



**Certified Mail - Return Receipt Requested**

July 15, 2021

George H. Cushman  
Headquarters, Department of the Army  
Office of the DCS, G-9  
Army Environmental Office, Room 5C140  
600 Army Pentagon  
Washington, DC 20310-0600

**RE: DISAPPROVAL  
FINAL GROUNDWATER PERIODIC MONITORING REPORT  
JANUARY THROUGH JUNE 2020  
FORT WINGATE DEPOT ACTIVITY  
MCKINLEY COUNTY, NEW MEXICO  
EPA ID# NM6213820974  
HWB-FWDA-21-001**

Dear Mr. Cushman,

The New Mexico Environment Department (NMED) is in receipt of the Fort Wingate Depot Activity (Permittee) *Final Groundwater Periodic Monitoring Report January through June 2020* (Report), dated March 2021. NMED has reviewed the Report, and hereby issues this Disapproval with the following comments.

**GENERAL COMMENTS**

**1. Inaccuracies/Discrepancies**

**NMED Comment:** The Report contains inaccuracies and discrepancies. Examples are listed as follows:

- a. **Section 5.2.4, Volatile Organic Compounds, lines 29-32, page 5-3:** The Permittee states, "[g]roundwater contamination from volatile organic compounds (VOCs) at concentrations above groundwater screening values is limited to a small number of shallow alluvial monitoring wells (TMW33, TMW35, TMW08, MW20, MW18D,

MW01) in the Administration Area.” However, According to Table 5-5, *Summary of VOC Analytical Results*, the VOC concentrations in the groundwater samples collected from wells TMW35, TMW08, MW20, and MW01 did not exceed the applicable screening levels. Resolve the discrepancy in the revised Report.

- b. **Section 5.3, Variances from the Work Plan, lines 25-26, page 5-5:** The Permittee states, “[a]ll analytical and data quality methods and procedures for the October 2019 sampling event were performed in accordance with the QSM (DoD/DoE, 2019).” This Report summarizes the sampling event conducted in April 2020. Correct the typographical error in the revised Report.
- c. **Section 6.0, Summary, lines 28-29, page 6-1:** The Permittee states, “[n]itrate, perchlorate, explosives, TPH-DRO, one VOC, and metals were detected in groundwater samples at concentrations above the selected groundwater screening values.” However, Section 5.2.5, *Other Organic Compounds*, lines 18-19, page 5-4, states, “[o]ne SVOC was detected above the respective screening level during this reporting period; bis(2-Ethylhexyl)phthalate was detected at 41 µg/L in monitoring well TMW07.” The exceedance of the SVOC screening level is not included in the statement. Resolve the discrepancy in the revised Report.
- d. **Figure 4-1, Northern Area Alluvial Groundwater Contour Map – January 2020 and Figure 4-2, Northern Area Alluvial Groundwater Contour Map – April 2020:** Although Table 4-1, *Northern Area Groundwater Elevations*, page 10 of 38, appropriately retains well TMW02 as an alluvial well, Figures 4-1 and 4-2, which present alluvial groundwater contour maps, do not depict well TMW02. Revise the figures to include well TMW02 in the revised Report.
- e. **Figure 4-3, Northern Area Bedrock Groundwater Elevation Map – January 2020 and Figure 4-4, Northern Area Bedrock Groundwater Elevation Map – April 2020:** Although Table 4-1, *Northern Area Groundwater Elevations*, page 10 of 38, appropriately retains well TMW02 as an alluvial well, Figures 4-3 and 4-4, which present bedrock groundwater elevations, depict well TMW02. Since well TMW02 is screened in the alluvial aquifer, revise the figures to remove well TMW02.
- f. **Table 4-1, Northern Area Groundwater Elevations, page 25 of 38:** According to Table 4-1, the groundwater elevation in well TMW54 is recorded as 6,664.28 feet as measured in April 2020. Since the ground surface elevation and total depth of the well are recorded as 6,708.77 feet and 40.0 feet, respectively, the elevation of the total depth of the well is 6,668.77 feet, which is 4.49 feet higher than the measured groundwater elevation of 6,664.28 feet. Provide an explanation for the discrepancy in the response letter or correct the error.

- g. **Table 5-6, Summary of TPH and SVOC Analytical Results, page 8 of 10:** According to Table 5-6, the TPH-GRO concentration in the groundwater sample collected from TMW30 on April 24, 2020 is recorded as  $< 10 \mu\text{g/L}$ . However, according to Table 2-2, *Northern Area Groundwater Sampling Matrix*, TPH-GRO is not included in the analytical suite required for well TMW30. Explain why well TMW30 was sampled for TPH-GRO in April 2020 or correct the typographical error in the revised Report.

As Previously stated, these types of errors result in extended review times for NMED. The Permittee must review all documents for accuracy prior to submittal to NMED.

## 2. Legibility of the Report

**NMED Comment:** A hard copy of the Report contains multiple pages where fonts were distorted and illegible. While the electronic copy of the Report does not have this issue, the Permittee must ensure that all future submittals, both hard copy and electronic, are legible.

## 3. Laboratory Analytical Reports

**NMED Comment:** The Permittee provided large quantities of data with no indication where to locate a specific sample within a specific analytical laboratory report. NMED previously provided comments to the Permittee on multiple occasions regarding this issue. For example, NMED's November 7, 2018 *Disapproval Final Permittee-Initiated Interim Measures Report Parcel 6, Revision 1* (Disapproval) states:

For every document that includes analytical data, provide a link for each specific sample to a specific lab report filename (if multiple files are provided) or to a page number in the appendix where the specific lab report can be found (if multiple lab reports are combined into one large file). For Appendices C and F, the lab reports are indexed by lab report number. The Permittee must provide a link to the lab report number for each analyte. For Appendix J, no indexing is provided and multiple laboratory reports are combined. The Permittee must either provide indexing for each report and indicate which particular report contains a particular sample, or provide specific page numbers for each sample ID that indicates where the sample can be found in the lab reports. This information can be provided either in a new table or in the analytical data electronic database.

In addition, although Section 2.3, *Data Management Validation*, lines 31-32, page 2-3, states, "[r]esults were subjected to 100% Level II and 10% Level III validation using the ADR software", the laboratory reports included in Appendix D-2, *EMAX Electronic Data Deliverables*, appear to be level IV reports (e.g., inclusion of chromatograms). The Permittee has previously been directed to not submit level IV analytical laboratory reports. NMED's November 7, 2018 Disapproval also states:

The Report includes Level IV reports from the analytical laboratories. This has resulted in over 18,000 pages of laboratory reports for this Report. These reports are unneeded and cumbersome. NMED requests that only Level II analytical laboratory reports be included in all submittals. Revise the Report by removing Level IV analytical reports and including Level II analytical reports.

Remove all of the Level IV analytical reports from the revised Report and replace them with Level II analytical reports. Once the Level II reports are provided, the Permittee must provide a link for each specific sample to a specific laboratory report per the quoted comment. This is a requirement for all data submitted in all reports. Provide a table including, or revise the data tables to include, this information in the revised Report.

#### **SPECIFIC COMMENTS**

##### **4. Executive Summary, lines 23-26, page ES-1**

**Permittee Statement:** "six were dry in April 2020 (FW35, MW18S, and MW22S from the existing wells, and TMW54, TMW56, and TMW60 from the 32 new wells). These wells were considered dry since the measured water level was less than six inches from the bottom of the well screen."

**NMED Comment:** According to Table 4-1, *Northern Area Groundwater Elevations*, page 25 of 38, the groundwater elevation in well TMW56 is recorded as 6,657.28 feet during the April 2020 measurement. Since the ground surface elevation and total depth of the well are recorded as 6,705.44 feet and 50.0 feet, respectively, the elevation of the total depth is calculated as 6,655.44 feet, which indicates the presence of 1.84 feet of water in the well. Provide an explanation for why this well is considered "dry" when the data indicate that more than six inches (1.84 feet) of water was present. Revise all relevant sections, tables, and figures of the Report, as appropriate.

##### **5. Executive Summary, lines 13-18, page ES-3**

**Permittee Statement:** "NMED approved a Groundwater Supplemental RCRA Facility Investigation (RFI) to further assess the groundwater plumes at FWDA. Work completed during the RFI included the installation of 32 new wells in 2019 (24 screened in the alluvial groundwater unit and eight (8) screened in bedrock) throughout the Northern Area to further assess contaminant plumes and further characterize groundwater flow in the alluvial and bedrock formations."

**NMED Comment:** NMED approved the work plan for the investigation; clarify that the approval was for the work plan. The Permittee failed to submit the Groundwater Supplemental RFI Report to NMED on the required date of February 8, 2019. The report is

over two years past due and subject to enforcement action. Data provided from the wells installed for the RFI are not considered valid until the Groundwater Supplemental RFI Report has been reviewed and approved by NMED.

**6. Section 3.0, Regulatory Criteria, lines 14-15, page 3-1**

**Permittee Statement:** "The GWMP has been revised annually and submitted to NMED from 2009 through 2018."

**NMED Comment:** The groundwater monitoring plans are required to be updated annually in accordance with the Permit Section V.A.4, but were not updated annually. For example, the 2018 update was not submitted. The most recent groundwater monitoring plan was submitted in April 2020. Accordingly, the statement is not accurate. Correct the statement for accuracy in the revised Report.

**7. Section 4.1, Northern Area Groundwater Elevations, lines 16-18, page 4-1, and Section 4.1.2, Northern Area Bedrock Groundwater System, line 27, page 4-2**

**Permittee Statements:** "As directed in an NMED Disapproval Letter dated August 7, 2017, water-level elevation contours were not prepared for the bedrock wells (NMED, 2017)." and, "The 32 new monitoring wells installed in 2019, of which eight are bedrock wells."

**NMED Comment:** In addition to the eight bedrock wells installed in 2019, four bedrock wells (BGMW07 through BGMW10) were installed in 2018. With these new wells, there may be an adequate number of data points to prepare water-level elevation contours for the bedrock aquifer. Evaluate whether there are a sufficient number of data points to prepare water-level contours for the bedrock aquifer and present groundwater contour maps for the bedrock aquifer in future groundwater periodic monitoring reports, as appropriate. No revision required. The Permittee is reminded that data provided from the wells installed for the RFI are not considered valid until the Groundwater Supplemental RFI Report has been reviewed and approved by NMED.

**8. Section 5.1, Water Quality Parameters, lines 30-32, page 5-1**

**Permittee Statement:** "Measured ORP values (<~200 mV) indicate reducing conditions are present in groundwater in some areas of FWDA. Measured ORP values are offset from the actual potential (Eh) by approximately 200 mV."

**NMED Comment:** Provide a reference to the ORP to Eh conversion method. In addition, explain the purpose of converting ORP to Eh in the response letter.

**9. Section 5.2.1, Nitrate and Nitrite, lines 16-18, page 5-2**

**Permittee Statement:** “Note that monitoring Well TMW27 was sampled for nitrate/nitrite and although the result was non-detect, this well was not supposed to be sampled for nitrate/nitrite and thus is not shown in the figures, only in Table 5-2. This statement is also included in the Variances of the Work Plan, Section 5.4 of this PMR.”

**NMED Comment:** The referenced section above is Section 5.3 rather than 5.4. Correct the typographical error. In addition, the nitrate and nitrite concentrations in the groundwater samples collected from well TMW27 must be included in Figure 5-1 because this additional data indicates the absence of nitrate west of well SMW01. Revise the figure to include the data collected from well TMW27 in the revised Report.

**10. Section 5.2.2, Explosives Compounds, lines 41-42, page 5-2**

**Permittee Statement:** “Changes in RDX concentrations over time are plotted for wells TMW03, TMW04, TMW23, and TMW40S in Appendix F.”

**NMED Comment:** According to Appendix F, *RDX vs. Time Plots*, the RDX concentrations in the samples collected from these wells fluctuate over time. Discuss the potential cause of the fluctuation in the response letter. The fluctuation of the RDX concentrations may correlate with changes in groundwater elevations. Include the groundwater elevations in the plots in future groundwater periodic monitoring reports, as appropriate.

**11. Section 5.2.5, Other Organic Compounds, lines 23-24, page 5-4**

**Permittee Statement:** “Detections of 1,4-Dioxane were not identified from the analytical testing, although the screening level is slightly below the detection limit.”

**NMED Comment:** Section 5.4, *Data Quality Exceptions*, pages 5-5 and 5-6, lists 42 data quality exception compounds where the Limit of Detection (LOD), or Limit of Quantitation (LOQ), or both, exceed the screening levels. However, 1,4-dioxane is not included in the list even though the screening level is below the detection limit. Include 1,4-dioxane in the list and revise all relevant sections of the Report (e.g., Table 3-1).

**12. Section 5.4, Data Quality Exceptions, lines 28-29, page 5-5**

**Permittee Statement:** “There are a total of 42 data quality exception compounds where the Limit of Detection (LOD), or Limit of Quantitation (LOQ), or both, exceed the screening level as shown in Table 3-1.”

**NMED Comment:** It is impossible to demonstrate whether these 42 compounds and 1,4-dioxane are absent or present at concentrations above the applicable screening levels. NMED previously provided several comments intended to resolve this recurring issue.

Comment 12 of the NMED's *Approval with Modifications Revised Final 2022 Interim Northern Area Groundwater Monitoring Plan*, dated March 8, 2021, states, "[t]he February 1, 2021 email from Mr. Wear of NMED to Mr. Cushman of FWDA provides a clarification and direction regarding the analytes where LOQ exceeds the applicable screening levels. The email requests specific information be provided for NMED's evaluation of this recurring issue. In the response letter, provide an anticipated date when the requested information will be submitted to NMED."

Specific direction to resolve this issue was already provided to the Permittee, and NMED will evaluate the requested information once submitted. No revision is required to the Report.

### 13. Section 5.5, New Findings, lines 11-13, page 5-7

**Permittee Statement:** "Three additional monitoring wells were installed in August 2020, and these three new wells will be analyzed for 1,4-dioxane for two consecutive monitoring events starting in April 2021."

**NMED Comment:** Samples collected from 32 groundwater monitoring wells installed in 2019 were exclusively analyzed for 1,4-dioxane in April and October 2020.

Comment 8 of the NMED's *Disapproval Final Groundwater Periodic Monitoring Report July through December 2019*, dated February 1, 2021, states, "[t]he new wells should have been sampled for the full analytical suite. The Permittee was previously directed to analyze 1,4-dioxane using EPA Method 8270 Selective Ion Monitoring (SIM) in groundwater samples collected from wells where chlorinated solvents were previously detected. The Permittee failed to follow this direction. Whether or not chlorinated solvents are detected in 2021, 1,4-dioxane analysis must continue for wells where 1,4-dioxane was previously detected. Include the provision in the next groundwater monitoring plan update."

This direction applies to the three monitoring wells installed in August 2020; therefore, these wells must be sampled for the full analytical suite in 2021. Correct the statement in the revised Report.

### 14. Section 6.0, Summary, lines 35-36, page 6-1

**Permittee Statement:** "The collocated perchlorate and nitrate plumes appear to have a common source at the Building 528 Complex (SWMU 27)."

**NMED Comment:** Although the perchlorate plume may have originated from the Building 528 Complex (SWMU 27), the highest nitrate concentrations in alluvial and bedrock groundwater were found in the Workshop Area immediately downgradient of the TNT Leaching Beds (SWMU 1). The nitrate plume may have originated from the TNT Leaching Beds (SWMU 1) rather than the Building 528 Complex (SWMU 27). Correct the statement for accuracy in the revised Report.

The Permittee must submit a revised Report that addresses all comments contained in the attachment. Two hard copies and an electronic version of the revised Report must be submitted to the NMED. The Permittee must also include a redline-strikeout version in electronic format showing where all revisions to the Report have been made. The revised Report must be accompanied with a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. The Revised Report must be submitted to NMED no later than **October 15, 2021**.

Should you have any questions, please contact Michiya Suzuki of my staff at (505) 690-6930.

Sincerely,



Ricardo Maestas, Acting Chief  
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB  
B. Wear, NMED HWB  
M. Suzuki, NMED HWB  
L. McKinney, EPA Region 6 (6LCRRC)  
L. Rodgers, Navajo Nation  
S. Begay-Platero, Navajo Nation  
M. Harrington, Pueblo of Zuni  
C. Seoutewa, Southwest Region BIA  
A. Whitehair, Southwest Region BIA  
G. Padilla, Navajo BIA  
J. Wilson, BIA  
B. Howerton, BIA  
R. White, BIA  
C. Esler, Sundance Consulting, Inc.  
M. Falcone, USACE

File: FWDA 2021 and Reading