



MICHELLE LUJAN GRISHAM  
GOVERNOR

JAMES C. KENNEY  
CABINET SECRETARY

## Certified Mail - Return Receipt Requested

September 8, 2021

Colonel Robert A. Masaitis  
Commander, 27th Special Operations Wing  
100 Air Commando Way, Suite 100  
Cannon Air Force Base  
New Mexico 88103-5214

**RE: DISAPPROVAL  
ANNUAL GROUNDWATER MONITORING REPORT 2017 - REVISION 1  
MELROSE AIR FORCE RANGE  
EPA ID# NM5572124456  
HWB-MELR-18-001**

Dear Colonel Masaitis:

The New Mexico Environment Department (NMED) has received the United States Air Force (Permittee) *Annual Groundwater Monitoring Report 2017- Revision 1* (Report), submitted on behalf of Melrose Air Force Range and dated May 29, 2019. NMED has reviewed the Report, and hereby issues this Disapproval with the following comments.

Based on the continued issues with the Permittee's reporting, NMED is directing the Permittee to the NMED Hazardous Waste Bureau's *General Reporting Guidelines for Corrective Action Documents*, which can be found on NMED's website at <https://www.env.nm.gov/hazardous-waste/guidance-documents/>. Adherence to these guidelines will help ensure the Permittee provides approvable submittals to NMED in the future. In addition, the Permittee failed to follow NMED direction provided in the previous Disapproval. Failure to follow NMED direction constitutes noncompliance and may result in an enforcement action.

### **GENERAL COMMENTS**

#### **1. Required Permittee Report Cover Letter Certification Statement**

**NMED Comment:** The Permittee's revised Report, as well as all documents submitted to NMED, must include the following 40 Code of Federal Regulation (CFR) Section 270.11(d)(1) statement for signatories to reports:

SCIENCE | INNOVATION | COLLABORATION | COMPLIANCE

Hazardous Waste Bureau - 2905 Rodeo Park Drive East, Building 1, Santa Fe, New Mexico 87505-6313  
Telephone (505) 476-6000 - [www.env.nm.gov](http://www.env.nm.gov)

*"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

Failure to include the signed statement in the revised Report, or any other submittal to NMED, may result in rejection of the document and the re-assessment of document review fees.

## **2. Reporting of Volatile Organic Compound (VOC) Concentration Data**

**NMED Comment:** The Permittee's response to NMED Comment 3 of the January 2019 *Disapproval 2017 Annual Groundwater Monitoring Report* (January 2019 Disapproval for AGRM 2017) stated, "[w]e were unable to attain the missing laboratory results for VOCs at this time. The limited suite of VOCs chosen for analysis was due to miscommunication between CAFB and Bear Engineering that was not revealed until the 2018 sampling event. The previous year's reports included notes that VOCs analysis was performed for a target compound list."

The laboratory analytical data reports provided with the prior 2015 Melrose Air Force Range (MAFR) annual groundwater monitoring report indicate that groundwater samples were analyzed for the full suite of United States Environmental Protection Agency (EPA) Method 8260 VOCs. Groundwater samples collected at MAFR during periodic monitoring must always be analyzed for the full suite of Method 8260 VOCs analytes and the results provided in the respective report. Provide sample analysis reports for the full suite of VOCs in the revised Report and include the additional analytical data in the revised Report. Revise the Report accordingly.

## **3. Page Numbers for Report Figures, Tables, and Charts**

**NMED Comment:** Appendix A and B contain multiple pages with no page numbers. Every page of every submittal whether text, table, or chart, must include a page number. This applies to all sections of the Report including appendices. Revise the Report accordingly.

## **4. General Report Text Structure**

**NMED Comment:** The Permittee must ensure that the narrative presented in all sections of the revised Report are structured in a logical and consistent manner. The following are examples of Report presentation issues that must be addressed during revision:

- a. Various “hanging” report sections were noted throughout the Report. For example, Section 1.0 and Section 2.0 text discussions are the only sections included on Report pages with a significant remainder of the page left blank. Typically, supporting subsections directly follow the initial section introductory discussion. These issues must be corrected in the revised Report.
- b. The Report narrative begins on page six. This is a result of the continuation of page numbering from the Report table of contents and certification page (page numbers i through v). Typically, the narrative portion of a report is separately numbered and begins on page one. This issue was not noted in the prior June 2019 *Annual Groundwater Monitoring Report 2016-Revision 2*. The Report narrative (i.e., Executive Summary through Section 6) and the table of contents portion of the revised Report must be separately numbered. Revise the Report accordingly.
- c. A sentence format issue was noted for Section 1.2.1, SWMU [Solid Waste Management Unit] Description and History, SWMU-130 World War II Cantonment Disposal Site (Page 12), that was carried over from the prior version of the Report and resulted in significant space between words in the statement “[t]he monitoring wells associated with SWMU-130 are listed below.” Resolve the sentence formatting issue in the revised Report.
- d. The Subsection title for Section 1.4.1, Groundwater Elevation, Gradient, and Flow Velocity (at bottom of Page 14) is not included on the same page with the respective report text (on Page 15). Ensure that all section and subsection titles are appropriately located with respective report section discussions in the revised Report. Revise the Report accordingly.
- e. The Permittee must ensure that Report narrative structure and formatting issues are not carried forward into the revised Report and that the revised Report is submitted in a consistent and logically structured format that does not distract the user from the actual Report content and data. Revise the Report accordingly.

#### **SPECIFIC COMMENTS**

##### **5. Section 1.2, Site Description and History, Page 10**

**Permittee Statement:** “Monitoring well MAO2MW001D (SWMU-131) is located approximately 1,500 feet to the northeast of ST [Storage Tank]-506.”

**NMED Comment:** The reported 1,500-foot distance between monitoring well MAO2MW001D and ST-506 does not appear to be accurate based on historical location information. Review the information provided in the statement and ensure that the

distance reported between monitoring well MAO2MW001D and ST-506 is accurate in the revised Report. Revise the Report accordingly.

**6. Section 1.3.1, Inactive Wells, Page 14**

**Permittee Statement:** "There are several wells located on MAFR that are included in previous monitoring plans. These wells are abandoned, inaccessible, or inactive, and not included in the FSP [Field Sampling Plan]. These well locations are shown on Figures 1-2 and 1-3 in Appendix A. Details of these wells are listed in Table 2a in Appendix B."

**NMED Comment:** Revise the statement to reflect that well status details are also provided on Table 2b, MAFR Summary of Groundwater Elevation Data 2003 to 2016, in the revised Report.

**7. Sections 2.1 and 2.2, Spring and Fall Sampling Events, Pages 17 through 20**

**NMED Comment:** Section 2.1 and 2.2 discussions of the well conditions and obstructions encountered during attempted water level gauging at wells MWL-5, MWL-8, and MWL-10 provide sufficient information and rationale for not collecting water level measurements at each well. Remove the accompanying photographs from the Report section discussions for each well. The photographs may be included in the revised Report as an additional appendix with appropriate reference in each section; otherwise, they are not necessary. Revise the Report accordingly.

**8. Section 2.3, Investigation Derived Waste [IDW], Page 20**

**NMED Comment:** The Permittee must provide monitoring event wastewater characterization and disposal manifest documentation for the 2017 monitoring year (spring and fall events) as an additional Report appendix that is appropriately discussed and referenced in Section 2.3. Revise the Report accordingly.

**9. Section 3.3, Field Parameters and Equipment, Page 22**

**Permittee Statement:** "Well construction details and pump placement are presented in Table 1 in Appendix B."

**NMED Comment:** Appendix B does not contain a Table 1. Well construction detail information is provided on Table 1a, Well Properties. Revise the statement to reference the correct table in the revised Report.

**10. Section 4.1., Groundwater Contours and Flow Direction, Page 23**

**NMED Comment:** Revise the section discussion to accurately reference all Appendix A figures that include groundwater elevations, contours, and inferred groundwater flow direction information in the revised Report.

**11. Sections 4.1.1, and 4.1.2, Chinle Formation and Ogallala Formation, Page 23**

**NMED Comment:** As required by NMED's January 2019 Disapproval for AGRM 2017, Comment 20, the revised Report must include the results of the general groundwater gradient calculations based on the groundwater elevation data collected during the 2017 May and October events for the Chinle and Ogallala Formations. Revise the section discussion accordingly. Failure to follow NMED direction constitutes noncompliance and may result in an enforcement action.

**12. Section 4.2, Analytical Data, Pages 23 through 25**

**NMED Comment:** The Permittee did not adequately address NMED's January 2019 Disapproval for AGRM 2017, Comment 21. The section discussion simply lists COCs detected at MAFR monitoring wells with no reference to respective location or significant constituent concentration trends. As previously required, Section 4.2 and its respective subsections must be revised to discuss any significant observed COC concentration data trends, detections, and screening level exceedances based on the data reported in the Appendix B tables and charts. The revision must include location information (e.g., SWMU and monitoring well) for reported significant detections, concentration data trends, and any cleanup or screening level exceedances for the identified MAFR COCs cyanide, explosives, hexavalent chromium, metals, nitrate and nitrite, perchlorate, VOCs, and the water quality parameters alkalinity, total dissolved solids, chloride, and sulfate. Revise Sections 4.2 and supporting Subsections 4.2.1 through 4.2.5 accordingly. Failure to follow NMED direction constitutes noncompliance and may result in an enforcement action.

**13. Section 5.0, Summary, Page 22**

**NMED Comment:** The section discussion must be expanded to include a detailed discussion of observed COC concentration data trends, detections, and cleanup level exceedances for the SWMU monitoring well networks, the annual monitoring well network, the background monitoring well as addressed in Section 4.2.1 through 4.2.5, and any other significant findings for the groundwater monitoring reporting period. Revise the section discussion accordingly.

#### 14. Figure 1-2, Monitoring Well Network

**NMED Comment:** Water-level only well MWL-4 is noted as an active water level only well on the figure; however, the well was identified as removed from the well network on Tables 2a and 2b. Revise the figure for accuracy to indicate that the well has been removed from the data collection schedule for groundwater level measurement.

#### 15. Figure 1-3, Solid Waste Management Units and Monitoring Wells

**NMED Comment:** The identified issues with the figure must be addressed as follows:

- a. SWMU 130 monitoring wells MAO1MW003 and MAO1MW004 locations are transposed on the figure. Based on well location information previously provided in the NMED-approved MAFR Annual Groundwater Monitoring Reports (AGMR) for 2013, 2014, and 2015, MAO1MW004 is the northern monitoring well and MAO1MW003 is the western monitoring well at SWMU-130. Review all figures for accuracy and correct any inaccuracies in the revised Report.
- b. SWMU 114 monitoring wells M114MW001 and M114MW004 locations are transposed on the figure. Based on well location information previously provided in prior NMED-approved AGRMs, M114W001 is the central well and M114MW004 is the northeastern monitoring well at SWMU 114. Revise the figure for accuracy in the revised Report.
- c. SWMU 131 monitoring well MAO2MW001S is depicted in the wrong location on the figure. Based on well location information previously provided in prior NMED-approved AGMRs and historical information, MAO2MW001S was one of two nested wells located at SWMU-131. MAO2MW001S must be accurately depicted at the correct location on the figure in the revised Report.
- d. The Figure 1-3 scale does not appear to be accurate. Review Figure 1-3 and all other Appendix A figure scales for accuracy and revise the Report, as necessary.

#### 16. Figures 4-1 and 4-3, Chinle Groundwater Flow Map for May and October 2017 Events

**NMED Comment:** The monitoring well locations, labels, groundwater elevation data, and groundwater contours are not clearly or accurately depicted on Figures 4-1 and 4-3. Revise the figures to depict all monitoring well locations, labels, respective groundwater elevation data, and groundwater contours clearly and accurately on each figure.

**17. Figure 4-6, Groundwater Level Map October 2017**

**NMED Comment:** Groundwater elevations for wells MWQ-1, MWQ-8, MWQ-13, MWL-11, and MWL-12 reported on Figure 4-6 do not appear to be accurate based on historical elevation data and depth to groundwater data collected during the October 2017 groundwater level gauging event and documented on Table 2b. Figure 4-6 must be revised to report accurate groundwater elevations for all monitoring wells depicted on the figure. Review and revise the figure accordingly.

**18. Figures 4-7 and 4-9, Analytical Parameters Exceeding Screening Levels May and October Semiannual Well Network 2017**

**NMED Comment:** Identified issues with the Figures 4-7 and 4-9 must be addressed as follows:

- a. The reported concentration data for monitoring wells MA01MW001, MA01MW002, MA01MW003, and MA01MW004 as presented on the figure do not correspond to the correct well locations. The correct monitoring well locations have been previously documented in NMED-approved AGRMs for 2013, 2014, and 2015. Concentration data and respective monitoring well locations must be depicted accurately on the figures in the revised Report. Revise the figures accordingly.
- b. The reported concentration data for monitoring wells M114MW001, M114MW002, M114MW003, and M114MW004 do not correspond to the correct well locations. Concentration data and respective monitoring well locations must be depicted clearly and accurately on the figures in the revised Report. Revise the figures accordingly.
- c. Figures 4-7 and 4-9 also report data that do not exceed respective screening levels. For clarity, the figures must specify that COC concentrations highlighted in red have exceeded their respective screening levels. Revise the figures accordingly.
- d. Firebreaks and roads are redundantly defined on the Figure 4-7 legend and on the actual figure. Ensure that the firebreaks and roads are not redundantly defined on Figures 4-7 and 4-9. Revise the figures in the revised Report.

**19. Figure 4-8 Analytical Parameters Exceeding Screening Levels May Annual Well Network 2017**

**NMED Comment:** Identified issues with the figure must be addressed as follows:

- a. For clarity, revise the figure legend to signify that COC concentrations highlighted in red have exceeded their respective screening levels in the revised Report.

- b. The figure includes concentration data for MWQ-24, a semiannual network monitoring well. Remove the redundant concentration information from the figure in the revised Report.
- c. Ensure that firebreaks and roads are clearly labeled and not redundantly defined on the figure in the revised Report.

## 20. Table 1a, Well Properties

**NMED Comment:** Ensure the table number and title is clearly provided at the top of the table in the revised Report and ensure that the table is appropriately sized for the page where it is presented. Revise the table accordingly.

## 21. Tables 1b and 1c, Semiannual Sample Methods and Annual Sample Methods

**NMED Comment:** Identified Table 1b and 1c issues must be addressed as follows:

- a. Revise the table titles to include the actual information provided in the tables (e.g., semiannual or annual monitoring well network and analytical methods).
- b. Ensure that the tables are appropriately sized for the pages where they are presented in the revised Report.
- c. Table note five on Table 1b and table note three on Table 1c for perchlorate are not defined. Ensure that the notes for perchlorate are defined in the revised Report.

## 22. Table 2a, MAFR Summary Depth to Groundwater Data 2003 to 2017 and Table 2b, MAFR Summary Groundwater Elevation Data 2003 to 2017

**NMED Comment:** Identified issues with Tables 2a and 2b must be addressed as follows:

- a. Measured depth to groundwater data is reported on Table 2b instead of groundwater elevations for monitoring wells MWQ-12, MWQ-13, MWL-11, and MWL-12 for the October 2017 event. Revise the table to report the groundwater elevations for each monitoring well and ensure the respective data charts are updated to reflect accurate groundwater elevations for each well. Revise the table and data charts accordingly.
- b. All data discrepancies and table issues noted in NMED's July 2020 Disapproval *Annual Groundwater Monitoring Report 2016-Revision 2* (July 2020 Disapproval for AGRM 2016), Comment No. 28, were also noted in this Report. Therefore, Tables 2a and 2b must also be revised to address all respective table comments in NMED's



Disapproval response for AGRM 2016-Revision 2. Revise the table and data charts accordingly. Failure to follow NMED direction constitutes noncompliance and may result in an enforcement action.

- c. The Permittee must ensure that all data reported on Tables 2a and 2b are accurate and complete. Review and revise the tables accordingly.

### **23. Table 3a, Summary April [sic] 2017 Annual and Semiannual Field Water Quality Data**

**NMED Comment:** Revise the table title to indicate the data for the annual and semiannual network data reported on the table were collected in May 2017.

### **24. Table 4b, Historical Dissolved Oxygen**

**NMED Comment:** The following tables issues must be addressed as follows:

- a. Table 4b data for annual network wells for May 2017 do not match the data reported on Table 3a or the Appendix D field notes. Revise the table to report accurate dissolved oxygen field data for each annual network monitoring well. Revise the table and data charts accordingly.
- b. The Table 4b data charts report dissolved oxygen concentrations in micrograms per liter; however, respective table concentration data is reported as milligrams per liter. For Table 4b data, ensure that the corresponding data chart concentrations and units match the table concentration data and units (milligrams per liter). Revise the Table 4b data charts accordingly.

### **25. Table 5a and 5b, Summary of Analytical Results April and October 2016**

**NMED Comment:** As provided in NMED's July 2020 Disapproval for AGRM 2016, Comment No. 30a, the applicable cleanup levels for evaluation of all COCs in groundwater shall be the New Mexico Water Quality Control Commission (WQCC) groundwater quality standards, 20.6.2.3103 NMAC, the cleanup levels calculated for toxic pollutants listed in 20.6.2.7.T(2) NMAC, and the drinking water maximum contaminant levels (MCLs) adopted by EPA under the federal Safe Drinking Water Act (42 U.S.C. 300f to 300j-26). If both a WQCC groundwater quality standard and an MCL have been established for an individual COC, then the lower of the levels shall be the cleanup level for that substance. The most recent version of the NMED's Tap Water Screening Levels listed in Table A-1 of the 2019 *NMED Risk Assessment Guidance for Site Investigation and Remediation* (as updated) shall be used to establish the cleanup level if neither a WQCC standard or an MCL has been established for a specific COC. In the absence of an NMED tap water screening level then the EPA Regional Screening Levels for Chemical Contaminants at Superfund Sites (RSLs, as updated)

for tap water shall be used as the cleanup level. As an exception, hexavalent chromium concentrations must be evaluated with the WQCC groundwater quality standard for dissolved chromium. Review all screening levels used for evaluation of COCs on Tables 5a and 5b, ensure they are accurate and that the appropriate screening level is listed as the cleanup level or screening level criteria for each COC, and ensure that the cleanup or screening level used is appropriately highlighted on the table in accordance with the direction provided in this comment. Revise Tables 5a and 5b and all affected Report sections and tables. Failure to follow NMED direction constitutes noncompliance and may result in an enforcement action.

## **26. Tables 6a through 6ah, Historical COC Concentrations and Data Charts**

**NMED Comment:** The following issues must be addressed for Tables 6a through 6ah in the revised Report as follows:

- a. Table 6a, Historical Aluminum Concentrations, concentration data for all monitoring wells for SWMU 114, SWMU 130, SWMU 131 and MWQ-24 for May and October 2017 are transposed on the table based on data reported on Tables 5a and 5b. The Table 6a data and respective data charts must be revised to report the aluminum concentration data accurately for each monitoring well.
- b. For Table 6o, Historical Manganese Concentrations, data discrepancies between the manganese concentrations reported on Tables 5a and 5b for monitoring well MWQ-2 for May 2017 (a screening level exceedance) and for monitoring wells MAO1MW001 and MAO1MW002 (for dissolved manganese concentrations) for October 2017 were identified. The Table 6o data and respective data charts must be revised to report the manganese concentration data accurately. Revise the table and data charts accordingly.
- c. Table 6z, Historical Zinc Concentrations, data reported as undetected at the limit of detection on Tables 5a and 5b have been reported as detections for SWMU 114, SWMU 130, SWMU 131 and MWQ-24 monitoring wells for the October 2017 event and monitoring wells MWQ-19, MWQ-20, and MWQ-22 for the May 2017 event. The Table 6z data and respective data charts must be revised to report the zinc concentration data accurately for each monitoring well.
- d. Data discrepancies were noted between Table 6ag, Historical Sulfate Concentrations and Table 5b for monitoring wells MAO1M001, MAO1MW002, and MAO1M003 concentration data. The Table 6ag data and respective data charts must be revised to report the sulfate concentration data accurately for each monitoring well.
- e. Various discrepancies were noted for cleanup levels or screening levels for various

COCs and/or the cited regulatory sources for the COC evaluation criteria on Tables 6a, 6e, 6i, 6j, 6k,6p,6q,6w,and 6z when compared to the Tables 5a and 5b COC screening level criteria highlighted as the applicable evaluation criteria. To ensure accuracy, Tables 6a through 6ah must be reviewed and revised to accurately cite applicable screening levels and respective regulatory source information for all COCs as directed by NMED in Comment 25 above. Review and revise the tables accordingly.

- f. NMED's January 2019 Disapproval for AGRM 2017, Comment 2b required the Permittee to ensure all concentration units noted in the hard copy and electronic PDF version of the Report for Tables 6a through 6aa were accurate. The Permittee noted in the response to NMED Comment 2b provided with the Report that the Report had been amended accordingly. NMED's review of Report Revision 1 indicates NMED's comment was not addressed in the revised hard copy Report. Tables 6a through 6aa and respective data charts in the hard copy version of the Report continue to indicate that chemical of concern (COC) concentrations are reported in grams per liter (i.e., g/L). The Permittee must thoroughly review Tables 6a through 6aa and their respective data charts in the hard copy and electronic PDF versions of the revised Report and ensure the cited concentration units are accurately noted as micrograms per liter to match the reported data in both copies of the Report. Review and revise Tables 6a through 6aa and the corresponding data charts to report the data and concentration units accurately. The Permittee must ensure that concentration data and respective units in the hard copy report match the data reported in the electronic PDF version of the Report. Revise the Report accordingly. Failure to follow NMED direction constitutes noncompliance and may result in an enforcement action.
  
- g. All other table data discrepancies noted in NMED's July 2020 Disapproval for AGRM 2016, Comment No. 32, were also noted in this Report and must also be corrected for Tables 6a through 6ah of this Report. Review all Report historical data tables and charts and revise to also address the data issues noted by NMED's Disapproval response for AGRM 2016-Revision 2. Failure to follow NMED direction constitutes noncompliance and may result in an enforcement action.

## **27. Table 6ai, Historical VOCs Concentrations**

**NMED Comment:** Historical methylene chloride concentrations (0.5 µg/L) for the January 2010 sampling event were omitted from the table for monitoring wells MAO1MW003 and MAO2MW001D. Ensure the concentrations are included in the revised Report.

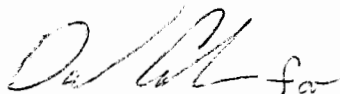
**28. Tables 7a and 7b, Spring and Fall Split Sample Comparison**

**NMED Comment:** The VOC analytical method is listed as EPA Method 6260 on Tables 7a and 7b. Samples collected for VOCs analysis were analyzed by EPA Method 8260. Revise the tables to cite the correct analytical method in the revised Report.

The Permittee must submit a revised Report (2 hard copies and 2 electronic) that addresses all comments contained in this Disapproval. In addition, the Permittee must include a response letter that cross-references where NMED's numbered comments are addressed. The Permittee must also submit an electronic redline-strikeout version of the revised Report showing all changes made to the Report. The revised Report must be submitted no later than **November 6, 2021**.

If you have any questions regarding this letter, please contact Gabriel Acevedo at (505) 690-5760.

Sincerely,



Ricardo Maestas, Acting Chief  
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB  
B. Wear, NMED HWB  
G. Acevedo, NMED HWB  
L. King, EPA Region 6 (6LCRRC)  
C. Gierke, CAFB  
C. Soto-Lorenzo  
S. Jennings  
J. Burgoon

File: MELR 2021 and Reading