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NEW MEXICO ENVIRONMENT DEPARTMENT

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RON CURRY
Secretary

SARAH COTTRELL
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

November 19, 2010

Mr. Randy Schmaltz
Environmental Manager
Western Refining, Southwest, Inc.
Bloomfield Refinery
P.O. Box 159
Bloomfield, New Mexico 87413

RE: NOTICE OF DISAPPROVAL
INVESTIGATION WORK PLAN FOR DETERMINATION OF BACKGROUND CONCENTRATIONS
WESTERN REFINING SOUTHWEST, INC., BLOOMFIELD REFINERY
EPA ID # NMD089416416
WRB-10-006

Dear Mr. Schmaltz:

The New Mexico Environment Department (NMED) has reviewed Western Refining Southwest, Inc., Bloomfield Refinery (Western) *Investigation Work Plan Background Concentrations* (Work Plan) dated July, 2010. NMED hereby issues this Notice of Disapproval. Western must address the following comments:

Comment 1

In Section 2.2 (Site Conditions), page 2-1, Western states "[t]he conditions at the site, including surface and subsurface conditions that would affect the fate and transport of any contaminants, are discussed below." Western does not discuss the predominant wind direction at the facility. Chemicals (including metals) that are by-products of the various processes are released from the facility. The background soil location(s) should be in a place(s) that is not significantly impacted by facility emissions (*e.g.*, upwind of building(s) that emit hydrocarbons and stack downwash).

Western must revise the Work Plan to include a brief discussion of prevailing wind directions. Western must also discuss background soil locations with respect to wind-related disposition and the potential for impact from all past and current emission sources at the Refinery.

Comment 2

In Section 2.2.2 (Subsurface Conditions), page 2-2, Western describes the stratigraphy at the site to include the Jackson Lake deposit and the Nacimiento Formation. Western does not discuss the unconsolidated surface soils, silts, and eolian deposits above the Jackson Lake Deposit. Western must revise the Work Plan to describe this uppermost unit and include the approximate thickness of the eolian deposits, the Jackson Lake Terrace deposits, and the Nacimiento Formation.

Comment 3

In Section 2.3.1 (Anticipated Activities), page 2-3 and Section 4.2 (Soil Sampling), page 4-2, Western states "[s]oil samples will be collected from the surface (0-6") and shallow subsurface (18-24") to establish background concentrations for inorganic constituents. Eight sample locations will be selected and two samples will be collected from each location to support the development of distinct background concentrations for surface and subsurface soils, if required."

Western proposes to collect soil samples from two intervals: 0-6 inches below ground surface (bgs) and 18-24 inches bgs. It appears background is being defined based on depth and not lithology. Background results from this study may be part of risk assessments to support corrective action complete determinations of the solid waste management units (SWMUs) and areas of concern (AOCs) being addressed under the corrective action portion of the July 27, 2007 Order (Order). For human health risk assessments, the residential and the construction worker scenarios are based upon a soil exposure interval of 0-10 feet bgs. For some ecological risk assessments, a soil interval up to 10 feet bgs may also be appropriate. In addition, as part of identifying nature and extent of contamination, soil samples will likely be collected at multiple subsurface intervals, some of which may be below a depth of 24 inches bgs. Using the limited surface and shallow subsurface soil data as proposed in this Work Plan, sufficient data will not likely be collected to adequately allow assessment of soil below 24 inches. Western must revise the Work Plan to clarify how the soil intervals currently defined will provide sufficient data to compare to the deeper subsurface soil samples (*i.e.*, demonstrate the 18-24 inch interval is representative of the deeper subsurface soils). If the 18 to 24 inch interval is not representative of deeper subsurface soils; Western must propose to collect additional samples to characterize deeper subsurface soils. NMED suggests background soil be evaluated to a minimum depth of 15 feet bgs and that each lithologic unit present, down to and including the Nacimiento Formation be part of the study. See Also Comment 6.

Comment 4

In Section 2.3.4 (Surveys), page 2-4, Western states "[t]he horizontal coordinates of each sample location and the locations of all other pertinent structures will be determined by a registered New Mexico Professional land surveyor in accordance with the State Plane Coordinate system

(NMSA 1978 47-1-49-56 (Repl. Pamp. 1993))...Horizontal positions will be measured to the nearest 0.1 ft." Western does not discuss the vertical elevation measurements and how these measurements will be obtained. Western must revise the Work Plan to discuss vertical elevation measurements for the sample locations. Refer to and comply with the requirements of Section VIII.A7 of the Order.

Comment 5

In Section 4.1 (Well Drilling and Construction Activities), page 4-1, Western states "[t]he soil boring(s) to be completed as a background monitoring well will be drilled to the top of bedrock (Nacimiento Formation) and the anticipated completion depth ranges from 50 to 60 feet. Soil samples will be collected continuously and logged by a qualified geologist or engineer. Soil samples will not be collected for chemical analyses, only ground water samples will be collected from the soil boring(s) completed as background monitoring wells." In order to demonstrate that the area is not contaminated, Western must also collect soil samples from five feet bgs and at the top of saturation/water table. The soil samples must be analyzed for gasoline range organics (GRO) and diesel range organics (DRO). Western must revise the Work Plan to include the additional sample locations.

Comment 6

In Section 4.2 (Soil Sampling), page 4-2, Western states "...[e]ight sample locations will be selected and two samples will be collected from each location to support the development of distinct background concentrations for surface and subsurface soils, if required. The area in which the samples will be collected is located southeast of the Regional Transportation office (Figure 2). The background sample locations are shown in Figure 9. This area will be gridded into eight cells of approximately the same size with sample collection locations staked in the center of each grid cell." The proposed soil background location is a limited area of approximately 170 feet by 70 feet (approximately 0.27 acres). Given the size of the area investigated (approximately 263 acres), it does not appear that eight samples in a relatively small area will provide sufficient representation of the natural variability of the soil across the site. Western must propose to collect additional background soil samples from areas that have not been impacted to allow for the evaluation of variability of inorganic constituents. Western may use the proposed monitoring well locations as additional locations for background soil samples. The soil samples collected from the additional locations must be from the same lithologic units as the other eight locations. See Comment 3.

Comment 7

In Section 4.2 (Soil Sampling), page 4-2, Western states "[t]he area chosen for background samples was selected based on the fact that no site-related or other industrial activities are known to have taken place in this area and based on a review of soil survey information. As shown on the soil survey map included in Appendix B, the same soil map unit (Doak-Avalon association) occurs across most of the refinery complex (USDA, 2010). The area from which the background samples will be collected is within this same soil association. The two sample depths were

selected based on the chemical soil properties reported in Appendix B, which show a slight variation with the depth for the Doak-Avalon association soils." Appendix B of the Work Plan contains a custom soil resource report for the site. Based on the soil map (page 8), the bulk of the soils across the site are members of the Doak-Avalon association, gently sloping (DN), Fruitland-Persayo-Sheppard complex (FX), and hilly Fruitland-Persayo-Sheppard complex, hilly (HA) soil units. In addition to physical properties for these units, Appendix B also provides profiles for these units, summarized below.

Soil Unit	Profile
DN	*0 to 14 inches:* Loam *14 to 60 inches:* Loam
FX	*0 to 4 inches:* Sandy loam *4 to 60 inches:* Fine sandy loam
HA	*0 to 7 inches:* Cobbly sandy loam *7 to 26 inches:* Cobbly sandy clay loam *26 to 60 inches:* Cobbly sandy clay loam

Western proposes to collect the background soil samples from the DN soil unit. Based on the physical properties provided for each of these units, it appears that there may be sufficient similarity between the units to allow for samples collected from the DN soil unit to be representative of samples from the FX and HA soil units. However, it is not clear that soil comprised of mostly loam may be representative of soils with higher sand and/or cobble content as defined in some areas at the site. Figure 7 suggests that some of the sources of LNAPL may be located within soil units other than DN, FX, or HA. For example, the plume west of RW-1 and Hammond Ditch and the North Boundary Barrier Wall is located within the Avalon loam (Ay). Western must include additional discussion of the representativeness of the DN soil unit for all locations, and explain how the DN unit is representative of the FX and HA units.

Comment 8

Western discusses well development in Section 4.3.1. However, Western does not discuss the timeframe in which the well(s) will be developed in this Section. Western must revise the Work Plan to state the timeframe within which well development will be completed in accordance with Section IX.C.5 of the Order.

Comment 9

In Section 4.3 (Ground Water Sample Collection), page 4-5, Western states "Ground water samples intended for metals analysis will be submitted to the laboratory as total metals." In addition to total metals analysis, the groundwater samples must also be analyzed for dissolved metals. Western must revise the Work Plan accordingly.

Comment 10

Western discusses the collection of groundwater level measurements in Section 4.3.2 (Ground Water Levels). Western must revise the Work Plan to include information about the instrument that will be used to collect the water level measurements.

Comment 11

In Section 5 (Schedule), page 5-1, Western states "[t]his background investigation Work Plan will be implemented concurrently with the next site investigation Work Plan that is approved by the NMED. At this time, this is anticipated to be the Group #4 Investigation Work Plan December 2008 (revised January 2010)." The background investigation cannot be conducted concurrently with the Group 4 Investigation,which has already been completed. Western must revise the Work Plan to state the Work Plan will be executed concurrently with the next investigation Work Plan approved by NMED.

Comment 12

In Section 5 (Schedule), page 5-1, Western states "[c]omputation of the required summary statistics pursuant to Section VIII.H. of the Order will be completed and the results will be included with the Group #4 Site Investigation Report." The background investigation Work Plan results must be included in a separate report. Western must revise the Work Plan to remove the Group 4 Report reference and state that the results will be included in a background investigation report.

Comment 13

In Appendix A (Investigation Derived Waste (IDW) Management Plan), Western states "[d]rill cuttings generated during installation of soil borings and monitoring wells are not anticipated to be contaminated and will be spread on the land surface following customary water well drilling practices." Western does not discuss field screening of the soil borings in the Work Plan. Although contamination is not anticipated, Western must conduct field screening of soils (using instrument, olfactory, and visual methods) during the installation of the soil borings and monitoring wells for evidence of hydrocarbons. The field screening results will assist in determining whether or not Western can dispose of contaminated soils on the land surface. Contaminated soils with values above the New Mexico Soil Screening Levels, residential scenario, must be disposed of properly at an off-site facility. Western must revise the Work Plan to include these changes.

Comment 14

Based on the historical knowledge of the facility, NMED is aware that locating groundwater and locations for background wells is going to be difficult. As presented in the Work Plan, background values for groundwater cannot be determined. The following concerns related to the limited groundwater data is listed below.

a. According to Section VIII.H of the Order, statistically defensible data must be collected for background determination. The (two) proposed wells are to be screened only in the shallow surface water, allowing for the collection of one groundwater sample per well. Two groundwater samples will not provide enough data to be statistically defensible, as statistical comparison of data cannot be conducted. Moreover, it is not likely that two wells would sufficiently capture the natural variability of inorganics in groundwater.

b. Because of the potential for refusal at the proposed background locations for groundwater, additional proposed well locations are warranted.

c. It is not clear how the data quality objectives and the quality control measures with respect to duplicates and blanks will be met with only two samples. It is therefore likely that the evaluation of groundwater will be limited to a qualitative assessment of inorganics with some limited quantitative analysis in the uncertainty section.

d. Western must propose additional locations for the installation of background monitoring wells.

Western must address all comments contained in this NOD and submit a revised Work Plan to NMED on or before February 22, 2011. The revised Work Plan must be submitted with a response letter that details 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 that identifies where all changes have been made in redline strikeout format.

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

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

JPB:hm

cc: J. Kieling, NMED HWB
D. Cobrain, NMED HWB
C. Chavez, OCD
A. Hains, Western
File: WRB-10-006 and Reading 2010