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Certified Mail - Return Receipt Requested

July 25, 2022

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: SECOND DISAPPROVAL
[REVISED] FINAL NORTHERN AREA GROUNDWATER RCRA FACILITY INVESTIGATION
REPORT
FORT WINGATE DEPOT ACTIVITY
MCKINLEY COUNTY, NEW MEXICO
EPA ID# NM6213820974
HWB-FWDA-21-004**

Dear Mr. Cushman,

The New Mexico Environment Department (NMED) is in receipt of the Fort Wingate Depot Activity (FWDA or Permittee) *[Revised] Final Northern Area Groundwater RCRA Facility Investigation Report (Report)*, dated May 6, 2022. NMED has reviewed the Report, and hereby issues this Second Disapproval with the following comments.

COMMENTS

1. Permittee's Response to NMED's Disapproval Comments 6, 47 and 48, dated January 25, 2022

Permittee Statements: "The naturally occurring organic compounds are likely due to plant matter originating in the geologic formations, both alluvial and bedrock, where the wells are screened."

and,

"Similar to the detection in Parcels 10A/10B, this TPH-DRO detection [in Parcel 21] is not associated with a distinct source of diesel fuel, and the chromatogram for this detection lacks a distinctive diesel pattern as observed in the diesel standard (Appendix F3)."

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and,

“Based upon the Army’s review of the chromatograms, the majority of the laboratory reported DRO and GRO detections do not appear to be related to petroleum hydrocarbons. The analysis and basis for this opinion is presented in section 5.3.5.1. For future groundwater analyses of TPH, organic matter can be removed from analytical reporting via use of silica gel cleanup performed by the laboratory. This procedure is recommended in section 6.3.5 so that future misinterpretations of DRO and GRO data can be minimized.”

NMED Comment: Appendix F3 (GRO and DRO Chromatograms) provides 24 chromatograms of the groundwater samples to compare peaks with those of diesel and gasoline standards, and the Permittee intends to demonstrate that the sample peak patterns are not comparable to those of diesel and gasoline standards. However, multiple analytes that may be considered as potential contaminants of concern (COCs) or fuel constituents were detected in the groundwater samples collected from the same wells (see the table below). These analytes may potentially represent peaks identified in the sample chromatograms. The cause of the total petroleum hydrocarbon (TPH) gasoline range organics (GRO) and diesel range organics (DRO) detections remains unknown; therefore, it is premature to conclude that naturally occurring organic compounds are the sole source of the detections.

For example, the concentrations of TPH GRO and DRO in the groundwater sample collected from well BGMW13S are reported as 21 J and 43 J µg/L, respectively, the sample chromatograms were compared to the standards, and the peak patterns were observed to be different from those of diesel and gasoline standards. However, according to Table 4-3.3 (Groundwater Analytical Detections – VOCs) and Table 4-7.2 (Groundwater Analytical Detections - Other Constituents), toluene, 1,4-dioxane, and 2-methylnaphthalene were also detected in the groundwater sample collected from well BGMW13S. These constituents are site related COCs. Since TPH is analyzed by EPA Method 8015C, which utilizes a flame ionization detector, organic compounds that can be volatilized in the capillary column are not selectively detected as peaks shown on the chromatograms; the peaks may represent site related COCs rather than naturally occurring organic compounds. The following table summarizes the detection of analytes potentially considered as site related COCs that were found in the soil and groundwater samples and may potentially represent TPH GRO and/or DRO peaks on the chromatograms.

Well ID	TPH-GRO (µg/L)	TPH-DRO (µg/L)	Detected Analytes in GW Samples	Detected Analytes in Soil Samples
BGMW13S	21 J	43 J	toluene, 1,4-dioxane, 2-methylnaphthalene	Samples not retained for chemical analysis
BGMW13D	Not Detected	39 J	2-methylnaphthalene, naphthalene, pyrene	Samples not retained for chemical analysis
MW25	Not Detected	36 J	1,2-dichloroethane	Samples not retained for chemical analysis
MW27	Not Detected	59 J	naphthalene	Samples not retained for chemical analysis
MW28	18 J	51 J	1,4-dioxane	Samples not retained for chemical analysis
MW29	Not Detected	55 J	1,2-dichloroethane, di-n-octyl phthalate	1,2,4-trimethylbenzene, benzene, ethylbenzene, tetrachloroethene, toluene, xylenes

MW30	12 J	33 J	1-methylnaphthalene, 2-methylnaphthalene, benzo[a]pyrene, benzo[g,h,i]perylene, dibenz[a,h]anthracene	benzene, toluene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, ethylbenzene, xylenes
MW31	Not Detected	77 J	1,2-dichloroethane, 1,4-dioxane	1,2,4-trimethylbenzene, benzene, ethylbenzene, toluene, xylenes, 1,2-dichloroethane
MW33	Not Detected	90 J	2-Butanone, 2-hexanone, chloromethane, 1,4-dioxane, 2-methylnaphthalene, naphthalene	Samples not retained for chemical analysis
MW34	Not Detected	32 J	Not Detected	Samples not retained for chemical analysis
MW36S	Not Detected	86 J	phenanthrene	Samples not retained for chemical analysis
MW37	Not Detected	37 J	benzo[b]fluoranthene, 1,4-dioxane, benzo[k]fluoranthene	1,2,3-trichlorobenzene, 1,2,4-trimethylbenzene, 1,4-dichlorobenzene, benzene, carbon disulfide, chloromethane, ethylbenzene, hexachlorobutadiene, xylenes, methylene chloride, naphthalene, toluene
MW39	Not Detected	180 J	p-isopropyltoluene, 4-methyl-2-pentanone, benzene, toluene, 2-hexanone, 1,4-dioxane, pyrene, phenanthrene, naphthalene, fluoranthene, chrysene, bis(2-ethylhexyl) phthalate, benzo[g,h,i]perylene	benzene, toluene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, pyrene, methylene chloride
TMW50	Not Detected	420	benzene, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene	Samples not retained for chemical analysis
TMW51	Not Detected	44 J	benzene, styrene, toluene	Samples not retained for chemical analysis
TMW52	Not Detected	580	benzene, toluene, carbon disulfide, 1,4-dioxane	Samples not retained for chemical analysis
TMW53	Not Detected	45 J	toluene, carbon disulfide	Samples not retained for chemical analysis
TMW55	Not Detected	46 J	2-hexanone, di-n-octyl phthalate	Samples not retained for chemical analysis
TMW58	Not Detected	67 J	2-butanone, toluene	Samples not retained for chemical analysis
TMW59	Not Detected	94 J	RDX, naphthalene, bis(2-ethylhexyl) phthalate, caprolactam	Samples not retained for chemical analysis
TMW64	Not Detected	71 J	chloromethane	Samples not retained for chemical analysis

In order to evaluate the assertions in the Report, the Permittee must (a) define what analytes constitute naturally occurring organic compounds and (b) collect groundwater samples from the new wells where TPH-DRO/GRO were detected and (c) conduct TPH-DRO/GRO, VOC, and SVOCs analyses with and without use of silica gel cleanup for at least two consecutive sampling events. The results of analyses must be reported and discussed in the corresponding periodic groundwater monitoring reports. Note that although the use of silica gel cleanup has not been evaluated or approved at this time, a comparison of the TPH-DRO/GRO, VOC, and SVOC analytical results with and without use of silica gel cleanup may allow NMED to evaluate whether the use of silica gel cleanup is permissible. The use of silica gel cleanup must exclusively remove naturally occurring organic compounds without affecting detections of potential COCs. Once the results are evaluated, NMED may approve or disapprove further use of silica gel cleanup for TPH-DRO/GRO analysis. Revise the Report to remove unproven assertions and propose the required analysis detailed above should the Permittee wish to pursue the use of analytical laboratory silica gel cleanup of samples prior to analysis.

2. Permittee's Response to NMED's Disapproval Comment 7a, dated January 25, 2022

Permittee's Statement: "Section ES-2.3 – Other Constituents, has been revised to state that metals are constituents of concern."

NMED Comment: Section ES-2.3 (Groundwater Contaminant Plumes), lines 21-22, page ES-4 states, "[m]etals are naturally occurring constituents of concern and are expected to be reported in both total and dissolved samples." Although the text in Section ES-2.3 was revised, it does not clearly state that metals have previously been released at FWDA as a result of the facility operations. The statement is therefore still misleading and must be corrected for accuracy in the revised Report.

3. Permittee's Response to NMED's Disapproval Comment 7b, dated January 25, 2022

Permittee Statement: "Total metals analytical results are influenced by the presence of high turbidity. Dissolved samples are not influenced by high turbidity as these samples are filtered prior to collection in the laboratory container."

NMED Comment: Although the Permittee's response is appropriate, the relevant text in Section ES-2.3 was not revised to reflect the Permittee's response. Therefore, NMED's previous Disapproval Comment 7 has not been addressed in the Report. Correct the relevant text in Section ES-2.3 in the revised Report.

4. Permittee's Response to NMED's Disapproval Comment 7c, dated January 25, 2022

Permittee Statement: "Section 5.3.5 provides an in-depth discussion of groundwater analytical results for metals. Section 6.3.5 provides recommendations for further investigation of metals."

NMED Comment: Sections 5.3.5 and 6.3.5 provide discussions regarding total petroleum hydrocarbon plumes rather than metals. The referenced sections are not accurate. Reference the appropriate sections of the Report and address NMED's previous Disapproval Comment 7 in the revised Report.

5. Permittee's Response to NMED's Disapproval Comment 9b, dated January 25, 2022

Permittee Statement: "Section 3.4.1 has been revised to reflect that Bedrock Aquifer 1 is defined by thickness and is a laterally discontinuous water bearing zone without sustainable water production."

NMED Comment: According to Table 4-2.1 (Monitoring Well Construction Details), only wells BGMW08, TMW51, TMW52, TMW53 and TMW64 were screened in the Bedrock

Aquifer 1 (BR1) and all other wells screened in the sandstone formation were designated as the Bedrock Aquifer 2 (BR2) wells. However, Section 3.4.1 (Drilling) does not provide information regarding the thickness of the aquifer or water production capacity where these wells are distinguished as BR1 or BR2 wells. Section 2.3.7.2 (Bedrock Aquifer) defines that the sandstone thickness of the BR1 interval is 20 feet (\pm 10 feet). According to Appendix E1 (Boring Logs), the sandstone formation was continuously observed at the termination depths at wells TMW51 and TMW64; therefore, the thickness of the sandstone formation remains unknown at the wells. The sandstone formation appears to be thicker than 30 feet at well TMW52 and thinner than 10 feet at well TMW53. The distinction between BR1 and BR2 is still unclear. Provide clear information that defines the distinction between BR1 and BR2 in the revised Report. In addition, a lower water production rate does not necessarily indicate that the water bearing zone is laterally discontinuous unless additional supporting data is provided. Clarify the statements in all applicable sections with additional supporting data in the revised Report.

6. Permittee's Response to NMED's Disapproval Comment 9c, dated January 25, 2022

Permittee Statement: "The hypothesis regarding contaminant communication between the bedrock and alluvial aquifers has been noted. The Army does not have any evidence to support the NMED hypothesis, therefore the text was not updated."

NMED Comment: NMED's previous Disapproval Comment 9 states, "hydraulic communication between the alluvial and bedrock aquifers is evident because contaminants have already migrated vertically across the aquifers in the Study Area; however, interaction between the first and second bedrock aquifers had not been determined because the presence/absence of separate aquifers among the bedrock aquifer has not been clearly demonstrated. Therefore, the former statement can be misleading." The presence of communication between the bedrock and alluvial aquifers is not a hypothesis since contaminants are present in both the alluvial and bedrock aquifers. Revise the Report to address NMED's previous Disapproval Comment 9.

7. Permittee's Response to NMED's Disapproval Comment 13b, dated January 25, 2022

Permittee Statement: "[T]he Army agrees that the bedrock aquifer in the Administration Area has not been investigated. The Army believes for the reasons stated above that groundwater contamination in this area is unlikely and is reluctant to install deep wells in this area due to the potential for cross contamination from the alluvial aquifer to the bedrock aquifer."

NMED Comment: The Permittee's June 28, 2022 supplemental correspondence does not address the Disapproval Comment 13b. Since the alluvial aquifer is already contaminated and the primary COC at the Administration Area is a chlorinated solvent (i.e., 1,2-

dichloroethane) whose specific gravity is greater than one (1) and therefore will sink in water, it is possible that the underlying bedrock aquifer may also be contaminated. In addition, if deep wells are installed using appropriate methods, potential cross contamination between aquifers should not occur. NMED's previous Disapproval Comment 13 states, "[s]ubmit a work plan to investigate [the] presence of potential groundwater contamination in the bedrock aquifer beneath the Administration Area no later than **June 30, 2022.**" Although this comment remains valid, the Permittee's June 28, 2022 supplemental correspondence proposes to submit a work plan by July 30, 2023 due to the Permittee's contracting schedule. Since the Permittee has already had time to initiate the contracting process, an additional year to award a contract is excessive. Accordingly, the Permittee must submit a work plan to investigate the presence of potential groundwater contamination in the bedrock aquifer beneath the Administration Area no later than **February 20, 2023** rather than June 30, 2022.

8. Permittee's Response to NMED's Disapproval Comment 14, dated January 25, 2022

Permittee Statements: "The Army removed contamination in the TNT leaching bed area, significantly reducing the amount of contaminant leaching from soil to groundwater."

NMED Comment: The RDX concentrations exceeding the soil leachate-based screening level (SL-SSL) of 0.06 mg/kg were detected in multiple confirmation samples at the TNT leaching bed area; therefore, leaching potential of the contaminants still remains. The text is misleading without stating the fact that the concentrations of multiple contaminants remain above respective SL-SSLs at the TNT leaching bed area. Revise appropriate sections of the Report accordingly.

9. Permittee's Response to NMED's Disapproval Comment 15, dated January 25, 2022

Permittee Statements: "The Army believes that the bedrock nitrate contamination originated from releases to the exposed bedrock at the building 528 Complex."

NMED Comment: NMED does not agree with the Permittee's assertion. The Permittee's assertion may be appropriate to describe the origin of perchlorate plumes; however, since the nitrate contamination is more elevated and expanded in the alluvial aquifer than in the bedrock aquifer, the nitrate contamination in the bedrock aquifer likely originated from the overlying alluvial aquifer. Revise the appropriate sections of the Report or provide additional data to support the assertion in the revised Report.

10. Permittee's Response to NMED's Disapproval Comment 16, dated January 25, 2022

Permittee Statement: "No remediation activities have been performed and the perchlorate remains in soil at this location [the Building 528 Complex]."

NMED Comment: In order to prevent further contamination of groundwater by perchlorate,

the Permittee must submit a separate work plan to remediate soils where perchlorate concentrations exceeded applicable SL-SSL no later than **July 30, 2023**.

11. Permittee's Response to NMED's Disapproval Comment 17, dated January 25, 2022

Permittee Statements: "The statement in Section 2.4.3.3 was revised as follows:

"The extent of groundwater perchlorate contamination from previous investigation was determined to be limited to Parcel 21 and Parcel 22."

Well TMW39D was installed as part of the RFI and the presence of perchlorate at this location is [reported in] Result (Section 4, see Figure 4-5.2) and Finding (Section 5)."

NMED Comment: Since the perchlorate concentrations in the groundwater samples collected from well TMW39D have exceeded the applicable screening level, it is appropriate to state that the extent of the plume is expanding from Parcels 21 and 22 to Parcel 13. In addition, such discussion is not provided in Sections 4 and 5. Reference appropriate sections of the Report if the discussion is provided; otherwise, include the discussion in the revised Report.

12. Permittee's Response to NMED's Disapproval Comment 19, dated January 25, 2022

Permittee Statement: "The Army concurs that the depth of soil hydrocarbon contamination extends to the water table; however, not at the location of SWMU 45. The upgradient soil gas and groundwater results suggest an upgradient hydrocarbon source. Furthermore, soil analytical results from the cited report document the depth of TPH in soil at this location."

NMED Comment: According to Table 4-3.2 (Soil Analytical Detections – Chemical), multiple fuel constituents were detected from the soil samples collected from borings MW29, MW30, and MW31 at depths above the water table (10 – 12 feet below ground surface (bgs)). These borings were advanced in the vicinity of SWMU 45; therefore, it is possible that the soil hydrocarbon contamination extends to the water table at the location of SWMU 45.

Since Comment 7 above requires submission of a work plan to investigate the presence of potential groundwater contamination in the bedrock aquifer beneath the Administration Area, one of the bedrock wells to be advanced in the Administration Area must be proposed within the boundary of SWMU 45 so that the soil samples collected from the boring can be used to assess the vertical extent of contamination within SWMU 45. Include this provision in the work plan required by Comment 7 above.

13. Permittee's Response to NMED's Disapproval Comment 22, dated January 25, 2022

Permittee Statement: "The Army believes that collection and analysis of these soil samples

would not change the findings or recommendations presented in this report regarding the extents of the groundwater contamination plumes.”

NMED Comment: NMED’s previous Disapproval Comment 22 lists potential data gaps associated with lack of soil sample collection and analyses and requires the Permittee to “[p]rovide justification for not collecting appropriate samples and not having the appropriate analyses conducted in the revised Report. In addition, propose to submit a work plan for collection and analyses of soil samples to fill the data gaps listed above no later than **June 30, 2022.**” Address each data gap listed in NMED’s previous Disapproval Comment 22 and explain why the Permittee believes that collection and analysis of these soil samples would not change the findings or recommendations regarding the extents of the groundwater contamination plumes in the revised Report. Submit a work plan for collection and analyses of soil samples to fill the data gaps no later than **February 20, 2023** rather than June 30, 2022.

14. Permittee’s Response to NMED’s Disapproval Comment 24, dated January 25, 2022

Permittee Statement: “The NMED-approved May 2019 Work Plan addresses the additional sample analyses described in this comment. Work was performed in accordance with the 2018 Work Plan and the 2019 Work Plan with no additional variations to report.”

NMED Comment: NMED has no record for receiving a relevant RFI work plan in May 2019. NMED received a revised 2017 interim facility wide groundwater monitoring plan; however, the relevant wells were installed after 2017. Provide a clarification for the cited reference in the revised Report.

15. Permittee’s Response to NMED’s Disapproval Comment 25b, dated January 25, 2022

Permittee Statement: “Henry’s Law is a screening tool and as such can be inaccurate, subject to interference and has its limitations including non-ideal conditions. However, it can quickly provide valuable information that can be used to select sample locations for laboratory analysis. The purpose of the groundwater monitoring well was to delineate the downgradient extent of the groundwater [1,2-dichloroethane (1,2-DCA)] plume. The model was not used for any other purpose. The soil vapor assessment was a screening tool to locate a groundwater monitoring well.”

NMED Comment: Although NMED agrees that Henry’s Law is a screening tool and as such can be inaccurate, the Permittee established the soil vapor screening criterion based on the selected Henry’s Law Constant, which guided the extent of the investigation; therefore, it is important to use an accurate Henry’s Law Constant. The Permittee calculated the soil vapor screening level (60 parts per billion by volume (ppbv)) using the New Mexico Water Quality Control Commission (NM WQCC) standard for groundwater protectiveness (5 µg/L) and Henry’s Law Constant for 1,2-DCA (0.048). According to the formula provided in Section

3.7.1 (Soil Vapor Screening Criteria), the Henry's Law Constant (0.048) is based on a temperature of 298.15 Kelvin (25 degrees Celsius (°C)). If the soil vapor temperature was lower, the Henry's Law Constant would be lower and, proportionally, the soil vapor screening level would be lower, which would result in a larger plume boundary. According to Figure 4-1.1 (1,2-DCA Soil Vapor Plume), elevated 1,2-DCA concentrations were detected in the soil gas samples collected from multiple boring locations outside of the 60 ppbv plume boundary (e.g., SG36, SG47, SG70, SG75, SG83). These locations may potentially be included in the plume boundary if a lower Henry's Law Constant is used. Subsequently, the conclusions and recommendations regarding delineation of the downgradient extent of the groundwater 1,2-DCA plume may change. The soil vapor plume may be larger if the calculated soil vapor screening level is lower. Provide justification for the soil vapor screening level of 60 ppbv or revise the Report to include an empirical value for the Henry's Law Constant.

16. Permittee's Response to NMED's Disapproval Comment 25c, dated January 25, 2022

Permittee Statement: "The soil vapor data was not used for a vapor intrusion assessment as suggested by this comment. The intent of the data collection was consistent with the 2018 Work Plan and consistent with NMED Directive in its letter dated July 3, 2019, comment #3: "The Permittee may utilize the HAPSITE GC/MS for soil gas screening purposes. The Permittee is reminded that data collected by field instruments may only be used for screening purposes unless a high correlation with duplicate analytical laboratory data is demonstrated. Field instrument screening data may not be used for confirmation or compliance purposes."

Also note that the soil vapor samples were collected at a depth of approximately 30 feet below ground surface to assess potential presence of groundwater contamination and are not representative of near surface soil vapor conditions which would be used for vapor intrusion purposes.

As intended and directed, none of the data was used for vapor intrusion assessment purposes. Instead, the groundwater sample results from wells MW25 and MW31 provide the empirical data for this investigation, as opposed to the soil vapor data.

For these reasons, the units for soil vapor data have not been converted to $\mu\text{g}/\text{m}^3$."

NMED Comment: The Permittee's explanation for not converting the unit for soil vapor data is not relevant. NMED's previous Disapproval Comment 25 states, "[s]tandard units for soil vapor concentrations and NMED's vapor intrusion screening levels are $\mu\text{g}/\text{m}^3$. For all discussion or presentation of soil vapor or air quality data, the Permittee must use $\mu\text{g}/\text{m}^3$ for concentration units." Failure to follow NMED direction constitutes noncompliance and may result in an enforcement action. Resolve the issue in the revised Report.

17. Permittee's Response to NMED's Disapproval Comment 27, dated January 25, 2022

Permittee Statement: "The Army proposes to address potential soil contamination associated with Building B005 as part of a separate work plan to further investigate data gaps in the Administration Area. Furthermore, B005 is not occupied and is not suitable for occupancy due to the dilapidated interior. Signage will be posted at each entrance indicating that the building is not suitable for occupancy. Therefore, due to the lack of potential for indoor air exposure, the Army does not consider there to be a vapor intrusion hazard at B005."

NMED Comment: It is possible that Building B005 may be used for occupancy in the future. Posting signage alone does not ensure safety for future occupants. Submit a separate work plan to investigate risks associated with vapor intrusion within Building B005, as required by NMED's previous Disapproval Comment 27 no later than **July 30, 2023**.

18. Permittee's Response to NMED's Disapproval Comment 29, dated January 25, 2022

NMED Comment: Based on the Permittee's response, it is not clear which future periodic monitoring report(s) will address NMED's previous Disapproval Comment 29 to evaluate the presence/absence of separate units within the alluvial/bedrock aquifers (e.g., by comparing the groundwater quality and chemical composition of groundwater in the two zones). Provide a clarification in the revised Report.

19. Permittee's Response to NMED's Disapproval Comment 31, dated January 25, 2022

NMED Comment: Although total porosity analysis was conducted for geotechnical samples, effective porosity analysis was not conducted for any geotechnical samples. Effective porosity can often be an important parameter for various remediation technologies. When geotechnical analyses are conducted at the areas where groundwater remediation may potentially be required in the future, include a provision to conduct both total and effective porosity analyses. No revision is required to the Report.

20. Permittee's Response to NMED's Disapproval Comment 33, dated January 25, 2022

NMED Comment: The chromium concentration in the soil sample collected from boring TMW57 at 55 – 57 feet bgs is reported as 5.3 mg/kg in Table 4-3.2 (Soil Analytical Detections – Chemical). Although the reported concentration does not exceed the SL-SSL for total chromium (205,000 mg/kg), it exceeds the SL-SSL for hexavalent chromium (0.192 mg/kg). Submit a work plan to advance a soil boring to collect a soil sample at the nearest accessible location from well TMW57 for hexavalent chromium analysis no later than **July 30, 2023** or provide an explanation why hexavalent chromium analysis is not required in the revised Report.

21. Permittee's Response to NMED's Disapproval Comment 34, dated January 25, 2022

Permittee Statement: "The following discussions were added to:
Section 4.7.2.1: "Nitrite—There were three nitrite exceedances."
Section 4.7.2.2: "Nitrite - no screening level exceedances.""

NMED Comment: The referenced Sections 4.7.2.1 and 4.7.2.2 are not relevant to the discussion regarding the exceedance of nitrite. Reference the relevant sections of the Report where the discussion is provided or include the required discussion in the revised Report.

22. Permittee's Response to NMED's Disapproval Comment 34, dated January 25, 2022

Permittee Statement: "Based upon the isolated nitrite exceedances and the lack of nitrite exceedances during the 2018 groundwater monitoring year, there does not appear to be a nitrite plume. While similar groundwater purging and sampling methods were used during the RFI and the semi-annual monitoring events, different laboratories were used which may explain the differing groundwater analytical results."

NMED Comment: The nitrite concentrations in groundwater samples collected from wells MW27, MW35, and MW59 must be evaluated to determine whether the exceedances were false detections, and the discussion must be provided in the future periodic groundwater monitoring reports. Propose to split the nitrite samples collected from the wells and direct the two laboratories to conduct nitrite analysis to evaluate for potential analytical errors in the revised Report.

23. Permittee's Response to NMED's Disapproval Comment 36, dated January 25, 2022

Permittee Statements: "The shape of the dissolved RDX plume is influenced by the groundwater mound that may be impacted by wells 68 and/or 69. These wells are planned for decommissioning in 2022. Once these wells are decommissioned, the Army will assess the configuration of the RDX plume and the need for further delineation of the RDX plume using the existing monitoring well network."

NMED Comment: NMED does not believe that the existing monitoring well network is sufficient to assess the configuration of the RDX plume. The distance from well TMW62 to wells TMW21 and MW27 exceeds 500 feet; therefore, the RDX plume boundary west of well TMW62 is not well defined. Submit a work plan to install an additional well to delineate the western boundary of the RDX plume no later than **February 20, 2023**.

24. Permittee's Response to NMED's Disapproval Comment 36, dated January 25, 2022

Permittee Statement: "At the location of TMW54, the alluvial sediments are shallower than at other nearby locations and are unsaturated. This does not mean that the screen interval

for TMW54 was not appropriate, only that the alluvial sediments in this location are sometimes dry. The subsurface conditions at FWDA are variable. The Army does not believe additional investigation is needed at TMW54. TMW54 is being monitored as part of the 2022 semi-annual groundwater monitoring events and if groundwater is present, a sample will be collected.”

NMED Comment: Although NMED agrees that the subsurface conditions at FWDA are variable, it does not agree that additional investigation is unnecessary at well TMW54. Although the Permittee proposes to monitor TMW54 as part of future periodic groundwater monitoring events, groundwater is unlikely to be present in well TMW54 due to the shallow depth of the screened interval. Submit a work plan to augment well TMW54 with an adjacent well that is constructed with a more appropriate screened interval or at an alternative nearby location no later than **February 20, 2023**.

25. Permittee’s Response to NMED’s Disapproval Comment 42, dated January 25, 2022

Permittee Statement: “The Army plans to submit a separate work plan to assess the extent of the soil vapor plume as part of a separate effort to further investigate data gaps in the Administration Area. The Army respectfully requests that this effort be treated independently from the Northern Area Groundwater RFI that is the subject of this report.”

NMED Comment: NMED concurs to treat the work plan to investigate the extent of the soil vapor plume, including the potential for vapor intrusion, in the vicinity of Building B006 independently from the Northern Area Groundwater RFI. The work plan must be submitted to NMED no later than **July 30, 2023**. No revision is required to the Report.

26. Permittee’s Response to NMED’s Disapproval Comment 44, dated January 25, 2022

Permittee Statement: “There are no inconsistencies regarding groundwater flow directions and groundwater contaminant plume configurations. As reported, the groundwater at FWDA is variable, hence groundwater contaminant plume configurations are variable as well.”

NMED Comment: According to Figure 4-2.1 (Groundwater Elevation Contours – Alluvial), groundwater flows toward the west in the vicinity of the former TNT Leaching Beds. However, according to Figure 4-4.1 (Alluvial Groundwater Plume – Nitrate), the nitrate plume expands north rather than west. There is an inconsistency regarding groundwater flow directions and groundwater contaminant plume configurations. Provide more detailed explanation regarding variability of the groundwater flow direction to support the assertion in the revised Report.

27. Permittee's Response to NMED's Disapproval Comment 51, dated January 25, 2022

Permittee Statement: "The Army plans to submit a separate work plan to assess the locations and integrity of the sewer lines, and the potential of the sewer lines as a source nitrate contamination to groundwater. The work plan will be submitted as part of an additional work plan to further investigate data gaps in the Administration Area."

NMED Comment: The work plan must be submitted to NMED no later than **July 30, 2023**. No revision is required to the Report.

28. Permittee's Response to NMED's Disapproval Comment 53, dated January 25, 2022

Permittee Statements: "Additional sample and analyses for herbicides is considered investigative. Sampling and analysis for pesticides which were detected at less than screening levels is not required for investigative purposes and can be addressed as needed in the groundwater monitoring program, Groundwater monitoring program recommendations are not provided in the RFI report, and no changes were made."

NMED Comment: The Permittee must propose to (a) analyze potential COCs and (b) modify the groundwater monitoring program, as necessary, in the RFI reports, based on findings from the investigations. The Permittee recommended to conduct additional groundwater sampling and analysis of herbicides for wells MW36S, BGMW13D and BGMW07. Accordingly, it is appropriate to propose the modifications to the groundwater monitoring program in the upcoming Interim Northern Area Groundwater Monitoring Plan. Revise the Report accordingly. In addition, pesticides were detected below their respective screening levels in the groundwater samples collected from well TMW52. While the presence of these lower-level detections may be addressed in the uncertainty section, the Permittee has not provided such discussion in the Report. For the initial screening assessment, all potential site related analytes with at least one detection must be evaluated. Propose to conduct pesticide analysis for the groundwater samples collected from wells TMW40S and TMW52 for a minimum of two consecutive groundwater sampling events in the revised Report and update the sampling requirement in the upcoming Interim Northern Area Groundwater Monitoring Plan, as required by NMED's previous Disapproval Comment 53. This comment also applies to the Permittee's response to NMED's previous Disapproval Comment 54.

The Permittee must submit a revised Report that addresses all comments contained in this letter. 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 **December 31, 2022**. In addition, the work plan required by Comments 7, 13, 23 and

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24 must be submitted no later than **February 20, 2023**. The work plan required by 17, 25 and 27 must be submitted no later than **July 30, 2023**, as requested by the Permittee's June 28, 2022 supplemental correspondence. Furthermore, the work plan required by Comments 10 and 20 must also be submitted no later than **July 30, 2023**. Each investigation required by the comments may independently be submitted as a letter work plan, if the Permittee chooses to do so.

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

Sincerely,

Rick Shean

Digitally signed by Rick
Shean
Date: 2022.07.25
13:40:12 -06'00'

Rick Shean
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
K. Noble, Pueblo of Zuni
A. Whitehair, Southwest Region BIA
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