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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

January 11, 2017

Mr. Ed Riege
Remediation Manager
Western Refining, Southwest Inc., Gallup Refinery
92 Giant Crossing Road
Gallup, New Mexico 87301

RE: APPROVAL
REVISED INVESTIGATION REPORT
SOLID WASTE MANAGEMENT UNIT (SWMU) NO. 1 AERATION BASIN AND SWMU NO. 14 OLD API SEPARATOR
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY
EPA ID # NMD000333211
HWB-WRG-13-001

Dear Mr. Riege:

The New Mexico Environment Department (NMED) has received the revised *Investigation Report Solid Waste Management Unit (SWMU) No. 1 Aeration Basin and SWMU No. 14 Old API Separator* (Report) revised June 2014 and August 2015 and submitted on April 26, 2016 on behalf of Western Refining Southwest Inc., Gallup Refinery (Permittee). The Permittee's response to NMED's March 17, 2016 Rejection letter is adequate. NMED hereby issues this Approval with the following comments and clarifications.

NMED also received the Permittee's *Investigation Work Plan Solid Waste Management Unit (SWMU) No. 1 Aeration Basin and SWMU No. 14 Old API Separator* (Work Plan), dated July 2015 regarding proposed additional investigations at the SWMUs. NMED's comments regarding this Report should be addressed during further investigations in order to define the extent of contamination at the SWMUs. NMED's review and comments regarding the Work Plan are pending.

NMED's comments are separated into three sections regarding the April 1, 2014 Disapproval, the May 11, 2014 Disapproval, and the revised Report.

Permittee Response (August 24, 2015) to NMED Response (May 11, 2015) to Permittee Response to April 1, 2014 Disapproval Comments

Permittee Response to NMED Comment 2a

The Permittee's response to NMED's Comment 2a states "Western appreciates the clarification regarding use of DAFs. Our experience has clearly shown that groundwater impacts are associated with primary sources (e.g., leaking tanks or pipelines) and not minor secondary sources (e.g., stained soils with low concentrations of petroleum hydrocarbons, even well above DAF 20 values)." Soil DAF values are meant to assess the risk over time of contaminants present in soils to migrate to groundwater, so while groundwater may not immediately be affected by soils containing contaminant concentrations well above the DAF 20, the risk exists that the contamination may, over time, reach groundwater. At this point, because groundwater is already affected by contaminants, calculation and discussion of DAF is not necessary. No revision is required.

Permittee Response to NMED Comment 2b

The Permittee's response states, "Western notes that the report refers to 'vertical impacts to soil.' Although Western does not accept NMED's observation that 'hazardous waste has been in direct contact with groundwater,' both the Aeration Basin and OAPIS have contained waste materials that was in direct contact with refinery wastewater and Western believes this 'impacted' water transported contaminants vertically through soils in some locations. A review of the soil borings for SWMU 1 and SWMU 14 does not indicate any of the soil borings encountered waste materials." There appears to be a typographical error and the intent of NMED's comment was to refer to hazardous waste constituents rather than waste itself. The Permittee's response regarding the vertical impacts to soils is accurate.

Permittee Response to NMED Comments 2c and 8d

NMED's Response to Comments, Comment 2c related to the Permittee's risk assessment states, "[t]he results obtained from the screening analysis (risks for soil under a residential scenario at $1x10^{-3}$ exceed NMED target risk of $1x10^{-5}$ using DAF=461 while the hazard index is 1.5; for groundwater, the risk is again above $1x10^{-3}$ and the hazard index is 910) indicate the SWMUs must be further evaluated (potentially, with a more detailed, site-specific risk assessment) and/or that remediation of soil and groundwater is necessary. The Permittee may calculate separate DAFs for each SWMU to aid in the assessment of soil contamination. In addition to calculating separate site-specific DAFs, the Permittee may want to perform a screening analysis of the sediments in the Aeration Basin." The Permittee's response to NMED's Comment 2c states, "[b]ased on previous characterization of sediments, as provided in the Trihydro Report and process knowledge, Western assumes the sediments in the Aeration Basin will require that a remedy be implemented. A screening analysis does not appear to be warranted." The Permittee must take into account that the Aeration Basin received listed and characteristic hazardous waste and hazardous constituents and the regulatory impacts this has on site closure. NMED's

Comment 8d stated, "[g]iven the high risk estimates, a more detailed screening analysis that focuses on the potential risks and hazards posed by each SWMU is warranted. Further evaluation may also be necessary. Addressing the SWMUs as separate exposure units will facilitate more informed and resource-effective risk management decisions related to corrective action and remedy selection." To which the Permittee responded, "Western needs more explanation of NMED's statement that 'Further evaluation will be necessary.' Remediation is expected for both SWMUs and so Western questions what further risk evaluation could be necessary to arrive at that conclusion." NMED's comment was meant to clarify options for the Permittee, because of the high risk estimates at the SWMUs and to also point out that contaminated soils in one SWMU may delay cleanup progress at the other SWMU if they are connected. The Permittee separated the SWMUs; no revision is required.

Permittee Response to NMED Comment 5

The Permittee's response to NMED's Comment 5, which required a description of the construction and composition of the pond berms, provides excerpts from a geotechnical document regarding the proposed construction of the Aeration Basin titled *Technical Specification for Construction of an Aerated Lagoon API Separator Effluent Treatment Facility* dated 1986. The Permittee notes that, "[f]rom the following design description, it is clear that Giant Industries took great care to ensure the berms were properly constructed to minimize any exfiltration from the Aeration Basin." The design specifications for the Aeration Basin provide details regarding plans; however, there is no evidence (unless the Permittee can provide as-built drawings or a final construction report) that the ponds and berms were constructed as planned. Additionally, GWM-2 and GWM-3, which were installed to determine whether or not the Aeration Basin was leaking, frequently contained water after their installation. Once the Aeration Basin started drying out, the wells became dry, indicating leakage from the Aeration Basin. The Permittee asserts that "[d]uring the operational life of the Aeration Basin there were no indications of any seepage along the western and northern sides of the Aeration Basin where the berms are above grade." However, the presence of water in GWM-2 and -3 and contamination in GWM-1 demonstrate that this assertion is not accurate as does the discussion in Report Section 4.2.2 (see Comment 3). No revision is required; however, in future submittals regarding the Aeration Basin ensure that a discussion is included regarding seepage of wastewater from the Aeration Basin.

Permittee Response to NMED Comment 7a

The Permittee's response to NMED's Comment 7a states, "Western is interested in NMED's suggestion to perform fingerprint analyses and would like to discuss this further and hopefully obtain examples from NMED of how other Permittees have used fingerprint analysis to determine site-specific screening levels with NMED's approval of the methodology and any associated calculations. Western would note that when it comes to analysis for [*total petroleum hydrocarbons*] TPH, it is less important to know what the original release material was but rather what constituents remain in the subject environmental medium today, thus the analysis for [*gasoline range organics*] GRO, [*diesel range organics*] DRO and [*motor oil range organics*] MRO that are capable of providing the fractionation of the TPH." There has not been a situation at another facility where use of a less conservative screening level has been proposed.

Fingerprint analysis may narrow down the specific component, but it is also possible that it may not, so the most conservative value will be used for comparison. NMED cannot make a determination without data. In the future, if the Permittee wishes to use a less conservative screening value, evidence must be presented to demonstrate that the proposed, less conservative value, is the most appropriate based on the hydrocarbon fractions present and as identified by an off-site laboratory analysis; otherwise, the unknown oil value must be used.

NMED Response to Permittee Response to May 11, 2014 Disapproval Comments

Permittee Response to NMED Comment 4

Regarding NMED Comment 4, the Permittee responds "NMED comments that the data tables have values with too many significant digits and then refers to the 'proper number of significant digits." The data tables provided in the July 2014 Investigation Report contain the same values as those included in the original February 2013 copy of the Investigation Report for which NMED did not indicate any problems regarding the number of significant digits. Western does not understand why the presentation of a more accurate result containing more significant digits would elicit a comment from NMED. Regardless, Western searched the Permit and NMED guidance to identify what NMED is referencing as the 'proper number of significant digits' and did not find any reference to significant digits in either of these guiding documents. Western reviewed the electronic copy of the New Mexico Soil Screening Levels (Table A-1) that are provided on your website and observed the values are provided to 15 significant digits while the screening values included in the 2014 Risk Assessment Guidance for Site Investigation and Remediation show three significant digits expressed in scientific notation. Western has reported the exact values provided by the laboratory via electronic data delivery in Excel format and deferred to the reporting laboratory to determine the 'proper number of significant digits' for the detected results." It is common practice to report data in units appropriate to its use. For future submittals, tables must report data using the same units as soil and groundwater cleanup levels and must report data to three significant digits to allow for easy comparison between screening levels and the data. No revision is required.

NMED Comments on the Revised Report

The following comments are NMED's comments regarding the revised Report.

Comment 1

The Permittee presents conflicting statements regarding releases from the Old American Petroleum Institute Separator (OAPIS). In Section 2.2.2 (Prior Maintenance Activities), the Permittee states, "[t]he concrete was patched in numerous locations in both bays and the weir wall down-stream of the pipe skimmer was rebuilt on both bays. Stained soil (approx. 4,500 lbs) identified around the perimeter of the separator was removed and sent off-site for disposal as hazardous waste (K051)." However, in Section 2.2.3 (Historical Site Investigations) the Permittee states, "[t]here have not been any documented historical releases from the OAPIS with the aforementioned noted exception of the identification of some surface soils with hydrocarbon stains around the sides of the unit. These stained soils were removed and this limited volume of

material did not indicate an obvious significant release." And then, in Section 2.1.2 (Prior Maintenance Activities) regarding the Aeration Basin, the Permittee lists release incidents where the OAPIS was the source of releases to the Aeration Basin. Additionally, soil boring analytical data from this investigation indicate that there were additional releases beneath the OAPIS. No revision is required; however, in the future statements must be supported by data.

Comment 2

In Section 3.1.2 (SWMU No. 14 Old API Separator) the Permittee states, "[t]wo of the planned deep borings (SWMU 14-5 and SWMU 14-8 located on the north side and northwest corner of the OAPIS) had to be installed with a hand auger instead of the hollow-stem auger (HSA) method due to access limitations with the drilling rig (Figure 3)." The majority of the borings installed at the OAPIS terminated two feet below the ground surface. Soil analytical data demonstrates that contaminant concentrations often increase in the 1.5-2.0 foot interval. While access limitations may affect collection of data from deeper intervals, the Permittee must demonstrate that the vertical extent of contamination has been defined. Borings 14-7 and 14-9 demonstrate that contamination outside the footprint of the OAPIS may reach a depth of 6 to 8 feet below ground surface (bgs). Generally, samples must be collected at the depth immediately below the base of the unit and at the fill-native soil interface, five feet below the base of the structure, and five feet below the water table (Permit Section IV.J.2.d.ii Soil and Rock Sampling). The Permittee submitted an additional Investigation Work Plan for SWMU 1 and 14, dated June 2014 that is currently under NMED review. The additional proposed sampling locations are not within the footprint of the OAPIS and do not address and delineate potential vertical contamination. The Permittee must delineate the vertical impacts and must propose soil borings within the footprint of the OAPIS in the Work Plan.

Comment 3

The Permittee discusses shallow groundwater that is present in the investigation area, in Section 4.2.2 (Hydrogeology):

> "The presence of shallow groundwater in the area of the Aeration Basin and OAPIS appears to be associated with fluids managed in these two SWMUs. All of the deeper soil borings immediately surrounding the Aeration Basin encountered saturation or at least moist conditions where more permeable horizons (e.g., clayey sand) were present at elevations at or below the water levels in the Aeration Basin (Figure 7). Saturation was not encountered in similarly permeable soils at elevations above the water levels in the Aeration Basin, nor are any of the measured water levels in the shallow wells above the water levels in the Aeration Basin. Saturation was not encountered in borings (e.g., SWMU 14-1, SWMU 14-6, SWMU 14-7, SWMU 1-20, and SWMU 1-38) located further away from the Aeration Basin and OAPIS, with the exception of boring SWMU 14-23. There was an indication of saturation within a sandy clay interval in SWMU 14- 23; however, no water was produced from a temporary well completion installed in the soil boring. In addition, as discussed above in Section 2.1.3,

> there have been low concentrations of constituents reported in shallow groundwater from samples collected nearby the Aeration Basin and OAPIS that have also been detected in water and sediment samples collected from the Aeration Basin. All of the evidence points to the Aeration Basin in particular as a source of recharge to the discontinuous permeable zones (e.g., clayey sand) that have been identified in borings adjacent to the Aeration Basin. These saturated intervals produce very little water. Temporary well completions were installed in soil borings SWMU 1-2, SWMU 1-3, SWMU 1-4, SWMU 1-5, SWMU 1-6, SWMU 1-7, SWMU 1-8, SWMU 1-24, and SWMU 14-3. In every case, it was difficult to obtain sufficient volumes of water to complete scheduled sample collection activities and at SWMU 1-5, there was not a sufficient volume of water to allow analyses for all analytes."

NMED agrees that the presence of shallow groundwater appears to be influenced by fluids managed in the SWMUs. However, historic documents demonstrate the presence of seeps in the area prior to construction of the Aeration Basin (see: *Geotechnical Investigation Three Cell Sludge Pond*, dated July 22, 1986). There are naturally occurring saturated intervals in the upper Chinle/Alluvium found in the subsurface as a discontinuous permeable zone and seen in borings as sand lenses (or sand stringers). The Aeration Basin, in particular, likely affected shallow groundwater levels, because there was a noticeable drop in groundwater levels in GWM-1, -2, -3, and OAPIS-1 when use of the Aeration Basin ceased. Evidence points to the connection between the natural water in the area with the wastewater held in the Aeration Basin. Any proposed remediation at the Aeration Basin must address groundwater contamination and the recharge of groundwater from, and now to, the Aeration Basin.

Comment 4

Many of the hand auger soil samples were completed to a total depth of two feet below ground surface or less, which is not necessarily representative of conditions at the SWMUs. As an example, one soil sample was collected (SWMU 1-19) from 0-0.5 feet bgs and then the boring was terminated due to refusal in gravel. Soil sample collection at the ground surface is useful if the investigation involves an area where, for instance, there were past releases that resulted in surface contamination that were not immediately remediated, but in this case the purpose of this investigation was to investigate whether or not the Aeration Basin contaminants seeped to the surrounding soils. NMED notes that fifteen hand auger borings 1-12, 1-17, 1-18, 1-19, 1-21, 1-23, 1-25, 1-26, 1-29, 1-31, 1-32, 1-33, 1-34, 1-36, 1-39 were terminated at two feet below ground surface or less and are not representative of subsurface conditions at the Aeration Basin.

Comment 5

In Section 7.1 (Conclusions), regarding soil cumulative risk calculations, the Permittee states, "[t]he cumulative carcinogenic risk is 1.36×10^{-3} assuming residential land use and 6.3×10^{-5} for non-residential land use at SWMU No. 1. The cumulative carcinogenic risk is 1.41×10^{-3} assuming residential land use and 6.93×10^{-5} for nonresidential land use at SWMU No. 14. The hazard index for residential land use is 0.56 and for non-residential land use is 0.126 at SWMU

No. 1. The hazard index for residential land use is 1.30 and for non-residential land use is 0.384 at SWMU No. 14." The Permittee did not define the extent of contamination at the Aeration Basin; therefore, the cumulative risk calculations are not necessarily representative of site conditions. Cumulative risk must be calculated after the site has been fully characterized.

Comment 6

In Section 7.1 (Conclusions), regarding groundwater cumulative risk calculations, "[a] cumulative risk evaluation for groundwater is presented in Tables 14 and 15 for SWMUs No. 1 and No. 14, respectively. The evaluation was conducted by taking the maximum reported concentration of each constituent detected in groundwater, which is based on the totals analyses for metals, and dividing by the risk-based residential screening levels, as shown in the equation above in the discussion for soil. The cumulative carcinogenic risk level is calculated to be 1.74×10^{-3} for SWMU No. 1 and 1.48×10^{-3} for SWMU No. 14. The hazard index is 147.04 for SWMU 1 and 79.55 for SWMU 14." Groundwater contaminant concentrations must meet the lower of the EPA Maximum Contaminant Levels (MCLs) or the WQCC standards as specified in Permit Section IV.D.1. It is noted that the calculated risk for groundwater is unacceptable even though the extent of contamination has not been defined.

Comment 7

In Section 7.1.1 (Aeration Basin) the Permittee states, "[b]enzene was the only constituent detected above the DAF screening level in soil boring SWMU 1-28 at a depth of 1.5 – 2.0' bgl (2.53 mg/kg vs. 0.796 mg/kg). Soil boring SWMU 1-28 is located on the northern boundary of the Aeration Basin and the 1.5 – 2.0' interval is composed of a clayey gravelly sand, which was damp, but not saturated. The boring was terminated at 4 feet bgl in the same material." The Permittee did not collect a soil sample at the bottom of this boring; therefore, it is not known if benzene concentrations increase at depth. The highest PID reading from the boring was from the 2-4 foot sample interval (although the PID reading was low at 4.8). Further investigation of the vertical extent of contamination must be conducted. It is also not clear why a sample was not collected from the bottom of this boring, generally, when attempting to define the vertical extent of contamination; samples are collected for laboratory analyses from the bottom of boreholes.

Comment 8

In Section 7.1.1 (Aeration Basin), under the "Soils" heading, page 63, the Permittee states, "[o]verall, there were few exceedences of the DAF screening levels in the soil samples collected around the Aeration Basin. Only 3 (SWMU 1-1 (2-4'), SWMU 1-1 (10-12'), and SWMU 1-28 (1.5-2') out of 103 soil samples collected around the Aeration Basin exceeded DAF screening levels. The vertical impacts to soil were found to extend to the uppermost groundwater-bearing horizons in some borings around the Aeration Basin." Not surprisingly, the borings advanced around the Aeration Basin contained relatively low contaminant concentrations, but no borings were collected on the inner part of the berms, the berms separating the ponds, or within the ponds themselves; therefore, the unit has not been fully characterized. The groundwater analytical results demonstrate that there was migration of contaminants from the Aeration Basin.

Comment 9

Depth to bedrock appears to vary greatly around the Aeration Basin. The depth to bedrock can be correlated to the depth of shallow groundwater. Shallow groundwater is present in the area of the Aeration Basin and the OAPIS, contrary to the Permittee's statement that shallow groundwater is coming from leaks from the Aeration Basin and the OAPIS, the shallow groundwater is also naturally occurring. In Section 7.1.1 (Aeration Basin), under the "Groundwater" heading, page 65, the Permittee states,

> "Based on the field evidence of potential impacts at borings SWMU 1-4 and SWMU 1-24, two additional soil borings (SWMU 1-20 and SWMU 1-38) were drilled west of the Aeration Basin.
> At location SWMU 1-20 (located southwest of SWMU 1-4), bedrock was encountered at a depth of only 10 feet bgl and there was no indication of saturation in the boring or the clayey sand deposits, which were identified in SWMU 1-4. No groundwater sample was collected at SWMU 1-20 as the boring was dry. Soil boring SWMU 1-38 was drilled west-northwest of SWMU 1-4 and bedrock was encountered at a depth of only 6 feet bgl. Once again, the clayey sand deposits, which were saturated in boring SWMU 1-4, were not present at this location to the west of the Aeration Basin. No groundwater sample was collected at SWMU 1-38 because the boring was dry. Based on the results of borings SWMU 1-20 and SWMU 1-38, it does not appear that the saturated zones found in SWMU 1-4 and SWMU 1-24 extend beyond the base of the slope on the west side of the Aeration Basin where borings SWMU 1-20 and SWMU 1-38 were completed."

Bedrock is present anywhere from 6 feet to over 30 feet below the ground surface at the facility. Between the top of bedrock and the ground surface, the Chinle (bedrock)/Alluvium Interface and other relatively coarser-grained intervals often contain groundwater. In Section 7.1.1 (Aeration Basin), page 65, under the "Groundwater" heading the Permittee states, "SWMU 1-24 was drilled to a depth of 34 feet, but bedrock was not encountered. A saturated interval of clayey silt/sand was identified from 24 to 28 feet bgl. A groundwater sample collected from this boring found benzene, 1-methylnaphthalene, DRO, and naphthalene at concentrations above their screening levels." Boring SWMU 1-24 is located on the western berm of EP-1. The clayey sand interval is unpredictable and difficult to trace and may be present in some borings and not in others or may be present with more frequency in some borings compared to others. In Section 7.1.1 (Aeration Basin), under the "Groundwater" heading, page 64, the Permittee states, "soil boring SWMU 1-2 was drilled along the southwest side of the Aeration Basin and encountered bedrock at a depth of 19.5 feet bgl. There were several saturated soil intervals encountered in this boring including clayey sand from 8 to 11 feet, 14 to16 feet, 17 to 17.25 feet, and 18.25 to18.5 feet bgl." The shallow groundwater and the clayey sand layers represent groundwater flow paths throughout the facility that can allow contaminants to migrate. Any proposed remedy for the

Aeration Basin or the OAPIS must take into account the presence of these groundwater contaminant flow paths. See also Comment 3. No revision is required.

Comment 10

In Section7.1.1 (Aeration Basin), under the "Groundwater" heading, page 66, the Permittee states, "[t]he saturated intervals in most locations consist of clayey sand, which was found to not be very productive during sample collection activities. The clayey sand intervals do not appear to be laterally continuous at most locations based on the inability to correlate zones between most of the soil borings completed around the perimeter of the Aeration Basin. It also appears that the source of recharge to the saturated intervals found in the borings around the Aeration Basin is the wastewater, which has been maintained in the Aeration Basin. As the Aeration Basin is removed from service and the liquids are removed, it is probable that the saturation observed in borings SWMU 1-2, SWMU 1-3, SWMU 1-4, SWMU 1-5, SWMU 1-6, SWMU 1-7, SWMU 1-8, SWMU 1-24, and SWMU 1-37 will dissipate." While the hydraulic conductivity of the clayey sand layers may not be very high, the interval(s) represent contaminant migration pathways. Additionally, it has been assumed that the Aeration Basin was set into dense clay that acted as a barrier for the unlined ponds; it is obvious now that the permeability of some soils allowed wastewater to seep into the surrounding soils. It also appears that the same soil permeability allowed groundwater to seep into the Aeration Basin. See also Comments 3 and 10. No revision is required.

Comment 11

In Section 7.1.2 (Old API Separator), under the "Soils" heading, page 67, the Permittee states, "[t]he highest concentrations were found in soil samples collected directly beneath the former location of the OAPIS at borings SWMU 14-12, SWMU 14-13, and SWMU 14-14, and at borings immediately adjacent to the OAPIS (e.g., SWMU 14-15, SWMU 14-16, and SWMU 14 -17). In addition, there is an area of elevated concentrations at depths of 8 to 12 feet bgl located near the west end of the former OAPIS, near borings SWMU 14-6 and SWMU 14-7, and extending north towards the location of the former benzene strippers." The high concentrations of contaminants detected in the soils demonstrate that wastewater was likely historically released from the OAPIS. See also Comment 2.

Comment 12

In Section 7.1.2 (Old API Separator), under the "Soils" heading, page 67, the Permittee states, "[a]ll constituents except benzene were found below their respective DAF screening levels to the east of the OAPIS in boring SWMU 1-23. Benzene was detected at 1.1 mg/kg vs. a DAF screening level of 0.796 mg/kg in silty clay at a depth of 12 – 14 feet in SWMU 14-23." The constituents detected in boring SWMU 14-23 may be from a source other than the OAPIS. No response is required, although further investigation may be warranted to determine if there is an upgradient source of soil contamination east of the OAPIS.

Comment 13

In Section 7.1.2 (Old API Separator), under the "Soils" heading, page 67, the Permittee states, "[t]he extent of impacts to soil was not defined to the north toward the Aeration Basin, as

demonstrated by impacts found in soil boring SWMU 14-3, which is located approximately half way between the former OAPIS and the Aeration Basin. It is possible that the impacts to soil may extend continuously between the OAPIS and the Aeration Basin, which are separated by only a short distance of approximately 60 feet. The vertical impacts to soil were found to extend to the uppermost groundwater-bearing horizons in borings SWMU 14-2 and SWMU 14-3." The Permittee recommends, on page 68, that "[t]he area between the OAPIS and the Aeration Basin is relatively small and does not warrant additional investigation to determine if there is possible separation of impacts sourced from the two different SWMUs." NMED concurs that further investigation is not needed in this area between the units; however, any earth moving or excavation in this area must include sampling to demonstrate that all contaminated soils are addressed. No revision is required.

Comment 14

In Section 7.1.2 (Old API Separator), under the "Groundwater" heading, page 68, the Permittee states, "[s]oil boring SWMU 14-2 was drilled to a depth of 26 feet, but did not encounter bedrock, nor was there any distinct saturated interval logged in this boring. Soil boring SWMU 14-3 was also drilled to a depth of 26 feet and did not encounter bedrock. An indication of potential saturation was observed near the top of a clay horizon in SWMU 14-3 at 14 feet bgl. Groundwater production was very slow from both of these locations, indicating the lack of a true aquifer." The Permittee is aware that there is shallow groundwater at the facility and that meets the definition of groundwater in Permit Section I.I and therefore must meet the groundwater cleanup standards. Low flow groundwater sampling techniques are used at the facility because of low recharge rates in many of the groundwater monitoring wells; the Permittee is aware that many groundwater wells have slow recharge rates at the facility. See also Comment 3 and Comment 10.

Comment 15

The manner in which the Permittee presents the soil analytical data for the Aeration Basin and the OAPIS makes it difficult to interpret because soil sample depths are not presented in order (e.g., from the top of the soil strata to the bottom of the borehole). The data presentation makes it more difficult than necessary to visualize any trends in the data set. In the future, please ensure that data tables present data in a way that makes sense for interpretation. No revision is required.

If you have questions regarding this Approval, please contact Kristen Van Horn of my staff at 505-476-6046.

Sincerely,

John E. Kieling
Chief
Hazardous Waste Bureau

cc: D. Cobrain NMED HWB
K. Van Horn NMED HWB
C. Chavez OCD
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File: Reading File and WRG 2017 File
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