



NEW MEXICO  
ENVIRONMENT DEPARTMENT

*Hazardous Waste Bureau*

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**JAMES C. KENNEY**  
Cabinet Secretary Designate

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

January 31, 2019

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

**RE: DISAPPROVAL  
[REVISED] INVESTIGATION WORK PLAN SANITARY LAGOON  
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY  
EPA ID # NMD000333211  
HWB-WRG-18-004**

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has reviewed the *[Revised] Investigation Work Plan Sanitary Lagoon* (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 Permittee's response to NMED's *Disapproval* Comment 1 states "[m]uch of the pipeline immediately south of the lagoon has been excavated with the trench partially collapsed." The purpose of this trenching is not apparent. NMED cannot provide appropriate comments for the Work Plan without an adequate description of the current status of site conditions. In the revised Work Plan, provide a more comprehensive site history. The Permittee must identify the current status of the discharge. If the discharge ceased, explain what measures were implemented to eliminate the discharge and the dates the measures were implemented in the revised Work Plan. Clarify the purpose of the trench. The revised Work Plan must provide the information

regarding all activities performed at the site to date. Finally, Figure 5, *Sanitary Lagoon Proposed Soil Boring Locations Adjacent to Pipeline*, does not show the excavated area south of the lagoon. Provide a figure showing the excavated areas in the revised Work Plan.

### **Comment 2**

The Permittee's response to NMED's *Disapproval* Comment 1 states "[t]he trench is deep, with depths possibly as great as 15 feet, thus it is a health and safety concern to collect samples from within this unshored excavation." Clarify whether the trench was installed to the maximum depth of 15 feet below ground surface (bgs) because the pipeline was buried to the depth of 15 feet bgs or the trench was previously installed for different purposes (e.g., hydrocarbon seep recovery). In addition, clarify whether a part of the pipeline was exposed and removed or the entire pipeline is visible and remains in the trench. Explain why a method to sample depths below four feet below ground surface could not be devised.

### **Comment 3**

The Permittee's response to NMED's *Disapproval* Comment 1 states "[i]n our recent meeting (September 19, 2018), we discussed this concern [safety issue due to the trench] and a suggestion was made to attempt angled borings. We will attempt angled borings, but the rig will need to be placed a safe distance from the excavation and it likely will not be possible to actually collect soil samples from directly below the depth of the pipe from the Sanitary Lagoon." The use of angled borings is not proposed or discussed within the text of the Work Plan; however, an angled boring may not be appropriate at the locations where the trench was installed because it may not allow to collect soil samples directly below the depth of the pipeline. If the trench is open, and the pipeline is visible, propose to use a backhoe to collect samples along the trench wall beneath the pipeline. Include the sampling protocol in the revised Work Plan.

### **Comment 4**

NMED's *Disapproval* Comment 3 states, "[t]he Permittee must advance the soil borings to the water table and collect samples at 2.5-foot intervals to depths that cross the water table." The Permittee's response to NMED's *Disapproval* Comment 3 states "[p]erhaps the comment is anticipating the additional borings being added along the pipeline to the southeast." To clarify, the referenced soil borings are those to be installed within the boundary of the Sanitary Lagoon. The Permittee also states, "[t]he Work Plan calls for all borings completed with a hand auger to reach the depth of refusal or saturation, whichever occurs first." Since the surface soils are likely saturated within the boundary of the Sanitary Lagoon, "saturation" does not provide clear criteria to determine the depths of soil borings. The Permittee must install the soil borings to the water table and collect samples at 2.5-foot intervals to depths that cross the water table. Revise the Work Plan accordingly.

### **Comment 5**

The Permittee's response to NMED's *Disapproval* Comment 5 states, "[t]hird, the sample bottles used for the VOC analyses come from the laboratory with an acid preservative. It is very important to not flush the preservative from the sample bottle and placing the small bottle

directly under the discharge, if still active, could greatly increase the chance of compromising the sample preservation.” To clarify, Comment 5 did not direct the Permittee to flush the sample bottle. Comment 5 rather directs the Permittee to collect samples directly from the outfall. The Permittee’s *Sanitary Lagoon Investigation*, dated February 1, 2018, states that the flowrate into the lagoon varies from less than one gallon per minute to approximately three gallons per minute. The observed flowrate likely allows the Permittee to collect wastewater samples directly from the outfall without flushing the preservative in the bottles. If the outfall is removed or plugged at this time, this comment will not be applicable; however, acknowledge the direction for the sampling protocol in the Work Plan.

#### **Comment 6**

The Permittee’s response to NMED’s *Disapproval* Comment 5 states, “[l]astly, requiring someone to attempt to walk into the lagoon far enough to reach the end of the discharge pipe could subject them sinking into a very soft bottom of the lagoon and greatly increase their risk of exposure to pathogens likely present in the septic discharge.” Section 4.1.1, *Discharge Water and Surface Water Sampling*, states, “[t]he water samples will be collected in a decontaminated water scoop... The samples will be transferred to the appropriate, clean, laboratory-prepared containers provided by the analytical laboratory.” The Permittee proposes to use a water scoop to collect the water samples; however, the sampling method still requires a field personnel to walk to the outfall within the Sanitary Lagoon. The exposure risk does not appear to be eliminated by the Permittee’s proposed sampling method. If the outfall is removed or plugged at this time, this comment will not be applicable; however, explain how the proposed sampling method is safer in comparison to the sampling method required by Comment 5 in the revised Work Plan.

#### **Comment 7**

The Permittee’s response to NMED’s *Disapproval* Comment 6 states, “[a]s we have no experience dealing with microbial impacts and cannot find any obviously relevant regulatory standards for New Mexico, we are uncertain what the appropriate microbial analyses are for soils. Can you please specify the required [microbiological] analyses [for soils] and the relevant regulatory standards in your approval letter so that we can add these analyses?” The Permittee did not find any relevant standards for pathogens in soils; therefore, the Permittee is not required to compare the site concentrations to the standards. However, the Permittee is still required to propose an investigation to determine the source of pathogens within the Sanitary Lagoon. Soil may act as a reservoir for pathogens (e.g., e. coli); therefore, hot spots must be identified to minimize soil contamination and potential for soil-to-groundwater migration. One way to investigate hot spots is to inoculate coliforms from soil samples collected from the Sanitary Lagoon and compare the coliform levels among the samples. Propose to conduct microbiological analyses in the revised Work Plan.

**Comment 8**

The Permittee's response to NMED's *Disapproval* Comment 7 states, "[t]he immediate health and safety concern was simply getting stuck in the mud and not being able to get out of the lagoon." The ground surface may be more stable since the discharge ceased. Examine the stability of the ground surface at the Sanitary Lagoon and report the current status of the ground surface in the Sanitary Lagoon in the revised Work Plan. If the ground surface is stable enough, all soil borings within the Sanitary Lagoon must be installed via mechanical means rather than by hand auger.

**Comment 9**

The Permittee's response to NMED's *Disapproval* Comment 10 states, "[g]roundwater samples are already collected on a quarterly basis at all of the subject monitoring wells and analyzed for the additional analyses requested above [VOCs, SVOCs, TPH-GRO, DRO and ORO, metals, chloride, fluoride and sulfate]. We believe that the information that is already available, and that is continually being collected, will be sufficient to clearly establish concentrations of contaminants in the area." The Permittee may limit the groundwater analyses for nitrate, nitrite, COD, BOD, total coliform and e-coli analyses for the groundwater monitoring wells (MKTF-24, MKTF-25, MKTF-26, MKTF-29, MKTF-30, MKTF-31, MKTF-40, and OAPIS-1). However, the Permittee must include VOCs, SVOCs, TPH-GRO, DRO and ORO, metals, chloride, fluoride and sulfate analyses in addition to nitrate, nitrite, COD, BOD, total coliform and e-coli analyses for the groundwater samples collected from the soil borings. Include the provision in the revised Work Plan.

**Comment 10**

In Section 4.1.3, *Drilling Activities*, the Permittee states, "[a] minimum of two exploratory trenches will be dug using a trackhoe to determine the depth of the pipeline." Figure 5 depicts the location of the proposed exploratory trenches approximately 500 feet to 700 feet southeast of the Sanitary Lagoon. The location and depth where the pipeline was buried northwest of the proposed exploratory trenches is speculative based on the extrapolated data since exploratory trenches are not proposed along the northwest section of the pipeline. Although installation of soil borings is proposed along the projected location of the pipeline, the proposed borings may not be located close enough to collect representative soil samples adjacent to the pipeline. The sampling must be more accurate. The exploratory trenches must be excavated from the outfall at the Sanitary Lagoon (or the southern end of the existing excavated trench, if the pipeline is exposed) to proposed boring location PL-6, every 50 feet. A maximum of 13 exploratory trenches must be excavated along the pipeline. In addition, propose to use a backhoe to collect soil samples along the exploratory trench wall beneath the pipeline, rather than to collect samples using soil borings. Furthermore, if the pipeline is damaged during the installation of the trenches, plug the outlet of the undamaged pipeline that is closest to the release points. Revise the Work Plan accordingly.

**Comment 11**

Since the outfall or the end of the pipeline has been already plugged, the Permittee must investigate any indications that the discharge may still be occurring at the plugged location and seeping from the pipeline upgradient of the blocked portion. Any indication of seeping at the upgradient location of the blocked portion of the pipe must be examined during the excavation of the exploratory trenches. All trenching must include observations of pipe conditions and soil saturation levels. In addition, if the pipeline is damaged during the excavation of the trenches, the outlet of the pipeline closest to the release points must be blocked and the trench must be left open for at a minimum of one month to ensure that no future discharge occurs from the blocked section. Include the provision in the revised Work Plan.

**Comment 12**

In Section 4.1, *Investigation*, the Permittee states, “[o]ne discharge water sample will be collected from the lagoon prior to commencement of the oil sampling.” The text of the Work Plan suggests that the discharge samples may still be collected. Explain whether there is still a possibility of the discharge samples being collected from the pipeline at this time. If the discharge samples are no longer available, revise the Work Plan to reflect the change in current status of the site.

**Comment 13**

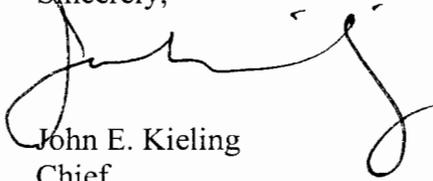
In Section 4.1.9, *Chemical Analyses*, the Permittee states, “[t]he discharge and surface water samples will also be analyzed for chloride, fluoride, nitrate, nitrite, sulfate, COD, BOD, total coliform, and E. coli bacteria.” The listed anions are not included in the table titled as Inorganic Analytical Methods (page 4-8). Explain why these inorganic constituents are not included in the table or revise the table to include all inorganic constituents proposed for analysis 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 of the revised Work Plan 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 all revisions have been made, cross-referencing NMED's numbered comments. The revised Work Plan must be submitted to NMED no later than **May 3, 2019**.

Mr. Moore  
January 31, 2019  
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If you have questions regarding this Disapproval, please contact Michiya Suzuki of my staff at 505-476-6059.

Sincerely,

A handwritten signature in black ink, appearing to read "John E. Kieling". The signature is fluid and cursive, with a large initial "J" and a long horizontal stroke.

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-18-004