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Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

MAY 16 1991

91-ERB-103

Mr. G. C. Sorensen, Manager
Regulatory Programs
Washington Public Power Supply System
P. O. Box 968 (MD-280)
Richland, Washington 99352

Dear Mr. Sorensen:

DISPOSITION OF COMMENTS ON DRAFT A OF RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) FACILITY INVESTIGATION/CORRECTIVE MEASURES STUDY WORK PLANS FOR 100-NR-1 AND 100-NR-3 OPERABLE UNITS

This letter acknowledges that the U. S. Department of Energy, Richland Operations Office (DOE-RL) received the Washington Public Power Supply System (WPPSS) comments on the Draft A of RCRA Facility Investigation/Corrective Measure Study Work Plans for 100-NR-1 and 100-NR-3 Operable Units on December 11, 1990.

Attached you will find DOE-RL's dispositions of the WPPSS's comments on the work plans. Please provide this office with any disagreement with a comment disposition by May 17, 1991.

If there are any questions or need for additional information, please contact Mr. P. M. Pak of my staff on (509) 367-4798.

Sincerely,

Steven H. Wisness
Hanford Project Manager

ERD:PMP

Attachments:
1. 100-NR-1 Disposition of Comments
2. 100-NR-3 Disposition of Comments

cc w/o atts:
R. E. Lerch, WHC

RCRA Facility Investigation/Corrective Measures Study Work Plan for the 100-NR-1 Operable Unit, Hanford Site, Richland, Washington Draft A

Commenters were: Argonne National Laboratory/Department of Energy, Headquarters (DOEHQ), Martin Marietta HAZWRAP (HAZ), General Support Services Contractor (GSSC), Department of Energy, Office of Environmental Restoration and Waste Management - On-Site Remediation Branch (DOEER), Department of Energy, Office of Chief Counsel, Richland (DOECC), Washington Public Power Supply System (WPPS), Department of Energy, Nuclear Materials Compliance Division (DOENM).

GENERAL COMMENTS

Comment 1

The document was not reviewed specifically for editorial errors, however, when found they have been noted (See Editorial Comments). A technical editing for correct spelling, sentence structure and grammar should be undertaken. (GSSC)

Response to Comment 1

The document is being edited once again to correct any spelling, sentence structure or grammatical problems.

Comment 2

The EPA guidance document suggests that a "Cost" and "Key Assumptions Section" be included as sections in the work plans. These two sections would help in putting into perspective the proposed work. (GSSC)

Response to Comment 2

Per written and verbal instructions from DOE-RL, cost and key assumptions section will not be included in the work plan at Hanford.

Comment 3

Before a RFI/CMS work plan can be developed, the existing data (for example; details of site specific geology and hydrology, contaminate occurrences as presented in Sections 2.2.2, 2.2.3, and 3.1.2) should be defined such that data gaps can be identified. One method would be to construct a summary table. Also, references have not been made of all of the site specific information and studies that have been done or are currently underway. Examples of the ongoing programs include: 3-D modeling of the disposal trenches being undertaken under the "Liquid Effluent Study", monitoring of 1301-N, 1324-N, and 1325-N liquid waste disposal facilities done under "RCRA Ground-Water Monitoring Projects for Hanford Facilities". The lack of depth in the scoping and development of the work plan is apparent. (DOE-HQ, GSSC)

Response to Comment 3

In order to meet the milestone dictated by the Tri-Party Agreement, document review had to be somewhat limited out of necessity. However, 150 documents are referenced in this work plan and more than twice that many were examined by the writers. Document citation was based on whether the documents were considered relevant to development of the work plan. Regarding the Liquid Effluent Study and RCRA Groundwater Monitoring Studies, a number of these documents have in fact been cited. The 3-dimensional monitoring of the 100-N Area and its interactions with the Columbia River is in very much a draft form and cannot be referenced. In addition, the work plan specifies an initial data review and evaluation task, in which data from ongoing programs and investigations conducted after development of the work plan will be addressed. No changes to the document are warranted regarding this comment.

Comment 4

A discussion of the local physiographic setting should be expanded to provide a greater emphasis on the salient topographic features (geomorphology, drainage swales, etc.) which may effect transport of contaminates at the site. This includes local recharge and discharge of ground water, overland flow due to a precipitation event, and eolian processes. (DOE-HQ, GSSC)

Response to Comment 4

Physiographic factors of the 100 Area have been discussed to the extent applicable and appropriate in Section 2.2 "Physical Setting." Salient topographic features are addressed in the section on topography. Drainage swales, overland flow and surface water issues are discussed in the section on surface hydrology. Recharge and discharge of the aquifer are discussed in the hydrogeology section. These sections show that the major influences of the surface geomorphology on contaminant transport are the Columbia River and the glacial "hummocky" typography. The presence of the Columbia River provide a strong sitewide influence on migration that is locally affected by the glacial "hummocky" terrain depending upon the extent and type of constituent release. This will be emphasized in Section 2. It will be noted in the geology section that no evidence of significant aeolian erosion or deposition was noted during facility inspections.

Comment 5

The text calls out for all current and new monitoring wells to be sampled quarterly for the long list of analities . This appears not to be cost effective. An analysis of the initial round of sampling should allow the development of a greatly reduced anality list. This list may vary from area to area depending on the identified contaminates of concern. Additionally, based on the initial sampling round, a reduction in the number of wells included in the monitoring network could be undertaken. (GSSC)

Response to Comment 5

The intent of the sampling plan is to present an initial episode of sampling employing the long list of analytes for a suite of wells to be determined during an early well evaluation task. Subsequent sampling rounds will be analyzed for a reduced list, to be determined on a case-by-case basis depending on initial results. The document will be reexamined to ensure that this is made clear and revised where it appears to be necessary to clarify this point. It is agreed that a reduction in a number of the wells for this program is appropriate and the text states that the wells to be sampled will be based upon on initial suitability study. Please refer to the response to Specific Comment #80.

Comment 6

A consistent set of standards needs to be used over the different NR Operable Units. These standards should cover: legends, map and cross-section scales/formate, standard set of plates, standardized boiler plate to cover: vegetation, generalized geologic settings and stratigraphy, meteorology, etc. Such standards developed at this operable unit could be used on future work plans. This would reduce variations between work plans and reduce cost through reduction of duplication of effort by each contractor. (GSSC, DOE-HQ)

Response to Comment 6

It is agreed that consistent set of standards should be used over the different 100-N operable units. In developing the two work plans, thus far in 100-NR-1 and 100-NR-3 standards have indeed been developed regarding legends, scales and plates, and we expect that these standards will be used eventually when the work plan for 100-NR-2 is prepared. No changes to the document are warranted.

Comment 7

The issue of inclusion of HGP within the work plan should be discussed. HGP was not one of the signers of the consent order. If a third party agreement has been signed with HGP it should be mentioned in the work plan. (GSSC)

Response to Comment 7

The HGP is a facility operated by the Washington Public Power Supply System on land leased from the Department of Energy. The Department of Energy is owner of the property and its potential environmental problems, whether the legal authority is based on CERCLA or RCRA. Because DOE, as property owner, is a potential responsible party, it is completely appropriate and in fact necessary that the HGP be included in this work plan. It will be noted in the introduction to the work plan that the HGP is operated on DOE-owned property.

Comment 8

Another method for the collection of aquifer parameters that should be included is the use of dye tests. With the large number of sampling points (wells, springs), the addition of non-intrusive dye tests would be appropriate for the determination of travel times, estimations of K and dispersion, etc. Dye could be introduced at a variety of points at the site and monitored at the springs and any of the other monitoring wells. From this testing the areal distribution of aquifer parameters could be collected. (GSSC)

Response to Comment 8

Dye/tracer tests could provide useful information for identifying the natural groundwater flow regime that is established in the 100-N Area after all disposal of reactor effluents is terminated. Dye/tracer tests will be added to the proposed investigations for this purpose.

Comment 9

The hydro-geologic conceptual model presented in the work plan is very general in nature. Based on the information available on the site (past studies), a more detail conceptual model addressing the regional flow regime could be constructed and should be presented in the work plan. This detailed model should address the interaction of the regional vertical flow and that induced by the extensive ground water mound at the N Reactor with special attention on contaminate transport. (GSSC)

Response to Comment 9

Very little information is currently available to determine the vertical flow patterns and impacts on the deeper aquifers that may have resulted from the disposal of large volumes of liquids and the formation of large ground-water mounds at the site. Much of the proposed investigation is designed to determine these impacts. However, the discussion of regional flow will be expanded to include as much information as is readily available concerning flow in and between the principal water-bearing zones beneath the Hanford Reservation. A brief review of analysis of the impact of mounding on the deeper water bearing-zones at nearby 100 Areas will also be undertaken. If any significant impacts have been identified, a brief discussion of these impacts will be added to the work plan.

Comment 10

A plate or figure identifying each of the structures located within the area covered by the 100-NR-1 work plan needs to be supplied. This is required so that the reader of the work plan can locate the structures called out in the text. Also a similar figure or plate which exhibits the location and areal extent of the unplanned releases would be helpful along with grids showing the location of sampling points/geophysical lines. (GSSC, DOE-HQ, DOE-RL ERD)

Response to Comment 10

Such a figure identifying the structures at the facility is being prepared and will be included in the next revision of the work plan.

Comment 11

A vast amount of information is presented in the work plan. It is difficult to match the investigative work to be conducted within the NR-1 source units. This plan outlines the larger scale work that is being conducted over the entire 100-NR Operable Unit. It may be appropriate to identify separately the source and ground water investigations. (DOE-HQ)

Response to Comment 11

The plan does indeed identify separately the source and groundwater investigation. Task 1 of the Phase I RFI, discussed in Section 5.3.2 of the work plan, is the Source Investigation. Task 6, discussed in Section 5.3.6, is the Groundwater Investigation. No changes to the plan are required by this comment.

Comment 12

The general organization of the work plan could be improved. The current structure with its subdivision of sections, repetition of data, and general disjointed presentation of sources, hydrologic information, and proposed future work, creates a very cumbersome document. A review and critique of the organization of the work plan should be undertaken with the goal of the revising the outline so that concise and easy to follow future work plans can be written. (GSSC)

Response to Comment 12

The plan has been carefully organized to provide a standard for future RI/FS work plans. The flow of ideas is meant to go from background information on operations and the environmental setting to specific sources of contamination in the environment and then developing goals and rationale for activities. This approach is felt to be the least repetitive and provide the most reasonable progression. In addition, the organization of potential sources of contamination into groups provides a realistic and manageable approach to the performance of the RFI activities. No change in the work plan is warranted.

Comment 13

During the review of the 1100-EM-1 1/2 FS, concerns were raised about the appropriateness of some of the ARAR's. Some of these same concerns can be found in this work plan. A study is underway (requested by the Mr. Carosino, Office of Chief Counsel) by WHC on the ARAR's and the results of this study should be integrated into this work plan. (DOE-RL CC)

Response to Comment 13

It is agreed that administrative and procedural standards are not ARARs. The appropriate text and tables will be altered to meet the concerns of this comment. In addition, the ARARs will be revised following completion of the WHC study.

SPECIFIC COMMENTS

Comment 1

Page WP-1, Section 1.1, Para. 2, Last Sentence: The reason for including the statement about the MTCA is not obvious. The program is only now being developed and it is too early to make a comparison to CERCLA. Furthermore, this statement is not necessary in the context of this paragraph. (DOE-RL CC)

Response to Comment 1

The Model Toxics Cleanup Act Cleanup Standards were officially adopted in January 1991. Therefore, it is appropriate to discuss it in this section. It will be noted in the work plan that the standards have been adopted.

Comment 2

Page WP-4, Section 1.1.2, Para. 2: This paragraph states that a significant difference between the RFI/CMS and RI/FS is that the former is performed concurrently and the latter is performed consecutively. It would be appropriate to state any other differences between the two programs in this section. (GSSC)

Response to Comment 2

Other significant differences between CERCLA and RCRA, such as CERCLA health-based cleanup criteria, compliance with applicable or relevant and appropriate requirements and CERCLA activities coming from record of decision rather than modification of RCRA permit are already discussed in this section. No changes to the work plan appear necessary.

Comment 3

Page WP-3, Section 1.1.1: The Interim Final Risk Assessment Guidance for Superfund, Volume I (July 1989) should be referenced in this paragraph and utilized rather than the Superfund Public Health Evaluations Manual (October 1986). (DOENM)

Response to Comment 3

The Interim Final Risk Assessment Guidance for Superfund, Volume I, recommended in this comment will be referenced in the work plan.

Comment 4

Page WP-7, Section 1.3.1: It would be appropriate to include in this discussion the rationale for the delineation of the boundaries of the Operable Units. This delineation will help explain why the boundary shown for 100-NR-2 extends half-way into the Columbia River channel while the others stop at the river bank. (HAZ, GSSC)

Response to Comment 4

This section will be revised to include a discussion of the boundaries of the operable units. The discussion will address the Tri-Party Agreement, the WHC Preliminary Operable Unit Designation Project, and appropriate other sources.

Comment 5

Page WP-9, Section 1.3.2, Last Para., Third Sent.: The finding of imminent and substantial endangerment is a threshold finding the regulatory agency must make prior to issuance of a CERCLA Section 106 or RCRA 7003 administrative order for either sort-term or long-term remedial action, ie. the finding of imminent and substantial endangerment does not automatically trigger interim corrective actions nor is it necessary to conduct interim corrective actions. Item 1 should be reworded to read "(1) determine the need for interim corrective actions;". (DOENM)

Response to Comment 5

Revising the sentence as shown will invite next reviewer to ask "How do you determine this?" To avoid this, the section in question will be reworded to state "...(1) determine if any source of contamination may pose an immediate or short-term threat to human health or the environmental, which may trigger interim corrective actions."

Comment 6

Section 2.0: A general area wide map is required showing the location of buildings called out in the text. As presented, the reader has no idea where some of the structures discussed in the text are located. For example, Section 2.1.4.1 calls out buildings 105-N Reactor Building and 109-N Heat Transfer Building but the plates do not identify their location. Other structures that need to be identified, some of these include: 120-N-4 Non-hazardous and Non-radioactive Waste Storage Pad. (GSSC)

Response to Comment 6

As noted above, a map identifying buildings and structures at the site will be prepared and will be included.

Comment 7

Page WP-17, Section 2.1.3, Para. 2, Line 3: After "of" add "byproduct steam used by the Washington Public Power Supply System's Hanford Generating Plan (HGP) to generate". Similarly, in line 8 after "operation" add "byproduct" to clarify that steam was always a byproduct of the N Reactor operation. (DOE-RL CC)

Response to Comment 7

These suggested changes will be made to the document.

Comment 8

Page WP-19, Section 2.1.3.3, Line 4: Delete "co-" before production and in line 5 change "electrical power" to "byproduct steam which was used at HGP to produce electricity". (DOE-RL CC)

Response to Comment 8

These suggested changes will be made to the document.

Comment 9

Page WP-30, Section 2.2.2.1.2, Figure 9: The text calls out 6 formational units yet Figure 9 does not display all of the formations described. In addition, Figure 9 does not show the location of the "early Palouse soil". (GSSC)

Response to Comment 9

The stratigraphic column will be revised to reflect the descriptions in the text.

Comment 10

Page WP-34, Section 2.2.2.1.2.2, Para. 1: When discussing the subdivisions of the Columbia River Basalt Group there are inconsistencies between the text and the stratigraphic column provided in Figure 9. These inconsistencies include the "Pichre Gorge Basalt" which has been omitted from the column. Also the column indicates that the Yakima Group includes the Imnaha which is inconsistent with the text. (GSSC)

Response to Comment 10

The text and stratigraphic column will be revised to remove these inconsistencies.

Comment 11

Page WP-34, Section 2.2.2.1.2.3: This sentence makes no geologic sense. How can the paleo-channel be located west of the 100 area when the current river channel effectively runs east-west. Clarify the balance of the sentence. Is this a reference to inter-flow sediments within the basalt sequence? (GSSC)

Response to Comment 11

Because the ancestral Columbia River flowed in a southerly direction to the west of 100-N and down through Gable Gap, the sentence does indeed makes geologic sense. However, the description will be revised to more clearly state this.

Comment 12

Page WP-37, Section 2.2.2.1.2.5, Para. 1: A discussion of the age and thickness of the Early Palouse soil is appropriate. (GSSC)

Response to Comment 12

Although the early palouse soil has not been identified in the 100-N Area, a short discussion on the age and thickness of the unit will be included.

Comment 13

Page WP-37, Section 2.2.2.2: The last sentence is confusing in its references to Plates A & B. A clarification needs to be added that these lines of section are not the same lines of section shown in Figure 14. (GSSC)

Response to Comment 13

The location of the cross-section shown on Plates A and B will be clarified. In addition, Plates A and B may be moved into the document as figures.

Comment 14

Page WP-38, Figure 12: The figure has a double vertical scale which is not labeled as to what units of measurement are used nor what the relative datums are. (GSSC)

Response to Comment 14

The scales will be labeled.

Comment 15

Page WP-40, Figure 13: This figure does not contain all of the wells called out in the text. (GSSC)

Response to Comment 15

All borings referenced will either be clearly located on Figure 13 or another appropriate figure or will be removed from the discussion.

Comment 16

Page WP-41, Section 2.2.2.2.2: The paragraph states that "The basalt member identification is uncertain". If this statement is true that you can not identify specific flows/members, as such, it would be more appropriate to use a number designation for the flows and inter-flow sediments. (GSSC)

Response to Comment 16

The two sentences in question will be revised to read "This unit is described in the log for BH-1 as aphanitic, highly to moderately-vesicular dark-grey basalt that is closely fractured at the top, though the specific basalt member was not identified (WPPSS 1974)." The sentence reading "The basalt member identification is uncertain." will be deleted.

Comment 17

Page WP-43, Figure 14: Add the lines of section that plates A & B represent. Also Figure 15 calls out Well # N-8P which is not located on Figure 14. (GSSC)

Response to Comment 17

The locations of the cross-section shown on Plates A and B will be better presented on either a figure before Figure 14 or on the plates themselves. This will be done. Regarding Well N-8P, Well N-8 on Figure 14 will be identified as a well cluster of which Well N-8P is one of the wells.

Comment 18

Page WP-44, 45, 46, Figures 15, 16, and 17: A foot note should be added indicating the datum used for the vertical scale. (GSSC)

Response to Comment 18

A footnote will be added indicating that the datum for the vertical scale is sea level.

Comment 19

Page WP-48, Section 2.2.3.1, Para. 1: Add a reference for the source of the groundwater level data. (GSSC)

Response to Comment 19

A clearly identified reference for the cited ground-water level data will be added.

Comment 20

Page WP-64, Section 2.2.3.2.4, Para. 2: The description of the stage changes of the river and related effect on the adjacent unconfined aquifer is superficial. Some background information on the magnitude of the fluctuations with distance from the river would be appropriate. This information has been presented in other 100 area work plans and if no specific information related to 100-NR-1 is available then this information could be presented to yield an idea of the extent of the effect of river stage fluctuations on ground water. This information aids in determining if this is a major factor in the flow and transport of contaminates at the site. (GSSC)

Response to Comment 20

Very little information regarding the impact of changes in river stage on ground-water gradients was available at the time the work plan was drafted, and the essential elements of this information were included in the work plan. A significant element of the investigation proposed in the work plan is designed to address this issue. In addition, studies of the impact of the river on the ground-water flow regime are ongoing and references to these studies will be added to the text. There is some discussion available regarding the impact of the river on ground-water flow in nearby 100 Areas, and a brief discussion of these will be added to the text.

Comment 21

Page WP-73, Section 2.2.6.2, Para. 3, Line 12: Change "which will require DOE to prepare a management plan" to "pursuant to which DOE will prepare a management plan," since it is not clear that the state regulation fulls written a waiver of sovereign immunity. (DOE-RL CC)

Response to Comment 21

Changes will be made as suggested.

Comment 22

Page WP-78 through WP-88: There does not appear to be any reason for the inclusion of septic tanks and sanitary drainage fields in this investigation. Sanitary sewage facilities are specifically excluded for RCRA/CERCLA action. If there are reasons for the inclusion of these units as a potential source then this information needs to be added. (HAZ, GSSC)

Response to Comment 22

The reason for inclusion of the septic tank and sanitary drainage fields are as follows: (1) these units are listed in WIDS, (2) the RCRA exemption applies only to sanitary sewage that is discharged to a POTW, (3) if the septic tanks or drainage fields may have discharged hazardous waste to the environment, then they will be subject to either CERCLA or RCRA. All these units are considered to be potential sources of contamination at the site. No changes are warranted in the document.

Comment 23

Page WP-93, Figure 29, 30, 31, 32, 33, 34, 35, 36, 38, 39, 40, 41, 42, 44, 45, 46, 50, 51, 52, 53, 54, 55, 56, 62: Inclusion of the current monitoring wells along with proposed wells on these figures would greatly aid the reader in determining data needs related to the potential sources. (GSSC, HAZ)

Response to Comment 23

The locations of existing monitoring wells will be added to the identified figures.

Comment 24

Page WP-103, Para. 2: This section states that the state issued the discharge permit for 116-N-1. Is this statement true and is their also a EPA issued NPDES discharge permit for springs? Please clarify this section. (GSSC, DOE-RL CC)

Response to Comment 24

The EPA issues NPDES permits for federal facilities. The statement in the work plan will be amended to reflect this.

Comment 25

Page WP-111, Section 3.1.1.1.7: This section states that the burn pit dimensions have been altered over time. Describe the original dimensions and how they have changed. (GSSC)

Response to Comment 25

The dimensions of the burn pit have reportedly varied per interviews with current and former workers. Because of the lack of verifiable or citable data, it is not possible to describe the original dimensions or subsequent alterations for the burn pit. Investigation of this unit will be carried out during non-intrusive activities at the beginning of the Phase I RFI, which will determine if there are hazardous or radioactive wastes in the environment at the burn pit. No alterations to the document are warranted.

Comment 26

Page WP-123, Section 3.1.1.2.4: This section appears to be written to comply with 40 CFR Sections 280 & 281 which is not totally appropriate. Currently, Washington State has purposed regulations covering UST which are different and, in parts, more stringent than the federal regulations. These regulations can be found in the Washington Administrative Code (WAC) 173-360. The section should be written addressing the purposed WAC regulations. (GSSC)

Response to Comment 26

This section was not written to comply with sections of 40 CFR nor with sections of the Washington Administrative Code. The section is merely to describe the tanks that are there as background to activities suggested in this work plan. No alterations to the document are warranted.

Comment 27

Page WP-133, Figure 46: Section 3.1.1.1.3.3.4 calls out the 163-N Demineralization Plant which is not shown on the Figure. (GSSC)

Response to Comment 27

Accepted. The building will be clearly identified on the appropriate figure.

Comment 28

Page WP-148, Section 3.1.1.3.8.4: The text states that this pond did not receive any listed or characteristic waste. State the rationale for inclusion of this site into the RFI. (GSSC)

Response to Comment 28

The filter backwash discharge pond is included for the following reasons: (1) the pond is listed on WIDS, (2) while there is no documentary evidence that listed or characteristic wastes were discharged to this pond, validatable sampling of the remaining pond sediments or pond waters has not been done. For these reasons, the pond is included. A statement clarifying that no documentation for hazardous wastes or materials at this site will be added to the description.

Comment 29

Page WP-165, Section 5.3.2.2.2: The buildings, structures, power lines and pipelines may cause interference with the proposed geophysical survey techniques (for example, a magnetic survey and overhead power lines). This should be clarified in the proposed work plan. (DOE-HQ)

Response to Comment 29

The work plan will be revised to clarify the potential effects of buildings, structures, power lines and pipelines on proposed geophysical survey techniques.

Comment 30

Page WP-167, Section 3.1.1.4: The inclusion in this investigation of any potential sources originating from the HGP is highly questionable based on the following:

1. The HGP is not covered under the TPA and any corrective action must be taken by HGP. (GSSC)

2. The hydraulic gradient in the area indicates any ground water contamination due to sources originating within the confines of HGP would migrate directly towards the river and would have little to no impact on the ground water underlying the lands covered by the TPA. (GSSC)

Response to Comment 30

Issue #1 - It is appropriate that the HGP be covered in this document. Please see the response to general comment #7 above.

Issue #2 - The direction of ground-water flow in the vicinity of the HGP has not been clearly identified. However, some component of flow parallel to the river is expected, particularly since the dissipation of ground-water mounds in the 100-N Area. In addition, even if ground-water flow is principally towards the river, an investigation of any significant source of potential contamination would be required to ensure that the impact on the river would be adequately understood. No changes are required to the work plan.

Comment 31

Page WP-167, Section 3.1.1.4.1: The text states that the 20,000 gallon diesel storage tank at HGP is monthly dip tested for product levels. This tank contains a Levelometer which is read every working day. (WPPS)

Response to Comment 31

The description of the diesel storage tank will be clarified to add this information.

Comment 32

Page WP-167, Section 3.1.1.4.2; The inclusion of HGP NPDES as a source is questionable based on the above comment. (GSSC)

Response to Comment 32

Please see responses to general comment #7 and specific comment #30 above. No changes are required to the work plan.

Comment 33

Page WP-169, Section 3.1.1.4.3: This section refers to an oil spill which was contained by the pond. This spill occurred on January 2, 1987 and originated at the N-Reactor and was cleaned up by UNC and JAJ in early February 1987. UNC provided the Supply System with some documentation. (WPPS)

Response to Comment 33

The section will be revised to include this information.

Comment 34

Page WP-169, Section 3.1.1.4.7: The text refers to the removal of 1,000 gallon leaded gasoline tank which was removed in October 1989 but it does not mention that an adjacent 1,000 gallon unleaded gasoline underground storage tank is still in place and in use. (WPPS)

Response to Comment 34

The section will be revised to include this information.

Comment 35

Page WP-174, Section 3.1.2.1.1.2, Para. 2: What is the mechanism for horizontal transport of radionuclides in the vadose zone? This would be an appropriate location to discuss the geochemical characteristics of transport of radionuclides as was done is Section 3.1.2.1.4. (GSSC)

Response to Comment 35

A brief discussion of the mechanisms of lateral migration of contaminants in the unsaturated zone and a clear reference to the discussion of the geochemical factors that control contaminant migration presented in Section 3.1.2.1.4 will be added. However, due to the amount of material available and its impact on migration in the saturated as well as unsaturated zone, the discussion of the geochemical factors controlling contaminant transport will remain in Section 3.1.2.1.4.

Comment 36

Page WP-189, Table 20: Headings are needed to identify what items are listed in the underlying columns. Also, footnotes need to be added explaining the abbreviations used in the table. (GSSC)

Response to Comment 36

Appropriate headings and footnotes will be added to Table 20.

Comment 37

Page WP-191, Section 3.1.2.2.3, Para. 1: The first 3 sentences infer that all of the wells from which the data was collected for the generation of Table 25 were also sampled during the July/August 1989 sampling time period, and that Table 26 lists only those wells which exceed the standards. State if the wells sampled are the same or note which wells were not sampled during the July/August 1989 sampling period. (GSSC)

Response to Comment 37

These sentences are not written to imply that all wells sampled during the period April, 1987 to November, 1989 were sampled during July/August 1989. These data have been included only to provide a summary of contamination for the longer period identified and a more recent, individual sampling event. The previous discussions regarding the ground-water sampling program at the 100-N area have clearly indicated that sampling frequency and parameter list vary considerably between individual sampling events. However, the basic elements of the sampling program have been outlined. Due to the considerable variability in sampling programs conducted in the 100-N Area, a

more detailed presentation of the sampling undertaken under each of the individual programs and during each month of the specified period would be extremely tedious and difficult to undertake; while adding little additional value to the discussion. Consequently, the identification of those wells included in Table 25 but not Table 26 is not planned at this point.

Comment 38

Page WP-197 & 8, Section 3.1.2.2.3.4, Para. 2 & 3: State/clarify the significance of the fact that the wells with the contaminates are adjacent to the river. Also a statement on the sampling procedure used, especially if the sample had or had not been filtered would be appropriate. (GSSC)

Response to Comment 38

It is unclear whether any significance can be attached to these wells being located next to the river. The source of these contaminants has not yet been identified. An attempt to identify the most likely source of the contaminants found in the referenced wells will be undertaken. If a reasonable source is identified, it will be identified accordingly. Otherwise, a statement will be added to clearly indicate that the source of these elevated levels of potential contaminants is not known. An attempt will also be made to determine if the samples were filtered.

Comment 39

Page WP-199, Section 3.1.2.2.3.6, Para. 1, 2, 3: Additional text needs to be added addressing the source of these contaminates. This additional text would be appropriate in the section discussing sources. (GSSC)

Response to Comment 39

Additional efforts will be made to identify the source of these constituents. However, the source may not be apparent and a statement to that effect may have to be added.

Comment 40

Page WP-206, Section 3.1.2.2.4, Para. 2: The last sentence is unclear. Clarify and expand on this concept. An additional discussion on diffusion gradients, cation exchange and effects of changes in water chemistry on the mobility of contaminates would be appropriate. (GSSC)

Response to Comment 40

As has been discussed, a few sentences clarifying the concept of saturating a soil's adsorption capacity will be added to an earlier paragraph in the same section. However, no additional discussion regarding the various geochemical factors that influence radionuclide migration will be added. We have presented such a discussion in Section 3.1.2.1.4 and have referenced this discussion at the beginning of this section (pg. 201, paragraph 2). Also please refer to response to Comment 35 on page 14.

Comment 41

Page WP-206, Section 3.1.2.2.4, Para. 5: The historic presence of a ground water mound in the area (several months prior to fall water level measurements) and the distribution of tritium is not surprising. The call for a high permeable material without any lithologic evidence to support the statement is premature. The cross-sections presented in this work plan show no evidence of a lithologic unit (channel deposits etc.) which would indicate that a higher permeable material exists. A more complete analysis of the hydro-stratigraphic framework based on well data and historic flow regime is needed. (GSSC)

Response to Comment 41

As has been discussed, the text will be modified to identify a high permeability channel as only one of several possible explanations for the contaminant migration patterns observed. It will be further pointed out that the data are only suggestive that tritium may not have followed expected migration pathways (see Comment #42 below).

Comment 42

Page WP-209 through WP-212, Figures 71 through 73: The 3 figures suggest that the contaminate distribution over time is not what would be expected based on flow through a homogeneous aquifer with a constant gradient but is what would be expected though a non-homogeneous aquifer with a varying gradient. Examination of the well locations (data points) and data values indicate that this distribution could be a contour and data density bias due to the fact that the same wells were not use in the construction of each map. It is suggested that text be added stating this as a potential cause of disparity between anticipated contaminate distribution and that demonstrated on the figures. (GSSC)

Response to Comment 42

The text will be changed to indicate that bias due to data density may be responsible for the apparent pattern of tritium migration. In addition, the tritium contour maps will be redrawn to indicate much greater uncertainty in tritium contours than is currently indicated.

Comment 43

Figures 71, 72, 73, 74, 75, 76, 77, 78: The contour lines locally are not faithful to the data points on the map. An explanation for deviation from the data is warranted. If based on other information which would support a contouring bias, then state this information. There is also a discrepancy between figures on the number of wells and their locations exhibited on the figures. For example, the nested wells N-67, N-69, N-70, N-39 are not shown on all of the figures. Also, a foot note needs to be added to the figures indicating what aquifer is being represented and whether all of the wells sampled are screened through the same zone. (GSSC) Recommend that the source areas be added onto the figures. This would aid the reader in making an association between the source units and known contamination plumes. (GSSC, HAZ)

Response to Comment 43

The cited figures will be reexamined to identify and remove unwarranted biases in contouring, particularly in regard to the figures depicting tritium concentrations (see comment #42 above). The cited figures will also be reexamined to ensure the inclusion of a consistent set of wells. The aquifer zone for which contaminant concentrations are being depicted will also be clearly indicated on each

figure. While all source units will not be identified, the three most relevant sources will be identified (1301-N, 1324-NA, and 1325-N).

Comment 44

Page WP-218, Section 3.1.2.2.4, Para. 2: The paragraph is suggesting that vertical flow in the area of the ground water mounds causes higher contaminate concentrations with depth in adjacent wells. WP-217, Section 3.1.2.2.4, Para. 1 does not appear to agree with this statement. (GSSC)

Response to Comment 44

This paragraph begins by confirming that the general pattern, namely that much contamination has been limited to a relatively narrow zone centered around the water table, is not confirmed by tritium data. However, as previously discussed in this section, the strontium and other radionuclide data do seem to confirm this pattern. The reason for the apparently different behavior of these materials is not known and will be assessed during the RFI. Consequently, no changes in the text appear necessary.

Comment 45

Page WP-220, Section 3.1.2.2.4, Para. 3: This paragraph states that samples from wells N-23 and N-26 have identical concentration for Fe, Mn, Ba, and Cr. It is highly unlikely to have identical concentrations even in a sample spilt, let alone from two different wells. Suggest that the data files be check. (GSSC)

Response to Comment 45

This statement was meant to indicate that the peak concentrations observed from these two wells (as a group) were the quoted amounts. The statement will be edited to avoid this confusion.

Comment 46

Page WP-232-233, Table 33: The text refers to Figure 21 for the location of the sampling points. Yet the figure does not have labels showing the location of the sampling points. (GSSC)

Response to Comment 46

A figure will be added identifying sampling locations that are referenced in this table.

Comment 47

Page WP-241, Section 3.1.3.1, Para. 1: This section discusses a study that was conducted on the effects on vegetation adjacent to 116-N-1 Crib and trench. Clarify the purpose and add the reference. (GSSC)

Response to Comment 47

The section will be revised to clarify the purpose of the study, which was to compare the relative availability of radionuclides to plants before and after liquid radioactive wastes had passed through soil. The reference is already included in the report.

Comment 48

Page WP-254, Figure 84: An explanation for why the 100-KR-4 aggregate ground water unit extends out to the middle of the river and the 100-NR-1 does not may be warranted. Also, 100-NR-3 does extend out to into the river and the figure shows it stopping at the river bank. The addition of gross groundwater contours would also help define the relationship of the units to each other. (GSSC, HAZ)

Response to Comment 48

The figure will be revised to remove the 100-KR-4 groundwater unit boundary that is in the middle of the river. The figure is merely to show that these units are adjacent. 100-NR-3, which is not called out in this figure, does not in fact extend out into the river and this is discussed earlier in the work plan.

Comment 49

Page WP-255, Section 3.1.5.3: There is currently an ongoing study of the ground water contaminate migration from the 200 area. This information can be found in the sitewide "RCRA Monitoring Project For Hanford Facilities". This ongoing work should be referenced. (GSSC)

Response to Comment 49

The RCRA Monitoring Project for Hanford Facilities have indeed been referenced in the groundwater section of the work plan. Specific studies of contaminants from the 200 Area entering the 100-N Area have not been discovered in these documents. No change to the work plan is warranted.

Comment 50

Page WP-255, Section 3.1.5.2, Para. 2: This paragraph references to Figure 79 as a map showing boundaries of the operable units. Figure 79 is a graph. (GSSC)

Response to Comment 50

The paragraph will be changed to refer to Figure 84.

Comment 51

Page WP-258, Table 47: Several of the ARAR listings appear to be erroneous. For example, 40 CFR 191 is not "applicable"; nor on page WP-261 is the Shoreline Management Act since the Hanford Site is a NPL site pursuant to CERCLA. The State of Washington's Model Toxic Control Act should be "potentially relevant and appropriate" rather than "applicable". (DOE-RL CC)

Response to Comment 51

The referenced entries will be changed as suggested except that the MTCA, as adopted, is considered an ARAR for CERCLA sites and will likely be applied at RCRA corrective action sites. Therefore, MTCA is considered an applicable potential CAR for the 100-NR-1 operable unit.

Comment 52

Page WP-258, Para. 2, 2 Sentence: I would define applicable requirements as those statutes and regulations which would apply as a matter of law if the Hanford Site had not been listed on the NPL. (DOE-RL CC)

Response to Comment 52

The sentence will be changed to "the appropriate CAR for the above should be protective of human health and the environment since all of these...".

Comment 53

Page WP-258, Table 47: This table should list proposed regulations or standards as to-be-considered (TBC) criteria. If promulgated as final before signature of the ROD, proposed regulations or standards become potential ARARs. Until promulgated, the proposed regulations or standards are TBCs, which may be used in the absence of ARARs (CARs) or where ARARs (CARs) are not sufficiently protective. (DOENM)

Response to Comment 53

The text will be changed as indicated.

Comment 54

Page WP-260, Table 47: The NCP is not appropriate to list as a potential CAR (or ARAR). (DOENM)

Response to Comment 54

The text will be changed as indicated.

Comment 55

Page WP-265, Table 49: Units can not be found on the table. State what the units are for the values listed. (GSSC, HAZ, DOE-HQ)

Response to Comment 55

The table will be revised to give units.

Comment 56

Page WP-266, Table 50: Footnotes a, b, and c can not be tied into the above table. (GSSC)

Response to Comment 56

Footnotes a and c will be added in their proper place. Footnote b is on the table.

Comment 57

Page WP-267, Para. 3, 3 and 4 line: Change "are relevant..." to "may be relevant...". Additionally, it is not clear that the RCRA regulations should be used to determine cleanup levels for radioactive constituents since they are not solid waste. The CERCLA methodology may be the appropriate mechanism to use, even though it will be done as part of the RFI/CMS activity. (DOE-RL CC)

Response to Comment 57

The text will be amended from "are relevant..." to "may be relevant...". CERCLA methodology is discussed on the following page. Because cleanup standards have not been determined for the Hanford Site and because there are hazardous constituents detected in some groundwater wells, both sets of standards are discussed.

Comment 58

Page WP-268, Section 3.2.2, Para. 4: An additional reference, WAC 173-201 should be added in addition to the EPA guidance for water quality standards for this reach of the Columbia River. (GSSC)

Response to Comment 58

The reference will be added to this section as suggested.

Comment 59

Page WP-271, Figure 85: The following should be considered as additions to the pathway model: Air emission (stack) and fugitive dust raining on the Columbia River. (GSSC)

Response to Comment 59

These pathways will be added as suggested.

Comment 60

Page WP-273, Table 51: This table does not address hydrocarbons or its constituents (benzene, toluene etc.) as potential contaminates of concern. State in the text the basis for this exclusion since major historic spills have occurred at the site. (GSSC)

Response to Comment 60

Hydrocarbons will be added to the table.

Comment 61

Page WP-276, Section 3.3.3: The purpose of this section appears to be to provide an evaluation of whether the operable unit provides an immediate or near-term threat. Imminent and substantial endangerment is a finding necessary by statue under CERCLA Section 106 or RCRA Section 7003 for the regulatory agency to make prior to issuance of an administrative order to address

either near-term or long-term threats. The title and conclusions in the Section (and Section 3.3.5) should be reworded to indicate that an immediate or near-term threat does not appear to exist, rather than an imminent and substantial endangerment does not appear to exist. (DOENM)

Response to Comment 61

The text will be amended as suggested.

Comment 62

Page WP-277, Section 3.3.3: A statement related to the danger due to the consumption of aquatic life, (fish, water foul, etc.) or vegetation (wild asparagus, mull berry, etc) which has been exposed to contaminates and may have elevated concentrations due to bio-accumulation should be added. (GSSC)

Response to Comment 62

Radioactive materials may enter terrestrial and aquatic pathways, and lead to public exposures through ingestion of fish, drinking water, and locally grown food. Studies of trends in radionuclide concentrations in these materials does not indicate accumulation or concentration trend increases (Trends in Radionuclide Concentrations for selected Wildlife and Food Products Near the Hanford Site from 1971 through 1988, September 1989, Pacific Northwest Laboratory PNL -- 6992 and Environmental Monitoring at Hanford for 1987, May 1988, Pacific Northwest Laboratory, PNL -- 6464. These issues will be briefly discussed in the work plan.

Comment 63

Page WP-281-283, Table 54: Several of the alternatives labeled as "no-action" are described as having institutional controls as a component. If the CERCLA guidance for conducting RI/FS studies is followed this then is incorrect. A "no-action" option contains only limited monitoring with no institutional controls. The addition of institutional controls even limited is an action option. Remove the "no-action" from the institutional controls. Also the "no-action" option should be included for each of the environmental medium discussed. In addition, treatment and/or removal actions should be considered as General Response Actions to address Air and Biota environmental media. (GSSC, DOENM)

Response to Comment 63

References to institutional controls will be removed from the no-action alternative and will be listed under a separate "Institutional Controls" category. Other treatment and/or removal actions will be considered for ARAR and biological environmental media. Other soil treatment methods will also be discussed.

Comment 64

Page WP-277, Section 3.3.4, Para. 4 and 5: It is hard to believe that the 100-D water has not been tested to date for radionuclides. A check of the records should indicate if this has been done. (GSSC, DOE-RL CC)

Response to Comment 64

While the 100-D water intake has been tested, evidently the analytical results are not available at this time. As soon as the results are available, they will be incorporated into the work plan.

Comment 65

Page WP-305, Section 4.3.2.2: The relationship between this ranking and the EPA methodology needs to be explained. (HAZ, GSSC)

Response to Comment 65

The ranking system described in this section is based on the strategy for pursuing these investigations as presented in the work plan. A brief discussion will be added discussing how this strategy relates to EPA methodology.

Comment 66

Page WP-307, Table 59, Grouping 3, 22 Corridor UPR: Is the ranking for this spill correct? When you compare it with the rest of the grouping only septic systems have as low of a ranking. The text description would suggest that it could be higher. (DOE-RL ERD)

Response to Comment 66

Further investigation and inspection at the site regarding the Corridor 22 UPR, reinforce this ranking of 3. The spill was evidently less than a 100 gallons. Most of which was apparently cleaned up. The description of the unit and the table will be revised to conform with this new information.

Comment 67

Page WP-316, Section 4.3.4, Para. 2: If an investigation of potential sources has been done at HGP then state it. It appears that a double standard is being applied in that all potential sources within the DOE controlled portion of the facility are being investigated inclusive of sampling while HGP is not. If the rational for this exclusion is that the HGP is not covered by the TPA then state it. (GSSC)

Response to Comment 67

An investigation of potential sources at the HGP has been conducted and can be found in Section 3.1.1.4 of this work plan. The ranking for these units is given in Table 59 and discussed in Section 4.3.2.2. Source sampling is being conducted only at those sources in the 100-N Area at which an immediate or near-term threat potentially exists, not at all sources within the DOE-controlled portion of the site. No immediate or near-term threat from the HGP units is apparent. Therefore, no source sampling is planned during Phase I of the RFI at the HGP. The sections noted will be revised as appropriate to clarify these issues.

Comment 68

Page WP-328, Section 5.2.2: The Interim Final Risk Assessment Guidance for Superfund, Volume I should be referenced in this paragraph and utilized rather than the Superfund Public Health Evaluations Manual. (DOENM)

Response to Comment 68

The Interim Final Assessment Guidance will be referenced as indicated.

Comment 69

Page WP-324, Section 5.2.1, A. Release Characterization, #2: An additional appropriate question would be "Is the waste toxic, carcinogenic, or persistent ?" (GSSC)

Response to Comment 69

On page WP-324, release characterization item 2a refers to listed characteristic and radiological waste or constituents. Toxicity, carcinogenicity and persistence are implicit in determining if a waste is characteristic. No change to the document is required.

Comment 70

Page WP-328, Section 5.3, Para. 1, 3 Sentence: A reference to 12 specific tasks located in section 4.0 is made. The 12 specific tasks can not be identified in section 4.0. (GSSC)

Response to Comment 70

Twelve specific tasks should have been discussed in Section 4.3.3 on work plan page WP-312. That section now will discuss those tasks. Section 5.3 will be revised to refer to Section 4.3.3 rather than 4.0.

Comment 71

Page WP-331, Section 5.3.2.2.2: Maps should be included to show the areas that will undergo the various geophysical investigations. (HAZ, GSSC)

Response to Comment 71

Section 5.3.2.2.2 will be rewritten outlining the specific objectives of the geophysical investigations. Each technique will be described and the areas to be investigated by each technique will be defined. Maps will be included where appropriate.

Comment 72

Page WP-340, Table 63: Footnote "a" states that WHC will approve procedures to be used. This is incorrect, Ecology, EPA and DOE must approve of the procedures and by reference in the TPA, SW-846 procedures are the standards. (GSSC)

Response to Comment 72

The table will be revised, deleting the footnote "a" and referencing correct SW-846 methods.

Comment 73

Page WP-353 and 355, Section 5.3.4.2.3: Sampling all 24 spring locations, 6 times and running the full, long list of analities appears to be excessive. A reduction in the number of samples and the list of test analities based on the initial sampling data should be planned. (GSSC, DOE-RL ERD)

Response to Comment 73

Sampling the springs for a full list of constituents for six quarters may be excessive unless extensive contamination including a wide range of constituents is observed. Moreover, it does not now appear practical since spring discharge is significantly reduced and much less apparent now that the previous ground-water mounds have largely dissipated. In order to clearly identify spring discharges and avoid sampling bank storage, it may now only be practical to sample springs during periods of low flow in the Columbia River, such as the late summer. The list of analytes and sample locations from the initial sampling will be reduced, if warranted. The work plan will be revised to reflect these concerns.

Comment 74

Page WP-356, Section 5.3.4.2.4: The location of the farthest up stream sample may still be within the influence of contaminates introduced at the cribs during the time that the extensive ground water mound existed. Add additional text stating any information which would indicate that the sampling point is outside of the influence of the ground water mound. (GSSC)

Response to Comment 74

While it is unlikely that the upstream sampling location shown in Figure 89 would be impacted by the 1301-N and the 1325-N cribs, it is not possible to conclude conclusively that this is so. In addition, an impact from the 1324 infiltration pit is much more likely. Consequently, the sampling point will be moved further upstream to ensure obtaining a sample not impacted by the 100-N area activities.

Comment 75

Page WP-356, Section 5.3.5.1: With the vadose zone characterization being done in conjunction with monitoring well drilling, of which most wells are located outside of the source areas, only "generalized" area wide data will be collected. Based on the x-sections it appears that source specific information is needed to address vadose zone modeling. A reposition of monitoring wells or the addition of wells to collect vadose data within the source areas appears appropriate. (GSSC)

Response to Comment 75

Vadose zone modeling has not been included in the work plan. Consequently, sampling designed specifically to obtain data for such an effort has not been planned. In addition, these investigations follow a phased approach in which the most significant sources of contamination are addressed first. Consequently drilling and vadose sampling have initially been concentrated in the vicinity of the

1325-N and 1301-N cribs. More extensive vadose zone sampling may be undertaken in other areas during later phases of the investigation.

Comment 76

Page WP-358, Section 5.3.5: The vadose zone investigation does not give the number or location of samples, instead these are deferred to the groundwater section. Figures 90 and 91, which give the locations, should at least be referenced in this section. Preferably, the vadose investigation section should include a more complete discussion of location, number, and rationale for the collection of samples of vadose zone. A section addressing this subject should follow the ground water section. (DOE-RL ERD)

Response to Comment 76

The vadose zone section will be revised to include a more complete discussion of location, number, and rationale for collection of vadose zone samples.

Comment 77

Page WP-363, Section 5.3.6: The general location of the ground water monitoring wells appears to be adequate for general characterization of the shallow ground water quality. However, with no specific analysis of the transient ground water flow system that was operating at the time of the injection of the contaminates, specific target locations for monitoring wells cannot be evaluated with respect to determination of background. There appears to be more than a sufficient amount of historic data (ground water level and geologic information) to preform some preliminary modeling effort to aid in the selection of the location of the new monitoring wells. (GSSC)

Response to Comment 77

Some of those wells identified as background wells may be not be representative of background water quality due to the impact of past mounding from the 1325-N crib (or other facilities). These wells should be more appropriately identified as upgradient wells. The actual purpose of these wells is to determine the residual impact of discharge to the subsurface in these otherwise upgradient (under natural conditions) locations. Sampling from these wells may indicate that additional wells, located further upgradient may be necessary to establish background in the area. The text will be modified to clarify the use of these wells. However, modeling will not be undertaken to identify potential background locations. The results of such modeling would be highly speculative based on current knowledge of the ground-water flow regime.

Comment 78

Page WP-373, Section 5.3.6.2.1, Para. 2: If as stated, no vertical control exists for the current wells in the 100-NR area, then what is the bases for the potentiometric maps in Figures 20-24? (GSSC)

Response to Comment 78

This statement will be revised to indicate that while the top of each well casing has been surveyed, the actual ground surface elevation at each well location has not be determined. Thus, water level data available are valid. However, accurate specifications for screen depths are not possible since screen depths have been provided relative to ground surface.

Comment 79

Page WP-373, Section 5.3.6.2.2.1, Para. 2: This paragraph should also include checking construction and utility drawings along with the use of standard utility location methods. Section 5.3.2.2 methods should be used in conjunction with the above methods. (GSSC)

Response to Comment 79

The section stated will be amended to include the subjects.

Comment 80

Page WP-373, Section 5.3.6.2.2.2, Para. 2, 2 Sentence: A total of 71 wells will exist in the 100-N area and to use the entire well population as proposed in a monitoring well network seems excessive with potential analytical costs approaching over an estimated $1,000,000 a year (quarterly sampling). A reduction in the number of wells in the network should be undertaken to reduce cost. This could be accomplished by using the analytical data collected in the first round of sampling of all wells to reduce the number of wells in the monitoring network and to reduce the number of analities to be analyzed for. This reduced anality list could vary over the site. (GSSC)

Response to Comment 80

The current sampling plan does not call for sampling all 71 wells installed on site. Only 52 wells have been selected for sampling. However, sampling of all of these wells may not be necessary. The initial effort planned during the Phase I investigation will be to examine all wells for their suitability. At this point, it is expected that additional wells may be removed from the sampling program. It is not now possible to identify these wells, and the best approach is to make a final selection of wells in the context of the set of wells found suitable for monitoring. The text of the work plan will be revised to ensure that this approach is made clear. In addition, the work plan currently calls for a reduction of the set of analytes where appropriate after the initial rounds of sampling.

Comment 81

Page WP-374, Section 5.3.6.2.1, Para. 3: Splitspoon samples are not undisturbed samples especially if used in permeameters. The text calls out for the use of a fixed piston Shelby tube or a Waterloo sampler would be more appropriate. (GSSC)

Response to Comment 81

The text will be revised to call for the use of fixed piston Shelby tubes or Waterloo samplers when undisturbed samples are taken.

Comment 82

Page WP-375, Section 5.3.6.2.2.2, Para. 2, 3 Sentence: Section 6.0 does not give a more detailed presentation of proposed sampling plans. Section 6.0 is the project schedule. (GSSC)

Response to Comment 82

The reference made in the text is not to Section 6.0 of the work plan itself and but rather to Section 6.0 of the Field Sampling Plan (Attachment 1a) and it is so stated. No changes to the document are warranted.

Comment 83

Page WP-375, Section 5.3.6.2.2.3, Para. 2, Last Sentence: Based on the potenometric maps presented the proposed well N-I-Au may or may not be within the historic ground water mounds influence. As such, it may not be an appropriate location for an up-gradient, background well. (GSSC)

Response to Comment 83

Well N-1-Au may not be a suitable location for a background well and accordingly will not be used as such (see comment #77).

Comment 84

Page WP-376, Section 5.3.6.2.2.3: Existing wells should be evaluated as to which will be geophysically logged so that a stratigraphic framework across the site can be constructed from the logging and lithologic data. Also, the boreholes will in most cases be cased. Some of the geophysical logging methods called out to be used can not be done in cased hole conditions. Additionally, text should be added that states that the radioactive contaminates will effect the use of natural gamma ray logs for correlation purposes. (GSSC, DOE-RL ERD)

Response to Comment 84

This section does not address existing wells. However, some geophysical logging of existing wells may be useful and will be added to the proposed survey of existing wells (Section 5.3.6.2.1). The proposed methods for geophysical well logging will be revised to include only those appropriate for a cased well. A statement will also be added to both sections stating that lithologic correlation through gamma survey will be difficult, if not impossible, in areas of high radioactive contamination.

Comment 85

Page WP-376, Section 5.3.6.2.2.4: State what the sand pack and the screen slot size is based on. The section only states that it is based on grain size analysis but does not state that this should be of the lithology adjacent to the screened interval. (GSSC)

Response to Comment 85

The text will be modified to state that the screen will be selected based on grain size analysis of the lithology adjacent to the screened level.

Comment 86

Page WP-376, Section 5.3.6.2.2.5: In the case of a "Phase I" well development of wells cased in the upper portion of the unconfined aquifer, how far is the casing going to be pulled out of the well as the well is being constructed. Additional text should be added to define how high above the sand pack the casing should be pulled prior to Phase I development. If the casing is totally removed prior to development caving could preclude adding additional sand pack and the bentonite seal. (GSSC)

Response to Comment 86

The description of well installation procedures can be modified to include a statement that the screen will be pulled back in successive increments while the sand pack is emplaced. However, some concern has been expressed that procedures specified in the Westinghouse Environmental Investigations and Site Characterization Manual, known as Environmental Investigation Instructions (EIIs), must be utilized in any case. Consequently, this discussion of well installation may have to be removed and replaced with a reference to specific EIIs.

Comment 87

Page WP-377, Section 5.3.6.2.2.6: Either state what the survey standards are or formally reference the "Hanford Plant Standards". (GSSC)

Response to Comment 87

The standard will be clarified in the text.

Comment 88

Page WP-378, Section 5.3.6.2.5: The sampling of all wells initially may be justified although based on the well distribution this number could easily be reduced. (GSSC)

Response to Comment 88

The work plan will be modified to include a review of the wells identified for sampling after initial rounds of sampling to determine if it is reasonable to remove any from the established monitoring network. Please see response to comment #80.

Comment 89

Page WP-381, Section 5.3.6.3, Para. 1: The first sentence states that a laboratory analyses must be performed on at least one sample to determine the sorptive capacity of the aquifer material. One sample is not sufficient to make a qualitative judgement based on the variability of lithology. Several sample analyses on different lithologies to determine the sorptive capacity of the aquifer material. (GSSC)

Response to Comment 89

Clearly, the analysis of a single sample is not sufficient. The text will be revised to include the analysis of several soil samples for their sorptive capacity. The number of these samples will be determined only after the borings have be completed and the variability in samples assessed.

Comment 90

Page WP-389, Section 5.3.11.4, Last Para., Last Sent.: The excess carcinogenic risk goal should be consistent with the goal in the NCP and Proposed Corrective Action Rule (10 E-4 to E-6). (DOENM)

Response to Comment 90

The section will be changed to read "... contracting cancer between 10^{-6} and 10^{-4}."

Comment 91

Page WP-401, Section 5.5: The wording used in this section implies that the scope of effort for this investigation is inadequate. Since a vast amount of information already exists about this site, refinement beyond this "Phase I" study should not be needed. If additional work is required it should be included in this plan. (HAZ)

Response to Comment 91

Specifying activities to be conducted after the initial Phase I activities before reviewing the results of those activities implies a confidence in an understanding of the site model that is not felt. Although a vast amount of information does already exist about this site, there is sufficient uncertainty associated with the information such that this screening activity should be carried out before specific characterization activities are planned. No changes to the work plan are warranted.

Comment 92

Page WP-422, Section 5.6.5, 2nd Para.: This sentence should be reworded to indicated that EPA retains authority to select the preferred remedial alternative until Ecology obtains HSWA authority. (DOENM)

Response to Comment 92

This section will be revised as indicated.

Comment 93

Page WP-423, Section 5.7.3: I am not familiar with the concept of adding a report to an EIS as an "amendment". The NEPA regulations refer to it as supplements to an EIS. (DOE-RL CC)

Response to Comment 93

The section will be revised as indicated.

Comment 94

Page WP-426, Figure 93: This figure shows that Phase I RFI includes no allocation of Project Management until 3.5 years out from the initiation of the project. Check the schedule to see if this is correct. (GSSC)

Response to Comment 94

Figure 93 will be corrected to show project management as a task being performed throughout the length of the project.

SAMPLE AND ANALYSIS PLAN

Comment 1

General: The plan in general is vague on the methods to be employed. For example, will the Columbia River sediment sample be a composite sample from one location, a single sample, or a composite from several locations. Will a bias be placed on the collection of fine grain, organic rich sediments (which tend to concentrate radionuclides) or coarse sands and gravel? (GSSC)

Response to Comment 1

The Sampling and Analysis Plan is currently being revised to show, in more specific detail, sampling methodology, types, locations, etc.

Comment 2

General: The plan is insufficient because issues such as analytical laboratory(ies) selection processes for the Contract Laboratory Program (CLP) and the non-CLP laboratory(ies), quality assurance and quality control (QA/QC) requirements of the laboratory(ies), should be included to comply with the EPA's Guidance for Preparation of Combined Work/Quality Assurance Project Plan for Environmental Monitoring (OWRC QA-1), May 1984. (ANL/DOE-HQ)

Response to Comment 2

These issues will be addressed by reference to the Westinghouse Environmental Engineering, Technology and Permitting Functions Quality Assurance Program Plan (WHC-EP-0383), which meets NQA-1 criteria 4 and 7.

SPECIFIC COMMENTS

Comment 1

Page SAP/FSP-5, Section 2.1.1.2.1: The purposed method for sampling for the determination of background values (for naturally occurring elements) is valid only if the background sample plot consists of identical stratigraphic units with the same lithology and mineralogy as that which it is compared to. It appears that this may not be the case. The test plot is in a location that is assumed to be undisturbed eolian sands while the area within the security fence, as stated has been bull dozed potentially exposing non-eolian sediments. The lithology/mineralogy may not be similar at the two sites and as such the use of the background value for comparison is not valid. (GSSC)

Response to Comment 1

The section for the radiological survey is currently being rewritten to address these and other concerns that have been brought up during this review.

Comment 2

Page SAP/FSP-7, Section 2.1.2: A statement should be added that states that integration of plant construction and utility drawings along with geophysical information will be undertaken to locate buried features. (GSSC)

Response to Comment 2

Such as statement will be added.

Comment 3

Page SAP/FSP-10, Section 2.2.1, Para. 3: Based on scoping studies the potential list of contaminates of interest should have been identified along with their location. Based on this information, a reduced list of analities can be developed. The need for a full long lists appears to be excessive. (GSSC)

Response to Comment 3

As stated above, the need for validatable data which has driven the strategy of doing a screening sampling for all contaminants after which a reduced list can be used has been discussed above. It is fully expected a reduced list of analytes will be developed. Also, refer to responses to General Comment 5 and Specific Comment 80.

Comment 4

Page SAP/FSP-14, Section 2.2.1.5, Para. 3: If sampling of the septic tanks is warranted, sampling of the tank and its content will only indicate what has currently been disposed in the septic system. Samples from the soils underlying the septic system will yield some indication of historic disposal use of the septic system. (GSSC)

Response to Comment 4

On the basis of the ranking and activities presented in Section 4.0 of the work plan, the septic tanks have been reconsidered and are not slated to be sampled at this time during Phase I. The Field Sampling Plan will be revised to indicate this.

Comment 5

Page SAP/FSP-35, Table FSP-5: State what physical tests are going to be run on the samples. (GSSC)

Response to Comment 5

Text and tables will be changed to describe physical tests to be run on the samples, such as grain-size analysis, permeability, moisture content, etc.

Comment 6

Page SAP/FSP-46, Section 6.1.2.4: The referenced EII does not discuss a "Phase 2" well development. (GSSC)

Response to Comment 6

The section in question does not refer to a "Phase 2" well development either. The two "stages" discussed in this section refer to activities that will occur 24 hours apart. An examination of the EII will show that these activities are indeed described in it. No change to the work plan is warranted.

Comment 7

Page SAP/FSP-46, Section 6.1.2.5: State what datum will be used for surveying. Also state that a measuring point will be marked on the casing from which all water depth measurements will be taken from. (GSSC)

Response to Comment 7

The text will be revised to refer to the appropriate EII.

QUALITY ASSURANCE PROJECT PLAN

Comment 1

Page SAP/QAPP-6, Section 3.0: The following are comments on this section:

1. Add a brief statement to describing the rational behind the selection of the targeted analities. (GSSC)

2. Level IV: will the remaining 80% of the samples to be analyzed require non-standard methods of analysis (level V)? or what. (GSSC)

3. Level II: mention which method will be used for full lab analysis for volatiles. (GSSC)

Response to Comment 1

***Issue #1** - A statement will be added reiterating the "initial screening" strategy of collecting validatable and defensible data for all compounds that may have been released at the Hanford Site.*

***Issue #2** - The levels for the samples will be clarified to show that the remaining 80% of the samples will be analyzed or screened without full CLP QA/QC documentation (Levels II, III, V).*

***Issue #3** - Level II refers to field and laboratory screening methods, as noted in the plan. Level II does not refer full laboratory analysis and therefore full laboratory analyses for volatiles are not appropriate for discussion under Level II. Full laboratory analytical methods for all analytes will be presented in Table QAPP-1.*

Comment 2

Page SAP/QAPP-8, Table QAPP-1: This table does not designate the level of analysis as is implied in Sections 3.0 and 8.2.1. (GSSC)

Response to Comment 2

References to the table designating levels of analysis will be removed.

Comment 3

Page SAP/QAPP-18, Section 5.0: State who will be in charge of the project quality records (i.e. the logging in and disbursement)? (GSSC)

Response to Comment 3

Reference will be made here to the Westinghouse Environmental Engineering Technology and Permitting Function Quality Assurance Program Plan WHC-EP-0383.

Comment 4

Page SAP/QAPP-27, Section 8.1, 4th bullet: Analytical results or data deliverables should also include library search (for GC/MS) result for non-target analities and anality calibration data. (GSSC)

Response to Comment 4

The text will be revised to include library search results for non-target analytes and analyte calibration data.

Comment 5

Page SAP/QAPP-28, Section 8.2: State which OSM procedures are used for validation. (GSSC)

Response to Comment 5

Reference will be made to the Westinghouse document, Sampling Management and Administration WHC-CM-5-3.

Comment 6

Page SAP/QAPP-30, Section 9.0: State that the "alternative Laboratory" has been approved and who approved it. (GSSC)

Response to Comment 6

Reference will be made to the Westinghouse Environmental Engineering Technology and Permitting Functions Quality Assurance Program Plan (WHC-EP-0383), which meets NQA-1 criteria 4 and 7.

Comment 7

Page SAP/QAPP-33: Typo RPD= relative percent difference. In the equation it is listed as "RFD" and should be "RPD". (GSSC)

Response to Comment 7

The text will be amended as noted.

HEALTH AND SAFETY PLAN

Comment 1

Page HSP-45, Para. 3: The narrative should consider the possibility that the decontamination line may be located downwind of the fire and that an alternative escape and meeting area under these conditions is needed. (DOE-RL ERD)

Response to Comment 1

The text will be revised to consider this possibility.

PROJECT MANAGEMENT PLAN

Comment 1

General: The plan should mention the Analytical Laboratory responsibilities with the Technical Lead (WHC Environmental Engineering Group). (ANL/DOE-HQ)

Response to Comment 1

The plan will be amended to address this issue.

PLATES

Comment to Plates A & B

PLATES A & B: The following comments apply:

1. The vertical and horizontal scales on the two plates should be the same to aid in their use.
2. The cross-section needs to be labeled identifying the plate.
3. A map needs to be provided that shows the location of the wells used for the cross section and the lines of section.
4. Figures 13 or 14 do not show the location of the following wells used for the construction of the plates: B-18, B-1, K-10, BH-1, 199-H4-2.

If one is going to the expense of developing and reproducing plates for inclusion within a work plan then they should be referenced and used in the discussion. If they have no use they should not be included. (GSSC)

Response to Comment to Plates A & B

The plates are being revised and may be included in the work plan as figures rather than as plates. The following comment resolutions will be incorporated as part of these revisions:

***Issue #1** - The horizontal and vertical scales for the plates will be the same, if appropriate, in the new presentation.*

***Issue #2** - The cross-sections will be clearly labeled and located on location maps.*

***Issue #3** - The location of the wells used for the cross-sections will all be shown.*

***Issue #4** - See #3 above.*

The geological portion of the text will be revised to more clearly illustrate the importance of the data presented in the cross-sections.

Comment to Plate C

PLATE C: The following comments apply:

1. Not all of the buildings called out in the text are listed on the plate. Some of these include the following: 105-N Reactor Building, 109-N Heat Exchanger Building, 163-Demineralization Plant, 183-N Water Filtration Plant, 107-N Basin Recirculation Facility, 109-N Mix Tank, 120-N-4 Non-hazardous and Non-radioactive Chemical Storage Area.

2. The call outs of structures are different on the plate then that call out in the text.

3. A legend needs to be added to explain the use of symbols used on the map. For example, the meaning of the short and long dashed lines.

4. If all of the sources are to be located, then those sources with the confines of the HGP should be shown.

It would aid in reading and following the work plan if a figure was supplied which included the building call outs. (GSSC)

Response to Comment to Plate C

***Issue #1** - A separate plate will be provided showing the callouts of all structures referenced in the work plan.*

***Issue #2** - Further QC will be done to ensure the matchings of structures referenced on the plate and in the text.*

***Issue #3** - A legend will be added.*

***Issue #4** - The potential sources within the HGP will be shown on the plates.*

EDITORIAL COMMENTS

General Comments

Comment 1

A clarifier term needs to be added to distinguish the difference between the 100-NR-1 aggregate ground water unit and the source unit. The current usage with no identifier as to which unit is being discussed leads to confusion. (GSSC)

Response to Comment 1

The 100-NR-1 aggregate groundwater unit and the 100-NR-1 source unit have been identified as such where it has been considered appropriate to distinguish the difference them. Without specifically noting where this confusion occurs, it is difficult to clarify this issue beyond what has already been included in the work plan. The work plan will be reexamined to try to determine where it is not clear and will be clarified by use of the term 100-NR-1 aggregate groundwater unit and 100-NR-1 source units.

Specific Comments

Comment 1

Page 12, Section 1.6, Para. 1, 1 Sent.: Change "will conform" to "conforms". (HAZ)

Response to Comment 1

Text will be changed as suggested.

Comment 2

Page 15, Section 2.1.2, Last Sent.: The last sentence of page WP-15 does not read appropriately onto page WP-17. Also identify what the acronym HGP stands for. (GSSC)

Response to Comment 2

Typographical error at end of page WP-15 will be corrected and HGP will be defined.

Comment 3

Page WP-15, Section 2.1.3.5, Para. 2: The first sentence states that raw water used in the plant receives no treatment other than straining. Please change the word "straining" to "screening" as straining is not a word common to water treatment processes. Screening would be appropriate to the bar screen method of treatment. (GSSC)

Response to Comment 3

Use of the word straining on page WP-15 will be changed to screening as suggested.

Comment 4

Page WP-28, Section 2.1.5, Para. 4: The last sentence of the page is unclear and poorly written. (GSSC)

Response to Comment 4

The noted sentence will be clarified.

Comment 5

Page WP-33, Figure 9: No reference is given for this figure. Was it developed within the organization that wrote the work plan. (GSSC)

Response to Comment 5

The figure will be referenced.

Comment 6

Page 46, Figure 17: This figure is oriented in the wrong position and needs to be corrected. (ANL/DOE-HQ)

Response to Comment 6

The figure will be oriented properly.

Comment 7

Page WP-47, Section 2.2.2.2.5, Para. 1: Deposits are described as "heterogenous and poorly mixed". "Mixed" is not a geological term, a more appropriate term is "poorly sorted". (GSSC)

Response to Comment 7

The term "mixed" will be replaced with "sorted."

Comment 8

Page WP-49, 50, Figures 18 & 19: Addition of points on the map showing the location of data points would add confidence to the reviewer that the map is not based on only a few data points. (GSSC)

Response to Comment 8

These maps have been selected from standard Hanford references. It is beyond the scope of this work to contour the entire Hanford site. The maps will be properly referenced and the data points can be examined by consulting those references.

Comment 9

Page WP-78, Table 4: The following are comments on the Table:

1. The table lists 166-N Fuel Unloading & Storage Area Grouping and Plate C does not contain this call out. (GSSC)

2. The headings for the major groupings, for example #4, 1301-N Crib & Trench Groupings, does not match the major grouping title on Plate C. (GSSC)

3. Plate C contains unplanned releases which are not listed on this table. For example, spring 1983 unplanned release under the 166-N-2 grouping. (GSSC)

Response to Comment 9

All discrepancies between plate and text will be corrected.

Comment 10

Page WP-148, Section 3.1.1.3.7.1, Para. 1: The 120-N-4 Area is a non-hazardous and non-radioactive storage area. The first sentence of this sections calls the unit a non-hazardous and hazardous waste storage pad. Correct the apparent typo. (GSSC)

Response to Comment 10

Text will be amended to read nonhazardous and nonradioactive.

Comment 11

Page WP-161, Figure 58: The names of the 4 different septic tanks are included. Septic tank 124-N-5 is incorrectly labeled. (GSSC)

Response to Comment 11

Figure 58 will be revised to correctly label the tank.

Comment 12

Page WP-167, Section 3.1.1.4.1: This paragraph states that monthly dip tests are performed. The terminology that is generally used is "manual tank gauging".

Response to Comment 12

The text will be revised as suggested.

Comment 13

Page WP-170, Section 3.1.2.1.1.2: The title "Sediment Samples Collected within the Vadose Zone" should be designated as "Subsurface or Drill Cutting Samples Collected within the Vadose Zone". (ANL, GSSC)

Response to Comment 13

To provide continuity in Section 3.1.2.1.1, Section 3.1.2.1.1.2 will be retitled "Subsurface Soil Samples."

Comment 14

Page WP-185, Section 3.1.2.2.1: The use of "p/m" and "p/b" units should be spelled out. The abbreviations "ppm" and "ppb" should be used. (ANL, GSSC)

Response to Comment 14

The abbreviations "p/m" and "p/b" are standard international units and usage which are specified in Westinghouse Hanford Company guidance, and should be familiar to scientists and engineers. No change to the work plan is warranted.

Comment 15

Page WP-228, Table 31: What are the units? Curies? (GSSC)

Response to Comment 15

Units will be added to table.

Comment 16

Page WP-294, Table 56: Under Geologic additional data needs include: depositional environment, geometry and areal extent of stratigraphic units, mineralogy, vertical and horizontal lithologic variations. Under Ground Water additional data needs include: vertical and horizontal variability of hydraulic conductivities. (GSSC)

Response to Comment 16

These additional data needs under geologic and groundwater will be added to the work plan.

Comment 17

Page WP-314, Section 4.3.3.5, Para 1, Sentence 1: Correct "access" to "assess". (GSSC)

Response to Comment 17

The suggested change will be made.

Comment 18

Page WP-315, Section 4.3.4, Para. 1: The last sentence needs clarification. It is not clear if the entire 100-NR-2 is ranked a 1 or not. (GSSC)

Response to Comment 18

The 100-NR-2 operable unit is not ranked as a whole. The sentence in question clearly refers to the previous sentence in which it is specified that the units are ones that may have impacted groundwater or the river. In addition, it is clear from the discussion earlier of ranking and source units that none of the three operable units, as a whole, is ranked. No change to the document appears warranted.

Comment 19

Page WP-328, Section 5.2.1, Para. 1, #2: The reference needs to be completed. Section 3004 (v) of what law or regulation. (GSSC)

Response to Comment 19

The reference will be properly completed.

Comment 20

Page WP-332, Section 5.3.2.2.3, Para. 2, Sentence 1: Appears to be an incomplete sentence. (GSSC)

Response to Comment 20

The sentence will be revised to form a proper sentence.

Comment 21

Page WP-334, Table 61: An apparent error in the number of samples is found in the section covering 1314-N LWLS. (GSSC)

Response to Comment 21

The table on Page WP-334 will be corrected.

Comment 22

Page WP-357, Table 64: State what methods 625 and 624 are. Are these EPA methods out of SW-846? If so, add footnote stating it. (GSSC)

Response to Comment 22

The test methods will be properly referenced.

Comment 23

Page WP-359, Section 5.3.3.1: There are two sections with the same section headings. (GSSC, DOE-RL ERD)

Response to Comment 23

Duplicated Section 5.3.5.1 will be correctly numbered.

Comment 24

Page WP-375, Section 5.3.6.2.2.2, Para. 3: Please reword the second sentence two negatives are used in the sentence incorrectly. (GSSC)

Response to Comment 24

The sentence will be corrected by changing the word "unidentified" to "identified."

Comment 25

Page WP-378, Section 5.3.6.2.4: After a complete explanation of what a slug test is, the narrative introduces the Ferris Method without a preamble, explanation or reference. If the authors assume this level of working knowledge for the reader then it would be appropriate to omit the extensive explanation on slug tests. (DOE-RL ERD, GSSC)

Response to Comment 25

The elementary description of slug test will be removed from the text and the Ferris Method will be clearly identified by a reference.

Comment 26

Page HSP-10, Section 2.1.2, Bullet 3: "...hard, hat..." should read "...hard hat...". Also it is unclear what "substantial protective footwear" consists of. If this is defined in a WHC safety manual then a reference to it would be appropriate. (DOE-RL ERD)

Response to Comment 26

The typo in the reference to hard hat will be corrected. Substantial protective footwear will be defined.

DOCUMENT REVIEW:
RCRA FACILITY INVESTIGATION/CORRECTIVE MEASURES STUDY WORK PLAN FOR THE 100-NR-3 OPERABLE UNIT, HANFORD SITE, RICHLAND, WASHINGTON

Commenter Codes: S&W = Stone & Webster; DOERL-OCC = DOE Richland - Office of Chief Council; HQ-EM = DOE Headquarters EM-442; HQ-EH = DOE Headquarters EH-222; HQ-EH, ARNL = DOE Headquarters, Argone National Laboratories; DOERL-QAD = DOERL - Quality Assurance Division; WPPSS = Washington Public Power Supply System; DOEOR-EW = DOE Oak Ridge Operations - EW92; DOERL-ERD = DOERL - Environmental Restoration Division

SUMMARY

In general the "RCRA Facility Investigation/Corrective Measure Study Work Plan for the 100-NR-3 Operable Unit" is fairly complete. It follows the EPA guidance ("Guidance for Conducting Remedial Investigation and Feasibility Studies Under CERCLA") and it appears to thoroughly identify potential hazardous waste sites in the 100-NR-3 Area.

Comments on the 100-NR-3 Work Plan cover a wide range of topics, but there are several topics on which many comments are made. Probably the most general comment is that it is not always clear what the main purpose of the work plan is. The risks to human health and the environment, which caused the placement of the site on the National Priorities List, are not addressed. There is no attempt to expand on the risks that have been previously identified. This is reflected in the lack of reasoning for obtaining the proposed information. Examples are: A lack of reasoning for either investigating or not investigating certain areas; and, the lack of a description of criteria to be used to identify sample locations. It is essential that all information needed to aid in characterizing the risks at the site and that the needs for the information be explained.

Related to the lack of clear objectives is the lack of evaluation of available data. Available data must be evaluated to: 1) Provide direction by determining risks to humans and the environment; 2) justify the need for additional specific data; 3) prevent the duplication of efforts; 4) reduce the time required for the investigation; and, 5) reduce costs. It is much more efficient to evaluate existing data rather than undertaking new investigations. Therefore, the 100-NR-3 Work Plan should be based on all available information. For example, the extent of contamination, the types of contaminants, sample results of contamination and the extent of past remediation should be included in the Work Plan.

It appears that too much emphasis is placed on phasing of investigations. It is not always clear if information will be gathered as part of one of the phases of the RI Phase I investigation or if the information will be gathered as part of the RI Phase II investigation. As much information as possible should be gathered as part of the first phase of the Phase I investigation in order to limit the number of phases. Also, it should be kept in mind that all activities should be included in a work plan or a proposal in order to allow the DOE the opportunity to review and comment on the proposed activities. Therefore, all activities that will take place, based on this work plan, should be described in the work plan.

GENERAL COMMENTS

Comment 1

Physiographic settings should be expanded to provide more information on the salient topographic features of the 100-NR-3 Operable Unit. Features such as: geomorphology, drainage swales, drainage density, proximity of adjacent topographic areas (100-NR-1 and 100-NR-2) and the surrounding Hanford site (areas for recharge and discharge), should be included. (HQ-EH, ARNL)

Response to Comment 1

Features of the physiographic setting are presented in this report in sections on topography, geology, hydrogeology, and surface hydrology, to the extent which significant available data allows. It will be stated in Section 1.6, Organization of the Work Plan, that this information is discussed in Section 2.0.

Comment 2

A cost estimate for the work should accompany the work plan. A baseline cost estimate should be considered for inclusion. (HQ-EM)

Response to Comment 2

DOE-RL is not providing cost estimates as part of RI/FS or RFI/CMS Work Plans being prepared for the Hanford Site at this time. No change to the document is warranted.

Comment 3

The Attachment "Health and Safety Plan" needs to be expanded to include site-specific details including descriptions of protective equipment, decontamination procedures for personnel and equipment, and the delineation of the work area. (HQ-EH, ARNL)

Response to Comment 3

The Health and Safety Plan will be revised to meet these concerns, as appropriate.

SPECIFIC COMMENTS

Comment 4

Page WP-3, Section 1.1.1, 3rd Paragraph: The Risk Assessment Guidance for Superfund (Dec. 1989) should be referenced and used instead of the Superfund Public Health Evaluations Manual (October 1986). (HQ-EH)

Response to Comment 4

The Work Plan will be revised to reference the Risk Assessment Guidance as stated above.

Comment 5

Page WP-4, Section 1.1.2, 4th Paragraph: In the statement: "...cleanup requirements will be denied from CERCLA policy." denied is an error and it should be changed to derived. (DOERL-ERD)

Response to Comment 5

The document will be revised as stated above.

Comment 6

Page WP-7, Section 1.1, 2nd Paragraph: The Model Toxics Control Act of 1988 is only now being developed, therefore it is too early to compare it to CERCLA. (DOERL-OCC)

Response to Comment 6

It is assumed that the comment is referring to Section 1.1 on page WP-1. The Model Toxics Control Act cleanup standards were officially adopted in January 1991. Therefore, it is appropriate for the MTCA to be introduced at this point in the document. It will be noted in this section that these standards have been adopted.

Comment 7

Page WP-7, Section 1.3.1, 1st Paragraph: The institutional reasons for not addressing the releases from the Washington Public Power Supply System Hanford Generating Plant should be given. It is likely that the regulators or the public will question this at some point, therefore a complete answer should be developed now. (S&W)

Response to Comment 7

Because DOE-RL and WPPSS have not come into an agreement on how this issue should be dealt with, we have agreed with Paul Pak of DOE that this statement could not be elaborated on and will be left as is for the time being.

Comment 8

Page WP-7, Section 1.3.1, 1st Paragraph: The extent of the contact of the 100-NR-3 Operable Unit with 100-KR-4 and 100-HR-3 should be indicated. (HQ-EM)

Response to Comment 8

The boundary of the 100-KR-4 groundwater unit will be extended to show the full contact between that unit and the 100-NR-3 unit. As can be seen from the map, there is no contact between the 100-HR-3 groundwater unit and the 100-NR-3 source operable unit. A sentence will be added to the section noting these relationships.

Comment 9

Page WP-8, Figure 4: The items in the legend should be labeled "operable" instead of "operating". (HQ-EM)

Response to Comment 9

The figure will be corrected to read "operable" rather than "operating."

Comment 10

Page WP-9, Section 1.3.2, Last Paragraph: The finding of imminent and substantial endangerment is made by the regulatory agency prior to issuance of a CERCLA Section 106 or RCRA 7003 administrative order for either short-term or long term remedial action (i.e. the finding of imminent and substantial endangerment does not automatically trigger interim corrective actions). The item "(1) determine the need for interim corrective actions;" would be more appropriate. (HQ-EH)

Response to Comment 10

The change, as noted, will bring a response from future reviewers of "How will this be determined?" To prevent this, the statement in question will be revised to read "The purpose of this phase is to sufficiently characterize the operable unit to: (1) determine if any source of contamination may pose an immediate or short-term threat to human health or the environment and thus potentially trigger interim corrective actions..."

Comment 11

Page WP-9, Section 1.3.2, Last Paragraph: It should be indicated that if a phased approach to the RFI/CMS activities is unnecessary, then the process (particularly the RFI) may be performed in one phase. Furthermore, the purpose of the RFI should not be to define the scope of the Phase II RFI; rather, the Phase II RFI may be required if the RFI is later found to be inadequate. (HQ-EM)

Response to Comment 11

Item number (3) will be reworded as "determine the need for additional field investigation and define the scope of the Phase II RFI, if necessary."

Comment 12

Page WP-10, Section 1.3.2, 2nd Paragraph; Page WP-51, Section 3.1.1; Page WP-141, Section 4.3.1; Page 148, Section 4.3.3.1, 1st Bullet; Page WP-149, Section 4.3.3.2, 1st Bullet; Page WP-167, Section 5.3.2.3.2; Page WP-186, Section 5.3.8, 3rd Paragraph; Page SAP/FSP-9, Section 2.2, 1st Paragraph: All available information should be evaluated before the work plan is complete. Planned activities may easily be either insufficient or redundant if all previous information is not considered. (S&W)

Response to Comment 12

It will be clarified in the appropriate sections that all available information has been reviewed and evaluated as of the original submittal in July 1990. Further, it will be clarified in the appropriate places that data evaluation of tasks in this work plan will cover data generated after the preparation of the work plan.

Comment 13

Page WP-11, Section 1.5, 2nd Paragraph: The work plan references WHC 1990a as the QA program plan. WHC 1990a is the "Environmental Engineering, Technology and Permitting Function Quality Assurance Program Plan" which has not been approved internally by WHC. It is unacceptable for the work plan to reference documents which have not been approved internally by WHC. In addition, the QA Program Plan does not discuss health physics, radiological protection and other items that are listed. (DOERL-QAD)

Response to Comment 13

Reference to the document will be removed. The final sentence of paragraph two (including the bulleted items) will be removed and replaced with "The plan references both NQA-1 (ANSI/ASME 1986) and QAMS-005 (EPA 1983) guidance documents.

Comment 14

Page WP-21, Section 2.1.3.1.11, 2nd Paragraph: It is stated that the spent regenerant surge tank, effluent stream contains no dangerous or radioactive constituents. This statement should be supported and referenced. (S&W)

Response to Comment 14

It will be stated that analyses have indicated that the spent regenerant surge tank contains no dangerous or radioactive constituents after neutralization. The reference, Tuck 1990, has previously been provided.

Comment 15

Page WP-24, Section 2.1.5, 1st Paragraph: "Tri-Party Agreement and Action Plan" is incorrect it should be written as "Tri-Party Agreement Action Plan". (DOERL-ERD)

Response to Comment 15

The correct title "Tri-Party Agreement Action Plan" will be used.

Comment 16

Page WP-25, Section 2.1.5.1, 3rd Paragraph: RCRA ground water data from the 120-N-2 unit should be evaluated to identify potential contaminants in the unit. (S&W)

Response to Comment 16

RCRA ground-water data from wells near the 120-N-2 unit have been evaluated and are discussed in the 100-NR-1 Ground Water Operable Unit Work Plan. Potential contaminants in the unit have been identified from waste management references and are discussed in Section 3.1.1.8.3 of this work plan.

Comment 17

Page WP-28, Section 2.2.2.2: The details of the structural orientation of the outcrops should be included. (HQ-EH, ARNL)

Response to Comment 17

It is not clear what outcrops are being referenced here. This comment refers to Section 2.2.2.2, which is 100-N Area Geology. There are no bedrock outcrops in the 100-N Area. No changes to the work plan are warranted.

Comment 18

Page WP-33, Section 2.2.2.2, Figure 12: Information provided about site-specific geology in the 100-NR-3 Unit should be expanded by using the geologic borings BH-12, BH-13, and BH-14 as shown in Figure 12. The information should be used to expand the geologic cross-sections and ground water levels of the 100-NR-3 Unit in Figures 13 through 18. (HQ-EH, ARNL)

Response to Comment 18

Geologic information contained in the stated borings will be integrated into the geologic description of this section. Borings will be included in cross-sections, if appropriate.

Comment 19

Page WP-39, Section 2.2.3, 3rd Paragraph: The reference "Krug 1989, p. 13" is used to document that the 130-N-1 Filter Backwash Discharge Pond continued to receive discharge until 1990. Verify the validity of the reference since it appears that the date of the reference is too early to document the date that discharge discontinued. (HQ-EM)

Response to Comment 19

References to 1990 in this paragraph will be changed to 1989.

Comment 20

Page WP-47, Section 2.2.6.3: It will take more than just finding a bald eagle or ferruginous hawk in these areas for the areas to be determined to be a critical habitat. Please elaborate on these requirements. (DOERL-OCC)

Response to Comment 20

The section will be expanded to state that if threatened or endangered species are found in the 100-NR-3 Operable Unit, roosting or foraging areas may be considered critical habitats.

Comment 21

Page WP-51, Section 3.1.1 and all subsections: In addition to the location, the areal extent of releases and the area of remediation should also be indicated on the associated figures. Also, the extent, including depth, of past remediation and plans for present or ongoing remediation should be described in the text. This information is essential in developing sample and remediation plans and it should be evaluated to the greatest extent possible in the RFI Work Plan. (S&W)

Response to Comment 21

It is impossible to depict the areal extent of releases and areas of remediation on the figures based on the available information for these releases. All that is known about all potential sources is discussed and presented in Section 3.1.1. It will be clarified at the beginning of Section 3.1.1 that all available information as of the date of the work plan have been evaluated.

Comment 22

Page WP-51, Section 3.1.1.1; Page WP-62, Section 3.1.1.2; Page WP-72, Section 3.1.1.3.6; Page WP-91, Section 3.1.1.9; Page WP-93, Section 3.1.1.11; Page WP-96, Section 3.1.1.12: The reasons for investigating each area or facility should be made clear. For example, the reason for including the septic tanks and sanitary drainage fields in a RCRA/CERCLA investigation should be given. In addition, if an area or facility is described, but no investigation is planned, it should be made clear why the area is not considered a hazard. (DOEOR-EW)

Response to Comment 22

The rationale for discussing each potential source will be briefly expounded upon in Section 3.1. Septic tanks and sanitary drainage fields were identified as part of the WIDS Database and are therefore listed in the Tri-Party Agreement as waste management units and must be investigated as such. RCRA/CERCLA exemptions for septic tanks and drain fields do not apply if hazardous and/or radioactive wastes may have been released from these units to the environment. Therefore, the potential for dangerous or radioactive releases from these units must be addressed in the work plan. The rationale for further investigation of units is provided in Section 4.3.

Comment 23

Page WP-60, Section 3.1.1.1.1: The user or users of the Hanford Generating Plant (HGP) burn pit should be identified. The burn pit should not be investigated if it was not used by DOE. (HQ-EM)

Response to Comment 23

The users of the Hanford Generating Plant (HGP) burn pit included only HGP personnel. This will be stated in the appropriate section. Even though the unit was only used by HGP, it must be investigated because the property is owned by DOE, which therefore makes DOE a potential responsible party (PRP).

Comment 24

Page WP-60, Section 3.1.1.1.1: It should be noted that the burn pit was last used by HGP on June 1, 1989. (WPPSS)

Response to Comment 24

It will be stated that the HGP burn pit was last used by HGP on June 1, 1989.

Comment 25

Page WP-60, Section 3.1.1.1.1; Page WP-60, Section 3.1.1.1.2; Page WP-60, Section 3.1.1.1.3: The references used to obtain information on these potential waste disposal areas should be identified in case additional information is needed. (S&W)

Response to Comment 25

It will be stated in Section 3.1.1.1 that the information was obtained by HGP personnel.

Comment 26

Page WP-62, Section 3.1.1.2.2: The source of the liquid that is discharged should be described. In addition, the characteristics of the material at the discharge point are not clear. (S&W)

Response to Comment 26

It will be stated that the drainage consists of water from the 182-N Tank Farm.

Comment 27

Page WP-64, Section 3.1.1.3.1, 1st Paragraph: It is stated that the french drain "was used" until March 1987. Is it now sealed, as this statement implies? (HQ-EM)

Response to Comment 27

Recent inspections of the facility show this french drain to have been removed. This will be indicated in the text. Further information is being sought. If not available for incorporation into the work plan, the information will be collected as part of the Phase I data evaluation and review task and this will be noted in the work plan.

Comment 28

Page WP-75, Figure 30: The location of the 184-N Plant Service Power House is missing from this figure. Also, the orientation and scale of the figure should be included. (S&W)

Response to Comment 28

The figure will be revised as indicated.

Comment 29

Page WP-76, Section 3.1.1.5.3; Page WP-77, Section 3.1.1.6; Page WP-77, Section 3.1.1.7.1: The locations of the following facilities should be indicated on figures: 166-N storage tanks and day tank, well N-16, 184 Annex, 105-N Reactor, 116-N-2 Radioactive Chemical Waste Treatment and Storage Facility, and N-29 Craft Shop. It is more difficult to accurately locate potential waste sources if the facilities used as landmarks are not indicated on figures. (S&W)

Response to Comment 29

The landmarks and buildings indicated will be included on the appropriate figures.

Comment 30

Page WP-77, Section 3.1.1.7: The unit 124-N-4 is indicated on Plate 1, but it is not described in this section. The unit 120-N-4 is not indicated on Plate 1, but it is described in this section. This discrepancy should be corrected. (S&W)

Response to Comment 30

The correct designation for the unit is 120-N-4. The plate will be corrected.

Comment 31

Page WP-77, Section 3.1.1.6, 2nd Paragraph: State whether the values given are curies per liter, or total amounts for the spilled water. State whether sampling was performed at the base of the excavation prior to backfilling, if known. (S&W)

Response to Comment 31

The text will be revised to indicate that the values were total amounts for the spilled water and that no known sampling was conducted at the base of the excavation.

Comment 32

Page WP-79, Figure 32: The service station underground storage tanks (1716-N) are indicated in another location on Plate 1. This discrepancy should be corrected. (S&W)

Response to Comment 32

The figure has the correct locations. The plate will be revised accordingly.

Comment 33

Page WP-80, Section 3.1.1.7.2: The status of the use of the underground storage tanks should be indicated. The quantity of material presently contained in the tanks should be indicated if the tanks are no longer in use. (S&W)

Response to Comment 33

One tank has been recently removed and one tank remains in place and in use. This will be so stated in the text.

Comment 34

Page WP-87, Section 3.1.1.8.3, 2nd Paragraph: The integrity of the double lined surface impoundment should be addressed. For example, have leaks been detected? (S&W)

Response to Comment 34

It will be stated that no leaks have been detected from the unit.

Comment 35

Page WP-87, Section 3.1.1.8.3, 3rd Paragraph: This paragraph indicates that regeneration effluent was neutralized in the 120-N-1 Surface Impoundment then discharged to the 120-N-1 Percolation Pond. This appears to be an error in designating the impoundments and it should be corrected if this is the case. (S&W)

Response to Comment 35

The proper designation is 120-N-2 Surface Impoundment. The text will be revised accordingly.

Comment 36

Page WP-90, Section 3.1.1.8.3, 2nd Paragraph: The analytical results from the five groundwater monitoring wells near the 120-N-2 Surface Impoundment should be discussed in the 100-NR-3 work plan. The results may indicate what contaminants are present and migrating from the source. (S&W)

Response to Comment 36

Analytical results will be briefly discussed in this section but contaminants from this unit are known and stated. Groundwater analytical results from the wells are discussed in detail in the 100-NR-1 Ground Water Operable Unit Work Plan. Therefore, it is not appropriate to present detailed results in this work plan.

Comment 37

Page WP-90, Section 3.1.1.8.5: The 1143-N Paint Shop is listed under the heading of Sources yet there is no indication of a release or potential release of contaminants from the facility. If there is no evidence of a release, this should be stated. (S&W)

Response to Comment 37

It will be stated that there is no documentation or evidence of releases from this unit.

Comment 38

Page WP-91, Section 3.1.1.9.2; Page WP-91, Section 3.1.1.9.2: The locations of buildings 1117-N and 1113-N should be indicated since they are used as landmarks for potential sources. (S&W)

Response to Comment 38

The 1117-N and 1113-N buildings will be indicated on the figure associated with Section 3.1.1.9.2.

Comment 39

Page WP-98, Section 3.1.2.1: An explanation of why the only soil-sampling data that was examined was the background soil data from the area of the 120-N-1 and 120-N-2 ponds, should be given. In addition, the locations of the samples should be indicated on a map or diagram. (S&W)

Response to Comment 39

No other soil sampling data is available for the 100-NR-3 unit other than the data that is discussed. This will be so indicated. The location of these samples will be indicated on a figure.

Comment 40

Page WP-104, Figure 41: The origins of the areas of inferred soil contamination are not clear. The sources of potential contaminants should be identified to indicate the quantity and types of contaminants in each area. In addition, it is not clear how the information in this figure will be used to develop a sample or investigation plan. (S&W)

Response to Comment 40

The origins of the areas of inferred soil contamination are discussed in Section 3.1.2.1.2. The figure will be revised to indicate sources and contaminant types. The figure was not specifically used in sample plan development, but the areas indicated on the figure are being investigated through either non-intrusive investigations or source sampling.

Comment 41

Page WP-104, Figure 41: The reason for one and only one surface soil sample location needs to be explained. (HQ-EH, ARNL)

Response to Comment 41

The soil sample location on the figure was included in error and will be removed.

Comment 42

Page WP-105, Section 3.1.2.4, 3rd Paragraph: The locations of the 109-N Roof Vents and the 116-N Stack should be identified. The locations of these potential sources is needed to evaluate the sample data from the air sampling stations. (S&W)

Response to Comment 42

It will be indicated in the text that the 116-N Stack is located in the 100-NR-1 Operable Unit and the 109-N Roof Vents are located in the 100-NR-2 Operable Unit.

Comment 43

Page WP-110, Section 3.1.5, 1st Paragraph: It is stated that most existing reports of 100-N Area analyses do not include the validation information. The number of reports that do and do not contain validation information, the types of sample data in the various reports, and the usefulness of the various reports should be described. (S&W)

Response to Comment 43

It is not within the scope of work of preparation of the work plan to list reports that are validated and not validated, list the types of data in the reports, and describe the usefulness of data in each report. If the report had useful data, it was incorporated into the work plan.

Comment 44

Page WP-110, Section 3.2, 1st Paragraph: The applicable requirements should be defined as those statutes and regulations which would apply as a matter of law if the Hanford Site had not been listed on the NPL. (DOERL-OCC)

Response to Comment 44

The definition of applicable requirements will be revised to "cleanup or control standards or other substantive environmental protection requirements, criteria or limitations, which would apply as a matter of law."

Comment 45

Page WP-112, Table 12; Page WP-113, Table 13: The heading in the Table should be labeled "Chemical Specific" instead of "Contaminant Specific". (DOERL-ERD)

Response to Comment 45

The heading in the table will be labeled "Chemical Specific" instead of "Contaminant Specific."

Comment 46

Page WP-112, Table 12; Page WP-114, Table 13; Page WP-115 Table 13: The ARAR for Environmental Radiation Protection Standards (40 C.F.R. 191) is not applicable. The Shoreline Management Act is not applicable since the Hanford Site is an NPL site pursuant to CERCLA. The Model Toxic Control Act should be listed as a potentially relevant and appropriate rather than applicable. (DOERL-OCC)

Response to Comment 46

Tables will be changed as suggested, except that the MTCA, as adopted, is considered an ARAR for CERCLA sites and will likely be applied at RCRA corrective action sites. Therefore, it is justifiable to show the MTCA as an applicable potential CAR for the 100-NR-3 Operable Unit.

Comment 47

Page WP-122, Section 3.3.2.2: It is stated that the appropriate CAR for the indicated contaminants of concern should be background. This statement should be supported by citing the appropriate Federal or State guidance. (S&W)

Response to Comment 47

The sentence will be changed to "The appropriate CAR for the above should be protective of human health and the environment, since all of these ...".

Comment 48

Page WP-122, Section 3.3.3; Page WP-125, Section 3.3.5: The wording in these sections should be changed to indicate that an immediate or near-term threat does not appear to exist, rather than an imminent and substantial endangerment does not appear to exist. An imminent and substantial endangerment is a finding made by a regulatory agency. (HQ-EH)

Response to Comment 48

"Imminent and substantial endangerment" will be changed to "immediate or near-term threat" in Sections 3.3.3 and 3.3.5.

Comment 49

WP-123, Section 3.3.4, 3rd Paragraph: The phrase "relatively high activity ground water (average 353 pCi/L in 1988)" should be referenced. (HQ-EH, ARNL)

Response to Comment 49

The reference for the statement is Golder, 1990, which will be included in the text.

Comment 50

Page WP-125, Section 3.3.5, 3rd Paragraph: It is stated that monitoring data for 100-NR-3 does not indicate an imminent or substantial health or environmental hazard. The data that this proposition is based on should be presented. (S&W)

Response to Comment 50

The statement is made in the conclusions section of the preliminary risk assessment. The data that this proposition is based on is presented in the previous sections of the preliminary risk assessment, namely Sections 3.3.1 through 3.3.4.

Comment 51

Page WP-127, Section 3.4.2, Table 17: Several of the alternatives labeled as "no-action" are described as having institutional controls as a component. Only monitoring is a legitimate component of the "no-action" alternative according to EPA's October 1988 Interim Final RI/FS Guidance (page 4-7).

Treatment and/or removal actions should be considered as General Response Actions to address Air and Biota environmental media. Also, other treatment methods (in addition to vitrification) should be considered for soil. (HQ-EH)

Response to Comment 51

References to institutional controls under the no action alternative will be removed and added as a separate alternative. Other treatment and/or removal actions will be considered for air and biota environmental media. Other soil treatment methods will also be considered.

Comment 52

Page WP-135, Section 4.2.3: It is said that the various tasks of a RFI may require different levels of data quality. However, the level of data quality required by each task is not specified. This information should be included in the work plan. (DOERL-QAD)

Response to Comment 52

As is stated in paragraph 2 of Section 4.2.3, individual DQOs and the appropriate analytical levels are presented in Table 21.

Comment 53

Page WP-137, Section 4.2.3, Table 20: The definition of Level V analysis should indicate that CLP - SAS is Level V analysis. The part of the definition that indicates what the CLP considers to be Level V analysis is irrelevant here. (DOERL-QAD)

Response to Comment 53

The definition of Level V analysis will be revised to indicate that CLP-SAS is Level V analysis.

Comment 54

Page WP-139, Section 4.2.3, Table 21: The "Data Use" for source samples should be indicated (ex.: SC, EA, ED, and RA). Also, RA should be indicated as the "Data Use" for geologic physical properties data. (HQ-EM)

Response to Comment 54

The data use for source samples will be included in Table 21. RA will be included as a data use for geologic physical properties data.

Comment 55

Page WP-140, Section 4.2.5, 2nd Paragraph: The need for additional scoping studies should be explained. Also, the content of the scoping studies should be described. (S&W)

Response to Comment 55

It will be stated that the additional scoping studies are needed to evaluate the data which was either not available for review or was not generated at the time of preparation of the RFI Work Plan. It will also be stated that additional scoping studies will consist of a review of newly-found generated data for appropriateness to the RFI.

Comment 56

Page WP-141, Section 4.3, 2nd Paragraph: It is stated that the first phase of the RFI for the 100-NR-3 operable unit is to continue gathering and analyzing the existing information. The EPA RI/FS guidance document (EPA/540/G-89/004) states that it is important to compile the available data that have previously been collected for a site before the activities necessary to conduct an RI/FS are planned. A thorough search of existing data should help avoid duplication of previous efforts and lead to a remedial investigation that is more focused and, therefore more efficient in its expenditure of resources. (S&W)

Furthermore, the economic benefits derived from phasing the RFI investigation must be weighed against the increased costs associated with remobilization of labor and materials and potential lengthening of the overall project schedule. (HQ-EM)

Response to Comment 56

As stated in the response to Comment #55, the data evaluation phase of the RFI will consist of an evaluation of previously unavailable or newly generated information. The statement "continue the gathering and analyses of existing information" will be reworded as such. The phasing of the RFI has been requested by DOE-RL. However, it is believed that remobilization costs, if necessary, would be minimal.

Comment 57

Page WP-144, Section 4.3.2.2, and Table 22: The description of numerical rating "2" states it will be given where "... documented or potential release of dangerous or radioactive wastes to soil have occurred." Justify the assignment of the "2" rating to releases of sanitary sewage from most septic tanks, while one septic tank is given a "3" rating (124-N-1 Septic Tank, in Grouping 3). (S&W)

Response to Comment 57

The rating for the 124-N-1 septic tank will be changed from a "3" to a "2" to correct this typographical error.

Comment 58

Page WP-150, Section 4.3.3.6; Page WP-185, Section 5.3.7: The potential for the presence of hazardous airborne particulates and radon gas should be addressed. (S&W)

Response to Comment 58

The potential for hazardous and radioactive airborne contaminants and radon gas will be addressed as part of the worker safety monitoring during field activities. There is no documentation nor is it suspected that hazardous or radioactive airborne contamination is a problem at the 100-NR-3 Operable Unit. Nor is there any indication that any source units pose the possibility of radon accumulation in ambient air.

Comment 59

Page WP-155, Section 5.1.5: Progress reports should be provided monthly. There are too many activities that take place each month to provide a report that covers more than one month. (S&W)

Response to Comment 59

Quarterly progress reports are the norm for RFI/CMS activities at the Hanford Site. However, project progress will be reported monthly at the operable unit manager's meeting to project personnel entities, such as project and unit managers, coordinators, contractors, subcontractors, etc. Meeting minutes will be entered into the operable unit project file. Progress to be reported at these meetings will summarize the work completed, present data generated, and evaluation of the available data. Progress, anticipated problems and recommended solutions, upcoming activities, key personnel changes, and status of deliverables will be included.

Comment 60

Page WP-165, Section 5.3.2.2.2.1, 2nd Paragraph: It is stated that potentially contaminated areas will be marked for further investigation during Phase III. This should be explained considering that multiple iterations of investigations may take place as part of the RFI. There should not be any areas of potential contamination after such a series of data collection activities. Furthermore, Phase III is the analyses and selection of remedial alternatives; there is no data collection planned in Phase III. (S&W)

Response to Comment 60

The statement will be reworded to indicate that areas identified as potentially contaminated will be marked for further investigation during intrusive RFI investigations.

Comment 61

Page WP-165, Section 5.3.2.2.2.1; Page WP-165, Section 5.3.2.2.2.2: The rationale for using electromagnetic induction, magnetometer and ground-penetrating radar is not clear. Based on the description of these techniques, the use of all of them is redundant. The need for all three techniques should be clearly justified. (S&W)

The potential sources of interference for the geophysical survey techniques proposed in the work plan should be identified. (HQ-EH, ARNL)

Response to Comment 61

Section 5.3.2.2.2 will be rewritten outlining the specific objectives of the geophysical investigations. Each technique will be described and the areas to be investigated by each technique will be included. Figures will be included where appropriate. Potential sources for interference in the geophysical investigations will be identified. If interference becomes a problem for one method, another method may be substituted, as necessary.

Comment 62

Page WP-166, Section 5.3.2.2.3: The area of use of the soil gas survey should be indicated on a site map. The reasoning for using the technique in certain areas should be described. (S&W)

Response to Comment 62

The rationale and locations for soil gas sampling will be outlined and explained in detail in Section 5.3.2.2.3.

Comment 63

Page WP-166, Section 5.3.2.3, 1st Paragraph: It should be determined when samples will be collected to characterize the extent of contamination. Also, the statistical method that will be used to determine the extent of contamination should be described. This is a major consideration and it should be determined at the RI/FS Work Plan stage and be approved by all parties. (S&W)

Response to Comment 63

Based on the results of the source sampling investigation, systematic sampling locations will be determined to characterize the extent of contamination. It is anticipated that a systematic grid sampling approach will be used to determine the extent of contamination. Section 12.0 of the QAPP discusses the various statistical and probabilistic techniques that may be selected for use in data comparison and analysis. QAPP Section 12.0 will be referenced in Section 5.3.2.3.

Comment 64

Page WP-167, Section 5.3.2.3.2 and all subsections; Page SAP/FSP-8, Section 2.2 and all subsections: The use of field screening techniques should be described for releases of contaminants; or, if the sample location is determined based on data review and evaluation this should be explained and the location of the sample should be indicated in the work plan. The criteria to be used to determine sample locations should be described to prevent locations from being chosen incorrectly by field personnel. (S&W)

Response to Comment 64

The use of field screening will be minimal. The sample locations are based on data review and evaluation and visual observation of the sources. The sections relating to sample locations will be revised to be more specific in detailing where the samples are to be obtained. Specific maps will be used to show proposed sample locations, to assist field personnel in choosing sample locations.

Comment 65

Page WP-172, Section 5.3.2.3.2.3, 2nd Paragraph: A subsurface sample is recommended at the 120-N-3 Neutralization Pit since it is unlined. Also, the type of material to be sampled should be described. (S&W)

Response to Comment 65

A subsurface sample will be collected from the unit. The material to be sampled will be soil beneath the large cobbles in the bottom of the unit. This information will be included in Section 5.3.2.3.2.3.

Comment 66

Page WP-172, Section 5.3.2.3.2.3, 3rd Paragraph: The type of material that will be sampled at the 120-N-8 Sulfuric Acid Sump Tank Vent French Drain should be described. (S&W)

Response to Comment 66

Section 5.3.2.3.2.3 will be revised to indicate that samples will not be collected from the 120-N-8 french drains because they have been excavated. Information on the removal of these tanks will be included in the work plan, if available.

Comment 67

Page WP-173, Section 5.3.2.3.2.8, 2nd Paragraph: It is not clear why source sampling is not planned for 120-N-1 and 120-N-2 as part of this work plan. Furthermore, it is not clear what the Krug - 1989 characterization plan will include, when the information will be available and how the information will be incorporated into the RFI/CMS investigation. These things should be described in the work plan. (S&W)

Response to Comment 67

Samples will be collected from the bottom of the 120-N-1 Percolation Pond. The 120-N-1 Surface Impoundment will not be sampled because the unit contains no wastes. The reference to the Krug investigation will be revised to state that because the Krug investigation will not be redesigned for another year, the RFI sampling and data evaluation will be integrated with it, as appropriate.

Comment 68

Page WP-184, Section 5.3.3.1: The need for additional geologic information should be explained and the type of additional geologic information needed should be described. (S&W)

Response to Comment 68

The need for additional geologic information will depend on the results of the 100-NR-1 Ground Water Operable Unit geologic investigation. This will be stated in the work plan.

Comment 69

Page WP-184, Section 5.3.3.3: The nature of geologic assessments should depend on the requirements of the risk assessment, not the data acquired and interpretive needs of the Phase I assessments. (S&W)

Response to Comment 69

The text will be revised to indicate that the nature of the geologic assessments will be a function of the requirements of the risk assessment.

Comment 70

Page WP-187, Section 5.3.9, 1st Paragraph; Page SAP/FSP-30, Section 9.0: It is not clear why additional archaeological studies are needed. If there are reasons for believing that additional archaeological or historic sites are present, or that the previous archaeological studies are inadequate they should be given. (S&W)

Response to Comment 70

It is a DOE-required procedure at Hanford that cultural resource review be conducted as part of developing excavation permits. The section will be revised to indicate that the extent of archaeological investigations will include notifying the site archaeologist when intrusive investigations are to commence. It is required that the archaeologist is aware of any intrusive activities so that it can be determined if known archaeological sites may be affected. The text will be revised.

Comment 71

Page WP-192, Section 5.3.11.3, 2nd Paragraph: The values of "25 mrem/yr effective dose equivalent" and "10E-4" risk level should be referenced. These values should not be proposed without serious consideration. For example, there is a possibility that the DOE believes a proposed value is too restrictive, but the regulators would accept either the proposed value or a

less restrictive one. Therefore, there should be some assurance that the proposed values are cost effective for the DOE and acceptable to the regulators. A range of several values, with references, may be considered. (HQ-EM)

Response to Comment 71

The work plan will be revised to suggest that 5 rems per year will apply to workers who are assumed to be the most exposed individuals (based on NRC health level of 0.1 rem per worker week) and the risk value shall be changed to 10E-4 - 10E-6.

Comment 72

Page WP-192, Section 5.3.11.4, 2nd Paragraph: The excess carcinogenic risk goal should be consistent with the goal in the NCP and Proposed Corrective Action Rule (10E-4 - 10E-6). (HQ-EH)

Response to Comment 72

The document will be changed to read as indicated above.

Comment 73

Page WP-221, Section 5.7.2: The NEPA document is generally referred to as the Hanford Remedial Action - Environmental Impact Statement (HRA-EIS). (S&W)

The scope and content (e.g.: RFI/CMS activities, remedial actions, closure, etc.) of the HRA-EIS report should be indicated. (HQ-EM)

Response to Comment 73

The text will be revised with the correct designation for the NEPA document. A brief summary of the scope and content of the report will be included.

Comment 74

Page WP-220, Section 5.6.5, 1st Paragraph: It should be indicated that EPA retains authority to select the preferred remedial alternative until Ecology obtains HSWA authority. (HQ-EH)

Response to Comment 74

The text will be revised to indicate that EPA retains authority to select the preferred remedial alternative until Ecology obtains HSWA authority.

Comment 75

Page WP-221, Section 5.7.3: The report that may be attached to the EIS should be clearly identified. In addition, the report should be called a supplement, as it is referred to in the NEPA regulations, rather than an amendment. (DOERL-OCC)

Response to Comment 75

The Impact Statement report may be formally attached to the EIS as a supplement. The text will be revised to indicate this.

Comment 76

Page WP-224, Figure 47: It is recommended that the work that will be done as part of the 100-NR-1 work plan be included in the 100-NR-3 schedule. It can be made clear that the work will be done as part of the 100-NR-1 activities. This will allow plans to be made to incorporate the 100-NR-1 information in the 100-NR-3 operable unit evaluation. (S&W)

Response to Comment 76

The figure as it stands clearly indicates which activities are to be conducted as part of the 100-NR-1 investigation. We have agreed to add a separate figure showing the 100-NR-1 Phase I RFI investigation schedule to clarify this to the reviewers.

Comment 77

Page SAP/FSP-1, Section 1.0, 1st Paragraph: In the last sentence of the first paragraph ("Sampling contractors should be familiar with...") it is recommended that "should" be replaced with "shall." It is important for all personnel to be familiar with the pertinent documentation. (DOERL-QAD)

Response to Comment 77

The text will be revised to indicate that "Sampling contractors shall be familiar with...".

Comment 78

Page SAP/FSP-4, Section 2.1.1.2.1: The justification for the area of coverage of the radiological survey should be given. (DOEOR-EW)

Response to Comment 78

The section will be rewritten to reflect the radiological site characterization requirements.

Comment 79

Page SAP/FSP-5, Section 2.1.2.1.1; Page SAP/FSP-6, Section 2.1.2.2.1: The area of use of the electromagnetic induction, magnetometer and ground-penetrating radar surveys should be indicated on a site map. The reasoning for using each of the techniques in certain areas should be described. (S&W)

Response to Comment 79

The geophysical survey sections of the field sampling plan will be revised to indicate the rationale for use of each method and the areas to be covered by each method. Site maps will be included where appropriate.

Comment 80

Page SAP/FSP-7, Section 2.1.3.1: The areas where soil-gas surveys are planned should be justified. A soil-gas survey may not be justified around buildings where there is no evidence of a release of hazardous materials. (HQ-EM)

Response to Comment 80

Section 2.1.3.1 will be revised to indicate the exact purpose and extent of the soil gas investigation. The purpose is to determine the extent of contamination of known hydrocarbon (No. 6 and diesel oil) releases.

Comment 81

Page SAP/FSP-9, Section 2.2, 1st Paragraph; Page SAP/FSP-9, Section 2.2.3, 1st Paragraph; Page SAP/FSP-18, Section 2.2.5, 2nd Paragraph: The method for determining the sample locations should be described. An objective method for determining sample locations should be identified rather than picking a location based on one persons judgement. The criteria that will be used to determine sample locations should be identified. Also, available data should be reviewed and discussed in the work plan to clarify it's affect on the selection of sample locations. (S&W)

Response to Comment 81

The rationale for selecting sample locations and more specific information on exact locations will be included in the text.

Comment 82

Page SAP/FSP-9, Section 2.2, 1st Paragraph: Criteria should be given for field screening. (S&W)

Response to Comment 82

Field screening will be limited as part of the source investigation. Monitoring equipment will be used for health and safety reasons. It will be at the discretion of the field team leader to modify sampling activities based on readings obtained in the field. The text will be revised to indicate this. Included in the revision will be basic criteria for determining if further sampling is necessary.

Comment 83

Page SAP/FSP-9, Section 2.2.2, 1st Paragraph: A plan for access to the 124-N-2 Septic Tank should be proposed. The RFI/CMS work plan should include approaches to potential hinderances. (S&W)

Response to Comment 83

Septic tanks are no longer to be sampled as part of the source investigation. The text will be revised to indicate this.

Comment 84

Page SAP/FSP-13, Figures FSP-1 through FSP-4: The figures should include more detail so that the sample locations can be more accurately located. For example, the area of contamination and pertinent topographic features may be included. (S&W)

Response to Comment 84

The figures will be revised to indicate more specific sample locations and pertinent topographic features.

Comment 85

Page SAP/FSP-33, Section 10.2: Inapplicable procedures should be removed from this section (e.g.: groundwater sampling and all drilling procedures). If subsequent RFI phases require this type of work, these procedures should be included in the Supplemental Work Plan. (HQ-EM)

Response to Comment 85

Inapplicable procedures will be removed from this section.

Comment 86

Page SAP/QAPP-1, Section 1.3: The QAPP should apply to all activities that will be conducted under this work plan. These activities include data reduction, validation and reporting. (DOERL-QAD)

Response to Comment 86

It will be indicated that the QAPP applies to all activities conducted within this work plan, rather than Phase I field activities and laboratory analyses.

Comment 87

Page SAP/QAPP-27, Section 8.2.1: It is stated that Level II screening (field analysis) is indicated in Table QAPP-1. However, it is not clear, in Table QAPP-1, when this type of analysis will be used. (HQ-EM)

Response to Comment 87

The reference to Table QAPP-1 will be removed from the text.

Comment 88

Page SAP/QAPP-1, Section 1.3; Page SAP/QAPP-16, Section 4.1.1: Section 1.3 references an unreleased document "Westinghouse Hanford Company quality assurance (QA) program plan for Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) remedial investigation/feasibility study (RI/FS) activities". It is not yet clear if this document will be released. This document should not be referenced until it is positive that it will be released. (DOERL-QAD)

Response to Comment 88

Reference to the document will be removed. The second and third sentences of Section 1.3 will be removed and replaced with "It is an element of the RFI sampling and analyses plan (SAP) prepared specifically for this phase of investigation and is prepared in compliance with the Environmental Engineering Technology, and Permitting Function Quality Assurance Program Plan (WHC 1990a). This plan describes the means selected to implement the overall QA program requirements defined by the Westinghouse Hanford Company Quality Assurance Manual (WHC 1989a) accommodating the specific requirements for project plan format and content agreed upon in the Hanford Federal Facility Agreement and Consent Order (Ecology et al. 1989)."

Comment 89

Page SAP/QAPP-25, Section 6.0: The calibration procedures for levels I, II and IV of analysis should be listed. (DOERL-QAD)

Response to Comment 89

Level I, II, and IV calibration procedures will be included in this section.

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(signed by S. H. Wisness, DOE-RL		(Xref 9151805)

Subject: DISPOSITION OF COMMENTS ON DRAFT A OF RFI/CMS WORK PLANS FOR 100-NR-1 AND 100-NR-3 OPERABLE UNITS

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The attachments are the same as outgoing letter #9151805.