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George V. Voinovich, Governor
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October 31, 1997

RE: DOE FEMP
COMMENTS: SITEWIDE
EXCAVATION PLAN

Mr. Johnny Reising
U.S. Department of Energy, Fernald Area Office
P.O. Box 538705
Cincinnati, OH 45253-8705

Dear Mr. Reising:

This letter provides as an attachment Ohio EPAs comments on the draft Sitewide Excavation Plan.

If you have any questions, please contact Tom Ontko or me.

Sincerely,

Tom Ontko for

Thomas A. Schneider
Fernald Project Manager
Office of Federal Facilities Oversight

cc: Jim Saric, U.S. EPA
Terry Hagen, FDF
Ruth Vandergrift, ODH
Mark Shupe, HSI GeoTrans
Francie Barker, Tetra Tech EM Inc.
Manager, TPSS/DERR,CO

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OHIO EPA COMMENTS ON THE SITE-WIDE EXCAVATION PLAN

General Comments

1) Commenting Organization: OEPA Commenter: DHWM
Section #: Sections 1.3.1.3, 2.1.1 , and 2.1.1.1 Pg. #: Line #: Code: M
Original Comment #:
Comment: In regard to the RCRA/CERCLA Integrated Closure Agreement, the SEP should incorporate additional conceptual information concerning procedures to satisfy closure component requirements of the 29 subject Hazardous Waste Management Units (HWMU's). Specifically, reference any field activity that has been performed to determine the presence and extent of RCRA COC soil contamination attributable to these units. These sections should provide a more direct discussion concerning the issues of any soil contamination and excavation associated with these units. Section 3.3.4.4 seems to imply that the determination of any HWMU soil contamination will take place as part of SEP activity. Please clarify.

2) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Pg #: Line #: Code: M
Original Comment #:
Comment: Ohio EPA disagrees with DOE's proposal for evaluating Th-232, Th-228 and Ra-228 concentrations. The Ohio EPA offers the following proposal to determine the concentrations of thorium-232, radium-228 and thorium-228.

a) DOE's August 29 letter to Ohio EPA and USEPA indicates that five gamma photons are commonly used to quantify thorium-232, radium-228 and thorium-228. It would be inappropriate to use the two actinium-228 peaks to quantify thorium-228 since actinium-228 precedes thorium-228 in the decay series.

b) The use of the lead-212 peak (0.239 MeV) should not be used due to potential interferences from radium-224 (0.241 MeV) and lead-214 (0.242 MeV) photons. Lead-214 will be present from the uranium-238 decay chain.

c) To quantify thorium-232 and radium-228 the two actinium-228 photons should be used:

Actinium-228	0.911, 0.969 MeV

Equilibrium conditions can be verified through the evaluation of the other photons in the decay chain, namely:

Bismuth-212	0.727 MeV
Thallium-208(36%)	0.583, 0.511, 2.615 MeV

d) To quantify thorium-228 the following photons should be evaluated:

Bismuth-212	0.727 MeV
Thallium-208(36%)	0.583, 0.511, 2.615 MeV

All four peaks should be used to determine the concentration of Th-228, using the error weighted averaging technique proposed in the above referenced letter.

3) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Pg #: Line #: Code: M
Original Comment #:
Comment: The SEP should be revised to incorporate reference to the Waste Acceptance Criteria Attainment Plan. Additionally, all changes to the WAC Plan resulting from EPA reviews should be incorporated within the SEP.

4) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Pg #: Line #: Code: M
Original Comment #:
Comment: Ohio EPA disagrees with DOE's proposal to use HPGe for certification of any contaminant. Ohio EPA does not believe that sufficient basis exists to accept these data for final certification. The document should be revised to replace all references to the use of HPGe for certification with the collection of physical samples and laboratory analysis.

5) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Pg #: Line #: Code: M
Original Comment #:
Comment: The document fails to adequately address the Operable Unit 5 ROD commitment to VOC screening during excavation. The ROD states, "A best management approach will also be applied during **all** excavation activities to identify, segregate (and treat as necessary) soil containing concentrations of organic compounds....(emphasis added)." In order to be consistent with the OU5 ROD VOC screening should be incorporated into all excavation activities.

6) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Pg #: Line #: Code: M
Original Comment #:
Comment: The 'hot spot' criteria that was used in the Area 1, Phase I remediation was a 2X the FRL criteria. This criteria was used to drive re-excavation in areas around discrete certification sample locations.

DOE guidance (DOE Order 5400.5 Chapter IV(4)(a)(1)) which has been cited in the Operable Unit 5 ROD as a "to Be Considered" uses a formula that varies the acceptable level of residual soil activity as a function of hot spot size. This formula uses as a factor the square root of 100 divided by the hot spot area squared. The factor is then multiplied by the FRL to give the acceptable residual activity of the hot spot.

The hot spot criteria in Appendix G is not consistent with either of these strategies. The criteria in Table G-15 are less restrictive than DOE guidance. All the criteria in Table G-15 are 3X the

respective FRL and there is no distinction between hot spots of various sizes. DOE Order 5400.5 permits hot spots of 3X FRL to be only 10 square meters in size. Table G-15 allows hot spots of 3X FRL to be 300 square feet (roughly 27 square meters) and 200 square feet (roughly 18 square meters).

According to the draft Addendum to the RTRAK Applicability Study dated September 1997, the RTRAK is capable of detecting thorium-232 at less than three times the FRL. Since each RTRAK measurement is 10 square meters, this is perfectly consistent with existing guidance.

Rewrite the hot spot criteria to be consistent with the following:

1. DOE guidance which requires remediation of 30 X FRL areas regardless of size.
2. DOE Order 5400.5 Chapter IV(4)(a)(1)
3. The analytical detection limits of the RTRAK.
4. Excavation of hot spots discovered by discrete certification sampling.

7) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Pg #: Line #: Code: M
Original Comment #:
Comment: It is difficult to follow the strategy for closing HWMUs and USTs because these topics are spread somewhat piecemeal throughout this Plan. Therefore, Ohio EPA was unable to evaluate the adequacy of the proposed strategy for closure. It would be more convenient if the discussion of HWMUs and USTs were all addressed completely in the same part of the Plan. Nevertheless, it is our expectation that the closure of these units would be accomplished by the proposed mechanism for soil certification units. That is, we expect to receive a remediation strategy for a particular HWMU (or UST) with the IRDP for the appropriate area. The IRDP should outline the remediation strategy (including analytical parameters, sampling frequency, etc.) in an analogous fashion to the strategy to remediate the ASCOCs. Similarly, we expect that the certification design letters will also contain a section addressing each of the HWMUs (and USTs) located within that unit. Final Ohio EPA acceptance of the closure of the HWMUs would be documented in our acceptance of the Certification Report.

8) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Pg #: Line #: Code: M
Original Comment #:
Comment: The document does not provide a basis for the increase in CU size over that implemented in A1P1. Ohio EPA believes the CU sizes used for A1P1 was at the maximum acceptable range. The CU sizes should be returned to 200X200 and 400X400. In addition, Ohio EPA believes smaller CU sizes may be appropriate for areas such as the production area and A2P1 where heterogenous waste is expected.

Specific Comments

9) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1.2.1 Pg #: 1-7 Line #: 15-18 Code: C
Original Comment #:
Comment: Please provide clarification regarding "agency-approved integrated approach".

10) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1.3.2.1 Pg #: 1-16 Line #: 1-10 Code: C
Original Comment #:
Comment: Soils classified as RCRA hazardous waste from the OU2 firing range area were excluded from disposal in the OSDF. These soils were specifically excluded from on-site disposal by the OU2 Record of Decision. These soils should be referenced here in the SEP and removed from other portions of the document addressing possible treatment and on-site disposal.

11) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1.3.2.1 Pg #: 1-16 Line #: 25-26 Code: C
Original Comment #:
Comment: Ohio EPA can not envision a situation where soils beneath a remediation facility would not require remediation. Please clarify or remove reference to this possibility.

12) Commenting Organization: OEPA Commenter: HSI GeoTrans/OFFO
Section #: 1 Pg. #: 1-17 Line #: 8 Code: C
a) No perched groundwater zones are shown on the referenced figure.
b) Additional details should be included regarding integration of perched groundwater remediation into specific soil areas.

13) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1.3.2.5 Pg #: 1-20 Line #: 27-34 Code: M
Original Comment #:
Comment: Soils classified as RCRA hazardous waste from the OU2 firing range area were excluded from disposal in the OSDF. These soils were specifically excluded from on-site disposal by the OU2 Record of Decision. Reference to any option other than off-site disposal should be removed from the document.

14) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1.3.2.10 Pg #: 1-22 Line #: 25-29 Code: M
Original Comment #:
Comment: The text fails to recognize the commitment within the Operable Unit 2 ROD to

continue federal ownership. Any change from continued federal ownership would require an amendment of the Operable Unit 2 ROD.

15) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Table 1-2 Pg #: Line #: Code: C
Original Comment #:
Comment: The Operable Unit 2 ROD established long-term monitoring commitments for the units encompassed by OU2. The table and document should be revised to reflect this commitment.

16) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Table 1-5 Pg #: Line #: Code: C
Original Comment #:
Comment: The document should be revised to include dates for design deliverables for Area 8 as well as off-property areas. DOE must show a commitment to address off-site areas that may be contaminated while it addresses contamination on its own property. Additionally, Area 8 is of significant concern to the Natural Resource Trustees for restoration and could allow DOE the potential for early successes.

17) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.1.1.3 Pg #: 2-4 Line #: 4-10 Code: M
Original Comment #:
Comment: As expressed in several Ohio EPA comments on the WAC Plan, significant questions remain regarding the recent revisions to the SED as well as the use of the revised SED in determining both WAC areas and area specific COCs. Additional details need to be provide regarding changes to the SED, data contained and more appropriately excluded from the SED when making conclusions regarding ASCOCs. What function did the validation of the RI/FS data serve if so many additional revisions to the data set are required?

18) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.1.2.2 Pg #: 2-6 Line #: Code: M
Original Comment #:
Comment: As stated, previously this section must be revised to reflect the existence of the WAC Plan as the document for defining WAC attainment for the OSDF. It may be most appropriate to simply reference the WAC plan in replacement of this section.

19) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.1.2.2 Pg #: 2-6 Line #: 6 Code: E
Original Comment #:

Comment: "Of the remaining five constituents (shaded)" should read "Of the five constituents (unshaded)"

20) Commenting Organization: OEPA Commenter: HSI GeoTrans
Section #: 2 Pg. #: 2-6 Line #: 28 Code: C
This sentence should be revised to indicate that soil to be disposed of in the OSDF will have concentration above FRL but below WAC for the given COC.

21) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.1.3 Pg #:2-9 Line #: 15-17 Code: C
Original Comment #:
Comment: Ohio EPA does not concur with the stated approach. Ohio EPA proposes an alternative method in a previous comment.

22) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.1.3 Pg #: 2-9 Line #: 15-17 Code: C
Original Comment #:
Comment: The statement is made that the FRL for thorium-232 will be used to assess use attainment of radium-228. Both DOE and OEPA environmental monitoring surface water sampling data has been for radium-228 and not thorium-232. In order to remain consistent with historical sampling, the FRL attainment for surface water levels of radium-228 should be determined using sampling data for radium-228, not thorium-232.

23) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.1.3.1 Pg #: 2-9 Line #: Code: C
Original Comment #:
Comment: As expressed in several Ohio EPA comments on the WAC Plan, significant questions remain regarding the recent revisions to the SED as well as the use of the revised SED in determining both WAC areas and area specific COCs. Additional details need to be provide regarding changes to the SED, data contained and more appropriately excluded from the SED when making conclusions regarding ASCOCs.

24) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.1.3.2 Pg #: 2-10 Line #: 19-21 Code: C
Original Comment #:
Comment: See previous comment regarding Th-232.

25) Commenting Organization: OEPA Commenter: HSI GeoTrans
Section #: 2 Pg. #: 2-12 Line #: 16 Code: C

Please clarify what is meant by "the averaging area generally ranges from 100 to 10,000 square meters and higher for land areas."

26) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.2.1 Pg #: 2-14 Line #: 3-4 Code: C
Original Comment #:
Comment: WAC are established in the WAC Plan. Revise the text accordingly.

27) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.2.3 Pg #: 2-17 Line #: 7-20 Code: C
Original Comment #:
Comment: What area will be characterized using the HPGe. As I understand it, if the area is a flat area and the height of the HPGe is set at 3 feet above the ground, a larger area will be characterized than if the HPGe is set at 1 foot above the ground. If the hot spot is small, for example the area covered by a drum leaking onto the ground, and the HPGe is set high, then a lower average activity per unit area will be read than if the HPGE is set closer to the hot spot. It therefore seems important to define what size area will be characterized by the HPGe once a sodium iodide detector locates an area of elevated radioactivity (e.g. 78.5 m^2 or 12.6 m^2).

28) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.5.3 Pg #: 2-35 Line #: 16-18 Code: C
Original Comment #:
Comment: Ohio EPA believes it is important to review data generated by removal actions and the waste removed as it provides information regarding possible COCs and WAC attaintment issues for the surrounding soils. Any effort to eliminate such information is not acceptable and is needed for making these determinations.

29) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.5.5 Pg #: 2-36 Line #: Code: c
Original Comment #:
Comment: The decision to leave pilings in place is in conflict with the Operable Unit 3 ROD which provides for the dismantlement and disposition of structures in the former production area. If for technical reasons some deep pilings cannot be removed, each one should be addressed on a case-by-case basis. Factors to be considered when deciding to leave in place or remove a piling should include:

1. The technical difficulties in removing the pilings.
2. Process knowledge about the mobility and quantity of potential contaminants.
3. Analytical results of borings.
4. The final grade of the excavation.

30) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.5.7 Pg #: 2-37 Line #: Code: C
Original Comment #:
Comment: Ohio EPA is concerned with the effectiveness of administrative controls used to date to prevent contamination of previously characterized areas. Comments addressing this concern have been submitted on the WAC Plan and IMPP. DOE should provide additional detail and emphasis on the physical and administrative controls that will be used to prevent either contamination of certified areas or additional/new contaminants being added to areas previously characterized (e.g., stockpiles).

31) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Table 2-7 Pg #: Line #: Code: C
Original Comment #:
Comment: As stated in previous comments, Ohio EPA is concerned with the adequacy of the database used to make decisions regarding WAC and FRLs. Inconsistencies between data presented in this table and Table 2-2 serve to further this concern (max ethylbenzene listed as 0.747 in Table 2-7 while Table 2-2 reports a concentration of 2.9 ppm for ethylbenzene). Ohio EPA believes a detailed reanalysis of the available data for making WAC and FRL determinations is needed. In addition the document should be revised to explicitly state all data included and excluded from the database used in these determinations.

32) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Table 2-8 Pg #: Line #: Code: C
Original Comment #:
Comment: a) Footnote "c" referenced with Constituents of Ecological Concern is not included with the Notes.
b) See Ohio EPA comments on the WAC Plan regarding WAC COCs (e.g., tetrachloroethene).

33) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.1.2 Pg #: 3-5 Line #: Code: C
Original Comment #:
Comment: In order to ensure above WAC material are not placed in the OSDF, Ohio EPA recommends evaluating concentrations of WAC COCs in locations which include concentrations approaching the WAC but not known to exceed. In other words don't just look in areas known to exceed the WAC but also in areas that approach the WAC concentration to ensure adequate characterization has been completed.

34) Commenting Organization: OEPA Commenter: HSI GeoTrans

Section #: 3 Pg. #: 3-14 Lines #: 4-11 Code: C
For clarity, this discussion should be revised such that consistent units (ppm v. mg/kg) are used to express the resolution of the HPGe, the ALARA goal, and the FRL.

35) Commenting Organization: OEPA Commenter: HSI GeoTrans
Section #: 3 Pg. #: 3-16 Line #: 26 Code: C
The text should be revised to indicate that the Certification Letter Report will include a discussion of the rationale for final selection of the boundaries for each CU (e.g., where Group 1, and Group 2 CUs are specified).

36) Commenting Organization: OEPA Commenter: HSI GeoTrans
Section #: 3 Pg. #: 3-18 Line #: 9 Code: C
The indicated text should also reference the potential for excavation prior to final delineation of certification units.

37) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.3.3.2 Pg #: 3-18 Line #: 17-19 Code: C
Original Comment #:
Comment: Please provide additional detail regarding the nature of a "fast-track EPA review cycle".

38) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.3.3.3 Pg #: 3-19 Line #: 17-20 Code: C
Original Comment #:
Comment: This section is inconsistent with statements on the previous page regarding "..EPA approval of the certification design...". Ohio EPA believes formal review and approval of the Certification Design Letter is essential to the proposed excavation and certification approach.

39) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.3.4.1 Pg #: 3-21 Line #: 5-9 Code: C
Original Comment #:
Comment: Ohio EPA disagrees with DOE's assumption that attainment of WAC for primary COCs demonstrates attainment for secondary WAC COCs. Ohio EPA believes it is important to document attainment of all appropriate WAC COC. If DOE insists on pursuing the process discussed in this section, Ohio EPA believes it will result in unacceptable WAC violations at the OSDF.

40) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.3.4.1 Pg #: 3-21 Line #: 12-16 Code: M

Original Comment #:
Comment: Ohio EPA disagrees with the entirety of this section. WAC attainment is not volume or area dependent. It is a concentration that is not to be exceed for any material entering the OSDF.

41) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.3.4.3 Pg #:3-22 Line #: 10-12 Code: C
Original Comment #:
Comment: The proposed approach for determining lateral extent at depth based upon surface lateral extent fails to address contaminant migration or contamination that exists solely at depth. The proposed approach will not be adequate for determining later extent at depth.

42) Commenting Organization: OEPA Commenter: DHWM
Section #: 3.3.4.4 Pg. #: 3-22 Line #: Code: C
Original Comment #:
Comment: Indicate if the information in this section pertains to the 29 HWMU's to be closed under the RCRA/CERCLA Integrated Closure Agreement.

43) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.4 Pg #:3-23 Line #: 27 Code: C
Original Comment #:
Comment: Please define "ISOPIA".

44) Commenting Organization: OEPA Commenter: HSI GeoTrans
Section #: 3 Pg. #: 3-25 Line #: 13 Code: C
HPGe should not be used for certification as a substitute for physical sampling until it has been demonstrated as comparable for the full range of moisture, humidity, and temperature conditions that can reasonably be expected during its deployment at the site. The referenced comparability study clearly demonstrates the potential value of the device but has not yet defined the window of environmental conditions within which it is reliable.

45) Commenting Organization: OEPA Commenter: HSI GeoTrans
Section #: 3 Pg. #: 3-25 Line #: 24 Code: C
The text should be revised to indicate that the HPGe measurements will be taken in accordance with the practices specified in the appropriate QA/QC document [Sitewide CERCLA Quality Assurance Project Plan (SCQ) or other QC document]. The specific document name should be stated in the revised text.

46) Commenting Organization: OEPA Commenter: HSI GeoTrans

Section #: 3 Pg. #: 3-29 Line #: 15 Code: C
The text should indicate that a full suite of 12 or 16 samples will be used for certification of each re-excavated Group 1 CU.

47) Commenting Organization: OEPA Commenter: HSI GeoTrans
Section #: 3 Pg. #: 3-29 Line #: 26 Code: C
The subset of samples actually used for certification (e.g., the 12 samples taken from the 16 that were actually collected) should be chosen randomly. The text should provide assurance that the selection process is not biased toward choosing the 12 cleanest samples for use in certification.

48) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.5.3.2 Pg #: 3-33 Line #: 18 Code: C
Original Comment #:
Comment: Ohio EPA does not agree a 3:1 slope is required for open water but believes such details are best addressed in the NRRP and subsequent design documents.

49) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.6.3 Pg #: 3-36 Line #: Code: C
Original Comment #:
Comment: It is important to ensure this section is consistent with those requirements outlined in the WAC Plan.

50) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.6.3.4 Pg #: 3-36 Line #: Code: C
Original Comment #:
Comment: a) Ohio EPA is under the impression that manifesting of trucks from point of generation to point of placement will be through a written manifest provided to the driver of every truck. Collation and assessments of manifests may best be done in an electronic format but paper/physical documentation in the field is absolutely necessary for a successful and credible operation.
b) Please include a discussion of the role of the WAO in this activity.

51) Commenting Organization: OEPA Commenter: HSI GeoTrans
Section #: 4 Pg. #: 4-12 Line #: 12 Code: C
Figure 4-2 and the referenced text should be revised to consider potential implementation of procedures to address nonattainment for a given CU (e.g., re-partitioning, analysis of archive samples, etc.).

52) Commenting Organization: OEPA Commenter: HSI GeoTrans

Section #: 4 Pg. #: 4-23 Line #: 2 Code: C
Figure 4-4 and the referenced text should be revised to consider potential implementation of procedures to address nonattainment for a given CU (e.g., re-partitioning, analysis of archive samples, etc.).

53) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 4.3 Pg #: 4-24 Line #: 5-6 Code: C
Original Comment #:
Comment: The soils underlying the stockpiles in A1P1 were not certified clean prior to placement. If "certified grade surface" refers to something else please explain.

54) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 4.3.1 Pg #:4-24 Line #: 24-26 Code: C
Original Comment #:
Comment: As stated in the previous comment the soils beneath the A1P1 stockpiles were never certified clean. It is disconcerting that the writers of the SEP are not more familiar with the A1P1 activities so that the lessons learned from that project would be incorporated therein. The document should be revised to correct the statements regarding soils beneath the A1P1 piles.

55) Commenting Organization: Ohio EPA Commentor: OFFO
Section #:4.3.3 Pg #: 4-28 Line #: 24-25 Code: C
Original Comment #:
Comment: The soils used in generation of the western soil stockpile in A1P1 were generated from operations within the OU1 area. Tc-99 contamination has been documented with OU1 therefore, Ohio EPA believes it is appropriate to characterize Tc-99 concentrations within the western stockpile.

56) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 4.3.3 Pg #: 4-28 Line #: 27-30 Code: C
Original Comment #:
Comment: If the source of soils within the stockpiles is unknown, what basis is there for determining characteristic waste is not present in the stockpiles. Additional data should be provided to support this conclusion.

57) Commenting Organization: OEPA Commenter: HSI GeoTrans
Section #: 4 Pg. #: 4-30 Line #: 25 Code: C
Figure 4-6 and the referenced text should be revised to consider potential implementation of procedures to address nonattainment for a given CU (e.g., re-partitioning, analysis of archive samples, etc.).

58) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 4.3.3 Pg #:4-30 Line #: 27-30 Code: C
Original Comment #:
Comment: Soils beneath the A1P1 stockpiles were not certified. Additional excavation and physical sampling will be required.

59) Commenting Organization: OEPA Commenter: HSI GeoTrans
Section #: 4 Pg. #: 4-42 Line #: 2 Code: C
Figure 4-8 and the referenced text should be revised to consider potential implementation of procedures to address nonattainment for a given CU (e.g., re-partitioning, analysis of archive samples, etc.).

60) Commenting Organization: OEPA Commenter: HSI GeoTrans
Section #: 4 Pg. #: 4-47 Line #: 9 Code: C
Figure 4-10 and the referenced text should be revised to consider potential implementation of procedures to address nonattainment for a given CU (e.g., re-partitioning, analysis of archive samples, etc.).

61) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 4.6 Pg #: 4-47 Line #: Code: C
Original Comment #:
Comment: It is unclear if this excavation approach addresses the contamination along the bank of the GMR or if that is to be addressed under a separate approach. Please clarify which approach will be used in this area.

62) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 4.6.2 Pg #: 4-51 Line #: 23-25 Code: C
Original Comment #:
Comment: Since the area encompassing the pipeline in A1P2 will not be approvable as certified with subsurface contamination left in place, Ohio EPA recommends removal of the area from the A1P2 certification process and incorporation into an area more appropriate in time frame.

63) Commenting Organization: OEPA Commenter: HSI GeoTrans
Section #: 4 Pg. #: 4-56 Line #: 6 Code: C
Figure 4-12 and the referenced text should be revised to consider potential implementation of procedures to address nonattainment for a given CU (e.g., re-partitioning, analysis of archive samples, etc.).

64) Commenting Organization: OEPA Commenter: HSI GeoTrans

Section #: 4 Pg. #: 4-28 Line #: 12 Code: C
It is unclear which soil stockpile is being discussed in the referenced text. It is stated that the sample point density within the "stockpile" will be similar to the sample point density of RI/FS data in the surrounding areas. The text should be revised to clarify which stockpile is being discussed and should include an estimate of the number of samples needed for characterization.

65) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Figure 4-7 Pg #: Line #: Code: C
Original Comment #:
Comment: The figure is incomplete. Additional soil stockpiles have been generated. A pile was created near the STP as a result of placement of the north access road through an uncertified area. Other piles were noted on a recent visit to the VitPP adjacent to the new haul road. Additional piles are being generated in the southern portion of the site as part of the Injection/Extraction well system setup. The fact that piles are being generated faster than maps locating them can be generated speaks to the need for more administrative and physical control over pile generation. These piles will now require separate sampling and excavation procedures. The figure should be revised to comprehensively define all existing soil stockpiles.

66) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 5.1.2.2 Pg #: 5-6 Line #: 13-14 Code: C
Original Comment #:
Comment: Ohio EPA requests that a copy of the "Fugitive Dust Control Sitewide Guidelines" be provided with the comment response package or as an Appendix to the SEP.

67) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 5.1.2.2 Pg #: 5-7 Line #: 17-36 Code: C
Original Comment #:
Comment: The source of the definitions provided here should be referenced. Specifically, definitions from the BAT determination should be incorporate where applicable. Unpaved roads are to be designated by Ohio EPA and DOE prior initiation of operations in a given area. Obviously, this requirement within the BAT determination has not been implemented to date. The document should discuss at what point in the design or field activity such a delineation will occur.

68) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 5.1.2.2 Pg #:5-8 Line #: 1-2 Code: C
Original Comment #:
Comment: Ohio EPA believes all project personnel are responsible for control of fugitive emissions. Period inspections may not be sufficient to achieve the requirements of the BAT

determination. Key personnel who are always at the work location should be empowered to implement or escalate emission control measures.

69) Commenting Organization: Ohio EPA Commentor: OFFO
Section #:5.1.2.2 Pg #: 5-9 Line #: 14-16 Code: C
Original Comment #:
Comment: The section references an "above table" that does not exist. Please insert the referenced table.

70) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 5.1.3 Pg #: 5-15 Line #: 6-8 Code: C
Original Comment #:
Comment: Chips should not be applied to any area which has not been certified. Placement of chips in such areas will impede the effectiveness of real-time measurements as well as complicate soil sampling activities. In addition, to the extent possible it is preferable to keep such material out of the OSDF thus placement in and area to be remediated would be undesirable. Ohio EPA recommends stockpiling of chips in one of the existing chip stockpile areas until needed for restoration activities.

71) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 5.1.3 Pg #: 5-15 Line #: 25-39 Code: C
Original Comment #:
Comment: Ohio EPA has experienced problems with leachate from woodchip stockpiles and believes the runoff to be potentially detrimental to the water quality. As a problem with the runoff can be anticipated, the issue should be addressed in a proactive manner. Potential solutions include moving the stockpile to a location that doesn't drain directly into Paddy's Run (e.g. the souther waste units woodchip pile being placed in the met tower area), or capturing and treating the leachate.

72) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 5.1.3 Pg #: 5-16 Line #: 10-18 Code: C
Original Comment #:
Comment: This paragraph is misleading in that storm water degradation can occur from increased sediment loads, whereas the statements in the paragraph lead the reader to believe that contamination of the surface water runoff would only occur from COCs exposed. The increased sediment is in itself a contaminant of storm water runoff and increases in sediment loads can be expected any time top soil is disturbed. Treatment of stormwater runoff via sediment basins/traps, silt fences, etc. will be necessary whenever soils are disturbed.

73) Commenting Organization: Ohio EPA Commentor: DSW

Section #: 5.1.3 Pg #: 5-19 Line #: 10-19 Code: C
Original Comment #:
Comment: There are two issues with this paragraph:
1) The paragraph states that uranium will be monitored and if levels increase so that the FRL is exceeded in the dissolved fraction, then additional area specific parameters will be monitored. However if the ASCOC in the area of remediation is something other than uranium (e.g. technetium 99) then levels much higher than the FRL could leave the remediation area in surface water without detection. Upward trends in the ASCOC could also be missed. In areas where the ASCOC is something other than uranium, monitoring for the ASCOC may be warranted.
2) Comparing only the dissolved fraction of uranium against the FRL seems ill advised. The FRL is based on total uranium and it would be prudent for the area specific monitoring to trend total uranium in the discharge from control structures. Then any trends that indicate an exceedence of the FRL could be addressed at the remediation project prior to discharge through an NPDES discharge point. To monitor for the dissolved fraction only does not seem nearly as useful or prudent. Monitoring for total uranium rather than only the dissolved fraction is recommended.

74) Commenting Organization: OEPA Commenter: HSI GeoTrans
Section #: 6 Pg. #: 6-3 Line #: 21 Code: G
Change "This procedures/" to "These procedures/."

75) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Table A-2 Pg #: A-5, A-6 Line #: Code: C
Original Comment #:
Comment: The Threatened and Endangered Species Section of Table A-2 does not reference the Cobblestone Tiger Beetle found in the Great Miami River in the vicinity of outfall 001.

76) Commenting Organization: OEPA Commenter: HSI GeoTrans
Section #: Appendix B Pg. #: B-8 Line #: 26 Code: C
Clarify the plan for surface water drainage from Remediation Area 3. The text states that drainage will be directed to the storm drain in Area 4B. Figure B-7, however, shows drainage path is into Area 4A.

77) Commenting Organization: OEPA Commenter: HSI GeoTrans
Section #: Appendix B Pg. #: B-9 Line #: 4 Code: C
The sentence beginning on this line pertains to Remediation Area 5 and should be moved to Section B.2.8.

78) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Appendix C Pg #: Line #: Code: C
Original Comment #:

Comment: The Appendix leaves the reviewer with a significant level of confusion regarding steps taken to reduce the list of COECs and the basis for the conclusions/recommendations. Ohio EPA recommends a meeting to further discuss the steps used to evaluate and reduce the list of COECs. In particular walking through the steps for each contaminant eliminated may be necessary. In addition it is necessary that the Natural Resource Trustees review the Appendix to ensure agreement on the list of COECs and potential impacts upon restoration activities.

79) Commenting Organization: Ohio EPA Commentor: DSW
Section #: C.2.1.2 Pg #: C-7 Line #: 8 Code: E
Original Comment #:
Comment: It appears as though the text should refer to Table C-4 rather than C-3 and should be changed to indicate that the BTV or FRL used is listed in bold.

80) Commenting Organization: Ohio EPA Commentor: DSW
Section #: C.2.1.4 Pg #: C-8 Line #: 1-2 Code: C
Original Comment #:
Comment: Eliminating COECs because there were less than five detections an order of magnitude greater than the BTV seems inappropriate and arbitrary. These sample points could be indicative of levels higher or more widespread than that appearing in the database. At this point in the screening process it is advisable to retain those COECs for further evaluation.

81) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: C.2.1.4 Pg #: C-8 Line #: 10 Code: C
Original Comment #:
Comment: The footnote three referenced in this sentence raises more questions than it answers. Additional discussion regarding the actions listed in the footnote should be provided.

82) Commenting Organization: Ohio EPA Commentor: DSW
Section #: C.2.2.2 Pg #: C-11 Line #: 19 Code: C
Original Comment #:
Comment: "Impractical" is preferred over "impossible".

83) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: C.2.2.2 Pg #: C-11 Line #: 13-16 Code: C
Original Comment #:
Comment: Considering the substantial amount of effort and funds expended by DOE to develop the background soils study it is difficult to support or understand the conclusion drawn here. On numerous occasions DOE has claimed the background study generated numbers too low for the site background but on all occasions the site data has proven the background data valid (see Area 1 Phase 1 certification

report). The higher degree of variability on the Fernald site is more likely a result of DOE operations than glacial actions.

84) Commenting Organization: Ohio EPA Commentor: DSW
Section #: C.2.2.4 Pg #: C-12 Line #: 1-11 Code: C
Original Comment #:
Comment: There are three issues with this section.
1) The first sentence of this section, "Some ecological receptors are perceived to be more valuable than others." adds no significant clarification to the section and reflects a potential subjective judgement calls that may be misconstrued by a varied audience. It is recommended that this sentence be deleted.
2) The second paragraph of the section is confusing. The first sentence, "In addition, potential interactions between desirable species and anticipated land uses within the site will be considered during COEC selection." appears to be more closely related to the concept of special considerations in the first section than the example of habitat elimination that follows. That aside, a reference to "desirable species" is not recommended for the reasons stated in the first section of this comment. "Certain species" or "particular organisms" may be less controversial descriptions. The second part of this section the OSDF will not be considered restored habitat and therefor COECs will not be a major consideration, however the area of the OSDF could be habitat for native grasses such as the endangered running buffalo clover, slender finger grass or mountain bindweed and as such consideration of COECs should not be lessened.
3) As indicated above, you may want to change the title of this section "Receptor Values" to something like "Special Consideration Receptors".

85) Commenting Organization: Ohio EPA Commentor: DSW
Section #: C.2.2.5 Pg #: C-12 Line #: 12-16 Code: C
Original Comment #:
Comment: This section relates to a previous comment wherein one or two detections greater than the BTV could indicate localized contamination and should be addressed as such rather than discounted as indicated in the previous comment.

86) Commenting Organization: Ohio EPA Commentor: DSW
Section #: C.2.2.6 Pg #: C-12 Line #: 19-21 Code: C
Original Comment #:
Comment: What mechanism exists for re-evaluating areas should an area that was likely to be excavated for FRLs is later determined as not necessary to excavate for FRLs? As worded, these COECs would never be addressed in such a situation.

87) Commenting Organization: Ohio EPA Commentor: DSW
Section #: C.2.3.3 Pg #: C-14 Line #: 15 Code: C

Original Comment #:
Comment: There is no Table C-17 and consequently the K_d values are not presented.

88) Commenting Organization: Ohio EPA Commentor: DSW
Section #: C.2.3.3 Pg #: C-14 Line #: 20-21 Code: C
Original Comment #:
Comment: This appears to be stating that if no background concentration was available for a particular sub-area, but was available for another area, that a zero concentration was assumed for that particular sub-area. If this is the case, then the background concentration from another sub-area should be used rather than assigning a zero concentration to that sub-area. If that is not what this statement means, it should be clarified.

89) Commenting Organization: Ohio EPA Commentor: DSW
Section #: C.3.1 Pg #: C-15 Line #: 22 Code: C
Original Comment #:
Comment: This refers to figures B-2 to B-4 for the locations for the remnant soil BTV exceedances of antimony, cadmium, and silver however those figures do not show the locations of those exceedances.

90) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Table C-4 Pg #: Line #: Code: C
Original Comment #:
Comment: Several chemicals (4,4'-DDE, 4,4'-DDT, benzene, chromium, cyanide, fluoride, n-nitroso-di-n-propylamine, vinyl chloride) are listed in the comments as being either less than the BTV (e.g. 4,4'-DDT) when the maximum concentration that is listed is greater than the BTV, or the concentration in the comments is lower than the maximum concentration (e.g. vinyl chloride). Please clarify.

91) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Table C-5 Pg #: Line #: Code: C
Original Comment #:
Comment: This table should also list the maximum concentration as in Table C-4.

92) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: C.3.2.1.3 . Pg #: C-18 Line #: 10-13 Code: C
Original Comment #:
Comment: This discussion of soil pH would appear to be more significant than presented in the text. The significance relates to the varying excavation depths within the site and thus the varying pH conditions that will exist with associated bioavailability. Additional discussion of the impact of excavation depth on bioavailability should be presented in this and other sections as well as the Natural Resource Restoration Plan.

93) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: C.3.2.1.4 Pg #: C-19 Line #: 1819 Code: C
Original Comment #:
Comment: a) DOE is obviously under estimating the extent of ecological receptors that may use the OSDF upon completion. A fence will exclude a very small portion of possible ecological receptors and is primarily intended to inhibit human intrusion.
b) The basis for concluding Study Area E is of little value to terrestrial wildlife is not evident to this reviewer. Terrestrial wildlife is a very broad term. I would venture to say that numerous terrestrial wildlife not only "occasionally travel rapidly across it" but also reside there and complete their life cycle within the confines of Area E. DOE has obviously developed the view of Area E with some more limited definition of terrestrial wildlife that should be discussed further in the document along with a basis for this definition.
c) These comments regarding Receptor Values are applicable throughout Appendix C.

94) Commenting Organization: Ohio EPA Commentor: OFFO
Section #:C.3.2.2.4 Pg #: C-21 Line #: 18 Code: C
Original Comment #:
Comment: As stated in the previous comment, Ohio EPA disagrees with the assertion that no suitable habitats for most terrestrial wildlife exists within Areas C, D, or E. DOE's definition of terrestrial wildlife is obviously bias towards particular individuals.

95) Commenting Organization: Ohio EPA Commentor: OFFO
Section #:C.3.2.5.7 Pg #: C-32 Line #: Code: C
Original Comment #:
Comment: Ohio EPA believes manganese should be carried forward as a COEC and that data from sampling within Area B should include analysis for manganese to assess its impact on Natural Resource Restoration activities.

96) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: C.3.2.6.7 Pg #: C-35 Line #: Code: C
Original Comment #:
Comment: Ohio EPA believes Molybdenum should be carried forward as a COEC and that data from sampling within Areas A and B should include analysis for molybdenum to assess its impact on Natural Resource Restoration activities.

97) Commenting Organization: Ohio EPA Commentor: DSW
Section #: C.4 Pg #: C-46 Line #: 10 Code: C
Original Comment #:
Comment: This refers to four constituents having remnant concentrations greater than the BTV whereas

Section C.5, Page C-48, line 2 and Section C.3.1, Page C-15, line 22 state that there will be three constituents having remnant concentrations greater than the BTV (see comment #25). This discrepancy should be resolved.

98) Commenting Organization: Ohio EPA Commentor: DSW
Section #: C.4 Pg #: C-46 Line #: 28-30 Code: C
Original Comment #:
Comment: This indicates that final grading was not a consideration in this evaluation. Elsewhere reference is made to contaminants that are too deep to consider ecological receptors even though they may exceed the BTV. What provision is made for the possibility of these contaminants being made available as ecological receptors during final grading?

99) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Table D-2 Pg #: Line #: Code: C
Original Comment #:
Comment: a)The Soil FRL column appears to have a number of errors in which footnote "a" was replaced with a "1".
b) With regard to footnote "b", it is unclear how the statement is relevant to the data collected from the wood samples and why "data on molybdenum should be used cautiously." Additional clarification is requested.

100) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Table D-3 Pg #: Line #: Code: C
Original Comment #:
Comment: a) The text of the document does not discuss what appears to be significant bioaccumulation of Tc-99 in the tree samples. Additional discussion of this data is relevant considering potential ecological impacts and natural resource issues. Please provide additional data regarding average Tc-99 soil concentrations in the sampled areas, include validated data within the revised document, and information regarding whether any of the concentrations presented in the table lie below the quantitation limit.
b)Ohio EPA requests that a copy of the data by sample location be provided with the response to comments.

101) Commenting Organization: OEPA Commenter: HSI GeoTrans
Section #: Appendix G Pg. #: G-4 Line #: 27 Code: C
The deletion of all RI soil data above the FRL assumes that remediation will be 100 percent effective and is likely to result in an underestimation of the true standard deviation, particularly for constituents with an FRL very close to background (e.g., Radium 226 and Thorium 228). Citation of the computed standard deviations from Area 1 Phase 1 do not answer this concern because these results are from an

area that is known to be relatively unimpacted and could be easily remediated. The standard deviation is the primary driver in the sample size calculation. As a result, the number of samples computed may be biased low which could result in an inordinate number of false positive.

102) Commenting Organization: OEPA Commenter: HSI GeoTrans
Section #: Appendix G Pg. #: G-6 Line #: 7 Code: C
The procedure(s) that will be used to test for normality should be discussed in the text.

103) Commenting Organization: OEPA Commenter: HSI GeoTrans
Section #: Appendix G Pg. #: G-20 Line #: 12 Code: C
It is premature to assume that sample sizes used thus far in the remediation effort are conservative given that only an area with suspected minimal impacts has been considered. Rather than assuming a one site-wide standard deviation is appropriate for all COCs, a more defensible approach would be to collect an the initial 12 or 16 samples from each CU and compute the standard deviation and required sample size based on these samples. This approach will ensure that a sufficient number of samples are included in the analysis, particularly in the more impacted areas of the site.

104) Commenting Organization: OEPA Commenter: HSI GeoTrans
Section #: Appendix G Pg. #: G-20 Line #: 12 Code: C
The SEP should indicate what portions of the site will require sample size recalculations based on changes in sitewide COC FRLs from those that were relevant to Area 1 Phase 1. The lower FRLs in the off-site areas, for example, will have an impact on certification sample size calculations.

105) Commenting Organization: OEPA Commenter: HSI GeoTrans
Section #: Appendix H Pg. #: H-4 Line #: 4 Code: C
The "multitude of potential field conditions" that could affect the HPGe should be summarized in the SEP along with their relative importance. The reader should be referred to the appropriate document(s) for the testing conducted in support of the claim that none of the conditions have "denied performance at the three FRL level."