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**RESPONSE TO COMMENTS ON THE OPERABLE
UNIT 5 INITIAL SCREENING OF ALTERNATIVES
REPORT**

02/12/93

**DOE-FN/EPA
DOE-1126-93
30
LETTER**



Department of Energy
Fernald Environmental Management Project
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FEB 12 1993
 DOE-1126-93

Mr. James A. Saric, Remedial Project Director
 U.S. Environmental Protection Agency
 Region V - 5HRE-8J
 77 W. Jackson Boulevard
 Chicago, Illinois 60604

Mr. Graham E. Mitchell, Project Manager
 Ohio Environmental Protection Agency
 40 South Main Street
 Dayton, Ohio 45402-2086

Dear Mr. Saric and Mr. Mitchell:

RESPONSE TO COMMENTS ON THE OPERABLE UNIT 5 INITIAL SCREENING OF ALTERNATIVES REPORT

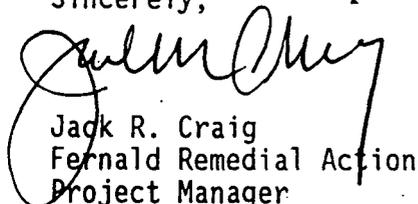
- References: 1) Letter, G. E. Mitchell to J. R. Craig, "Transmittal of Ohio EPA comments on the OU 5 ISA Report," dated January 19, 1993
- 2) Letter, J. A. Saric to J. R. Craig, "Approval of OU 5 Initial Screening of Alternatives," dated January 14, 1993

This letter transmits responses to comments received on the Initial Screening of Alternatives (ISA) Report for Operable Unit (OU) 5. These responses cover the Ohio Environmental Protection Agency (OEPA) comments (Reference 1), as well as the United States Environmental Protection Agency (U.S. EPA) comments (Reference 2).

Once we receive final approval of the comment responses, we will complete the final ISA report for submission.

If you or your staff have any questions, please contact Pete Yerace at (513) 738-6178.

Sincerely,


 Jack R. Craig
 Fernald Remedial Action
 Project Manager

FN:Yerace

Enclosure: As Stated

Enclosure: As Stated

cc w/ enc.:

J. J. Fiore, EM-42, TREV
K. A. Hayes, EM-424, TREV
B. Barwick, USEPA-V, AT-18J
J. Kwasniewski, OEPA-Columbus
P. Harris, OEPA-Dayton
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T. Schneider, OEPA-Dayton
J. Michaels, PRC
L. August, GeoTrans
AR Coordinator, FERMCO

cc w/o enc.:

R. L. Glenn, Parsons
P. Clay, FERMCO/19
D. Dubois, FERMCO/65-2
J. W. Thiesing, FERMCO

Comment Responses on the

**INITIAL SCREENING OF
ALTERNATIVES
FOR OPERABLE UNIT 5**

February 1993

Comment Responses on the

**INITIAL SCREENING OF
ALTERNATIVES
FOR OPERABLE UNIT 5**

February 1993

U.S. EPA GENERAL COMMENTS ON THE OU5 ISA

Commenting Organization: U.S. EPA

Commentor:

Section: Page : Line :

Comment Code:

Comment No. 1

Comment: The ISA does not discuss which of the potential ARARs would relate to which of the alternatives examined. In the Feasibility Study, we will expect DOE to correlate to each remedial alternative, the ARARs that may apply to it. As the ISA is written, it is unclear which of the array of potential ARARs from the listing in Appendix B would apply to which of the various alternatives.

Response: ARARs are recognized as a "threshold criteria" that must be satisfied in order for an alternative to be eligible for selection. The selected remedy must attain all ARARs, unless use of a waiver is justified. ARARs will be discussed in detail for each alternative during the Feasibility Study in accordance with the U.S. EPA recommendation.

Action: Other than to include text on the importance of ARARs, no action is required at this time.

Commenting Organization: U.S. EPA

Commentor:

Section: Page : Line :

Comment Code:

Comment No. 2

Comment: In the Feasibility Study EPA expects greater specificity from DOE as to which particular requirements may be ARARs. For example, in Appendix B of the ISA, DOE correctly identifies as a Chemical-Specific ARAR the Resource Conservation and Recovery Act and 40 CFR 260-272. While it is certainly the case that RCRA is a potential ARAR, compliance with all of the RCRA requirements will not be required of OU5. At the Feasibility Study stage, we will expect DOE to be more precise about which particular aspects of RCRA and the RCRA regulations should be considered as potential ARARs. This can be accomplished by listing in Appendix B the specific statutory sections or regulation citations that may be ARARs, and by expanding the narrative "Description" section of Appendix B to clarify why a particular requirement may be an ARAR. Such an expanded narrative description would be particularly helpful to us for statutes and regulations with which we are less familiar.

Response: Refer to Response to Comment No. 1

Action: Refer to Action for Comment No. 1

U.S. EPA SPECIFIC TECHNICAL COMMENTS ON THE OU5 ISA

Commenting Organization: U.S. EPA

Commentor:

Section: Page: 6-10 Line: 22

Comment Code:

Comment No. 1

Comment: The text indicates that a total of 12 wells will be used for reinjecting treated ground-water into the aquifer. However, considering the maximum injection pressure of less than 1 pound per square inch per foot of overburden above the injection level, more than 12 wells may be required to reinject 500 gallons per minute of ground water. The U.S. Department of Energy (DOE) should check the proposed number of reinjection wells and increase their number if need.

Response: The 12 wells include 4 wells proposed as part of the EE/CA plus the addition of 8 new wells as part of OU5. The diameter of the wells are anticipated to be 12 inch i.d., instead of 1.5 inches as stated in the ISA.

The number of reinjection wells will be reviewed during the detailed Feasibility Study. The number of reinjection wells will be evaluated and increased as needed. It is expected that the total number of reinjection wells will increase from 12 to 14, to include 4 EE/CA wells and 10 OU5 wells.

Action: No action is needed at this stage. Correction or clarification will be provided in the detailed FS.

Commenting Organization: U.S. EPA

Commentor:

Section: Page :6-10 Lines: 26,
27, and 28

Comment Code:

Comment No. 2

Comment: The text indicates that the treatment sludge will have concentrated contaminants and will be stored at an on- or off-site storage facility for 10 years. DOE should clarify in the text that an on-site storage facility will be considered a long-term storage facility under the Resource Conservation and Recovery Act (RCRA) and will have to comply with substantive RCRA permitting requirements.

Response: A sentence will be added to the text that states: "The intermediate storage facility will be considered a long-term storage facility under RCRA and will have to comply with substantive RCRA permitting requirements."

Action: As stated in the Response.

OHIO EPA COMMENTS ON THE OU5 ISA

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 1-31 Line: 3

Comment Code:

Comment No. 1

Comment: The statement needs further explanation concerning all aspects of the alleged radioactive waste, survey, and findings. Was a geophysical survey conducted in the area of the second flag pole to see if the radioactive wastes were buried there? If so, what were the findings, etc.?

Response: Three methods of geophysical surveying were performed to identify magnetic anomalies in the north flagpole area. These methods included gravimetric, magnetic, and ground penetrating radar (GPR) surveys. The results from the surveys indicate that magnetic anomalies were recorded in the north flagpole area. During trenching operations in the proximity where the four highest magnetic anomalies occurred, metallic surface debris was discovered. This debris did not contain any radioactive wastes. Therefore, the theory of buried radioactive wastes in the north flagpole area has been discarded.

Action: The above information will be incorporated into the text, at line 4 of page 1-31.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 1-17 Line: 12

Comment Code:

Comment No. 2

Comment: Please insert "(SSOD)" after "storm sewer outfall ditch" and include this acronym on the acronym list.

Response: The acronym SSOD will be inserted after "storm sewer outfall ditch" and added to the Acronym List at the front of the report.

Action: As stated in the Response.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 1-19 Line: 26

Comment Code:

Comment No. 3

Comment: Plant 8 is referred to here as the "recovery plant" while it is labeled on Figure 1-8 as the "water treatment plant." Select the most representative term and use it consistently.

Response: The wording "recovery plant" will be replaced with "water treatment plant" in the text of the report. Figure 1-8 remains unchanged.

Action: As stated in the Response.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 1-27, Line:
Column 2

Comment Code:

Comment No. 4

Comment: Prill should be footnoted as "g."

Response: The superscript for Prill will be changed from h to g.

Action: As stated in the Response.

Commenting Organization: Ohio EPA

Commentor:

Section: 3.0 Page: Line:
General Comment

Comment Code:

Comment No. 5

Comment: As in the past, Ohio EPA has concerns regarding the acceptability of the background ground water locations and data. These background locations were never approved by Ohio EPA.

Response: The ISA report has used background groundwater quality characteristics that were developed and reported in the Site-Wide Characterization Report (SWCR). An effort is currently underway to reevaluate the selection of background wells, the completeness and quality of the data, and the statistical procedures used to characterize background water quality.

By March 1993, a new set of background chemical characteristics should be calculated that are more complete and reliable. These new values will not be ready soon enough to be incorporated into the ISA Report. However, once the

new background values have been reviewed and accepted, they will be used in future reports, including the OU5 RI and FS Reports.

Action: A short discussion will be added to the text which explains that new background water quality characteristics are currently being calculated and will be included in future reports.

Commenting Organization: Ohio EPA

Commentor:

Section: Pages 3-28, Line: 30
Table A-1

Comment Code:

Comment No. 6

Comment: The text reports background quantities of total uranium in perched ground water in micrograms per liter (ug/l), while Table A-1 reports the concentrations in milligrams per liter (mg/l). Please report all concentrations of total uranium (and thorium), including those applicable in Table A-2, to ug/l.

Response: Comment noted.

Action: Tables A-1 and A-2 in Appendix A and any other table to which this comment could also apply will be revised so that water concentrations of total uranium and total thorium will be reported in ug/l.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 3-30 Line: 4

Comment Code:

Comment No. 7

Comment: Delete "only" from this sentence as it is misleading. The wells that were sampled only once may have had more than one detection if they had been sampled repeatedly. This comment applies to every statement made to this effect (i.e., Page 3-40, Line 6, etc.)

Response: Comment noted.

Action: The word "only" will be deleted from the text in all instances when used in the context noted on page 3-30, line 4.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 3-32 Line: 30

Comment Code:

Comment No. 8

Comment: Table 4-56 does not appear in this document. Table A-6 most closely resembles the data being discussed here. Please clarify.

Response: The reference to Table 4-56 is incorrect. The correct reference is Table A-7.

Action: The text will be revised to refer to Table A-7 on line 30 of page 3-32

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 3-35 Line: Last Paragraph

Comment Code:

Comment No. 9

Comment: Again, Ohio EPA has reservations regarding the validity of the background data, as the locations were never approved by the agency.

Response: Refer to Response to Comment No. 5

Action: Refer to Action for Comment No. 5

Commenting Organization: Ohio EPA

Commentor:

Section: 3.5 Page: 3-43 Line:

Comment Code:

Comment No. 10

Comment: Preliminary remediation goals (PRGs) should be developed based on U.S. EPA guidance, in particular Risk Assessment Guidance for Superfund Sites (RAGS), Part B. Soils above background are considered contaminated. DOE's use of the word "contaminated" is unacceptable. The text should be rewritten to replace the word "contaminated" with a more appropriate term or simply designate as > 35 pCi/g.

Response: Comment noted.

Action: The text will be revised by substituting "above PRG-level" or by simply stating > 35 pCi/g instead of the word "contaminated" when referring to uranium-contaminated soil.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 3-48 Line: 2 Comment Code:

Comment No. 11

Comment: Amend this line to read "... and \leq 135...."

Response: Agree.

Action: The above mentioned line will be corrected to read "... and \leq 135...".

Commenting Organization: Ohio EPA Commentor:

Section: Page: 3-59 Line: 24 Comment Code:

Comment No. 12

Comment: Is the 3,200 cubic yards of soil limited to the zone from 0.0 to 1.5 feet? Or has the contamination that may have migrated down to 15 feet in depth been taken into account?

Response: The total volume of soils containing uranium levels above the 35 pCi/g PRG level is estimated to be 3,200 yd³. This volume of soil includes contamination that has migrated 15 feet into the subsurface soil. Table A-28 contains the areas of surface and subsurface soil affected by uranium at specific depths. The Area ID, in this case, is NE8 in Table A-28

Action: The text will be clarified as follows: "This is due to uranium concentrations ranging from 89 to 160 pCi/g for soils at depths of 0.0 to 1.5 feet and also uranium contamination that is believed to have migrated 15 feet into the subsurface soil."

Commenting Organization: Ohio EPA Commentor:

Section: 3.10.1 Page: Line: Comment Code:
and 3.11.1

Comment No. 13

Comment: DOE fails to consider dermal contact with soil and water as a means of exposure. Please amend this discussion to include this possibility.

Response: Dermal contact with groundwater, surface water, soils and sediments at the FEMP is a viable exposure pathway.

Action: Sections 3.10.1 and 3.11.1 will be revised to include dermal contact as an exposure pathway.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 3-61 Line: 5

Comment Code:

Comment No. 14

Comment: The techniques used for the repair of cracked or leaking surfaces will require evaluation to ensure the concrete overlay on the impermeable membrane provides sufficient strength to withstand its storage applications. The use of an epoxy based paint to seal the exterior surfaces may also be a practicable alternative.

Response: This information was extracted from the OU3 ISA document and any changes would have to be subject to OU3 approval.

Action: Personnel responsible for OU3 will be made aware of this comment.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 3-69 Line: 17

Comment Code:

Comment No. 15

Comment: Please detail the applicable tank closure sections of CERCLA that will be addressed.

Response: The sentence "These tanks locations are scheduled to be closed under the CERCLA program" in line 17 of page 3-69 is misleading. Neither CERCLA nor the NCP specify tank closure requirements. This sentence is attempting to state that remedial activity concerning the closure of this tank group will be part of the Remedial Action, as defined in CERCLA, at the FEMP. However, specific tank removal and closure requirements are covered in RCRA Subtitle I and 40 CFR 280 which has been identified as an ARAR for the FEMP.

Action: The text will be clarified accordingly.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 3-7 Line: 13

Comment Code:

Comment No. 16

Comment: The text should specify whether background concentrations (Table A-31) are based on regional or site specific data.

Response: Background radionuclide levels in soils are based on regional data.

Action: The text will be revised to state that background radionuclide concentrations in soils are based on regional sources. This will be accomplished by inserting a sentence into the text on line 15, page 3-70 (after the Table A-31 reference) that defines the source of background radionuclide data for soils as regional and not site specific. In addition, a footnote will be added to Table A-31 also stating that background radionuclide concentrations in soil are based solely on regional data.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 3-88
Paragraph 3

Line:
Sentence 5

Comment Code:

Comment No. 17

Comment The statement that "dilution prior to reaching the FEMP boundary may be sufficient to reduce uranium concentrations below the 20 ug/l criterion" does not agree with current data. Additionally, sources located near the boundary may be contaminating ground water and thus would contribute to higher concentrations near the boundary, not more diluted concentrations. Please correct.

Response: The above-mentioned sentence will be edited from the text.

Action: As stated in the Response.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 3-88

Line: 16

Comment Code:

Comment No. 18

Comment: SWIFT III model output data has not yet been approved by the Ohio EPA.

Response: A report is in preparation describing the SWIFT III groundwater model and its application results which will be provided to the agencies for approval in late spring. Additionally, a model improvement effort is underway to address agency concerns regarding SWIFT III and its application at the FEMP. This approach is

consistent with that presented to EPA representatives at the January 7, 1993 TIE meeting.

Action: The SWIFT III groundwater model reference and associated text and figures will be deleted from the ISA.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 3-96
PRG Column

Line:

Comment Code:

Comment No. 19

Comment: The designation "ARAR/TBC" is incorrect, as is the explanation given in the footnote, "c." An ARAR (applicable or relevant and appropriate requirement) is an approved regulatory requirement (legally enforceable) with which any selected remedy at a Superfund site must comply. Criteria that are "to be considered" (TBCs) include standards or limits that are not promulgated but are generally included in permits as well as guidance documents. TBCs are not legally enforceable. Please correct the footnotes and change those PRGs designated as "ARAR/TBC" appropriately.

Also, each of the PRGs listed in Table 3-9 are to be based on ARARs. If this is not possible, risk-based numbers are to be the next alternative in determining PRGs. The last choice on which to base PRGs is TBCs. Please see comment 7 above.

Response: ARARs and TBCs are two separate devices used to define PRG concentrations. An ARAR is a legally enforceable requirement as stated in the comment. TBCs are advisories or guidance (e.g., DOE Orders, health effects advisories) issued by Federal or state government that are not legally binding and do not have the status of potential ARARs, but are considered during evaluation of potential remedial alternatives. TBCs will be used in establishing protective PRGs (and action levels) only when an ARAR is not available. Therefore, a distinction will be made between the two categories as requested.

Action: The table will be revised so that the PRG column will no longer include the ARAR/TBC designation, but will specify the origin of PRGs, where applicable, as an ARAR or TBC. In addition, any text pertaining to this discrepancy will be revised to clarify the differences between an ARAR and a TBC.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 4-1

Line: 4

Comment Code:

Comment No. 20

Comment: Change "alternatives" to objectives."

Response: Agree.

Action: The word "alternatives" will be changed to "objectives."

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 4-3

Line:

Comment Code:

Comment No. 21

Comment: The items listed in this table should be referred to as "preliminary remedial action objectives" both here and throughout the document.

Response: The word "preliminary" will be inserted in front of "remedial action objectives" in the document.

Action: As stated in the Response.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 4-26

Line: 11

Comment Code:

Comment No. 22

Comment: This statement does not make sense. If discharge to Paddys Run represents a variation of the discharge to the Great Miami River then it should be independently evaluated.

Response: Both discharge to Paddy's Run and discharge to the Great Miami River represent variations of the technology "Surface Water Discharge." The two discharge paths will be carried through in the ISA text under Surface Water Discharge. The specific options (i.e. Option 1: Paddys Run discharge, Option 2: Great Miami River discharge) will be evaluated thoroughly in the detailed FS.

Action: As stated in the Response.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 4-33

Line:

Comment Code:

Comment No. 23

Comment: Retain soil aeration as a process option as it is applicable to some of the contaminants found at the FEMP. Correct all pertinent sections of the text.

Response: Soil aeration is recognized as a process option applicable to certain organic contaminants. Soil aeration can be used to enhance bioremediation as well. Therefore, soil aeration will be carried through as a support technology process option for treating limited areas of organic contamination.

Action: Text will be modified to address the soil aeration as a support technology.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 5-8,
Table 5-1

Line:

Comment Code:

Comment No. 24

Comment: Under "Implementability" for the General Response Action of Discharge: Public acceptance approval is not part of the implementability criteria. Remove all references to this effect wherever they appear in the text. Also, while the administrative feasibility of a technology or alternative may be impacted by agency approval of permits or similar aspects of the work process, this should not be confused with "state acceptance" of the alternative or technology as a whole, as discussed in the National Contingency Plan (NCP) under the nine criteria of the detailed analysis (Section 300.430 (e) (7) and (9)). Clarify that agency approval in this sense is associated with the administrative aspects of a technology or alternative (i.e., can the necessary permits be obtained?) and not with acceptance of the alternative on the whole as a means of remediating a site.

Response: All references to public acceptance will be removed from the text of the document. The wording "...administrative acceptance by local/government agencies is expected" will be added in its place.

It should be noted that "State acceptance" of each alternative is not addressed until the detailed FS as part of the nine screening criteria.

Action: As stated in the Response.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 5-11

Line:

Comment Code:

Comment No. 25

Comment: Include a technology and alternative in which contaminated groundwater is extracted, treated, and reinjected as a means of gradient control.

Response: Gradient control technology was not included initially due to some concerns of potential secondary contamination by residual contaminants. However, no data at this stage can support this exclusion. Therefore, the text will be modified to include a technology for reinjection of groundwater after it is adequately treated. Alternatives GW-4 and GW-5 already exist to include this technology (see page 6-10).

Action: Text will be modified to include a technology for reinjection of groundwater after it is adequately treated.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 5-36 Line: 18

Comment Code:

Comment No. 26

Comment: Typo: "with for"

Response: The above mentioned line will be corrected to read "... as a baseline for comparison with other remedial alternatives."

Action: As stated in the Response.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 6-2 Lines: 1, 2
and 3

Comment Code:

Comment No. 27

Comment: This is representative of the SWIFT III model, which was not approved by the Ohio EPA (see comment 18 above). Figure 6-1 is not representative of the existing south plume contaminant concentrations and/or flow conditions. Please correct.

Response: Figures 6-1 and 6-2 are representations of the studies done for placement of the South Plume EE/CA (now South Plume Removal Action) well fields. They are not necessarily required to support the ISA text and will be deleted. However,

they cannot be replaced with maps displaying more recent data as this would not be representative of the data used to perform the initial study.

Action: Figures 6-1 and 6-2 and any references in the text to these figures will be deleted from the ISA report.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 6-13 Lines: 19, 20,
and 21

Comment Code:

Comment No. 28

Comment: Clarify whether or not the 45,000 cubic yards of overburden is included in the estimated total cubic yardage to be handled by this alternative.

Response: The 45,000 cy of clean, overburden soil are included in the estimated total of 366,000 cy to be removed in this alternative, but is not included in the storage/treatment volumes of soil (i.e., 320,600 cy) in of any of the soil alternatives. The 45,000 cy of clean soil would be used as backfill.

Action: The text will be clarified accordingly.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: 6-14 Line: 29

Comment Code:

Comment No. 29

Comment: Clarify the time constraints for temporary storage (i.e., not to exceed 10 years). If the waste is stored for a longer period what will be the justification? Also, explain at this point the reasoning behind allowing a 10-year temporary storage (an explanation is not given until page 7-13, currently).

Response: The time frame for temporary storage (10 years) was an estimated number chosen for cost estimating purposes. It was believed that 10 years would provide sufficient time for determination of the final disposition of the waste, i.e., closure at the same location as a landfill or removing to different location(s) for permanent disposal. If the time frame is different from 10 years (either more or less), governing agencies will be notified and updates will be made in cost estimates and all related areas.

Action: The reasoning given on page 7-13 will be moved up to Section 6.0 to address the time frame for temporary storage.

Commenting Organization: Ohio EPA

Commentor:

Section: 7

Page:

Line:

Comment Code

Comment No. 30

Comment: Part of meeting the effectiveness criterium as discussed in the NCP is the ability of an alternative to comply with ARARs. This is not mentioned anywhere in this section. Rewrite the effectiveness evaluations to address compliance, or lack thereof, with ARARs.

Response: Refer to Response for U.S. EPA General Comment No. 1.

Action: Refer to Action for U.S. EPA General Comment No. 1.

Commenting Organization: Ohio EPA

Commentor:

Section:

Page: 7-4 Line: 16

Comment Code:

Comment No. 31

Comment: Again, agency acceptance in this context is mistakenly referring to "state acceptance" and not to whether or not the alternative is administratively feasible. Please see comment 24 above and delete this sentence from the text.

Response: Changes and/or clarifications will be made as appropriate.

Action: The sentence "Public agency acceptance is not expected" will be changed to read: "Administrative feasibility, i.e., the ability to obtain approvals from agencies, is low."

Commenting Organization: Ohio EPA

Commentor:

Section:

Page: 7-14

Lines: 8 and 25

Comment Code

Comment No. 32

Comment: See comments 24 and 31 above. Public acceptance is not part of the implementability criteria. Agency acceptance is involved only as related to the administrative aspects of the alternative (i.e., is it administratively possible and legal?), not whether or not the state will accept the alternative.

Response: Changes and/or clarifications will be made as appropriate.

Action: Similar to Comments 24 and 31 above, sentences will be modified to emphasize "administrative feasibility." "Public and agency acceptance" will be replaced with "administrative feasibility."

Commenting Organization: Ohio EPA

Commentor:

Section: 7.3 **Page:**

Line:

Comment Code:

Comment No. 33

Comment: Develop and evaluate an alternative for soils and sediments that includes soil washing with batch vitrification of the concentrated residues prior to disposal (on-site and off-site).

Response: This new alternative will be developed and evaluated in the ISA report. It will be noted that it is possible that the gel-like nature of the residuals may not be amenable to vitrification.

Action: The text will be revised to include a new alternative that addresses vitrification of the soil washing residuals. This alternative will be carried through to the detailed FS.

Commenting Organization: Ohio EPA

Commentor:

Section: **Page:** 7-21

Line: 17

Comment Code:

Comment No. 34

Comment: Retain alternative SS-8 (batch vitrification with disposal (on-site or off-site)). It has been assumed in the ISA that this alternative has comparable effectiveness to alternative SS-7 (batch vitrification with backfilling) and therefore SS-8 has been eliminated based on high costs and questions regarding the availability of a disposal facility. The Ohio EPA disagrees that these two alternatives have comparable effectiveness. Proper disposal of vitrified waste is more protective than replacing the waste in the hole from which it was excavated. Cost may only be used to eliminate an alternative when all other elements of effectiveness and implementability are equal, which is not the case when comparing alternatives SS-7 and SS-8. Uncertainty regarding the availability of a disposal facility is not a sufficient reason for screening an alternative. Retain alternative SS-8 and amend Table 7-2 as appropriate.

Response: Alternative SS-8 will not be eliminated at this stage of the ISA and will be carried through to the detailed FS report.

Action: The text and tables of the ISA will be revised accordingly.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: Line:
Table A-1

Comment Code:

Comment No. 35

Comment: Please include appropriate units for the concentrations on this table (total thorium and total uranium are the only constituents with units as footnoted).

Response: Comment noted.

Action: Appropriate units will be included for all radionuclides listed in this table.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: A-39 Line:

Comment Code:

Comment No. 36

Comment: Southeast and Northeast Quadrants - Area between Plants 4 & 5: Possible origins of the levels of contamination at the 15 - 20 feet levels will need to be addressed.

Response: According to the OU3 RI report (December, 1990), weathered clay is present in the borings along First Street to depths of 15 feet. Therefore, one possible source of contamination at this depth is contaminant leaching from surface soils which resulted in vertical migration. Another possible source is leakage from the buried pipelines in the area.

In addition, the OU3 ISA (April, 1991) report indicates contamination at 15 to 20 feet on Table 1-5, while Table 6-2 only shows contamination to 5.5 feet. Presently, the data is being reevaluated, and will be presented in the OU5 ISA. If contamination is present at 15 to 20 feet, an explanation will be included in the OU5 ISA.

Action: The text will be revised to include the Response.

Commenting Organization: Ohio EPA

Commentor:

Section: Page: A-95 Line: Comment Code:
 Tables A-48,
 49, and 50

Comment No. 37

Comments: State what the analytical units are. Explain why there is a range to the constituents sample detection limits.

Response: The analytical units are specified to the right of the constituents subcategories (e.g., organics or inorganics). There is a range to the constituent sample detection limits because several rounds of sampling and analysis were performed at some sampling locations and different detection limits were used for the different rounds of sampling.

Action: The reference to the analytical units will be incorporated into the heading of each table instead of adjacent to the constituent subcategory, as presently exists. In addition, footnote "a" will be revised to address the reasons, as stated above, for having a range of sampling detection limits.

Commenting Organization: Ohio EPA Commentor:

Section: Page: Tables A-1 Line: Comment Code:
 and A-4

Comment No. 38

Comment: The Ohio EPA has reservations regarding the validity of the background data as stated above in comments 5 and 9 above.

Response: Refer to Response to Comment No. 5

Action: Refer to Action for Comment No. 5

Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.

Section: Table Page: ES-4 Line: 11 Comment Code: E
 of Contents

(Comment No. 39 was not submitted in the original EPA Document.)

Comment No. 40

Comment: Tables 3-5 to 3-11 are located on page numbers one prior to those listed.

Response: Comment noted.

Action: The Table of Contents will be corrected.

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section: Executive Summary **Page:** ES-4 **Line:** 11 **Comment Code:** E

Comment No. 41

Comment: Typographical error "contaminated".

Response: The spelling of the word "contaminated" will be corrected.

Action: As stated in the Response.

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section: 4 **Page:** 4-16 **Line:** Reverse Osmosis **Comment Code:** E

Comment No. 42

Comment: Typographical error "steam" should be "stream".

Response: The word "steam" will be corrected to "stream".

Action: As stated in the Response.

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section: 5 **Page:** 5-12 **Line:** 21 **Comment Code:** C

Comment No. 43

Comment: The degree that implementing this action would slow plume migration should be discussed in this section. The corresponding reduction in cost of the final treatment alternative due to implementation should be evaluated.

Response: Implementing this action would slow down plume migration. However, the degree of reduction is uncertain without an extensive investigation which seems beyond the scope of an ISA. Consequently, the corresponding reduction in cost can not be evaluated at this stage either.

Action: No action required at this time. Effects of concrete lining of Paddys Run could be pursued in the detailed FS, if deemed necessary, as part of the groundwater modeling effort.

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section: 5 **Page:** 5-15 **Line:** 6

Comment Code: C

Comment No. 44

Comment: Installation of a 130 foot deep slurry wall is contradictory to the limit of readily feasibility depth of 50 to 70 feet indicated on page 5-14, line 11.

Response: Experience in slurry wall construction indicates that slurry trenches up to 75 feet deep are considered typical and any depth beyond 75 feet to more than 200 feet is feasible, but costly.

Action: Changes and/or clarifications will be made to line 11 on page 5-14 as appropriate.

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section: 5 **Page:** 5-19 **Lines:** 8 and 9

Comment Code: C

Comment No. 45

Comment: Change "high permeable" to "low permeable".

Response: Agree.

Action: The word "high" will be changed to "low."

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section: 5 **Page:** 5-25 **Lines:** 6, 7 and 8

Comment Code: M

Comment No. 46

Comment: Adsorption processes are indicated to effectively remove uranium from water, but are not carried into alternative development for uranium reduction.

Response: Although uranium removal by the adsorption process has been demonstrated, the primary function of the adsorption process is to treat organics in the waste

streams. Adsorption has been carried through groundwater remedial alternatives serving as organic removal (see Table 6-1).

Action: No action required at this time.

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section: M **Page:** 5-26 **Line:** 11

Comment Code: M

Comment No. 47:

Comment: pH adjustment of groundwater is easily, cost-effectively accomplished and should not be a basis for precipitation elimination. Ion-exchange uranium removal is also pH sensitive.

Response: As concluded from past treatability/feasibility studies, conventional chemical precipitation for uranium reduction is successful only within a narrow pH range, produces large quantities of sludge, and is predicted to be more costly than reverse osmosis or ion exchange in the pH range of 10 to 11. However, new developments in the chemical precipitation process have indicated that some proprietary reagents can accomplish precipitation at lower pH, producing significantly less sludge, and is less expensive. Therefore, chemical precipitation will be carried through as a primary unit operation in the groundwater remediation alternatives and be evaluated in the ISA.

Action: Text for the evaluation of technologies and alternatives in the ISA will be revised to address chemical precipitation as a primary unit operation in accordance with the above Response.

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section: 5 **Page:** 5-34 **Line:** 6 in Table

Comment Code: E

Comment No. 48

Comment: Typographical error "equipment metal rental".

Response: The word "metal" will be deleted from the sentence.

Action: As stated in the Response.

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section: 5 **Page:** 5-38 **Line:** 15

Comment Code: C

Comment No. 49

Comment: Effectiveness should be scored moderate, at best, as single layer capping is less effective than multi-layer capping which is scored moderate.

Response: The "high" rating in the text was a typo as indicated by the "moderate" rating for single layer capping in Table 5-2.

Action: The word "high" will be corrected to "moderate" in the text.

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section: 5 **Page: 5-38** **Line: 31**

Comment Code: C

Comment No. 50

Comment: O&M would also include vegetation control.

Response: The text will be modified to include vegetation control as part of "subsequent minor repairs" under O&M costs.

Action: As stated in the Response.

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section: 5 **Page: 5-39** **Line: 10**

Comment Code: C

Comment No. 51

Comment: The filter and drainage layer above impermeable membranes in capping design functions to transmit infiltrated water away from the capped area to prevent ponding.

Response: The text will be changed to read: "(2) a filter and drainage layer that transmits infiltrated water away from the underlying low permeability layer to prevent ponding."

Action: Text will be revised accordingly.

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section: 5 **Page: 5-43** **Lines: 13 and 31**

Comment Code: C

Comment No. 52

Comment: Ex-situ and in-situ stabilization processes should be described and evaluated separately.

Response: Differences in ex-situ and in-situ stabilization processes with regard to effectiveness and implementability are minimal for preliminary screening purposes. The major difference in these processes is that ex-situ stabilization allows for off-site disposal. Since the focus of the ISA report is to address effectiveness and implementability of various technologies, the location to implement these technologies (either in-situ or ex-situ) has not been considered as a major parameter in the evaluation. Therefore, stabilization processes were not evaluated based on their implementation locations in the ISA.

Action: The ex-situ vs. in-situ processes will be evaluated in more detail as part of the detailed FS.

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section: 6 **Page:** 6-10 **Lines:** 12 to 23

Comment Code: M

Comment No. 53

Comment: Discharging 500 GPM through a 1-1/2" injection well is not realistic. Reinjection well costs in Appendix C should also be modified.

Response: The text will be revised to indicate 12" i.d. reinjection wells will be used. Appendix C costs will be modified accordingly.

Action: As stated in the Response.

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section: E **Page:** 6-15 **Line:** 17 and 21

Comment Code:

Comment No. 54

Comment: Typographical error "clayer".

Response: The word "clayer" will be corrected to read "clay."

Action: As stated in the Response.

Commenting Organization: Ohio EPA

Commentor: GeoTrans, Inc.

Section: 7 **Page:** 7-5 **Lines:** 13, 14 and 15

Comment Code: C

Comment No. 55

Comment: Short-term effectiveness refers to reduction of TMV in the construction and implementation phases, not reducing treatment time span.

Response: Due to the shorter time required to clean up the site groundwater, it is considered that the exposure to human health and the environment would be shorter. Therefore, it is believed that this alternative can offer higher short-term protection of human health and the environment, i.e., short term effectiveness.

Action: No action required at this time.