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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

May 25, 2021

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

RE: **DISAPPROVAL**
FACILITY WIDE GROUNDWATER MONITORING WORK PLAN – UPDATES FOR 2021
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY
EPA ID # NMD000333211
HWB-WRG-21-006

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has reviewed the *Facility Wide Groundwater Work Plan (Work Plan)*, dated March 31, 2021, submitted on behalf of Marathon Petroleum Company dba Western Refining Southwest Inc., Gallup Refinery (the Permittee). NMED hereby issues this Disapproval with the following comments.

Comment 1

In the Executive Summary, page iii, the Permittee states, “Group E includes 49 permanent monitoring wells installed to delineate the extent of a hydrocarbon plume associated with a seep discovered in 2013 directly west of the crude tanks (T-101, 102).” According to Table 5-1, *Modifications to the Monitoring Network*, pages 3 and 4, a total of 50 wells are listed as Group E. There is a discrepancy in the number of the Group E wells. Resolve the discrepancy in the revised Work Plan.

Comment 2

In Section 2.1, *Historical and Current Site Use*, page 3, the Permittee states, “[t]he Refinery also receives natural gasoline feed stock via a 4-in diameter pipeline that comes in from the west along the Interstate 40 corridor from the Western Refining Southwest, LLC - Wingate Plant (formerly Conoco gas plant).” The statement indicates that the “Wingate Plant” belongs to the Permittee. In a response letter, clarify whether the plant was acquired and currently operated by the Permittee.

Comment 3

In Section 2.4, *Summary of Historical Impacts*, page 9, the Permittee states, “[b]ased on the subsurface soil conditions, there is a possibility that precipitation could cause constituents to leach and reach groundwater.” Section 3.3, *Vegetation Types*, page 14, states that average rainfall at the Refinery is less than 7 [inches] per year. Note that northwestern New Mexico is characterized by a semiarid climate and mean annual rainfall is generally low as stated in Section 3.3. Precipitation may not be a significant contributing factor for constituents to leach and reach groundwater. The more prominent contributing factors at the site may include a hydrostatic pressure exerted by fluids that are/were leaking from the sewer pipelines, NAPIS, production wells, sanitary and aeration lagoons. Revise the Work Plan, as necessary.

Comment 4

Section 2.4 includes six subsections, Sections 2.4.1 through 2.4.6. Sections 2.4.1, *Separate Phase Hydrocarbons*, and 2.4.2, *Methyl Tert Butyl Ether*, provide discussion specific to the contaminants while Sections 2.4.3, *NAPIS Unit*, 2.4.4, *Aeration Basin*, 2.4.5, *North Drainage Ditch*, and 2.4.6, *OW-14 Source Area*, provide discussion specific to the areas. Sections 2.4.1 and 2.4.2 and Sections 2.4.3 through 2.4.6 may be separated and grouped for clarity and better organization. Revise the Work Plan, as appropriate.

In addition, Sections 2.4.1 and 2.4.2 provide a discussion regarding two specific types of contaminants, separate phase hydrocarbons (SPH) and methyl tert butyl ether (MTBE); however, the contaminants of concern (COCs) are not limited to SPH and MTBE. Other hydrocarbon constituents such as benzene, toluene, ethylbenzene, total xylenes (BTEX), chlorinated solvents (e.g., 1,2 dichloroethane), and metals have also been detected above the applicable screening levels at the Facility. Acknowledge that there are other COCs. Similarly, although there are multiple Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) at the Facility, the discussion for the only four specific areas is included. Acknowledge that there are other impacted areas. Unless the discussion is inclusive, provide a clarification stating that there are other COCs and SWMUs/AOCs at the Facility. Revise the Work Plan for clarity.

Comment 5

Some discussions provided in Sections 2.4.1 through 2.4.6 are incomplete and do not include the latest information. For example, Section 2.4.4, *Aeration Basin*, page 11, concludes, “[t]he

revised report and response to comments were submitted on January 5, 2021. A due date from the additional work plan will be determined upon approval of the revised report.” However, the NMED’s *Approval with Modifications Solid Waste Management Unit 1 Revised Investigation Report*, dated January 26, 2021, has already approved the report and provided the due date for the work plan. Revise the sections to update the information.

Comment 6

In Section 4.0, *Monitoring and Sampling Program*, page 17, the Permittee states, “[i]f samples cannot be collected from a location due to environmental concerns, such as elevated hydrogen sulfide, arrangements will be made to collect samples from the affected location(s) during the next sampling or gauging event.” Comment 3 of the NMED’s *Approval with Modifications Annual Ground Water Monitoring Report Gallup Refinery – 2018*, dated January 22, 2020, states, “[t]he Permittee must conduct the required sampling and change the scheduled sampling dates as necessary, if the H₂S concentrations are too high to allow personnel to conduct the sampling event on the scheduled sampling timeframe.” Include this provision in the revised Work Plan.

Comment 7

In Section 5.1, *Modifications in Monitoring Locations*, page 18, the Permittee states, “[e]ight wells and one sample location are proposed for removal from the monitoring network. The eight wells have SPH recovery systems installed (OW-13, OW-14, OW-29, OW-30, RW-1, RW-2, RW-5, and RW-6).” Propose to discontinue operation of the SPH recovery system installed for these wells prior to gauging and sampling events, allow groundwater to equilibrate, and collect data from these wells. Revise the Work Plan accordingly.

Comment 8

In Section 5.1, *Modifications in Monitoring Locations*, page 18, the Permittee states, “[t]he sample location, Boiler Water Inlet to EP-9, is proposed for removal because the Boiler is no longer in service.” The proposed change is hereby approved. If the discharged is to be resumed in the future, propose to collect the wastewater samples from the discharge location in a future groundwater monitoring plan update.

Comment 9

In Section 5.1, *Modifications in Monitoring Locations*, page 18, the Permittee states, “OW-13 will be retained at this time to allow for further evaluation.” However, well OW-13 is proposed to be removed from the monitoring network in 2021 according to Table 5-1, *Modifications to the Monitoring Network*. Resolve the discrepancy in the revised Work Plan. Regardless, the groundwater data must continue to be collected from well OW-13 and other groundwater monitoring wells where the SPH recovery systems were installed (see also Comment 7).

Comment 10

In Section 5.1, *Modifications in Monitoring Locations*, page 18, the Permittee states, “14 new

monitoring wells are anticipated to be installed and added to the network in 2021.” The discussion regarding three new monitoring wells (Sonsela wells near OW-13, between OW-12 and OW-13, and west of OW-1) is provided; however, the remaining 11 wells are not discussed. Provide a discussion regarding the remaining anticipated 11 wells in the revised Work Plan.

Comment 11

In Section 5.1, *Modifications in Monitoring Locations*, page 18, the Permittee states, “[t]o delineate the down-gradient extent of the plume detected at OW-1, a new Sonsela well will be installed approximately 500 ft downgradient of OW-1 to the west. The proposed locations of these wells and other new wells are shown on Figure 5-1.” The location of the referenced Sonsela well is depicted approximately 100 feet rather than 500 feet downgradient of well OW-1 in Figure 5-1, *Proposed Well Locations*. Resolve the discrepancy in the revised Work Plan.

Comment 12

In Section 5.1, *Modifications in Monitoring Locations*, page 18, the Permittee states, “MPC will submit an addendum to this Plan within 60 days of the final well completion detailing the new monitoring wells, the proposed sampling schedule, and the proposed analytical suites.” The Permittee must not submit the reports as an addendum to this Work Plan. Rather, the Permittee must submit a separate well completion report. Revise the Work Plan accordingly.

Comment 13

In Section 5.2, *Modifications in Monitoring Frequency*, pages 18 and 19, the Permittee states, “sampling frequency for wells BW-4A, BW-4B, BW-5A, BW-5B, BW-5C, PW-3, and PW-4 is proposed to be reduced from quarterly to annual sampling because concentrations have remained consistent since 2016.” The proposed change on sampling frequency for wells BW-4A, BW-4B, BW-5A, BW-5B, PW-3, and PW-4 is hereby approved. However, the steady MTBE concentrations in the groundwater samples collected from wells BW-5B and BW-5C potentially indicate that MTBE is migrating offsite. Chlorinated solvents (1,2-dichloroethane, 1,1-dichloroethane) have also been detected from these wells and 1,4-dioxane was detected in the groundwater sample collected from well BW-5C during the October 2019 sampling event. In addition, production well PW-3 is located in the middle of the refinery infrastructure and reportedly leaking. The cause of the leak is currently being investigated. The sampling frequency for wells BW-5B, BW-5C, and PW-3 must remain quarterly at this time. Revise the Work Plan accordingly and incorporate this change for the 2022 Groundwater Monitoring Work Plan Updates.

Comment 14

In Section 5.3, *Modifications in Target Analytes*, page 19, the Permittee states, “[a]nalytes were removed if the analyte had not been detected in the last 3 consecutive years of sampling.” Such criterion may be inappropriate for data presentation because removal of analytes that are not detected in the last three consecutive years eliminates potential future detections. For example, benzene, ethylbenzene, and total xylenes have not been detected in the last three

consecutive years of sampling in the groundwater samples collected from well BW-5B; however, MTBE and toluene have been detected frequently in the well. If benzene, ethylbenzene, and total xylenes were removed and only MTBE and toluene were listed in the analytical data tables, it would not be possible to evaluate whether benzene, ethylbenzene, and total xylenes remained undetected or breakthrough has occurred during the future sampling events. A future detection of other hydrocarbon constituents (e.g., benzene) is possible in well BW-5B because MTBE and toluene, which are also hydrocarbon constituents, have been detected. Unless analytical laboratory is directed not to report certain analytes, every compound listed in the analytical method will be reported. The Permittee must report every compound detected above respective detection limit. Remove the criterion from the revised Work Plan.

Comment 15

In Section 5.3, *Modifications in Target Analytes*, page 19, the Permittee states, “[n]aphthalene, 1-methyl naphthalene, and 2-methyl naphthalene were removed from VOC analysis because these constituents are also analyzed by SVOC analysis.” Every compound detected in a sample must be reported. If notable discrepancies in the naphthalene, 1-methyl naphthalene, or 2-methyl naphthalene results between VOC and SVOC analyses are found, the discrepancies must be reported, and the cause must be evaluated. Remove the statement from the revised Work Plan.

Comment 16

In Section 5.3, *Modifications in Target Analytes*, page 19, the Permittee states, “[c]ations analyzed as dissolved metals were removed. Because the anions are analyzed as totals, doing an anion/cation comparison is only relevant if the cations are also analyzed as total.” The statement is not clear. The Permittee must continue to report the concentrations of dissolved metals and anions (e.g., nitrate). Previous groundwater monitoring reports do not appear to include total anions or cations data and an associated discussion. Provide a clarification in the response letter and revise the Work Plan for clarity.

Comment 17

In Section 5.3, *Modifications in Target Analytes*, page 19, the Permittee states, “1,4-dioxane was removed from wells OW-54, OW-55, OW-56 because two consecutive sampling events have been conducted, per NMED Disapproval Facility Wide Groundwater Monitoring Plan – Updates for 2019, Comment 22 (July 12, 2019). As such, further monitoring of this analyte is no longer required.” If 1,4-dioxane was detected in any of wells OW-54, OW-55, and OW-56 during the sampling events, the Permittee must continue 1,4-dioxane sampling regardless of the level of the concentration. Revise the Work Plan, as appropriate.

Comment 18

In Section 5.3, *Modifications in Target Analytes*, page 20, the Permittee states, “MPC proposes to sample the Group well sets for their complete analyte list every 5 years. Analytes that are

above the applicable standard will be added back into the analyte lists. This will be done to ensure that changes in groundwater chemistry are adequately monitored. The next sampling event in which the complete analyte list will be sampled for is 2026.” The Permittee must continue to conduct all required analyses for groundwater samples collected from each well and report all analytes detected from the well regardless of the level of detection. Since the analytical suite is specific to each well rather than the group well sets, the proposal is not applicable. Revise the statement accordingly.

Comment 19

Section 5.3, *Modifications in Target Analytes*, pages 19 and 20, does not address the modifications required by the following comments:

- a. Comment 25 of the NMED’s *Disapproval Annual Groundwater Monitoring Report Gallup Refinery – 2019*, dated November 23, 2020, states, “[p]ropose to conduct pesticide analysis for the water samples collected from pond EP-2 using EPA Method 8081 in the 2021 Facility-wide Groundwater Monitoring Work Plan.”
- b. Comment 6 of the NMED’s *Disapproval Natural Attenuation Assessment and Proposed Workplan for the Hydrocarbon Seep Area*, dated January 26, 2021, states, “[p]ropose to conduct sulfide analysis for pertinent wells in the next groundwater monitoring work plan update.”
- c. Comment 9, item c of the NMED’s *Disapproval Natural Attenuation Assessment and Proposed Workplan for the Hydrocarbon Seep Area*, dated January 26, 2021, states, “[p]ropose to conduct the analyses of the degradation products of MTBE in the next groundwater monitoring work plan update.”
- d. Comment 9, item d of the NMED’s *Disapproval Natural Attenuation Assessment and Proposed Workplan for the Hydrocarbon Seep Area*, dated January 26, 2021, states, “[p]ropose to conduct the analyses of the daughter products of vinyl chloride in the next groundwater monitoring work plan update.”

Address the above comments in the revised Work Plan.

Comment 20

The Work Plan does not provide discussions related to groundwater monitoring and sample collection as required by Permit Section IV.L. Include the following discussion in the revised Work Plan at a minimum:

- a. The method for groundwater elevation survey,
- b. Purging and sampling method(s) specific to each well (e.g., bailer, low flow purging device, wells with SPH recovery systems, production wells),

Mr. Moore
May 25, 2021
Page 7

- c. A collection of field groundwater quality parameters,
- d. Groundwater stabilization criteria specific to each sampling method,
- e. Sample handling and waste management procedures, and
- f. Sample collection quality control and assurance procedures.

The Permittee must submit a revised Work Plan that addresses all comments contained in the letter. Two hard copies and an electronic version of the revised Work Plan must be submitted to the NMED. The Permittee must also include a redline-strikeout version in electronic format showing where all revisions to the Work Plan have been made. The revised Work Plan must be accompanied with a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. The revised Work Plan must be submitted to NMED no later than **September 24, 2021**.

If you have questions regarding this letter, please contact Michiya Suzuki of my staff at 505-476-6046.

Sincerely,



Dave Cobrain
Program Manager
Hazardous Waste Bureau

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

File: Reading File and WRG 2021 File