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Mr. David Cobrain
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Dr. E, Bldg 1
Santa Fe, NM 87505

RE: Draft Technical Review Comments on the "Investigation Report Group 3 (SWMU No. 4 Transportation Terminal Sump, SWMU No. 5 Heat Exchanger Bundle Cleaning Area, AOC No. 22 Product Loading Rack and Crude Receiving Loading Racks, AOC No. 23 Southeast Holding Ponds, AOC No. 24 Tank Areas 41 and 43, AOC No. 25 Auxiliary Warehouse and 90-Day Storage Area, and AOC No. 26 Tank Area 44 and 45)" Bloomfield Refinery, Revised April 2011

Dear Mr. Cobrain:

This letter addresses the draft technical review of the "Investigation Report Group 3 (SWMU No. 4 Transportation Terminal Sump, SWMU No. 5 Heat Exchanger Bundle Cleaning Area, AOC No. 22 Product Loading Rack and Crude Receiving Loading Racks, AOC No. 23 Southeast Holding Ponds, AOC No. 24 Tank Areas 41 and 43, AOC No. 25 Auxiliary Warehouse and 90-Day Storage Area, and AOC No. 26 Tank Area 44 and 45)" Bloomfield Refinery, Revised April 2011. As noted in an email (June 1, 2011) from Ms. Hope Monzeglio Petrie, there were questions concerning the derivation of risk screening for total petroleum hydrocarbons (TPH) presented in Appendix I. While these TPH derivations were the primary focus of the review, the following comments were noted.

1. The screening level for C11-C21 aromatics as provided in the NMED TPH Guidance was updated to reflect more current toxicity information. The TPH levels contained within the NMED TPH Guidance were based on methodologies provided in the Massachusetts Department of Environmental Protection's Contingency Plan Standards. The methodology applied to derive a new TPH value for the C11-C21 aromatics (Equation 1 in Appendix I) is based upon the standard equation for deriving a soil screening level (SSL) from the NMED SSL Guidance. The methodologies for developing a TPH level are different between NMED's TPH and SSL Guidance. However, the methodologies are not dissimilar enough to warrant Bloomfield Refinery to revise the calculations. In addition, the methodology applied in Appendix F is not too dissimilar from other State's TPH SSL derivations. The screening level for C11-C21 aromatics is acceptable.

2. The facility indicated that use of screening levels for evaluation of migration to groundwater based on a dilution and attenuation factor (DAF) of one (1) was overly conservative and not applicable to conditions at the Bloomfield Refinery (Section 5). It is not clear why they did not apply screening levels based on the DAF of 20, as the NMED SSL Guidance does indicate that this is appropriate for most facilities. However, Bloomfield chose to derive a site-specific DAF (the same as that calculated for Area 2). Based upon the review of the methodologies used to derive the site-specific DAF in the Area 2 report, it was noted that the methodologies were consistent with the NMED SSL Guidance. The use of the site-specific DAF is a more conservative approach than applying generic SSLs based on the DAF of 20, and thus acceptable.

3. Many of the tables included Regional Screening Levels (RSLs) in lieu of NMED Screening Levels (SSLs). A clear example of this is noted in Tables 6, 7, and 9. It is not clear why RSLs were chosen over NMED SSLs. In addition, the following were noted:

    a. RSLs are based on a carcinogenic risk level of 1E-06. The State of New Mexico applies a carcinogenic risk level of 1E-05. All carcinogenic RSLs should be modified to reflect a 1E-05 risk level. Modifying the RSLs accordingly did 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.

    b. Table 1. The Maximum Contaminant Level (MCL) was listed over more conservative NMED SSLs in some cases (e.g., benzene and ethylbenzene). However, the use of the more conservative tap water screening level does not change the conclusions. Groundwater contamination is present at levels above screening levels (MCL or SSL) for MW 30 and MW 31.

    c. Table 5. The screening level for chromium is based upon trivalent chromium. However, it appears that the analytical data represent total chromium. As such, a SSL for total chromium should have been derived and applied. However, in reviewing the data, the results would most likely not exceed SSLs for total chromium. For future reports/investigations, if data represent total chromium, SSLs for total chromium must be applied.

4. Assumptions concerning risk are presented in the document although there are no quantitative risk calculations. It is noted that the report indicates that quantitative risk assessments will be provided in a separate report.

5. Some volatile organic compounds (VOCs) were detected at the SWMUs. In addition, there are soil vapor screening data. It is not clear how the soil vapor data were evaluated or if they were incorporated into making risk determinations (there is no analysis of the vapor intrusion scenario). However, at a minimum a qualitative analysis of the vapor intrusion pathway should be included for sites where VOCs are present.

If you or any of your staff have questions, please contact me at (801) 451-2864 or via email at paigewalton@msn.com.

Thank you,

Paige Walton

Paige Walton
AQS Senior Scientist and Program Manager

CC: Hope Monzeglio Petrie, NMED (electronic)
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