Department of Energy
Ohio Field Office
Fernald Area Office
P. O. Box 538705
Cincinnati, Ohio 45253-8705
(513) 648-3155

3104

JUL 17 2000

Mr. James A. Saric, Remedial Project Manager
U.S. Environmental Protection Agency
Region V, SRF-5J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

DOE-0859-00

Mr. Tom Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

TRANSMITTAL OF RESPONSES TO THE U.S. ENVIRONMENTAL PROTECTION AGENCY AND OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS ON THE DRAFT 90% INTEGRATED REMEDIAL DESIGN PACKAGE FOR AREA 3A/4A

Enclosed for your approval are the subject comments responses on the draft 90% Integrated Remedial Design Package (IRDP) for Area 3A/4A. Upon acceptance of these comments by the Agencies, the Department of Energy (DOE) will prepare the Area 3A/4A Certified for Construction package and the final Implementation Plan.

If you have any questions or need further information, please contact Robert Janke at (513) 648-3124.

Sincerely,

Johnny Reising

Johnny W. Reising
Fernald Remedial Action
Project Manager

FEMP:R.J. Janke

Enclosures

Recycled and Recyclable

cc w/enclosures:
A. Harris, OH/FEMP
R. J. Janke, OH/FEMP
D. Pfister, OH/FEMP
G. Jablonowski, USEPA-V, SRF-5J
T. Schneider, OEPA-Dayton (three copies of enclosures)
F. Bell, ATSDR
F. Hodge, Tetra Tech
M. Schupe, HSI GeoTrans
R. Vandegrift, ODH
AR Coordinator, Fluor Fernald/, Inc.78

cc w/o enclosures:
N. Hallein, EM-31/CLOV
A. Tanner, OH/FEMP
R. Abitz, Fluor Fernald, Inc./52-0
D. Carr, Fluor Fernald, Inc./2
J. Chiou, Fluor Fernald, Inc./52-0
T. Hagen, Fluor Fernald, Inc./65-2
J. Harmon, Fluor Fernald, Inc./90
S. Hinnefeld, Fluor Fernald, Inc./31
M. Jewett, Fluor Fernald, Inc./52-2
C. Messerly, Fluor Fernald, Inc./52-0
D. Russell, Fluor Fernald, Inc./52-0
T. Walsh, Fluor Fernald, Inc./65-2
W. Westerman, Fluor Fernald, Inc./52-0
ECDC, Fluor Fernald, Inc./52-7

RESPONSES TO U.S. ENVIRONMENTAL PROTECTION AGENCY TECHNICAL REVIEW COMMENTS ON THE DRAFT INTEGRATED REMEDIAL DESIGN PACKAGE FOR AREA 3A/4A (20800-IRDP, REVISION B)

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

IMPLEMENTATION PLAN

GENERAL COMMENTS

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Not Applicable (NA) Page #: NA Line #: NA
Original General Comment #: 1

Comment: The text identifies a number of data gaps related to above-final remediation level (FRL) and above-waste acceptance criterion (WAC) contamination, particularly in the Incinerator Pad and Plant 6 areas. The U.S. Department of Energy is conducting additional predesign investigations to determine the extent of above-FRL and above-WAC contamination. However, the full extent of above-FRL and above-WAC contamination cannot be defined until the above-ground structures of Plant 6 are removed in Spring 2001. The text should be revised to include the analytical results from all the predesign investigations conducted in Areas 3A and 4A and a detailed discussion of the extent of above-FRL and above-WAC contamination in these areas.

Response: An additional 20 predesign borings have been completed in Areas 3A/4A since the IRDP submittal. Based on data from these borings, bounding of all above-WAC and above-FRL contamination outside the Plant 6 area has been completed. This includes northern lateral bounding of the above-FRL aroclor contamination area north of the Maintenance Building as well as vertical and western lateral bounding of above-FRL organic contamination in the Incinerator Pad area. Additional borings have also provided eastern bounding of the above-WAC technetium-99 and above-FRL organic contamination of the East Plant 6 contamination area. Further bounding of the four contamination areas under Plant 6 is not currently possible due to building and equipment obstructions. Additional predesign borings to bound contamination in these areas are scheduled for Spring 2001, following partial decontamination and decommissioning of Plant 6. The text will be revised to include the analytical results from these additional borings and to identify the extent of above-FRL and above-WAC areas.

Action: Section 2.3 text, Figures 2-9, 2-10, 2-13, 2-14, 2-15 and 2-19, Tables 2-5 and 2-7, and Appendix C will be updated to include revised contamination area boundaries, boring locations, and analytical data from the 20 additional predesign borings.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: NA Page #: NA Line #: NA
Original General Comment #: 2

Comment: The text indicates that unforeseen events such as breaching of the Great Miami Aquifer (GMA) may occur during deep excavations in Areas 3A and 4A. The text should be revised to state that the regulatory agencies will be promptly informed and consulted in the event that such events occur.

Response: Section 3.6 discusses how the anticipated GMA breaches will be backfilled to protect the GMA. The text will be revised to note that the EPA and OEPA will be notified when the GMA is exposed.

Action: Add the following text to the introduction of Section 3.6: "*The EPA and OEPA will be notified when excavation activities breach the GMA.*"

Commenting Organization: U.S. EPA Commentor: Saric
Section #: NA Page #: NA Line #: NA
Original General Comment #: 3

Comment: A number of construction drawings are cited in the text by drawing number; however, the drawing numbers cited in the text do not agree with the drawing numbers on the drawings. The text should be revised to cite the proper drawing numbers.

Response: The last three to five digits of the drawing number were cited in the text (e.g., 030 or 00030), and this appears to have caused confusion between the drawing number and sheet number. The drawing numbers are correct as cited, but the existing numbers will be replaced by the full drawing number (e.g., 99X-1900-G-00030) to avoid possible confusion between the sheet number and the drawing number.

Action: Replace the cited drawing numbers with the full drawing number.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: NA Page #: NA Line #: NA
Original General Comment #: 4

Comment: During perimeter trenching, the pipes for a number of underground utilities will have to be cut. Therefore, provisions should be made to drain liquids from the underground pipes prior to cutting them. The text should be revised to address this issue.

Response: Underground water lines will be depressurized prior to performing the perimeter trenching. However, there is no guarantee that the lines will be drained, as the fire and domestic water lines are not gravity-drain lines. If draining lines are spotted, the material draining from the pipe will be removed with the soil it contacts. See response to Ohio EPA Comment 11.

Action: See action under Ohio EPA Comment 11.

Commenting Organization: U.S. EPA Commentor: Saric
Appendix #: B Page #: NA Line #: NA
Original General Comment #: 5

Comment: The surface water management plan does not adequately address the issue of the wastewater treatment plant's capability to handle the volatile organic compound-contaminated water that is expected to be encountered during excavation in Areas 3A and 4A. The text should be revised to address this issue.

Response: The VOC discussion in Sections 1 and 3 of the Implementation Plan, as well as the Surface Water Management Plan (Appendix B), will be modified to address this comment and Ohio EPA Comments 18, 22, 25 and 26. Water that accumulates in the excavations will be analyzed for PCE, TCE, and DCE levels. If any of these concentrations exceed the established "inside mixing zone maximum" listed in Table 7-1 of OAC 3745-1-07, the water will be pumped to portable tanks and taken to the BioSurge Lagoon (BSL) for Phase II treatment. If the BSL is filled to capacity, the portable tanks will be staged until the BSL can receive the water. See responses to Ohio EPA Comments 18, 22, 25 and 26.

Action: See actions under Ohio EPA Comments 18, 22, 25 and 26.

SPECIFIC COMMENTS

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.2.3 Page #: 3-3 Lines #: 17 through 19
Original Specific Comment #: 1

Comment: The text states that the 2-foot-wide by 12-foot-deep perimeter trench will be excavated to "isolate undocumented below-grade utilities." It is unclear how the 2-foot-wide by 12-foot-deep trench will remain open for any length of time without collapsing. The text should be revised to discuss how the trench would be kept open to protect any "live utilities" from damage and to ensure the safety of workers. In addition, all trenching should be conducted in accordance with 20 Code of Federal Regulations Section 1926.650, "OSHA Regulations, Excavating and Trenching Operations." The text should be revised to reflect compliance with these regulations.

Moreover, the rationale for the 12-foot depth for the perimeter trench is not provided. Because most utilities are about 6 feet deep, the need to extend the trench to a depth of 12 feet should be explained. The text should be revised accordingly.

Response: The 2-foot wide by 12-foot deep trench is envisioned to be cut with a continuous trenching machine and immediately backfilled. Live utilities will not be present in Area 3A/4A when the trench is cut, although there will always exist a small probability to cut a low voltage (220V) line that has not been identified on the utility grid master file. Given the noise of the machine and the speed at which the cutting blade operates, the severing of a 220V line is not likely to be noticeable to personnel in the field. The machine operator will be insulated from electrical hazards, and the hazard will be identified by visual inspection after the machine has passed. Although the trench will not remain open for a significant period of time, there are instances when the trench may need to be accessed to plug a sewer or utility line. For these special cases, a trench may remain open for over 24 hours, and OSHA regulations for excavating and trenching will apply.

The rationale for the 12-foot depth lies with providing additional assurance that any utility lines existing below 6 feet that are not reflected in the as-built utility drawings will be severed by cutting to the maximum depth achievable by the machine. Given that the continuous trenching machine is designed to cut through rock, there is no significant difference in time to cut a 6-foot versus a 12-foot trench when soil is the media.

Action: The above discussion will be added to Section 3.2.3

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.2.3 Page #: 3-3 Lines #: 21 through 23
Original Specific Comment #: 2
Comment: The text states that "a written and/or photographic record will be available to the contractor to demonstrate that the utility lines are abandoned and de-energized prior to trenching around the perimeter of the project area." If such a record will be available before trenching begins, it is unclear why the contractor will be required to dig a trench around the site to isolate "undocumented below-grade utilities." The text should be revised to clarify this matter.

Response: As noted on Lines 16 and 17 of Page 3-3, the term undocumented below-grade utilities refers to utilities that are not present on the as-built utility drawings. All known utility lines will be de-energized and depressurized prior to performing the trenching operation, and a record of these actions will be provided to the contractor.

Action: None.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.2.2 Page #: 3-4 Lines #: 1 and 2
Original Specific Comment #: 3
Comment: The text states that the contractor must plug storm sewer lines upgradient from the point of cutting. It is not clear how storm water will be drained if the storm sewer lines are plugged. Provisions should be made to properly drain the storm sewer lines, and the text should be revised accordingly.

Response: Storm sewer lines will be taken out of service by the trenching operation, and there will be a period of time when storm water in the project area does not drain locally. This period is envisioned to be less than two weeks, and is the time between completion of the trenching task and initiation of excavation to provide retention capacity for the surface water. To excavate retention capacity within the project area prior to performing the trenching defeats the safety purpose for performing the trenching. Therefore, storm water that is not contained within the project area during the transition period will be captured by storm water inlets lying outside the project area.

With respect to draining the storm sewer lines, there is no rationale basis for performing this task. Presently, there is no integrity to the existing storm sewer system. That is, perched water flow enters the storm sewer lines through joints and cracks and storm water flows out of the lines into the soil through the joints and cracks.

Action: None.

CONSTRUCTION DRAWINGS

Commenting Organization: U.S. EPA Commentor: Saric
Section #: NA Page #: NA Line #: NA
Original General Comment #: 1

Comment: A number of drawings entitled "Grading Plans" display coordinates at some "corners" of excavation areas; however, no other dimensions are shown to indicate the size of each excavation. The coordinates should be displayed for all corners of excavation areas, or the dimensions of each excavation should be shown. The drawings should be revised accordingly.

Response: The size of each excavation is easily obtained by using the scale provided on each drawing.

Action: None.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: NA Page #: NA Line #: NA
Original General Comment #: 2

Comment: In a number of drawings, the note under "general notes" cites Drawing No. 99X-1900-00003 for the legend and general notes. However, the legend on Drawing No. 99X-1900-00003 does not show all the symbols used on the drawings. The legend should be revised to include all the symbols used.

Response: Agreed.

Action: The drawings will be reviewed and revised to add the legend symbols not shown.

TECHNICAL SPECIFICATIONS

SPECIFIC COMMENT

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 02206 Page #: NA Line #: NA
Original Specific Comment #: 1

Comment: The text describes how the GMA plug will be backfilled. However, backfilling of excavation areas other than the GMA plug is not described in the technical specification. The specification should be revised to state how excavation areas that may create local instability when left open for long periods of time will be backfilled.

Response: Backfilling and general maintenance of areas that may otherwise jeopardize local slope stability or certification efforts will be accomplished under the requirements for interim grading as specified in Section 02206, Item 3.5.

Action: None.

RESPONSES TO OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS ON THE DRAFT AREA 3A/4A INTEGRATED REMEDIAL DESIGN PACKAGE (20800-IRDP, REVISION B)

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

GENERAL COMMENTS ON THE IMPLEMENTATION PLAN

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: Pg. #: Line #: Code: C
Original Comment #: 1

Comment: Have the excavation drawings been reviewed for construct ability? We have noticed many cases where excavations have tortuous outlines that at first looks very expensive to build and does not appear to have a strong logical need to be so complicated. For example, refer to Drawing 00021 in the Plant 9a footprint. The drawing shows a 4 feet high island roughly 5 feet by 10 feet in size. This 'island' is located between two deeper excavations that require plugging to protect the GMA. In general, we strongly support the concept of minimizing excavations, which penetrate the tills, which protect the GMA. But in this case, we believe it would be quicker (and therefore more protective) to excavate the island with the surrounding materials ('island' volume 200 cubic feet, i.e. barely half a truckload) than it would be to survey and verify that the excavation followed the design.

Response: Construction personnel have been participating in the design process since its inception. Constructability reviews were performed on the 60 and 90 percent Title II design, prior to submittal of the IRDP to the Ohio EPA. Excavations have been designed to minimize the volume of clean soil that is placed in the On-Site Disposal Facility (OSDF), and this results in a challenging design that is difficult, but not impossible, to implement. In general, the survey to verify excavation volume is not a high priority, and overexcavation will take place when field conditions or precertification surveys dictate the need. An overall smooth profile can be achieved in a timely fashion by accelerating certification and performing restoration grading as soon as possible. The driving criteria behind the excavation design are minimize the non-impacted soil volume delivered to the OSDF, protection of the Great Miami Aquifer (GMA), and cost reduction. The simpler and faster approach alluded to in the comment meets none of these criteria in most of the area. Minimizing the volume of soil reduces the need for construction of additional OSDF cells and placement of clean soil in the cells, which are very costly endeavors. Additionally, minimizing the excavation volume is more protective of the GMA because many small excavations result in less water volume in the deeper excavations (hence it can be pumped out quicker) and less hydraulic head on the GMA.

Action: None.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: Pg. #: Line #: Code: C
Original Comment #: 2

Comment: We are having difficulty determining the drivers for the various excavations. Color-coded cross-sections which distinguish soils to be excavated for FRL exceedences, WAC funkers, slope stability, utility excavation, etc., would help us understand some of the more convoluted excavations. Cross-sections should contain analytical information obtained from borings so that it is easy to confirm that all soils above the FRL have been captured and that excavations are bounded by analytical results, which are below FRL.

Response: Excavation features driven by subsurface building structures are currently identified on the cross-sections illustrated in Figures 2-22 through 2-25. Identification of excavation areas that can be distinctly associated with subsurface utilities and specific non-uranium above-WAC and above-FRL contamination areas will be added to these figures. Other excavation profiles not directly related to utilities, above-WAC contamination, or above-FRL contamination are due to construction of safe slopes to reach the structures or contamination. A note to that effect will be added to these figures.

The cross-sections illustrated on Figures 2-22 through 2-25 directly intersect only a small number of the total borings used to define the excavation profiles. Because a projection of the sample points onto the cross-sections would result in many points that appear to be below the excavation profile, the x-y graphs on Figures 2-29 through 2-41 are provided to illustrate that all sample points with above-FRL values are captured by the excavation profile. DOE believes these graphs, as described on Page 2-25, Lines 11 through 22, are the most accurate method of assuring and visually illustrating that the excavation profile captures all above-FRL and above-WAC material, because:

1) The cross-sections cannot be drawn to intersect all borings that control the excavation profile.

2) Projecting sample points onto the cross-section plane can be misleading and difficult to interpret.

3) The x-y graphs do not use modeled data but are based on analytical results for physical samples; and they show the depth excavated below each above-FRL sample point.

4) The graphs provide a quick visual verification that the excavation depths capture each location where above-WAC and above-FRL material for each COC was identified by physical sampling.

Predesign borings were located where above-FRL contamination was not bounded at depth by RI/FS data, as well as in areas where data gaps existed. If other unknown above-FRL areas exist outside the defined excavation, they will be identified by real-time measurements during excavation and precertification activities.

Action: Figures 2-22 through 2-25 will be revised to identify excavation profile features related to underground utilities as well as those areas related to non-uranium above-WAC and above-FRL contamination zones. A note will be added to identify that all other non-color-coded portions of the excavation profile are due to safe slopes. Finally,

information in Appendix D relevant to the excavation drivers will be summarized in a table and placed in the text.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: Pg. #: Line #: Code: C
Original Comment #: 3
Comment: During previous discussions we agreed that the issue of whether all deep foundation pilings would be removed or allowed to remain in place would be handled on a case-by-case basis. The only deep piling to remain after remediation in this Package is in the Boiler Plant. A discussion should be added detailing the reason the piling is remaining and specifically why it is more protective of the GMA to allow it to remain than it is to remove it.

Response: The pilings associated with the Boiler Plant have been selected to remain in place below a depth of 562 feet amsl because excavation in this area is driven by sub-grade structures and not contamination. Therefore, the decision to avoid an unnecessary breach of the GMA was considered prudent, and the truncation of the pilings is designed to occur at approximately 10 feet above the GMA (c.f., 99x-1900-G-00030).

Action: The justification noted in the response will be added to Section 3.3.3.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: Pg. #: Line #: Code: C
Original Comment #: 4
Comment: A new table should be added that summarizes the excavations that are expected to require plugging to protect the GMA. The table should include a specific name for the excavation (i.e., 'Deep Excavation in NE side of Plant XX footprint'), the volume of gray clay estimated to be required to effectuate the plug, and the size of the area which drains into the excavation.

Response: A table will be added to identify the Boiler Plant, Plant 5, Plant 6, and Plant 9 excavations that penetrate the GMA. Information will be given for drainage area and the volume of gray clay required to plug each excavation. Note that drainage areas in the excavation are limited to storm water that enters the excavation below the lowest bench contour adjacent to the plug.

Action: The noted table, and associated discussion, will be placed in Section 3.6. Information for the table is as follows: Boiler Plant sump, 406 yd^3, 0.06 ac; Boiler Plant piles, 56 yd^3, 0.07 ac; Plant 9 sump, 227 yd^3, 0.18 ac; Plant 5 west, 346 yd^3, 0.15 ac; Plant 5 east, 629 yd^3, 0.36 ac; Plant 6 west, 238 yd^3, 0.14 ac; Plant 6 east, 804 yd^3, 0.40 ac.

Commenting Organization: Ohio EPA Commentator: ODH
Section #: Pg. #: Line #: Code: C
Original Comment #: 5
Comment: We will provide detailed comments on the Drawings when results from all the sampling are incorporated into the next revision of the Package.

Response: An additional 20 predesign borings have been completed in Areas 3A/4A since the IRDP submittal. Based on data from these borings, bounding of all above-WAC and above-FRL contamination outside of Plant 6 has been completed. This includes northern lateral bounding of the above-FRL aroclor contamination area north of the Maintenance

Building as well as vertical and western lateral bounding of above-FRL organic contamination in the Incinerator Pad area. Additional borings have also provided eastern bounding of the above-WAC technetium-99 and above-FRL organic contamination of the East Plant 6 contamination area. Further bounding of the four contamination areas under Plant 6 is not currently possible due to building and equipment obstructions. Additional predesign borings to bound these areas are scheduled for Spring 2001, following partial decontamination and decommissioning of Plant 6. The text will be revised to include the analytical results from these additional borings and to identify the extent of above-FRL and above-WAC areas.

Action: Section 2.3 text, Figures 2-9, 2-10, 2-13, 2-14, 2-15 and 2-19, Tables 2-5 and 2-7, and Appendix C will be updated to include revised contamination area boundaries, boring locations, and analytical data from the 20 additional predesign borings.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: Pg. #: Line #: Code: C
Original Comment #: 6
Comment: Has any cost/benefit analysis been performed for treating the soils contaminated with TCE, PCE and DCE? Also, details are necessary on the method of treatment to be used.

Response: A cost/benefit analysis has been performed with respect to treatment of PCE/TCE/DCE contaminated soil. This analysis initially looked past the treatment stage to the final disposition of the material. Costs associated with the disposal of the treated soil were a direct driver for the decision between onsite versus offsite treatment of that same material. A comparison was performed between onsite and offsite disposal costs, where onsite costs were based on current practices and cost factors as opposed to offsite costs based on the existing contract with Envirocare of Utah. The result of this comparison showed an overwhelming cost difference in favor of onsite treatment and disposal.

The selected method of treatment is Low Temperature Thermal Desorption (LTTD), based on the cost of the technology, target concentrations and volume of soil that requires treatment. Details on the treatment process will be provided when the vendor is selected. With that direction in mind, a comparison of onsite treatment costs was performed between two independent vendors of LTTD services. Each vendor had several internal options for treatment. Two options from each vendor were chosen and compared for cost and schedule. The results of this comparison showed that the cost of one vendor was more expensive, but their schedule was more in line with the planned construction schedule. More importantly, the cost of onsite treatment coupled with onsite disposal was still considerably less expensive than that of offsite disposal alone.

Action: Details on the treatment will be provided in an independent work plan after a vendor has been selected. The work plan will be approved prior to implementing treatment activities.

SPECIFIC COMMENTS ON THE IMPLEMENTATION PLAN

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 1.1 Pg. #: 1-5 Line #: 12-13 Code: C
Original Comment #: 7
Comment: This section does not include the approval by the Agencies for DCN's. Please add.

Response: Agreed. DCN's will be sent to the Agencies for approval.

Action: Text will be added to clarify the DCN review process.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 1.5 Pg. #: 1-12 Line #: Code: C
Original Comment #: 8
Comment: The Lessons Learned section needs to include a bullet, which states that certification of the excavated areas will take place in an expedited manner to prevent ponding of water in the excavations. This expedited approach should involve submitting the CDL for review prior to completion of final excavation, and approval after precertification.

Response: The lessons learned section will be updated to note that certification of the excavated area will take place as soon as practical to minimize the effort required to continual remove ponded water from the excavation. A Certification Design Letter (CDL) will be submitted to the Agencies before the excavation reaches the design grade in the area of interest.

Action: Add a bullet to Section 1.5 that summarizes the approach noted above.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 2.3.3 Pg. #: 2-12 Line #: 24, 26, and 27 Code: C
Original Comment #: 9
Comment: This section states that some "predesign boring locations" fall outside 3A/4A boundaries into Area 6. However, in the review of Figures 2-13 and 2-14 it is difficult to know exactly which borings are outside 3A/4A boundaries. Please designate which locations are on the outside of 3A/4A and Area 6 on the figures.

Response: Agreed. Area 6 was not identified on Figures 2-13 and 2-14.

Action: Figures 2-13 and 2-14 will be revised to identify where Area 6 adjoins Areas 3A and 4A.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 2.6.3 Pg. #: 2-25 Line #: 9 Code: C
Original Comment #: 10
Comment: This section describes the fitted safe slopes, which correspond to the excavation depths, which are illustrated on Figures 2-21 through 2-25. The figures, sections, etc., are satisfactory and the concepts are clear. However, the colors in the figures indicate modeled concentrations. Figures should be added to the Plan that reflect measured concentrations as obtained from borings. The same cross sections can be used. The use of color-coding to indicate measured concentrations (similar to Figure 2-16) in lieu of numerical values is acceptable if the numeric version proves to be cumbersome.

The intent of this comment is to be able to quickly visually verify that all excavations are bounded by analytical data below the FRL and that all soils greater than the FRL have been captured.

Response: See response to Ohio EPA Comment 2.

Action: See action under Ohio EPA Comment 2.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 3.2.3 Pg. #: 3-4 Line #: 7-13 Code: C
Original Comment #: 11

Comment: If any other line is hit during excavation, i.e., process line, then the material released from that line should be dug out as well. In addition, every effort should be taken to plug or stop the line from releasing its contents into the trench.

Response: Agreed. Text will be added to the referenced section and appropriate technical specification section to address requirements for excavating material released from process lines.

Action: Change the text in Lines 7 through 13 as follows: "The trenching operation will be stopped if the workers encounter draining sanitary sewer lines *or process lines*, special materials, ...etc. Draining sanitary sewer lines *and process lines* will be plugged ...etc. *Additionally, any material released from a leaking sewer line and process line will be excavated from the trench prior to backfilling.*"

Similar text will be added to the appropriate specification.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 3.6 Pg. #: 3-21 Line #: 11 Code: C
Original Comment #: 12

Comment: The text states that in excavations where there is less than 5 feet of gray clay remaining over the GMA, the contractor has 15 working days to initiate work to bring the gray clay to a minimum of 5 feet thick. This should be changed so that the placement should be completed in five working days. A requirement to pump rainwater from the excavation should be added.

Response: Agreed. The text will be changed to note the 5-day and pumping requirement.

Action: Change Line 11 to read: "The contractor must initiate... within *5* working days, and *ponded water must be continually pumped out of the excavation until the gray clay is returned to a minimum thickness of 5 feet.*"

Also see the response to Ohio EPA Comment 55 for revisions proposed to Technical Specification 02206.

Commenting Organization: Ohio EPA | Commentator: OFFO
Section #: 3.6 | Pg. #: 3-21 | Line #: | Code: C
Original Comment #: 13

Comment: The section makes serious and satisfactory commitments to protect the GMA in instances where excavations are planned to extend through the glacial tills that overlay the aquifer. Because the actual elevation of the GMA is inferred from a limited number of borings, it is possible that excavations may penetrate the gray clay or expose permeable lenses that are not shown on the drawings. A contingency plan should be developed which:

- Identifies 'danger' signs that the aquifer may be penetrated (appearance of unconsolidated material, 'pumping' under vehicle tires, rainfall that drains through the bottom of excavations instead of ponding, etc.)

- Identifies actions that must take place in order to plug the breach. These actions may include scanning the bottom of the excavation, identifying a source of gray clay to use for plug material, planning contingency drainage measures to prevent rainwater infiltration and the like.

Response: Agreed. Text will be added to Section 3.6 to discuss contingency plans for a GMA breach that occurs above the GMA horizon indicated on the construction drawings

Action: The following text will be added to Section 3.6 after Line 14: "*Construction and engineering personnel will monitor all deep excavations for danger signs that indicate a potential breach of the GMA. These signs include the appearance of unconsolidated sand and gravel, 'pumping' under vehicle tires, and rainfall that drains rapidly through the bottom of the excavation. If construction personnel identify any of these signs in the excavation, excavation activities will be stopped to examine the nature of material in the bottom of the excavation. Engineering personnel will determine if the GMA has been breached and, if so, what actions may be required to protect the GMA. The selected actions will be based on weather conditions and/or forecasts. If precipitation is likely in the next 24 hours, the breach will be backfilled immediately to a minimum depth of 2 feet with gray clay from the local excavation. All ponded water will be pumped from the affected excavation as soon as practical following the precipitation event. When excavation resumes, or in the event that excavation continues because a precipitation event is not imminent, the lateral extent of excavation around the breach will be completed per the design. However, excavation will be stopped at the top of the unconsolidated sand and gravel if this horizon is reached prior to the design depth. Extensive excavation into the sand and gravel deposits of the GMA is prohibited. Once the excavation is complete, backfilling and sampling of the plug will take place as noted above.*"

A summary of this language will be added to Technical Specification 02206.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 3.7 Pg. #: 3-21 Line #: 29 Code: C
Original Comment #: 14

Comment: The text states that some interim grading of design slopes may be required to facilitate access by the real-time monitoring crew. It goes on to say that most interim grading will be performed after the precertification measurements are completed. First, we do not see the necessity of interim grading for access by the real-time crew. In the STP Project, slopes required for safe operations of trucks and excavating equipment were readily and safety used by the real time crew. Also, as stated in Section 2.5.13 of the SEP, rough or interim grading is to be performed after certification. Secondly, our confusion here may be related to semantics, but we are not clear what the terminology 'interim grading' refers to. We are clear on the concept of earthmoving to achieve remediation or to remove below-grade utilities. We are also comfortable with our understanding of the term 'final grading' to mean that grading which occurs subsequently to certification in order to bring the topography to final slopes, allow for long-term drainage and achieve NRRP objectives. The concept of 'interim grading' has us puzzled.

Define the term 'interim grading' and explain why this intermediate grading activity is necessary.

Response: Text will be added to clarify interim grading cited in the Implementation Plan.

Action: Edit lines 29 through 31 as follows: "...FRL goals. *Interim grading, defined as grading that occurs for slope maintenance and to prevent unsafe working conditions, is dependent on actual field conditions and may occur prior to or after precertification. The frequency of interim grading in a given excavation will be a function of the slope materials and their ability to maintain the 2:1 design slope during precipitation events that occur prior to completion of the final grading.*"

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: Figure: 3-4 Pg. #: Line #: Code: C
Original Comment #: 15

Comment: This figure describes the steps and decision points to be made to excavate process pipes (and other underground utilities) in areas beyond the design surface. According to the text in Section 3.4.4, Line 21, "There are very few data points on the contamination existing in bedding material and soil below the utility lines, due to penetration permit requirements that forbid subsurface investigation of bedding material." It is not stated whether the lack of data extends to trench overburden soil. Unless data exists to show that the overburden removed in step 1 is below FRL, this material should be sampled (or scanned with the HPGe) before it is returned to the trench.

Response: As noted in Lines 27 and 28 on Page 3-17, the surface area above the utility will be precertified with the HPGe prior to removing the utilities. Therefore, this is a general indication that the overburden soil is below the FRLs for uranium, thorium, and radium. However, when the overburden above the utility exceeds 1 foot, the material will be surveyed with the HPGe prior to its use as backfill for the trench. Figure 3-4 and its discussion, as well as Drawing 99X-1900-G-00045, will be revised to incorporate this change.

Action: Figure 3-4 will be edited according to the following text added to Line 31, Page 3-17: "Overburden soil will be removed and placed upgradient until used as backfill for the trench. *The overburden will be excavated and placed upgradient in the form of a flat cylinder with diameter of 2 m and a thickness of approximately 15 cm. The cylinder will be surveyed with the HPGe (placed no higher than 15 cm above the surface) to ascertain FRL compliance. If uranium, thorium, and radium FRLs are met, the overburden soil will be used to backfill the trench.*"

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: Figure 3-4 Pg. #: Line #: Number 6 Code: C
Original Comment #: 16

Comment: This step describes how at 50-foot intervals, a bucket of pipe bottom material is removed from the trench bottom and scanned (and sampled) prior to being returned to the excavation. Based on the area of view of the HPGe detector (see Table 4.1-1 of the User's Guidelines, Measurement Strategies and Operational Factors for Deployment of *In-Situ* Gamma Spectroscopy at the Fernald Site), the HPGe should be placed no higher than 15 cm above the surface. Since the field of view at that height is roughly one meter, the soil will need to be spread in a circle with a two-meter diameter and the detector should be placed in the center of the circle.

Response: Agreed. Additional text will be added to Figure 3-4 and its associated text, as well as Drawing 99X-1900-G-00045, to note the diameter and scan-height requirements.

Action: Figure 3-4 will be edited according to the following text added to Lines 7 and 8, Page 3-18: "The soil will be flattened to *form a cylinder with diameter of 2 m and a thickness of approximately 15 cm. This cylinder will be scanned with the HPGe detector set at a height of 15 cm* and then sampled for FRL attainment (i.e., certification)."

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 3.4.4 Pg. #: 3-17 Line #: 26 Code: C
Original Comment #: 17

Comment: Has a cost/benefit analysis been perform on the disposition of overburden and pipe bedding material from process piping below the design grade. Considering that the OSDF Project is soil-poor and that the pipe-bedding will meet the criteria of select impacted material, it may be cheaper just to administratively decide to place all pipe bedding material as select impacted material (WAC compliance would, of course, still need to be established.)

Response: A cost-benefit analysis has not been performed and there is no plan to perform one at this time. In general, the soil-poor scenario that is noted in this comment is not applicable to the trenching operation because the trenching activities take place after the design depth is reached. Therefore, large active excavations are and an adequate volume of select impacted material is available. Moreover, the soil produced from the bulk excavation is expected to be of the same quality as the overburden material.

Action: None.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 3.5.1 Pg. #: 3-19 Line #: 11 Code: C
Original Comment #: 18

Comment: The text states "Perched groundwater that resides in excavation zones that contain organic contamination (i.e., Plant 6, Incinerator Pad, RCRA Soil Area 5) will be collected in tanks and transferred to the BSL..." where it will be treated for VOCs. There is no succinct discussion in this plan that discusses why no other areas will be evaluated for VOC contamination. Provide a discussion which summarizes RI/FS data, process knowledge, knowledge of the perched groundwater regime, etc. that justifies why no additional efforts are initiated to discover new areas of VOC contamination. It is our understanding that portable GC/MS instrumentation has been recently deployed at Fernald, which could quickly and cheaply screen perched water for VOCs.

Response: Current VOC contamination areas are based on RI/FS and predesign-characterization data, process knowledge, and knowledge of the perched water zones. A discussion will be provided that outlines the approach for screening all excavation areas for VOC contamination. The discussion will include the protocol for collection and analysis of ponded-water samples. Additionally, DOE wishes to clarify that portable GC/MS analysis is being considered for the site, but the instruments have not been purchased. The earliest anticipated field deployment of these instruments would be summer of 2001.

Action: The following text will be added to Line 14 on Page 3-19: "...treatment at the AWWT Facility. *All soil excavation areas will be screened for VOCs with PID instruments. If the PID reading exceeds 10 ppm, thus indicating VOC contamination in the soil, water samples will be collected from storm water runoff and perched groundwater in the excavation. The collection of water samples will occur prior to pumping to ensure that VOC-contaminated water is identified and sent to AWWT Phase II treatment.*"

"*The samples will be analyzed for VOCs present in the Area 3A/4A soil (i.e., 1,1-dichloroethylene, tetrachloroethylene, and trichloroethylene) using a field-portable GC/MS instrument. If the VOC concentrations in the samples exceed 3,000 ug/L for 1,1-dichloroethylene, 1,100 ug/L for tetrachloroethylene, or 3,400 ug/L for trichloroethylene (the water standards for "inside the mixing zone maximum" from Table 7-1 of OAC 3745-1-07), the water will be collected in tanks and transported to the BSL, or pumped to the BSL, for Phase II treatment. Water with concentrations below the listed values will be pumped to the Tank Farm Settling Basin for eventual transmission to the SWRB and AWWT Phase I treatment.*"

Commenting Organization: Ohio EPA Commentator: DSW
Section #: 4.3 Pg. #: 4-7 Line #: 19 Code: C
Original Comment #: 19

Comment: The sediment trap referred to here is the Tank Farm Settling Basin and should be specified as such.

Response: Agreed.

Action: Line 19 on Page 4-7 will be changed as follows: "...into the excavation will be directed to *the Tank Farm Settling Basin* prior to..."

Commenting Organization: Ohio EPA Commentator: DSW
Section #: 4.3 Pg. #: 4-7 Line #: 32 Code: C
Original Comment #: 20

Comment: The sentence "Industrial activity inspections may also be conducted in the Area 3A/4A remediation area, if required under the SWPP." must be changed to "Industrial activity inspections **will** also be conducted in the Area 3A/4A remediation are, **as** required under the SWPP."

Response: Agreed.

Action: Line 32 on Page 4-7 will be changed to read: "Industrial activity inspections *will* also be conducted in the Area 3A/4A remediation area, *as* required under the SWPP."

Commenting Organization: Ohio EPA Commentator: DSW
Section #: 4.3 Pg. #: 4-8 Line #: 21-22 Code: C
Original Comment #: 21

Comment: The sentence is difficult to understand. It appears to refer to project specific monitoring for areas outside the production area ("the former storm water runoff-controlled Production Area drainage basin"). It would read more clearly if "the former storm water runoff-controlled Production Area drainage basin" were more simply stated "Production Area drainage basin."

Response: Agreed.

Action: Line 22 on Page 4-8 will be changed to read: "...areas located outside the *Former* Production Area."

Commenting Organization: Ohio EPA Commentator: DSW
Section #: 4.3 Pg. #: 4-8 Line #: 28-30 Code: C
Original Comment #: 22

Comment: This project does require project specific storm water monitoring, specifically, the storm water must be monitored for VOCs to determine where it will be pumped to from the 3A/4A area.

Response: See response to Ohio EPA Comment 18.

Action: See action under Ohio EPA Comment 18.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 4.4 Pg. #: 4-9 Line #: 17 Code: C
Original Comment #: 23

Comment: The text states that the GMA under Plant 6 has already been identified as an area that will need aquifer restoration. More recent data has indicated that the aquifer contamination is much smaller than previously thought. Decisive actions to protect the GMA in this location will almost certainly save money compared to the cost to remediate under Plant 6.

Response: The text will be changed to reflect the most recent groundwater-monitoring data from the Plant 6 area.

Action: Lines 17 through 20 on Page 4-9 will be changed to read: "*The OU5 ROD identified the GMA below Plant 6 as an area requiring aquifer restoration, and the 1999 IEMP outlined the strategy for remediating this area. However, groundwater-monitoring data collected in the spring of 2000 indicate that the uranium contamination plume is no longer present under Plant 6. Therefore, it is important to minimize the impact to the GMA in the Plant 6 excavation to ensure that uranium levels remain below the groundwater FRL.*"

SPECIFIC COMMENTS ON APPENDIX A

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: Appendix A, Section 4.0 Pg. #: 5 Line #: NA Code: C
Original Comment #: 24

Comment: The citation listed under ODNR, "Ohio's Standards for Stormwater Management..." is the subtitle of the document. The correct title is "Rainwater and Land Development" followed by your citation as a subtitle. Section 5.4 on Page 13 of the appendix (the first paragraph after the four bullets) should also be changed.

Response: Agreed.

Action: Title will be changed as noted in comment.

SPECIFIC COMMENTS ON APPENDIX B

Commenting Organization: Ohio EPA Commentator: DSW
Section #: Appendix B, 3.1 Pg. #: 3-1 Line #: Code: C
Original Comment #: 25

Comment: It is unclear from this section whether water containing VOCs will be pumped to the Tank Farm Settling Basin prior to being put into portable tanks (Appendix B, 3.1 and 5.5; Specification 02275, 3.1D) or pumped into portable tanks prior to being pumped to the Tank Farm Settling Basin (Appendix B, 1.3; Drawing 99X-1900-G-00010, keyed note 4).

Response: Excavation water containing VOC concentrations above the "inside mixing zone maximum" listed in Table 7-1 of OAC 3745-1-07 will be pumped into tanks and transported to the BSL. See response to Ohio EPA Comment 18.

Action: Appendix B will be clarified as noted above. However, the specification need not be revised because the contractor only requires information on the final destination of the storm water (i.e., the specification does not need to address the criteria for making the VOC decision).

Commenting Organization: Ohio EPA Commentator: DSW
Section #: Appendix B Pg. #: General Line #: Code: C
Original Comment #: 26

Comment: There needs to be more information on sampling for VOCs. Is this done prior to any water being sent over to the Tank Farm Settling Basin, if any VOC is present will the water be routed to the BSL through portable tanks, how long between sampling and pumping is allowed, etc?

Response: Excavation water containing PCE, TCE, and/or DCE concentrations above the values listed in Table 7-1 of OAC 3745-1-07 for "inside mixing zone maximum" will be pumped into tanks and transported to the BSL for Phase II treatment. Surface water containing the noted VOCs at concentrations below the listed maximums will be discharged to the SWRB via the Tank Farm Settling Basin. The VOC concentrations noted in Table 7-1 of OAC 3745-1-07 have been brought to the attention of AWWT management and are of no concern with respect to Phase I treatment. Changes will be made to Appendix B (Section 3.1 and Figure 3-1) to reflect the removal of the WMF from the surface-water management loop. There is no indication at this time (i.e., funding) that the WMF will be constructed before Area 3A excavation is initiated. Sampling for VOCs is discussed in the response and action listed under Ohio EPA Comment 18.

Action: Modify Section 3.1 and Figure 3-1 to reflect removal of the WMF. For VOC sampling, see action under Ohio EPA Comment 18.

Commenting Organization: Ohio EPA Commentator: DSW
Section #: Appendix B, 3.2 Pg. #: 3-2 Line #: Code: C
Original Comment #: 27
Comment: Need more detail here and on Drawing 99X-1900-G-00008 on how water will be contained/handled in the soil treatment area?

Response: Agreed.

Action: Develop design for containing and managing water within the Soil Treatment Area and illustrate features (ditches, berms, etc.) on Drawing 99X-1900-G-00008.

Commenting Organization: Ohio EPA Commentator: DSW
Section #: Appendix B,3.3 and 3.5 Pg. #: 3-3 and 3-5 Line #: 21-22 Code: C
Original Comment #: 28
Comment: Water should not be pumped directly to Paddys Run. Water should be routed through one of the sediment basins handling water from certified areas, such as the sediment basin in Area 2, Phase III or Area 1, Phase I.

Response: Surface water from certified areas will be routed through a sediment basin prior to discharging the water to Paddys Run.

Action: Change sentence on Pages 3-3 and 3-5 to read: "After the project area has been certified, the runoff will be pumped to *a sediment basin prior to discharging the water to Paddys Run.*"

Commenting Organization: Ohio EPA Commentator: DSW
Section #: Appendix B Pg. #: 3-6 Line #: Figure 3-1 Code: C
Original Comment #: 29
Comment: Provide more detail about the WMF, how are VOC and non-VOC waters going to be kept separate, how is the water handled here, etc?

Response: See response to Ohio EPA Comment 26.

Action: See action under Ohio EPA Comment 26.

Commenting Organization: Ohio EPA Commentator: DSW
Section #: Appendix B, 4.2 Pg. #: 4-2 Line #: Code: C
Original Comment #: 30
Comment: Specification 02930 is not provided in the Technical Specifications package.

Response: Specification section 02930 is contained in the OSDF Phase III package. It was assumed that the Agencies had a copy of that package for reference while reviewing the Area 3A/4A IRDP.

Action: A copy of the OSDF Phase III package has been transmitted to the Agencies so that it may be referenced in the context of Area 3A/4A remediation.

Commenting Organization: Ohio EPA Commentator: DSW
Section #: Appendix B, 6.2 Pg. #: 6-2 Line #: Code: C
Original Comment #: 31
Comment: Is silt fence necessary in addition to the diversion ditch? It appears as though the diversion ditch alone will accomplish the desired result.

Response: Based on ODNR guidance, silt fence is considered necessary in combination with the temporary diversions presented on design Drawings 99X-1900-G-00006 and 99X-1900-G-00060 to minimize sediment transport.

Action: None.

Commenting Organization: Ohio EPA Commentator: DSW
Section #: Appendix B Pg. #: Appendix A Line #: Velocity calculations Code: C
Original Comment #: 32
Comment: Note that design velocities in erodible ditches greater than 3 fps should have rock check dams to reduce velocities. Rock check dams should be installed according to ODNR guidance.

Response: Comment noted.

Action: Check calculations for erodible ditches and specify the installation of rock check dams in accordance with ODNR guidance for erodible ditches having design velocities greater than 3 fps.

Commenting Organization: Ohio EPA Commentator: DSW
Section #: Appendix B Pg. #: Appendix A Line #: Code: C
Original Comment #: 33
Comment: The calculations for pump size in this section use a 3-day dewatering period and Specification 02275 3.8 B require pumps to be sized so that no water from a 10-year, 24-hour or lesser storm event overflow into the GMA.

Response: Comment noted.

Action: Verify pump sizing calculations and the adequacy of sizing to handle the 10-year, 24-hour or lesser storm event without overflow into the GMA breaches.

SPECIFIC COMMENTS ON APPENDIX E

Commenting Organization: Ohio EPA Commentator: DSW
Section #: Appendix E Pg. #: E-1 Line #: 15 Code: C
Original Comment #: 34

Comment: The text should discuss the possibility that the elimination of the more than 800 samples did not restrict the model's capacity to predict un-sampled contamination at depths just below the 0.5 foot cutoff. For example, consider a location with contamination extending to three below land surface but that was only sampled above 0.5 feet. The model would be unable to predict the presence of this contamination unless nearby sampling intersecting the contamination is available. Was the removal of the data points conditioned on the sampling results below the cutoff depth?

Response: Of the surface sample data eliminated from the model (e.g., samples with a mid-point sampling depth less than or equal to 0.5 ft), two are within the Area 3A/4A excavation boundary. These two surface samples have no subsurface samples at the same location and have total uranium concentrations greater than the FRL (82 mg/kg outside the high leachability zones, or 20 mg/kg inside the leachability zones). These two samples are tabulated below:

Sample ID	Easting '83	Northing '83	Location	Total U (mg/kg)	Excavation Depth (ft below surface)
99276	1350139.06	481586.35	NE of Bldg 64	474	2.0
5308	1349894.97	481509.44	W of Bldg 65	91	2.4

Since both of these surface samples are located in areas where there are no vertical pathways for contaminant migration (e.g., building foundations, sumps, etc.), deeper contamination is not anticipated at either of these locations. As indicated in the table, 2.0 to 2.4 feet of soil will be excavated at each location as part of the excavation design. Therefore, even if these samples had been included in the model, the impact to final soil volume estimates would have been minimal.

Approximately 24 of the surface samples eliminated from the model are in the designated above-WAC area in the northeast corner of Area 3A and some exhibit total uranium concentrations above the WAC. Although these surface samples have no subsurface samples at the exact same location, there are numerous subsurface samples within the designated above-WAC area that are included in the model. The boundaries for this above-WAC area were set using analytical data from physical samples that indicate all above-WAC uranium contamination lies above a depth of 2 feet. Additionally, because this is an above-WAC area, the surface below each lift will be scanned with real-time instruments to ensure that all above-WAC uranium has been removed. Therefore, the inclusion of these samples in the model is not an issue for soil containing above-WAC levels of uranium.

Finally, as in all excavated areas, soil will be sampled and analyzed upon completion of precertification activities to certify that all contamination above the appropriate FRL has been removed. Therefore, the inclusion of isolated surface-soil samples in the model is not required to demonstrate that all contamination has been captured.

Action: Soil in the above-WAC area will be scanned after each lift to ensure above-WAC uranium contamination is not placed in the OSDF. Soil in above-FRL areas will undergo a precertification scan and certification sampling after excavation has been completed.

Commenting Organization: Ohio EPA Commentator: HSI GeoTrans, Inc.
Section #: Appendix E Pg. #: E-2 Line #: 9 Code: C
Original Comment #: 35

Comment: The SAGE2001 program user must select an appropriate maximum lag distance for sample variogram construction (a value of 300 feet was used for the excavation design). It is important that this parameter be carefully chosen because the program will not use any sample variogram points at lag distances larger than the specified maximum. Similarly, if the specified maximum is too long, useless points could be included in the modeling process. The inclusion of these points may adversely affect model accuracy. The selected maximum lag distance should be justified as appropriate through an assessment of variogram model sensitivity to potential alternative choices for this parameter.

Response: The optimum maximum lag distance of 300 feet used in the geostatistical analysis was chosen after several model runs using a range of values from less than 300 feet up to 1,000 feet. The resulting variograms plotted in Attachment E-I show a well-defined shape out to the 300-foot maximum lag distance. At the maximum lag distance of 300 feet, -most of the variograms have flattened out demonstrating there is no correlation in the data at this distance. In fact, as mentioned in the text of Appendix E, the range of 100 feet was chosen as a result of examining these variograms. Once the range was determined, the expert variogram modeling system within the MVS software was used to model the variograms actually used in the kriging process. The 100-foot range determined from the SAGE2001 model was provided to the MVS kriging package as the kriging reach parameter.

Action: None.

Commenting Organization: Ohio EPA Commentator: HSI GeoTrans, Inc.
Section #: Appendix E Pg. #: E-2 Line #: 8 Code: C
Original Comment #: 36

Comment: The sample variograms for the design excavation analysis were constructed by including on the plot only those variogram points that represent 50 or more data pairs. The minimum data pair's threshold is a parameter specified by the user and requires careful trial and error consideration. The minimum data pair's threshold value should be selected large enough so that spurious points near the origin are eliminated but small enough so that the shape of the variogram at shorter lag distances is adequately defined. The selected minimum data pairs threshold value (50) should be demonstrated as appropriate through the model validation process.

Response: As in the choice of optimum maximum lag distance (see response to Ohio EPA Comment 35), the minimum data pair threshold value of 50 data pairs was chosen after several model runs using a range of threshold values from less than 50 pairs up to a maximum of 500 pairs. The value of 50 resulted in well-defined variograms with no spurious points at short lag distances as shown in Attachment E-I. The variograms plotted in Attachment E-I also have the number of data pairs used to calculate each point displayed beside the point. The number of data pairs ranges from a minimum of 167 data pairs to a maximum of 778 data pairs. The minimum data pairs threshold

would have to be increased to more than 167 to make any difference in the final variogram model. Final variogram model results therefore, are not sensitive to this parameter choice.

Action: None.

Commenting Organization: Ohio EPA Commentator: HSI GeoTrans, Inc.
Section #: Appendix E Pg. #: E-2 Line #: 17 Code: C
Original Comment #: 37
Comment: Inspection of the sample variograms reveals that only one data point is plotted for lag spacing shorter than about 112.5 feet. SAGE2001 employs least squares regression to fit the model variograms to the sample variogram points. Inaccuracies will occur where there are few sample variogram points to guide these curve fitting calculations. The ability of the model to accurately predict total uranium concentrations within the horizontal search radius of 100 feet is, therefore, questionable. The analysis should include a demonstration that the selected model is capable of accurate estimation within the search radius that was used.

Response: While the 12 variograms at zero dip and 12 variograms at 30-degree dip angles have one point plotted at a lag spacing less than 112.5 feet, the 12 variograms at 60 degree dip angle and the variogram at 90 degree dip angle all have two points plotted at a lag spacing less than 112.5 feet. Since SAGE2001 fits all 37 variograms at the same time, adequate control points are available to control the model fit below 100 feet. As discussed in the response to Ohio EPA Comment 35, the SAGE2001 modeling results were only used to determine the kriging range for the MVS software.

Action: None.

Commenting Organization: Ohio EPA Commentator: HSI GeoTrans, Inc.
Section #: Appendix E Pg. #: E-3 Line #: 13 Code: C
Original Comment #: 38
Comment: The text indicates that the final excavation surface was placed in the model as an intermediate surface between the model top and bottom, respectively defined as surface topography and the top of the Great Miami Aquifer. How was this surface determined using the model?

Response: The design excavation surface was not determined using the model. The design excavation surface was constructed by a civil engineering team after careful examination of building foundation drawings and contours of the modeled total uranium soil concentrations. The final engineered excavation surface was placed into the soil contaminant model by kriging points generated from the design surface on a random 5-foot average spacing. All excavation surface profiles and contour drawings were generated directly from the designed surface and not from the kriged representation in the model.

Action: None.

Commenting Organization: Ohio EPA Commentator: HSI GeoTrans, Inc.
Section #: Appendix E Pg. #: E-3 Line #: 17 Code: C
Original Comment #: 39

Comment: A comparison of the top of the Great Miami Aquifer surface on Figure E.7 with the excavation surface (shown on the same figure) indicates that the excavation surface will extend below the top of the aquifer in at least two places. The excavation profiles shown on Figures 2-22 through 2-25 do not show any excavations that are planned to extend below the top of the aquifer. Why does the model contradict the plan?

Response: Two areas are shown in Figure E-7 where the modeled excavation surface extends below the top of the Great Miami Aquifer (GMA). These two areas are directly beneath the Boiler Plant and the northern part of Plant 6. The construction drawings for these two areas show that the excavation surface extends approximately 3 feet below the top of the GMA beneath the Boiler Plant and extends to the top of the GMA beneath Plant 6 (Sheet Numbers 25 and 26 of Construction Drawing Package I and Sheet Numbers 34 and 37 of Construction Drawing Package II). Since the modeled excavation surface is a kriged representation of the design surface (see the response to Ohio EPA Comment 38.), the representation presented in Figure E-7 agrees with the excavation design within the limits set by the kriging process.

Action: None.

Commenting Organization: Ohio EPA Commentator: HSI GeoTrans, Inc.
Section #: Appendix E Pg. #: E-3 Line #: 22 Code: C
Original Comment #: 40

Comment: SAGE2001 reports the total sum of squared differences (error SSE) resulting from the least squares regression analysis performed to fit the model variograms to the variogram plot. The error SSE should be provided for the selected model and for any competing models considered. In addition, the error SSE should be reported for alternative values considered for the maximum lag distance and for the minimum data pairs threshold value.

Response: As indicated in the response to Ohio Comment 35 the 100 foot range determined from the SAGE2001 model was provided to the MVS kriging package as the reach parameter. The expert variogram modeling system within the MVS software was used to model the variograms used in the kriging process. Internally, the MVS variogram modeler uses a sum of squared differences to find the best variogram model. The results of this statistical analysis, however, are not available to the user and therefore, could not be provided in the text.

Action: None.

Commenting Organization: Ohio EPA Commentator: HSI GeoTrans, Inc.
Section #: Appendix E Pg. #: E-3 Line #: 25 Code: C
Original Comment #: 41

Comment: The results of this geostatistical analysis are a key input to the determination of excavation volumes and depths. The critical nature of this analysis, therefore, requires that meaningful and quantitative model validation be performed, and that the results of the validation be presented in the text discussion. Validation should be used to demonstrate that a reasonable model has been identified and used. The model put forth in Appendix E assumes an exponential form and a nugget effect of 0.27. Is this model

superior to one that does not include a nugget effect? Validation statistics calculation (i.e., standardized residuals, orthonormal residuals, etc.) procedures are available to answer such questions by providing a way to quantitatively compare one model to another. It should be noted that the above validation statistics differ from the total sum of squared differences (error SSE) reported by SAGE2001. Assuming that validation statistics were used in model development for this analysis, they should be reported in the text rather than merely providing a statement that the analysis satisfied an internal review.

Response: As discussed in response to Ohio Comments 35 and 40, the MVS modeling/visualization software package was used to construct the variogram model and krige the total uranium concentration data for input into the excavation design process. While the MVS system uses a sum of squared differences error method to arrive at a variogram model, these internal statistics are not available to the user. As mentioned in the text of Appendix E, an independent peer review of the variogram model, kriging process, and the input data set was conducted by DOE personnel at Argonne National Laboratories to ensure that a reasonable model and modeling process was being used.

Finally, the model, as used in this design process, is only an estimation tool used to provide soil contamination and volume estimates to the excavation design process. The final excavation surface will undergo precertification scanning and certification sampling to demonstrate that all FRLs have been met.

Action: None.

GENERAL COMMENTS ON THE TECHNICAL SPECIFICATIONS

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: Pg. #: Line #: Code: C
Original Comment #: 42
Comment: The following Parts and Sections are referenced throughout the Technical Specifications but are not included in the document: Part 6, Part 8, Section 02200, Section 02100, Section 02230, and Section 02930. Please provide these sections.

Response: The reference specification sections are contained in the OSDF Phase III package.

Action: A copy of the OSDF Phase III package has been transmitted to the Agencies so that it may be referenced in the context of Area 3A/4A remediation.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: Pg. #: Line #: Code: C
Original Comment #: 43
Comment: Please delete all references to the borrow area, as that is not part of the work under this scope.

Response: Agreed.

Action: The OSDF Borrow Area references pertaining to scope will be deleted.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 02205 Pg. #: 6 of 19 Line #: 3.1 Code: C
Original Comment #: 44
Comment: Activity C should immediately follow activity A. Surface water management and control measures need to be in place before the activities mentioned in activity B begin. Please correct.

Response: Agreed.

Action: The order of Section 02205, Items 3.1.B and C will be reversed.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 02205 Pg. #: 7 of 19 Line #: K2, 3 Code: C
Original Comment #: 45
Comment: What justification is there for the steep slopes (1.5H:1V) indicated in this section? Are these slopes constructable and safe to work on and around?

Response: Slope stability requirements are based on temporary slope configurations as detailed in the Geotechnical Engineering Report for Project Order 177 A-E Support Services for the Geotechnical Investigation of the Former Plant Area, Revision C, dated March 1998.

Action: None.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 02205 Pg. #: 7 of 19 Line #: N 1 Code: C
Original Comment #: 46
Comment: What methods will be used to verify that the truck is no longer considered RCRA hazardous?

Response: After hauling RCRA hazardous material, all visible material will be rinsed from the truck prior to use in another area. Item 3.1.N will be clarified to state that equipment and trucks will be rinsed prior to reuse.

Action: Item 3.1.N will be revised to specify that equipment will be rinsed until no visible material is present on exterior surfaces, as determined by the Construction Manager.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 02205 Pg. #: 11 of 19 Line #: 3.4 Code: C
Original Comment #: 47
Comment: All RCRA hazardous debris must be sampled for TCLP and pass before placement in the OSDF. Also, how is the RCRA debris transported to the OSDF?

Response: As stated in Section 4.2.2.2.2 of the OSDF WAC Attainment Plan, there are no RCRA-based restrictions for the OSDF, with the exception of lead sheeting from Operable Unit 3, acid brick, and spent lead bullets from the South Field Firing Range. Debris that is encountered within the boundaries of a RCRA characteristic soil area is eligible for disposal in the OSDF provided it is found within a below-WAC area (for numerical WAC) and passes process-related visual inspection requirements. However, as a best management practice, the WAC Attainment Plan requires that debris from a RCRA characteristic area be set aside and decontaminated to remove adhered soil (i.e., field rinsed with water to the point where no soil material is visible on the debris)

prior to disposal in the OSDF. Following decontamination to meet these requirements, the debris will be transported in a truck to the OSDF for disposal.

Action: None.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 02205 Pg. #: 12 of 19 Line #: 3.5 Code: C
Original Comment #: 48
Comment: The definition of empty (less than 1 inch of liquid or less than 0.3% by weight of the total container contents) appears to have been borrowed from the RCRA definition of 'empty' container. However, RCRA defines container as something that is normally used to transport materials. The underground storage tanks relevant to this Plan are not containers but are defined as tanks and the RCRA regulations have a different definition for empty tanks. To be clean closed under RCRA, a tank would be drained, cleaned and clean-closed only after a rinseate sample was found to be free of hazardous constituents.

WAC-compliance for tanks should follow the same criteria as used for process-related metals.

Response: Agreed. The WAC attainment requirements for debris are appropriate for underground storage tanks (USTs) and will be applied instead of the RCRA definition for an empty container or empty tank. The Construction Manager will visibly inspect all USTs to determine that they are empty and do not contain process-related residues prior to disposal.

Action: Revise Item 3.5 to remove requirements specific to emptying the tank per the RCRA definition of an 'empty' container in favor of the Construction Manager making a visual determination that the tank is empty, either by breaching the top of the tank and looking in, or by using a dip stick.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 02205 Pg. #: 12 of 19 Line #: 3.5 F Code: C
Original Comment #: 49
Comment: If soils around the UST are saturated, then the soils must be treated or sampled.

Response: Agreed. Item 3.5.F, which directs the contractor to over-excavate as directed by the Construction Manager, was intended to address the hold point for any treatment or sampling required prior to disposal without burdening the excavation contractor with the details of what this will entail.

Action: Scope and text related to the disposal of saturated soil surrounding a UST will be revisited and revised as necessary to provide the excavation contractor with appropriate direction and detail regarding soil treatment and/or sampling as it impacts their field work.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 02205 Pg. #: 13 of 19 and 16 of 19 Line #: 3.7C, 3.13B Code: C
Original Comment #: 50

Comment: Real-time monitoring between lifts of below-WAC are to be performed, as has been in the case in all remedial excavations. Please correct.

Response: Real-time monitoring of lifts will be performed on every lift when excavation is driven by soil contamination. However, real-time monitoring will only be performed on the initial soil surface when excavation is driven by removal of structures where contamination in the subsurface is absent.

Action: Specification text will be revised to clarify monitoring requirements for below-WAC areas based on excavation driver (i.e., contamination versus structure).

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 02205 Pg. #: 14 of 19 Line #: 3.11 E Code: C
Original Comment #: 51

Comment: All haul equipment fitted with automatic covers should have the covers in place at all times (i.e. -inside and outside of radiological controlled areas), except when loading or unloading.

Response: Agreed.

Action: Item 3.11.E text will be revised to delete "outside of radiological controlled areas."

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 02205 Pg. #: 15 of 19 Line #: 3.2 M Code: C
Original Comment #: 52

Comment: OEPA is under the impression that SP4 will be hauled away before the end of the current construction season. Will SP4 still be there during the 3A/4A remediation? If so, please provide details as to what soil will be added to the stockpile, and how it will be verified prior to placement that the soils are below-WAC, as SP4 has already passed WAC Attainment Sampling.

Response: SP4 has already been excavated and disposed in the OSDF, and real-time scanning was performed on the footprint of the pile to demonstrate that the area is below-WAC. A new stockpile, A3A-008, may be created in the footprint of SP4 from material excavated in Area 7. The Area 7 soil will be characterized prior to being placed in A3A-008.

Action: None.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 02205 Pg. #: 18 of 19 Line #: 3.15 E 4 Code: C
Original Comment #: 53

Comment: A new requirement for removing surface water from excavations should be added to make it a priority to remove surface water from all excavations which penetrate within 5 feet of the GMA.

Response: The text refers to seasonal closure methods at the end of each construction season. The intent is that any penetration within 5 feet of the GMA is repaired per this specification section within 5 working days, well before implementing any seasonal closure.

Action: None.

Commenting Organization: Ohio EPA Commentator: HSI GeoTrans, Inc.
Section #: 02206 Pg. #: 4 of 6 Line #: 3.2C Code: C
Original Comment #: 54
Comment: Hydraulic conductivity requirements should be specified for GMA plug material.

Response: Compaction of the specified GMA plug material (CL classification according to United Soil Classification System) in 8-inch loose lifts to at least 95% Standard Proctor dry density (ASTM D698) within +/- 3% optimum moisture content, as specified in Item 3.2.C, will be sufficient to achieve adequate permeability or hydraulic conductivity.

Action: None.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: Specification 02206 Pg. #: 4 of 6 Line #: 3.2 C1 A,B Code: C
Original Comment #: 55
Comment: This specification details activities that are required when work activities encroach on the 5-feet protective cover of the GMA but do not extend to within 2-feet of the GMA. Specification 3.2C1A allows the Construction Manager 5 working days to collect physical samples. This is an unreasonably long duration. The text on Page 3-20 lists only ten excavations that are expected to penetrate within 5 feet of the GMA. It doesn't seem unrealistic to expect the CM to perform this sampling much more quickly. Lacking convincing justification for a longer time, we think 24 hours to obtain this sample is more than adequate. Section 3.2C1B allows ten working days for the contractor to backfill with the GMA plug. This too, seems unreasonably long considering the expenses that are being incurred to remediate the aquifer. Two working days to initiate plugging and five days to complete plugging seems reasonable.

Response: Comment noted.

Action: Specification Item 3.2.C.1.a will be revised to allow the Construction Manager 24 hours to obtain physical sampling in the area. As for backfilling, the contractor's clock starts upon notification from the Construction Manager that sampling results are acceptable. Therefore, Item 3.2.C.1.b should be revised to state "Upon notification from the Construction Manager of acceptable FRL results, initiate backfilling using GMA plug material meeting the requirements of this Section. Complete backfilling within five days following notification of sampling results."

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: Specification 02206 Pg. #: 4 of 6 Line #: 3.2 C1 A Code: C
Original Comment #: 56
Comment: The text explains that the CM will collect samples in the area to be backfilled that are within 5 feet of the GMA but not within 2 feet of the GMA. Describe the measures to be taken to ensure that the act of sampling does not provide a route for contaminants to enter the GMA. Sample depth, plugging the sample hole, examination of the soil core for coarse-grained materials, etc. should be included in the measures.

Response: Sampling will be performed to a depth of 6 inches and the sampling point filled with Bentonite grout upon completion of sampling. The contractor does not perform the sampling, hence the sampling details are not in the specification.

Action: None.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 02206 Pg. #: 4 of 6 Line #: 3.2 D 2 Code: C
Original Comment #: 57
Comment: The text states "...as necessary to achieve a total compacted thickness of 2-feet." We are unclear if the 2-feet referred to here is the requirement that 2 feet of clay be placed within 24 hours of encroaching on the GMA or if this is a typographical error and it refers to the 5-feet plug thickness. Confirm that this is not typo.

Response: The reference to a compacted thickness of 2 feet is not a typo.

Action: None.

Commenting Organization: Ohio EPA Commentator: HSI GeoTrans, Inc.
Section #: 02206 Pg. #: 5 of 6 Line #: 3.2 D 4 Code: C
Original Comment #: 58
Comment: The specification should indicate that the sodium bentonite grout will be mixed prior to installation and will be pressure emplaced using a tremie pipe. In addition, the grout should be emplaced by first installing the tremie pipe to the bottom of the pile and by removing the tremie pipe as the pile is filled with grout. The grouting should be performed in one continuous operation. In addition, the specification should indicate how the grout will be emplaced so that all void space is eliminated in the event that an obstruction, preventing installation of the tremie pipe to the bottom of the pile, is encountered.

Response: Comment noted.

Action: Pending constructability review to work out the details, Item 3.2.D.4 will be revised to direct the contractor to tremie the grout into the open pile to eliminate void space.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 02275 Pg. #: 2 of 8 Line #: 1.4 C Code: C
Original Comment #: 59
Comment: Provide a copy of the Contractor's Surface Water Management Plan for Ohio EPA review and approval. We can commit to an expedited review cycle to minimize delays.

Response: DOE will prepare an Operations, Maintenance, and Management Plan that covers all aspects of surface-water control during excavation. The selected contractor will be required to manage surface water in the manner dictated by the plan. DOE will provide this plan to Ohio EPA for review prior to award of the excavation contract.

Action: Provide an Operations, Maintenance, and Management Plan for surface water to Ohio EPA for review.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 02275 Pg. #: 3 Line #: 1.4 C 5 and 6 Code: C
Original Comment #: 60
Comment: How will plugged pipes handle incoming water? Will they be rerouted to bypass excavations? This needs to be addressed.

Response: Plugged pipes will be rerouted around excavations.

Action: Revise Item 1.4.C.5 to specify that the contractor must provide discussion in their Surface Water Management Plan on the rerouting of plugged pipes around excavations.

Commenting Organization: Ohio EPA Commentator: DSW
Section #: Specification 02275 Pg. #: 4 Line #: 2.1 D Code: C
Original Comment #: 61
Comment: Site requirements are for coir/jute fiber matting. Confer with the site Natural Resources group. Any plastic netting used (not recommended) must be specified as non-UV stabilized.

Response: Comment noted.

Action: Revise Item 2.1.D to correspond with the coir/jute biodegradable material defined in previous design specifications.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 02205 Pg. #: 4 of 5 Line #: Code: C
Original Comment #: 62
Comment: The erosion control blanket requirement should be revised to specify the coir based, biodegradable material defined in previous construction specifications for other on-site projects. Additionally, Ohio EPA recommends use of this erosion control fabric on any slope that will be steeper than 4.1 to facilitate seeding success.

Response: Comment noted.

Action: See action for Ohio EPA Comment 61 regarding revising the erosion control blanket material specification. In addition, Item 3.3, as well as the construction drawings, will be revised to direct the contractor to use erosion control fabric on final design slopes steeper than 4:1 to facilitate seeding success.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 02205 Pg. #: 5 of 8 Line #: 3.2 Code: C
Original Comment #: 63
Comment: The section should specifically refer to the ODNR guidance for installation methods and requirements. Additional detail should be provided in this section to ensure proper silt fence usage and installation.

Response: Drawing 99X-1900-G-00041 provides silt fence installation detail per ODNR guidance. However, the execution section of this specification text does not currently provide the appropriate link to the drawing.

Action: Item 3.2 for silt fence installation will be revised to provide a link to the referenced drawing.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 02275 Pg. #: 7 of 8 Line #: 3.8 C Code: C
Original Comment #: 64

Comment: For excavations extending to within 5 feet of the GMA, this specification requires that less than one foot of standing water be maintained at all times by pumping to the Tank Farm Settling Basin. No design storm event is specified. We strongly agree that aggressive storm water controls are necessary to protect the aquifer. We are not confident that it is possible to implement the one foot maximum standing water regardless of the size of the storm. It may be necessary to pump from the excavation to an adjacent area rather than the Tank Farm Settling Basin. A prioritized list of actions to be taken if a greater-than-design basis series of storms occurs should be a part of the SWMP.

Response: Comment noted.

Action: Validate the 10-year, 24-hour storm event design criterion and develop contingencies within the design SWMP for achieving the 1 foot maximum standing water requirement as stated in Item 3.8.C, as suggested in the comment. In addition, provide clearer requirements for the contractor's SWMP and within the execution section of Specification Section 02275.

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: 02275 Pg. #: 6 of 8 Line #: 3.8 Code: C
Original Comment #: 65

Comment: Protection of the Great Miami Aquifer is one of the highest priorities of the Ohio Environmental Protection Agency not only at the Fernald site but throughout southwest Ohio. Verifying compliance with this specification will be a major component of our oversight activities.

Response: Protection of the GMA is also one of the highest priorities for the DOE, as demonstrated by the aggressive remediation efforts to restore the aquifer to the EPA proposed uranium drinking water standard of 0.020 mg/L. It is noted that the DOE groundwater restoration goal of 0.020 mg U/L for the GMA is lower than: 1) the promulgated uranium groundwater standard (0.044 mg U/L) applicable to the clean-up of UMTRA sites; 2) the U.S. Agency for Toxic Substance and Disease Registry derived drinking water concentration (DDWC) of 0.051 mg U/L; and 3) the World Health Organization DDWC of 0.031 mg U/L.

Action: None.

Commenting Organization: Ohio EPA Commentator: DSW
Section #: 02275 Pg. #: 7 Line #: 3.10 A Code: C
Original Comment #: 66

Comment: The sentence ("Forty-five calendar days will be the maximum time...") which begins both Section 3.10A and Section 3.10B should be deleted in both sections. Seven days is the maximum time before stabilizing can take place. We have found that including the first sentence can lead construction personnel to believe they can leave those areas unstabilized for 44 days.

Response: Agreed.

Action: The first sentence in both 3.10.A and 3.10.B will be deleted.

SPECIFIC COMMENTS ON THE DRAWINGS

Commenting Organization: Ohio EPA Commentator: OFFO
Section #: Drawing G-00100 Pg. #: Cross section 1 Line #: Code: C
Original Comment #: 67
Comment: This section shows a clay plug in the GMA but the bench does not extend around the entire perimeter of the excavation. The excavations should be redesigned so that surface water does not drain into the excavation.

Response: Agreed.

Action: The bench will be extended around the entire excavation for the clay plug.

Commenting Organization: Ohio EPA Commentator: OFFO
Drawing #: G000030 Sheet #: 27 Section #: Cross section 5 Code: C
Original Comment #: 68
Comment: The drawing shows the GMA plug is greater than 5 feet thick.

Response: The design criteria requires that the clay plug extend 5 feet above the GMA/till interface. In this case, the excavation is shown to remove 2 feet of the GMA, which requires a 7-foot clay plug to satisfy the criteria.

Action: None.