NEW MEXICO ENVIRONMENT DEPARTMENT

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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

January 28, 2019

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

RE: DISAPPROVAL
WORK PLAN 2015 ANNUAL GROUNDWATER REPORT COMMENTS
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY
EPA ID # NMD000333211
HWB-WRG-18-012

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has reviewed the *Work Plan 2015 Annual Groundwater Report Comments* (Work Plan), dated October 2018, submitted on behalf of Marathon Petroleum Company dba Western Refining Southwest Inc., Gallup Refinery (the Permittee). NMED hereby issues this Disapproval. The Permittee must address the following comments provided by both NMED and the New Mexico Energy Minerals and Natural Resources Department Oil Conservation Division (OCD):

Comment 1

The title of the work plan must reflect the topic of the work plan. While this Work Plan was submitted in response to NMED requirements based on review of the Permittee's 2015 Groundwater Monitoring Work Plan, the work plan more specifically addresses installation of new monitoring wells. The Permittee should have titled the document more appropriately in order to be able to track the topic of the document in the future. No revision is required; however, in the future the Permittee must use relevant titles for documents.

Comment 2
An electronic version of the response letter was not included in the submittal. Provide an electronic version of the response letter along with Attachments 1 and 2 in the response letter no later than **February 8, 2019**.

Comment 3
In Section 1, *Introduction,* the Permittee states, "Comment 18.3 - Methyl Tert Butyl Ether (MTBE) has been detected in OW-50 and OW-52 since submission of the 2015 Annual Groundwater Monitoring Report that confirms the down-gradient flow direction to the north, thus no additional wells are proposed." NMED concurs that no additional wells are necessary between wells OW-13 and OW-29 because wells OW-54 and OW-55 were already installed. However, wells OW-50 and OW-52 may be located cross-gradient relative to the groundwater flow direction since the MTBE concentrations in groundwater samples collected from wells located west of OW-13 (e.g., OW-56) are significantly higher than the MTBE concentrations in groundwater samples collected from wells OW-50 and OW-52. The MTBE plume is likely migrating toward west rather than north. Figure 2, *Chinle / Alluvial Interface Potentiometric Map,* indicates that the groundwater flow direction is toward north; however, the potentiometric surface elevations west of well OW-56 were not investigated. Revise the statement in the Work Plan, as necessary.

Comment 4
In Section 1, *Introduction,* the Permittee states, "Comment 20 - Upon further review of the well construction and water levels, it appears that operating a recovery pump in existing RW-2, which is being proposed separately, will lower the water level in RW-2 to below the top of the well screen." Refer to Comment 9 in the *Disapproval for Revised Annual Groundwater Monitoring Report: Gallup Refinery – 2015,* dated January 4, 2019. Comment 9 states, "[i]t is not appropriate to depress the water table in the wells where the screened intervals have historically been submerged, because the depth intervals where free product is present or smeared have not been delineated for these wells." Since the screened interval of well RW-2 has historically been submerged, the Permittee must revise the Work Plan to propose to install a well with an appropriate screened interval at the location of RW-2.

Comment 5
In Section 1, *Introduction,* the Permittee states, "Comment 22 - Recent monitoring data has shown the benzene, toluene, ethylbenzene, and xylenes (BTEX) results have been non-detect in samples collected at OW-1 and the MTBE results are well below the screening level. Therefore, the leading edge of the plume is adequately defined at OW-1 and there is no benefit to installing additional down-gradient wells at this time." According to Table 8.12 in the *Annual Ground Water Monitoring Report Gallup Refinery – 2017* (2017 Report), dated October 30, 2018, the MTBE concentrations in the groundwater samples collected from well OW-1 were steadily detected below the applicable standard throughout 2017. Since there is a water supply well approximately one mile downgradient from the evaporation ponds, the Permittee must ensure that no contaminants migrate further downgradient of well OW-1. Propose to install a sentinel groundwater monitoring well west of well OW-1 in the revised Work Plan.

Comment 6
In Section 1, *Introduction,* the Permittee states, "Comment 25 - A well installed on the southern margin of Evaporation Pond 9 (EP-9) would be cross-gradient to the evaporation pond and be of limited value evaluating potential releases from EP-9. It is also noted that there is a natural depression to south of EP-9 that would make it difficult, if not impossible, to install a monitoring well near the south berm of EP-9. Pursuant to other recent agency requests, new boundary wells (i.e., BW-5A, BW-5B, and BW-5C) were recently installed to the west and down-gradient of EP-9." Refer to Comment 14 in the NMED's January 4, 2019 Disapproval. Comment 14 directs the Permittee to propose to install a groundwater monitoring well at the southern perimeter of pond EP-9. If accessibility is an issue, the Permittee may install the well at a location outside of the depressed area near the berm. Aerial images suggest that there are appropriate locations around midsection of the south berm that appear level. The boundary wells BW-5A, BW-5B and MW-5C are positioned west of pond EP-9 and are unlikely to be adequate for leak detection for the southern perimeter of the pond; therefore, Comment 14 still applies. Revise the Work Plan accordingly.

Comment 7
In Section 1, *Introduction,* the Permittee states, "Comment 39 - MTBE concentrations have been slowing [sic] increasing in groundwater samples collected from OW-13. This well was installed in 1981, approximately 37 years ago, and the quality of the well construction is in question. There is a concern the well itself may be acting as a conduit for contamination in the Chinle/Alluvial Interface zone to migrate vertically to the Sonsela Aquifer. It is recommended to plug and abandon well OW-13 and install a new Sonsela well in the same area." Explain the basis for stating that well OW-13 may be a conduit for contaminant migration and the well construction is in question in the revised Work Plan. Well OW-13 must not be abandoned unless sufficient evidence is provided. Replacement of well OW-13 does not address Comment 39. Comment 39 requires the Permittee to investigate the expansion of MTBE plume in the Sonsela formation. Well OW-12 installed in the Sonsela formation is located approximately 800 feet downgradient of well OW-13. MTBE has not been detected to date in the groundwater samples collected from well OW-12. Propose to install a well screened in the Sonsela formation at a location halfway between wells OW-12 and OW-13 in the revised Work Plan.

Comment 8
In Section 2, *Background,* the Permittee states, "[t]wo of the wells (OW-13 replacement and new off-site Chinle/Alluvial Interface well) will be drilled in the northeast portion of the property, with one of these actually located off-site to the northeast." In addition to the two wells, Comment 4 requires installation of another well at the location of RW-2 at the northeast portion of the property. Furthermore, Comments 5 and 6 require installation of a sentinel well west of well OW-1, and a groundwater monitoring well south of pond EP-9. Comment 7 requires installation of a well within the Sonsela formation. Address the requirements and revise all applicable sections of the Work Plan.

Comment 9
In Section 4.3, *New Shallow Wells at MKTF-17 and MKTF-18,* the Permittee states, "[t]he wells will be screened in the upper-most saturated interval (logged as Fill in MKTF-17 and MKTF-18)

with anticipated maximum well depths of 10 feet." The 2017 depth-to-water (DTW) measurements indicate that the groundwater depths were below nine feet below ground surface (bgs) in well MKTF-17 according to Table 9.2 of the 2017 Report. The well placed next to MKTF-17 must be installed deeper than ten feet bgs. Revise the Work Plan accordingly. In addition, all proposed wells must be installed in a way to accommodate the decreasing trend in groundwater elevations in recent years (e.g., deeper total well depths, longer screened intervals). Furthermore, the designation for all new wells that replace existing wells must be distinguished from the designations for the existing wells (e.g., MKTF-17A). Revise the Work Plan accordingly.

Comment 10

In Section 4.5, *Soil Sample Field Screening and Logging,* the Permittee states, "[s]oil samples will be collected for laboratory analysis if screening indicates the potential for site impacts." Regardless of field screening results, soil samples must also be collected at the groundwater interface and termination depths in each soil boring since some constituents may not be detected by field screening (e.g., metals and semi-volatile organic compounds). Revise the Work Plan accordingly.

Comment 11

In Section 4.5.1, *Drilling Activities,* the Permittee states, "[s]lotted (0.01 inch) PVC well screen will be placed at the bottom of the borings and will extend for 10 feet. A 10/20 sand filter pack will be installed to two feet over the top of the well screen." The statement is contradictory. The longer screened intervals are proposed for the new well northeast of OW-30, and some MKTF wells in Sections 4.1, and 4.4, respectively. Similarly, the length of sand filter pack above screen is less than two feet in wells MKTF-01 and MKTF-02. Resolve the discrepancies in the revised Work Plan.

Comment 12

In Section 4.6, *Groundwater Sample Collection,* the Permittee states, "[g]roundwater samples will be collected from the new monitoring wells within 24 hours of the completion of well purging using disposal bailers." Prior to collection of groundwater samples for laboratory analyses, the Permittee must measure DTW and the total depths of each well, and collect groundwater quality parameter data (e.g., dissolved oxygen, pH, temperature, conductivity, redox potential, turbidity) during well purging. Include descriptions of the field procedures in the revised Work Plan. In addition, the discussion regarding well development methodology is not included in the Work Plan. Include a discussion in the revised Work Plan.

Comment 13

In Section 4.9, *Chemical Analyses,* the Permittee states, "[g]roundwater samples will also be analyzed for major cations (calcium, magnesium, sodium, and potassium) and anions (e.g., carbonate, bicarbonate, sulfate, fluoride and chloride)." The listed cations and anions are not included in the table titled as Inorganic Analytical Methods (page 4-8). Explain why these inorganic constituents are not included in the table or revise the table to include all inorganic

constituents that will be analyzed. In addition, groundwater samples must also be analyzed for nitrate and nitrite because of potential wastewater discharges at the site. Include the nitrate and nitrite analyses for groundwater samples in the revised Work Plan.

Comment 14

Figure 2, *Chinle / Alluvial Interface Potentiometric Map,* uses the December 2017 groundwater elevation data; however, Figure 2A, *Chinle / Alluvial Interface Potentiometric Map,* uses the March 2015 groundwater data. Figure 2A must be revised to incorporate the December 2017 groundwater elevation data. In addition, Figures 2 and 2A present different maps; Figure 2 presents a northeastern part of the facility and Figure 2A presents entire region of the facility. However, the titles of both figures are identical. Change the titles of the figures for clarity in the revised Work Plan.

Comment 15

In Appendix A, *Boring Logs,* the top of casing elevations for wells MKTF-04, MKTF-17, and MKTF-18 appear to be positioned below ground level. Previously, surface water entered the wells in flush-mounted wells; therefore, an aboveground completion is preferred. The stickup of well casing must be positioned above ground level for all proposed wells, where applicable. Acknowledge the requirements in the revised Work Plan.

The Permittee must address all comments in this Disapproval and submit a revised Work Plan. Two bound hard copies and an electronic version must be submitted to NMED. In addition, include a red-line 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 revisions have been made, cross-referencing NMED's numbered comments. The revised Work Plan must be submitted to NMED no later than **June 3, 2019**.

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

Sincerely,

John E. Kieling
Chief
Hazardous Waste Bureau

cc: K. Van Horn, NMED HWB
D. Cobrain, NMED HWB
M. Suzuki, NMED HWB
C. Chavez, OCD
L. King, EPA Region 6
B. Moore, WRG

File: Reading File and WRG 2019 File
HWB-WRG-18-012