



Michelle Lujan Grisham
Governor

Howie C. Morales
Lt. Governor

**NEW MEXICO
ENVIRONMENT DEPARTMENT**

Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6313
Phone (505) 476-6000 Fax (505) 476-6030
www.env.nm.gov



James C. Kenney
Cabinet Secretary

Jennifer J. Pruett
Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

June 14, 2019

Mark Patterson
BRAC Environmental Coordinator
Fort Wingate Depot Activity
13497 Elton Road
North Lima, OH 44452

Steve Smith
USACE
CESWF-PER-DD
819 Taylor Street, Room 3B06
Fort Worth, TX 76102

**RE: DISAPPROVAL
FINAL GROUNDWATER PERIODIC MONITORING REPORT
JANUARY THROUGH JUNE 2018
FORT WINGATE DEPOT ACTIVITY
MCKINLEY COUNTY, NEW MEXICO
EPA ID# NM6213820974
HWB-FWDA-19-001**

Dear Messrs. Patterson and Smith:

The New Mexico Environment Department (NMED) is in receipt of the Fort Wingate Depot Activity (Permittee) *Final Groundwater Periodic Monitoring Report January through June 2018* (Report), dated April 2019. NMED has reviewed the Report and hereby issues this Disapproval. The Permittee must address the following comments.

GENERAL COMMENTS

1. 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's November 7, 2018 *Disapproval Final Permittee-Initiated Interim Measures Report Parcel 6, Revision 1* 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, these laboratory reports are level IV reports. The Permittee has previously been directed to not submit level IV analytical laboratory reports. NMED's November 7, 2018 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.

Failure to follow NMED direction constitutes noncompliance and may result in an enforcement action. Remove Level IV analytical reports from the revised Report and replace them with Level II analytical reports.

2. Inaccuracies/Discrepancies

NMED Comment: The Report contains multiple inaccuracies and discrepancies. Some of them are listed as follows:

- a. **Section 4.1.1, Northern Area Alluvial Groundwater System, lines 38-40, page 4-1:** The Permittee states, "[t]his mound may be the result of leakage from the inactive artesian water supply Well 69. Well 69 is currently used as a minor non-potable water supply at FWDA." The statement indicates that Well 69 is inactive but used as a non-potable water supply well. This statement is contradictory. Resolve the discrepancy in the revised Report.
- b. **Section 5.2.5, Other Organic Compounds, line 24, page 5-5:** The Permittee states, "2-chloronaphthalene (0.70 J ug/L at alluvial monitoring well TMW47) [is the highest chloromethane detection]." The compound is also detected in bedrock monitoring well TMW31D according to Table 5-6. Since the highest detections in both alluvial and bedrock wells are listed throughout the Report, the detection in bedrock well TMW31D must also be included in the statement for consistency. Correct the statement in the revised Report.
- c. **Figure 4-4, Northern Area Bedrock Groundwater Elevation Map April 2018:** Background well BGMW10 in Figure 4-4 is designated as BMW10 in Table 4-2, *Northern*

Area Groundwater Elevations (Wells Screened in Bedrock). Resolve the discrepancy in the revised Report.

- d. Figure 5-7, Northern Area VOC Concentrations in Alluvial Groundwater, April 2018:** The acetone concentration in the groundwater sample collected from well TMW41 is recorded as 1.6 ug/L in Figure 5-7. However, according to Table 5-5, *Summary of Volatile Organic Compound Analytical Results (ug/L)*, the acetone concentration is recorded as 1.6 U ug/L, indicating not detected. Resolve the discrepancy in the revised Report.
- e. Figure 5-7, Northern Area VOC Concentrations in Alluvial Groundwater, April 2018:** The methyl acetate concentration in the groundwater sample collected from well TMW46 is recorded as 1.5 ug/L in Figure 5-7. However, according to Table 5-5, the methyl acetate concentration is recorded as 1.5 UJ ug/L, indicating not detected estimated. Resolve the discrepancy in the revised Report.
- f. Figure 5-8, Northern Area VOC Concentrations in Bedrock Groundwater, April 2018:** The carbon disulfide concentration in the groundwater sample collected from well TMW31D is recorded as 0.37 ug/L in Figure 5-8. However, according to Table 5-5, the carbon disulfide concentration is recorded as 0.37 J ug/L. Resolve the discrepancy in the revised Report.
- g. Figure 5-9, Northern Area SVOC and TPH Concentrations in Alluvial Groundwater, April 2018:** The concentration unit for TPH-DRO is shown as milligrams per liter (mg/L) in Figure 5-9. However, according to Table 5-6, *Summary of Semi-volatile Organic Compound and Total Petroleum Hydrocarbons Analytical Results (ug/L)* and the text of Section 5.2.5, the unit is shown as micrograms per liter (ug/L). Resolve the discrepancy in the revised Report.
- h. Figure 5-9, Northern Area SVOC and TPH Concentrations in Alluvial Groundwater, April 2018:** The TPH-DRO concentration in the groundwater sample collected from well TMW34 is recorded as 0.6 J mg/L in Figure 5-9. However, according to Table 5-6, the TPH-DRO concentration is recorded as 0.06 J ug/L. Resolve the discrepancy in the revised Report.
- i. Figure 5-9, Northern Area SVOC and TPH-Concentrations in Alluvial Groundwater, April 2018:** The phenanthrene concentration in the groundwater sample collected from well TMW43 is recorded as 0.295 ug/L in Figure 5-9. However, according to Table 5-6, the phenanthrene concentration is recorded as 0.29 J ug/L. In addition, Table 5-6 indicates that acetophenone is positively detected at 0.33 J ug/L in well TMW43; however, the detection of acetophenone is not recorded in Figure 5-9. Resolve the discrepancies in the revised Report.
- j. Figure 5-10, Northern Area SVOC and TPH Concentrations in Bedrock Groundwater, April 2018:** Table 5-6 indicates that 2-chloronaphthalene is positively detected at 0.31 J ug/L in well TMW31D; however, the detection of 2-chloronaphthalene is not recorded in Figure 5-10. Resolve the discrepancy in the revised Report.

Although the quality of the Report is improved compared to the previous periodic monitoring reports, there are still many errors that can be easily eliminated by more thorough review.

SPECIFIC COMMENTS

3. Executive Summary, lines 37-38, page ES-1

Permittee Statement: “Army will resume groundwater monitoring activities within Parcel 3 once hazardous operations are completed.”

NMED Comment: The *Final Revision 1 Parcel 3 Groundwater RCRA Facility Investigation Report*, dated March 31, 2019 states, “[T]he Army will prepare a separate simplified groundwater monitoring work plan for Parcel 3 groundwater monitoring for 8 quarterly events, upon approval of requested funding.” The statement is contradictory. Correct the statement in the revised Report, as necessary. As a reminder, it is incumbent upon the Permittee to provide appropriate funding to meet the requirements of the FWDA RCRA Permit.

4. Executive Summary, lines 42-43, page ES-1, and Section 4.1.1, Northern Area Alluvial Groundwater System, line 42, page 4-1 and line 1, page 4-2

Permittee Statements: “Hydraulic gradients in alluvium ranged from 0.002 foot per foot (ft/ft) to 0.03 ft/ft.”

NMED Comment: Although the reference points for groundwater hydraulic gradients in the bedrock unit are discussed in Section 4.1.2, *Northern Area Bedrock Groundwater System*, the reference points for the alluvial unit is not discussed in the Report. Provide the reference points used to calculate the alluvial groundwater gradients in the revised Report.

5. Executive Summary, lines 3-5, page ES-2, and Section 4.1.2, Northern Area Bedrock Groundwater System, lines 16-18, page 4-2

Permittee Statements: “Groundwater elevation in the bedrock groundwater unit is slightly higher than in the alluvial groundwater unit and exists under hydraulically confined conditions in most of the northern area.”

NMED Comment: According to Table 4-1, *Northern Area Groundwater Elevations (Wells Screened in Alluvial Sediments)*, the groundwater elevations in alluvial wells TMW31S and TMW39S are recorded as 6,669.69 feet and 6,671.09 feet, respectively in April 2018. According to Table 4-2, *Northern Area Groundwater Elevations (Wells Screened in Bedrock)*, the groundwater elevations in bedrock wells TMW31D and TMW39D are recorded as 6,669.66 feet and 6,670.59 feet, respectively in April 2018. Groundwater elevation in the alluvial groundwater unit is slightly higher than in the bedrock groundwater

unit at these locations. Evaluate the accuracy of the statements and correct the statements in the revised Report, as necessary.

6. Executive Summary, lines 21-23, page ES-2

Permittee Statement: “The nitrate plume in the alluvial groundwater unit appears to originate from the trinitrotoluene (TNT) Leaching Beds (solid waste management unit [SWMU] 1) and extends downgradient to the Administration Area.”

NMED Comment: According to Figure 5-1, *Northern Area Nitrate and Nitrite Concentrations in Alluvial Groundwater, April 2018*, the nitrate concentrations in the vicinity of the TNT Leaching Beds are the highest; the nitrate concentrations in groundwater samples collected from alluvial wells TMW03 and TMW40S are recorded as 120 mg/L and 140 mg/L, respectively. It is apparent that one of the nitrate sources is the TNT Leaching Beds. However, the elevated nitrate level in the vicinity of the TNT Leaching Beds does not appear to be continuous toward the Administration Area. The nitrate concentrations in groundwater samples collected from alluvial wells TMW34 and TMW46 are recorded as 77 mg/L and 78 mg/L, respectively. These wells are located within and downgradient of the Administration Area. The nitrate levels directly downgradient of the TNT Leaching Beds and upgradient of the Administration Area (area located between the TNT Leaching Beds and Administration Area) are lower than those recorded in wells TMW34 and TMW46. A separate source of the nitrate plume that extends west/northwest from the Administration Area may be present. To better understand the characteristics of the nitrate plume(s) in alluvial groundwater, include additional concentration contour lines (e.g., 5, 10, 20, 50, 100 mg/L) in Figure 5-1. In addition, discuss whether or not there is a potential for a more recent release from the Administration Area that affects nitrate level in groundwater (e.g., sewer line leaks) in the revised Report.

7. Executive Summary, lines 10-13, page ES-3, and Section 5.2.6, Metal, lines 2-6, page 5-7

Permittee Statements: “Background groundwater concentrations of dissolved or total metals have not been accepted by NMED for FWDA, so it cannot clearly be demonstrated whether the detected concentrations are a result of natural background conditions or anthropogenic sources of contamination.”

and,

“It cannot clearly be demonstrated whether the detected concentrations are a result of natural conditions or anthropogenic sources of contamination because background metal groundwater concentrations have not yet been accepted by the regulators for FWDA. Therefore, no contaminant plume maps were created for the total or dissolved metals data, and results are not discussed in this GPMR.”

NMED Comment: The Permittee was directed to submit a background groundwater monitoring well completion report following installation as directed by the NMED’s Approval letter, dated February 16, 2018. Since background groundwater monitoring wells BGMW07, BGMW08, BGMW09, and BMW10 (sic) were installed at this time, submit the

well completion report for the well installations no later than **October 25, 2019**. In addition, evaluate background metal concentrations in the northern groundwater area in a separate submittal. Revise the Report to incorporate the provision.

8. Executive Summary, lines 21-22 and 26-28, page ES-2

Permittee Statements: “The nitrate plume in the alluvial groundwater unit appears to originate from the trinitrotoluene (TNT) Leaching Beds (solid waste management unit [SWMU] 1)...”

and,

“The collocated perchlorate and nitrate plumes appear to have a common source at the Building 528 Complex (SWMU 27).”

NMED Comment: The statements indicate that the nitrate plume in the alluvial groundwater originates from the TNT Leaching Beds while the nitrate plume in the bedrock groundwater originates from the Building 528. Since the alluvial nitrate plume overlies the bedrock nitrate plume in the vicinity of bedrock well TMW02, the source of nitrate in the bedrock aquifer may also originate from alluvial groundwater that contains concentrations of nitrate. Evaluate whether alluvial groundwater migrates into the bedrock aquifers and is a source of the nitrate contamination in the revised Report.

9. Section 4.1.1, Northern Area Alluvial Groundwater System, lines 36-39, page 4-1

Permittee Statement: “The cistern is no longer in service, and the groundwater mound was expected to attenuate over time. However, the groundwater mound is still observed in the water-level data for monitoring well MW02. This mound may be the result of leakage from the inactive artesian water supply Well 69.”

NMED Comment: Despite the overall decreasing trend in groundwater elevations at the facility, the groundwater elevation in well MW02 has increased in recent years according to Table 4-1. Since well MW02 is located close to Well 69, the increase in groundwater elevation may be the result of the leakage. Comment 7 in the NMED’s *Disapproval Final Groundwater Periodic Monitoring Report, July through December 2017*, dated September 4, 2018, directed the Permittee to submit a work plan to investigate whether Well 69 is leaking. The Permittee’s response states, “[t]he Army is currently contracting an investigation by visual inspection (lowering a video camera) and to be followed up with abandonment of Well 69. The Video report including results of that investigation will be provided to NMED.” The Video report was received on May 29, 2019 and provided no useful information. The Permittee has been directed to re-conduct the video log.

10. Section 5.1, Water-Quality Parameters, line 33, page 5-1

Permittee Statement: “DO values ranged from 0.0 to 15.96 mg/L...”

NMED Comment: The solubility limit of oxygen in fresh water at a temperature of 25 °C under atmospheric pressure is approximately 8 mg/L. The field instrument must be calibrated daily (according to manufacturer specifications) prior to conducting the measurements in all future sampling events. The required calibration procedure for the instrument must be described in the appropriate section of the revised Report. In addition, field technicians must be trained to identify “out of spec” conditions so that remedies can be implemented in the field. If the issue cannot be resolved, investigate alternate instruments for measuring DO concentrations.

11. Section 5.2.2, Explosive Compounds, lines 17-18, page 5-3

Permittee Statement: “Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) (1,000 µg/L at alluvial monitoring well TMW40S) [was the highest RDX detection].”

NMED Comment: Comment 10 in the NMED’s September 4, 2018 Disapproval directs the Permittee to propose to conduct explosive compound analysis for the groundwater samples collected from well TMW13 located near TMW40S where the highest RDX detection was recorded. Update the upcoming Interim Facility-Wide Groundwater Monitoring Plan (IFGMP) accordingly.

12. Section 5.2.3, Perchlorate, lines 18-20, page 5-4

Permittee Statement: “This Supplemental RFI Work Plan proposes locations for additional groundwater monitoring wells necessary to further delineate the alluvial and bedrock groundwater perchlorate contaminant plumes.”

NMED Comment: The supplemental RFI Work Plan proposes alluvial wells TMW54 and TMW56 and bedrock wells TMW50, TMW58 and TMW63 that may further delineate the perchlorate plumes. Additionally, the *Letter Work Plan Downgradient Alluvial Aquifer Investigation & Installation of One Additional Well*, dated October 11, 2018, proposes the additional bedrock well TMW64 which should aid in delineation of the eastern extent of the bedrock groundwater perchlorate plume. This reference must also be included in the statement. Revise the Report accordingly.

13. Section 5.2.4, Volatile Organic Compounds, line 3, page 5-5, and Section 5.6, New Findings, lines 9-11, page 5-8

Permittee Statements: “Methyl tert-butyl ether [MTBE] (0.59 J µg/L at bedrock monitoring well TMW49) [was the highest MTBE detection].”

and,

“No new findings were identified from monitoring data collected during the monitoring event described in this GPMR. Monitoring data are generally consistent with historical data except as discussed below.”

NMED Comments: The second statement is not accurate. MTBE was not previously detected at the facility. Discuss the potential source of MTBE in the revised Report. Include discussion of the MTBE detection in Section 5.6 of the revised Report.

14. Section 5.2.5, Other Organic Compounds, lines 32-33, page 5-5

Permittee Statement: “No regulatory groundwater screening values were identified for [total petroleum hydrocarbons diesel range organics (TPH-DRO)] and [total petroleum hydrocarbons gasoline range organics (TPH-GRO)].”

NMED Comment: Comment 13 in the September 4, 2018 NMED’s Disapproval directs the Permittee to evaluate the detections relative to the screening levels listed in the *Risk Assessment Guidance for Site Investigations and Remediation Volume I Soil Screening Guidance for Human Health Risk Assessments* (Guidance), dated March 2017. The updated February 2019 Guidance is available at this time and lists the screening levels for TPH-DRO and TPH-GRO as 16.7 ug/L (Diesel #2/Crankcase Oil) and 10.1 ug/L (Gasoline), respectively. Include the screening levels in the revised Report.

15. Section 5.3, Open Burn/Open Detonation Area Analytical Results, lines 14-17, page 5-7

Permittee Statement: “No historical analytical results are available for monitoring events after April 2013. Access to the OB/OD Area has not been permitted for periodic monitoring since April 2013 due to explosive hazards associated with excavation and removal of UXO and MEC.”

NMED Comment: The May 2017 groundwater monitoring event conducted in Parcel 3 is part of the periodic monitoring event. Accordingly, the statement is not accurate. Revise the Report for accuracy. Also, refer to Comment 3.

The Permittee must submit a revised Report that addresses all comments contained in this Disapproval. 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

Messrs. Patterson and Smith

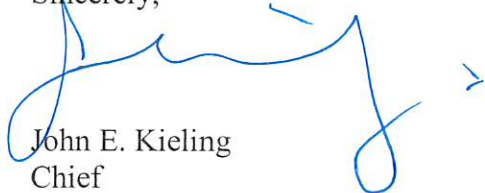
June 14, 2019

Page 9

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 **November 30, 2019**. The well installation report required by Comment 7 must be submitted no later than **October 25, 2019**.

Should you have any questions, please contact Michiya Suzuki of my staff at (505) 476-6059.

Sincerely,



John E. Kielling
Chief

Hazardous Waste Bureau

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

File: FWDA 2019 and Reading, Groundwater

