/D
    - TPH-GRO, Method 8015D
5. Analytical data will be screened against NMED Industrial SSLs.

Equipment will be decontaminated before collecting each sample, and equipment decontamination will be noted on the field forms. Upon collection, samples will be placed into a clean, sealable plastic bag labeled with the field sample identification. Sample jars will be filled, labeled, and placed in a cooler. Field duplicates, equipment blanks, trip blanks, and other quality control samples will be included at the rate of one quality control sample per 10 soil samples. Before shipment, each cooler will be packed with ice and one temperature blank. A chain of custody (CoC) form will accompany each sample shipment. Coolers will be sealed and shipped overnight to Eurofins Environment Testing in Pensacola, Florida.

Laboratory Sample Frequency

Laboratory samples will be collected at the shallowest depth at which the field pH is less than 12.5. This equates to one laboratory sample per location.

Data Quality and Validation

Quality assurance/quality control (QA/QC) samples will be collected during sampling to monitor the validity of the sample collection procedures. Field duplicates will be collected at a rate of 10 percent (%) of all samples collected. Equipment blanks will be collected from re-usable equipment at a rate of 10%; if disposable sampling equipment is used, the blanks shall be collected at a frequency of one per day. Field blank samples will also be collected once a day. The field duplicate and blank samples will be submitted to the laboratory along with the soil samples.

QA/QC samples will be recorded on the field forms and CoCs. All data will undergo Tier II data validation.

Data Evaluation

The soil confirmation sampling results will be compared to NMED Industrial SSLs to help delineate the extent of contamination from the KOD release and determine if excavation is necessary. Soil recovered during sampling will be placed in roll-off boxes or drums, labeled, and stored within the area of the flare KOD and characterized prior to disposal within 90 days.

Monitoring and Sampling Program

No groundwater, ambient air, subsurface vapor, remediation systems, engineering controls, or other monitoring and sampling programs are currently being implemented at the flare KOD. This investigation work plan will delineate an area of contaminated soil, which will allow removal of the horizontal and vertical extent of soil contamination.

Schedule

Pending NMED approval, MPC anticipates the investigation to begin in before the end of the second quarter 2021. Once the investigation has been completed, MPC will submit an investigation report to NMED summarizing the sample results and investigation conclusions within 90 days of the receipt of the analytical data.

References

Marathon Petroleum Company (MPC). 2020a. Response Action Report – Flare KOD Pump– Sodium Hydroxide Release, Gallup Refinery Marathon Petroleum Company LP, Gallup, New Mexico, EPA ID# NM000333211, HWB-WRG-20-003. January 6.

MPC. 2020b. Response Action Report, Response to Approval with Modifications – Flare KOD Pump– Sodium Hydroxide Release, Gallup Refinery Marathon Petroleum Company LP, Gallup, New Mexico, EPA ID# NM000333211, HWB-WRG-20-003. April 30.

New Mexico Environment Department. 2020. Approval with Modifications, Response Action Report Flare KOD Pump – Sodium Hydroxide Release, Western Refining Southwest Inc., Gallup Refinery, EPA ID #NMD000333211, HWB-WRG-20-003. February 21.

Figures

Image Cite: DigitalGlobe © CNES (2020) Distribution Airbus DS © Microsoft Corporation, BING Imagery

EXPLANATION

40 INTERSTATE HIGHWAY

N

0 2,000'

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

FIGURE 1

FACILITY LOCATION

MARATHON PETROLEUM CORP.
GALLUP REFINING DIVISION
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: JP	Scale: 1" = 2,000'	Date: 9/14/20	File: 697-FD-FACILITYLOC_202009

M:\TON\MARATHON\CADD\GALLUP_REPORTS\TRENCHDRAIN\WP\697-FD-FACILITYLOC_202009

Image Cite: Trihydro Corporation – UAS Aerial Photography – Publication: 2018

EXPLANATION

- PROPOSED SOIL SAMPLE LOCATION
- PROPOSED SECONDARY SOIL SAMPLE LOCATION
- RELEASE EXTENT
- 6935 — EXISTING CONTAINMENT ELEVATION CONTOURS (INTERVAL = 1')
- KOD — KNOCKOUT DRUM

N

0 20'

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

FIGURE 2

PROPOSED SAMPLE LOCATIONS
KOD CAUSTIC RELEASE

MARATHON PETROLEUM COMPANY
GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: PH	Scale:1" = 20'	Date: 10/21/2020	File: 697-KODCAUSTICREL-OV-202010

M:\TOM\MARATHON\CADD\GALLUP_REPORTS\RELEASES\FLARE_KODRELEASE\697-KODCAUSTICREL-OV-202010

Appendix A
Standard Operating Procedure – Soil Sampling

memorandum

To:	Sampling Team Members
From:	Project Manager, Heidi Jones
Date:	November 20, 2020
Re:	Standard Operating Procedure – Soil Sampling

1.0 INTRODUCTION

Soil sampling related to site characterization and site clean-up is expected to involve source sampling of potentially contaminated soils for characterization and profiling. Soil sampling is expected to occur around the flare knock out drum (KOD) area.

All personnel involved in soil sampling projects are required to review this Standard Operating Procedure (SOP) before sampling to ensure the continued generation of reliable data. This SOP is based on experience gained from collecting soil samples and the latest information available in guidance manuals. This SOP may be updated as additional experience and information are acquired.

2.0 PRE-FIELD ACTIVITIES

Several activities will be conducted prior to departure for the project site. A project team will be assigned and the members will begin coordinating the sample collection event with Marathon Petroleum Company. Field equipment will be checked and organized. Access to the areas to be sampled will be checked, and provisions made to pack the necessary equipment for delivery to the project site.

3.0 PREPARATION

The Project Manager will review the current sampling and analysis plans and work plans to determine if any documents need to be brought to the site during monitoring. The Project Manager will also evaluate whether any changes have been made in the sampling and analytical procedures and notify the appropriate personnel.

This preparation ensures that the proper equipment and personnel are available at the site. All field screening equipment will be inspected prior to departure, ensuring that it is in proper working order. For soil sampling, the field monitoring equipment used will be a photoionization detection (PID) meter and a soil pH meter. Both instruments should be calibrated and operated and according to manufacturer's recommendations.

4.0 EQUIPMENT

The following equipment is recommended for soil sampling:

- Required personal protective equipment (PPE), listed in the site-specific health and safety plan (HASP)
- Soil sampling devices (i.e., hand auger, hand trowel)
- Sampling bottles, labels, and preservatives
- Gloves
- Chain-of-custody/sample-analysis-request forms
- Opaque Cooler(s) and bagged ice or frozen Blue Ice
- Detergent or solvent for cleaning monitoring equipment
- Brushes dedicated for decontamination
- Decontamination containers dedicated for wash, rinse 1, and rinse 2
- Ziploc baggies, 1 quart
- Paper towels
- Trash bags
- Field logbook

5.0 SAMPLE COLLECTION

A critical aspect of any sampling program is selection and implementation of an appropriate sampling technique. Selection of equipment and technique should be appropriate for the volume of material required and the type of analysis to be performed. In general, the sampling equipment and technique will be chosen to minimize, to the extent possible, the amount of handling a sample will undergo prior to analysis. In many cases, the material to be sampled will be easy to access, and simple "grab" samples collected using a shovel, trowel, or hand auger are appropriate. Specific analytical requirements and sampling frequencies are specified in the work plan.

Soil samples will be collected from representative locations using a decontaminated hand auger, shovel, or hand trowel. The sampling device will be driven completely into the material using a manually operated auger. The samples will then be extracted from the collection tool using a trowel as needed. The material will placed directly from the trowel or other appropriate sampling device into a clean glass jar. The jar will be filled completely to minimize headspace (by tamping during filling), and immediately sealed with a teflon-lined lid.

If necessary, several cores may be collected from each location to provide adequate sample volume for the laboratory. The sample containers will be labeled with endelible ink. Filled sample containers should be wiped dry and placed in a cooler with ice (or equivalent) for storage at the time of collection. Enough ice and protective packing material should be used to cool the samples to 4° C and ensure that the container remains intact prior to final packing and shipment.

Field screening may involve the use of a PID, which will be inserted into a Ziploc bag and the reading taken. All samples shall be screened at as close to the same temperature as possible to obtain consistent results.

Sampling devices will be decontaminated between sampling locations using a four-stage decontamination system consisting of a two detergent/water washes and two deionized water rinses. Sample locations will be recorded with a Global Positioning System unit in order to accurately map the sampling locations.

Field logbooks, Soil Sampling Field Log, and photograph logs will provide a written record of field data gathered, field observations, field equipment calibrations, the samples collected for analysis, and sample custody. Color photographs will be used to substantiate and augment the field notes, if necessary.

697-078-001

From:	Martinez, Cynthia, NMENV
To:	JMoore5@Marathonpetroleum.com
Cc:	Cobrain, Dave, NMENV; Suzuki, Michiya, NMENV; Chavez, Carl J, EMNRD; "king.laurie@epa.gov"
Subject:	Letter to Mr. Moore
Date:	Tuesday, October 13, 2020 9:50:31 AM
Attachments:	WRG 2020- HWB-WRG-20-014.pdf WRG 2020- HWB-WRG-20-002.pdf

---

Good Morning,
Please see attachments.

Cynthia Martinez
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Bldg.1
Santa Fe, New Mexico 87505-6313

NEW MEXICO
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1
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www.env.nm.gov

Michelle Lujan Grisham
Governor

Howie C. Morales
Lt. Governor

James C. Kenney
Cabinet Secretary

Jennifer J. Pruett
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

October 13, 2020

John Moore
Environmental Superintendent
Western Refining, Southwest Inc., Gallup Refinery
92 Giant Crossing Road
Gallup, New Mexico 87301

RE: APPROVAL WITH MODIFICATIONS
RESPONSE ACTION REPORT SOUR NAPHTHA RELEASE
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY
EPA ID # NMD000333211
HWB-WRG-20-002

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has reviewed the *Response to Disapproval Response Action Report Sour Naphtha Release* (Response), dated September 15, 2020, submitted on behalf of Marathon Petroleum Company dba Western Refining Southwest Inc., Gallup Refinery (the Permittee). NMED hereby issues this Approval with Modifications.

The Permittee must address all comments in the Attachment below and submit a response letter and replacement pages no later than **April 30, 2021**. A letter report required by Comment 3 must be submitted no later than **June 1, 2021**.

This approval is based on the information presented in the document as it relates to the objectives of the work identified by NMED at the time of review. Approval of this document does not constitute agreement with all information or every statement presented in the document

If you have questions regarding this Approval with Modifications, please contact Michiya Suzuki of my staff at 505-476-6059.

Sincerely,

Dave Cobrain
Program Manager
Hazardous Waste Bureau

cc: M. Suzuki, NMED HWB
C. Chavez, OCD
L. King, EPA Region 6 (6LCRRC)

File: Reading File and WRG 2020 File

Attachment

Comment 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.

Comment 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.

Comment 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.

Comment 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.

Comment 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.

Comment 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.

Comment 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.

Comment 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.

Comment 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.

Comment 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.

From:	Caitlin Fields
To:	Suzuki, Michiya, NMENV; Cobrain, Dave, NMENV
Cc:	Moore, Brian; Moore, John; Heidi Jones; Paul Hildebrandt; Chavez, Carl J, EMNRD
Subject:	[EXT] Gallup Flare KOD RTC Report
Date:	Monday, April 27, 2020 4:15:00 PM
Attachments:	image001.png image002.png image003.png image004.png image005.png image006.png 202004_RTC-FlareKOD_LTR.pdf

Hi Dave and Michiya,

Please find the Flare KOD Release Response to Approval with Modifications. We will also be sending a hard copy to EPA but please let us know if you would like a hard copy.

Thank you,
Caitlin

Caitlin Fields
Associate Engineer

Trihydro CORPORATION

OUR SAFETY IS MY RESPONSIBILITY

1252 Commerce Drive
Laramie, Wyoming 82070
(307) 745-7474 (phone)
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cfields@trihydro.com

Connect with us on:

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Western Refining Southwest, Inc.
A subsidiary of Marathon Petroleum Corporation
92 Giant Crossing Road
Jamestown, NM 87347
Tel: 505.722.3833

April 30, 2020

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

RE: Response to Approval with Modifications
Response Action Report Flare KOD Pump Sodium Hydroxide Release
Western Refining Southwest Inc., Gallup Refinery
EPA ID #NMD000333211
HWB-WRG-20-003

Dear Mr. Pierard,

Attached please find the response to comments contained in the New Mexico Environmental Department (NMED) Approval with Modifications letter dated February 21, 2020.

If you have any questions or comments regarding the information contained herein, please do not hesitate to contact Mr. Brian Moore at (505) 870-0486.

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,
Marathon Petroleum Company LP, Gallup Refinery

Robert S. Hanks
Refinery General Manager

Enclosure

cc: D. Cobrain, NMED HWB
M. Suzuki, NMED HWB
C. Chavez NMNMED
L. King, EPA Region 6
B. Moore Marathon Gallup Refinery
H. Jones Trihydro Corporation

New Mexico Environmental Department (NMED) Comments:

NMED Comment 1:

The Table of Contents does not contain a list of figures and appendices although they are included in the Report. Ensure that the Table of Contents presents all contents in future submittals. No response or revision required.

Marathon Petroleum Company (MPC) Response 1:

The comment is acknowledged.

NMED Comment 2:

In the Executive Summary, page 3 of 6, the Permittee states, "[a]pproximately 20-30 gallons of caustic were pumped from the area into a vacuum truck, which had been diluted with approximately 100 gallons of water, and pumped into the refinery sewer system at a pH of 8.0." Approximately 80 barrels [3,360 gallons] of caustic was released to the area. It is not clear why only 20-30 gallons were recovered. Explain whether the remaining amount was adsorbed in soils in a response letter.

MPC Response 2:

The 20-30 gallons of caustic was the maximum recoverable amount. No soils excavation was conducted in the area and the remaining caustic adsorbed into the soils in the release area.

NMED Comment 3:

In the Introduction Section, *Discussion of the Release*, page 3 of 6, the Permittee states, "[m]aintenance personnel used a vacuum truck with approximately 100 gallons of water in the tank, to collect approximately 20-30 gallons of caustic. The collected water/caustic mixture, with a pH value of 8, was discharged to a sewer drain to tank T-35." Caustic solution contains 20-30% sodium hydroxide according to Appendix C, *Safety Data Sheets (SDS)*. Theoretical pH values in the dilute solution would easily exceed 13. Unless a neutralizing agent (e.g., acid) was used, the dilute solution could still be too caustic and could damage parts of the truck, tank, or piping. Additionally, excessive heat may have been generated during mixing. The attempt to recover caustic via vacuum truck may present a safety hazard. In-situ neutralizing may be more effective and appropriate in such circumstances. No response required.

MPC Response 3:

The comment is acknowledged.

NMED Comment 4:

In the Introduction Section, *Discussion of the Process Area*, page 4 of 6, the Permittee states, "[t]he flare KOD removes liquids and the caustic is used to remove H_2S and other impurities from the gas stream." The statement indicates that the caustic solution may be in contact with hydrocarbons and hydrogen sulfide. It is not clear whether the released caustic solution contained hydrocarbons and hydrogen sulfide. Provide an explanation regarding potential contaminants in the released caustic in the response letter.

MPC Response 4:

Several soil samples in the release footprint will be collected to a depth of one foot below ground surface and analyzed for pH and gasoline range (GRO) and diesel range organics (DRO) total petroleum hydrocarbons (TPH) (Figure 4). Because the caustic could have contained some amount of TPH-GRO and TPH-DRO, the analysis will help delineate the footprint of the spill and the potential contamination of caustic and hydrocarbons. To help delineate the extent of the caustic infiltration, soil pH values will also be

taken in the field during the sampling. If the pH values exceed 12.5 at a depth of one foot below ground surface, additional field sampling will take place at 2.5-foot intervals until the soil pH is less than 12.5 to evaluate the vertical extent of contamination.

NMED Comment 5:

In the Remediation Activities Section, *Assessment – Soil Confirmation and Subsurface Soil Conditions*, page 5 of 6, the Permittee states, "[t]here was no soils remediation conducted therefore no confirmation sampling was conducted," and "[n]o soil boring or monitor wells were installed during the investigation because of the small amount of material released." The volume released was 80 barrels, which is not a small amount, and only 20-30 gallons of caustic were recovered. The contamination likely remains and may potentially pose risks to various receptors and could affect groundwater. The Permittee must propose to submit a workplan to investigate lateral and vertical extend of the soil contamination associated with the release no later than **July 31, 2020** (see Comment 8).

MPC Response 5:

A work plan will be submitted to delineate the horizontal and vertical extent of the caustic release on or before July 31, 2020.

NMED Comment 6:

In the Remediation Activities Section, *Groundwater Conditions*, page 5 of 6, the Permittee states, "[t]hese [nearest] monitoring wells [OAPIS-1 and NAPIS-2] have not been analyzed for pH." The permittee must analyze groundwater samples collected from these wells for pH. Propose to include the analyses in the updates for the *2020 Facility Wide Ground Water Monitoring Plan*.

MPC Response 6:

During well purging, pH and other parameters are recorded. These well purging forms are included in the annual Groundwater Monitoring Reports.

NMED Comment 7:

In the Regulatory Criteria Comparisons Section, page 5 and 6, the Permittee states, "[t]he cleanup criteria for caustic (20-30% sodium hydroxide) are not available in either the NMED Risk Assessment Guidance or the EPA's Regional Screening Levels." The value of pH above 12.5 defines the soil as corrosive hazardous wastes. If the soil pH is found to exceed 12.5 in the vicinity of the release, soil remediation is warranted. Additionally, the Permittee proposes to establish a background pH for soils. Discuss situations where the pH values in soil samples could exceed a background pH and, if so, whether any remedial actions would be implemented in the response letter.

MPC Response 7:

For a solid waste to be deemed to be hazardous based on the corrosivity characteristic, it must be aqueous per CFR §261.22(a)(1). For multiphase waste, the waste must contain at least 20% by volume free liquids to be deemed hazardous. Free liquids were removed from the release area immediately after the event.

A field paint filter test can be used to determine if there is greater than 20% by volume of free liquids. If not, pH will be used in the field to determine if impacts from the release extend deeper.

NMED Comment 8:

In the Conclusions and Recommendations Section, *Recommended Additional Excavation and Assessment*, page 6 of 6, the Permittee states, "several soil samples in the release footprint should be collected to a depth of one foot below ground surface and analyzed for pH (Figure 4). An additional soil sample collected from the same depth should also be collected outside the footprint of the release to establish a background pH for near surface soils." A work plan must be submitted no later than **July 31, 2020** as specified by Comment 5. Each sample location depicted in Figure 4 must target topographically low areas where the released caustic would have likely accumulated. Revise the figure, as appropriate, and provide a revised figure with the response letter. In addition, since the caustic could have contained hydrocarbons, soil samples must be collected for the analysis of total petroleum hydrocarbons (TPH) as well as pH. Furthermore, soil pH may qualitatively be determined during field investigation. If pH values at a depth of one foot below ground surface (bgs) exceed 12.5, further investigation is warranted of deeper soils (e.g., at two feet bgs) to evaluate the vertical extent of contamination. Revise the statement and provide a replacement page.

MPC Response 8:

A replacement page and a revised figure have been included as an attachment to this letter.

criteria for caustic (20-30% sodium hydroxide) are not available in either the NMED Risk Assessment Guidance or the EPA's Regional Screening Levels.

Conclusions and Recommendations

At 09:30 PM on April 20, 2017, during regular rounds, an operator noticed the hose to the sandpiper pump had ruptured. Caustic (20-30% sodium hydroxide) was spraying from the ruptured hose. The sandpiper pump was immediately shut down and maintenance personnel used a vacuum truck, with approximately 100 gallons of water in the tank, to collect approximately 20-30 gallons of caustic. The collected water/caustic mixture, with a pH value of 8, was discharged to a sewer drain to tank T-35.

Recommended Additional Excavation and Assessment

This near surface release is unlikely to pose a threat to groundwater resources due to the small volume release over a relative large area. This means that downward fluid migration would be limited by ponding at the surface (hydraulic head). Several soil samples in the release footprint should be collected to a depth of one foot below ground surface and analyzed for pH and total petroleum hydrocarbons-gasoline range organics (TPH-GRO) and diesel range organics (TPH-DRO) (Figure 4). Because the caustic could have contained some amount of hydrocarbon, the TPH-GRO and TPH-DRO analysis will help delineate the footprint of the spill and the potential contamination of caustic and hydrocarbons. To help delineate the extent of the caustic infiltration, soil pH values will also be taken in the field during the sampling. If the pH values exceed 12.5 at a depth of 1-ft bgs, additional field samples will be collected at 2.5-foot intervals to evaluate the vertical extend of contamination. An additional soil sample collected from a one-foot depth should also be collected outside the release footprint to establish a background surface soil pH.

Depending upon the field results of the initial round of soil samples, soil samples at additional horizontal step-out locations will be collected at a depth of 1-ft bgs if the original sample has a pH greater than 12.5. These additional soil samples will be collected at downslope locations (Figure 4) outside of the original spill footprint at 5-foot horizontal intervals.

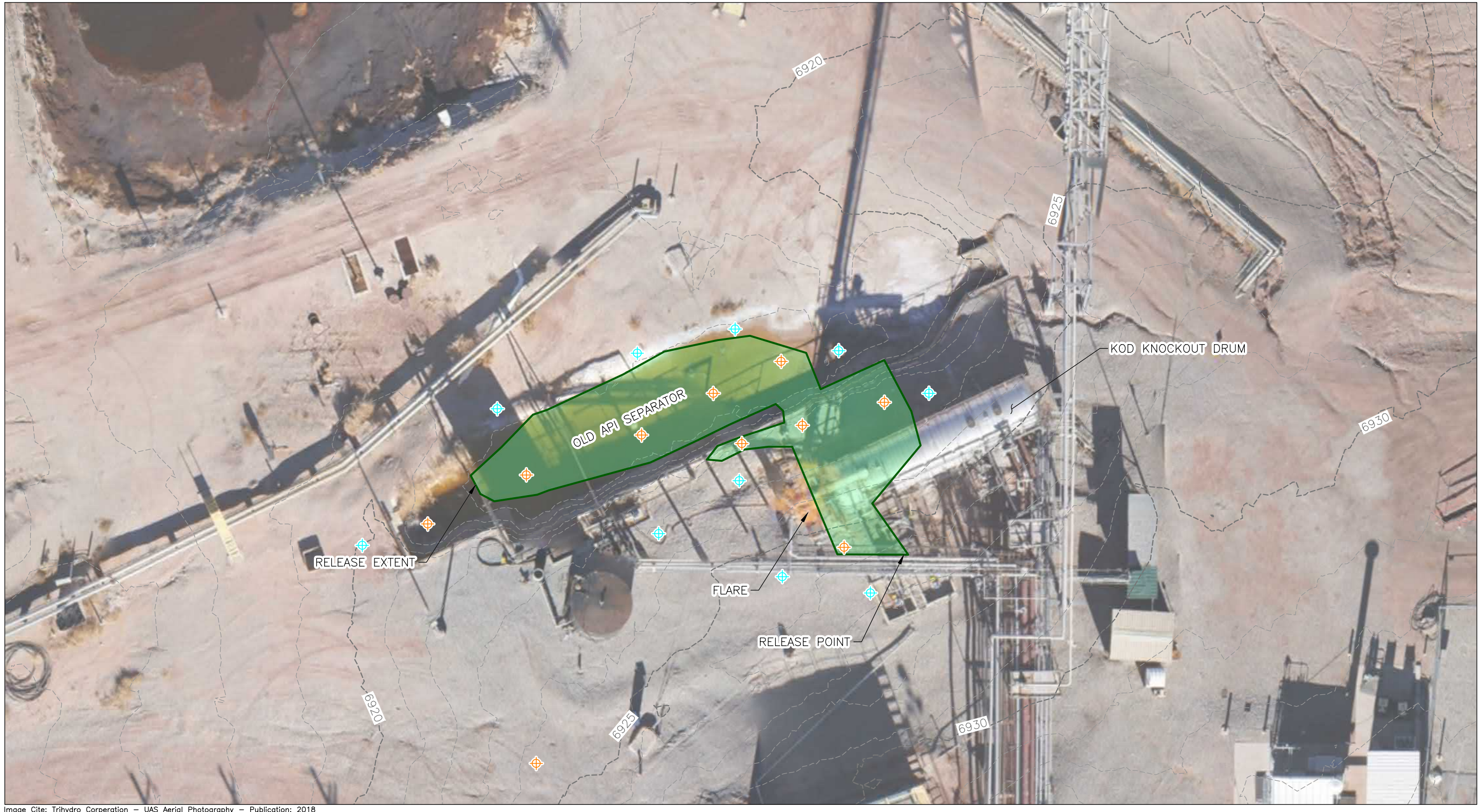

Image Cite: Trihydro Corperation – UAS Aerial Photography – Publication: 2018

EXPLANATION

- PROPOSED SOIL SAMPLE LOCATION
- PROPOSED SECONDARY SOIL SAMPLE LOCATION
- RELEASE EXTENT
- 6935 — EXISTING CONTAINMENT ELEVATION CONTOURS (INTERVAL = 1')
- KOD — KNOCKOUT DRUM

N

0 20'

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

FIGURE 4

PROPOSED SAMPLE LOCATIONS
KOD CAUSTIC RELEASE

MARATHON PETROLEUM COMPANY
GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: PH	Scale:1" = 20'	Date:4/3/2020	File: GALLUP_KODCAUSTICREL-OV-202004

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