



Michelle Lujan Grisham
Governor

Howie C. Morales
Lt. Governor

NEW MEXICO
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6313
Phone (505) 476-6000 Fax (505) 476-6030

www.env.nm.gov

ENTERED



James C. Kenney
Cabinet Secretary

Jennifer J. Pruett
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

APR 24 2020

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

RE: APPROVAL WITH MODIFICATIONS
INVESTIGATION REPORT SANITARY LAGOON
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY
EPA ID # NMD000333211
HWB-WRG-20-008

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has reviewed the *Investigation Report Sanitary Lagoon* (Report), dated February 2020, submitted on behalf of Marathon Petroleum Company dba Western Refining Southwest Inc., Gallup Refinery (the Permittee). The Report is generally acceptable; however, several technical deficiencies are identified in the Report. NMED hereby issues this Approval with Modifications with the attached comments.

The Permittee must address all comments in the attachment and submit a response letter and replacement pages no later than **October 31, 2020**. Additionally, the work plan required by Comments 1 and 14 must be submitted **no later than April 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.

Mr. Moore
Investigation Report Sanitary Lagoon
Page 2

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

Sincerely,



Kevin Pierard
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
M. Suzuki, NMED HWB
C. Chavez, OCD
L. King, EPA Region 6 (6LCRRC)
B. Moore, WRG

File: Reading File and WRG 2020 File
HWB-WRG-20-008

Attachment

Comment 1

In the Executive Summary, page E-i, the Permittee states, “[t]he Investigation Work Plan also included the installation of up to 13 trench locations southeast of the lagoon along the pipeline that discharged to the lagoon, with collection of soil and possibly groundwater samples. Because a recent release of gasoline from a pipeline leak at the Truck Loading Rack is migrating along the area of the pipeline, the investigation of this area is temporarily postponed. This was agreed to by NMED via correspondence dated January 6, 2020.” The required investigation along the pipeline was temporarily suspended due to the migration of contaminants from the Truck Loading Rack. The nature of the investigation in the area was altered due to the new release from the Truck Loading Rack. An investigation work plan that addresses both potential sources originating from the Truck Loading Rack and along the pipeline in the pertinent areas must be submitted to NMED. The work plan must be submitted to NMED no later than **April 1, 2021**.

Comment 2

In Section 2, *Background*, page 2-1, the Permittee states, “[t]he pipeline was cut and plugged at the south end of the excavation in October 2018, thus terminating flow into the lagoon,” and “[b]ased on reviews of sewer pipeline maps and recent dye-trace tests, the lab sanitary facilities, change house, warehouse, and the truck rack drivers lounge have sanitary sewer lines that discharged to the Sanitary Lagoon.” In a response letter, clarify whether the wastewater generated from the lab sanitary facilities, change house, warehouse, and the truck rack drivers lounge is routed to the wastewater treatment system at this time; otherwise, the wastewater may still be leaking along the pipeline upstream of the plugged location and must be routed to the wastewater treatment system.

Comment 3

In Section 4.1, *Surface Conditions*, page 4-1, the Permittee states, “[t]he soils in the vicinity of Sanitary Lagoon are identified as the Simitarq-Celavar soils, which are well drained with a conservative permeability of 0.20 inches/hour and minimal salinity. Simitarq soils have nearly neutral pH values ranging from 7.2 to 7.4 standard units with salinity values as low as approximately 0 mmhos/cm (nonsaline).” The soil in the vicinity of the lagoon was exposed to wastewater for a long time; therefore, it should be noted that soil salinity and pH may be altered due to the contamination. No revision required.

Comment 4

In Section 4.1, *Surface Conditions*, page 4-1, the Permittee states, “[r]egional surface water features include the refinery evaporation ponds and a number of small ponds (one cattle water pond and two small unnamed spring fed ponds).” There are several storm water retention ponds and the hydrocarbon seep detention ditch, which are also surface water features, within the Facility boundary. Describe surface water features to include these additional features in future reports and work plans. No revision is required to this Report.

Comment 5

In Section 4.2.2, *Hydrogeology* 4.1, page 4-3, the Permittee states, “[t]he Sonsela Member is identified as the uppermost aquifer for RCRA monitoring purposes at the LTU because the overlying groundwater bearing units are not capable of supplying sufficient quantities of groundwater to meet the definitions of an aquifer. Wells completed in a thinner permeable sandstone layer within the Painted Desert Member are also monitored near the LTU as a potential early warning network.” The statement is misleading. The water bearing units identified above the Sonsela must also be protected regardless of aquifer productivity. Revise the statement and provide replacement pages.

Comment 6

In Section 4.4.1, *Groundwater Investigation*, page 4-21, the Permittee states, “MKTf-26 was not sampled due to the presence of SPH.” Section 4.3.1, *Soil Investigation*, page 4-5, states that the PID reading in the soil sample collected from boring SL-1 at depth 2 – 2.5 feet bgs was recorded as 1,341 parts per million, which was the highest observed measurement. The locations of boring SL-1 and well MKTF-26 are close to the area where hydrocarbon seep was detected in June 2013. The elevated volatile organic compound concentrations in shallow soils in the vicinity of boring SL-1 and separate phase hydrocarbons (SPH) in well MKTF-26 may be associated with the hydrocarbon seep rather than the wastewater discharge to the Sanitary Lagoon. Discuss the potential source of the shallow soil contamination and SPH detected southeast of the Sanitary Lagoon (e.g., hydrocarbon seep or new release from the Truck Loading Rack) in the response letter.

Comment 7

In Section 5, *Regulatory Criteria*, page 5-1, the Permittee states, “Table 3 has soil screening levels for the soil-to-groundwater pathway that are based on a dilution/attenuation factor (DAF) of 1.0, which is NMED’s most conservative screening level for this pathway.” However, Table 5, *Analytical Results Summary*, lists DAF of 20 values as screening criteria for site’s soil concentrations. Revise the Report for consistency and provide replacement pages.

Comment 8

In Section 5, *Regulatory Criteria*, page 5-2, the Permittee states, “[a]s there is no information to determine what types of petroleum products could be present, the screening level for “unknown oil” was selected for comparison to the gasoline range, diesel range and motor oil range soil analytical results.” According to NMED’s *Risk Assessment Guidance for Investigations and Remediation* (Guidance), dated February 2019, the residential and industrial/construction worker soil screening levels for gasoline are listed as 100 mg/kg and 500 mg/kg, respectively. Although it is appropriate to use soil screening levels for unknown oil to compare the site concentrations of diesel and oil range organics, much lower soil screening levels for gasoline were established in the 2019 Guidance. The site’s total petroleum hydrocarbons gasoline range organics (TPH-GRO) concentrations must be compared with the screening levels for gasoline indicated in the 2019 Guidance. According to Table 5, the TPH-GRO concentrations did not

exceed the soil screening levels for gasoline in any soil samples; therefore, the evaluation of potential impacts and recommendations for future actions are not affected by the lower screening levels. However, since the Report requires other revisions, revise all applicable parts of the Report and provide replacement pages.

Comment 9

In Section 6.2, *Groundwater Analytical Results*, page 6-5, the Permittee states, “[t]here are four detections of 1,2-dichloroethane [EDC] above the screening level (5 ug/l) that occur in samples SL-1, MKTF-24, MKTF-25, and MKTF-31.” According to Table 6, *Groundwater Analytical Summary*, the detection limit for 1,2-dibromoethane (EDB) is higher than the applicable screening level. Since EDC is a lead scavenger, EDB may be present in the groundwater samples collected from the wells where EDC was detected. If EDB was previously analyzed in groundwater samples using an analytical method capable of detecting EDB at concentrations less than 0.004 micrograms per liter (e.g., EPA Method 8011), provide a discussion regarding presence or absence of EDB in the response letter; otherwise, propose an appropriate EDB analysis for groundwater samples where EDC was detected in the next updated facility-wide groundwater monitoring work plan.

In addition, chlorinated solvents were detected during the sampling event. The New Mexico Water Quality Commission adopted revised regulations that listed 1,4-dioxane as a toxic pollutant on December 21, 2018. The Permittee must analyze groundwater samples collected from the wells where chlorinated solvents have been detected within the past ten years for 1,4-dioxane using EPA Method 8270 Selective Ion Monitoring (SIM). If 1,4-dioxane was previously analyzed, provide a discussion regarding presence or absence of 1,4-dioxane in the response letter; otherwise, propose to analyze for 1,4-dioxane for two consecutive events in the next updated facility-wide groundwater monitoring work plan.

Comment 10

In Section 6.2, *Groundwater Analytical Results*, page 6-5, the Permittee states, “[t]here are two detections of trichloroethene above the screening level (5 ug/l) that occur in samples SL-5 and MKTF-25 at concentrations of 8.7 ug/l and 11 ug/l, respectively... There are four detections of vinyl chloride above the screening level (2 ug/l) that occur in samples SL-5, SL-7, MKTF-24, and MKTF-25.” Comment 17 in NMED’s *Approval with Modifications Annual Ground Water Monitoring Report Gallup Refinery – 2018*, dated January 22, 2020, states, “[t]he Permittee proposed to submit a separate submittal that evaluates natural attenuation of chlorinated solvents in the *Response to Approval with Modifications 2017 Annual Groundwater Report*, dated November 12, 2019. NMED concurs with the Permittee’s proposal. The evaluation must be submitted no later than **November 1, 2020.**” Since various chlorinated compounds are present in the groundwater samples collected from the vicinity of the Sanitary Lagoon, the data collected from this area may be useful for the evaluation. This comment serves as a reminder. No revision is required.

Comment 11

In Section 6.2, *Groundwater Analytical Results*, page 6-6, the Permittee states, "Diesel Range Organics were detected above the screening level (85.8 ug/l) in one groundwater sample (OAPIS-1) at a concentration of 1,400 ug/l." According to Table 6, the total petroleum hydrocarbons diesel range organics (TPH-DRO) concentrations in the groundwater samples collected from all wells except well OAPIS-1 are recorded as <132 µg/L. The screening level for TPH-DRO is 85.8 µg/L; therefore, it is not known whether or not the concentrations exceed the screening level. The detection limit of TPH-DRO must be lower than the screening level. Similarly, the TPH motor oil range organics (MRO) concentrations in the groundwater samples collected from all wells are recorded as < 2,500 µg/L. The screening level for TPH-MRO is 85.8 µg/L; therefore, it is not known whether the concentrations exceed the screening level. The detection limit of TPH-MRO must be lower than the screening level. If collection of groundwater is impracticable at this time, address the concentrations where the detection limits are higher as a data gap and include the discussion in the revised Report. Provide replacement pages.

Comment 12

In Section 6.3, *General Groundwater Chemistry*, page 6-6, the Permittee states, "[t]he measurement of field purging parameters included measurement of groundwater pH, specific conductance, dissolved oxygen concentrations, oxidation-reduction potential, turbidity, and temperature." Table 2, *Groundwater Field Measurements*, includes nitrate and nitrite data collected using a field test kit. Table 6 includes nitrate and nitrite data obtained from laboratory analysis. The Permittee previously stated that laboratory nitrite analysis could not be carried out due to its short holding time (i.e., 48 hours). Subsequently, NMED suggested the use of a field test kit to report separate nitrite concentrations. If laboratory nitrite analysis can be conducted, conduct laboratory nitrite analysis rather than field nitrite analysis as laboratory analysis is more accurate. In the response letter, explain how laboratory nitrite analysis was successfully carried out during this sampling event and clarify whether future nitrite analysis will be conducted using a field test kit or off-site laboratory analysis or both.

Comment 13

In Section 7.1, *Conclusions*, page 7-1, the Permittee states, "[a]ll of these [soil] exceedances occur at depths of 10 feet or greater, where the non-residential screening levels would not apply." According to Table 5, many of site's soil concentrations exceeded the DAF of 20 soil screening levels. However, none of these exceedances is discussed in the Report. For example, DAF of 20 soil screening level for cobalt is indicated as 5.4 mg/kg and the cobalt concentrations in sample SL-5 (12-14 feet bgs) is recorded as 6.1 mg/kg in Table 5. Revise the Report to include the discussion regarding the exceedance or provide an explanation for why the DAF exceedances are not discussed in a response letter.

Mr. Moore
Investigation Report Sanitary Lagoon
Attachment Page 5 of 5

Comment 14

In Section 7.2, *Recommendations*, page 7-2, the Permittee states, “[d]etections of DRO in soils above screening levels occur in the upper two feet and additional delineation sampling at similar depths is recommended to the south of SL-8 and east and north of SL-2 and SL-3.” NMED concurs with the recommendation. Include the proposed work in the work plan for the investigation required by Comment 1 above.