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Certified Mail - Return Receipt Requested



March 23, 2022

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

**RE: APPROVAL WITH MODIFICATIONS
MARKETING TANK FARM LASER-INDUCED FLUORESCENCE/HYDRAULIC PROFILING
INVESTIGATION REPORT ADDENDUM
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY
MCKINLEY COUNTY, GALLUP, NEW MEXICO
EPA ID # NMD000333211
HWB-WRG-21-024**

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has completed its review of the Marathon Petroleum Company dba Western Refining Southwest LLC, Gallup Refinery (Permittee) *Marketing Tank Farm Laser-Induced Fluorescence/Hydraulic Profiling Investigation Report Addendum* (Addendum), dated November 2021 and received on December 6, 2021. NMED has reviewed the Addendum, and hereby issues this Approval with Modifications with the following comments.

Comment 1

In Section 1.0 (Introduction and Background), page 5 of 13, paragraph 1, the Permittee states, "[t]his investigation was conducted to address data gaps identified in the "Marketing Tank Farm Laser-Induced Fluorescence[[LIF]]/Hydraulic Profiling [[HP]] Investigation Report" (MKTf Report) (MPC March 31, 2021)." The Addendum does not clearly define what data gaps are identified in the MKTF Report. Revise the appropriate sections of the Addendum to define the data gaps identified in the MKTF Report and provide replacement pages for those sections.

Comment 2

In Section 1.0 (Introduction and Background), page 5 of 13, paragraph 2, the Permittee states, "[t]he investigation scope was conducted in accordance with a series of verbal discussions and agreements between the New Mexico Environment Department (NMED) and the Refinery."

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Although the investigation scope was discussed verbally, NMED prefers a written form of communication for our record so that it is accessible to the public and also to facilitate tracking the course of the investigations. Therefore, for future investigations, the Permittee must submit written work plans for review and approval by NMED prior to conducting the investigations. No revision is required to the Addendum.

Comment 3

In Section 3.0 (Investigation Results), page 10 of 13, paragraph 1, the Permittee states, “[e]levation data for the LIF borings were provided in Appendix D of the Tank 570 Report (Western October 27, 2021).” Comment 18 of the NMED’s January 31, 2022 *Disapproval Tank 570 Release and Additional Areas Laser-induced Fluorescence/Hydraulic Profiling Investigation Report* required the Permittee to submit the missing surface elevation data and NMED has not yet received the data. Although this issue will be addressed in a separate submittal, the Tank 570 Report does not contain the elevation data; therefore, the statement must be removed from the revised Addendum or modified to report the current circumstances. Provide replacement pages accordingly.

Comment 4

In Section 3.2 (Laser-Induced Fluorescence Results), page 11 of 13, paragraph 2, the Permittee states, “[n]o response was noted in MKTF-LIF-124, and a gasoline-type waveform was noted for MKTF-LIF-126 (41.6%).” According to boring log MKTF-LIF-124 included in Appendix C (LIF/HP Logs), the boring was terminated at a depth of 9.54 feet below ground surface (bgs). Although the depth to water (DTW) readings collected from well MKTF-26 located adjacent to boring MKTF-LIF-124 are comparable to the termination depth (9.54 feet bgs) of the boring, there has been no verification that the boring was adequately advanced to the water table where separate phase hydrocarbons (SPH) may potentially be present. In addition, 1.72 feet of SPH was measured in neighboring well MKTF-26 during the December 2020 gauging event. SPH may also be present in the vicinity of boring MKTF-LIF-124 based on the December 2020 gauging data collected from well MKTF-26. Unless boring MKTF-LIF-124 was documented to have been advanced to the water table, the presence/absence of SPH at boring MKTF-LIF-124 is considered as a data gap and must be discussed accordingly in the revised Addendum. Verify the termination depth of boring MKTF-LIF-124 in the revised Addendum and include an additional discussion about the presence/absence of SPH in the revised Addendum and provide replacement pages, as necessary.

Comment 5

In Section 3.2 (Laser-Induced Fluorescence Results), page 11 of 13, paragraph 3, the Permittee states, “[n]o response was noted in MKTF-LIF-133, MKTF-LIF-134, and MKTF-LIF-135.” According to Appendix C, the boring log for MKTF-LIF-135 reported that the depth was terminated at 7.68 feet bgs. Since DTW readings collected from well MKTF-42 located downgradient from boring MKTF-LIF-135 are recorded as 15 to 16 feet bgs, the boring was unlikely to have been advanced to the water table where SPH may potentially be present. Since boring MKTF-LIF-135 was not

likely advanced to the water table, the presence/absence of SPH at boring MKTF-LIF-135 should be considered as data gap and discussed in the revised Addendum (see also Comment 4). Provide replacement pages accordingly.

Comment 6

Appendix A (Fluid Level Measurements) presents fluid level measurement data for the monitoring wells and borings. In Appendix A, the elevation data is referenced from the “measuring point” but the “measuring point” is not defined. It is not clear whether the referenced “measuring point” is referring to the top of casing (TOC) or the ground surface. Revise the table to clarify where the “measuring point” was collected. In addition, all DTW readings must be reported with a unit of feet bgs. Revise the table accordingly and provide a replacement table in Appendix A.

Comment 7

Appendix B (LIF/HP Methods) describes details on the LIF/HP technique. In Appendix B, page 2 of 2, paragraph 1, the Permittee states, “[t]he estimated K (ft/d) is calculated using the equation:

$$K = \ln(Q/P') * 20.0 + 7.0$$

where: P' = downhole pressure in psi – (0.433 (psi/ft) * depth below water table (ft)) – atmospheric pressure (psi)

0.433 psi/ft = hydrostatic pressure gradient

Q = flow rate (mL/min).”

Address the following comments about the equation and provide a replacement Appendix B:

- a) While the equation explains how the K is calculated from the HP data, it is not clear how the potentiometric surface (water table) can be calculated from the data. Include a separate equation to calculate the potentiometric surface (water table) and provide an explanation with an example. Furthermore, clarify whether the “depth below water table” is calculated from the potentiometric surface (water table) obtained from the dissipation testing or explain how it is estimated.
- b) The Permittee provided the unitless constants, 20 and 7, in the equation but did not define these values. Provide an explanation for the unitless constants (20 and 7) used in the equation.
- c) P' appears to have a unit with pound per square inch (psi), Q has a unit with milliliter per minute (mL/min) and the output value for K has a unit with feet per day (ft/d). It is unclear how the unit conversion is accomplished from the equation. Provide conversion details to the equation for clarity and include an example calculation with units. Furthermore, the Permittee did not clearly define P' in the equation. Define P' in the

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equation and confirm the value's unit.

Additionally, the equation to calculate K that is presented in Appendix B was not discussed in the text of the Addendum. Include an additional section that discusses the equation in the text of the revised Addendum and provide replacement pages.

The Permittee must address all comments above and submit a response letter, replacement pages, and an electronic version of the revised Addendum on a CD/DVD no later than **June 30, 2022**.

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 letter, please contact Michiya Suzuki of my staff at 505-690-6930.

Sincerely,



Dave Cobrain
Program Manager
Hazardous Waste Bureau

cc: L. Tsinnajinnie, NMED HWB
M. Suzuki, NMED HWB
H. Jones, Trihydro
L. Barr, EMNRD OCD
L. King, EPA Region 6 (6LCRRC)

File: Reading File and WRG 2022 file