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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

March 26, 2009

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

**RE: NOTICE OF DISAPPROVAL
OIL CONSERVATION DIVISION (OCD) 2007 ANNUAL GROUNDWATER
REPORT (AND OCD ADDENDUM)
WESTERN REFINING COMPANY, SOUTHWEST, INC., GALLUP REFINERY
HWB-GRCC-08-005
EPA ID # NMD000333211**

Dear Mr. Riege:

The New Mexico Environment Department (NMED) has completed its review of the *Oil Conservation Division 2007 Annual Groundwater Report (and OCD Addendum)* (Report), dated August 28, 2008, submitted on behalf of Western Refining Company, Southwest Inc., Gallup Refinery (Permittee). NMED hereby issues this Notice of Disapproval (NOD). NMED does not require the submittal of a revised report. However, all comments contained in this NOD must be applied and corrected in future groundwater monitoring reports (Annual Report) due to NMED and the Oil Conservation Division on September 1, 2009.

Comment 1

On page 2 of the Executive Summary and in Section 4.0 (Groundwater Monitoring Results), page 17, the Permittee addresses Methyl Tetra-Butyl Ether (MTBE) detections in monitoring wells (MTBE is also addressed in other Sections of the Report) and applied the Water Quality

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Control Commission (WQCC) standard of 0.1 mg/L and the EPA Maximum Contaminant Level (MCL) of .20 mg/L for MTBE. There is no WQCC or MCL standard for MTBE. The Permittee applied the MTBE standard regulated under the Petroleum Storage Tank (PST) Bureau 20.5.12.1233 A.(2) NMAC, which is not a health-based standard.

In future Annual Reports, the Permittee shall not apply the PST MTBE standard of 0.1 mg/L. The Permittee must apply the EPA Regional Screening Levels (RSL) located at http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm, "Residential Risk-Based Screening Levels for Tap Water" of 12 µg/L for MTBE. All areas of the Report referencing MTBE must be revised to apply the RSL standard.

Comment 2

On page 3, paragraph 6, the Permittee states "[f]ree product is also recovered from a few wells where such product exists."

It is unclear which wells the Permittee is referencing. In future Annual Reports, the Permittee must specifically identify any well that free product is recovered from.

Comment 3

The following comments pertain to Section 2.0 (Scope of Activities). This Section suggests the Permittee did not complete all groundwater monitoring requirements included in item 19 of the Oil Conservation Division (OCD) Discharge Permit (Discharge Permit). The Permittee did not follow the groundwater sampling requirements of the August 23, 2007 Discharge Permit, but may have used an earlier version. The Permittee must address all comments below in the next Annual Report.

- a. According to Table 19 of the Discharge Permit, the groundwater sample from OW-11 was to be analyzed for semi-volatile organic compounds (SVOCs) and general chemistry. The analyses for these constituents do not appear in the Table provided in Section 2 nor in the laboratory report provided in Section 5 (Groundwater Chemical Analytical Data). The Permittee must ensure that these analyses are conducted and the results presented in future Annual Reports.
- b. The Permittee must ensure OW-14 is sampled semi-annually, not annually as identified in the Table in Section 2. This requirement must be applied to future Annual Reports.
- c. The Permittee must ensure that water levels are measured quarterly for GWM-1. In the Report, the column "Date Sampled" only identified an annual sample date of 5-24-07. The quarterly water level measurements and date of measurements must be

included in all future Annual Reports.

- d. The Permittee must ensure that the water levels in monitoring wells GWM-2 and GWM-3 are checked quarterly and all four dates and the associated water levels (or absence of water) are presented in future Annual Reports. The Table in Section 2 states "Dry" for these wells under "Date Sampled;" it is not clear how often these wells were checked.
- e. According to the Discharge Permit, the inlet to Pond 1 is to be sampled semi-annually. The Table in Section 2 identified the Pond 1 inlet as being sampled once. The Permittee must ensure that the inlet to Pond 1 is sampled according to the Discharge Permit, and that all sampling information is included in future Annual Reports.
- f. NMED assumes that the November 29, 2007 sampling of Ponds 1-8 was considered to be in the first quarter. The Permittee must ensure that the data for all four quarters are included in future Annual Reports.
- g. NMED stated in its January 16, 2008 NOD to the Annual Groundwater Report that "[t]he Permittee must ensure the next annual groundwater monitoring report incorporates OCD's Discharge Permit requirements, including the most current groundwater sampling schedule." This task was not completed. The Permittee must complete all sampling requirements in the Discharge Permit.

Comment 4

The following sampling locations required by the Discharge Permit were not found in Section 2 (Scope Activities) of the Report: NAPIS -1, NAPIS-3, NAPIS-3D, OW-1, OW-10, OW-29, OW-30, PW-2, Effluent from the Pilot Station to Aeration Lagoon, Effluent from the new API separator, and boiler water inlet to EP-2. NMED is aware that the sampling data for the NAPIS wells may not have been included in the Report because the sampling requirements were not established until late 2007. However, the Permittee must ensure that all sampling requirements are completed, and that if sampling did not occur, an explanation must be included. Future Annual Reports must be revised accordingly.

Comment 5

The Permittee compared the analytical data to the WQCC standards and the MCLs. The Permittee must apply the RSLs for tap water for those constituents where a WQCC Standard or a MCL has not been established. This must be implemented in future Annual Reports.

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Comment 6

In Section 2.0 (Scope of Activities), page 13, the Permittee states “[c]omplete details of all of these sampling activities are described in section 3b of Binder 2 attached to this report” and in Section 4.0 (Groundwater Monitoring Results), page 17, the Permittee states “[t]here are numerous other effluent and surface water sampling activities also performed during the year that have been presented in Section 3b of the attached Binder 2 of the report.”

Section 3b of Binder 2 does not provide a detailed description of sampling activities but rather provides analytical laboratory reports. These statements must be revised to clearly explain what the Permittee is conveying because the laboratory reports do not describe sampling details. This correction must be made in future Annual Reports.

Comment 7

In Section 3 of the Report, the Permittee included a list of the WQCC standards, the Water Quality Standards for Interstate and Intrastate Surface Waters (2.6.4 NMAC), as well as the MCLs. It is not clear why the Permittee included the Water Quality Standards for Interstate and Intrastate Surface Waters (2.6.4 NMAC) since these standards do not apply to groundwater.

In future Annual Reports, if the Permittee includes the references to the Water Quality Standards for Interstate and Intrastate Surface Waters, then the Permittee must explain why these standards are being included in the report. The Permittee must also include a copy of NMED’s TPH Screening Guidelines which can be found at the following link: http://www.nmenv.state.nm.us/hwb/Guidance_docs/NMED%20TPH%20Guidance%2010-2006.pdf.

Comment 8

In Section 4.0 (Groundwater Monitoring Results), page 17, the Permittee states “[i]n 2007, monitoring conducted between December 27-31, 2007 (and January 1, 2008, as inclement weather prevented completion of sampling of some wells within December 2007) showed that in Potable Well #3 the contaminant 2-Methylnaphthalene was at a level of 0.032 mg/L. This level exceeds the current NM Water Quality Commission standard of 0.03 mg/l for 2-Methylnaphthalene.”

If the Permittee did not sample Potable Well #3 in 2008, it must be sampled in 2009. The Discharge Plan states this well is to be sampled every 3 years starting with 2008. However, because samples from this well had detections of 2-methylnaphthalene exceeding the WQCC standard, the well must be sampled annually, unless otherwise directed by NMED. This information must be included in future Annual Reports. Pending the sampling results, the sampling frequency for this well may be modified.

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Comment 9

Some of the tables provided in Section 4 (Groundwater Monitoring Results) do not include a WQCC standard or MCL where one exists (e.g., Table 2 did not include a WQCC or MCL standard for iron, manganese, zinc, and phenols). In addition, the RSLs should have been applied to some constituents in Table 2 as well (e.g., 2,4, dimethylphenol). For the tables provided in Section 4.0, where diesel range organics (DRO) are present, the Permittee must apply NMED's TPH Screening Guideline of 0.2 mg/l for "unknown oil" found in Table 2a. In future Annual Reports, the Permittee must revise the tables found in Section 4.0 to include the appropriate standards and include data from the previous three sampling events.

Comment 10

The Permittee analyzed some samples for RCRA metals and other samples for the larger list of WQCC metals (e.g., GWM-1 analyzed for RCRA metals; the Evaporation Ponds analyzed for WQCC metals). The Discharge Permit requires all samples to be analyzed for the WQCC metals list. The Permittee must ensure the samples are analyzed for the correct constituents. This must be reflected in future Annual Reports. If different analyses are used, the Permittee must provide an explanation for the deviations from the Discharge Permit.

Comment 11

The difference between Section 5 (Groundwater Chemical Analytical Data) in binder 1 and Section 3b (Results of all Sampling and Monitoring Events) in binder 2 is not clear; both contain analytical laboratory reports. In future Annual Reports, the Permittee must include all laboratory reports in one section. Only laboratory reports that apply to the groundwater monitoring requirements found in the Discharge Permit need to be included. The Permittee must ensure the entire laboratory report is included; some laboratory reports found in Section 3b were missing pages (e.g., sample location AL-1 Inlet only included the last page of SVOC data, (Lab ID 0705252-02, collection date 5/17/07)).

Comment 12

This comment pertains to Section 6 (Summary of Groundwater Testing), OW-11. The Permittee states "[t]he sample was analyzed for Mercury (EPA Method 7470), Total Recoverable Metals (EPA Method 6010B), and Volatiles (EPA Method 8260B)....In 2006, the general chemistry results showed that fluoride (2.5 mg/l) and sulfate (1,100 mg/l) were present at levels greater than the NMWQS for fluoride (1.6 mg/l) and sulfate (600 mg/l). However, these analyses could not be conducted in 2007, as the sample was frozen by the time it reached the analytical laboratory."

It is not clear how the frozen groundwater sample could be analyzed for mercury, total recoverable metals and volatile organic compounds, but not fluoride and sulfate. The Permittee must clarify this type of discrepancy in future Annual Reports.

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Comment 13

In Section 6 (Summary of Groundwater Testing), OW-11, under Recommendations, the Permittee states "In future, Western refining will conduct the annual groundwater sampling exercise earlier in the calendar year. (In 2008, sampling has been conducted in July and August)."

In the next Annual Report, the Permittee must provide an explanation for this change in months that sampling occurs, and clarify if OW-11 was sampled in July or August or both (OW-11 must be sampled annually).

Comment 14

In Section 6 (Summary of Groundwater Testing), OW-14, under Recommendations, the Permittee states "OW-29 is downgradient from OW-14 and OW-30, and can be used as a sentinel well to monitor the MTBE before it migrates off the refinery boundary."

OW-29 cannot be used as a sentinel well because this well already contains detections of MTBE. Because there are no other wells located north/northwest of OW-29, it is not clear if MTBE has migrated in these directions, offsite, or both. In future Annual Reports, the Permittee must revise the Report to remove any illusion that OW-29 is a sentinel well. The Permittee must continue to monitor OW-13, OW-14, OW-30, and OW-29 on a quarterly basis as required by NMED's September 25, 2008 letter. The Permittee must install another well(s) downgradient of OW-13 and OW-29 to determine if contamination has migrated north, northwest of the refinery and potentially offsite. NMED will address the installation of additional well(s) in a separate letter.

Comment 15

In Section 6, (Summary of Groundwater Testing), under OW-29, the Permittee states "[t]he laboratory analyses showed all parameters at non-detectable levels, except for MTBE which was detected at extremely low levels."

Detections either exceed a standard or are below a standard. In future Annual Reports, the Permittee must state whether detections exceed or are below the applicable standard(s).

Comment 16

As a general comment to Section 6 (Groundwater Testing), the Permittee must review the analyses listed under "Recommendations" in this Section to ensure the listed analyses match the listed analyses in the Discharge Permit. The Permittee must also ensure that the information provided is from the correct year (i.e., 2007 and not 2006); examples include wells OW-1, OW-10, MW-1, MW-4, MW-5, SWM-2, and SMW-4. In addition, not all of the sampling requirements are listed in Section 6 (e.g., effluent sampling requirements from the Pilot Gas Station to the Aeration Lagoon). All groundwater sampling requirements listed in the Discharge

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Permit (Item 19) must be included in this section. The Permittee must revise future Annual Reports accordingly.

Comment 17

There are discrepancies between when PW-2, PW-3, and PW-4 are to be sampled, the schedule presented in Section 6, and what is identified in the Discharge Permit. The Permittee must apply the sampling schedule found in the Discharge Permit dated August 23, 2007. This must be updated in future Annual Reports.

Comment 18

The information provided by the Permittee in Section 7 (List of Tables) is not organized and does not correlate with the headings identified on the first page of this Section. In future Annual Reports, the Permittee must revise this Section as follows:

- a. The Permittee must only provide relevant information and remove random pages that do not pertain to the headings provided on the first page of the Section. For example, the page after the "Well Data Summary Table" states "Well Closures." This information is not relevant. The second page of this Section is "Ground Water Depth to Water 2007." This information is already present in the "Well Data Summary Table." Relevant information should be included together.
- b. Revise page 2 of the "Well Data Summary Table" to include the 2007 data; the table provides 2006 data.
- c. Include the total well depth of recovery wells 1, 2, 5, and 6 in the "Well Data Summary Table."
- d. The "Ground Water Depth to Water 2007" table contains hand written information. This information must be included in the Well Data Summary Table, and the page removed from the Report.
- e. If the Permittee includes their field notes, this information should be included in a separate section (e.g., an appendix) of the Report, and removed from the Tables section of the Report.

Comment 19

In Section 7, the Permittee provides tables that contain recovery well information and state "Condition Permit ID: OCD Sect., 9, Item 4". The table contains three columns entitled "Depth to Product (feet)", "Depth to Water (Feet)" and "Product Level Thickness (feet)." The values presented in these columns are listed in both feet and inches and appear to be rounded numbers.

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In future Annual Reports, all measurements must be measured to an accuracy of 0.01 foot and be presented in the tables in feet. This comment also applies to the "Well Inspection Sheets." If the data are collected in inches, they must be converted to feet and the Permittee must explain how the conversions are completed and include any applicable equations or conversion factors.

Comments pertaining to the use of inches in these tables have been made in NMED's 2005 and 2006 Annual Groundwater Monitoring Report NOD's; the revision to the Report has yet to occur.

Comment 20

Section 8 contains a list of figures. In future Annual Reports, the Permittee must revise all Figures to remove the numbers presented in grey (e.g., well symbol 01117-B2; RFI 1113) which appear to be old boring locations. The figures must also include a different color to identify the raw water production wells, which are currently green and barely visible.

Comment 21

In Section 8 (List of Figures), Appendix A, the Permittee states, "[a]ll facility monitoring wells and recovery wells were gauged in January, March, May, June, July, and October for 2007." The sampling dates provided in Section 2 (Scope of Activities) of the Report do not correlate with the cited months. The Permittee must correct this discrepancy in future Annual Reports.

Comment 22

In Section 8 (List of Figures), Appendix A, the Permittee states, "[e]lectrical Conductivity (E.C.), pH, and temperature are monitored during purging using a meter."

In the next Annual Report, the Permittee must identify the type of meter used to collect the water quality parameters. The type of meter must also be stated in the text under "Water Quality/Groundwater Sampling," which also references using a meter.

Comment 23

In Section 8 (List of Figures), Appendix A, the Permittee states "[f]iled data and well elevations can be found in Section 8 – Well Data Summary Table."

In future Annual Reports, the Permittee must cite the correct Section where the field data and well elevations are located. Section 8 of the Report is the "List of Figures."

Comment 24

In Section 8 (List of Figures), Appendix A, the Permittee states "[p]urge well water from wells that have shown prior contamination is collected in fifty five gallon drums. The water is treated in the refinery's waste water treatment system. Purged water from historically non-contaminated

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wells is drained onto the ground.”

In future Annual Reports, the Permittee must clearly state that the analytical data for the purge water from historically non-contaminated wells is reviewed for detections before it is discharged to the ground.

Comment 25

The Permittee must revise future Annual Reports to include the accuracy to which depth to groundwater and separate phase hydrocarbons (SPH) water levels are measured (e.g., to the nearest 0.01 foot). See Section 8 (List of Figures), Appendix A, under Groundwater Elevation and Well Evacuation.

Comment 26

In Section 8 (List of Figures), Appendix A, under Well Evacuation, the Permittee states “[t]he water level in the well, total depth of well and thickness of floating product (if any) will be measured using the Dipper T electric[onic] water depth tape. A transparent bailer will be used to check for the presence and measure the thickness of floating product.”

In future Annual Reports, the Permittee must revise the above paragraph to indicate if the floating product is measured using the Dipper T or a bailer.

Comment 27

In Section 8 (List of Figures), Appendix A, under Well Evacuation, page 50 and 51, the Permittee uses the term “should” (e.g., the Permittee states the first sample *should* be tested for pH, temperature...). It is unclear what the Permittee actually did. In future Annual Reports, the Permittee must revise these pages to state what the Permittee actually did, not what they should do.

Comment 28

In Section 3e (Summary of all Leaks, Spills & Releases & Corrective Actions), the Permittee provides dates and descriptions of spills that occurred during the year at the refinery.

In future Annual Reports, the Permittee must provide more detail concerning the descriptions of the spills. Some of the explanations are vague and do not indicate if the spill was cleaned up. The cleanup and what measures the refinery implemented when the spill occurred must be included. For example, on 7/19/07, the API weir box ran over. The last sentence states “[e]stimate 5-10 bbls of oil/water spilled to the ground.” The Permittee did not mention anything about the cleanup. In any event, the cleanup must be addressed in detail, including the volumes recovered, the amount of soil removed, if removed, and where waste was disposed.

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Many of the comments in this NOD were also made in NMED January 16, 2008 NOD to the 2006 Annual Groundwater Report. The Permittee must review the 2006 NOD and this NOD when preparing future Annual Reports. NMED recommends referring to the Bloomfield Refinery's Annual Groundwater Report as a template.

The Permittee must address all comments included in this NOD in future Annual Reports.

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

Sincerely,



James P. Bearzi
Chief
Hazardous Waste Bureau

cc: J. Kieling, NMED HWB
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