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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

November 3, 2017

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: APPROVAL WITH MODIFICATIONS
GROUNDWATER PERIODIC MONITORING REPORT
JULY THROUGH DECEMBER 2016
FORT WINGATE DEPOT ACTIVITY
MCKINLEY COUNTY, NEW MEXICO
EPA ID# NM6213820974
HWB-FWDA-17-005

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, July through December 2016* (December 2016 Report), dated August 2017. NMED has reviewed the December 2016 Report and hereby issues this Approval with Modifications. The Permittee must address the following comments.

GENERAL COMMENTS

1. The December 2016 Report was written and submitted before receipt of NMED's comments regarding the *Final Groundwater Periodic Monitoring Report, January through June 2016* (June 2016 Report). Many of the comments from the June 2016 Report carry over to the December 2016 Report. Ensure that all future reports incorporate the changes made to address the comments concerning both the June and December 2016 Reports.

2. Inaccuracies/Discrepancies

NMED Comment: The December 2016 Report contains multiple inaccuracies and discrepancies. Examples are listed below:

a. **Figure 4-2, October 2016 Northern Area Alluvial Groundwater Counter Map:** Although the groundwater elevation for PZ06 is recorded as 6,654.91 feet according to Table 4-1, *Northern Area Groundwater Elevations (Wells Screened in Alluvial Sediments),* PZ06 is shown between the contour lines of 6,660 and 6,655 feet in Figure 4-2.

b. **Figure 5-1, Fall 2016 Northern Area Nitrate and Nitrite Concentrations in Alluvial Groundwater:** The nitrite concentration in well TMW08 is recorded as 3.6 mg/L in Figure 5-1, while the value is shown as 3.5 mg/L in Table 5-2, *Summary of Nitrate-nitrogen and Nitrite-nitrogen Analytical Detections.*

c. **Section 5.1.4, Perchlorate, lines 14-15, page 5-3:** The Permittee states, "[p]erchlorate was detected in groundwater samples from nine bedrock wells, with concentrations ranging from 0.0082 J to 1,300 µg/L." The highest perchlorate concentration is recorded as 1,600 ug/L in bedrock well TMW31D according to Table 5-4, *Summary of Perchlorate Analytical Detections.*

d. **Figure 5-5, Fall 2016 Northern Area VOC, SVOC, and TPH Concentrations in Alluvial Groundwater:** The bis(2-ethylhexyl) phthalate concentration in the groundwater sample collected from well MW01 is recorded as 1.1 J ug/L in Figure 5-5. However, the SVOC analysis for the groundwater sample collected from well MW01 is not included in Table 2-1, *Fall 2016 Groundwater Sample Matrix.* In addition, Table 5-6, *Summary of Semi-volatile Organic Compounds and Total Petroleum Hydrocarbons Analytical Results* indicates that SVOCs were not analyzed for the groundwater sample collected from well MW01.

e. **Section 5.1.6, Other Organic Compounds, lines 28-31, page 5-4:** The Permittee states, "[t]he common plastic additive bis(2-ethylhexyl) phthalate may be present in a variety of laboratory and sampling equipment (including sample tubing, pump, bailer, and laboratory equipment) and was detected in samples from 16 monitoring wells." The compound was detected in groundwater samples collected from 15 monitoring wells according to Table 5-6.

f. **Section 5.1.6, Other Organic Compounds, line 14, and lines 21-23, page 5-4:** The Permittee states, "[maximum] diesel range organics (DRO) [concentration was detected at] (54 J ug/L at alluvial monitoring well MW20)," and "[t]he highest concentrations occurred in samples from shallow wells adjacent to the former fueling facility (54 J ug/L as DRO in monitoring well MW20)." The DRO concentration in groundwater sample collected from MW20 is 53 J ug/L and the maximum DRO concentration is detected at 54 J ug/L in groundwater sample collected from well MW01 according to Table 5-6.

g. **Section 6.1, Summary, lines 6-7, page 6-2:** The Permittee states, "[g]roundwater samples collected from four alluvial monitoring wells had [1,2-dichloroethane] concentrations above the EPA MCL of 5 ug/L." The 1,2-dichloroethane concentration exceeds the regulatory limit in groundwater samples collected from two alluvial monitoring wells according to Table 5-5, *Summary of Volatile Organic Compound Analytical Detections.*

h. **Section 5.1.6, Summary, lines 15-16, page 6-2:** The Permittee states, "[a] supplemental RFI Work Plan was submitted to NMED in December 2016 and is currently in regulatory review." The *Final Groundwater Supplemental RCRA Facility Investigation Work Plan, Revision 1* is dated and submitted in October 2016. Currently, NMED is reviewing the *Final Groundwater Supplemental RCRA Facility Investigation Work Plan, Revision 2*, dated and submitted in September 2017.

Ensure that all statements provided in all future plans and reports are accurate. No revisions to the December 2016 Report are necessary. Multiple inaccuracies and discrepancies have been identified in recent groundwater periodic monitoring reports. Future reports may be subject to disapproval should this trend continue.

SPECIFIC COMMENTS

3. **Table 4-1, Northern Area Groundwater Elevations, Wells Screened in Alluvial Sediments**

NMED Comment: Well FW26 was located to assess groundwater contamination in SWMU 9, POL Waste Discharge Area. Refer to Comment 6 in the *Disapproval Letter for RCRA Facility Investigation Report Parcel 7,* dated August 7, 2017. Propose the installation and sampling of a replacement monitoring well to evaluate for groundwater contamination as directed in the letter. In addition to the analytical parameters specified in the letter, nitrate and nitrite analysis must be included as the nitrate plume may extend from upgradient well TMW46 to FW26. It should be noted that the nitrate concentration in the groundwater samples collected from well TMW46 has been increasing and was recorded as 84 mg/L during the December 2016 sampling event.

4. **Section 4.1.1, Northern Area Alluvial Groundwater System, lines 31-33, page 4-1**

Permittee Statement: "However, the groundwater mound is still observed in the water level data for monitoring well MW02 and may be the result of leakage from the artesian Water Supply Well 69."

NMED Comment: Refer to Comment 4 in NMED's *Disapproval Letter for Groundwater Periodic Monitoring Report January through June 2016,* dated August 7, 2017. Provide all available construction details for the water supply well (e.g., total depth, screened interval). Provide the information in the submission of the *July – December 2017 Groundwater Monitoring Report.*

5. **Section 4.1.2, Northern Area Bedrock Groundwater System, lines 43-44, page 4-1 and lines 1-4, page 4-2**

   Permittee Statement: "Steep horizontal gradients from east to west (in particular, between monitoring wells TMW38 and TMW40D and between monitoring wells TMW17 and TWM37) indicate that a geologic structural feature impedes groundwater flow. Vertical offset of the sandstone layers in the bedrock aquifer by a fault or fracture zones may be present in this area and impede groundwater flow. Contaminant transport of perchlorate to the north (instead of to the west) also provides evidence supporting the conceptual model of a structural impediment to westerly groundwater flow in bedrock beneath the Workshop Area."

   NMED Comment: Refer to Comment 5 in NMED's *Disapproval Letter for Groundwater Periodic Monitoring Report January through June 2016,* dated August 7, 2017. For future reports, revise the statement to include the fact that the groundwater flow direction has not been fully characterized in the bedrock aquifer beneath the Workshop Area.

6. **Figure 5-1, Fall 2016 Northern Area Nitrate and Nitrite Concentrations in Alluvial Groundwater**

   NMED Comment: The nitrate concentrations in alluvial monitoring wells TMW06 and TMW07 are recorded as 13 mg/L and non-detect (ND), respectively, in Figure 5-1. These wells are in close proximity to each other. The nitrate concentration in well TMW06 has routinely exceeded the regulatory limit during the previous sampling events while the nitrate concentration in well TMW07 has been non-detect or depicting very low-level detections. The boring/well logs show no notable differences between these wells except the depths of the screened intervals. Well TMW06 is screened from 45 to 55 below ground surface (bgs) while well TMW07 is screened from 65 to 75 bgs. Discuss the potential cause of the nitrate exceedance in well TMW06 and non-detect/low-level detection in well TMW07 in the upcoming *July-December 2017 Groundwater Monitoring Report.*

7. **Table 5-5, Summary of Volatile Organic Compound Analytical Detections**

   NMED Comment: The laboratory data output in Appendix C was not accurately transferred to Table 5-5. For example, the concentrations of 1,2,4-trimethylbenzene, 1,2-dichloroethane, 1,3,5-trimethylbenzene, and n-propylbenzene in the groundwater sample collected from well TMW33 are reported as 0.48 J, 41, 2.7 J, and 1.9 J ug/L, respectively in Appendix C, while the concentration of 1,2-dichloroethane is reported as 41 J ug/L, and 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene and n-propylbenzene are not included as detected analytes in Table 5-5. Include all detected analytes and ensure that all laboratory data are accurately transferred to Table 5-5 in future reports. Additionally, all laboratory data output in Appendix C must be examined to determine whether the data are accurately transferred to the other tables, especially, Table 5-3, *Summary of Total Explosives Analytical Detections,* Table 5-6, *Summary of Semivolatile Organic Compounds and Total*

Petroleum Hydrocarbons Analytical Results, Table 5-7, *Summary of Dissolved Metals Analytical Detections,* and Table 5-8, *Summary of Total Metals Analytical Detections.*

8. Section 6.1, Summary, lines 12-15, page 6-1

Permittee Statement: "Groundwater in the bedrock appears to flow radially to a potentiometric low south of monitoring well TMW32 in the eastern portion of the Workshop Area and to the west in the western portion of the Workshop Area, with an interpreted geologic feature impeding flow between the two areas."

NMED Comment: Refer to Comment 10 in NMED's *Disapproval Letter for Groundwater Periodic Monitoring Report January through June 2016*, dated August 7, 2017. The *Final Groundwater Supplemental RCRA Facility Investigation Work Plan, Revision 2*, dated September 2017 is currently under review and will address the comment.

9. Section 6.1, Summary, lines 30-31, page 6-1

Permittee Statements: "The extent of the alluvial nitrate plume is not defined west of the Administration Area."

NMED Comment: Refer to Comment 11 in NMED's *Disapproval Letter for Groundwater Periodic Monitoring Report January through June 2016*, dated August 7, 2017 and Comment 3 in this letter. The *Final Groundwater Supplemental RCRA Facility Investigation Work Plan, Revision 2* is currently under review and will address the comment.

10. Section 6.1, Summary, lines 12-15 & 31-32, page 6-1

Permittee Statements: "Groundwater in the bedrock appears to flow radially to a potentiometric low south of monitoring well TMW32 in the eastern portion of the Workshop Area and to the west in the western portion of the Workshop Area, with an interpreted geologic feature impeding flow between the two areas," and "The bedrock nitrate plume is also present at the TNT Leaching Beds (SWMU 1) but extends upgradient to the south."

NMED Comment: Refer to Comment 12 in NMED's *Disapproval Letter for Groundwater Periodic Monitoring Report January through June 2016*, dated August 7, 2017. Revise or remove the statements in all future reports.

11. Section 6.1, Summary, line 38-39, page 6-1

Permittee Statement: "The highest perchlorate concentrations were detected in groundwater samples from the bedrock groundwater unit in the Workshop Area. The northern boundary of the bedrock perchlorate plume has not been defined."

NMED Comment: Refer to Comment 13 in NMED's *Disapproval Letter for Groundwater Periodic Monitoring Report January through June 2016*, dated August 7, 2017. The *Final Groundwater Supplemental RCRA Facility Investigation Work Plan, Revision 2* is currently under review and will address the comment.

12. Section 6.2, Recommendations, line 30, page 6-2

Permittee Statement: "Abandon well FW35 and remove it from the GWMP. Historical analytical detections at this location are not indicative of groundwater impacts (Appendix D). This well has been dry for the last five water level monitoring events."

NMED Comment: The concentrations of several metals in groundwater samples collected from well FW35 before it went dry exceeded the screening levels. Therefore, the well must be replaced. A requirement to replace well FW35 will be added as a modification to the approval of the supplemental work plan.

13. Appendix D, Historical Groundwater Analytical Data

NMED Comment: It appears that the Permittee provided a locked version of the file titled FtWingate_EDMS_Database_Oct16.MDB. Ensure all files submitted to NMED are not locked in future reports.

The Permittee must address all comments contained in this Approval with Modifications in all future reports and work plans.

Should you have any questions, please contact Ben Wear of my staff at (505) 476-6041.

Sincerely,

John E. Kieling
Chief
Hazardous Waste Bureau

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File: FWDA 2017 and Reading, Groundwater, FWDA-17-005