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**OPERABLE UNIT 3 REMEDIAL
INVESTIGATION/FEASIBILITY STUDY WORK
PLAN ADDENDUM**

12/17/92

**DOE-0661-93
DOE-FN/EPA
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LETTER**



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DEC 17 1992

DOE-0661-93

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Mr. James A. Saric, Remedial Project Director
U.S. Environmental Protection Agency
Region V - 5HRE-8J
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Chicago, Illinois 60604-3590

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

Dear Mr. Saric and Mr. Mitchell:

OPERABLE UNIT 3 REMEDIAL INVESTIGATION/FEASIBILITY STUDY WORK PLAN ADDENDUM

The purpose of this letter is to transmit, for your review and approval, the revised Operable Unit 3 (OU 3) Remedial Investigation/Feasibility Study Work Plan Addendum. The revised work plan is accompanied by a set of responses and actions addressing each of the specific comments received from the United States Environmental Protection Agency and Ohio Environmental Protection Agency on the draft work plan addendum and the September 15, 1992, submittal of the revised work plan approach document.

If you or your staff have any questions, please contact Robert Janke at FTS/Commercial 513-738-6883.

Sincerely,

for 
Jack R. Craig
Fernald Remedial Action
Project Manager

FN:RJ Janke

Enclosure: As stated

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COMMENTS AND COMMENT RESPONSES FOR USEPA AND OHIO EPA COMMENTS

DRAFT OU3 RI/FS WORK PLAN ADDENDUM

AND

APPROACH TO REVISING THE OU3 WORK PLAN ADDENDUM

AND AN EXAMPLE SAMPLING AND ANALYSIS PLAN FOR COMPONENT 39A

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USEPA TECHNICAL REVIEW COMMENTS**OPERABLE UNIT NUMBER 3 (OU3)****RI/FS WORK PLAN****GENERAL COMMENTS**

1. **The Operable Unit (OU)3 remedial investigation (RI) work plan will require considerable restructuring to address U.S. Environmental Protection Agency (EPA) comments. The document is intended to guide contractors and U.S. Department of Energy (DOE) staff in the development of field implementation procedures (FIP) and to provide regulatory agencies and the public with a complete understanding of the OU3 RI approach. The document is difficult to follow and incomplete. Critical decision elements have not been presented and will need to be presented within FIPs, requiring excessive regulatory review and streamline the document, providing a clear framework for decision making without providing unnecessary information.**

Response The Work Plan Addendum has been modified to ensure that adequate information is included so that review of additional documentation on individual components will be unnecessary. Section 3 was modified to better clarify data needs and uses, a more focused presentation of data quality objectives (DQOs) is provided in Section 4, and data needs are more clearly tied to the approach to be used for data collection. Additional detail is provided for each component so that field implementation procedures (FIPs) will not be necessary. A separate submittal (dated 9/15/92) was prepared to explain and illustrate the approach used in revising the Work Plan Addendum.

2. **In order to approve this version of the work plan, EPA will have to conduct extensive reviews of the individual FIPs because critical elements of the sampling approach are not provided in the work plan. Therefore, EPA will require more detail than the sampling plan (Appendix D) currently provides to be incorporated into this document. EPA suggests that DOE develop model protocols for all Level II component categories at each level of significance S (i.e. S1, S2, and S3).**

Response The WPA approach was revised to streamline the sampling approach and standardize the sampling protocols. Section D.9 was added to implement the requirements of the protocols for each sampled component.

3. The remedial investigation (RI) work plan should provide a framework for RI field sampling activities such that extensive review of FIPs for specific OU3 components is not necessary. Using the RI work plan and the site-wide CERCLA quality assurance project plan (SCQ), DOE contractors should be able to create FIPs for addressing individual components without having to incorporate the level of detail currently required for removal action (RA) work plans. The RI work plan does not accomplish this objective.

The field sampling procedures included in Volume IV do not contain enough detail to stand alone. Moreover, according to the RI (Section D.8.4.2), over 110 different procedures must still be developed. The first issue can be addressed by referencing the SCQ procedures and removing those abstracts included in Volume IV. The second issue will necessitate the review of new procedures as they are developed, either as modifications to the SCQ or within each FIP.

Critical sample-specific handling criteria have not been included or referenced. For instance, required sample volumes, sample containerization, sample preservation, sample holding times, required quality control sample frequency (by analytical method), and sample chain-of-custody criteria should be referenced to the SCQ or summarized in the RI work plan.

The data quality objectives (DQO) are not clearly presented or linked to sampling protocols. The DQOs, such as rationale for choosing the number of samples, locations of samples, the proper analytical support level (ASL), and specific analytical protocol, should be explicitly stated and tied directly to specific components of the sampling plan (SP).

Response See response to general comment No. 1. Section D.9 was added to the WPA to implement the sampling protocols for each component to be sampled. FIPs have been replaced with the component-specific D.9 section and the Field Work Package (FWP).

The revised Work Plan Addendum contains abstracts of only those procedures not currently in the Site-Wide CERCLA Quality Assurance Project Plan (SCQ). Procedures in the SCQ are referenced only. New and modified sampling and analytical procedures will be submitted to the U.S. Environmental Protection Agency (EPA) for review as modifications to the SCQ. The revised sampling and analysis plan (SAP) indicates that such procedures will be submitted for review.

Sample-specific handling criteria will be provided or referenced to the SCQ for all required sampling in the Field Work Packages (FWPs) to be prepared before components are sampled. Component FWPs will include summary tables and text addressing component-specific sample handling.

DQOs have been presented more clearly and explicitly linked to sampling procedures. The rationale for sample numbers, sample location, and ASL requirements are discussed in the approach discussions of the revised WPA.

4. **The OU3 RI should provide defensible data that are useable for risk assessment purposes. DOE's current approach appears to use the a significance of risk factor (S) to determine the ASL and the priority of investigation. DOE ties increasing S directly to increased levels of contamination, which may not be appropriate. DOE's approach requires more analytical detail for higher S levels. DOE's current definition of S does not take into account other critical risk factors, such as buildings with high occupancy that may have a greater degree of exposure than buildings with lower occupancy.**

EPA also notes that S is largely determined using radiological data that is qualitative or semiquantitative. While this approach may be appropriate when determining relative significance, it should not be used to set a baseline for information gathering that relies on qualitative or semiquantitative levels of data, as this will result in nondefensible conclusions. EPA believes that a quantitative risk level cannot be based solely on data below ASL D [Contract Laboratory Program (CLP) equivalent], unless DOE can show that data at lower ASLs are valid.

To address these issues, EPA believes that (1) risk criteria, other than level of contamination, should be considered when determining S, and (2) the baseline data gathering, regardless of S level, should include confirmation using ASL D data.

Response The sampling approach has been modified. The information collected for components will not be related to S, which is no longer used.

All intrusive samples will be analyzed at analytical support level (ASL) C or D. The U.S. Department of Energy (DOE) intends to show that ASL C, as defined in the SCQ, is Contract Laboratory Program (CLP) equivalent and will yield defensible conclusions. By definition, ASL C differs from ASL D only in the reporting of raw instrument output. Raw data for ASL C are kept on file at the lab so that reports can be upgraded to ASL D should the need arise. It is DOE's intent that ten per cent of all intrusive sample analytical data packages will be validated using raw instrument output.

5. **Because the OU3 RI work plan omits specific sampling information, EPA will have to review and approve FIPs on an individual basis before work on any component can begin. This will result in the extensive review of over 200 FIPs, thus incurring excessive costs and schedule delays.**

Response See response to general comment No. 2.

6. **Components are not consistent between appendices. For example, the data tables in Appendix A do not match those in Appendix D. The components should be clearly defined and consistent between tables and appendices.**

Response An effort has been made to ensure consistency between appendices. However, providing a specific response to this comment requires specific examples of inconsistency. See response to specific comment No. 26 below.

7. **Based on a review of data contained in the OU3 RI work plan, some areas at the Fernald site should be considered for removal actions. However, the OU3 RI work plan does not indicate how or at what stage candidates for removal action will be identified. For example, removal of underground storage tanks (UST) in the area of Garage 31 (Pages 2-115 and 2-116) has defined an area of contamination that should be considered as a removal action (RA). The RI work plan should indicate how and at what stage of the RI RA candidates will be identified. Furthermore, the existing reporting and notification process should be referenced in the RI work plan.**

Response The introduction to Section 2.5.1 and Section 2.5.1.12 of the draft Work Plan Addendum discussed the identification of additional removal actions. New removal actions are identified annually per the mechanism established by the Amended Consent Agreement. (Soil contamination around underground storage tanks will be addressed by OU5.) The reporting and notification process based on the Amended Consent Agreement was referenced in the draft Work Plan Addendum on page 2-79.

8. **The work plan identifies four ASLs. ASL C is the lowest level that will require quantitative analysis in a laboratory. ASLs A and B requires analyses that will be performed in the field. EPA evaluated the overall breakdown of analysis by ASL. Ninety-two percent of the analyses will provide data that are field-survey quality (Level A and B); 7.6 percent of the analyses will provide data that are not CLP equivalent; and 0.4 percent of the analyses will provide data that are of EPA CLP quality. As noted above, this mix of data quality will not provide data that can be used for a quantitative risk assessment, or provide sufficient information to determine the migration potential of contaminants.**

Response The approach to data collection has been revised. The large number of ASL C/D analyses proposed should be more than adequate to support a conservative quantitative risk assessment and other needed evaluations to be conducted without reliance on ASL A/B analyses. The revised Work Plan Addendum clearly indicates the quality of the data to be used for various purposes, and data needs are clearly developed through DQOs to specific sampling activities.

9. **There is no information presented on the specific data or rationale on why each component was ranked for U, F, and S. The OU3 RI work plan does not clearly state the criteria used to rank the components. These criteria should be included in the work plan. Furthermore, a summary should be provided for each component listing the rationale for each component's ranking.**

Response The revised Work Plan Addendum does not use U, F, and S. However, the rationale for ranking of components according to U, F, and S was provided in Tables A.8.0 - A.8.2 of the draft Work Plan Addendum. The criteria used were provided in Table 4.2.

10. **The sampling and analysis plan (SAP) does not discuss how DOE will assess data quality. At a minimum, quality assurance (QA) criteria should be detailed for each ASL. Furthermore, DOE should recommend a procedure to verify data that were analyzed at ASLs A, B, and C. At a minimum, a fixed percentage of duplicate samples should be analyzed at a higher ASL to evaluate the data's validity.**

Response Quality assurance criteria are provided in the SCQ. The SCQ is referenced and criteria are summarized in the revised Work Plan Addendum. All intrusive samples will be analyzed at ASL C or D. ASL C and D differ only in reporting requirements (analytical lab QA/QC is the same for both). Therefore, collecting duplicates of samples analyzed at ASL C to analyze at ASL D is unnecessary to evaluate data validity. ASL A or B results will be verified using ASL C/D results obtained from the same location. (Because ASL A or B results involve survey instruments and ASL C/D results are based on the use of laboratory analysis of intrusive samples, there will not be an actual analysis of duplicate samples.) The proposed sampling design, however, will not yield a fixed percentage of verifications, but a minimum of one ASL C/D sample per major medium per process area. Per the requirements of the SCQ, duplicate samples will be taken on a 1 in 20 basis, further detailed in the WPA.

11. **The SAP uses terms throughout such as reasonable, where appropriate, when possible, and so on. Non-specific action phrases do not provide sufficient information for EPA to determine if the approach will meet the stated objectives of the RI. While it is anticipated that some flexibility must be retained in the sampling program a definite**

plan must be presented.

Response A specific attempt has been made in the revision of the WP and SAP to avoid non-specific action phrases and provide criteria to be utilized at decision points. Additional detail for field sampling of components has been provided in D.9 in order to further reduce uncertainties.

12. Each section and subsection in Section D.5 of Appendix D should specifically identify which component is being addressed.

Throughout this section the SAP states that samples will be analyzed using ASL A/B, as appropriate. ASL A is defined on page D-24 as field screening, such as gross alpha radiation surveys. However, ASL B is defined as qualitative, semi-quantitative, or quantitative, which is too broad to accurately describe how samples will be analyzed. In addition, statements throughout the section referring to samples collected for ASL A/B are not sufficient to describe the sampling and analytical approach.

According to Page D-154, the lowest ASL that includes laboratory analysis is ASL C. The extensive use of field screening techniques with the general exclusion of any laboratory analysis will not result in data that can be used to determine quantitative risk to potential receptors. For example, in characterizing the waste and scrap metal piles (components P1 through P25) DOE proposes over 1,500 ASL A/B measurements, 11 ASL C measurements, and 3 ASL D measurements.

The frequency with which radiation meters will be used is based primarily on accessibility of sample location and S level. The frequency of measurement using radiation meters should also depend on other factors, including media heterogeneity, representativeness of data, and existing information. The current approach appears to be somewhat arbitrary. The approach appears to be structured so that highly contaminated (S3) surfaces are sampled more frequently. EPA notes that more highly contaminated surfaces may require less characterization than less contaminated (S1) surfaces, if contamination distribution is homogeneous and sampling is representative.

Response Section D.5 is not intended to identify specific components. The section discusses sampling protocols that apply to a variety of sampling situations. However, the revised SAP contains a section that discusses how individual components will be sampled.

The sampling and analytical approach for ASL A and B samples have been clarified in the SAP. ASLs are linked to specific methods where appropriate. (See response to general comment No. 14.)

In the revised Work Plan Addendum, characterization of components is based primarily on ASL C/D analyses. Field screening will be used largely to identify locations for sampling.

The approach to radiation surveys has been modified. Surveys will be used to identify locations with the highest levels of contamination. Characterizing contaminant distribution on a small scale across OU3 is not feasible, nor is it an objective of the RI. Measurement frequency will be determined in the field and will depend on existing data, process knowledge, and the nature of the distribution of contamination. In the revised SAP, the measurement frequency for intrusive sampling is determined by the number of media in each process area in each component.

- 13. The field procedures included in Volume IV do not include a general sampling approach or sampling objectives; nor do they provide rationale for determining sampling locations, numbers of samples, types of samples, or analytical parameters. Furthermore, they do not provide information about sampling or monitoring equipment, such as sampling components or calibration. Many procedures must still be developed and presented for EPA review. If field procedures presented in Volume IV are presented in more detail in the SCQ, it would be more appropriate to reference the SCQ and omit these procedures. Otherwise an appendix with complete field procedures should be provided.**

Response Information on general sampling approach, sampling objectives, rationale for determining sampling locations, etc. were provided in the draft SAP (and modified versions are included in the revised SAP) and are not appropriate for inclusion in the field procedures. Information on equipment and instrument calibration is provided in the SCQ. Abstracts of procedures included in the SCQ are not included in the revised SAP; references to the SCQ are provided. Sampling procedures developed for the OU3 RI/FS field investigation will be submitted for review as an addendum to the SCQ.

- 14. The SAP does not provide specific analytical procedures for each of the ASLs. However, some analytical procedures have not yet been developed. This information is necessary to determine if the proposed sampling and analysis plan will meet the objectives of the RI/FS.**

Response A table has been added to the revised SAP, Section D.3, providing a clear cross reference between ASLs and analytical procedures. Analytical procedures developed for the OU3 RI/FS field investigation will be submitted for review as an addendum to the SCQ.

15. **The work plan does not include any provision for EPA review and approval of FIPs and sampling and analytical procedures. As the document is written, EPA will have to review each FIP and new sampling procedure. The document should clearly detail the approval process for these deliverables by identifying key deliverables, the anticipated delivery date, and state that approval is required.**

Response As noted in the response to general comment No. 1, FIPs will no longer be used, since the component-specific section D.9 has been included in the revised SAP. Field Work Packages (FWPs) will be transmitted to EPA in advance of component sampling for information. New sampling and analytical procedures will be submitted to EPA for review and approval as modifications to the SCQ. The revised Work Plan Addendum identifies those procedures requiring approval, and states that approval by EPA is necessary. Procedures will be submitted to EPA and approved before field work begins.

16. **The four general objectives identified in Section 1.2 are not specific enough to focus the RI data gathering activities. For instance, one objective is to characterize radiological and chemical contamination at OU3. EPA notes that the level of characterization will depend on the intended data usage. It would be appropriate to have a high level of characterization if the purpose is to determine the disposition of waste; to accurately identify the volume of waste and the costs associated with remedial alternatives; to clear a component for reuse; or to justify no action. On the other hand, only limited information may be necessary to justify an immediate hazard requiring mitigation through an RA. DOE should provide an approach that more clearly (1) identifies the data usage requirements, (2) defines a phased approach to data gathering which identifies key decision making elements, (3) details data gathering elements to identify integrated approaches, and (4) defines how each data gathering element requirement will be met.**

Response The objectives given in Section 1.2 are intended to be general. More specific objectives are discussed in later sections. Section 3 of the revised document has been modified to more clearly indicate data usage requirements. The document has been modified to indicate that a phased approach to data gathering is being presented (see response to general comment No. 19) and key decision points have been more clearly identified. Overall data needs have been related more clearly to the integrated approach to data collection. The approach to be used to fulfill each data need has been clearly stated.

17. **DQOs are discussed conceptually in Section 4.0 and summarized in Appendix D. Section 4.0 provides a complex framework for determining DQOs and provides a generic DQO form, which is an integral component of the SCQ. As presented, the DQOs are vague, requiring that key decisions be made within the FIPs. The steps for creating DQOs are provided, but it is unclear what the actual DQOs are. A succinct presentation of actual DQOs for each component should be provided. The DQOs should then be linked to the required ASL support level, corresponding analytical methods, and number of samples. Furthermore, DQOs and data needs should be broken down by S level and level I and II component categories to provide an overall framework.**

The DQOs presented in the RI work plan are separate from those included in the SCQ for laboratory and field analytical procedures. The DQOs for laboratory procedures should be referenced and removed from this document.

Response The presentation of DQOs has been clarified and DQOs are clearly presented by media to be sampled. DQOs for components are not appropriate. DQOs are explicitly linked to ASL and numbers of samples. As noted in the response to general comment No. 14, a clear cross reference has been provided between ASLs and analytical procedures. S and level I/II categories are not used in the revised Work Plan Addendum.

DQOs for laboratory procedures are only included implicitly by reference to the procedures.

18. **Section 5.0 of the work plan provides a summary of OU3 RI tasks and Section 6.0 provides a schedule. The OU3 RI report is due to EPA in March 1996. Some reporting vehicle should be provided at an earlier stage to allow for EPA input in the decision making process. The complexity of the site will require modifications to the work plan. It may be appropriate to provide model FIPs as reviewable deliverables and to provide interim RI updates, perhaps on a semiannual basis.**

Response Interim results will be provided to EPA during the remedial investigation (RI) process. In particular, the field program will start with selected process buildings and data collected for those components will be evaluated and provided in an interim submittal, further described in the revised WPA. As noted in the response to general comment No. 1, FIPs will no longer be used, however EPA has reviewed an example FWP for one of the OU3 components.

19. Three sampling approaches are proposed: (1) judgmental, (2) systematic, and (3) random. A description of each method is provided in Table D-1. However, it is unclear how DOE will determine when each sampling approach will be used. The type of sampling should depend on factors other than S, F, and U. For instance, the amount of existing data, the heterogeneity of the media, the nature of contaminants, and the representativeness of the data could provide a basis for using any of the sampling approaches. A phased approach, where early studies of each media or category could be used to refine successive sampling approaches, should be used to determine the type of sampling approach to be used. If a phased approach were used, the sampling plan would not require rigid sampling frequency, ASL level, or standard approaches, but provide a basis for initial characterization and subsequent confirmation.

Response The revised WPA proposes an accelerated phased approach to characterization (i.e., ASLs and sampling frequency for intrusive samples will be predesignated). The first phase uses existing information and existing survey results to identify contaminated areas. No statistical sampling will be used because a biased approach meets DOE's data needs. The second phase will involve non-intrusive sampling (screening) that will focus the locations for intrusive sampling in the third phase. All phases of the characterization will use judgmental sampling. Such an approach is expected to meet DOE's data objectives.

20. The SAP emphasizes the uses of field screening equipment. While field screening is a valid investigative tool, the results are, at best, semi-quantitative. The SAP should provide procedures for confirming field measurements with defensible data (ASL D or E). The representativeness and reproducibility of all data from all ASLs should be definable. Field screening measurements are not an appropriate method of determining source concentrations for quantitative risk evaluation or fate and transport modeling.

Response The revised SAP emphasizes the use of field screening to identify locations of representative sources to sample, as well as to provide specific information, such as radiation exposure rates, which are based on calibrated field measurements. Evaluations requiring the concentrations of specific contaminants will be based on the results of fully defensible ASL C/D analyses. See also the response to general comment No. 10 concerning verification of ASL A/B results.

21. According to the SAP, action levels (AL) and decision levels (DL) will be used as basis for field sampling decisions.

ALs appear to be based on clearly defined statutory limits. However, ALs are only presented for radionuclides. Chemical contaminants have not been included. DOE

should include chemical-specific ALs. These should be tabulated by matrix and level. Also, the relationship between preliminary remediation goals (PRG) and ALs should be clarified. Because PRGs are being developed simultaneously for OU5, DOE should include PRGs in the OU3 RI work plan.

The process for determining DLs is vague and poorly defined. For instance, Section D.4.7.1 states "The DLs will be specified after the initial radiological survey measurements have been taken and statistically evaluated. If a DL is defined after statistical evaluation of data, comparing the DL to the standard deviation seems redundant. It appears that the DLs are intended to define the necessity of additional information. The SAP should clearly define what the acceptable level of representativeness is and define when additional data are required.

Response

In the revised approach to data collection, action levels will not be used as a basis for sampling decisions. An intrusive sample will be collected for each major media in each process area of each component sampled. The locations from which such samples will be collected will be in those areas with the most elevated levels of contamination and will be determined on the basis of surveys and inspections, historical knowledge, and the availability of media for sampling. Analysis will be carried out for a conservatively defined group of radiological and chemical parameters for each such major medium. Supplemental samples, as defined in the revised Work Plan Addendum, will also be taken and analyzed for the same group of parameters. This comprehensive program of analyzing samples will provide the necessary confirmation of screening results by media in all sampled components and satisfy data needs for OU3. A health and safety program will be in place to provide data needed to ensure worker protection during the remedial investigation. Finally, all materials in OU3 will be thoroughly surveyed during remediation to identify any contamination above levels allowed for release without radiological restrictions.

Preliminary remediation goals for OU3 are discussed in Section 3 of the revised Work Plan Addendum.

In the revised approach to data collection, decision levels are used to define only a limited number of situations for which additional information is needed from surveys or sampling. For example, all swipes from areas within a component for which surface contamination exceeds by an order of magnitude the surface contamination guidelines in DOE Order 5400.5 will be composited as a single supplemental sample for laboratory analysis of individual radionuclides. This approach, based on a decision level related to surface contamination, will provide a conservative estimate of the level of surface contamination by radionuclide, as required to satisfy the data needs for risk

assessment and alternatives evaluation. In the revised SAP, all decision levels are clear guidelines that specify the need for additional information from surveys or sampling.

It is no longer an objective of the Work Plan Addendum to conduct statistically based surveys of components. Representativeness will be achieved through intrusive sampling of major media from all major process areas and through the collection of supplemental samples. The revised SAP identifies the quantity and type of samples to be collected for each component.

22. **There are inconsistencies between the summary tables presented in Appendix D. For instance, Table D-11 includes a list of analytical requirements for components by specific chemical groups, while Table D-19 lists ASLs for each component. The ASLs listed in Table D-19 do not appear to encompass required analyses in Table D-11. Also, Table D-11 is inconsistent with the data summary tables in Appendix A (Tables A.2 and A-3). The summary tables in Appendix A identify possible contaminants that are not listed for chemical analyses in Table D-11. Tables D-11 and D-19 should be modified to assure that proper chemical groups are analyzed and that the ASLs include all required chemical parameters.**

Response Table D-11 has been eliminated from the revised SAP, reflecting a modified comprehensive approach to selecting analytical parameters. Similarly, former Table D-19 has been extensively revised to reflect the numbers of measurements and intrusive samples required at the various ASLs under the modified approach to sampling.

SPECIFIC COMMENTS

1. **Work Plan, Page 4-2, Paragraph 2.** DOE states that "[a] FIP will be prepared for each individual component in OU3 at the time sampling and analysis is to be conducted." This statement should be clarified. The work plan should clearly indicate when FIPs will be developed, identify priority FIPs, and indicate that FIPs must be approved by EPA prior to implementation.

Response As noted in the response to general comment No. 1, FIPs will no longer be used. FWPs will be provided to EPA for information prior to component sampling.

2. **Work Plan, Page 4-8, Section 4.1.4.** The section does not discuss the use of the F designator as a decision making tool. DOE should indicate how the F designator will impact sampling and analysis considerations.

Response F is not used in the revised Work Plan Addendum. F was used to represent the expected interim use of a component and affected only the scheduling for that component. This was discussed on p. 4-6 and p. 4-35 of the draft Work Plan Addendum.

3. **Work Plan, Page 4-11, Paragraph 2.** It appears that the S designator is the primary factor for determining DQOs. If the primary reason for sampling is to determine source terms, this should be clearly stated. However, this appears to contradict the DQO development procedure discussed in Section 4.2.2.

Response In the revised Work Plan Addendum, DQOs are not related to S, which is no longer used. Sampling will be carried out to satisfy a variety of data needs, as is discussed in the Work Plan Addendum.

4. **Work Plan, Page 4-14, Paragraph 2.** The bulleted decision factors for making DQO decisions summarized here indicate that the data to be collected will be used for more than determining risk. If these factors are included in the OU3 RI, they should be clearly defined along with the adequate ASLs and analytical methods. However, the approach appears too generalized to really assist in the preparation of FIPs that will not need a high level of review.

Response The approach related to the use of data has been clarified and made more specific in the revised Work Plan Addendum. See also the response to general comment No. 1.

5. **Work Plan, Page 4-16, Paragraph 2.** Step 6 of the DQO development process will be used to establish acceptable levels of uncertainty. According to Step 6, levels of uncertainty will be established using analytical methods discussed in the SCQ. This portion of the process should focus on acceptable limits of uncertainty when characterizing contamination. It should assess factors that can be affected by the DQOs defined in the work plan. For example, it should define acceptable ASLs and acceptable levels of sample representativeness.

Response The discussion of DQOs has been modified in the revised Work Plan Addendum. The modified approach to data collection focuses on collecting samples from the areas of highest contamination for each major media in each process area of each component. Therefore, uncertainty associated with characterizing contamination is related to the uncertainty with which maximum levels of contamination are identified rather than the uncertainty associated with the mean or variability in contamination levels.

6. **Work Plan, Page 4-18, Table 4.3.** Table 4.3 should specify which field or laboratory analytical methods are associated with each ASL.

Response The field or laboratory analytical methods associated with each ASL are provided in the revised SAP. See response to general comment No. 14.

7. **Work Plan, Page 4-19 through 4-21, DQO Summary Form.** The model DQO summary form does not provide an adequate summary of the rationale used to determine the ASL, analytical method, or intended data use. For instance, item 3 indicates that any ASL can be used for any investigative method, yet the form does not provide the basis for making this decision. Secondly, item 4 indicates that one of the goals is to determine waste characteristics, including hazardous waste determination and hazardous substance list (HSL) contaminants (the first is ASL E; the second is ASL D); however, item 6B indicates that only ASL A, B, or C analysis will be conducted, and item 8 identifies QA protocol for ASL B. Finally, item 6A, which includes the analytical groups for HSL analysis, is not correctly completed.

Response The DQO summary form is not included in the revised Work Plan Addendum. Pursuant to the requirements of the SCQ, the DQO summary forms are kept on file, however the DQO summary forms have been revised, including distinction between intended uses for ASL levels.

8. **Section D.2.2, Page D-8, Line 8.** Analytical procedures used by the field analytical support facility must be submitted to the EPA for approval.

Response No field analytical facility is now planned. The text has been modified in the revision.

9. **Section D.2.2, Page D-8, Line 14.** Each FIP must be submitted to EPA for review and approval.

Response As noted in the response to general comment No. 1, FIPs will no longer be used. Section D.9 of the SAP addressed component-specific sampling in lieu of the FIP concept.

10. **Section D.3.1, Page D-10, Line 16.** In addition to the number and location of samples and the required analysis, each FIP must include (1) specific data need; (2) data use; (3) DQOs; and (4) analytical support level (ASL). This requirement can be waived if this information is presented in the OU3 RI work plan.

Response The information requested is presented in the revised Work Plan Addendum.

11. **Section D.3.2, Page D-11, Line 11.** The SAP states that data must be sufficient to support the risk assessment. The SAP also states that this can be accomplished by determining the relative magnitude and migration potential of the contaminants. To complete a quantitative risk assessment and fate and transport modelling, the absolute level of contamination and migration potential should to be established. This paragraph, and all subsequent portions of the work plan predicated on the relative magnitude and migration potential, should be changed.

Response Any discussion implying that the relative magnitude of contamination and contamination migration potential will be used as the basis for quantitative risk assessment or transport and fate modeling has been eliminated from the revised Work Plan Addendum. The data needs developed in the revised Work Plan Addendum reflect additional information gathering to support Risk Assessment needs.

12. **Section D.3.2, Page D-11, Paragraph 3.** The PRGs, which are being developed in a separate document, should be referenced.

Response The text related to PRGs has been deleted. PRGs are discussed in Section 3 of the revised Work Plan Addendum.

13. **Section D.3.3, Page D-12, Line 28.** EPA notes that DQO development, not the specific DQOs, is included in Section 4.2.2 of the work plan. As noted in general comment No. 17, this is a major shortcoming and specific DQOs should be developed.

Response Specific DQOs have been developed for the Work Plan Addendum and are kept on file. Table D.3-1 in Section D.3.3.2 presents sample types and associated ASLs more clearly in the revised Work Plan Addendum.

14. **Section D.3.4, Page D-24, Line 14.** The SAP states that ASL B represents a broad range of analytical options yielding results that are qualitative, semiquantitative, and quantitative. This is too broad of a range to determine if the proposed sampling and analysis are adequate to meet the objectives of the RI. The SAP must clearly state which analyses are included in each ASL. In addition, Section D.7.3.8 states that ASL C is the lowest ASL that includes laboratory analysis. If this is the case, most of the sampling proposed in his SAP must be reconsidered to include much more ASL C data to support the RI objectives.

Response The analyses to be included in each ASL have been clarified in the revised Work Plan Addendum. Table D.3-1 in Section D.3.3.2 presents sample types and associated ASLs. Sufficient ASL C data are identified to support RI objectives.

15. **Section D.3.4, Page D-24, Line 16.** The SAP states that raw instrument output will not be reported for ASL C. This practice precludes complete data validation of ASL C data. All data should be validated to the fullest extent possible. This is of the utmost importance, especially with the sampling approach proposed in this work plan.

Response Consistent with the definition of ASL C provided in the SCQ, raw instrument output is not reported for ASL C data. Raw instrument output is maintained by the laboratory. The data package for ASL D data includes raw instrument output. Per the requirements of the SCQ, the DQO development identified the required ASLs for the project (Section 4.2). Data validation is intended to follow these requirements. See also the response to general comment No. 4.

16. **Section D.4.1, Page D-25, Line 17.** The SAP states that there may be changes in actual sampling based on further review of existing data. While this is expected, DOE should document all changes in the component-specific FIPs prior to submitting them to EPA for review and approval.

Response As noted in the response to general comment No. 1, FIPs will no longer be used. The sampling program for each component is specified in the revised Work Plan Addendum. Any significant changes required would be discussed with EPA prior to implementation.

17. **Section D.4.4.2, Page D-46, Line 8.** The SAP should present the detection limit and interfering compound associated with field kits used to measure chemical contaminants

(for example, PCBs).

Response The revised SAP presents information on detection limits and potential interferences for PCB field test kits.

18. **Section D.4.4.2, Page D-46, Line 19.** X-Ray fluorescence is a very matrix-dependent field analytical technique that requires extensive calibration. This SAP should show how these limitations will be addressed.

Response The revised SAP evaluates the limitations and data useability of field measurements by X-ray fluorescence. Its main use will be as a screening tool for selecting locations for intrusive samples. Such use extends to making inferences about the absence of elevated levels of certain trace metals in OU3 media based on field measurements. Detection limits and calibration requirements are addressed.

19. **Section D.4.5, Page D-47, Line 8.** The DQO summary forms should accompany each FIP for review by EPA.

Response As noted in the response to general comment No. 1, FIPs will no longer be used. Appropriate summary information is provided in the revised Work Plan Addendum.

20. **Section D.4.5.2, Page D-53, Line 10.** The waste acceptance criteria should be defined as much as possible, prior to sample collection so that appropriate analyses can be conducted. Determining the waste acceptance criteria prior to sample collection will help prevent the need for additional sampling that could may impact the OU3 RI schedule.

Response Final characterization related to waste disposition will be done during remediation. However, potential criteria related to waste disposition have been reviewed and were considered in defining data needs in the revised Work Plan Addendum. RI characterization will assist in identifying waste acceptance issues for further analysis, such as RCRA characterization, to support feasibility study needs.

21. **Section D.4.6, Page D-53, Line 14 through 27.** Each FIP should include all the information used to decide how many samples are needed, the sample matrix from which each sample will be delivered, appropriate ASL for each sample, and the type of analysis performed on each sample. See Comment Number 10.

Response The information specified is included in the revised Work Plan Addendum with

additional component-specific detail provided in the FWPs.

22. **Section D.4.6, Page D-54, Line 24.** All documentation used to determine that a component is sufficiently characterized must be presented to EPA for review and approval.

Response As a result of the revision of the Work Plan, all components that are sampled will be characterized using a similar approach. Results of the characterization will be presented to EPA in the RI for review and comment. The data sufficiency issue raised by the original comment is no longer appropriate with respect to the revised approach to sampling and the protocols.

23. **Section D.4.7.2, Page D-58, Table D.9.** Discrepancies exist between this table and Table 2.4, which presents the same information. These discrepancies should be reconciled.

Response Table D.9 and Table 2.4 have been made consistent. However, in the revised SAP, Table D.9 is used to help define decision levels rather than action levels. See also the response to general comment No. 21.

24. **Section D.4.7.2, Page D-59, Line 10.** DOE should justify the choice of 30 times background as an AL.

Response The factor of 30 times background is based on criteria established in DOE Order 5400.5. See the response to general comment No. 21 concerning the use of action levels.

25. **Section D.4.7.2, Page D-61, Line 10.** The environmental media action level for PCBs is inappropriate. Toxic Substance Control Act (TSCA) standards for the acceptable level of PCBs in a 100 square centimeter swipe sample would be more appropriate. Guideline action levels and sampling approaches are presented in 40 CFR 761 Subpart 19, and should be considered in the OU3 RI work plan.

Response See response to general comment No. 21 concerning the use of action levels. The TSCA criteria for surfaces levels and bulk media for PCBs have been considered in the setting of required detection limits in the SAP.

26. **Section D.4.10, Pages D-67 through D-73, Table D-11.** Table D-11 is incomplete, inconsistent with Appendix A, and contains inappropriate chemical classifications.

The table is incomplete. For example, two components, included in Appendix A are not included: (1) tanks outside of Plant 2 and (2) Duratek test trailer. Furthermore, the table is inconsistent with Appendix A. Many of the contaminants and processes indicated in Appendix A are not considered in Table D-11. For example, the Metals Production Plant (5A) should include the following chemical contaminants which are identified as contaminants of concern or associated with plant processes: (1) semivolatile organic compounds (SVOC), PCBs, and lead. Likewise, Plant 5 Ingot Pickling (5B) should include volatile organic compounds (VOC) as a class of chemical contaminants requiring analysis.

Finally, the table includes chemical classifications by analytical group. Each analytical group must represent analyses that can quantitatively identify individual suspect contaminants. For example, total petroleum hydrocarbons (TPH) are included as a chemical contaminant for many components where oil or waste oil is a contaminant of concern. It is inappropriate to use TPH analytical results to determine quantitative risks associated with oil or waste oil-related compounds. It would be more appropriate to use SVOC as the chemical contaminant.

In summary, Table D-11 should be revised to ensure that it is complete, that it accurately addresses suspect contaminants identified in Appendix A, and that chemical parameters indicated are appropriate to provide quantitative data on individual suspect contaminants.

Response Table D.11 has been eliminated from the revised SAP, reflecting a revised approach to selecting analytical parameters. In summary, analysis to the fullest extent practical will be carried out for parameters on the EPA Target Compound and Target Analyte Lists (except for pesticides), plus all radiological parameters of interest across OU3 in each medium sampled in each process area.

Total petroleum hydrocarbon analysis will not be used (nor was it intended to be) to evaluate risks due to individual hydrocarbons. Analyses for volatile and semivolatile organic compounds will be conducted for that purpose.

27. **Section D.4.11, Page D-75, Line 18.** All modifications to the FIPs must be submitted to EPA for review and approval prior to sampling.

Response As noted in the response to general comment No. 1, FIPs will no longer be used. Any significant changes to sampling plans would be discussed with EPA prior to implementation.

28. **Section D.4.11.1, Page D-76, Line 18.** All FIPs should include DQOs, number of samples, location of samples, and type and level of analysis required.

Response The information specified is included in the revised SAP or will be included in the Field Work Package (FWP) prepared for a particular component. The revised Work Plan Addendum specifies the location of sampling by media and generally also specifies the specific location or region to be sampled. If the more specific location is not provided in the SAP, and for areas with chemical contamination concentrated at a location other than the location identified for radiological contamination, the FWP will identify the specific location or region to be sampled through implementation of sampling protocols contained in the revised SAP.

29. **Section D.4.11.1, Page D-77, Line 21.** The review of existing data should present the data quality levels (DQL) for existing data and the effect these DQLs have on characterizing the magnitude and extent of contamination at each component.

Response The revised Work Plan Addendum assumes that the quality of existing data is sufficient for intended use as a screening mechanism.

30. **Section D.4.11.1, Page D-6, Line 6.** The SAP states that data will be validated to support DQOs. The data should be validated to the level required in the SCQ.

Response Validation to support DQOs is consistent with validation to the level required in the SCQ. The text has been modified to clarify this point. (The reference is assumed to be to p. D-78, not D-6.)

31. **Section D.4.11.1, Page D-6, Line 10.** Each FIP should justify the number of samples to be collected for each ASL analysis.

Response The number of samples to be collected for each ASL analysis is based on the overall approach to characterization, reflecting the sampling protocols. In the revised approach, the number of types of media present in each process area of a component determines the character of the sampling for a component. As noted in the response to general comment No. 1, FIPs will not be used. Sample type and quantities are specified for each component in the revised Work Plan Addendum. (The page reference for this comment seems incorrect and was assumed to reference p. D-80.)

32. **Section D.5, Page D-80, Line 13.** The number assigned to each type of sampling protocol does not match that listed in Table D.12. This discrepancy should be reconciled.

Response The numbers for the protocols in Table D.12 have been made consistent with those in the text.

33. **Section D.5, All Subsections.** For each of the twelve sampling protocols presented in Subsection D.5.1 through D.5.12, the SAP makes repeated statements concerning composite samples and required ASLs. Component-specific FIPs or the OU3 RI work plan must address each of the following comments on each of the areas presented below.

The FIP must state (1) why compositing is preferred method of characterization over several grab samples, (2) how many grab samples will be included in the composite, and (3) how the number and location of each element of the composite sample was selected.

The SAP makes several references to collecting samples for ASL B and C analysis in areas that exceed action levels (AL). ASLs B and C span field survey readings to laboratory analysis. The use of ASL B (nonlaboratory analysis) is not appropriate when characterizing areas that may present a significant risk to receptors. In addition, the SAP states that components initially characterized as significant level 3 (S3) will require ASL B and C analysis. Considering that S3 is the highest level of significance, a portion of these samples should be analyzed at ASL D.

Response Compositing is used on a limited basis in the revised SAP, primarily in the characterization of removable radiological contamination in components. The purpose and means of compositing swipe samples is addressed in the revised SAP. See also the response to specific comment No. 39.

ASL B is commonly used for health and safety purposes to protect human health in areas that may present a risk to human health. However, characterization of surface and bulk contamination will be based on the use of data from samples analyzed at ASLs C/D. As noted in the response to general comment No. 21, action levels will not be used as the basis for sampling decisions.

34. **Section D.5.1.1, Page D-88, Line 15.** See specific comment No. 18.

Response See response to specific comment No. 18.

35. Section D.5.1.1, Page D-88, Line 16. See specific comment No.25.

Response See response to general comment No. 21 concerning the use of action levels.

36. Section D.5.1.3, Page D-92, Line 22. It is unclear when continuous and noncontinuous high volume air sampling will be used.

Response The text has been expanded to indicate that air will be continuously sampled during periods when personnel might be present in an area with potential airborne contaminants. Unoccupied areas may not require routine, continuous sampling and may be sampled for short intervals (less than a week). Grab samples will be taken for analysis of radon as appropriate.

37. Section D.5.1.3, Page D-92, Line 22. The level of anticipated airborne contamination should also be considered when designing the air sampling program for each building.

Response The anticipated level of airborne contamination will be considered in designing the sampling program for radon individual buildings.

38. Section D.5.2.1, Page D-93, Line 24. The SAP states that components designated as S1 will be sampled only if a problem is known. The definition of significance levels on Page 22 precludes any component with a known level of contamination to be classified as S1. At a minimum, the components that are classified as S1 should be sampled on a random basis to evaluate if contamination exists.

Response The presence of limited areas of contamination in these components will not affect decisions related to evaluation of alternatives or to carrying out the baseline risk assessment. Confirmatory sampling will be carried out in a number of components for which no significant contamination is expected (Section D.9).

39. Section D.5.2.1, Page D-94, Line 26. Any swipe sample exceeding an AL must be subject to ASL C analysis. The use of ASL B (nonfixed laboratory analysis) is not appropriate when characterizing areas that may present a significant risk to receptors. This comment should be addressed throughout the SAP.

Response In the revised approach to sampling, all swipes from areas within a component for which surface contamination exceeds by an order of magnitude the surface contamination guidelines in DOE Order 5400.5 will be composited as a single sample for laboratory analysis of individual radionuclides. The sample will be analyzed at ASL C/D. All intrusive samples from all media will be analyzed at ASL C/D. See response to general comment No. 21 concerning action levels and decision levels.

40. **Section D.5.3.1, Page D-96, Line 27.** The SAP states that areas at which leakage is evident will be monitored to a reasonable extent. If leakage from vessels is apparent, this is direct evidence of a release and the area should be sampled. These samples should then, at minimum undergo ASL D analysis.

Response Leakage from a vessel may not always be significant. For example, the contents of many vessels are well characterized or known to not be of potential concern. For this reason, monitoring "to a reasonable extent" is indicated; ASL D analysis may not be necessary to support RI data needs. Vessel leakage identified by FWP inspection or field sampling crews will be sampled if contents are unknown or known to be of potential concern.

41. **Section D.5.3.1, Page D-98, Line 3.** The SAP states that rinsate procedure may be used to sample some of the vessels. Additional information on this and all other sampling procedures must be developed and submitted to EPA for review.

Response The rinsate procedure will not be utilized in the revised approach. See response to general comment No. 3 concerning any new procedures.

42. **Section D.5.7, Page D-108, Line 2.** This section indicates that drummed materials will be sampled; however, Table D.19 states that no samples will be collected from any of the drummed materials, rather samples will only be collected from sea-land containers. The OU3 RI work plan should more clearly present which drummed material will be sampled.

Response Section D.5.7 in the draft SAP stated that some containers (not necessarily drums) will be characterized. The section was to indicate that drummed materials are addressed through other programs, and other containers were to be addressed by the protocol.

43. **Section D.5.7.1, Page D-110, Line 1.** The SAP states that is ALs are exceeded, additional sampling may be required. If ALs are exceeded, additional sampling must be required and a portion of these samples should be analyzed at ASL D, at a minimum, to meet the objectives of the risk assessment.

Response If unknown liquids are identified, a grab sample of each unknown liquid will be taken for laboratory analysis. See general comment 4 for discussion of ASLs. See the response to general comment No. 21 concerning the use of action levels.

44. Table D.13, Page D-132, Line 21. The footnote to this table states that 58 sampling procedures will need to be developed, 36 sampling procedures modified, and 20 sampling procedures are existing Feed Materials Production Center (FMPC) or Westinghouse Environmental Management Company of Ohio (WEMCO) sampling procedures. The SAP should state that all newly developed and modified procedures will be submitted to EPA for review. In addition, the modified FMPC and WEMCO procedures should be submitted as part of the SCQ.

Response See response to general comment No. 3 concerning new procedures.

45. Table D.17, Page D-140. This table indicates that many analytical procedures need to be developed or modified. All analytical procedures must be developed and submitted as part of the SCQ for review prior to any sampling.

Response See response to general comment No. 3 concerning new procedures.

USEPA AIR TOXICS AND RADIATION BRANCH

SPECIFIC COMMENTS

1. Volume 1, Section 3.2.3, Page 3-41, Paragraph 4:

Justification should be provided as to why the risk to off-site receptors will be based on average total contamination levels in individual components.

Response As noted on p. 3-35, off-site risks will generally be associated with potential exposures to contaminants originating from multiple sources (components) within OU3. Such risks are likely to be the result of potential exposures that last for many years. Therefore, sources for such cases will generally be quantified in terms of average measured levels of contamination within component categories, rather than in terms of levels in particular components. The text in the revised Work Plan Addendum has been modified to clarify this.

2. Volume 1, Section 3.3.1, Page 3-41, Paragraph 6, Line 26:

The reference to Section 300.430(b)8 of the National Contingency Plan (NCP) is incorrect. The section of the NCP, which provides that the identification of ARARs and other "to-be-considered" (TBC) criteria be initiated during the scoping phase of the RI/FS, is Section 300.430(b)9.

Response The reference has been corrected to Section 300.430(b)9.

3. Volume 1, Section 4.2.1, Page 4-12, Paragraph 2, Line 4:

The number of samples or measurements to be taken will be dependant upon the uniformity of contamination, which is based on the initial data collected. This sampling strategy for each OU3 component would be strengthened if this section is expanded with regard to: 1) the minimum level of data requirements, 2) whether all the data requirements have been met and 3) the evaluation process used to validate the data.

Response The approach that will be used for data collection has been modified. Screening based on non-intrusive sampling will be used to identify locations with elevated levels of contamination and not for evaluation of the uniformity of contamination. Intrusive samples will then be collected in such areas by major media, by process area, and by component. Supplemental intrusive sampling will also be used to collect data for various other materials such as loose media and liquids. Minimum requirements for intrusive sampling based on this approach are specified in Section 4 of the revised Work Plan Addendum and minimum data requirements for each component are

specified in the revised SAP. Data validation will be done in accordance with approved SCQ data validation procedures. Determination of the need for any additional survey data will be made in the field.

4. **Volume 1, Section 4.2.1, Pages 4-12, Paragraph 3, Line 18:**
State specifically which ASL will not be included in the initial sampling and analysis.

Response The text has been modified indicating initial screening will not include ASLs C and D.

5. **Volume 1, Table 4.8, Pages 4-58 through 4-64:**
According to the baseline risk assessment strategy, the components within each level I/II category are to be sampled in the early period. Components 53A, 13D, and 39D are included in the conservative on-site baseline risk assessments (Table 4.7), but have been scheduled to be sampled in the late period. Clarify this discrepancy.

Response The discussion concerning scheduling has been modified. All components preliminarily selected for use in the baseline risk assessment will be sampled in the early period.

6. **Volume 2, Table A.4.0, Page A-158:**
Table A.4.0 provides a breakdown of potential contaminants by OU3 component. Justify why the Ore Refinery Plant (see page A-107) is not listed in this table as having any radiological contaminants. Also, Preparation Plant (1A) is not listed as having any radiological contaminants (see page A-106).

Response Table A.4.0 in the draft SAP listed a sizable number of potential radiological contaminants for both component 1A and component 2A. Table A.4.0 from the draft document is not used in the revised work plan.

7. **Volume 2, Table A.6, Page A-286:**
Table A.6 presents a summary of uranium products broken down by enrichment code that are currently stored in various buildings. This table does not include uranium up to 20% enrichment, which was included as a potential contaminant in Table A.3.0. Please check these tables for consistency.

Response Very small quantities of uranium at 20% enrichment were blended with uranium having lower levels of enrichment to increase final enrichment levels of products. No products with 20% enrichment were produced at the site.

8. **Volume 3, Section D.2, Page D-8, Specific Task 1:**
The OU3 sampling and analytical procedures should be submitted to the U.S.

Environmental Protection Agency for approval before being added as addenda to the site-wide CERCLA Quality Assurance Project Plan.

Response New OU3 procedures will be submitted to EPA for approval before being added to the SCQ.

9. Volume 3, Section D.2.2, Page D-8, Specific Task 5:

It is stated that "The data validation team will function in accordance with the SCQ data-validation procedures approved at the time of the validation." It is implied that the data validation procedures will be made-up as the sampling and the characterization progresses. If so, this is an unacceptable procedure; please clarify

Response Any procedures employed for validation will be approved prior to their utilization.

10. Volume , Section D.4.2, Page D-30, Table D.2:

Under the "Primary Isotope (half-life)" column, the half-life of Am-241 is listed as 232 years. The half-life of Am-241 is actually 432 years.

Response The correct half-life of Am-241 (432 yr) has been included in the revised Work Plan Addendum.

11. Volume 3, Section D.4.2, Page D-36, Paragraph 3, Sentence 4:

Uranium-233 can be identified by looking at its 4.824 MeV [84.4% yield] alpha particle energy which clearly sets itself apart from the U-234.

Response The alpha particle energies for U-233 and U-234 are sufficiently close (see Table D.2) that they are not resolvable by alpha spectrometry. Identification by mass spectrometry can be done but is not considered worthwhile since the internal dose conversion factors differ by only about two per cent for the two isotopes. Also, U-233 is likely present in quantity only in buildings 67 and 68, where no U-234 should be present.

12. Volume 3, Section D.4.4.1, Page D-45, Paragraph 1, Sentence 2:

The AL should be 20 $\mu\text{R/hr}$, not 20 $\mu\text{rem/hr}$. "R" is for Roentgen which is a unit used to express gamma exposure while "rem" is an absorbed dose equivalent. These units must not be used interchangeably and each unit must be used properly.

Response The units R/hr are used consistently throughout the revised Work Plan Addendum for exposure rates. See the response to general comment No. 21 concerning the use of action levels and decision levels.

13. Volume 3, Section D.4.4.1, Page D-45, Paragraph 1:

A preferred instrument for environmental gamma radiation monitoring is a hand-held micro-R survey meter. This type of meter uses scintillation crystal for detection and displays gamma exposure rate ranges as low as 0 → 25 μ R/hr, making this survey meter well suited for measuring gamma exposures 20 μ R/hr above background. A micro-R survey meter is also more stable and faster responding than a pressurized ion chamber and is available from several manufacturers.

Response In the absence of an instrument with equivalent response characteristics (linearity), DOE prefers to use the available pressurized ion chamber (PIC) instruments to make gamma ray exposure measurements. It is acknowledged that hand-held micro-R instruments exhibit faster response than do PICs, but as these instruments employ a NaI scintillation crystal they suffer from excessive non-uniform response for gamma emitters in the 100 KeV range, deemed unacceptable in many DOE applications.

14. Volume 3, Section D.4.7.2, Page D-57, Paragraph 2:

According to DOE Order 5400.5 (2-8-90), page IV-5, external gamma radiation levels on open lands or inside a building or habitable structure shall not exceed the background level by more than 20 μ R/hr, not 20 μ rem/hr.

Response See response to specific comment No. 12 (from Radiation Section) concerning units for exposure rates.

15. Volume 3, Section D.4.7.2, Table D.9, Page D-58:

Justify why the maximum action level of 15,000 dpm/100 cm^2 is indicated in this table, when DOE Order 5400.5, page IV-6, states a maximum of 3,000 dpm/100 cm^2 for this radionuclide group.

Response Limits provided for residual radioactive material will be made consistent with DOE Order 5400.5. See response to general comment No. 21 concerning the use of action levels.

16. Volume 3, Section D.4.8, Page D-62, Paragraph 2, Sentence 2:

The survey means and data quality assurances for the location of the sample points should be stated. Though a +/- .3 ft survey is adequate for locating radiological sample points, the ability to relocate those sample points should be guaranteed.

Response The uncertainty in samples location points was intended to read +/- 3.0 ft in the draft WPA, not +/- 0.3 ft, a typographical error. In the revised approach, field screening surveys will be documented on maps by field crews at the time of the survey, resulting

in a +/- 3 ft location accuracy. Intrusive sample locations, however, will be located with a tape measure from a surveyed reference point, resulting in accuracies better than +/- 1 ft. Intrusive sample locations will also be marked with paint or tape to guarantee the ability to relocate them.

17. Volume 3, Section D.4.9.1, Page D-63, Paragraph 1, Sentence 1:

The conventional unit for stating alpha particle energies is "MeV" (millions of electron volts) and not "mev" (thousandths of electron volts).

Response The units have been corrected to MeV.

18. Volume 3, Section D.5.1, Page D-86, Paragraph 1:

The initial definition of class A surfaces and class B surfaces is inconsistent with the definition examples of sections D.5.1.1 and D.5.1.2 (e.g., how can doors, windows, hoods, etc., be vertical and inaccessible surfaces?).

Response The concept of class A and B surfaces is not used in the revised Work Plan Addendum.

19. Volume 3, Section D.5.1.1, Page D-87, Paragraph 1, Sentences 2 and 3:

Justification is necessary as to why the 1000-ft² feature area size was selected; DOE Orders typically would state such areas in terms of square meters (m²). Further, the measurement requirements should be more stringent to state the number of measurements for every particular feature area of 1000-ft² or less rather than each of 1000-ft².

Response The protocol discussed is not included in the revised Work Plan Addendum and grids will not be used for sampling, except for conformational sampling as is discussed in Section D.9.

20. Volume 3, Section D.5.1.1, Page D-87, Paragraph 1, Last Sentence:

The use of random number generation to determine the measurement location within the cell should be justified. Reasons should be given as to why common sense cannot be used to determine locations that are more likely to be radiologically contaminated.

Response The sampling approach has been modified and random locations will not be used.

21. Volume 3, Section D.5.1.1, Page D-87, Paragraph 3:

One sample per component may not be adequate to characterize the liquids within each component. Expand this section to explain how liquids within the components will be characterized.

Response The SAP has been revised to indicate that a grab sample will be collected from each unknown liquid of sufficient quantity. Liquid samples will be analyzed for radiological and chemical contaminants, as appropriate, in order to characterize the liquids. The text of the protocols now states this more clearly.

22. **Volume 3, Section D.5.1.2, Page D-90, Paragraph 2, Sentences 1, 2 and 3:**
Justification is necessary as to why the 360-ft² feature area size was selected; DOE Orders typically would state such areas in terms of square meters (m²). Further, the measurement requirements should be more stringent to state the number of measurements for every particular feature area of 360-ft² or less rather than each of 360-ft².

Response See response to specific comment No. 19 (from Radiation Section).

23. **Volume 3, Section D.5.1.2, Page D-90, Paragraph 4:**
One sample per component may not be adequate to characterize the liquids within each component. Expand this section to explain how liquids within the components will be characterized.

Response See response to specific comment No. 21 (from Radiation Section).

24. **Volume 3, Section D.5.1.3, Page D-92, Paragraph 6:**
Radon is ²²²Rn (or Rn-222) while Thoron is ²²⁰Rn (or Rn-220). This should be made the convention throughout the OU3 Work Plan Addendum.

Response The text has been modified to indicate that radon is Rn-222 and thoron is Rn-220. This convention is used throughout the Work Plan Addendum.

25. **Volume 3, Section D.5.1.3, Page D-92, Paragraph 6:**
The grab sample method proposed may not fully characterize the radon levels within the components. Further explanation and justification should be given if integrating radon devices are not to be used. It is strongly recommended that integrating radon devices be used since five days are planned for radon measurements.

Response Integrating radon detection devices will be used if a potential exists for any extended exposure. Note that the revised text indicates that grab samples will be used for five work days prior to investigation; the text indicates that continuous sampling will be used where appropriate. In some cases, such as for opening piping, it may not be meaningful to sample for an extended period because any radon present will be released rapidly. In such a case a grab sample is more appropriate. The text has been

modified to clarify the preceding points.

26. **Volume 3, Section D.5.7, Page D-108, Paragraph 2, Sentence 3:**
A "REM" is a unit of dose equivalence, not exposure. Please revise the text to reflect this.

Response The units have been corrected to mR/hr.

27. **Volume 3, Section D.5.11.1, Page D-119, Paragraph 2, Sentences 3 and 4:**
It should be more clearly defined as to what are the cell dimensions or area within the noted grids. Also, the number of samples to be taken within each grid should be stated.

Response The approach to sampling has been modified. Grids will not be used for sampling. See also the response to specific comment No. 19 (from Radiation Section).

28. **Volume 3, Table D.15, Page D-135:**
The rationale for developing the radiochemical analytic procedures described in the SCQ is to establish consistency between all laboratories performing the radiochemical analysis for the FEMP. Table D.15 identifies the radiochemical analytical procedures that will be used for each sample matrix. The various sample types within each sample matrix requires some modifications to the original SCQ procedure, or to some existing procedure that may have not been reviewed previously by the USEPA. Clarify if these modifications will be developed and mutually agreed upon by the DOE and all laboratories before any samples are analyzed. Also, state whether these modified procedures will be submitted for the USEPA for review.

Response The number of modified analytical procedures of all types to be developed is given in Table D.6-5, p. D.6-12 of the revised Work Plan Addendum under the column "totals." The totals arrived at are 22 SCQ methods to be modified, 16 other existing methods to be modified, and no totally new methods to be created. As noted in footnote b of that table, these totals assume that "multiple matrix categories can be handled by one procedure." It is the position of DOE that this number of method modifications will yield the appropriate amount of detail and guidance in methods that must handle a variety of sub-types of matrices in OU3 sampling, while providing analytical laboratories the degree of latitude they require to deal with individual samples. The developed methods will be of sufficient detail to yield the desired degree of comparability of results between various laboratories to meet OU3 DQOs. Further, attempts will be made to confine the analysis of a given parameter in a given matrix to a single laboratory. The proposed methods to be developed will become part of the

SCQ, and as such will require approval by U.S. EPA, and the conformance of all participating laboratories.

29. Volume 4, Section D.1.2, Page D.1-5, Paragraph 4:

It should be stated that a pancake GM (geiger-müller) probe monitors contamination from beta and gamma emitting radionuclides. This fact should also be stated in Procedure 605b.

Response

The text has been modified to indicate that the probe monitors both beta and gamma-emitting radionuclides. (This point is discussed in Sec. D.4.4.1 and D.4.9.1.)

USEPA TECHNICAL REVIEW COMMENTS**APPROACH TO REVISING THE OU3 WORK PLAN ADDENDUM AND AN EXAMPLE****SAMPLING AND ANALYSIS PLAN FOR COMPONENT NO. 39A****GENERAL COMMENTS**

1. The U.S. Department of Energy's (DOE) approach is based on the premise the 30 of the 240 components of Operable unit (O) No. 3 contain over 85 percent of the volume of contaminated material. Thus, DOE has focused the remedial investigation and feasibility study (RI/FS) data gathering activities on the most contaminated components. Data gathering focuses on identifying the source terms for risk calculations, estimating waste volumes for cost purposes, and evaluating treatment technologies. The U.S. Environmental Protection Agency (EPA) notes that this focus will result in high estimates for risk and cost.

DOE's approach to assess risk for O No. 3 is to sample in the most contaminated areas of 12 components at the site, using field screening information to focus upon the most contaminated portions of each component. Most of these components are considered to be the most highly contaminated components in each level 1/11 category. While DOE plans to use a reasonable maximum exposure (RME) value in accordance with EPA guidance, this focused approach will probably not be representative and will overestimate the source term. This risk characterization may also elevate cost estimates because the volume of waste requiring remediation will be overestimated. Another factor that should be considered is that the remedial costs that will be estimated based on treating these components will probably not be representative of site conditions.

EPA believes that DOE should modify its approach to obtain representative data from all components, including those that will have low levels of contamination. EPA notes that one objective of the RI/FS must be to characterize the nature and extent of contamination for O No. 3 as a whole. This objective involves characterizing the nature and extent of contamination in components thought to exhibit relatively low levels of contamination as well as those exhibiting relatively high levels of contamination.

Response Given that the BRA will not be used to justify remedial action for OU3, a high risk estimate for the baseline conditions should be acceptable. We do not agree with the assertion that the proposed approach will necessarily yield an overly conservative estimate of cost. See responses to General Comment No. 2 (below) and Specific Comment No. 2 (below). It should be noted that the approach is to focus sampling on components with significant contamination, not on the most contaminated components.

Cost estimates for treatment options will not be based on sampling in 12 components only (as stated by EPA), but on more than 120 components. The cost estimates for disposal options will be based on the volume of materials contained in all those components.

Current process knowledge and survey data provide considerable information regarding the nature and extent of contamination in OU3. Evaluation of this information is considered to be the first phase in a phased approach. In this approach, the available knowledge is used to focus subsequent sampling of the OU3 components. Therefore, a detailed characterization to further refine the nature and extent of contamination throughout all of OU3 is not necessary.

2. **DOE's approach does not include sampling of those components classified as "S1." Although it is possible that S1 components may not represent significant risks as compared to the 30 most contaminated components, S1 components will be remediated as part of the RI/FS. DOE must therefore evaluate and document the nature and extent of contamination of the S1 components.**

Response For evaluation of alternatives, treatment technologies selected based on results from sampling in those components with significant contamination should be applicable to components with less than significant contamination also. The volume of contaminated materials in the latter group of components is too small to significantly impact the evaluation of treatment and disposal options. Therefore, it is not necessary to sample such components. Nevertheless, a limited number of components with no expected significant contamination has been selected and will be subjected to confirmatory sampling to verify the status based on historical process knowledge and/or monitoring data.

3. **DOE identifies "free release" criteria in the O No. 3 work plan addendum. Under Nuclear Regulatory Commission guidelines, free release criteria allow for the unrestricted release of materials to the environment. The free release criteria needs to compared to the risk-based clean up goals and justification provided as to the**

appropriateness of their use in this RI/FS. EPA notes that although DOE does not intend to implement No-Action criteria for site components, it does intend to release material to the environment for unrestricted reuse. As part of the RI/FS, DOE should generate exposure scenarios and calculate quantifiable risks assuming free release of materials may occur.

Response It is not the intent or within the scope of the OU3 Work Plan Addendum to define the adequacy of NRC criteria for release without radiological restrictions. The NRC criteria will be used without justification in the Work Plan Addendum for nonporous materials. For other types of materials, criteria will be developed based on ARARs or EPA risk guidance, if necessary. The comment does not impact the current data needs and the scope of the proposed sampling and analysis plan.

4. The revised approach includes an example of component-specific information for Building 39A. Component-specific information includes a description of the component, associated process areas, media types, component- and process-specific analytes, and sampling information. Component-specific information should also include a discussion of the waste materials, suspect contaminants, data gaps, if any, and justification for the location and number of samples, and analytes for each component.

Response Component-specific information provided in the 9/15/92 submittal already includes some consideration and discussion of the items listed by EPA. Section D.9 (previously labeled D.8) of the revised SAP has been streamlined and reformatted to more explicitly highlight the discussions requested. Items provided elsewhere in the Work Plan Addendum will be incorporated into Section D.9 either by reference or by restatement. For example, waste materials and suspect contaminants are provided in Appendix A tables. Justification for locations and numbers of samples and analytes is given in the submittal and applies globally to all components being sampled. Data gaps are fundamentally the same for all components and are addressed through the identification of process areas and media.

5. DOE provides a generic field work package (FWP) in Appendix A of the revised addendum. It was EPA's understanding that DOE would generate a detailed FWP so that EPA could evaluate whether or not the level of detail of component characterization is adequate. Thus, EPA would be required to review and approve each FWP the DOE generates. Alternatively, the FWP should be revised and submitted in a detailed format that focuses on the sampling activities required for Building 39A. If this approach were approved, it may not be necessary for DOE to submit a FWP for each component for EPA's review and approval.

Response A detailed FWP has been developed and provided for EPA concurrence since the submittal of the approach document.

6. The revised work plan approach appears to propose a limited characterization of approximately 120 out of 240 components. DOE proposes to sample only the S2 and S3 components, and not to conduct any sampling of the S1 components. Sampling of S1 components is required to demonstrate their low level of contamination.

Sampling on S2 and S3 components may be adequate to provide a "first cut" assessment of the level of contamination analogous to a Phase 1 investigation. However, it is inadequate to characterize the site to support the baseline risk assessment and FS. In order to facilitate the investigation, it may be appropriate to investigate the site in a phases approach. Subsequent and more focused sampling phases of characterization should be completed for a least one component from each S level in each of the 11 level I and II categories.

Response Components previously labeled S1 are known or expected to contain no significant quantities of contaminated materials based on process knowledge, past use, and/or survey data. Therefore, these components do not need to be sampled for the RI/FS in order to supply information necessary to make needed decisions. However as noted in the response to General Comment No. 2, confirmatory sampling will be carried out in a limited number of components that are expected to have no significant contamination.

Response to the second paragraph is provided in response to general comment No. 1.

7. The component-specific information provided in Section 6.0 is not adequate. The information for choosing sample numbers, sample locations, and analytical parameters is not provided. DOE does not integrate the sampling protocol approach for choosing sample locations, presented in Section 3.0 and 4.0, with the component-specific sampling. The justification of the sample numbers, locations, and parameters must be provided in the component specific data in Section D.8 of the Sampling and Analysis Plan (SAP).

Response See response to general comment No. 4.

SPECIFIC COMMENTS

1. **Section 1.3, Page 2, Paragraph 1** : DOE states that the objective of the risk assessment is not to demonstrate that no remediation is necessary. The specific purpose of the risk assessment should be presented. Also, DOE's statement indicates that the No-Action alternative will not be considered. EPA notes that the use of the NRC free-release policy for site-derived material will require DOE to quantitatively evaluate any risks associated with the unrestricted release of material from O No.3 components. DOE should modify the objectives appropriately.

Response

The baseline risk assessment provides a consistent framework for collecting information for decision making. However, given that the need for remediation is already accepted and that little or no portions of OU3 are expected to be left in place, the baseline risk assessment serves a limited purpose for OU3. However, as is discussed clearly in the revised Work Plan Addendum, the "no-action" alternative will be developed. In the FS, the long-term effectiveness of remedial action alternatives will be evaluated. Part of this evaluation calls for assessing risk due to exposures to any residual contamination remaining at the site. Materials released to outside of the site without radiological restrictions will meet the appropriate DOE criteria. See the discussion of release criteria in the response to general comment No. 3.

2. **Section 1.3, Page 2, Paragraph 1** : DOE's assumption that Table A.7 of the work plan addendum presents the quantities of both contaminated and uncontaminated material is incorrect. Table A.7 does present the total quantities of the materials but makes no distinction between contaminated and uncontaminated materials. EPA notes that this lack of specific-information is a data gap that will have to be assessed during the RI/FS.

Response

Table A.7 presents the total volume of material in components. The assumption is that all materials in components to be sampled are contaminated. Estimates in Table A.7 provide a reasonable upper bound on the volumes of contaminated materials in OU3.

3. **Section 1.3, Page 2, Paragraph 2** : DOE states that all components have been adequately characterized in terms of their level of significance. This statement is not acceptable without justification. One of EPA's major comments on the first draft of the O No. 3 work plan addendum is that DOE does not provide adequate documentation to justify the designated significance level for each component. The revised work plan addendum must provide this justification. This justification should be provided in the component specific information presented in Section D.8.

Response S is not used in the revised Work Plan Addendum. However, justification was provided in Tables A.8.0, A.8.1, and A.8.2 of the draft Work Plan Addendum for classifying components according to the S designation. In the revised Work Plan Addendum, justification has been provided in Section D.9 for all components that will not be sampled.

4. **Section 1.3, Page 2, Paragraph 4** : DOE states that 30 of the 240 identified components contain 85-percent of the associated contamination; therefore, uncertainties about the extent of contamination in less contaminated components will have little effect on the overall volume estimate. EPA believes that the RI/FS process requires DOE to evaluate the nature and extent of contamination for the site as a whole. All component categories will have to be investigated. DOE must therefore revise the addendum to include an investigation of a representative number of S1 component categories to properly characterize O No. 3.

Response See response to general comment No. 1.

5. **Section 1.3, Page 2, Paragraph 5** : DOE states that all S1 components will be surveyed during the remediation and considers S1 contamination to be negligible. EPA notes that data on S1 components is limited to direct survey measurements of radioactivity. No radionuclide- or compound-specific data are presented. This is clearly insufficient to support the assumption that contamination is negligible. DOE must present an approach for characterizing contamination by investigating a representative number of S1 components.

Response See response to general comment No. 2.

6. **Section 2.1, Page 3, Paragraph 6** : The work plan approach states that a single component from each category will be selected to yield a conservative risk estimate. However, the work plan approach lists two components that are not at the highest level of significance within their categories. These components are component 53A (the health and safety building) and Component PO 25 (the outside equipment storage area). The use of these two components may underestimate the risk for the category (in comparison to others). Either new components should be selected or additional justification for selecting these components should be provided.

Response The components identified in the Work Plan Addendum are preliminary choices and selection will be modified as necessary when additional data are available.

7. **Section 2.2, Page 9, Paragraph 5** : DOE notes that data is available for most components which lowers the overall data collection requirements for the RI/FS. EPA notes that much of the radiological safety data is limited to direct exposure measurements. This data does not take into effect the toxicological effects of individual radionuclides. In order to quantitatively assess risk, radionuclide-specific data is required. DOE should assess the usability of the radiological survey data for the quantitative risk assessment.

Response Historical radiological survey data in combination with historical process knowledge will be used to determine the locations of intrusive samples. Radionuclide-specific information required for quantitative risk assessments will be obtained from intrusive samples.

8. **Section 3.1.2, Page 13, Paragraph 1** : The revised approach states that the RI report will present the results for all components (including S1 components). DOE should explain how the RI can present this data when the revised approach states that no sampling of S1 components will be conducted.

Response The RI will summarize the available information for all components, which includes but is not limited to: historical data, past uses, process knowledge, and survey data.

9. **Section 3.1.2, Page 16 Paragraph 1** : The revised approach states that all swipes that exceed the contamination guidelines on DOE order 5400.4 by an order of magnitude will be composited. DOE should justify how this will characterize the O No. 3 components. DOE should consider combining swipe samples that have comparable radiation measurements to provide a more accurate characterization.

Response The composite samples provide information on all removable contaminants on surfaces in each component sampled. To satisfy our stated data needs, it is appropriate to composite over the whole component to represent the potential airborne contaminants. By compositing from areas above a threshold radiation level, comparable radiation measurements will be combined. However, comparable radiation measurement does not necessarily mean the same radionuclides.

10. **Section 3.3, Page 17, Paragraph 3**: The revised approach states that no samples of asphalt will be collected from S1 components. At a minimum DOE should provide radiological assessments and some radionuclide-specific analyses of asphalt to assess potential contamination.

Response Asphalt sampling was deemed unnecessary for the most significant asphalt-containing component, the parking lots. Asphalt sampling may occur for the Plant 4 Pad component, if field screening identifies a need. Site roads have been identified for confirmatory sampling, and therefore based on field screening results, asphalt may be sampled for this component as well.

11. **Section 3.5, Page 19, Paragraph 4** : The revised approach should provide a date (or at least a time frame), the objective of, and contents of, the referenced interim submittal.

Response The purpose of the interim submittal is to present the results of evaluations to be carried out using data to be collected from a group of four large and diverse components that will be sampled early in the field program in order identify any opportunities to better focus the remaining field program in a more efficient manner. The report will discuss correlations among variables and trends in measured quantities. The interim submittal will be provided to EPA early enough in the field program so that an opportunity will exist for possible revisions to be made to the majority of the field program if significant trends or correlations are identified.

12. **Section 3.5, page 20, Paragraph 3** : DOE indicates the X-ray fluorescence (XRF) will be used to evaluate trace metals on surfaces and in various solid and liquid media. EPA notes that XRF is usually used to identify a single or limited number of compounds during field screening. DOE must indicate which specific compounds will be analyzed by XRF; provide a general approach for using XRF, including compound-specific calibration; and identify detection limits.

Response The requested information has been provided in the revised Work Plan Addendum.

13. **Section 6.1, Page 22, Paragraph 4** : DOE should provide more process-related detail. This information should include periods of operation, waste volumes, waste types, and waste characteristics.

Response Process-related information compiled in the revised Work Plan Addendum is now considered adequate for its intended use. Additional detail is available to the project, but only the essentials have been included in Section D.9 component-specific portion of the WPA.

14. **Section 6.4, Page 26, Paragraph 3** : The discussion of component specific analytes references Table A-3-2 of the work plan addendum. This section should also discuss in detail background data on waste types, analytical information, and reasons for

selecting which contaminants to analyze for.

Response In the revised approach, all intrusive samples will be analyzed for a comprehensive list of contaminants by medium.

15. **Section 6.6, Page 27, Paragraph 2** : DOE discusses non-intrusive and intrusive samples in this paragraph. However, no specific-criteria for choosing sample locations or parameters are provided. DOE should discuss in detail the rationale for choosing non-intrusive sampling. Also the rationale for selecting intrusive sample numbers and locations, duplicate sample numbers and locations, and quality control samples should be provided.

Response Protocols 1-3 have been expanded to address the issues raised by this comment.

OHIO EPA TECHNICAL REVIEW COMMENTS

OPERABLE UNIT NUMBER 3 (OU3)

RI/FS WORK PLAN ADDENDUM

GENERAL COMMENTS

- 1. DOE should mention that "lessons learned" through removal actions such as Plant 1 Ore Silos will be integrated into the OU3 Workplan.**

Response Lessons learned from ongoing CERCLA and RCRA actions have been incorporated in the revision of the Work Plan Addendum (WPA). As subsequent important lessons are learned, affected practices will be adjusted to benefit.

- 2. Since the definition of this operable unit does not include surrounding soils, DOE should discuss the possibility of contaminants being transferred to OU5 during response actions. Additional characterization in OU5 may be necessary.**

Response OU3 and OU5 management have discussed this issue and are working to determine the most effective means for dealing with the situation during field activities. It is currently anticipated that this issue will be dealt with on a case-by-case basis as the need arises. The Work Plan Addendum (WPA) indicates at several points the need to maintain an active interface between the OUs on this subject.

SPECIFIC COMMENTS

- 1. Section 2.2, Page 9, 2nd paragraph. - Change second sentence to read, "Off-site risks during remediation will be minimized by achieving compliance with ARARs through the use of engineering controls and monitoring at the site boundary".**

Response Since compliance with ARARs only may still result in unacceptable off-site risks, the use of engineering controls and boundary monitoring will be used to control releases during remediation within acceptable limits.

- 2. Section 3.2, Page 16, 1st full paragraph. - In the fourth line "ARARs" should be "areas".**

Response This typographical error is not repeated in the revised Work Plan Addendum (WPA).

- 3. Section 3.4, Page 17. - Because of its porous nature transite should be more likely to absorb radiological and chemical contamination, not less likely.**

Response The revised Work Plan Addendum assumes that all transite siding and roofing is contaminated by radiological particulates from airborne deposition, namely due to its porous nature, however, due to the expectation that organic chemical compounds will have volatilized from the transite since the time of contamination, sampling is directed to locations in the operable unit which should present the worst case for potential RCRA contaminants. Sample analysis will be by Toxic Characteristic Leaching Procedure (TCLP).

- 4. Section 4.2, Page 21, Line 6. - Add number (7) "evidence of chemical erosion and degradation".**

Response The comment is incorporated in Section D.5.2.1 of the revised WPA as "discoloration, erosion or deposits, or similar visual clues."