

ATTACHMENT 2

REVIEW OF THE DRAFT SAMPLING AND ANALYSIS PLAN, VOLUMES I AND II PREPARED BY GZA GEOENVIRONMENTAL, INC., SEPTEMBER 1995 CENTRAL LANDFILL, OPERABLE UNIT 2 REMEDIAL INVESTIGATION JOHNSTON, RHODE ISLAND

Review comments for the above referenced document are presented below:

VOLUME I: SPECIFIC COMMENTS

- 1) Page 1, Section 2.00, paragraph 1: The text should be revised to indicate that OU2 includes the northern portion of the Lower Simmons Reservoir. This comment similarly applies to Figures 1 and 3.
- 2) Page 3, Section 3.21: The first sentence in paragraph 1 shall be revised. This sentence indicates that the groundwater from OU1 discharges into the Upper Simmons Reservoir. The field work proposed under this SAP will provide data to aid in a determination of the validity of this conceptual model. Revise this sentence to indicate that it is believed that most of the groundwater flowing under OU1 discharges to the reservoir. This comment is also applicable to the first sentence in section 3.23.
- 3) Page 5, Section 3.25: The text in this section should be revised to address the comment contained in the communication from EPA to RISWMC dated August 4, 1995 (RE: Review of GZA's Response Summary to EPA's Comments on the Ecological Characterization Report), regarding the need for additional surface water and sediment samples from two locations depicted on photographs submitted to RISWMC along with the referenced communication.

In addition, the assessment of ecological risk for the "Additional Surface Water and Sediments in OU2" shall address the exposure scenario involving *direct contact exposures*, since there is no valid reason to assume that ecological receptors will not enter in direct contact with such media in the surface water bodies identified in Section 3.25, including the four sedimentation/retention ponds.

- 4) Page 5, Section 3.26, paragraph 1: The text should be revised to further clarify the location of areas where surficial soil samples will be collected; such locations are currently referred to only as "... areas believed to be unexcavated ...". A description of general locations and rationale for these locations should be provided in the text (are sampling areas within OU1? on RISWMC property? off-

site? in prevailing downwind areas?, etc.) This comment similarly applies to Section 4.93 (page 28).

- 5) Page 17, Section 4.42.2 & 4.42.3: Disposal of investigation derived waste should be in accordance with RIDEM, Division of Site Remediation, Policy Memo 95-01, dated April 18, 1995. A copy is provided as Attachment 3.
- 6) Page 25, Section 4.91.2, paragraph 1: The text should be revised to indicate that additional surface water samples will be collected from the two locations depicted on photographs forwarded to RISWMC along with the communication from EPA to RISWMC dated August 4, 1995 (RE: Review of GZA's Response Summary to EPA's Comments on the Ecological Characterization Report). Also, appropriate revisions will be required on Figure 2 to address this comment.
- 7) Page 25, Section 4.91.2, paragraph 1: The text indicates that four locations will be sampled for surface water at the Almy Reservoir, while on Figure 3 only three locations are depicted within the reservoir. Also, the text refers to six surface water sampling locations in the wetlands between the site and the reservoir, but the figure only presents four locations (three of which are outside of what appears to be wetland symbols).

This comment similarly applies to Section 4.92.2 (paragraph 1, page 27) regarding the numbers of sediment sampling locations indicated in the text and those depicted on Figure 3 for the Almy Reservoir and the wetlands located between the reservoir and the site.

Please rectify as necessary.

- 8) Page 26, Section 4.91.3: Field instrumentation should be calibrated daily (prior to use), and the calibration of each instrument should be checked and documented at the end of each day's use.
- 9) Page 27, Section 4.92.2, paragraph 1: The text should be revised to indicate that additional sediment samples will be collected from the two locations depicted on photographs forwarded to RISWMC along with the communication from EPA to RISWMC dated August 4, 1995 (RE: Review of GZA's Response Summary to EPA's Comments on the Ecological Characterization Report). Also, appropriate revisions will be required on Figure 2 to address this comment.
- 10) Page 28, Paragraph 2 & 3: For those sediment samples with less than 30% solids, GZA plans to analyze only for the six wet chemistry parameters, not for the TCL/TAL CLP parameters.

To achieve the established DQOs for completeness, samples from *all* planned locations *must be analyzed*. The EPA Region I Guideline for samples with less

than 30% but greater than 10% solids is to estimate the positive results and reject the non-detected values, and to reject all results from samples with less than 10% solids, if analyzed by standard CLP protocols.

The efforts described in paragraph 3 to select sediment samples are not adequate. Our goal is to make sure that we obtain an adequate sample. A visual observation may not be adequate. Attachment 4 describes the steps that should be taken to collect adequate samples for SVOC, PCB/pesticides and VOCs. Also included with Attachment 4 is the SOP used at the Davis GSR Superfund Site to achieve adequate % solids and the CLP SAS requests used to analyze the samples. GZA should review Attachment 4 and use or modify it to suit the sediment sampling activities at the Central Landfill Site.

- 11) Page 29, Section 4.93.2. Paragraph 2: Upland soil samples to assess potential historical airborne contamination are proposed for collection from 0 to 12 inches below the ground surface. EPA Region I soil sampling protocol generally calls for surface soil samples from 0 to 6 inches. A one-foot sampling depth may be too deep to assess potential historical airborne contamination from the OU1 area. If soils from a one-foot interval are homogenized and sampled, this could result in dilution of contaminants which may be present in the uppermost soils, or in discrete horizons.
- 12) Page 35, Section 5.12, Paragraph 2: CLP SOW for organic analysis reference should be OLM03.1 and modifications (instead of OLM01.1). Also, the text refers to Table 2 as presenting the analytical methods for determining the water quality parameters of groundwater and surface water samples, however, such information is not presented on Table 2. The correct reference for the analytical methods should be presented here.
- 13) Page 36, Sections 5.12.1 and 5.12.2: Tentatively Identified Compounds (TICs) should be requested for the VOC and SVOC analyses.
- 14) Page 36, Section 5.12.5: Water samples to undergo filtration should be filtered in the field no later than two hours after collection.
- 15) Page 39, Section 6.11.1: Soil samples for volatile analysis should be shipped separated from volatile water samples to avoid potential cross-contamination. A trip blank should be included for each cooler.
- 16) Pages 39 - 40, Section 6.11.2: A rinsate blank from the filtration equipment used to obtain water samples for dissolved metals analysis should be collected and analyzed for dissolved metals.
- 17) Page 40, Section 6.11.3: Field duplicate samples are required for soil and sediment samples. Field duplicates are collocated samples to measure the spatial

contaminant distribution. Region I requires one field duplicate for every ten samples of the same matrix collected.

- 18) Page 48, Section 9.20: The text refers to a screening level risk evaluation identified as Task 9. However, on page 12, Task 9 corresponds to "data evaluation and preparation of a Technical Memorandum", while Task 10 corresponds to a "preliminary evaluation of risks to human and ecological receptors". Revise as necessary and in a manner compatible with the regulatory review comments on the Draft Work Plan for Baseline Risk Assessments of OU2, submitted by the EPA to RISWMC on July 31, 1995.

TABLE 2 COMMENTS

- 19) Table 2, Page 6 of 6: Quantitation limit requirements for chloride are missing from Table 2. The specific method number for each wet chemistry analysis should be provided.

TABLE 3 COMMENTS

- 20) All units for soil and sediment samples should be ug/Kg or mg/Kg. Page 6 of 6: The quantitation limit required to meet the DQOs for TOC, AVS/SEM should be included.
- 21) Why were sediment and soil included in the same table? Ecological *sediment* benchmarks should not be used to determine method detection limits/data quality objectives (MDLs/DQOs) for *soil*; appropriate ecological soil benchmarks should be researched in the literature for this purpose. All necessary revisions should be made to address this issue.
- 22) Why were Long and Morgan (1990) values used as ecological benchmarks to determine the MDLs/DQOs for sediment? Sediment benchmarks more appropriate for *freshwater* environments are available. For example, sediment benchmarks for organic contaminants derived using equilibrium partitioning from EPA's Ambient Water Quality Criteria, and the Lowest Effect Levels for metals from the Ontario Ministry of the Environment (MOE), were used in the Screening Level Risk Assessment for Sediments from the Upper Simmons Reservoir (GZA, June 1995). Even though Note 4 of the table indicates that Ontario MOE values were also used, the table fails to identify which of the sediment benchmarks are MOE values and which are Long and Morgan values. Ultimately, the MDLs/DQOs for contaminants in a given medium should be compatible with the benchmarks to be used during the risk assessment. Please note that an edition dated August 1993 of the Ontario MOE values is available, which is more recent than the one identified in Note 4 of the table. All necessary revisions should be made to address this issue.

- 23) Note 7 refers to another table in which proposed analytical methods are listed; however, such table is not identified by number and is not presented in Volume I of the document. The referenced table should be correctly identified here. (This comment also applies to Note 6 of Table 2).

FIGURES 2 AND 3 COMMENTS

- 24) Figure 2: This figure depicts four proposed PCBs sediment sampling locations within the Upper Simmons Reservoir. However, the sampling locations and the rationale for their arrangement are not acknowledged and discussed in the document. Furthermore, during the meeting held on July 12, 1995, it was agreed that four additional sediment samples would be collected from the reservoir for PCBs and pesticides analyses.

In addition, the distribution of the four sampling locations presented on Figure 2 should be rearranged to have a more complete coverage of the Upper Simmons Reservoir. Currently, three of the four sampling locations are concentrated in the southern portion of the reservoir, and all four locations appear to be fairly close to the periphery.

Please make all necessary revisions to address this comment.

- 25) Figure 2: The figure depicts five surface water sampling locations on Cedar Swamp Brook, while the text in Section 4.91.2 (paragraph 1, page 25) indicates that four locations will be sampled in the brook. Also, discrepancies on the numbers of sampling locations indicated on the text and those depicted on the figure exist for Sedimentation Ponds 2 and 4.

This comment similarly applies to Section 4.92.2 (paragraph 1, page 27) regarding the numbers of sediment sampling locations indicated in the text and those depicted on Figure 2 for Cedar Swamp Brook and Sedimentation Pond 2.

Please rectify as necessary (and in accordance with agreements reached during meetings with the regulatory agencies).

- 26) Figure 2: Two surface water and sediment sampling locations are depicted in the figure in the area that appears to correspond to the wetlands located to the north of the Upper Simmons Reservoir. However, such sampling locations are not acknowledged in the text of Sections 4.91.2 and 4.92.2. Please revise the text as necessary.
- 27) Figure 2: The number of proposed surface soil sampling locations depicted in the figure is in disagreement with the number indicated in the text in Section 4.93 (page 28). Please rectify.

- 28) Figure 3: The locations of several public supply wells listed in the public supply well table are missing, including well numbers 8, 10, 11, 12, and 13. Please revise the figure as necessary.
- 29) Figures 2 and 3: Currently, both figures are entitled "Proposed Exploration Location Map". These figures, however, should be assigned individual titles more descriptive of the specific information that each one presents. In addition, the legend in each figure should be expanded to include *all* the symbols used on the figure (For example, wetland symbols, different types of boundary lines, different colors covering certain areas, etc.).

APPENDIX A COMMENTS

- 30) SOP No. 3.1.1.1: The SOP should be clarified to indicate that the well shall be purged until turbidity, pH, temp, and conductivity have stabilized. This is a more consistent approach than simply removing a predetermined number of well volumes.
- 31) SOP 3.1.1.3, Method B - Pond Sampler: A *plastic* beaker should not be used for collection of semivolatile organics, Pesticides/PCBs, since a plastic container may introduce phthalate contamination. Also, why is the appropriate depth for the use of a pond sampler limited to less than one foot? Pond samplers are capable of reaching sampling depths of greater than one foot, with the use of an appropriate length sampler.
- 32) SOPS 3.1.2.1 and 3.1.2.2 (Split-spoon and surface soil sample collection): For each sample location, after collection of the volatile samples the soil for all other analyses should be homogenized in a stainless steel bowl prior to filling the other sample containers.
- 33) SOP No. 5.30: Please revise the title: the current title indicates that the SOP is for Permeability Testing - Inflatable Packers, but the SOP describes borehole geophysical procedures.

VOLUME II COMMENTS (Quality Assurance Project Plan)

- 34) Section No. 7, Tables 7-2 and 7-3, Pages 4 of 5 and 5 of 5: The extraction holding times listed for the semivolatile organics (base neutral acid and pesticide PCB) are correct. However, the EPA Region I data validation guidelines require 7-day holding times *from date of sample collection* to date of analysis. Results from samples extracted after this holding time are qualified as estimated. HNUS recommends extracting the soil/sediment samples within seven days from collection for semivolatile, pesticide and PCBs analyses.

- 35) Section No. 10, Page 1 of 5, Paragraph 7: Both diluted and undiluted results should be requested from the laboratory. The data validators should use the undiluted results for all analytes except the ones qualified by the laboratory as above the calibration range (requiring dilution). Only the results from the high concentration analytes should be taken from the diluted analysis. Combining the diluted and undiluted analyses results provides the lower sample quantitation limits to meet the required DQOs.
- 36) Section No. 10, Page 5 of 5: Provide the complete reference for the AVS/SEM procedure using the Gongmin, Boothman, DiToro and Mohony procedure.