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October 28, 2013 VIA: Electronic Mail

U.S. Environmental Protection Agency
Region VII SUPR/MOKS
11201 Renner Boulevard
Lenexa, KS 66219

ATTENTION: Mr. Dan Gravatt

SUBJECT: Revised Work Plan – Alternative Area 2 Excavation Depths and Volumes, West Lake Landfill Operable Unit 1, Bridgeton, Missouri

Dear Mr. Gravatt,

On behalf of Cotter Corporation (N.S.L.), Bridgeton Landfill, LLC., Rock Road Industries, Inc., and the United Sates Department of Energy (the "Respondents"), Engineering Management Support Inc. (EMSI) submits the attached revised Work Plan – Alternative Area 2 Excavation Depths and Volumes. The attached work plan has been revised to address comments provided by EPA's National Remedy Review Board (NRRB) and by the Missouri Department of Natural Resources regarding the specific sections of the Supplemental Feasibility Study (SFS) report that may need to be revised to incorporate the results of the evaluations of the alternative depths and volume of radiologically-impacted material (RIM) in Area 2.

With regard to the comment that "…the 500,000 cubic yards amount corresponding to the 'complete rad removal' option likely overstates the volume and cost associated with a reasonable excavation remedy, especially where it appears feasible to separate out uncontaminated overburden material (e.g., construction debris)," we do not understand the basis or nature of the NRRB comment. The volume of RIM identified in Areas 1 and 2 for possible excavation under the "complete rad removal" is actually 335,500 bank cubic yards (bcy) (see Section 2.2.4 of the December 2011 SFS report). The SFS evaluations also identified 359,000 bcy of non-RIM overburden material (including both non-RIM solid waste and inert fill material) located over the RIM in Areas 1 and 2 that would need to be removed and segregated as part of any attempt to remove the underlying RIM.

The methods used to develop these volume estimates for both RIM and overburden were discussed with EPA during a webinar meeting prior to preparation of the SFS, and were subject to EPA review and approval during development of the draft and final SFS report. We do not understand the basis for the value of 500,000 cubic yards cited by the NRRB

or the apparent misunderstanding of the NRRB regarding the fact the prior SFS evaluations included separation of non-RIM overburden material from the volumes of RIM to be excavated and disposed elsewhere.

With respect to the comments provided by the NRRB regarding consistency of the evaluation of alternative Area 2 RIM depths and volume with comments and recommendations provided by the NRRB, we look to EPA Region VII to address these comments with the NRRB. The Work Plan previously provided to EPA and the attached revised Work Plan address EPA's request (as stated in EPA's October 12, 2012 letter to the Respondents) that the volume of RIM considered for possible excavation under the "complete rad removal" alternatives be revised to exclude deeper intervals in soil borings WL-210 and WL-235 in Area 2. With respect to consideration of other alternative volumes of RIM for examination of possible excavation, this activity is addressed in the separate Work Plan – Partial Excavation Alternative.

If you have any questions or desire additional information related to this work plan or any other aspect of the project, please do not hesitate to contact me.

Sincerely,
ENGINEERING MANAGEMENT SUPPORT, Inc.

Paul V. Rosasco, P.E.

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Work Plan

Alternative Area 2 Excavation Depths and Volumes

Introduction

EPA's October 12, 2012 letter to the West Lake Landfill Operable Unit 1 (OU-1) Respondents states that, ~~during an early consultation with the National Remedy Review Board (NRRB), the NRRB indicated that~~ the deeper radiological detections in borings WL-210 and WL-235 are unreliable. Consequently, EPA has asked that the volume of radiologically-impacted material (RIM) considered for possible excavation under the "complete rad removal" alternatives be revised to exclude deeper intervals in soil borings WL-210 and WL-235 in Area 2.

Commented [WS1]: My recollection of the limited number of board discussions that I sat on is that the board was generally more concerned that the only excavation option seemed to be removing too much material. This workplan seems to be excerbating this problem. For a better understanding of the NRRB discussions the writer should go back and reread the comments entitled "West Lake Landfill Work Plans" distributed by Dan Gravatt on August 16, 2013. However the Region will still need to to discuss with the NRRB or some of its members to ensure that the Workplan is addressing the NRRB's concerns, if that is the intent of the Region.

Evaluation of the soil sample analytical results and the downhole gamma logging data during preparation of the SFS indicated that soil containing radionuclides above the levels used to identify material to be included within the scope of the two "complete rad removal" alternatives was potentially present within a deeper depth interval beneath the southwestern portion of Area 2. Specifically, elevated gamma peaks were identified on the downhole gamma logs at depths of 47.5 feet (ft) below ground surface (bgs) in WL-210 and 22.5 ft bgs in WL-235; however, the Remedial Investigation (RI) [EMSI, 2000] states (on p. 97) that boring WL-210 was re-logged because during the first logging attempt, material was knocked into the hole and that the presence of this material may have been the cause of a small poorly defined peak at the bottom of this boring. The RI also states (again on p. 97) that the presence of a poorly defined peak at the bottom of WL-235 may also be the result of RIM at shallow depths having been knocked into this borehole during drilling or logging activities.

Although the RI raised possible questions about the representativeness of the downhole gamma logs for the deeper intervals of these two borings, a soil sample obtained from boring WL-210 detected the presence of total Thorium-230+232 at a depth of 40 ft bgs at a level (18.6 pCi/g) above the cleanup level (7.9 pCi/g) used to evaluate potential excavation alternatives. A duplicate sample obtained from this same depth interval contained total thorium at 11.6 pCi/g. These samples were obtained from a depth of 40 ft, 10 feet above the bottom of the borehole. In addition, these samples were obtained during drilling of the borehole, prior to the downhole logging activities that may have resulted in surficial material being knocked into the hole. Therefore, these sample results likely represent actual conditions at the 40 ft depth interval in boring WL-210. The RI sampling did not include collection of a soil sample from the deeper portion of the WL-235.

Although uncertainty exists regarding the representativeness of the downhole gamma logs at these two locations, the soil sample result from the 40 ft depth in WL-210 combined with the downhole gamma logs were used to define an area and volume of a deeper interval of RIM occurrence beneath the southwestern portion of Area 2. This material and the associated overburden material that would need to be removed to allow for excavation of this RIM, were included within the overall volumes of materials

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that would need to be excavated if one of the "complete rad removal" alternatives were to be implemented at the site. (Note: Deeper intervals of radiologically-impacted material were also identified beneath other portions of Area 2 but are not the subject of this re-evaluation).

Because of the uncertainty associated with the downhole gamma logging at these two locations, EPA has indicated that ~~the NRRB believes~~ the radiological detections in the deeper portions of these two borings are unreliable. EPA has therefore requested that the volumes of materials that may be removed under a "complete rad removal" alternative be re-estimated to exclude the deeper depth intervals in borings WL-210 and WL-235.

Approach

The following approach will be used to develop a revised excavation volume for Area 2:

1. Revise the calculated volume of material to be excavated under the "complete rad removal" alternatives to eliminate deeper intervals in soil borings WL-210 and WL-235 and consequently to eliminate removal of the deeper interval of RIM material from the southwestern portion of Area 2; and

2. Develop revised estimates of the potential risks to workers and the public, revised projected construction schedules, and revised cost estimates for excavation and offsite or onsite disposal based on exclusion of the potential deeper occurrences of RIM beneath the southwestern portion of Area 2.

Deliverables

The following deliverables will be prepared pursuant to this task

1. Interim Deliverable – A brief memorandum will be prepared summarizing the revisions to the RIM extent and volumes resulting from exclusion of the deeper interval beneath the southwestern portion of Area 2. If the re-evaluation of the volume material results in significant changes in the amounts of materials that would be excavated under the "complete rad removal" alternatives, this memorandum will also include evaluations of potential risks, revised calculations of greenhouse gas emissions, revised anticipated project schedules, and revised anticipated costs for the two "complete rad removal" alternatives based on the assumption that the deeper intervals in borings WL-210 and WL-235 are not included in the volume of RIM material under the two "complete rad removal" alternatives.

2. SFS Revisions – The existing SFS text, tables and appendices will be amended to include the results of alternative development and evaluation based on exclusion of the deeper intervals in

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borings WL-210 and 235 in conjunction with the existing discussions that include these depth intervals as presented in the current SFS report. Subject to EPA comments on the Interim Deliverable, the following specific revisions to the December 2011 SFS report are anticipated:

a. Amend the text of the SFS as follows:
   i. Section 2.2.4 – Include discussion of the revisions/changes to the volume of RIM addressed by this alternative.
   ii. Section 5.3.1 – Include as part of the descriptions of the excavation and disposal alternatives the volumes of RIM and overburden material to be excavated if the reported deeper occurrences in borings WL-210 and WL-235 are not considered in addition to the total volumes already presented in this section
   iii. Sections 6.2.2 and 6.2.3 – Include as part of the descriptions of the excavation and disposal alternatives the volumes of RIM and overburden material to be excavated if the reported deeper occurrences in borings WL-210 and WL-235 are not considered in addition to the total volumes already presented in this section
   iv. Sections 6.2.2.5 and 6.2.3.5 – Add to the discussions of Short-Term Effectiveness, in particular the Protection of the Community, Protection of Workers, and Time Until RAOs are Achieved, discussions relative to the reduced volume of material and consequently reduced time frames that would be associated with excavation and disposal alternatives if the reported deeper occurrences in borings WL-210 and WL-235 are not considered
   v. Sections 6.2.2.7 and 6.2.3.7 – Add to the discussion of Cost, the estimated costs to implement the excavation and disposal alternatives based on the reduced volume of material and consequently reduced time frames that would be associated with excavation and disposal alternatives if the reported deeper occurrences in borings WL-210 and WL-235 are not considered
   vi. Sections 7.2.3 (Short Term Effectiveness) and 7.2.5 (Cost) – Revise the comparative analysis of alternatives to reflect the differences between the short-term risks, schedules and costs that result from inclusion or exclusion of the deeper intervals in borings WL-210 and WL-235
   vii. Table 10 – Amend this Table to include the results of the evaluation of the revised Area 2 volume alternative.

b. Amend the Appendices to the SFS as follows:
   i. Appendix B – Develop and include an alternative excavation plan that does not include excavation of the deeper intervals at WL-210 and WL-235 and calculate the revised volume of RIM and overburden material to be excavated.
   ii. Appendix H – Develop and include estimates of the potential risks to the community and workers based on the volumes of RIM and overburden material

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to be excavated and revised construction schedules if the deeper intervals in borings WL-210 and WL-235 are not considered

iii. Appendix I – Prepare additional estimates of Greenhouse Gas Emissions associated with the "complete rad removal" alternatives under a scenario where the deeper intervals in borings WL-210 and WL-235 are not considered

iv. Appendix J – Prepare additional construction schedules for the "complete rad removal" alternatives under a scenario where the deeper intervals in borings WL-210 and WL-235 are not considered

v. Appendix J – Prepare additional estimates of the construction costs (both fiscally constrained and not-fiscally constrained) for the "complete rad removal" alternatives under a scenario where the deeper intervals in borings WL-210 and WL-235 are not considered

Changes may also be made to other sections of the report if and as necessary to reflect the results of the evaluations of the revised Area 2 depth and volume estimates including but not limited to changes to the evaluation of the implementability of the alternatives.

Clarifications by EPA

No additional information or clarifications are being requested from EPA at this time relative to this task.

Anticipated Schedule

It is anticipated that it will take approximately two months to develop the interim summary memorandum.

Preparation of a Supplemental SFS report that includes the results of the revised Area 2 excavation volumes and associated evaluations, as described in the interim deliverable summary memorandum, will be performed once EPA comments on the interim deliverable are received and in conjunction with revisions to the existing SFS report required to address the results of the various other additional tasks EPA has requested.

References

Engineering Management Support, Inc. (EMSI), 2011, Supplemental Feasibility Study, Radiologically-Impacted Material Excavation Alternative Analysis, West Lake Landfill Operable Unit-1, December 16.

EMSI, 2000, Remedial Investigation, West Lake Landfill Operable Unit-1, April 10.

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