

September 12, 2011

John E. Kieling, Acting Chief  
New Mexico Environment Department  
Hazardous Waste Bureau  
2905 Rodeo Park Drive East, Bldg 1  
Santa Fe, NM 87505



UPS Mail Tracking #: 1Z 881 839 01 5237 0144 (delivery to NMED)  
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Re: Response to June 21, 2011 APPROVAL WITH MODIFICATIONS  
INVESTIGATION REPORT GROUP 3  
WESTERN REFINING SOUTHWEST INC., BLOOMFIELD REFINERY  
EPA ID# NMD089416416  
HWB-WRB-10-001

Dear Mr. Kieling:

Western Refining Southwest, Inc., Bloomfield Refinery (Western) has prepared the following responses to your comments received from the New Mexico Environment Department (NMED) in a letter dated June 21, 2011 on the above referenced investigation report.

**NMED Comment No. 1- Section 2.5 (AOC No. 24 Tank Areas 41 and 43), pages 5-6:**

*Western's Statement: "Tank 43 is not currently in service. There was a small spill of approximately 100 to 150 gallons of oily water that spilled near Tank 43 in 2006."*

*NMED's Comment: In future documents, if spills are discussed, provide additional information to describe the cleanup process, management of waste, and the volumes released and recovered.*

**Western Response No. 1:** Western will incorporate this information in the future when available. It was not included in this particular report because the information does not exist.

**NMED Comment No. 2 - Section 5 (Regulatory Criteria), pages 38 and 40:**

*Western's Statement: "[t]he ground water cleanup levels are based on New Mexico [Water Quality Control Commission (WQCC)] standards (20.6.2.7 WWNMAC, 20.6.2.3103, and 20.6.2.4103) unless there is a federal maximum contaminant level (MCL), in which case the lower of the two values is selected as the cleanup level. If neither a WQCC standard nor an MCL is available, then the cleanup level is based on an [Environmental Protection Agency (EPA)] Regional Screening Level. Table 8 presents the ground water cleanup levels, with the applicable cleanup level highlighted."*

*NMED's Commitment: The hierarchy for groundwater screening levels is addressed in Comment 5 of NMED's June 6, 2011, Approval with Modifications Group 2 Investigation Report. In the comment, NMED states, "[i]f neither a WQCC standard nor an MCL is available, Western must use the NMED Soil Screening Levels (SSLs) tap water column found in Table A-I of the August 2009 NMED SSLs for comparison. In the absence of a NMED tap water value, the EPA*

Regional Screening Level for tap water must be used. This must be applied to future documents." In addition, on page 40, Western states that there are several constituents that do not have a soil or groundwater screening level such as phenanthrene. Phenanthrene is listed in Table A-1 of the NMED SSLs including a tap water screening level of 1.10 E-03 ug/L. Check all groundwater data tables to ensure all appropriate screening levels (WQCC standards, EPA MCLs, NMED or EPA tap water level) have been referenced in the data tables in future documents. No revision is necessary.

**Western Response No. 2:** In future documents, Western will utilize the NMED Tap Water values as directed.

**NMED Comment No. 3 - Section 5 (Regulatory Criteria), page 39:**

**Western's Statement:** "[t]he screening levels that are compared to individual sample results are presented in Table[s] 9, 10, and 11 for soils and Table 14 for ground water."

**NMED's Comment:** The reference to Table 14 for groundwater is a typographical error. Table 16 (Ground Water Analytical Results Summary) is the correct table to reference in this section. Ensure that future documents contain the correct references to tables; no revision is necessary.

**Western Response No. 3:** None required.

**NMED Comment No. 4 - Section 5 (Regulatory Criteria), pages 39-40:**

**Western's Statement:** "[a] review of the NMED [Total Petroleum Hydrocarbons (TPH)] Screening Guidelines (dated 2006) indicates that the screening levels were developed based on screening levels and compositional assumptions developed by the Massachusetts Department of Environmental Protection (MADEP)... [t]he TPH screening concentrations were updated using the 2009 MADEP screening levels and the compositional assumptions from the 2006 TPH Screening Guidelines."

**NMED's Comment:** The use of the 2009 MADEP screening levels is addressed in Comment 6 of NMED's June 6, 2011 Approval with Modifications Group 2 Investigation Report. In the comment, NMED states, "[e]ven though the MADEP TPH screening levels have been updated, NMED has not updated nor adopted these screening levels. Western must continue to apply NMED's October 2006 TPH screening levels with the exception of the value developed by Western." The reference to the 2009 MADEP screening levels must be removed from future documents. Western does not indicate which TPH screening level tables (Table 2a: TPH Screening Guidelines for Potable Groundwater (GW-1) or Table 2b: TPH Screening Guidelines – Vapor Migration and Inhalation of Groundwater (GW-2) were used in the Report. Based on the response to Comment 25 from the April 25, 2011 response letter, Table 2a was applied. Future documents must identify the table being referenced in the Regulatory Criteria Section.

**Western Response No. 4:** None required.

**NMED Comment No. 5 - Section 6.1.3 (AOC No. 22 - Product Loading Racks and Crude Receiving Loading Racks), pages 46-47:**

**Western's Statement:** "[t]he following qualitative risk evaluation is only an initial screening not a substitute for a quantitative risk assessment, which would be developed as a separate risk assessment document... [f]our of the constituents are listed as potential carcinogens based on the NMED and EPA sources referenced in Section 5.0. This could result in the cumulative

carcinogenic risk level of at least 4.0 E-05, which exceeds the NMED target cumulative risk level of 1.0 E-05 for carcinogens."

**NMED's Comment:** Western provided a qualitative risk evaluation and a quantitative evaluation of the cumulative carcinogenic risk level of 4.0 E-05 for AOC No. 22. Western did not explain or show calculations of how the cumulative carcinogenic risk level was determined or derived. In addition, Western did not discuss any conclusions derived from the qualitative or quantitative cumulative risk evaluation. Because additional investigation at AOC No. 22 is proposed, no revision is necessary. Future documents must clearly explain all evaluations (e.g., provide calculations and conclusions).

**Western Response No. 5:** As stated in the report, "four of the constituents are listed as potential carcinogens based on the NMED and EPA sources referenced in Section 5.0. This could result in the cumulative carcinogenic risk level of at least 4.0 E-05." The derivation of the value of 4.0 E-05 was derived by simply multiplying the risk level of 1.0 E-05, which was used to derive the individual screening levels, by four (the number of constituents with concentrations above the screening level).

$$1.0 \text{ E-05} \times 4 = 4.0 \text{ E-05}$$

The conclusion is, as stated, that the resulting value of 4.0 E-05 exceeds the NMED target cumulative risk level of 1.0 E-05 for carcinogens. Western will include clear explanation of calculations and derived conclusions in future document.

**NMED Comment No. 6 - Section 7 (Conclusions and Recommendations), pages 55-62:**

**NMED Comment:** Western discusses the conclusions and recommendations for each SWMU and AOC in Section 7. Western requests Corrective Action Complete without Controls for AOC No. 23 (Southeast Holding Ponds) and AOC No. 2S (Auxiliary Warehouse and 90-Day Storage Area). This determination will be made upon completion of the background study. In addition, evaluation of cumulative risk/hazard must be completed at each site. The following must be considered when deciding if an AOC or SWMU has achieved corrective action complete status:

- a. Soils; compare detections to background concentrations once these are determined.
- b. At sites containing concentrations of multiple constituents above background, calculate the cumulative risk/hazard using the maximum detection values for each constituent detected (See Section 5 of the NM SSL guidance). If the risk is greater than 1 E-05 or the hazard index is greater than one, then further site-specific evaluation or a site-specific risk assessment is necessary.
- c. Groundwater; New Mexico considers all groundwater to be a resource. Compare detections to background values once these are established.
- d. Detections of contaminants in groundwater at concentrations above background levels and the groundwater standards; groundwater must be further evaluated. Determine the sources of contamination.
- e. Recommend site attribution analysis for metals (demonstrate if metals are site related contaminants or are present at naturally occurring concentrations) in soil and groundwater.

In each case, Western must be able to support their recommendation for a corrective action complete determination. For example, Western makes varying statements in the Report that indicate soil and groundwater contamination do not "present", "indicate", or "pose" an unacceptable risk to human health and the environment but this conclusion was not

substantiated. Any conclusions made by Western must be supported by data or left out of the Report.

Upon completion of the background study, Western must re-evaluate the data collected at each AOC or SWMU to determine if additional corrective action is warranted or if the AOC or SWMU qualifies for a corrective action complete status. Western may be required to submit a work plan, if additional work is necessary, or provide additional information to demonstrate that corrective action is complete.

**Western Response No. 6:** None required.

**NMED Comment No. 7 - General Comments about all the Tables**

**NMED's Comment:** Many of the tables included Regional Screening Levels (RSLs) rather than NMED SSLs. It is not clear why RSLs were used rather than the NMED SSLs. In addition, the RSLs are based on a carcinogenic risk level of 1.0 E-06. The State of New Mexico applies a carcinogenic risk level of 1.0 E-05. All carcinogenic RSLs must be modified to reflect a 1.0 E-05 risk level. Modifying the RSLs accordingly does not appear to result in any changes to the conclusions of risk. However, for future reports/investigations, ensure that all screening levels applied are consistent with NMED target risk levels.

**Western Response No. 7:** Western used the EPA RSLs as specified in the Order issued by NMED on July 27, 2007, including adjusting the soil RSLs to a risk level of 1.0E-05 as per the Order. In future documents, Western will use the NMED Tap Water Levels as directed above in Comment No. 2 and will adjust the EPA water RSLs to a risk level of 1.0 E-05.

**NMED Comment No. 8 - Table 6 (Residential Soil Screening Levels) and Table 7 (Non-Residential Soil Screening Levels):**

**NMED's Comment:** Western applied the chromium III Residential and Industrial value rather than the chromium VI value. Western must apply the chromium VI standard unless an explanation is provided for using the chromium III value. This applies to all future submittals. No revision is necessary.

**Western Response No. 8:** Western will utilize the chromium VI screening levels in future documents unless information is available to support use the chromium III screening levels.

**NMED Comment No. 9 - Table 8 (Ground Water Screening Levels):**

**NMED's Comment:** Table 8 contains some incorrect screening levels. For example, Table 8 identifies the EPA screening level for tap water for benzyl alcohol as 18,000 ug/L; the correct screening level is 3,700 ug/L. Review the data table to check for errors.

Table 8 also reports WQCC standards, EPA tap water screening levels, and MCLs. The NM tap water screening levels must also be included in Table 8 (see Comment 2). This must be added in future documents; no revision is necessary.

**Western Response No. 9:** The EPA screening level for benzyl alcohol is 18,000 ug/l in the April 2009 version of the EPA tables. The screening level of the 3,700 ug/L was included in the June 2011 EPA Regional Screening Levels, which was published after

this Investigation Report was published. In addition, per earlier discussions with NMED, the decision was made to use the same set of EPA screening level tables throughout at least the first set of investigation reports for the RFI units. The purpose being to provide consistency in screening levels across the various areas of investigation.

**NMED Comment No. 10 - Table 9 (Group 3 Soil Analytical Results Summary - SWMUs No.4 and 5, AOC No. 23 and AOC No. 25), Table 10 (Group 3 Soil Analytical Results Summary - AOC No. 22 (product Loading Rack) and AOC No.26), and Table 11 (Group 3 Soil Analytical Results Summary - AOC No. 22 (Crude Receiving Rack) and AOC No. 24):**

**NMED's Comment:** *Western applies the calculated residential screening level of 1.80 E+03 mg/kg to Tables 9, 10, and 11 of the Report. However, Appendix I (TPH Screening Level Calculations and Laboratory Chromatograms) lists a value of 1.83 E+03 mg/kg for the residential scenario. Address this discrepancy in the response letter; no revision is necessary.*

**Western Response No. 10:** The value of 1.8 E+03 is the result of rounding the value of 1.83 E +03 to two significant digits.

**NMED Comment No. 11 - Table 16 (Ground Water Analytical Results Summary):**

**NMED's Comment:** *Table 16 does not include the NM tap water screening levels. In future reports, the NM tap water screening levels must be included in addition to the WQCC standards, EPA MCLs, and EPA tap water screening levels (see Comment 2). Western also applies the #3 and #6 fuel oil groundwater TPH screening level for Table 16, which is indicated in the footnotes of the table. The application of the #3 and #6 fuel oil groundwater TPH screening level is not discussed in Section 5 (Regulatory Criteria) and Western did not discuss the TPH screening level guidelines for groundwater and how they determined which criteria to use. In future documents provide a discussion explaining the selection of groundwater TPH screening levels. Provide an explanation for using the #3 and #6 fuel oil screening level in the response letter. No revision is necessary.*

**Western Response No. 11:** A review of the detections of TPH in groundwater indicates that the impacted area is centered at the product loading racks with significantly lower concentrations extending down-gradient toward SWMU No. 4. As discussed in Section 1.0, "Current and past operations have produced gasoline, diesel fuels, jet fuels, kerosene, propane, butane, naphtha, residual fuel, fuel oils, and LPG." Of the possible products to have been handled at the product loading racks (i.e., gasoline, diesel fuels, jet fuels, kerosene, and fuel oils), fuel oils have the lowest applicable screening level in the NMED TPH guidance document. The value of 1.34 mg/l (#3 and #6 fuel oils) was used in Table 16 for comparison the TPH detections in the area of the product loading racks and the down-gradient area.

**NMED Comment No. 12 - Figures 3 (Cross Section A-A', West to East) and 4 (Cross Section B-B', North to South):**

**NMED's Comment:** *Figures 3 and 4 show the cross sections selected monitoring and recovery wells at the facility, but the figures do not provide all information for all the wells (e.g., screened intervals). Figure 3 does not include the screened intervals for wells MW-40, MW-41, RW-42, and MW-5. Figure 4 does not include the screened intervals for MW-1 and MW-3. Revise the figures and depict the screened intervals for all wells in future reports. No revision is necessary.*

**Western Response No. 12:** The drilling logs for MW-40 and MW-41 do not include information as to where the screen was set. Future reports will include the screen intervals for all wells for which such information is available.

**NMED Comment No. 13 - Comment 37/Response 37 (Response Letter dated April 28, 2011):**

*NMED's January 24, 2011 NOD Comment 37 states, "[p]rovide more information for the crude sampling rack east of AOC No. 22, the L.P.G. loading area north of SWMU No.4, the diesel AST southwest of AOC No. 25, and the gasoline pumps west of AOC No. 25 to determine whether they are operational/inactive. Include a discussion of any historical releases, description of the activities conducted at the SWMUs/AOCs, and indicate if these SWMUs/AOCs should be included in the Phase II investigation."*

**Western Response No. 13:** These locations were in existence at the time NMED issued the July 27, 2007 Order and were never identified as SWMUs or AOCs. There have not been any releases or changes in operation since that time to indicate that they should be considered either a SWMU or AOC.

The crude sampling rack once consisted of a centrifuge and counter used to collect very small quantities of crude oil to support an evaluation of the quality of crude delivered to the crude receiving racks. The sampling rack has not been in-service since 1996. There are no documented releases to indicate environmental impacts at this location.

The LPG loading area, which is currently no longer operations since there is currently no LPG storage at the facility, was used for loading LPG to tanker trucks. The very nature of LPG (low vapor pressure - evaporates at temperatures as low as -33 to -44 degrees Fahrenheit at atmospheric pressure) means that the loading activities would not have the potential to impact soil or groundwater. The diesel (aboveground storage tank located southwest of AOC No. 25), which was owned and operated by the Transportation Department of Giant, not the refinery, has not been in use since January 2009. There have not been any documented releases from this tank. The diesel pumps located west of AOC No. 25 has not been in service since January 2009.

**NMED Comment No. 13 (Continued)**

*NMED agrees that the LPG loading area should not be considered as a potential SWMU or AOC. However, it is possible that contaminant releases occurred at the crude sampling rack, diesel AST, and diesel/gasoline pumps. The July 27, 2007 Order (Order) does not make a distinction regarding the owner or operators for trucking and refining. The crude sampling rack, diesel AST, and diesel/gasoline pumps are located within the refinery boundary and are associated with the facility operations; therefore these sites are subject to corrective action under the Order. In accordance with Section IV.B.8 (Newly Discovered SWMU's and AOC's) of the Order, Western must submit an Assessment Report for the crude sampling rack, diesel AST, and diesel/gasoline pumps. After review of the report, NMED will determine if further investigation is warranted at these locations. If NMED determines additional investigation is necessary, Western will be notified in writing and the Order will be modified to add the sites as AOCs to the list in Section IV.B.3, and the investigation schedule in Section IV.B.5 and Section XI, Table 1.*

*Additional investigation activities may be required for some of the Group 3 SWMUs. However, these determinations are deferred until after the background study has been completed. Western must evaluate each site to determine if additional corrective action is necessary once*

*the background study is completed. Western must submit a work plan, if additional work is determined to be necessary. If additional investigation activities are not necessary, Western may submit requests for certificates of completion that include the additional information required by this letter for each site.*

*Western must address all comments where a response is required by this Approval with Modifications. A response letter must be submitted to NMED on or before September 12, 2011. Western must submit an AOC Assessment Report for the crude sampling rack, diesel AST, and diesel/gasoline pumps to NMED on or before October 17, 2011. The AOC Assessment Report must be prepared in accordance with Section IV.B.8 of the Order.*

**Western Response No. 13 (continued):** None required.

If you have questions regarding the above responses or the enclosures, please contact me at (505) 632-4171.

Sincerely,



PP James R. Schmaltz  
Health, Safety, Environmental, and Regulatory Director  
Western Refining Southwest, Inc., Bloomfield Refinery

cc: Dave Cobrain – NMED HWB  
Leona Tsinnajinnie – NMED HWB  
Carl Chavez - NMOCD  
Allen Hains – Western Refining El Paso  
Kelly Robinson – Western Refining Bloomfield  
Scott Crouch - RPS