

2032

**RESPONSES TO US EPA COMMENTS ON
ADDITIONAL SAMPLING ACTIVITIES FOR
OPERABLE UNIT 2**

10-01-90

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RESPONSE

of Ohio determines the regulatory status of fly ash based on the results of the EP tox test.

Additional data provided by this sampling will increase the level of understanding of the volume, type, characteristics, and variability of the wastes. This in turn will increase the validity of the risk assessment and feasibility study.

2. The standard operating procedure (SOPs) for sampling equipment and procedures, sampling handling, chain-of-custody and documentation should be attached to this addendum or specifically referenced. It is not clear which SOP guidelines will be followed by this addendum.

Response Standard Operating Procedures (SOPs) for sampling equipment and procedures, sampling handling, chain-of-custody and documentation are given in detail in the RI/FS QAPP.

3. The justification and data used to support the placement of the 11 borings for Operable Unit 2 are not provided to support the planned location of these borings. When referring to analyses of samples the terminology used between the work plan and the addendum should be consistent.

Response The Operable Unit 2 Draft RI Report, which is being prepared, indicates that relatively high concentrations of radionuclides were measured in samples obtained from Weston CIS Boring 49-03; therefore, two of the four borings proposed for the Sanitary Landfill will be located in the vicinity of Boring 49-03, as shown on Figure 1 of the work plan addendum. Two of the proposed borings will be located in an abandoned evaporation pond. Detectable concentrations of organics would be expected to be found in these locations. Two of the proposed borings will be located on the southern bank of the drainage channel to the north of the landfill. The potential exists for transport of contaminants found in shallow subsurface landfill material through the southern bank of the drainage channel via seepage. As shown in Figure 1 of the work plan addendum, the proposed boring locations in the Sanitary Landfill attempt to complete an even, spatial distribution of sampling across the landfill.

Due to the lack of subsurface soil data available for the Fly Ash Piles, four borings in both the Inactive Fly Ash Disposal Area and Active Fly Ash Pile are being proposed, as shown in Figure 2 and Figure 3 of the work plan addendum. The boundaries and vertical extent of the Fly Ash Piles are not clearly defined; therefore, placement of borings are governed by an even, spatial distribution across the Fly Ash Piles to better define the boundaries and vertical extent of the fly ash, as well as the contamination.

The rationale mentioned above will be included in the work plan addendum. Also, sample analyses terminology will be consistent between the work plan and the addendum.

4. If Shelby tube samples are to be taken, the frequency, depth, and location of samples should be specified in the addendum. Section 4.0 of the RI/FS Sampling Plan gives no protocol for sampling these types of material as described in this work plan addendum.

Response Shelby tube samples for geotechnical analyses will be taken from the fly ash piles, one from the inactive and one from the active pile. Specific geotechnical tests are listed in Table 2 of the work plan addendum. The on-site geologist will determine from which borings the Shelby tubes will be taken. They will be collected at a depth of approximately 10 feet in each pile. The choice of sample interval is based on an average representation of strength parameters and index properties of the fly ash. Volume V, Section 6.0 of the RI/FS Work Plan outlines subsurface soil sampling protocols which will be utilized in the OU2 sampling.

SPECIFIC COMMENTS

5. Page 1 of 8, paragraph: Data presented in the Characterization Investigation Study (CIS) indicated a predominance of low solubility contaminants (polynuclear aromatic hydrocarbons and PCBs). The contaminants are expected to preferentially partition into the solid phase, and therefore leachate samples are not likely to be indicative of the hazardous constituents present in the landfill.

Response Noted. See response to Comment # 13.

6. Page 1 of 8, paragraph 3: The method for continuously sampling the materials encountered should be specified. Drilling and sample collection procedures should be provided or referenced.

Response The method for continuously sampling the materials encountered as well as drilling and sample collection procedures are contained in Section 3.3.2 and Sections 4.3 through 4.7.1 of the RI/FS Sampling Plan, Rev 3. Additional procedures and protocol are listed in Sections 6.0 of the RI/FS QAPP, Rev 3.

7. Page 1 of 8, paragraph 3: The rationale for selecting a sample for radiological or inorganic HSL parameter analyses should be stated. In addition, samples should be collected for organic HSL and EP toxicity parameter analyses.

Response The rationale for selecting a sample for radiological or extended HSL parameter analysis is specified in the RI/FS Sampling Plan, Rev 3, Sections 4.7.1 and 7.4.4. Specified samples will be analyzed for HSL organics - EP Toxicity was assessed by the CIS.

8. Page 1 of 8, paragraph 3: The landfilled materials should be analyzed regardless if leachate or groundwater is encountered in the boring. It is important to have sufficient data on the distribution of contaminants within each media to describe the behavior or contaminants in the environment.

Response We agree and this is included in the revised plan.

9. Page 3 of 8, paragraph 1: The specific procedure used to sample the leachate or groundwater should be expanded. No method for sampling is provided.

Response Specific procedures for sampling leachate and installation of piezometers are given in Section 3.0 of the RI/FS Sampling Plan and Sections 5.0 and 6.0 of the RI/FS QAPP.

10. Page 3 of 8, paragraph 1: The specific depth beyond which each boring will penetrate the landfill should be stated.

Response The first sentence in paragraph 1, page 3 of 8, is meant to imply that each boring will penetrate the vertical extent of the landfill. Each boring will be advanced five feet past the disturbed/undisturbed soil interface. This will allow potential contaminant migration to be further characterized as a sample from below the landfill/till interface will also be analyzed for the same parameters as the landfill samples.

11. Page 3 of 8, paragraph 1: The lab that will perform the analysis on these samples should be specified.

Response IT Analytical Services will perform the analysis of samples.

12. Page 3 of 8, paragraph 3: Analyzing only the leachate from a borehole will not meet the stated objectives of characterizing the nature of the contamination in the landfill. Similarly, based on the types of contaminants reported in the CIS report, selecting one sample per borehole based on the highest recorded field measurement will not meet the stated objective.

Response See response to Comment # 13.

13. Page 3 of 8, paragraph 3: At that at least two solid samples be analyzed from each borehole; one sample selected from both the shallow and deeper portions of the landfill,

The selection of these samples may be modified based on field instrument measurements. Leachate should also be collected for analysis where encountered.

Response Three solid samples will be analyzed from each borehole; one sample selected from both the shallow and deeper portions of the Fly Ash Piles and one sample from below the fly ash soil interface. If a saturated zone is detected near the pile/till interface, leachate samples will be collected for analysis. Encountering a saturated zone is unlikely, however, since the fly ash was deposited on grade.

14. Page 3 of 8: Because leachate generation may be seasonal or accumulate at slow rates, the completion of piezometers at each location should be considered.

Response If leachate is not apparent during drilling, the borehole will be left open overnight to see if leachate accumulates. If the boring is still dry the day after drilling is completed, then the boring will be plugged. In cases of dry borings, composite solid samples may be subjected to additional leach tests with the resultant leachate subjected to the necessary analyses.

15. Page 3 of 8, paragraph 3: Leachate samples from the waste pile/till interface should also be collected and analyzed for HSL organic, inorganic and radiological parameters. In addition, the TCLP test should be run on each solid sample.

Response Leachate samples from the waste pile/till interface will be collected and analyzed for HSL organic, HSL inorganic and radiological parameters if a saturated zone is detected near the pile/till interface. The TCLP test will be run on composite solid samples from each borehole.

16. Page 3 of 8, paragraph 4: An additional boring should be added to the sample locations for the Active (lower) Fly Ash Pile. A fourth boring should be located in the northwest area of the lower Fly Ash Pile. This will provide a more even distribution of sample locations described in this addendum, no sampling has been done in this vicinity.

Response An additional boring will be added to the sample locations for the Active (lower) Fly Ash Pile. The additional boring shall be located in the northwest area as indicated on Figure 3.

17. Page 3 of 8, paragraph 3: The samples from the Active Fly Ash Pile should also be analyzed for EP toxicity and TCLP parameters.

Response Samples from the Active Fly Ash Pile will be analyzed for EP toxicity and TCLP parameters.