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September 18, 2017

Mr. Jason Wilson, Chief
c/o Mrs. Brandi Little
Governmental Hazardous Waste Branch, Land Division
Alabama Department of Environmental Management
P.O. Box 301463
Montgomery, Alabama 36130-1463

Subject: MDA Response to *ADEM Review and Comments: Site-Wide Corrective Measures Implementation Plan for Soil Remediation at Fort McClellan;* dated August 31, 2017

Dear Mr. Wilson:

On behalf of the McClellan Development Authority (MDA), Matrix Environmental Services, LLC (MES) is pleased to submit the MDA Response to *ADEM Review and Comments: Site-Wide Corrective Measures Implementation Plan for Soil Remediation at Fort McClellan,* dated August 31, 2017 for your review.

Two hard copies and one electronic copy of the document have been provided to Ms. Brandi Little. Please contact me at (256) 847-0780 (Anniston) or (770) 594-0331 (Atlanta) should you have any questions or comments.

Sincerely,
MATRIX ENVIRONMENTAL SERVICES, LLC

Richard Satkin, P.G
McClellan Program Manager

CC: Mrs. Brandi Little, ADEM (two paper copies and one electronic copy)
Mr. Robin Scott, MDA (transmittal letter only)
Matrix Project Files

Comment 1: **Page 1-2, Section 1.5.2.** *This section discusses the major goals of corrective action – excavate, stabilize and dispose of "metals-contaminated surficial and sub-surficial soils from within these Ranges in order to allow beneficial reuse of the property." Please add sediments to the list. As stated on Page 3-1 in the Affected Media section, "The purpose of this CMIP is to present a standard approach to the remediation of contaminated soils (surface, subsurface, and sediment) at Fort McClellan …."*

Response: The text has been modified to reflect the comment. Please see attached replacement page.

Comment 2: **Page 1-3, Section 1.5.3.** *The bulleted list states the five major components of the technical approach of this remedial project. In previous MDA documents regarding soil remediation, there was a sixth bullet stating "Grading, backfill (where necessary) and restoring vegetation of the excavated sites." Please address why this bullet was not included.*

Response: The text has been modified to reflect the comment. Please see attached replacement page.

Comment 3: **Page 1-3, Section 1.5.4, Paragraph 1.** *The last sentence discusses the possibility of adding land use controls (LUCs). Please add that LUCs will be implemented in accordance with the cleanup agreement.*

Response: The text has been modified to reflect the comment. Please see attached replacement page.

Comment 4: **Page 3- 1, Section 3.2.** *The text states that "while traces of constituents may have been detected in the groundwater, this plan is focused strictly on soils." Please add that, if necessary, groundwater will be addressed under separate cover.*

Response: Agreed. MDA has modified the text in Section 1.1 to address the comment. The text in Section 3.2 has not been modified. Please see attached replacement page.

Comment 5: **Page 4-1, Section 4.1.1.** *The Delineation section states that the Sampling and Analysis Plan and Quality Assurance/Quality Control Plan (SAP/QA/QCP) is located in Appendix B. Please revise to state that the SAP/QA/QCP is in Appendix A.*

Response: The text has been modified to reflect the comment. Please see attached replacement page.

Comment 6: **Page 4-1, Section 4.1.1.** *The Delineation section states that a five-point composite sample will be collected from the top 1-foot of the cell and analyzed. Appendix A, Section 4.1.1 states that the composite sample aliquots will be collected from 0-6 inches below ground surface (bgs). Also, Section 4.2.2, Paragraph 2 on Page 4-4 states that the composite samples will be collected from the top 6 inches of soil. Please clarify which measurement is correct and be consistent throughout the document.*

Response: All references for sample depth referenced in the comment have been updated to reflect 0-0.5 feet bgs. Please see attached replacement pages.

Comment 7: **Page 4-1, Section 4.1.1.** *The Delineation section states that composite samples may be analyzed on-site using x-ray fluorescence (XRF) or sent to an off-site laboratory. Please add that the acceptance criteria for XRF results confirmed by laboratory analysis will be 35% relative difference. Please also add to this section a discussion on how 1-foot munitions and explosives of concern (ME C) clearance areas will be excavated to 0.5-feet bgs, confirmation samples will be collected and the areas will be backfilled to regain the full 1-foot of cover soil per MDA's Soil Remediation Depth in Munitions Response*

Areas plan dated November 4, 2014.

Response: The MDA concurs that performance criteria for the XRF should be included in any discussion regarding the use of an XRF. However, the MDA believes that the appropriate location for this discussion should be in the SAP/QA/QCP. Section 4.4 of the SAP/QA/QCP has been modified to include a discussion regarding both the acceptance and performance criteria for XRF use on the Site.

Section 4.1.1 has also been modified to include a discussion of the sampling interval for post excavation samples collected when working in a one foot MEC area, in accordance with the Soil Remediation Depths in Munitions Response Areas Plan referenced above. This plan has also been added to Section 8 (References) of the CMIP. Please see attached replacement pages.

Comment 8: **Page 4-1, Section 4. 1.1.** *The Excavation section states that a 5-point composite confirmation sample will be collected from the bottom of the excavation. Section 4.2 .2, Paragraph 4 states that post excavation samples will be collected at 1 foot bgs. Appendix A, Section 4.1.2 states that a composite soil sample will be collected from the bottom of the excavation and continues by saying that each aliquot of the composite sample will be collected from 0-6 inches bgs (where ground surface is now 1 foot or more below original grade) following excavation activities. Please clarify which measurement is correct and be consistent throughout the document.*

Response: Sections 4.1.1 and 4.2.2 of the CMIP and Section 4.1.2 of the SAP/QA/QCP have been amended to include the 0-0.5 ft bgs sampling interval. Please see attached replacement pages.

Comment 9: **Page 4-3, Section 4.2.1, Paragraph 2.** *The text states that a composite sample will be collected and homogenized from five one-gallon aliquots. ADEM concurred with the CMIP for Soil Remediation - Baby Bains Gap Road Ranges, Ranges 23 and 25 East, which stated that the treatability study would consist of a composite sample collected and homogenized from two one-gallon aliquots. Please address.*

Response: The number of one-gallon aliquots selected for the treatability study is based on the characteristics of the Ranges being remediated and could include a varying number of sample aliquots, i.e. the CMIP for BBGRR Phase I (Range 25, Ranges South of 25, and Range 26) and the CMIP for BBGRR Phase III (Range 18) each included five one-gallon aliquots. Larger areas with multiple "hot spot" locations may have more than the five aliquots stated in the CMIP. The language in Section 4.2.1 has been amended to reflect a varying number of Treatability Study aliquots that is based on the Range being remediated and that the number of aliquots for each Range will be provided in the SSA. Please see attached replacement page.

Comment 10: **Page 4-4, Section 4.2.2.** *Please expand this section to include XRF screening information. Please include discussion regarding excavation requirements for XRF results less than 380 mg/kg and greater than 420 mg/kg for lead in soil as well as the requirement for laboratory analysis confirmation for XRF lead results within 5% of 400 mg/kg, the residential cleanup goal.*

Response: Please see response to ***Comment 7***.

Comment 11: **Page 4-4, Section 4.2.2.** *Please add the following statement to the fourth paragraph: "For cells that include locations with prior sample results exceeding the relevant cleanup levels, a minimum of two samples will be collected to ensure no further action is required in those areas."*

Response: The CMIP is designed to improve upon the original investigation performed at these Ranges, which identifies the potential areas of concern at the Site. The original investigations rely on single grab samples from areas that may have contamination from previous Site activities, using these samples to determine what contaminants are present and where the boundaries of that contamination may be (the nature and extent of contamination). These investigations are important to narrow the focus of the remedial process for these Sites, but the data generated is not designed for use in the remediation process. The remedial design (or CMIP) uses the data from the previous investigations as a starting point by establishing a grid network in those areas identified in the investigation, and collecting a five point composite sample from each grid cell. The grid is designed to ensure that any area previously identified as being above screening levels is included in the characterization. The five point composite samples collected from each grid is designed to better represent the soils in that cell, to ensure that remediation decisions are based on a structured, methodical characterization of the Site.

The MDA believes that the collection of these two samples is not necessary to ensure that the gridded cells are properly characterized. The grid system is established over the previously identified contamination contours, thus ensuring that any previous samples with high concentrations of Site contaminants will be included in the remediation characterization. Further, the five point composite sample from each grid is made of five aliquots (grab samples) from the cell, equally spaced throughout the grid, thus ensuring that the sample results fully characterize the grid. In cells where stabilization treatment and/or excavation activities have been conducted, composite samples will be collected from the base of the excavation, with aliquot locations at or near the pre-excavation aliquot locations (i.e. 5 point composite samples). Additionally, the CMIP includes a SAP/QA/QCP that includes multiple procedures to ensure the quality of the data generated. Lastly, the original investigation grab sample was collected in specific areas to determine whether contamination was present, not as a characterization of that one location for remediation purposes. Based on these factors, the MDA feels that collection of additional samples in locations that previously contained sample results above relevant cleanup levels is not necessary.

Comment 12: **Page 4-5, Paragraph 1:** *The text states, "To address the vertical extent criteria in the 1-foot MEC Clearance Areas, all excavation efforts will be limited to the upper six to nine inches." The text continues by stating, "Regardless of the results, the cell will be backfilled to the original grade." These statements appear to contradict MDA's Soil Remediation Depth in Munitions Response Areas plan, dated November 4, 2014, referenced above in Comment 6. Please address.*

Response: The text has been modified to reflect the comment. Please see attached replacement page.

Comment 13: **Page 4-5, Paragraph 3.** *The text states that sidewall samples will be collected at approximately 75 linear foot intervals around the perimeter of the excavation. Appendix A, Section 4.1.2 states that sidewall samples will be collected approximately every 50-75 feet along the sidewalls of excavation. Please clarify which measurement is correct and be consistent throughout the document.*

Response: The text has been modified to reflect the comment. Please see attached replacement page.

Comment 14: **Page 4-6, Section 4.2.3.** *Please discuss what measures will be taken to prevent cross contamination during soil excavation and stockpiling activities.*

Response: The text has been modified to reflect the comment. Please see attached replacement page.

Comment 15: **Page 4-7, Paragraph 1.** *The text in the last sentence references the Waste Management Plan (WMP). Please add that the WMP is located in Appendix B.*

Response: The text has been modified to reflect the comment. Please see attached replacement page.

Comment 16: **Page 5-2, Section 5.2.3.** *The Decontamination Areas section does not provide specifications for the materials that will be used for the decontamination pads, liners, etc. Please add this information to this section or clarify if this information will be submitted in each site specific CMIP addendum (SSA).*

Response: The text has been modified to reflect the comment. Please see attached replacement page.

Comment 17: **Page 5-2, Section 5.2.3.** *The Soil Stockpile Areas section states that areas will be managed in accordance with the Stormwater Pollution Prevention Plan (SWPPP) and Erosion Control Plan (ECP). Please clarify if this information will be submitted in each SSA or if it is included in this document.*

Response: The MDA does not intend to submit the SWPPP or the ECP for review at this time. The SWPPP and the ECP are two additional documents prepared by the RC that are associated with the Alabama Construction General Permit (General Permit Number ALR100000, Parts III.A. and III.B.)(Permit) and the Construction Best Management Practices Plan (CBMPP) required of the Remediation Contractor (RC) for land disturbing activities. These documents provide additional details for the planning and management of stormwater (SW) and erosion/sediment control at the Site, and are not directly associated with the remediation design or implementation. These documents are not required by the Construction Permit or as part of the CMI process. These documents are maintained onsite during the field implementation, but neither of these documents have been submitted to the Department for approval in previous CMIP submittals.

Comment 18: **Page 5-3, Section 5.3.** *Please add that the licensed Alabama surveyor will establish surface elevation shots for the 1-foot MEC clearance areas. The text states that the surveyor will mark out intermediate and post-excavation construction surveys of the excavation areas. Please add "(only in the 1-foot MEC clearance areas)" to the end of that statement.*

Response: The text has been modified to reflect the comment. Please see attached replacement page.

Comment 19: **Page 5-3, Section 5.4.2.** *This section discusses structures that may have to be removed during remediation work. Please note that the SSAs should specify how many samples will be collected from the demolished structures.*

Response: The text of this document has been modified to reflect the comment with the insertion of a one (1) sample per 500 cubic yards for demolition debris that is sent for offsite disposal. This sample frequency will apply to all future SSAs, unless a modification to the sampling frequency is specifically addressed in an SSA. Please see attached replacement page.

Comment 20: **Page 5-5, Section 5.6.** *The text states that each stockpile will have ten aliquots collected from it and will be composited into one sample. ADEM concurred with the CMIP for Soil Remediation - Baby Bains Gap Road Ranges, Ranges 23 and 25 East, which stated that five aliquots would be collected for one composite sample. Please address.*

Response: The selection of the ten point sampling technique was based on the most recent version of CMIP (BBGRR Phase III – Range 18) in which the Department requested that the number of aliquots be increased from 5 aliquots to ten.

Comment 21: **Page 5-6, Section 5.9.1.** *The text references "SAIC, 1998" for site-specific background screening values. ADEM concurred with the CMIP for Soil Remediation - Baby Bains Gap Road Ranges, Ranges 23 and 25 East, which referenced "MES, 2005." Please address.*

Response: The correct site-specific background screening value reference should is the "SAIC, 1998" document, the "MES, 1995" document referenced in the previous CMIP is not correct.

Comment 22: **Page 5-6, Section 5.9.2.** *This section states, "Visual inspections will be conducted quarterly or after significant rainfall events until the vegetation is firmly established." Please add that it will be inspected quarterly for one year.*

Response: Visual inspections are conducted in accordance with the requirements of the General Permit Number ALR100000, Part III.H. that the RC is required to obtain prior to initiating field operations. This section requires daily observations while construction work is ongoing, as well as inspections monthly and after significant rainfall events (0.75 inches in any 24 hour period) while the Permit is in effect. The Permit remains in effect until the revegetation has reached final stabilization. The Permit defines final stabilization (Part V) as "Established vegetation will be considered final if 100% of the soil surface is uniformly covered in permanent vegetation with a density of 85% coverage or better." Once the Site has reached final stabilization, the Permit is terminated, and no further inspections are required. The MDA requires that the RC provide a one year warranty from the date of installation on the revegetation to ensure that any issues that arise after the Permit is terminated and the warranty period ends. This requirement is in addition to the Permit requirements. Therefore, the MDA does not believe that the addition of the requested statement is warranted.

In preparing the response to this comment, the MDA did notice that the quarterly inspection requirement referenced in Section 5.9.2 is not correct, inspections are actually required to be conducted monthly. The text has been modified to reflect this. Please see attached replacement page.

Comment 23: **Page 6-2, Table 1.** *Event 6 states, "Soil characteristics or site grade affect mixing during stabilization." Please add to the Mitigation column for Event 6 that alternative mixing methods and/or equipment will be evaluated and discussed with ADEM and MDA/MES.*

Response: The text has been modified to reflect the comment. Please see attached replacement page.

Comment 24: **Page 6-3, Table 2.** *Please add to the Monitoring Method column that Performance Criteria 1 should have confirmation samples at the edges of excavation every 50-75 feet (or 75 feet, whichever is consistent with Comment 13 above) and Performance Criteria 2 should have confirmation samples from the bottom of the excavation every 2500 square feet.*

Response: The text has been modified to reflect the comment. For Performance Criteria 2, the bottom of excavation may not be 2,500 square feet, therefore the text has been amended to reference remediation cells. Please see attached replacement page.

Comment 25: **Appendix A, Page A-9, Paragraph 5.** *The text states that QAQC samples will be collected in accordance with Section 5.3. This appendix does not appear to have a Section 5.3. Please address.*

Response: The text has been modified to reflect the comment. Please see attached replacement page.

Comment 26: **Appendix A, Page A- 18, Section 7.2.1.** *Please format Appendix A.2 in this section to be bold to be consistent with the other references to sections and appendices.*

Response: The text has been modified to reflect the comment. Please see attached replacement page.

Comment 27: **Appendix B, Page B-6, Section 2.1.** *This section states that construction and demolition (C&O) debris generated during demolition will be sampled in accordance with Section 5.1 of the SAP/QA/QCP. Section 5.1 discusses Sample Location Identification. Please address.*

Response: The text has been modified to reflect the comment. Please see attached replacement page.

Comment 28: **Appendix B, Page B-6, Section 2.2.1.** *This section states that waste streams will be sampled in accordance with Section 5.1 of the SAP/QA/QCP. Section 5.1 discusses Sample Location Identification. Please address.*

Response: The text has been modified to reflect the comment. Please see attached replacement page.

Comment 29: **Appendix B, Page B-7, Section 2.2.4.** *The text states that "material with analytical results less than Resource Conservation and Recovery Act toxicity characterizations (see Table I of the SAP/QA/QCP in Appendix A) will be designated for transport and offsite disposal." Table I of the SAP/QA/QCP discusses QA/QC Sample Guidelines. Please address.*

Response: The text has been modified to reflect the comment. Please see attached replacement page.

Comment 30: **Appendix B, Page B-8, Paragraph 1.** *The text states, "The location identification of the excavation area will be generated using the location identification process described in Section 4.1 of the SAP/QA/QCP." Section 4. 1 discusses Site Characterization and Post-Excavation Confirmation Soil Sampling. Please address.*

Response: The text has been modified to reflect the comment. Please see attached replacement page.