

**Western Refining Southwest LLC**

A subsidiary of Marathon Petroleum Corporation

I-40 Exit 39

Jamestown, NM 87347

June 23, 2022

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

**RE: Flare KOD Caustic Release Post-Excavation Confirmation Screening Summary Report
Western Refining Southwest LLC D/B/A, Marathon Gallup Refinery
EPA ID# NMD000333211**

Dear Mr. Pierard,

Western Refining Southwest LLC (D/B/A Marathon Gallup Refinery) (Refinery) is submitting this "Flare KOD Caustic Release Post-Excavation Confirmation Screening Summary Report" (Report) to summarize the post-excavation confirmation screening results per New Mexico Environment Department's (NMED) "Approval, Flare KOD Caustic Release Investigation Report" dated January 24, 2022. This Report presents the pH screening results from the March 2022 soil excavation. A voluntary cleanup threshold of pH greater than 9 standard units (SU) was established to determine soil impacted by the 2017 caustic release.

Post-Excavation Confirmation Screening Results

During the week of March 15, 2022, excavation was conducted in the Flare Knock Out Drum (KOD) area (Figure 1) to remove high pH soils. Excavation areas were barricaded and left open for post-excavation confirmation screening, which was conducted for pH at 17 locations. The pH field screening included eight excavation floor locations and nine excavation sidewall locations (Figure 2 and Table 1). The pH field screening data were collected using an ExtechTM PH100 pH meter after soils had been wetted with distilled water.

The excavation area was bisected by a retaining wall that runs generally southwest to northeast (Figure 1), and the excavation was completed in 2 phases: (1) south of the retaining wall, and (2) north of the retaining wall. North and south lateral extents of impacted soils associated with the caustic release were established and confirmed by sidewall pH screening results of less than 9 SU (Figure 2).

The vertical extent of impacts was established in the soils south of the retaining wall and confirmed by pH screening data collected on the excavation floor in that section (Figure 2). Excavation south of the

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retaining wall was completed at the planned depth of 1 foot (ft) below ground surface (bgs). All pH results south of the retaining wall were less than 9 SU.

The vertical extent north of the retaining wall, around the concrete pad, was not confirmed. Groundwater was encountered at approximately 4 ft bgs on the east side of the concrete pad. The groundwater had a pH of 10 SU and greater. Multiple attempts to remove the groundwater using a vacuum truck were unsuccessful due to a high fluid recharge rate. To avoid encountering impacted shallow groundwater, further vertical excavation around the concrete pad was discontinued at 3 ft bgs despite floor pH screening results slightly above 9 SU.

The vertical extent of impacted soil was confirmed approximately 8 ft to the west of the concrete pad. All pH readings in this area were less than 9 SU.

Conclusions

Following are the conclusions from the Flare KOD excavation:

1. Lateral extent of impacted soils was bounded north of the retaining wall, as proposed in the "Flare KOD Caustic Release Investigation Report" submitted by the Refinery (October 27, 2021) and approved by NMED (January 24, 2022).
2. Vertical extent of impacted soils was not completed directly adjacent to the concrete pad, north of the retaining wall. However, additional vertical excavation around the concrete pad beyond 3 ft was not completed due to the high probability of contacting shallow impacted groundwater in the area. The impacted soils and groundwater are located in a depressed area where the Old American Petroleum Separator (OAPIS) was located. Remaining impacts are anticipated to remain fairly localized due to low permeability soils and clays surrounding the area which are expected to restrict groundwater flow from the area. Elevated pH levels have not been detected in the nearest downgradient monitoring well, OAPIS-1, during quarterly groundwater monitoring. Additionally, vertical extent was confirmed approximately 8 ft west of the concrete pad.
3. Confirmation sampling demonstrated that excavation south of the retaining wall is complete for both lateral and vertical extents.
4. The north and south excavations will be backfilled following NMED approval.

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



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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 Cade
Vice President

Enclosures

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

M. Suzuki, NMED HWB
M. Bracey, Marathon Petroleum Corporation
J. Moore, Marathon Gallup Refinery

Figures

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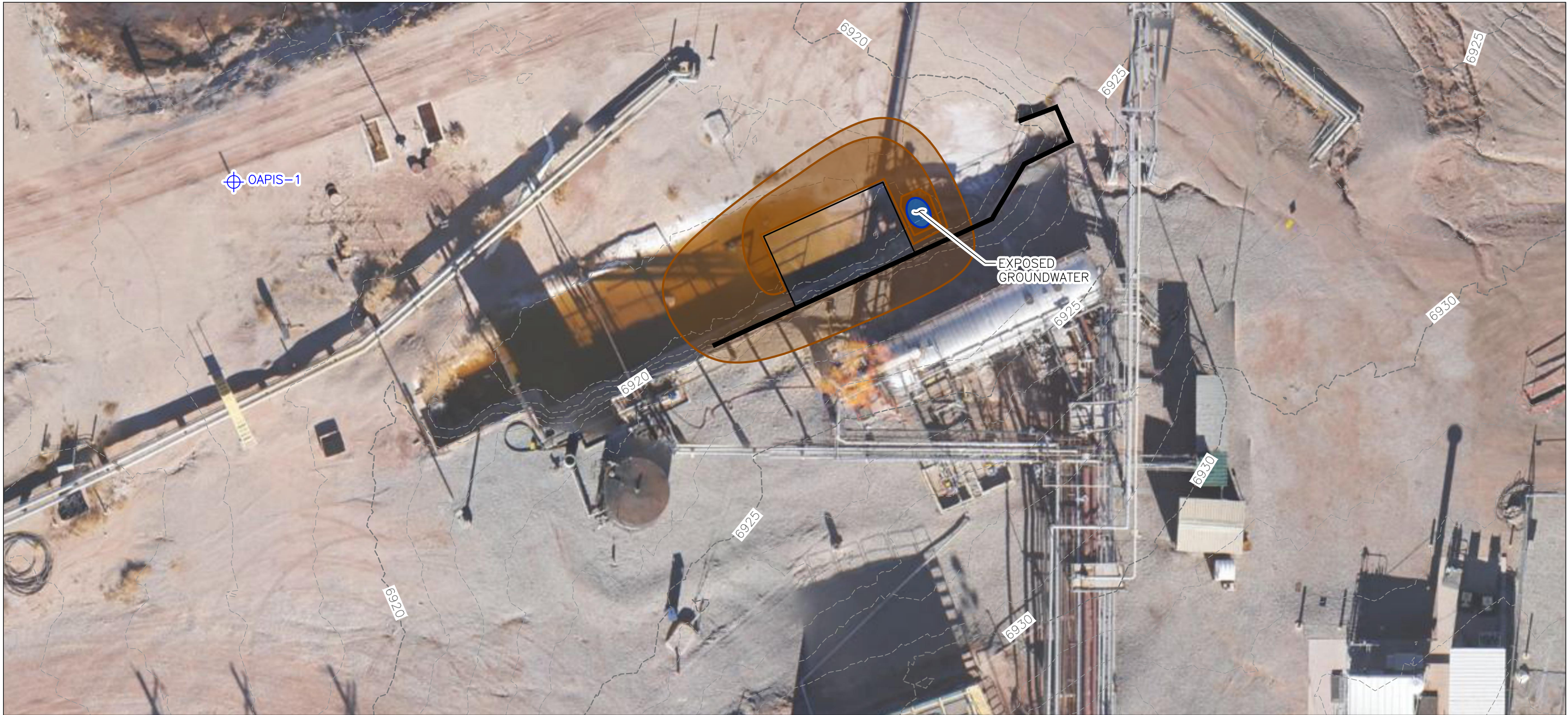





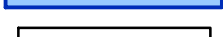
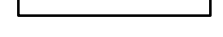

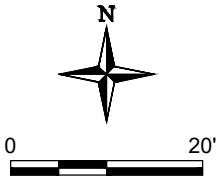



Image Cite: Trihydro Corporation – UAS Aerial Photography – Publication: 2018

EXPLANATION	
 OAPIS-1	GROUNDWATER MONITORING WELL AND DESIGNATION
	EXCAVATION (1-FOOT BGS)
	EXCAVATION (3-FOOT BGS)
	EXCAVATION (4-FOOT BGS)
	EXPOSED GROUNDWATER
	CONCRETE PAD
	CONCRETE RETAINING WALL
 6935	EXISTING CONTAINMENT ELEVATION CONTOURS (1-FOOT INTERVAL)
BGS	BELOW GROUND SURFACE



 1252 Commerce Drive Laramie, Wyoming 82070 www.trihydro.com (P) 307/745.7474 (F) 307/745.7729	FIGURE 1			
	EXCAVATION EXTENTS AND DEPTHS FLARE KOD EXCAVATION			
	WESTERN REFINING SOUTHWEST LLC MARATHON GALLUP REFINERY GALLUP, NEW MEXICO			
Drawn By: REP	Checked By: BM	Scale: 1" = 20'	Date: 5/31/22	File: 697-FLAREKODEXCAVDEPTH-2022

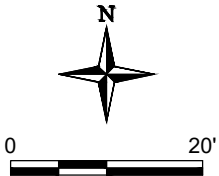
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EXPLANATION

- PH SAMPLE SIDEWALL LOCATION
- PH SAMPLE FLOOR LOCATION
- PH VALUE - STANDARD UNITS
- GROUNDWATER MONITORING WELL AND DESIGNATION
- EXCAVATION EXTENT
- CONCRETE PAD
- CONCRETE RETAINING WALL
- EXISTING CONTAINMENT ELEVATION CONTOURS (1-FOOT INTERVAL)



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FIGURE 2

POST-EXCAVATION PH SCREENING RESULTS
FLARE KOD EXCAVATION

WESTERN REFINING SOUTHWEST LLC
MARATHON GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP Checked By: BM Scale: 1" = 20' Date: 5/31/22 File: 697-FLAREKODEXCAVDATA-2022

Table

**TABLE 1. pH SCREENING LOCATIONS AND DEPTHS
FLARE KOD CAUSTIC RELEASE POST-EXCAVATION CONFIRMATION SCREENING SUMMARY REPORT
WESTERN REFINING SOUTHWEST LLC
MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO**

	Location	Depth Screened (ft)	pH (SU)
Floor Locations	1	1	7.35
	2	1	7.95
	3	1	8.37
	12	1	8.28
	13	3	9.56
	14	3	9.13
	15	3	9.20
	16	3.5	9.86
Sidewall Locations	4	0.5	7.79
	5	0.5	8.22
	6	0.5	7.24
	7	0.5	7.76
	8	2.5	8.79
	9	2.5	8.49
	10	2.5	7.76
	11	2.5	8.98
	17	0.5	8.32

Notes:

ft - foot

SU - Standard Units

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 120068

CONDITIONS

Operator: Western Refining Southwest LLC 539 South Main Street Findlay, OH 45840	OGRID: 267595
	Action Number: 120068
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

CONDITIONS

Created By	Condition	Condition Date
scwells	Accepted for Record Retention Purposes-Only	11/21/2022