UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7
11201 Renner Boulevard
Lenexa, Kansas 66219

DEC 2 0 2019

Mr. Paul V. Rosasco
Project Coordinator
Engineering Management Support, Inc.
25923 Gateway Drive
Golden, Colorado 80401

Dear Mr. Rosasco:

The U.S. Environmental Protection Agency has reviewed the October 15, 2019, 2nd Draft Remedial Design, or RD, Work Plan, West Lake Landfill, Operable Unit 2, or OU-2 in Bridgeton, Missouri. This document was developed on behalf of the West Lake Landfill OU-2 Respondent, Bridgeton Landfill, LLC, to support the remedial design of the Inactive Sanitary Landfill portion of OU-2. The EPA is disapproving the document as submitted. Please revise the document in accordance with the enclosed comments.

The EPA has coordinated its review of this document with the Missouri Department of Natural Resources and the Kansas City District of the U.S. Army Corps of Engineers. In accordance with the Third Amendment to the Settlement Agreement and Order on Consent, VII 94-F-0025, the Respondent shall prepare a revised RD Work Plan for OU-2 that incorporates the EPA's comments and requested changes.

Based upon recent conversations with Respondent's representatives, the EPA understands that work is already underway in order to provide the additional details which the EPA is requiring as a result of our enclosed comments. Based on those conversations, and in anticipation that the revised RD Work Plan for OU-2 will be more comprehensive if additional time is allowed for this particular revision, the EPA is hereby allowing for 60 days from the date of receipt of this letter for resubmission of the revised work plan. Contact me with questions at (913) 551-7789 or by e-mail at barker.justin@epa.gov.

Sincerely,

Justin Barker
Remedial Project Manager
Site Remediation Branch
Superfund and Emergency Management Division

Enclosure

cc: Mr. Ryan Seabaugh, MDNR

COMMENTS ON THE REMEDIAL DESIGN WORK PLAN (2nd Draft)
WESTLAKE LANDFILL SITE OPERABLE UNIT 2 (OU-2),
Bridgeton Missouri, Dated October 15, 2019

GENERAL COMMENTS ON THE OU-2 REMEDIAL DESIGN WORK PLAN

1. General: Based upon discussions with Bridgeton Landfill LLC's, or Respondent's, representatives, the EPA understands that Respondent plans to perform additional design investigation(s). Revise the RD work plan to describe the purpose of the design investigation(s), the geotechnical and analytical data to be collected, and the associated reports to be submitted to EPA. The reports should include summary information, tables, data, and engineering assessments of the design investigation phase work elements. The schedule for planning, performing and documenting the results of the investigation(s) must be submitted in the revised RD Work Plan. It is expected that the investigation work will be completed well ahead of the submission of the 30% design to ensure the data and assessments are understood and agreed upon by EPA and MDNR prior to their incorporation in the 30% design.

2. General: Several citations are apparently not written correctly in the submitted document and some are misidentified. Review and correct citations throughout the document. Specific comments below have attempted to point out the errors related to the incorrect citations, however the submittal should be thoroughly checked, and all errors corrected.

SPECIFIC COMMENTS ON THE OU-2 REMEDIAL DESIGN WORK PLAN

3. Section 1.0 Introduction, page 1: This section states *"As stated above, the Closed Demolition and Bridgeton Landfills will continue to be managed according to their respective permit requirements and should not be subject to further CERCLA action as outlined in the OU-2 ROD."* Please delete this statement.

4. Section 1.0 Introduction, page 1, bullet 1 on SSR: Assessment for historical placement of waste in the land area located between the Former Active Sanitary Landfill (South Quarry of Bridgeton Landfill) and the Inactive Sanitary Landfill is a critical component for assessing the potential for migration of a subsurface heating event (SSHE as used in these documents). This information will help assess the potential for an elevated temperature reaction to migrate between the waste cells which could affect the remedial design for the Inactive Sanitary Landfill. Reliance solely on a review of historical aerial photography or other records to assess subsurface material composition is not adequate. A minimum of three soil borings shall be installed, and the sampled subsurface material inspected by qualified personnel. Revise the work plan to include a summary discussion of this work element and a new figure with at least three proposed soil borings locations. The soil borings must be appropriately spaced between portions of the Inactive Sanitary Landfill and the South Quarry of Bridgeton Landfill. The locations of the soil borings should avoid existing site infrastructure. Revise this bullet by deleting the entire 1st sentence and revising the last sentence to state that *"at a minimum 3 soil borings will be installed"* between the landfill cells.

5. Section 1.0 Introduction, page 1, bullet 2 on Closed Demolition and Bridgeton Landfills (Timeline and Process): Revise this bullet to specifically quote the OU-2 ROD as follows: *"For areas operated under state permit, i.e., the Former Active Sanitary Landfill and the Closed Demolition Landfill, the terms of their respective permits dictate the appropriate closure and post-closure care requirements. Successful completion of these requirements would eliminate the need for further CERCLA action at these units. Consistent with EPA's policy on coordination between the Resource Conservation and Recovery Act and CERCLA actions, these regulated units are deferred to the state regulatory program."*

6. Section 1.0 Introduction, page 1, bullets 3 and 4 on OU-1 and OU-3 Process at OU-2: The last sentence of each of these bulleted items states the following *"This coordination and dependency has been highlighted in the schedule."* Revise this section and related sections such as 8.0 of the Work Plan to add narrative to explain how the OU-1 and OU-3 coordinated items are anticipated to impact the remedial design for OU-2. Further, see comments to Section 8.0 and to Figure 8-1.

7. Section 1.0 Introduction, page 2, bullets 5, 6 and 7. Remove the last 3 bullets (5, 6, and 7) from this section as not all prior EPA and MDNR comments have been fully addressed and can not be fully addressed in the RD work plan at this time due to on-going and pending coordination with the OU-1 and OU-3 efforts.

8. Section 1.1 Purpose and Scope, page 3: Since the primary purpose of the design effort is to support and allow for appropriate remedial action in the future, this must be clearly stated in this section. Revise this section of the RD work plan to provide a summary level discussion of how the proposed RD work is envisioned to be developed and used in support of the pending Remedial Action for at the Inactive Sanitary Landfill portion OU-2.

9. Section 2.1 Selected Remedy, page 4. Revise the 1st paragraph of this section to also include the remedy description for the other OU-2 waste cells as presented in the OU-2 ROD as follows: *"For areas operated under state permit, i.e., the Former Active Sanitary Landfill and the Closed Demolition Landfill, the terms of their respective permits dictate the appropriate closure and post-closure care requirements. Successful completion of these requirements would eliminate the need for further CERCLA action at these units. Consistent with EPA's policy on coordination between the Resource Conservation and Recovery Act and CERCLA actions, these regulated units are deferred to the state regulatory program."*

10. Section 2.2.1 Landfill Cap performance standards, page 5: This section states: *"The minimum sloping requirement of 5% shall be incorporated into the design..."* The 2008 ROD determined that the 5% sloping requirement was "not considered appropriate". The OU-2 ROD stated that a 2% slope is anticipated to be sufficient for the remedy. Revise this section to discuss the 2% slope per the ROD and revise related work plan sections discussing ARARs and the slope requirements for the design.

11. Section 2.2.3 Surface Water Runoff Controls, page 6: *"The analysis method for determining stormwater run-on/run-off will use the Rational Method. Watershed areas and runoff coefficients will be determined."* Revise text to better explain how and when the Rational Method is to be used at the Site, including a discussion of any supporting submittals that are envisioned such as a pending stormwater sampling and analysis plan. Further, clarify the purposes of the stormwater monitoring program and explain that the stormwater monitoring

program is envisioned to evolve over time including provisions for stormwater monitoring during multiple phases of the project such as, during the remedial design, during remedial construction, and post construction.

12. Section 2.2.4 Landfill Gas Monitoring and Control, page 6: This section states *"The MDNR Solid Waste Regulations (2004) [10 CSR 80-3.010(14)(C)(2)B.] state that decomposition gases..."* The citation is incorrect. Revise with the correct citation which is*10 CSR 80-3.010(13)(C)2.*

13. Section 2.2.4 Landfill Gas Monitoring and Control, page 6: This section states *"A general overview of a GCCS design that would be anticipated is provided in Figure 2-1."* The cited figure is a general detail of an individual gas collection well and does not provide the general overview of the gas collection and control system that was requested in the original comment. Revise to provide a description of the landfill gas control system design and explain how the gas control system could be sufficiently applied to a cap design that also prevents unwanted impacts to the underlying waste materials.

14. Section 2.2.5 Institutional Controls, page 7: This section states *"The institutional controls apply for not only the Inactive Sanitary Landfill but for all of OU-2 as specified in the ROD."* This statement does not appear to be consistent with the ROD and conflicts with other statements found in this submittal. Revise to delete this entire statement.

15. Section 2.2.6 Monitoring and Maintenance, page 7: Delete the final sentence of this section.

16. Section 4.0 Design Investigations, Item 4, page 11: Revise the RD work plan to include descriptions of additional planning for and submittals of plans to support the design investigations planned for in the RD. As appropriate, various sections of the work plan should be revised to refer to specific additional plans which will support the design investigation.

17. Section 4.0 Design Investigations, Item 4., Page 12: This section states: *"A slope stability analysis will be conducted in general accordance with 10 CSR 80-3 (17) E and F to better understand current site conditions and..."* EPA provided the incorrect citation in the prior comment letter. Revise to use the correct citation which is: 10 CSR 80-3.010 (17)(B) 8.

18. Section 4.0 Design Investigations, Item 7, page 13: This section states *"If the aerial surveys do not provide appropriate and accurate information, up to three borings may be conducted to characterize the area."* The degree in which it is appropriate is subjective, and it's not clear how "accuracy" will be determined. An additional line of evidence should be developed to support "accuracy." Revise to replace "up to" with "initially," and replace "may" with "will". Refer to related comment #6.

19. Section 4.0 Design Investigations, Item 8, page 13: No information was provided justifying the location of the proposed 5 monitoring well sampling locations, or the timing or other details of the proposed groundwater sampling. Revise the work plan to provide a summary level discussion of a pending groundwater monitoring effort sufficient to meet ROD requirements. Further, revise section to state the following: *"Groundwater performance monitoring will be performed during and after the OU-2 RA phase. Sentinel monitoring wells will be identified during the RD process. Baseline groundwater monitoring data will be collected from the sentinel*

monitoring wells during the RD investigations for comparison to groundwater monitoring data collected during and after the RA phase."

20. Section 5.0 Applicable or Relevant and Appropriate Requirements, page 15. As currently written the presentation of ARARs in Section 5.0 is misleading due to the omission of several ARARs. Revise the section to briefly discuss all of the OU-2 ARARs as presented in the OU-2 ROD. Further revise section to reference Table 6-1 (Design Basis and Design Criteria). See related comments and the list of additional OU-2 ARARs provided to be added into Table 6-1.

21. Section 5.2 National Ambient Air Quality Standards, page 16: This section discusses the applicability of the National Ambient Air Quality Standards to the OU-2 RD activities. The last sentence of this section states *"During remedial design phase a plan for air monitoring will be developed on a task specific basis."* Revise the RD work plan in an appropriate section to include a summary level discussion of the elements of the air monitoring work to be performed during RD, including a bulleted list of potential tasks that may require personal or area air monitoring. If currently available include the general types of air monitoring and analysis that are anticipated to occur. Further revise the section to describe generally how fugitive dust and other potential airborne issues will be addressed during RD field work should they be encountered. Revise the schedule to include for the submittal of plans addressing task specific air monitoring as necessary to support the design of the remedy.

22. Section 6.1 Conceptual Design, page 18: This section states *"The proposed cap (detailed on Appendix A Figure A-1) is consistent with the requirements outlined in the ROD."* Delete this statement, as it appears premature to state that the proposed cap meets requirements in the ROD before the cap is designed and approved.

23. Section 6.1 Conceptual Design, page 18: This section states: *"Those findings, as well as information and data for consideration of the effects of waste relocation, will be discussed with MDNR/USEPA."* Delete this statement. The evaluation mentioned in this statement is to be performed as a part of the overall OU-2 remedial design process. Revise this section to incorporate a summary level discussion of all of the conceptual/proposed design work items. Further, provide a list of anticipated design related submittals such as, design investigation data reports and associated engineering assessments. Additionally, include a list of any anticipated RD related work plans such as; air monitoring plan, stormwater monitoring plan, etc. and for each include a summary level discussion of their purpose and anticipated contents in this section of the RD Work Plan.

24. Section 6.2 Design Criteria, page 19: This section states *"The design criteria to be used as a basis for the design of the remedy were identified based on the requirements of the ARARs presented in Section 5 and..."*. Revise the first sentence of this section to state: *"The design criteria to be used as a basis for the design of the remedy were identified based on the requirements of the OU-2 ROD and...*.

25. Section 6.2 Design Criteria, page 19: Revise the Design Criteria section to include a summary level discussion of the various design criterion to be collected and evaluated, including; a list of the anticipated data sets to be generated, the types of engineering assessments to be conducted, and other required inputs to support the development of the overall design. This should include a summary level discussion of the design criterion needed for the

establishment of each layer of cover design including, as appropriate, thicknesses, vegetation considerations, slope geometry, surface water controls, benching, access roads, slope support, and other relevant items that will be evaluated to support the overall design. This narrative section should be tied to the Conceptual Design discussion contained in Section 6.1.

26. Section 8.0 Project Schedule, page 21: Replace the narrative provided in this section with a bulleted list of the various RD related activities/work presented in Figure 8-1, including a general description of the work occurring in each step. For each of the activities potentially impacted by OU-1 or OU-3 work, describe the potential impact. Ensure the narrative is consistent with the project schedule as presented on Figure 8-1.

27. Table 6-1 Design Basis and Design Criteria: Revise Table 6-1 to identify specific design criteria requirements in each citation, and reference appropriate locations in the work plan documents where they are being addressed.

28. Table 6-1 Design Basis and Design Criteria: Correct the incorrect citations and generally revise the design criteria descriptions in Table 6-1 as follows:

Slope and slope stability

- 10 CSR 80-3.010 (17)(B) 3. Restricts final side slopes to 25% unless it has been demonstrated in a detailed slope stability analysis that the slopes can be constructed and maintained throughout the entire operations life and post-closure period of the landfill
- 10 CSR 80-3.010 (17)(B) 7. Requires the final slope for the top of the sanitary landfill to have a minimum slope of 5%, which has been identified in the ROD as "not considered appropriate"
- 10 CSR 80-3.010 (17)(B) 8. Requires a shear failure analysis where intermediate and final side slopes exceed 25%
- 10 CSR 80-3.010 (17)(C) 3. Prohibits final side slopes exceeding thirty-three and one-third percent
- 10 CSR 80-3.010 (17)(C) 5. Requires provisions for slope stability for installation of final cover systems.

Cover

- 10 CSR 80-3.010 (17)(C) 11. Requires the compacted clay portion to consist of soils classified under the Unified Soil Classification System as CH, CL, ML, SC or MH.

Decision for landfill gas system

- 10 CSR 80-3.010 (14) (B) 2. Plans to assess the need for gas control systems.
- 10 CSR 80-3.010 (14) (C) 4. Implementation of a methane monitoring program capable of detecting decomposition gas migration... to ensure that the standards of paragraph (14)(C)2. are met.
- 10 CSR 80-3.010 (14) Landfill gas monitoring and control.

Stormwater

- Replace 10 CSR 80-3(8)F with 10 CSR 80-3.010(8)
- Add 10 CSR 20-6.200 – Cited in the ROD

Groundwater

- Add 10 CSR 80-3.010(8)

Other

- Add 40 CFR Part 141 – Cited in the ROD
- Add 10 CSR 60-4.010 – Cited in the ROD
- Add 10 CSR 80-3.010 (17) A. –Cited in the ROD
- Include intermediate and remedial action ARARs such as would be necessary for regrading or leachate and contact water management.
- Include OM&M ARARs and requirements such as 10 CSR 80-2.030 cited in the ROD
- Include ARARs and requirements relevant to Institutional and Engineering Controls on site such as 10 CSR 23-3.010
- Add air quality requirements 10 CSR 80-3.010 (14)
- Sufficiently include ROD citations that affect design criteria such as minimum 2% slope.

29. Figure 8-1 Remedial Design Schedule: Revise this figure in accordance with the comments provided to Section 8.0 Schedule.

COMMENTS ON APPENDIX C - QUALITY ASSURANCE PROJECT PLAN (QAPP)

General Comment:

30. Revisions in this Appendix do not appear to satisfy a significant number of previous comments. Examples include prior comments 31, 42, 43, 46, 47, 48, 49, 52, 57, and 69. When revising this Appendix, review EPA's previous comments to ensure the revision addresses all previous comments.

Specific Comments:

31. QAPP Cover page and Signature Lines, page v. Revise the cover page to add a new signature line for Region 7 Quality Assurance Manager, Ms. Diane Harris.

32. Section 1.2, Testing of Potential Borrow Areas, page 2. The proposed testing frequency of 1/20,000 cubic yards (CY) appears too low given the potential variability of material present at a borrow area. Recommend the testing frequency be increased to 1 sample per 10,000 CY to account for potential material variability. Also, the required permeability for the low permeability layer is 1 x 10-5 cm/sec, not 1 x 10-6 cm/sec as cited in the table associated with this item. Check and revise the table as appropriate or explain why 1 x 10-6 is being discussed in this section.

33. Section 1.2 Testing of Potential Borrow Areas, page 2. The laboratory methods discussed in this section are not linked with the corresponding ASTM methods listed in Section 8.0 as requested in prior comments to this plan. Further, the *"Minimum Frequency"* column in the table associated with this item appears to include a typo and the *"Test Requirement"* column does not reflect actual regulatory requirements. Revise to correct the discussion and the referenced table with the appropriate proposed testing frequencies and the correct test requirements.

Additionally, revise the referenced table to include the full ASTM titles and methods for each of the identified laboratory methods.

34. Section 1.3 Installation and Monitoring of Temporary Gas Perimeter Monitoring Wells, page 2. EPA's prior comment #42 requested additional detail regarding the selection of screening intervals for gas perimeter monitoring wells. The revised QAPP deleted and replaced the previous narrative with the following sentence, *"Well screen elevations will be determined by drilling a test hole initially to sample the soils logged and also a review of groundwater levels in adjacent monitoring wells."* Revise this section to acknowledge that the bottom elevation of the waste within the landfill will be considered when determining the screening intervals as stated in the prior comment. Further revise section to generally explain how the test hole information will be assessed to determine the screen elevations and how groundwater elevations beneath the landfill may affect this item.

35. Section 1.4 Existing Thickness and Material Evaluation of Inactive Sanitary Landfill, as related to prior EPA Comment 43. It does not appear that any rationale was provided for selecting the 150-foot grid spacing. Also, no additional sampling location was added to the east of CS-32 and no explanation was provided as requested. Revise to include the rationale for the spacing and add an additional sampling point as directed in the comment in EPA's prior comment letter.

36. Section 1.4 Existing Thickness and Material Evaluation of Inactive Sanitary Landfill, as related to prior EPA Comment 46. Some revisions were made to the section to discuss depth intervals related to visual soil classification (ex. "The test locations will be sampled continuously for the full depth of boring using a geo-probe.") However, it does not appear that any actual proposed depth interval information was provided with respect to the Shelby Tube samples. Revise this section to address the comment in EPA's prior comment letter. Also, globally check and revise the submittal to use the term "direct push technology" in-place of "geo-probe".

37. Section 1.4 Existing Thickness and Material Evaluation of Inactive Sanitary Landfill, page 3, as related to prior EPA comment 47. It does not appear that revisions were made that discuss how the Shelby tube data will be evaluated to determine if excess cover materials are available as requested in EPA's prior comment letter. Revise section to address EPA's prior comment.

38. Section 1.4 Existing Thickness and Material Evaluation of Inactive Sanitary Landfill, page 3, as related to prior EPA comment 48. The minor revisions to this paragraph do not seem to provide clarity or consistency regarding the proposed analyses for the Shelby tube samples. In addition, no references to other relevant subsections were included as requested in EPA's prior comment. Revise section to address EPA's prior comment.

39. Section 1.5 Evaluation of Stormwater Conveyance and Leachate Pumping Well Structures, page 4, related to prior EPA comment 49. The only change to this section other than a typo, appears to be in the first sentence of the last paragraph which states that a "design investigation" of the existing leachate pumping well will be conducted. This revision fails to address the prior comment that required summary level details to be added, including any anticipated limitations related to this work. Further EPA notes that the schedule presented on Figure 8-1 includes a line for this design investigation item (line 44) which has a proposed schedule of 3-days. EPA would like to understand better what is actually proposed to occur on those 3-days as related to this item and questions if 3-days is sufficient for the overall investigation of the standpipes.

Please include additional summary narrative describing the process for this investigation/evaluation including provisions for the field portion of the work and other engineering assessments and interim reporting anticipated for this item.

40. Section 1.6 Validation of Laboratory Analytical Results, page 5. Add a reference to Section 15 so that it is clear in this section what the general components of the level 4 data validation program for this QAPP will consistent of.

41. Section 1.7 Slope Stability Verification Along Western Portion of The Inactive Sanitary Landfill, page 5. This section does not adequately describe how the proposed geotechnical evaluation is designed to meet the overall design objectives. Revise the section to provide a summary level discussion on how this proposed slope stability work will meet ARARs and other design related objectives such as determining a factor of safety for the slope. Further, as appropriate, revise to state that a separate work plan will provide more detail regarding the number, location, and evaluation criteria for this item, unless these details are available to put in the revised RD work plan.

42. Section 1.8 Sampling and Analyses of Selected Groundwater Monitoring Wells, page 6. This section does not adequately describe how the selected wells were selected or how their sampling will meet the objectives specified in the OU-2 ROD. Revise to provide a summary level discussion on how this proposed groundwater monitoring will meet ARARs and other performance objectives. Further, revise the section to state the following: *"Groundwater performance monitoring will be performed during and after the RA phase. Sentinel monitoring wells will be identified during the RD process. Baseline groundwater monitoring data will be collected from the sentinel monitoring wells during the RD investigations for comparison to groundwater monitoring data collected during and after the RA phase."* Further, revise to state that a separate planning submittal is planned that will provide more detail regarding the number, location, and evaluation criteria for this item.

43. Section 2.0 Data Quality Objectives, page 7. Prior comment 52 from EPA's September 12, 2019 letter asked for revisions to this section yet no revisions were made. Revise section to include a summary level discussion that generally includes the anticipated types of data that will be produced during the RD and how these data types will be verified and then used in the design to help make or support decisions.

44. Section 4.0 Documents and Records, page 11. The section has not been revised sufficiently to address EPA's prior comment. Revise the text to address the following items:

    - Replace the last sentence of the first paragraph with the following, "All laboratory data will be validated on an individual lab report basis by the appropriate personnel identified in this QAPP within 60 days of receipt from the laboratory. The validated data shall be submitted to the EPA and the Missouri Department of Natural Resources with the next OU-2 RD monthly progress report after the data has been validated. The associated data validation report(s) will also be submitted with the validated data."
    - Comment #53 from EPA's September 12, 2019 letter requested that "an anticipated table of contents for these reports" be included in this section. The only revision that was made states, "Data validation reports and final report will include a table of contents." EPA's expectation is that all the deliverables specified in the OU-2 RD SOW

will include a table of contents. The request to include an anticipated table of contents in this section was made because it was not clear to EPA which RD deliverable, if any, the "final report" as stated in this section was referring to. Further, no description is provided anywhere in the work plan or QAPP for the "Data Evaluation Report". Therefore, revise the section by including a narrative description or an anticipated table of contents for the "Final Report" and the "Data Evaluation Report" so that the purpose and general contents of these reports can be understood. Further, add these "report" items to the schedule (Figure 8-1) and to other relevant work plan sections to clearly indicate when these items will be prepared and submitted.

- Add the following sentence to the end of the last paragraph in this section, "An updated electronic database will be provided to EPA quarterly in any quarter that new laboratory data is received and validated."

45. Section 5.2, Testing of Potential Borrow Areas, page 12. The last sentence indicates the Design Manager will have final authority for determining the appropriate number of samples and type of sampling for the cover material. Revise plan to include a summary level discussion of the approach that will be employed for this design investigation effort including a summary of decision criteria that the Design Manager will consider for this determination. Further, revise to state that an additional planning submittal will be developed to provide additional details regarding the purpose of this investigation as well as details regarding the types, numbers, and locations of various samples to be collected to support this work element.

46. Section 5.3, Installation and Monitoring of Temporary Landfill Gas Monitoring Wells, page 13, 2nd paragraph. The second sentence indicates the screening zones for this work will be determined in the field based on observations of site-conditions. EPA wants to understand how identifying different conditions will impact decisions on determining the screening zones. Revise this section to generally explain how site conditions will be assessed and how that will affect the decision-making process for the screening zones.

47. Section 5.5 Evaluation of Stormwater Conveyance and Leachate Pumping Well Structures, page 14. Revise section to add summary level discussion of the evaluation process for stormwater, leachate, and conveyance water sufficient to support design objectives, meet ARARs, and discuss any associated anticipated planning submittals or reports that will be developed to support this work element in the future.

48. Section 5.6, Slope Stability Verification Along Western Portion of the Inactive Sanitary Landfill page 14. The text in this section indicates that the geotechnical sample locations are shown on Figure A-7, however, those locations are not shown on Figure A-. Revise the referenced figure to show the locations or revise the text to indicate where this information is located in the work plan.

49. Section 5.7 Sampling and Analysis of Selected Groundwater Monitoring Wells, page 14. Revise section to provide a summary level discussion of how the proposed groundwater monitoring data will meet design objectives and ARARs. Further, revise to state that an additional planning submittal will be developed to provide additional details regarding this work to support this design investigation.

50. Section 6.2. Testing of Potential Borrow Areas, page 15. The narrative description of the proposed sampling methods for the testing of borrow areas does not currently provide sufficient details. Revise this section to provide a summary level discussion of the proposed sampling and testing methods.

51. Section 6.6, Slope Stability Verification Along Western Portion of the Inactive Sanitary Landfill, page 16. In addition to geotechnical samples at the top and bottom of the slope, EPA asserts that additional sampling on the slope to determine the actual limits of waste within/under the western slope is needed to support. Further, the first paragraph mentions a separate work plan will be submitted to address slope stability and sampling. EPA sees value in this approach, however, this item is not apparent in reading other portions of the RD Work Plan, thus revise the section to state that an additional planning submittal will be developed to provide additional information regarding the slope stability work.

52. Section 8.2, Testing of Potential Borrow Areas, page 21. EPA requests testing the borrow source area(s) for potential chemical and radiological contamination prior to transport to the project site. Revise this section accordingly.

53. Section 8.4 Existing Thickness and Material Evaluation of Inactive Sanitary Landfill Cover, page 22. In the revised version of the QAPP Section 8.4, the method referenced for the determination of "Unit Weight" is listed as ASTM D2166 (2016). EPA believes that the appropriate ASTM method for this type of evaluation is D7263-09 (Reapproved 2018) entitled, "Standard Test Methods for Laboratory Determination of Density (Unit Weight) of Soil Specimens". Please correct this reference within the QAPP or clarify the justification for use of a method for determination of unconfined compressive strength.

54. Section 8.6 Slope Stability Verification Along Western Portion of the Inactive Sanitary Landfill page 23. Strength testing should be included that will allow the slope stability analysis to account for potential multiple site-conditions, thus EPA asserts that it may be useful to also perform Consolidated Drained tests for the evaluation of existing conditions. Revise the section to state that an additional planning submittal will be developed to provide additional details regarding the purpose of this work and to provide details regarding the types, numbers, and locations of various samples to be collected to support this work element.

55. Section 9.0 Quality Control, page 23. The section has not been revised sufficiently to address EPA's prior comment. Revise this section to address the elements described in Section 2.2.5 (Quality Control) of EPA's *Guidance for Quality Assurance Project Plans EPA QA/G-5* (EPA ID $ 240/R-02/009), and establish the following in the revised text:

    - Establish the quality control, or QC, data needed to evaluate reliability and confidence in data generated. Base the requirements for these QC data on the DQOs for the various investigations.
    - Establish QC activities and control limits for field-acquired data, including geospatial data and landfill gas measurements. Base these activities and requirements on the DQOs for the various investigations.

56. Section 10 Instrument/Equipment Testing, Inspection, and Maintenance page 27. The section has not been revised sufficiently to address EPA's prior comment. The text of this section addresses only field instruments used for landfill gas collection. Revise this section to address all equipment requiring periodic maintenance and/or calibration, including instruments used to acquire geospatial data.

57. Section 12 Non-direct Measurements page 30. The section has not been revised sufficiently to address EPA's prior comment. This section identifies only one use of previously obtained information: *"...for planning field activities proposed in this RD QAPP."* However, Section 4.0 of the RD Work Plan states that data from previous analyses of 10 Shelby tube samples will be incorporated into the RD effort. Revise this section to identify and discuss all intended uses of previously acquired data, including the previously obtained Shelby tube data.

58. Figure A-1 Organizational Chart. Revise this figure to move the EPA RPM from the current location in the organizational chart and place the EPA RPM in the same "box" or a similar box and chart location as the other regulator (MDNR RPM) to the right side of the chart.

COMMENTS ON THE SAMPLING AND ANALYSIS PLAN (OU-2 RD SAP)

1. Section 6.0 Analysis of Existing Western Slope, page 6 (Response to EPA Comment 77): The original comment requested to replace the phrase "a geotechnical sampling investigation may be implemented" with "a separate work plan will be developed for approval to implement a geotechnical sampling investigation". Revise section to state that a separate planning submittal is planned that will provide more detail regarding field work and sampling efforts needed to support the design, including the proposed types, numbers, and locations for sample collection and other design investigative work, and the evaluation criteria associated with the work.

END OF COMMENTS