

EPA April 28, 2017 Comments on Development and Screening of Remedial Alternatives Technical Memorandum
Rolling Knolls Landfill Superfund Site

| | Section | Page | Paragraph | |
|----|---------|------|-----------|--|
| 1. | | | | <p>Based on current residential zoning and without an agreement in place to restrict residential use, the FS should include and evaluate future residential cleanup alternatives.</p> <p>As noted in a November 18, 2016 EPA email “Because the Human Health Risk Assessment found unacceptable future residential risk to children and adults, the RI and FS must include a residential cleanup scenario and remedial alternatives that will mitigate this potential risk.” EPA has instructed the Group on numerous occasions that without a residential restriction in place any remedy would have to include at least a contingency for residential cleanup.</p> <p>Please include the following soil scenarios: -- All residential, with full excavation of all contaminated areas; -- A mixed use scenario, with hot spot removal/capping/consolidation in some areas and full removal in others, such as along Britten Road; and -- All recreational-type use, with hot spot removal/capping/consolidation, as needed.</p> |
| 2. | General | | | Provide a table of specific COCs for each medium and corresponding tentative PRGs. Include human health and ecological PRGs. FS must include estimates of areas and volumes of remediation based on these PRGs. |
| 3. | General | | | Please ensure that the draft FS follows the format prescribed in the EPA Guidance document to allow for straight-forward government review. |
| 4. | General | | | The soil remedies identified do not seem to include consolidation of highly impacted soil and capping of selected areas. Please include alternatives to consolidate contamination throughout the site, including the FWS property. |
| 5. | General | | | In accordance with EPA’s August 29, 2013 Final Decision on Formal Dispute Resolution, which is incorporated into and an enforceable part of the Order, the ballfield and shooting range are considered part of the Site. The Group agreed to perform an RI/FS for the Site with the goals of determining the nature and extent of contamination and to identify and evaluate remedial alternatives. The entire ballfield and shooting range properties must be included when describing the Site throughout the RI and FS documents and must be included in remedial alternatives. |
| 6. | General | | | Groundwater monitoring data collected from temporary well points (TWPs) should be included in discussions of site characterization. |

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| 7. | General | | | Samples taken and designated as sediment samples in areas where there is no persistent channelized stream flow, should be considered as soil samples. |
| 8. | General | | | Almost all in situ and ex situ treatment technologies (except for phytoremediation) for soil have been eliminated. It is believed that treatment technologies such as ISCO or ex situ treatment can be effective and economical in treating targeted source areas and should not be ruled out. |
| 9. | General | | | Several in situ and ex situ chemical, physical, and biological treatment technologies for groundwater have been retained after the screening process. However, only biological treatment was incorporated into one remedial action alternative. All the other retained technologies were not utilized in the alternatives. Please clarify/revise. |
| 10. | General | | | It appears that the screening process is biased towards retaining the low-cost technologies. Some of the more effective treatment technologies (e.g., advanced oxidation process, thermal treatment) were screened out based on cost. During the initial screening of technology types and process options, effectiveness should be the primary focus, followed by implementability; cost should play a limited role at this stage. |
| 11. | General | | | For the soil alternatives, targeted on site “hot spot” treatment should be considered. |
| 12. | General | | | For the groundwater alternatives, all active remedies rely on MNA as the main control of risks and spreading of contamination. MNA can be a component of most if not all potential remedies, but should not be the main control for each one. For example, a viable option may be in-situ treatment after source control followed by MNA. |
| 13. | General | | | There are insufficient details in the alternative descriptions to provide meaningful evaluation of the alternatives. This information is necessary for the FS. For example, please provide the targeted treatment areas, the depth, the volumes, and the COCs in each area under Alternative 3. |
| 14. | General | | | The text states that “the presumptive remedy for CERCLA municipal landfill sites is containment”. However, the presumptive remedy also includes preventing direct contact with landfill contents, minimizing infiltration and resulting contaminant leaching to groundwater, controlling surface water runoff and erosion, collecting and treating contaminated groundwater and leachate to contain the contaminant plume and prevent further migration from source area, and controlling and treating landfill gas. If the presumptive remedy guidance were to be followed, the proposed alternatives lack one or more of the required components. In addition, treatment of soil and groundwater at the site is not impracticable, as stated in the Technical Memorandum. |

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| 15. | General | | | <p>Many of the EPA comments on the Technical Memorandum on Candidate Technologies dated March 2012, Revised March 2015 are still applicable to this DSRA and FS, in particular the technology evaluation regarding which class of COCs will be addressed by a particular technology. It is generally known that PCBs and metals will not be treated by biological treatment, yet no other technologies were incorporated into that groundwater alternative to treat other classes of COCs. Each technology should specify which COCs it will address.</p> <p>A mixed remedial approach is acceptable.</p> |
| 16. | General | | | <p>A wetlands assessment and restoration plan will be needed for any wetlands impacted or disturbed by contaminants and/or remedial activities (Clean Water Act Section 404, Protection of Wetlands E.O. 11990, 40 CFR 6 App A). Additionally, whenever possible, Management Practices (according to Federal Register Vol. 51, No. 219, Part 330.6) should be followed to minimize unavoidable impacts (e.g., spread of contaminants, roadways) to wetlands to the maximum extent practicable while designing/implementing the remedy.</p> |
| 17. | General | | | <p>Alternatives should include consideration of current uses (landscape businesses, hunt club, hunting, equipment storage) which would continue or include a description that these uses would be discontinued. In other words, a more detailed discussion of future use and potential exposure should be provided for each alternative.</p> |
| 18. | General | | | <p>The DSRA notes the USEPA range of acceptable Human Health risks is 1×10^{-6} to 1×10^{-4}. While the acceptability of the formal risk assessment is deferred to EPA, remediation for this site must comply with NJDEP Departmental policy and New Jersey statutes such that all contaminants present in concentrations above the one-in-a-million cancer risk (1×10^{-6}) and above an HQ of 1 are addressed either by remediation or institutional/engineering controls.</p> |
| 19. | ES | iv | 5 | <p>“Site conditions and constituent concentrations in soil, sediment, surface water, and groundwater have been characterized through several phases of investigation since 2006.” Sentence is not consistent with text on page 1, 2nd paragraph: “The Group began investigations of the Site in 2007, in compliance with the requirements of the Administrative Settlement Agreement. . .” Please revise or clarify.</p> |
| 20. | 2.1 | 3 | | <p>South Orange Disposal stores roll-offs on the site too.</p> |
| 21. | 2.2 | 3 | | <p>“although there is no evidence that landfilling occurred in these areas.” Remove this statement. Landfilled wastes are on the Green Village Fire Department property, as identified on Figure 2-1 by the pink line and green area.</p> |
| 22. | 2.4 | 4 | | <p>Please define ACO.</p> |

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| 23. | 2.5 | 4 | | Please define SCSR. |
| 24. | 2.6 | | | RI Results: Make sure this section is consistent with revised RI report language and Supplemental GW and Baseline MNA Investigation Report. |
| 25. | 2.6.1 | 5 | | There is no discussion of inorganic constituents in soils is included (like As and Pb distribution as it relates to GW). Though the occurrence is widespread, locations showing exceedances do not appear to be randomly distributed. The connection between soil and groundwater will need to be better developed in the FS. |
| 26. | 2.6.1 | 6 | 1st | “No waste disposal occurred and no landfill-related impacts were observed in soil at the Baseball Field and Shooting Range, which USEPA includes in the definition of the Site but which are located north of the landfill.” Please see General Comment 5 regarding the definition of the site and revise this section accordingly. |
| 27. | 2.6.1 | 6 | | “With the exception of one location where a low level of PCBs was detected, subsurface soil samples collected beneath the landfilled materials confirmed that constituents in the landfill are not migrating into the underlying soil.” This statement is confusing, because there is more than one occurrence of PCBs in the subsurface soil (SS-47: PCBs at 5.35 ppm 0-1 ft, 1.47 ppm 8-9 ft; SS-57 PCBs 12.5 ppm 0-1 ft, 12.1 ppm 4-5 ft; several other examples). Please clarify and/or remove the statement. |
| 28. | 2.6.2 | 6 | | “Many of these constituents are also found in surface water and sediment upstream of the Site. Therefore, their presence in the streams may not be Site-related.” Make sure this is consistent with revised RI and GW reports. “With minor exceptions, the constituents are not found in the most downstream surface water and sediment samples...” – What are these exceptions? Delete “minor” and provide details about exceptions. Make this language consistent with RI. |
| 29. | 2.6.1 | 6 | | See General Comment 7 regarding sediment and soil samples and revise this section accordingly. |
| 30. | 2.6.3 4.1.2 | 6-7 24 | 2 | Groundwater is to be remediated to its most beneficial use regardless of depth. The NJDEP Class IIA designation still applies to site groundwater. |
| 31. | 2.6.3 | 6-7 | | Prior comments on RI pointed out additional areas of impacted groundwater for consideration. The following additional areas also show localized groundwater impact and should be added to the list: GW-TWP-1 through 4: In addition to CFCs at 1 and 2, 2 through 4 have various pesticides; 1,3, and 4 have PAHs; 3 and 4 have PCBs. (It is unclear why the TWP results are excluded from characterization discussions). |

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| | | | | MW-6 and MW-7 have 1,4-dioxane detected at high concentrations as a TIC and warrant further investigation. PAHs in TWP-5,7,8,9 in southwestern corner |
| 32. | 2.63 | 7 | Bullet 1 | Since TP-09 is referenced, a figure should also show TP locations. |
| 33. | 2.63 | 7 | Bullet 2 | Since POI-10 is referenced, a figure should also show POI locations. |
| 34. | 2.6.3 | 7 | 1 | Without having a clear understanding of regional/background groundwater quality, the inorganic constituents on site cannot be attributed to background. Perhaps some of the lower concentrations can be attributed to background, but there needs to be evidence to make this claim. Make this section consistent with RI report. |
| 35. | 2.6.3 | 7 | last | <p>“Metals are mostly not detected in filtered groundwater samples...” This statement is misleading, as it has been established that there are significant areas in the aquifer where constituents (Fe, As, Pb, Mn and sporadic others) are showing up in both filtered and unfiltered components, sometimes at a nearly 1:1 ratio. Several areas have metals existing almost exclusively in the dissolved phase, which ties into the various geochemical regimes of the site. This will be important in addressing the mobile fraction of metals in soils.</p> <p>“The concentration of metals in the aquifer underneath the landfill decreases as groundwater flows to downgradient areas. This is related to the geochemical conditions in the aquifer: Strongly reducing beneath the landfill, leading to the formation of sulfide minerals, and oxidizing outside the landfill, leading to the immobilization of metals in oxidized forms.” First, there are few groundwater points representing the inside of the landfill. Plus, the formation of sulfide minerals was found at one location and cannot be used to characterize the extent of processes occurring throughout the landfill. (see also a similar discussion on page 25). Additional wells will be needed, especially inside the landfill going into design. The discussion of metals in groundwater is oversimplifying geochemical conditions based on very limited information. It is premature to draw conclusions at this time, based only on the MW-7 conditions.</p> |
| 36. | 3.1.1 | 10 | | First bullet list: Add a bullet that states “An adolescent and/or adult hunter on the Landfill”. This scenario is listed in the “Current and Reasonably Anticipated Future Exposure Scenario” table and was characterized in the BHHRA. |
| 37. | 3.1.1 | 10 | | Future On-Site Residential Development Scenario, first bullet: Revise the text to state “...in the potentially developable area (defined as <u>the landfill</u> areas...” for consistency with BHHRA language. |

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| 38. | 3.1.2 | 11 | | BHHRA Results: Define RME and CTE in the text. |
| 39. | 3.1.2 | 12 | 1 | “PCBs are the primary non-cancer health hazard drivers for these receptors.” PCBs are the only risk-driving COC in soil above 10-6 or HQ of 1. However, other contaminants may require remediation now that ARARs have been triggered. COCs list should include ARAR exceedances. |
| 40. | 3.1.2 | 12 | last | Please be aware that EPA issued guidance in December 2016 that, among other things, identifies a range of target blood lead levels of 2 ug/dl - 8 ug/dl. Region 2 is currently developing a protocol for evaluating data for lead in soil that addresses the issues identified in this guidance. When that protocol is final, Region 2 will share this. For the purpose of reviewing the DSRA, please be aware that lead has been identified as a COPC and will be carried into the FS for consideration of remedial alternatives. |
| 41. | 3.2 | 16-21 | | BERA: a.) The discussion of the potential risks to benthic invertebrates references the comparisons of sediment benchmarks to sediment concentrations from the 2016 sampling data. This discussion should acknowledge the additional sampling data prior to 2016. It should also be noted that with the inclusion of the additional Remedial Investigation (RI) data there may be areas of potential risk in addition to sample location SED007. b.) It is stated that the COPEC metal risks may be overestimated based on the assessment of the sediment bioavailability using the measured [SEM-AVS]/TOC. It is also stated that this showed that the potential for sediment toxicity is unlikely. It may be appropriate to revise this statement to indicate that the sediment toxicity associated with metals is unlikely at these specific locations. |
| 42. | 4.1.1 | | | EPA does not accept the Non-Residential only site-wide approach for soil alternatives. See General Comment 1 regarding the inclusion of additional residential and mixed use soil cleanup alternatives above. |
| 43. | 4.1.1 | 22 | | The areas of the site with waste and debris are wide-spread and highly variable in depth. The nature and extent of waste is not typical for a municipal landfill and therefore the presumptive remedy may not be appropriate. See comment 14 |
| 44. | 4.1.1 | 23 | | Table: Specific metals, PAHs and pesticides should be listed. |

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| 45. | 4.1.1 | 23 | | <p>“Risks for adolescent and adult trespassers on the landfill in the Current and Reasonably Anticipated Future Exposure Scenario are greater than the USEPA target level. In addition, risks for landscapers in Landscape Area 1 are slightly above the USEPA target level.” Target levels are not used to develop PRGs. Typically, once unacceptable risk (eco and human health) has been identified, risk-based cleanup goals are developed and compared to ARARs, human health risk-based PRGs, eco-risk based PRGs and impact to groundwater values. The most conservative value is selected as the PRG.</p> |
| 46. | 4.1.2 | 24 | 1 | <p>Class IIA GWQS and MCLs apply regardless of aquifer depth.</p> |
| 47. | 4.1.2 | 24 | | <p>Table:</p> <ul style="list-style-type: none"> a.) At least one additional area per RI comments: PCBs and PAHs in southwestern corner by TWP’s and MW’s 3 and 15. See comment 31 b.) While current exposures may not exist, don’t they need to include potential future exposure? c.) Specific metals should be listed. |
| 48. | 4.1.2 | 24 | | <p>NJ requires all groundwater to be remediated to its most beneficial use “restore, enhance, maintain the chemical, physical, and biological integrity of its waters,” in this case Class IIA requirements apply. See previous comments 30, 46</p> |
| 49. | 4.1.2 | 24 | 1 | <p>“Any future use of the groundwater is unlikely, and not reasonably anticipated, since New Jersey regulations require drinking water wells to have casings that are at least 50 feet deep (N.J.A.C. 7:9D2.3).”</p> <p>Because the groundwater is designated as Class IIA it needs to be protected regardless of the current use and New Jersey regulations. EPA has notified the Group of this requirement on numerous occasions, please see November 18, 2016 EPA email. The Clean Water Act has three parts: use designation; numeric criteria; and anti-degradation. Delete this sentence.</p> |
| 50. | 4.3 | 26 | | <p>The Preliminary Remedial Action Objectives listed are not appropriate. First, there is no RAO to restore the groundwater. In accordance with Section 121 of CERCLA the selected remedial action for the Site must comply with ARARs established under federal and state environmental laws unless a statutory waiver is justified. Note, although this groundwater is not currently being consumed for drinking water purposes and an intended future drinking water well would be deeper than the present groundwater contamination, groundwater migrates laterally and</p> |

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| | | | | <p>vertically with time and the goal of CERCLA is to restore the groundwater to drinking water standards. Therefore, an RAO for the restoration of groundwater should be included.</p> <p>The following suggested RAOs are more consistent with EPA’s expectations, though these are not final and we are willing to participate in a meeting/call to discuss and refine the RAOs further. These RAOs may be refined after any such meeting or after review of the full draft FS:</p> <ul style="list-style-type: none"> • Prevent or minimize potential current and future unacceptable risks to human and ecological receptors through direct contact or ingestion of contaminated soil. • Prevent or minimize soil contaminant impacts to groundwater that would result in ARAR exceedances. • Prevent or minimize potential current and future unacceptable risks to human receptors through ingestion of contaminated groundwater. • Restore groundwater to its expected beneficial use by reducing contaminant concentrations below the more stringent of federal MCLs and NJ GWQS and preventing migration of groundwater above these concentrations from the site. |
| 51. | 4.3 | 26 | | <p>Please include a section on PRGs, preferably after the RAO section, and before the discussion of technologies. We need to know what levels we're trying to get to, so that we can evaluate whether the technologies can get us there. The FS will need to include this information in detail.</p> |
| 52. | 5 | 27 | | <p>This will all need to be revised to reflect inclusion of residential and partial residential future use scenarios. The rest of the document will likely need to be revised significantly to incorporate residential scenarios.</p> |
| 53. | 5.1 | 27 | 2 | <p>Please see General Comment 14 regarding the presumptive remedy.</p> |
| 54. | 5.3 | 29 | Bullet 1 | <p>Screening Criteria: It is not clear what is meant by the bullet, “Metals present in the Site groundwater are widespread but may be a result of geochemical conditions associated with the municipal waste present in the soil or naturally occurring conditions.” The majority of metals present in groundwater are appear to be site related and are derived from the waste present in the soils. This statement should be removed from the document.</p> |

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| 55. | 5.3 | 29 | Bullet 2 | “non-metals groundwater impacts are localized and are limited to areas within and close to the boundaries of the landfill.” This sentence should be removed as this is an unknown. Given that all the monitoring wells with the exception of 1-2 are situated around the perimeter of the landfill, it is actually unknown what the groundwater impacts are within the center of the landfill. |
| 56. | 5.3 | 29 | Bullet 4 | Please remove the bullet, “Site groundwater is not a current or reasonably anticipated future source of drinking water” as that is not typically a consideration when evaluating groundwater remedies. |
| 57. | 5.4.3 | | | Process options were only developed based on containment end-point. Need to revise based on groundwater restoration goals, which are not impracticable here |
| 58. | 5.5.2 | 31 | Bullet 3 | Refers to in situ treatments for oxidation/reduction and precipitation in terms of containment – update based on restoration goals. ISCO/ISCR and precipitations/co-precipitation were eliminated “because they are expected to be less effective than containment options.” ISCO/ISCR and precipitations/co-precipitation are treatment processes while containment is a non-treatment. The two technologies should not be compared and eliminated based on cost. EPA favors treatment as a preferred remedy. |
| 59. | 5.5.2 | 32 | Bullet 1 | The text states that “biopiles was not retained because of the long treatment time relative to other ex situ biological treatments.” This is not a valid reason because all the other ex situ biological treatment technologies were eliminated. Cutoff trenches, sheet piling and reactive walls could be used for groundwater source control discussed under Alternative 3 in Section 6.2.2 as effectively as capping and don’t require as extensive an infrastructure for installation. Consider retaining these options. |
| 60. | 6.2 | 34-35 | | See general comment regarding current landscape businesses located on Site. |
| 61. | 6.2.1 | 35-37 | | Suggest including a variation of the remedial alternatives to consider on-site consolidation of source material. |
| 62. | 6.2 | 35 | 1 | “In fact, these future use scenarios are the only options that can comply with existing federal, state and local statutory and regulatory constraints on significant portions of the Site while meeting the intent of local, county and state planning documents for the area. |

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| | | | | Please give an estimate of total acreage that constitutes “significant portions of the Site” and more detailed rationale for this statement. |
| 63. | 6.2.1 | 36 | | <p>Alternative 3, Third paragraph: The text states that “thousands of truck trips to haul materials through residential areas on narrow streets not built for heavy truck traffic”. Similar claims were made under Alternatives 4 and 5. Please provide details regarding areas and depths of excavations, and the volumes of soil ship offsite. It is more a reason to justify onsite targeted treatment under Alternatives 3 and 4.</p> <p>Alterative 3, 4 and 5 discuss the infrastructure issues which make truck access difficult. Provide additional elaboration like what is in paragraph 3 of the executive summary as to site access restrictions. Also provide a figure of the best available haul route.</p> |
| 64. | 6.2.1 | 36 | | <p>This site was previously used as a landfill, that received waste by trucks. Short-term truck traffic impacts would be offset by long-term benefits provided by the remedial alternative.</p> <p>In addition, all sites need to deal with the issue of characterizing waste prior to off-site disposal. This site is a large former landfill with plenty of room to stage and maneuver, which should make this part of the effort much easier than it is at many other sites.</p> <p>Delete: “Furthermore, the use of trucks to haul materials to and from the Site will result in the emission of carbon dioxide and other air pollutants.” This is not appropriate for DSRA.</p> |
| 65. | 6.2.2 | 37-39 | | Two of the groundwater alternatives are “MNA” and “MNA with source control.” Source control is necessary component of any MNA remedy, so what differentiates these two alternatives? |
| 66. | 6.2.2 | 38 | | Alternative 2: Monitored Natural Attenuation – New/additional wells would be needed. |
| 67. | 6.2.2 | 39 | | <p>Groundwater Alternative 4: Will need to verify that site COCs can be adequately addressed by biological treatment if necessary.</p> <p>It is unclear if biological treatments will be effective for the site COCs. PAHs, pesticides, PCBs and metals are not known to be degraded using biological treatment. Other treatment technologies will be needed for these COCs.</p> |

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| 68. | 7 | 40 | 1 | Are all 12 soil and 19 groundwater remedial alternatives being evaluated in the FS or just the five for soil and four for groundwater which were developed? Please clarify in the last paragraph. |
| 69. | | | | Table 4-1 ARARs: Impact to GW should be included as TBCs |
| 70. | | | | Table 5.1 and 5.2: Please provide a dollar range for high, moderate and low cost. |
| 71. | | | | Table 5.1 and 5.2: Consider adding columns to evaluate overall protectiveness of human health and the environment, and compliance with ARARs. |