



BILL RICHARDSON
Governor

DIANE DENISH
Lieutenant Governor

NEW MEXICO
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1

Santa Fe, New Mexico 87505-6303

Phone (505) 476-6000 Fax (505) 476-6030

www.nmenv.state.nm.us



RON CURRY
Secretary

JON GOLDSTEIN
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

October 27, 2009

Mr. Ed Riege
Environmental Superintendent
Western Refining, Southwest Inc., Gallup Refinery
Route 3, Box 7
Gallup, New Mexico 87301

**RE: NOTICE OF DISAPPROVAL
PROCESS DESIGN REPORT FOR THE WASTEWATER TREATMENT
PLANT WORK PLAN (ALTERNATIVE DESIGN)
WESTERN REFINING COMPANY, SOUTHWEST INC., GALLUP REFINERY
EPA ID # NMD000333211
HWB-GRCC-09-006**

Dear Mr. Riege:

The New Mexico Environment Department (NMED) has completed its review of the *Process Design Report for the Wastewater Treatment Plant Work Plan (Alternative Design)* (Work Plan), dated September 2009, submitted on behalf of Western Refining Company, Southwest Inc., Gallup Refinery (the Permittee). The Permittee must provide additional information before NMED can complete its technical review. NMED hereby issues this Notice of Disapproval (NOD).

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Comments 1-3 Address Responses in the Cover Letter

Comment 1

The "Response to Comment A" identified in the Cover Letter dated September 25, 2009 "Process Design for the Wastewater Treatment Plant Work Plan (Alternative Design)." The Permittee requests approval to continuously discharge flows of less than 30 gpm from the storm sewer to T27 and T28.

NMED Response

NMED approves the use of Tank T27 and T28 to receive storm water flow. See Comment 8 below for required revisions to the Work Plan.

Comment 2

The Permittee states on the second page of the Cover Letter that "[Note: We believe it is prudent to have interconnectivity between the process sewer and the storm sewer in order to provide flexibility in management of our process wastewater and storm waters. This "normally closed" interconnection is reflected in Figure 1 of the PDR Work Plan.]"

NMED Response

NMED is assuming this is the line identified in Figure 1 with arrows on either end that states "(NORMALLY CLOSED)" upstream of Tanks T27 and T28 and the Equalization (EQ) Tank. The above statement does not explain the purpose of this connection between the Storm Water Tanks and the EQ Tank. The Permittee must explain the purpose for the proposed interconnectivity between the process sewer and the storm sewer and explain flexibility in management of the process wastewater and storm water and why it is desirable.

Comment 3

In the "Response to Comment D" identified in the Cover Letter dated September 25, 2009; "Process Design for the Wastewater Treatment Plant Work Plan (Alternative Design)," the Permittee requests an extension from September 4, 2010 to March 31, 2011 to have the upgraded wastewater treatment system installed and operating. The Permittee also states that "[t]o date, we have researched an upgraded wastewater treatment system and completed its process design. However, we have not been able to complete the full design package required for construction due to the negotiation of the recently finalized Compliant and Consent Agreement and Final Order (CAFO). The CAFO now requires compliance with 40 CFR 62.34(a) [sic] which has a major impact on the design requirements for the alternative system."

NMED Response

NMED does not approve of this extension request. An alternate deadline may be established upon approval of the revised Work Plan, if and when this Work Plan is approved; however, the

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Permittee already has an approved work plan and could have begun implementing the plan as of September 1, 2009. The Permittee has known since the first submittal of the February 26, 2009 *Process Design Report For Wastewater Treatment Plant Upgrade* that the system would likely have to comply with 40 CFR 262.34(a). In addition, a meeting was held on August 7, 2009 between NMED and Gallup explaining that these requirements would be required. No response is necessary.

Below are Comments addressing the Work Plan

Comment 4

In Section 1.2 (Project Scope), bullet one, page 2, the Permittee states “[t]wo existing tanks put in service for the storage of process area stormwater and diversion of off-spec wastewater.”

NMED Response

It is not clear which two existing tanks are being referenced, nor is it clear what “off-spec wastewater” is. The Permittee must revise the Work Plan to identify the two existing tanks by name (e.g., Tanks 27 and 28). The Permittee must clearly define what “off-spec wastewater” is (identify all sources) since this term is used throughout the Work Plan. The Permittee must also discuss the capacity of these tanks and their ability to handle the additional flow volumes and the ability of the API separator to handle potential increased flow from these tanks.

Comment 5

In Section 1.4 (Treatment Objectives), page 2, the Permittee states “[t]he treatment objectives for the WWTP upgrade are to provide water quality that is suitable for discharge to the unlined EP-1. Specifically, the objectives are for there to be no visible free oil and ≤ 0.5 mg/L benzene. This project design was developed based on these objectives.”

NMED Response

The effluent entering into the unlined Evaporation Pond 1 (EP-1) must have benzene concentrations less than 0.5 mg/L. In addition, the treatment objective of the upgraded wastewater treatment system (WWTS) is for all effluent entering into EP-1 to comply with all applicable regulations. Discharges to the unlined Evaporation Ponds must not create the potential for impacts to groundwater. The Permittee must revise the Work Plan to state that benzene concentrations will be below 0.5 mg/L for benzene.

Comment 6

In Section 2.3 (Pilot Travel Center Wastewaters), page 4, the Permittee states “[t]he lift station’s submersible pumps then transfer the wastewater through a pipeline to the refinery for further pumping and treatment.” In Section 4.2.5 (Travel Center Pretreatment), page 9, the Permittee states “The sanitary wastewater from the Pilot Travel Center and the refinery will be pretreated

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prior to discharge to EP-1"...[t]he new pretreatment system will provide removal of soluble organics. The technology selection for the system has not been finalized, but candidate technologies include: A new lined aeration lagoon (treating only Pilot Travel Center and refinery sanitary wastewaters), vertical flow wetlands, a recirculation media filter."

NMED Response

The Permittee does not appear to have a finalized pretreatment system design to treat the sanitary wastewater generated at the Pilot Station and at the refinery. NMED cannot evaluate the design of a system without knowing the system being proposed. The revised Work Plan must include the selected proposed pretreatment technology and design, process flow diagram(s), required maintenance, and contingencies that will be put in place if the system fails, etc. A list of candidate technologies is not acceptable.

Comment 7

In Section 3.3 (Macro Porous Polymer Extraction Technology), page 6, the Permittee states "[a] schematic of the MPPE process is provided in Figure 2."

NMED Response

The schematic diagram shown in Figure 2 is a generic schematic diagram from the manufacturer, which was also shown in Attachment B. The Permittee must revise Figure 2 of the Work Plan to include the design drawing of Macro Porous Polymer Extraction (MPPE) Technology that will actually be installed at the facility, in addition to all design details.

Comment 8

In Section 4.2.1 (Stormwater/Diversion Tanks), page 8, paragraph 2, the Permittee states "Oil that may accumulate on the liquid surfaces of T27 and T28 will be captured from a skimmer device contained within each tank's floating roof. The skimmed oil will be collected by a vacuum truck and transferred to the refinery's rerun oil system for recycling back to the refining process. Prior to pumping the T27/T28 contents to the API Separator, solid material that may have settled on the tank bottom will be re-suspended through mixing."

NMED Response

The Permittee provided insufficient detail concerning the removal of skimmed oil and the mixing process described above. The Permittee must revise the Work Plan to address the following. (see also Comment 1)

- a. Indicate how often oil will be skimmed from Tank T27 and T28.
- b. Explain how the solid material will be re-suspended through mixing (e.g., how will the mixing occur, what equipment will be used). The Permittee must also discuss

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what measures will be implemented to demonstrate that mixing was successful.

- c. Explain how the refinery will demonstrate that the liquids and solids in Tanks T27 and T28 meet the 90-day storage requirements, by clearly explaining the type of measurements and record keeping to be implemented to assure that the 90-day accumulation period is not exceeded.
- d. Tanks T27 and T28 shall not accumulate more than two feet of sludge during any 90-day accumulation period. The Permittee must demonstrate how the sludge level will be measured.

Comment 9

In Section 4.2.1 (Stormwater/Diversion Tanks), page 8, paragraph 3, the Permittee states "Cleanouts will be installed on the conveyance pipelines to and from the Stormwater/Diversion Tanks....[u]nderground piping will be buried below the frost line to prevent freezing. Above ground piping will be electric heat traced to prevent freezing."

NMED Response

The Permittee must revise the Work Plan to provide a figure of the WWST that identifies where all cleanouts and above and below ground piping will be placed and describe how pipelines will be tested for mechanical integrity or leakage.

Comment 10

In Section 4.2.1 (Stormwater/Diversion Tanks), page 8, paragraph 3, the Permittee states "[u]nderground piping will be buried below the frost line to prevent freezing. Above ground piping will be electric heat traced to prevent freezing. The piping design is referenced in section 4.5."

NMED Response

Section 4.5 does not include many details relating to the piping design as stated above. Section 4.5 states "[t]he secondary containment and leak detection requirements for piping systems covered by the CAFO will also be implemented where required." The Permittee must revise the Work Plan to describe what type of secondary containment and leak detection will be used for the piping systems. All design details proposed to comply with the CAFO must be included in the Work Plan.

Comment 11

The Permittee addresses the Equalization Tank (EQ) in Section 4.2.2.

NMED Response

The Permittee provided insufficient detail concerning the EQ Tank and must address the items below in the revised Work Plan.

- a. Discuss the operation of this tank in detail (e.g., flow controls, residence time, capacity).
- b. Explain the oil recovery process including the destination of the skimmed oil.
- c. Discuss sludge accumulation and address how the sludge be managed. Describe tank maintenance procedures (e.g., how will the tank be cleaned, frequency of cleaning, will cleaning require the tank to be removed from service, if so, how long will it be removed from service, effects on the operation of the wastewater treatment system, contingencies to be put in place to accommodate cleaning).

Comment 12

The Permittee address the Dissolved Gas Flotation System in Section 4.2.3.

NMED Response

This Section did not discuss the maintenance of the Dissolved Gas Flotation (DGF) system. The Permittee must revise this section to address maintenance required for this system, the frequency of maintenance, and all other operation and maintenance details.

Comment 13

In Section 3.3 (Macro Porous Polymer Extraction Technology), page 6, the Permittee states “[t]he design of the MPPE system employs two extraction columns allowing continuous operation in one column with simultaneous extraction and regeneration in the other column. A cycle time of one-hour extraction and one hour regeneration is typical.” The Permittee states in Section 4.2.4 (MPPE System), page 9, that “[t]he MPPE system will consist of two columns operating in parallel. One column will be in service while the other is being regenerated. The columns will switch their mode of operation on a routine schedule (e.g., hourly).”

NMED Response

The Permittee must revise the Work Plan to address the maintenance of the MPPE system to include the frequency of maintenance and the effects of such maintenance on the operation of the WWTS.

Comment 14

In Section 4.2.3 (DGF System), page 9, paragraph 3, the Permittee states “The DGF float material will be skimmed from the top of the DGF using a variable speed scraping mechanism. The skimmed float will be sent to the DGF float storage and dewatering system. The float

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system will consist of retention tanks with gravity dewatering. This material will normally be recycled to a refining process (on-site or off-site). If recycling is not available, the float material will be managed as a hazardous waste.”

NMED Response

The Permittee must provide more details about the DGF unit and DGF float storage and dewatering system and revise the Work Plan to identify how many retention tanks will be utilized and discuss all maintenance requirements and frequency of maintenance of the DGF unit and the DGF float storage and dewatering system.

Comment 15

In Section 4.4 (Management of Off-Spec Wastewater), page 10, the Permittee states “[p]rocess monitoring will be used to identify when this diversion is needed.”

NMED Response

The Permittee did not describe or define the process monitoring, does not address how the upgraded WWTS will be monitored to ensure system is operating correctly, or discuss how the Permittee will demonstrate that the effluent entering into EP-1 is not a hazardous waste. The Permittee must revise the Work Plan to include sampling activities that will be conducted to monitor the upgraded wastewater treatment system and describe “process monitoring.” In addition, the Permittee must discuss in detail in the text of the Work Plan where sample ports will be located within the wastewater treatment system (influent and effluent sampling ports in the EQ Tank, new API separator, DGF, MPPE, T27/T28). The sampling ports must be constructed in a manner that allows for reduced flow rates (low flow) to minimize the loss of volatile organic compounds (VOCs) when samples are collected (Figure 1 depicts sample points but these are not described within the text).

Comment 16

In Section 4.5 (Tank Design, Secondary Containment, and Leak Detection), page 11, the Permittee states “Under the terms of the CAFO, the tanks and ancillary equipment downstream of the API Separator, including diversion tank systems, are subject to 40 CFR §262.34(a). By reference, these systems are therefore subject to 40 CFR 265 Subpart J for tank systems. Accordingly, the systems downstream of the new API separator will comply with the tank design requirements of 40 CFR 265 Subpart J, including secondary containment and leak detection. Since the CAFO was signed just recently, Western Refining is still determining how the specific design requirements of the CAFO will be implemented.”

NMED Response

NMED cannot evaluate a Work Plan that does not include complete design specifications. The Permittee must revise the Work Plan to include all the design details that comply with 40 CFR

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262.34(a) and 40 CFR 265 Subpart J Tank Systems. The Permittee must identify all units by name that are subject to the requirements and how they will comply with 40 CFR 262.34(a) and 40 CFR 265 Subpart J (this must include the EQ Tank, Tanks T27 and T28, the DGF, the DGF Float Storage and Dewatering tank(s), and the MPPE unit).

Comment 17

In Section 4.5 (Tank Design, Secondary Containment, and Leak Detection), page 11, the Permittee states “[i]n general, secondary containment requirements for tanks will be met through concrete or impermeable liner containment areas. Containment volumes will be 1.3 times the volume of the largest tank within that area to include an allowance of precipitation. Leak detection for tanks with bottoms that cannot be visually inspected will be provided by installing double bottoms with leak detection on those tanks. The secondary containment and leak detection requirements for piping systems covered by the CAFO will also be implemented where required.”

NMED Response

The Permittee indicates that the upgraded system, where applicable, will comply with secondary containment and leak detection requirements. The Permittee must revise the Work Plan to provide the specific design details where secondary containment and leak detection will be constructed, including the specific units and individual type of secondary containment to be constructed, including piping and leak detection devices. The upgraded WWTS must comply with the applicable requirements of the OCD Discharge Permit (GW-032) as well.

Comment 18

In Section 4.5 (Tank Design, Secondary Containment, and Leak Detection), page 11, the Permittee states “In the event that there are new tanks(s) or ancillary equipment not covered by the CAFO, such as those upstream of the API Separator, those systems will be designed to standards in accordance with GW-032 and related OCD requirements.”

NMED Response

The WWTS must be designed to meet all applicable regulations upstream and downstream of the API separator.

Comment 19

In Section 4.6 (Air Emissions Control), page 11, the Permittee states that some units generate “negligible air emissions.”

NMED Response

The Permittee must revise the Work Plan to define the methods used to determine air emission levels and, based on those methods what would be considered negligible. The Permittee must

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identify and describe air sampling ports and their locations within the WWTS.

Comment 20

The Permittee provided supplemental information for the DGF and MPPE in Attachments A and B, respectively. The attachments provide the general manufacturers information about the DGF and MPPE units, which also include system diagrams. The diagrams are not necessarily specific to the WWTS. The Permittee must revise the Work Plan to include the design and process flow diagrams for the actual DGF and MPPE units that will be installed at the refinery. See Comment 21 Below.

Comment 21

The Permittee included a flow diagram of the alternative design to the WWTS in Figure 1 Flow Diagram Alternative WWTP UPGRADE (attached). The Permittee must revise the figure and add additional figures as necessary to address the following in the revised Work Plan.

- a. The Legend found in Figure 1 defines dashed lines as existing; the figure has the API separator surrounded by dashed lines because it is an existing structure. In the response letter, the Permittee must explain why the Storm Water Tanks T27 and T28 were not surrounded by dashed lines since these also are existing structures. The Permittee must revise the figure accordingly.
- b. The figure(s) must be design drawings of the actual WWTS that will be installed. The drawings must include the exact number of tanks that make up each component of the WWTS, piping, secondary containment, and leak detection. The drawing must also depict exactly where the flows will be entering and exiting through the various WWTS units (e.g., will influent enter at the top of tanks, sides).
- c. The flow diagram must present all above and underground piping associated with the WWTS.
- d. NMED requires additional flow meters. The locations of the flow meters are shown on the Attached Figure 1.

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If the Permittee intends to proceed with the construction of the alternate WWTS, the Permittee must address all comments contained in this NOD and submit the revised Work Plan as soon as possible to ensure the September 4, 2010 deadline to have the upgraded WWTS installed and operating is met. The revised Work Plan must be submitted with a response letter detailing where all revisions have been made, cross-referencing NMED's numbered comments. In addition, an electronic version of the revised Work Plan must be submitted with all changes shown in red-line strikeout.

If you have questions regarding this letter please contact Hope Monzeglio of my staff at 505-476-6045.

Sincerely,



James P. Bearzi
Chief
Hazardous Waste Bureau

cc: J. Kieling, NMED HWB
D. Cobrain NMED HWB
H. Monzeglio, NMED HWB
D. McElroy, NMED AQB
C. Chavez, OCD
J. Dougherty, EPA Region 6
D. Edelstein, EPA Region 6
A. Allen, Western Refining Southwest, Inc.
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