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DRAFT

JUL 1992 RECEIVED EDMC

RESPONSES TO EPA COMMENTS
ON DRAFT QA PROJECT PLANS FOR THE
100-BC-1 AND 100-BC-5
OPERABLE UNIT WORK PLANS

100-BC-1

1. Ref: General Comments, page 2, paragraphs 1 and 2; Declined; the QAPjP is not intended as a "stand-alone" document; it is intended to be implemented in conjunction with other elements of the subject Work Plan, and to be implemented by the Environmental Investigation Instructions (EIIs) and other procedural documents referenced therein. EPA guidance documents for Work Plan and QAPjP preparation (e.g., Section 7 of QAMS-005, Section 2.3.2.4 of Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA) permit the incorporation of information by reference to other plans or procedures in order to reduce redundancy, complexity, and preparation costs.

2. Ref: General Comments, page 2, paragraph 3;

- Bullets 1 and 2; Declined; sampling locations, frequency, and schedules will be defined in Descriptions of Work (DOWs); see comment response number 3.

- Bullet 3; Declined; Data Quality Objectives (DQOs) for all analytical parameters are discussed at length in Sections 4.1.1 and 4.1.2 of the Work Plan, and are further defined in Section 3 and Table QAPjP-1; however, please note that Section 3 and the table will be clarified pursuant to comment response number 11 and to correct the Work Plan cross-references.

- Bullet 4; Accepted in Part; training and calibiration requirements are separately identified in EIIs and other Sections of the QAPjP, but the text will be clarified.

- Bullet 5; Declined; equipment requirements are defined within EIIs; the EIIs that will apply to the various sampling investigiations are identified in Table QAPjP-2; please note, however, that the EII references and Table QAPjP-2 will be screened for consitency with Work Plan requirements, pursuant to comment response number 6.

3. Ref: Comment A-1; Accepted in Part; detailed discussions of individual task activities are provided in Section 5.0 of the Work Plan, as noted, repetition of these discussions in the text of the QAPjP would be redundant. The QAPjP is intended to be implemented in conjuction with the other elements of the subject work plan, and to be implemented by the EIIs and other procedural documents referenced therein. EPA guidance for work plan and QAPjP preparation permits the incorporation of documents by reference as noted in comment response 1. Final definition of sampling locations, frequency, and other schedule-driven considerations will be made through DOWs; DOW preparation requirements will be addressed in an EII and provided for regulatory review as an update to WHC-CM-7-7, Environmental Investigation and Site Characterization Manual. The QAPjP text will be modified to clarify the purpose of the DOW.

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4. Ref: Comment A-2; Accepted in Part; the text will be clarified and modified to cite standard procedures for screening and shipment of potentially radioactive samples; calibration details included in the procedures will not be reiterated in the QAPjP, however. See response to comment 10 below.

5. Ref: Comment A-3; Declined/Discuss; The non-CLP analytical reference methods cited in the QAPjP were selected on the basis of an understanding reached between EPA, Ecology, and DOE in the work plan re-scoping meeting conducted on June 27, 1991; see the discussion of Data Quality Objectives (DQOs) under Topic 6 in the meeting munutes produced on July 6, 1991. As noted in the meeting minutes, EPA agreed with the basic philosophy, but wished to evaluate it further; to our knowledge, no concerns with the DQO approach or analytical methodology were subsequently raised.

6. Ref: Comment A-4; Accepted; the text and Table QAPjP-2 will be screened for consistency with regard to the anticipated scope of work as outlined in Section 5 of the Work Plan.

7. Ref: Comment A-5; Accepted; EII 2.3 will be added to Table QAPjP-2.

8. Ref: Comment A-6; Declined; the air investigation described in Section 5.1.7 of the Work Plan is limited in scope due to the low probability of disturbance of significant soil volumes; air quality sampling in compliance with EII 5.12 will not be required.

9. Ref: Comment A-7; Accepted; the noted EIIs will be added to Table QAPjP-2; see comment response number 7.

10. Ref: Comment A-8; Declined; calibration control procedures for field equipment are adequately defined in the cited procedures and the EIIs governing their use. Field equipment will be drawn from a centrally managed calibration and maintenance facility that services all measuring, inspection, and testing functions at the Hanford site, not just the environmental engineering functions; inclusion of procedural detail in the QAPjP could precipitate inconsistencies between the QAPjP and later versions of the source procedures. In addition, EPA guidance for work plan and QAPjP preparation permits the incorporation of documents by reference, as noted in comment response 1.

Calibration methods for analytical laboratory equipment will be determined in large part by the type, make, and manufacturer of the equipment, the requirements of the standard EPA reference methods identified in Table QAPjP-1, and the requirements of the laboratory's own QA plan. The acceptability of those methods must be approved on a case-by-case basis for each analytical laboratory. Laboratory selection will not be finalized until DOWs have been prepared for the investigation; see comment response number 4.

11. Ref: Comment A-9; Accepted in Part; the text and Table QAPjP-1 will be revised to present detection limits as Practical Quantitation Limits (PQLs) where SW-846 methods are invoked, and as Contractually Required Quantitation Limits (CRQLs) where other EPA methods are specified. Maximum values for PQLs will correspond directly to those defined in 40 CFR 264 Appendix IX. Maximum values for CRQLs and target ranges for precision and accuracy will be based on what can reliably be achieved in the laboratory under normal conditions. The revised Table will represent a minimum standard that shall be met by the procurement agreements negotiated with individual laboratories; any justifiable deviation required from the minimum standard so established will require a formal change to the

QAPjP, and as such will be subject to regulatory review and approval prior to implementation.

12. Ref: Comment A-10; Declined; reporting units must be as defined in the governing reference method in order to ensure comparabilty of data. Extraction of procedural detail for inclusion in the QAPjP is inappropriate in a situation in which the EPA reference methods must always take precedence. Moreover, incorporation of such detail by reference to the standard methods reduces redundancy, complexity, and preparation costs, and eliminates any potential inconsistencies between the QAPjP and future revisions of the standard methods.

13. Ref: Comment A-11; Declined; physical parameters of soil will be tested by the standard ASTM methods specified in Table QAPjP-3, except where no ASTM standard exists, the soils laboratory must develop a procedure and submit it for approval prior to use. As in all cases in which subcontractor procedures are required, regulators will have access to such documents for review purposes at any time through the WHC Technical Lead. ASTM methods are in the public domain, and will not be separately provided. These tests were incorporated in response to a specific EPA request based on the review of an earlier draft of this document.

14. Ref: Comment A-12; Accepted; the text will be clarified.

15. Ref: Comment A-13; Accepted; the text will be clarified and modified to cite EII 14.1 and WHC-EP-0372, the HEIS Users' Manual.

16. Ref: Comment A-14; Accepted in Part; the decision on whether or not to reanalyze depends on sample material availability, holding time, and other factors, and will be made as part of the nonconformance resolution process discussed in Section 13. The text will be clarified.

17. Ref: Comment A-15; Accepted in Part; assessments of data accuracy and completeness should be performed in the context of the data validation process; any corrective actions required as a result of that process would automatically trigger the documentation and reporting actions that would be routinely considered in the data assessment process, and eventually summarized under the separate reporting function described in Section 14. Note that the last sentence of Section 14 requires an assessment of the overall adequacy of the total measurement system relative to the data quality objectives, which would inlcude any issues related to accuracy and completeness. Sections 8, 12, and 14 will be clarified.

100-BC-5

1. Ref: General Comments, pages 1, paragraphs 4 and 5; Declined; the QAPjP is not intended as a "stand-alone" document; it is intended to be implemented in conjunction with other elements of the subject Work Plan, and to be implemented by the Environmental Investigation Instructions (EIIs) and other procedural documents referenced therein. EPA guidance documents for Work Plan and QAPjP preparation (e.g., Section 7 of QAMS-005, Section 2.3.2.4 of Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA) permit the incorporation of information by reference to other plans or procedures in order to reduce redundancy, complexity, and preparation costs.

2. Ref: General Comments, page 2, paragraph 1;

- Bullets 1 and 2; Declined; sampling locations, frequency, and schedules will be defined in Descriptions of Work (DOWs); see comment response number 3.

- Bullet 3; Declined; Data Quality Objectives (DQOs) for all analytical parameters are discussed at length in Sections 4.1.1 and 4.1.2 of the Work Plan, and are further defined in Section 3 and Table QAPjP-1; however, please note that Section 3 and the table will be clarified pursuant to comment response number 11 and to correct the Work Plan cross-references.

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3. Ref: Comment A-1; Accepted in Part; detailed discussions of individual task activities are provided in Section 5.0 of the Work Plan, as noted; repetition of these discussions in the text of the QAPjP would be redundant. The QAPjP is intended to be implemented in conjuction with the other elements of the subject work plan, and to be implemented by the EIIs and other procedural documents referenced therein. EPA guidance for work plan and QAPjP preparation permits the incorporation of documents by reference as noted in comment response 1. Final definition of sampling locations, frequency, and other schedule-driven considerations will be made through DOWs; DOW preparation requirements will be addressed in an EII and provided for regulatory review as an update to WHC-CM-7-7, Environmental Investigation and Site Characterization Manual. The QAPjP text will be modified to clarify the purpose of the DOW.

4. Ref: Comment A-2; Accepted in Part; the text will be clarified and modified to cite standard procedures for screening and shipment of potentially radioactive samples; calibration details included in the procedures will not be reiterated in the QAPjP, however. See response to comment 10 below.

5. Ref: Comment A-3; Declined/Discuss; The non-CLP analytical reference methods cited in

the QAPjP were selected on the basis of an understanding reached between EPA, Ecology, and DOE in the work plan re-scoping meeting conducted on June 27, 1991; see the discussion of Data Quality Objectives (DQOs) under Topic 6 in the meeting munutes produced on July 6, 1991. As noted in the meeting minutes, EPA agreed with the basic philosophy, but wished to evaluate it further; to our knowledge, no concerns with the DQO approach or analytical methodology were subsequently raised.

6. Ref: Comment A-4; Accepted; EII 2.3 will be added to Table QAPjP-2.

7. Ref: Comment A-5; Declined; calibration control procedures for field equipment are adequately defined in the cited procedures and the EIIs governing their use. Field equipment will be drawn from a centrally managed calibration and maintenance facility that services all measuring, inspection, and testing functions at the Hanford site, not just the environmental engineering functions; inclusion of procedural detail in the QAPjP could precipitate inconsistencies between the QAPjP and later versions of the source procedures. In addition, EPA guidance for work plan and QAPjP preparation permits the incorporation of documents by reference, as noted in comment response 1.

Calibration methods for analytical laboratory equipment will be determined in large part by the type, make, and manufacturer of the equipment, the requirements of the standard EPA reference methods identified in Table QAPjP-1, and the requirements of the laboratory's own QA plan. The acceptability of those methods must be approved on a case-by-case basis for each analytical laboratory. Laboratory selection will not be finalized until DOWs have been prepared for the investigation; see comment response number 4.

8. Ref: Comment A-6; Accepted in Part; the text and Table QAPjP-1 will be revised to present detection limits as Practical Quantitation Limits (PQLs) where SW-846 methods are invoked, and as Contractually Required Quantitation Limits (CRQLs) where other EPA methods are specified. Maximum values for PQLs will correspond directly to those defined in 40 CFR 264 Appendix IX. Maximum values for CRQLs and target ranges for precision and accuracy will be based on what can reliably be achieved in the laboratory under normal conditions. The revised Table will represent a minimum standard that shall be met by the procurement agreements negotiated with individual laboratories; any justifiable deviation required from the minimum standard so established will require a formal change to the QAPjP, and as such will be subject to regulatory review and approval prior to implementation.

9. Ref: Comment A-7; Declined; reporting units must be as defined in the governing reference method in order to ensure comparabilty of data. Extraction of procedural detail for inclusion in the QAPjP is inappropriate in a situation in which the EPA reference methods must always take precedence. Moreover, incorporation of such detail by reference to the standard methods reduces redundancy, complexity, and preparation costs, and eliminates any potential inconsistencies between the QAPjP and future revisions of the standard methods.

10. Ref: Comment A-8; Declined; physical parameters of soil will be tested by the standard ASTM methods specified in Table QAPjP-3, except where no ASTM standard exists, the soils laboratory must develop a procedure and submit it for approval prior to use. As in all cases in which subcontractor procedures are required, regulators will have access to such documents for review purposes at any time through the WHC Technical Lead. ASTM methods are in the public domain, and will not be separately provided. These tests were incorporated in response to a specific EPA request based on the review of an earlier draft of

this document.

11. Ref: Comment A-9; Accepted; the text will be clarified.

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1/16 Comment Resolution Meeting BC-1 only

Comments on Draft B of the Remedial Investigation/Feasibility Study Work plans for the 100-BC-1 and 100-BC-5 operable units were provided by the Environmental Protection Agency (EPA), Department of Energy/Richland Operations (DOE/RL), Department of Energy/Head Quarters (DOE/HQ), International Technology Corp. (IT), and Westinghouse Hanford Company. This document provides the responses to the EPA comments transmitted to the DOE and dated December 23, 1991 (100-BC-1) and December 30, 1991 (100-BC-5).

The responses to the EPA comments are based on the letter dated January 7, 1992 addressed to Paul Day, EPA and Timothy Nord, Ecology from Steven Wisness, DOE. There are four topics that are prevalent throughout the EPA comments. These topics are described below, and will be referred to by number when responding to individual EPA comments.

1. Revisions of work plans to include additional material on geology, hydrology, ecology or sources.

   It is our position that the majority of the comments which call for the addition of material (which is primarily background in nature) would not be productive at this stage of the program. This type of information will become available during the course of the RFI (RI). Additionally, we believe this was the agreement which we had reached during the last round of comment disposition discussions. Consequently, many of the comments will be rejected on this basis.

2. Revise the work plans to include information on 100 Area Risk Assessment, Feasibility Studies, Ecological Investigations, etc.

   At the time that the work plans were drafted (June-September) many issues were not fully resolved. We do not believe that it would be productive to update the work plans to reflect these activities. We will clarify references to documents and actions that have since occurred, however, new material will not be incorporated.

3. Clarification of the Hanford Site Past Practice Investigation Strategy.

   Many comments related the need to better integrate the work plan activities with the Hanford Site Past Practice Investigation Strategy. This presentation will be improved after discussion with the three parties and expect that many comments will be resolved by this action.

4. Clarification of the information contained in descriptions of work (DOW).

   How the DOWs will be enforced will need to be discussed with the three parties. The discussion of the DOWs in text will be improved and it is expected that many comments will be resolved by this action.

Comments will also be classified as recommended by Ecology.

Technical - T
Technical requirements included in DOWs - D
Programmatic - P
Editorial - E

The responses to comments will be as follows:

Accept
Accept in part - discussion will be provided
Reject - discussion will be provided
Discuss (Requires regulatory input to determine response)

The responses to these comments should be considered preliminary because discussion among the three parties may lead to changes. Comments that have been accepted may be changed to accepted in part as the comment is actually incorporated into the text.

Comment Number	Class	Response
100-BC-5 Operable Unit - EPA Comments		
2.1	E	**Accept**
2.2	E	**Accept**
2.3	T	**Reject.** See topic 1.
2.4	E	**Accept**
3.1	E	**Accept**
3.2	T	**Accept in part.** Although information is provided regarding bioaccumulation factors, Section 3.3.2.5 states that "bioaccumulation potential is not used as a screening criterion for the operable unit contaminants." The same is true for contaminant mobility. The text in question will be changed from "focus will be on those contaminants..." to "contaminants will be examined with respect to the following characteristics:"
3.3	T	**Accept in part.** A more appropriate method for determining toxicity will be used. However, use of cancer potency and reference dose health factors for this preliminary assessment are not appropriate.
3.4	T	**Accept in part.** The text regarding the impact of radionuclides refers to a qualitative analysis, not the preliminary assessment conducted in Section 3.3. The text will be clarified. The list of general contaminant screening parameters will be removed from Section 3.3.3 and Table 3-36. Rationale for parameter selection and discussion of how they will be used will be provided in Section 5.
3.5 3.12	T	**Reject.** Identification of remediation alternatives, such as treatment technologies, for the IRM will take place in the focused FS. It would be premature to begin identifying treatment alternative technologies before data is available from the LFI.
3.6	T	**Reject.** See response to comment 3.5.
3.7 3.15	E	**Accept in part.** A bold circle will be added to the legend to depict primary contaminant sources. The arrowhead pointing from "Ingestion" to "Biota" will be removed. The biota receptor will not be further characterized. Section 3.3 is not intended to be an exhaustive analysis of exposure pathways, nor is it intended to limit the scope of further investigations.
4.1	P	**Accept**
4.2	I	**Accept**

ARAR's yes & no column. 3

4.4 - Phys. Prop Sampling - Possibly Use backhoe

Comment Number	Class	Response
4.3	E	**Accept**
4.4	T	**Reject.** Soil sampling at the depth anticipated in the groundwater investigations cannot be feasibly performed with a backhoe.
4.5	T	**Discuss** Accept in Part ~Reference Documents.
5.1	E	**Accept.** Soil samples for physical property analysis will be taken from the deep well, and soil samples for chemical analysis will be taken from the shallow well.
5.2	E	**Accept**
5.3	T	**Reject.** See response to 100-BC-5 comment 4.4.
5.4	E	**Accept**
5.5	T	**Accept**
5.6	T	**Discuss.** The objectives for addressing potential pipeline leaks needs to be clearly identified.
5.7	T	**Reject.** The deep well will be completed at the bottom of the first confined or partially confined aquifer encountered during drilling. Other portions of the text will be modified as required to be consistent with the aforementioned statement. Completion in the deeper upper confined aquifer was considered, but not adopted because drilling to such depths could not be justified without first determining whether contaminants had penetrated into shallower confined or partially confined aquifers.
5.8	D	**Accept**
5.9	T	**Reject.** The potential limited usefulness of slug tests is acknowledged in the text; however, such tests are not planned to be conducted within the temporary casings and screens because test activities may result in the collapse of loose sediments into the hole. If Aquifer test (Pump Test) aquifer, a slug test will not
5.10	T	**Accept in part.** The text will be modified to indicate that continuous measurements of temperature and water level are being conducted in three wells in each of the H, B/C, and F Areas, and will be used to establish general trends and help correlate the quarterly water sampling results with changes in river stage. Continuous measurements of additional water quality parameters may be made at a later date if needed to support site remediation.
5.11	T	**Accept**

200' depth
75' depth

Weiss

Add as data need.

Well Specs

Defer

Defer general approach

Would prefer to leave as bottom of Ringgold

Well constru ~temp. Casin temp scree

can not stress give you anything eithe

Possibly Plac in just On well for revi look at what was done in 300 Area.

Conductivity would probab be a better parameter for determining influence of River vs temperature

FSP Table Addition in Chap 5.

4

2 1 2 6 4 8 9 7

Comment Number	Class	Response
5.12	E	**Accept.** Section 5.1.11 will be revised to reference the Hanford Site Baseline Risk Assessment Methodology (HSBRAM), which makes use of the guidance documents in question.
5.13	T	**Accept in part.** The terminology developed for human health analyses is largely applicable to environmental assessments. However, Section 5.1.11 will be revised to reference the HSBRAM, which makes use of guidance for environmental evaluations and describes its application.
5.14	T	**Accept**
5.15	E	**Accept**
6.1	E	**Accept**
6.2	E	**Accept**
6.3	E	**Accept**
8.1	E	**Accept**
A.1 through 1.9 Appendix A		
D-1	T	**Accept.** However, geology mapping will not be done as part of the shoreline mapping. A reference will be added to Section 5.1.3.2 in the work plan.
D-2	T	**Reject.** Seepage sampling has been completed. This comment will be used in developing the sampling recommendations in Milestone M-30-02.
D-3	T	**Reject.** A longer-term monitoring program can better be planned and implemented based on the results of Milestones M-30-03 and 04.
Typos and Miscellaneous Comments		
1	E	**Accept**
2	E	**Accept**
3	E	**Accept**
4	E	**Accept**
5	E	**Accept**
6	E	**Accept**
7	E	**Accept**

Brian Ploot & Bob Peterson Defer

Additional transducer placement.

9 2 6 4 8 1 6 9 8

Comment Number	Class	Response
100-BC-1 Operable Unit EPA Comments		
1.1	P	**Accept**
1.2	D	**Accept in part.** A discussion of the DOWs will be added to the text. A table of planned DOWs will be added to Chapter 5.
1.3	P	**Accept**
2.1	E	**Accept**
2.2	E	**Accept**
2.3	T	**Accept**
2.4	T	**Accept**
2.5	T	**Reject.** The recommended data are being provided by the 100 Area ecological study. The data on structurally and functionally important species are provided in the Data Synthesis Report, and the information on sensitive species and habitat will be provided in a report.
3.1	T	**Accept**
3.2	T	**Accept**
3.3	P	**Reject**. The qualitative assessment conducted in Section 3.3 is the identification of imminent and substantial endangerments, based on existing data. Such a condition, if it exists, can be used to justify an expedited response action (ERA) or interim remedial measure (IRM). These topics are described in the first paragraphs of Sections 3.3 and 3.3.4. There is no relationship between Section 3.3 and the risk assessment methodology described in Section 5.1.11.
3.4	T	**Reject**. The level of detail recommended by the reviewer is not appropriate for Section 3.3, given its preliminary nature. Section 3.3 is not intended to be an exhaustive analysis of exposure pathways, nor is it intended to limit the scope of further investigations.

OK w/addition

Add - report will be written to address these.

OK - clarify purpose

Clarify differences in this section & qualit. R.A. performed as part of LFI/IRM.

Other erosional processes may include....

Comment Number	Class	Response
3.5	T	**Accept in part.** Although information is provided regarding bioaccumulation factors, Section 3.3.2.5 states that "bioaccumulation potential is not used as a screening criterion for the operable unit contaminants." The same is true for contaminant mobility. The text in question will be changed from "focus will be on those contaminants..." to "contaminants will be examined with respect to the following characteristics:"
3.6	T	**Accept in part.** A more appropriate method for determining toxicity will be used. However, use of cancer potency and reference dose health factors for this preliminary assessment are not appropriate.
3.7	T	**Accept.** The list of general contaminant screening parameters will be removed from Section 3.3.3 and Table 3-36. Rationale for parameter selection and discussion of how they will be used will be provided in Section 5.
3.8	T	**Accept in part.** The text in question refers to a qualitative risk analysis, not the preliminary assessment conducted in Section 3.3. The text will be clarified. ~will be addressed in the R.A.
3.9	E	**Accept in part.** Title of Section 3.3.4 will be changed to "Use of Qualitative Risk Assessment to Make Interim Action Decisions" as per the DOE Letter Report for Rescoped Work Plans (dated July 1991). However, as described in the first paragraphs of Sections 3.3 and 3.3.4., the identification of imminent and substantial endangerments can be used to justify an expedited response action (ERA) or interim remedial measure (IRM).
3.10	T	~~**Reject.**~~ Accept Section 3.4 is a preliminary assessment of remedial alternatives and it currently observes several types of land use.
3.11	E	**Accept**
3.12	T	**Reject.** A detailed presentation of waste treatment will be provided in the FS.
3.13	T	**Accept**
3.14	T	**Accept**

ok

ok

ok

ok

General land use has not been decided

ok

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Comment Number	Class	Response
3.15		**Accept in part**. A bold circle will be added to the legend to depict primary contaminant sources. The arrowhead pointing from "Ingestion" to "Biota" will be removed. The biota receptor will not be further characterized. Section 3.3 is not intended to be an exhaustive analysis of exposure pathways, nor is it intended to limit the scope of further investigations.
3.16	T	**Accept**
3.17	T	**Accept**
4.1	T	**Accept**
4.2	T	**Accept**
4.3	T	**Discuss** Red line Proposal > Qualit. R.A. – Risk Assessment Group will rewrite & PROPOSE ~ State clearer what are the objectives
4.4	T	**Accept**
4.5	T	**Reject**. The lateral extent of contamination will be determined by the observational approach during the implementation of the remedial alternative. The lateral extent of the cont., based upon site knowledge, is not expected to extend past the site boundary.
4.6	T	**Accept in part.** A pilot study is planned, however, it will be completed as a separate activity. A borehole will be added at this facility.
4.7	T	**Accept**
4.8	P	**Accept**
4.9	T	**Discuss** Reject
4.10	T	**Reject.** The use of analogous facilities was discussed as the preferred approach. Sampling would be used as a secondary measure.
5.1	T	**Accept**
5.2	T	**Accept in part.** A table will be added to Chapter 5 as recommended. A surface radiation survey is not planned at the 100-BC-1 area. ~ Info from 3-3, 6-3
5.3	T	**Reject**. Please see the response to 4.5.
5.4	D	See topic 4. add descriptions on
5.5	T	**Discuss** defer to BC-5

Redline —

Modify Text

9 2 1 2 6 4 8 1 0

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5.6	E	**Accept.** Section 5.1.11 will be revised to reference the Hanford Site Baseline Risk Assessment Methodology (HSBRAM), which makes use of the guidance documents in question.
5.7	T	**Accept in part.** The terminology developed for human health analyses is largely applicable to environmental assessm ents. However, Section 5.1.11 will be revised to reference the HSBRAM, which makes use of guidance for environmental evaluations and describes its application.
8.1	E	**Accept**
		A.1 through A.15 Glenn Mills

9 2 1 2 6 4 8 1 7 0 2

Response to EPA General QAPjP Comments

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Bullet 5; Declined; equipment requirements are defined within EIIs; the EIIs that will apply to the various sampling investigations are identified in Table QAPjP-2; please not that the EII references and Table QAPjP-2 will be screened for consistency with Work Plan requirements, pursuant to comment response number A-4.

9 2 1 2 6 4 8 1 7 0 8

#2

10% Full Validation

Comment Number	Class	Response
100-BC-1 Operable Unit - EPA QAPjP Comments		
A-1	P	Accept in Part. Detailed discussions of individual task activities are provided in Section 5.0 of the Work Plan, as noted; repetition of these discussions in the text of the QAPjP would be redundant. The QAPjP is intended to be implemented in conjunction with the other elements of the subject work plan, and to be implemented by the EIIs and other procedural documents referenced therein. EPA guidance for work plan and QAPjP preparation consistently permits the incorporation of documents by reference in order to reduce redundancy, complexity, and preparation costs. Final definition of sampling locations, frequency, and other schedule-driven considerations will be made through Descriptions of Work (DOWs); DOW preparation requirements will be addressed in an Environmental Investigation Instruction (EII) and provided for regulatory review as an update to WHC-CM-7-7, Environmental Investigation and Site Characterization Manual. The QAPjP text will be modified to clarify the purpose of the DOW.
A-2	T	Accept in Part. The text will be clarified and modified to cite standard procedures for screening and shipment of potentially radioactive samples; calibration details included in the procedures will not be reiterated in the QAPjP, however. See response to comment A-8 below.
A-3	T	Discuss. The non-CLP analytical reference methods cited in the QAPjP were selected on the basis of an understanding reached between EPA, Ecology, and DOE in the work plan re-scoping meeting conducted on June 27, 1991; see the discussion of Data Quality Objectives (DQOs) under Topic 6 in the meeting minutes produced on July 6, 1991. As noted in the meeting minutes, EPA agreed with the basic philosophy, but wished to evaluate it further; to our knowledge, no concerns with the DQO approach or analytical methodology were subsequently raised.
A-4	E	Accept. The text and Table QAPjP-2 will be screened for consistency with regard to the anticipated scope of work as outlined in Section 5 of the Work Plan.

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Comment Number	Class	Response
A-5	E	**Accept.** EII 2.5 will be added to Table QAPjP-2.
A-6	E	**Reject.** The air investigation described in Section 5.1.7 of the Work Plan is limited in scope due to the low probability of disturbance of significant soil volumes; air quality sampling in compliance with EII 5.12 will not be required.
A-7	E	**Accept.** The noted EIIs will be added to Table QAPjP-2; see comment response number A-5.
A-8	P	**Reject.** Calibration control procedures for field equipment are adequately defined in the cited procedures and the EIIs governing their use. Field equipment will be drawn from a centrally managed calibration and maintenance function that services all measuring, inspection, and testing functions at the Hanford site, not just the environmental engineering functions; inclusion of procedural detail in the QAPjP could precipitate inconsistencies between the QAPjP and later versions of the source procedures. In addition, EPA guidance for work plan and QAPjP preparation consistently permits the incorporation of documents by reference in order to reduce redundancy, complexity, and preparation costs. Calibration methods for analytical laboratory equipment will be determined in large part by the type, make, and manufacturer of the equipment, the requirements of the standard EPA reference methods identified in Table QAPjP-1, as well as the requirements of the laboratory's own QA plan. The acceptability of those methods must be approved on a case-by-case basis for each analytical laboratory. Laboratory selection will not be finalized until DOWs have been prepared for the investigation; see comment response number A-2.

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Comment Number	Class	Response
A-9	P	**Accept in Part.** The text and Table QAPjP-1 will be revised to present detection limits as Practical Quantitation Limits (PQLs) where SW-846 methods are invoked, and as Contractually Required Quantitation Limits (CRQLs) where other EPA methods are specified. Maximum values for PQLs will correspond directly to those defined in 40 CFR 264 Appendix IX. Maximum values for CRQLs and target ranges for precision and accuracy will be based on what can reliably be achieved in the laboratory under normal conditions. The revised Table will represent a minimum standard that must be met by the procurement agreements negotiated with individual laboratories; any justifiable deviation required from the minimum standard so established will require a formal change to the QAPjP, and as such will be subject to regulatory review and approval prior to implementation.
A-10	T	**Reject.** Reporting units must be as defined in the governing reference method in order to ensure comparability of data. Extraction of procedural detail for inclusion in the QAPjP is inappropriate in a situation in which the EPA reference methods must always take precedence. Moreover, incorporation of such detail by reference to the standard methods reduces redundancy, complexity, and preparation costs, and eliminates any potential inconsistencies between the QAPjP and future revisions of the standard methods.
A-11	T	**Reject.** Physical parameters of soil will be tested by the standard ASTM methods specified in Table QAPjP-3, except where no ASTM standard exists and the soils laboratory must develop a procedure and submit it for approval prior to use. As in all cases in which subcontractor procedures are required, regulators have access to such documents for review purposes at any time through the WHC Technical Lead. ASTM methods are in the public domain, and will not be separately provided. These tests were incorporated in response to a specific EPA request.
A-12	P	**Accept.** The text will be clarified.

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Comment Number	Class	Response
A-13	P	**Accept.** The text will be clarified and modified to cite EII 14.1 and WHC-EP-0372, HEIS Users' Manual.
A-14	P	**Accept in Part.** The decision on whether or not to reanalyze depends on sample material availability, holding time, and other factors, and will be made as part of the nonconformance resolution process discussed in Section 13. The text will be clarified.
A-15	P	**Accept in Part.** Assessments of data accuracy and completeness should be performed in the context of the data validation process; any corrective actions required as a result of that process would automatically trigger the documentation and reporting actions that would be considered in the data assessment process, and eventually summarized under the separate reporting function described in Section 14. Note that the last sentence of Section 14 requires an assessment of the overall adequacy of the total measurement system relative to the data quality objectives, which would include any issues related to accuracy and completeness. Sections 8, 12, and 14 will be clarified.

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Comment Number	Class	Response
100-BC-5 Operable Unit - EPA QAPjP Comments		
A-1	P	**Accept in Part.** Detailed discussions of individual task activities are provided in Section 5.0 of the Work Plan, as noted; repetition of these discussions in the text of the QAPjP would be redundant. The QAPjP is intended to be implemented in conjunction with the other elements of the subject work plan, and to be implemented by the EIIs and other procedural documents referenced therein. EPA guidance for work plan and QAPjP preparation consistently permits the incorporation of documents by reference in order to reduce redundancy, complexity, and preparation costs. Final definition of sampling locations, frequency, and other schedule-driven considerations will be made through Descriptions of Work (DOWs); DOW preparation requirements will be addressed in an Environmental Investigation Instruction (EII) and provided for regulatory review as an update to WHC-CM-7-7, Environmental Investigation and Site Characterization Manual. The QAPjP text will be modified to clarify the purpose of the DOW.
A-2	T	**Accept in Part.** The text will be clarified and modified to cite standard procedures for screening and shipment of potentially radioactive samples; calibration details included in the procedures will not be reiterated in the QAPjP, however. See response to comment A-8 below.
A-3	T	**Discuss.** The non-CLP analytical reference methods cited in the QAPjP were selected on the basis of an understanding reached between EPA, Ecology, and DOE in the work plan re-scoping meeting conducted on June 27, 1991; see the discussion of Data Quality Objectives (DQOs) under Topic 6 in the meeting minutes produced on July 6, 1991. As noted in the meeting minutes, EPA agreed with the basic philosophy, but wished to evaluate it further; to our knowledge, no concerns with the DQO approach or analytical methodology were subsequently raised.
A-4	E	**Accept.** EII 2.3 will be added to Table QAPjP-2.

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Comment Number	Class	Response
A-5	P	**Reject.** Calibration control procedures for field equipment are adequately defined in the cited procedures and the EIIs governing their use. Field equipment will be drawn from a centrally managed calibration and maintenance function that services all measuring, inspection, and testing functions at the Hanford site, not just the environmental engineering functions; inclusion of procedural detail in the QAPjP could precipitate inconsistencies between the QAPjP and later versions of the source procedures. In addition, EPA guidance for work plan and QAPjP preparation consistently permits the incorporation of documents by reference in order to reduce redundancy, complexity, and preparation costs. Calibration methods for analytical laboratory equipment will be determined in large part by the type, make, and manufacturer of the equipment, the requirements of the standard EPA reference methods identified in Table QAPjP-1, as well as the requirements of the laboratory's own QA plan. The acceptability of those methods must be approved on a case-by-case basis for each analytical laboratory. Laboratory selection will not be finalized until DOWs have been prepared for the investigation; see comment response number A-2.
A-6	P	**Accept in Part.** The text and Table QAPjP-1 will be revised to present detection limits as Practical Quantitation Limits (PQLs) where SW-846 methods are invoked, and as Contractually Required Quantitation Limits (CRQLs) where other EPA methods are specified. Maximum values for PQLs will correspond directly to those defined in 40 CFR 264 Appendix IX. Maximum values for CRQLs and target ranges for precision and accuracy will be based on what can reliably be achieved in the laboratory under normal conditions. The revised Table will represent a minimum standard that must be met by the procurement agreements negotiated with individual laboratories; any justifiable deviation required from the minimum standard so established will require a formal change to the QAPjP, and as such will be subject to regulatory review and approval prior to implementation.

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Comment Number	Class	Response
A-7	T	**Reject.** Reporting units must be as defined in the governing reference method in order to ensure comparability of data. Extraction of procedural detail for inclusion in the QAPjP is inappropriate in a situation in which the EPA reference methods must always take precedence. Moreover, incorporation of such detail by reference to the standard methods reduces redundancy, complexity, and preparation costs, and eliminates any potential inconsistencies between the QAPjP and future revisions of the standard methods.
A-8	T	**Reject.** Physical parameters of soil will be tested by the standard ASTM methods specified in Table QAPjP-3, except where no ASTM standard exists and the soils laboratory must develop a procedure and submit it for approval prior to use. As in all cases in which subcontractor procedures are required, regulators have access to such documents for review purposes at any time through the WHC Technical Lead. ASTM methods are in the public domain, and will not be separately provided. These tests were incorporated in response to a specific EPA request.
A-9	P	**Accept.** The text will be clarified.

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Will be in town on Friday

100-BC-1 Comment Resolution Meeting
February 10, 1992

AGENDA

General Topics

- EPA Policy on Start of Intrusive Work
- 100-BC-1 Workplan Production Schedule
- 100 Area Feasibility Study Strategy
- 100 Area IRM Strategy
- Disposal Facility Strategy

100-BC-1 OU Schedule

- Proposed Treatability Plan Milestone
- Scope of 100-BC-1 Treatability Tests
- DOE-HQ Review Requirements
- Initiation of Remedial Action Field Activities
- Schedules

100-BC-1 Workplan Comment Resolutions

9 2 1 2 5 1 3 1 7 0 3

General Topics

- EPA Policy on Start of Intrusive Work
  - EPA states that intrusive work can not begin until workplan submitted for public review
  - Original understanding that intrusive work can begin with a DOW
  - This represents a new position
- 100-BC-1 Workplan Production Schedule
  - See attachment
  - Based upon discussions on 2/6, it may be possible to deliver Workplan by 3/13 16
- 100 Area Feasibility Study Strategy
  - 100 Area FS defines remedial alternatives to be considered (8/1/92)
  - 100 Area Treatability Studies Plan (8/1/92) based upon 5/1/92 draft of 100 Area FS report; Defines what treatability studies are needed to support what IRMs. Identifies which OUs are involved and preliminary schedules
  - Need OU Specific Treatability Plan (8/1/92 for 100-BC-1) to provide details
- 100 Area IRM Strategy
  - 100 Area IRM Program Plan (8/1/92) based upon 100 Area FS report and 100 Area TS plan; Defines schedule for initial IRMs needed to prove concepts and identifies remaining IRMs

- Disposal Facility Strategy

100-BC-1 OU Schedule

- Proposed Treatability Plan Milestone
  - EPA proposed milestone for June, 1993
  - Need to identify scope of plan
  - We believe that it will be met by 8/1/92 deliverable, "OU Specific Treatability Plan"

- Scope of 100-BC-1 Treatability Tests
  - Limited lab or bench top tests
  - Defined in 8/1/92 deliverable, "OU Specific Treatability Plan"

- DOE-HQ Review Requirements

- Initiation of Remedial Action Field Activities
  - Clarification required as to (1) what constitutes the end of the investigative study and (2) what is substantial physical work

- Schedules

100-BC-1 Workplan Comment Resolutions

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Attachment
Workplan production schedule
February 7, 1992

potential to cut time
will review

Activity\Operable Unit	BC-1 original	BC-1 per 2/6/92 revised	BC-5
1. **Redline text available** (see assumption 4)	2/7	2/7	2/14
2. **Redline draft agreed to**	2/18	2/10	2/24
3. Redline schedules available	3/2		3/9
Critical → 4. **Redline schedules agreed to**	3/9	2/21	3/16
5. **Golder completes review draft** (copy sent to EPA.)	3/9	2/28 complete doc.	3/16
6. **Review draft comments disposed**	3/16	3/3	3/23
7. **Golder goes to press** No Changes!!!	3/23	3/6	3/30
8. **WHC receives workplans**	4/6	3/13	4/13
9. **DOE-RL transmits workplans**	4/13	3/14	4/20

2→5: 3 wks

Note: Items in bold print are on critical path.

No more crunch available!

Assumption

1. Activity on resolving comments on remaining workplans (KR-1, KR-4, FR-1, FR-3, NR-1, and NR-2) will have a lower priority and will not interfere with the above commitments. Ripple affect in other sites. Reword.

Activity Notes

1. Redline text available:

2/25 EPA 9AM

QAPjP a. A redline of the QAPjP will be available 2/21. Meeting Tentatively Sched. for 2/25

b. Generic sections are as follows: Chapter 1, 3.2, 3.3, 3.4, 5.2, 6,7, Appendix A, B, C, and D. These will be the same for all workplans except for minor differences in source vs. groundwater and possible OU specific references.

c. All unresolved comments will be resolved by February 10, 1992. Attachment 1 is a list of currently unresolved comments.

DMP d. Limited changes will be made to the Data Management Plan and it will be renamed "Information Management Overview". Redline draft will be available February 14, 1992. The larger data management issue will not be addressed by these plans. one or two days off

2. Redline draft agreed to:

a. Written agreement of changes to the redline text agreed to.

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b. Changes to the QAPjP and DMP will be worked in to the review draft on a timely basis.

c. Any time saved on agreeing to the redline drafts will result in an earlier delivery date.

3. Redline schedules available:

a. Redline schedules reflecting EPA's proposed milestones and other possible changes (such as extended DOE-HQ review time) will be prepared.

b. If no additional milestones are proposed by Ecology, the redline schedules will include only other possible changes (such as extended DOE-HQ review time). New milestones will have to be identified and agreed to during the redline review.

4. Redline schedules agreed to:

a. Redline schedule approval (Item 4) must be completed no later than two weeks prior to Golder going to press. This will allow time to react to any changes coming out of the workplan draft review.

b. Reaching agreement earlier than the noted date will not accelerate workplan delivery. If the redline text (Item 2) is agreed to earlier than the date shown, the redline schedule approval may be on the critical path.

5. Golder completes review draft:

a. Golder requires three weeks to revise the text based upon the redline agreement. This includes adapting the generic text to the specific OU, incorporating comments, looking for ripple effects and inconsistencies, a QA check, and producing review copies. This was reduced for BC-1 but similar reduction for BC-5 can't be assured at this time.

6. Review draft comments disposed:

a. This assumes a meeting or teleconference to agree upon any changes.

b. Any time saved here would advance the delivery date.

7. Golder goes to press:

a. Golder generally requires two weeks to print, collate, bind, check, and deliver worklans to WHC. This was reduced to one week for BC-1 and depending upon timing and availability of printing equipment, up to a week may be saved may be saved for BC-5.

8. WHC receives workplans:

a. WHC requires a week to check workplans and transmit to DOE. This was reduced to two days for BC-1.

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9. DOE-RL transmits workplans:

a. DOE requires at least two days to check in the workplans and put them into distribution. This was reduced to one day for BC-1.

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IT- HPPIS

INTERNATIONAL TECHNOLOGY CORPORATION

November 4, 1991

199806.271-91

Mr. Steve Clark H4-55
Westinghouse Hanford Company
P.O. Box 1970
Richland, Washington 99352

WHC Order MLW-SVV-073751, Task Order 91-12
100 Area Feasibility Study
Comments on the 100-DR-1 and 100-HR-3 Rescoped Work Plans

Dear Mr. Clark:

As required by Task 2.4 of the subject task order, IT Corporation has reviewed the subject work plans. Our comments are enclosed.

If you have any questions, please call me at 943-6728.

Sincerely,

IT CORPORATION

G.R. Chiaramonte
Task Manager

GRC:grc
Project No. 199806.112.02.06

cc: A. Krug - WHC

Enclosure

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Regional Office
1045 Jadwin Avenue, Suite C • Richland, Washington 99352 • 509-943-6728

IT Corporation is a wholly owned subsidiary of International Technology Corporation

REVIEW OF THE 100-DR-1 AND 100-HR-3
WORK PLANS (DRAFT C)

IT CORPORATION
November 4, 1991

1.0 INTRODUCTION

IT Corporation, working under task order to Westinghouse Hanford Company (WHC), was assigned to review two of the rescoped work plans for the 100 Area RI/FS programs, as follows:

> *RCRA Facility Investigation/Corrective Measures Study Work Plan for the 100-DR-1 Operable Unit, Hanford Site, Richland, Washington, DOE/RL-89-09, Draft C, and*
>
> *RCRA Facility Investigation/Corrective Measures Study Work Plan for the 100-HR-3 Operable Unit, Hanford Site, Richland, Washington, DOE/RL-88-36, Draft C.*

2.0 SCOPE OF THE REVIEW

The scope of the task entails reviewing the rescoped work plans for consistency with the Hanford Site Past Practice Investigation Strategy (Thompson, 1991) and the Hanford 100 Area Feasibility Study Project Plan (IT, 1991). In addition, the following documents were considered:

- Hanford Federal Facility Agreement and Consent Order Change Package, 5-16-91
- Hanford Site Baseline Risk Assessment Methodology (DOE/RL,1991)
- Meeting Minutes, Unit Manager Meetings on 100 Area Work Plan Rescoping

The work plans were reviewed for consistency with these documents. Technical adequacy and appropriateness of the proposed field investigations were not considered and no editorial review was conducted.

3.0 APPROACH

Review of the 100-DR-1 and 100-HR-3 work plans indicate that they are generally inconsistent with the past practice strategy document and do not accurately present the dependencies and interrelationships among activities leading to the Record of Decision (ROD). According to our discussions with both WHC and the Department of Energy (DOE), it was agreed with the regulators that each of the subject work plans should present a detailed description of the limited field investigation (LFI) and a general overview of the entire process which takes an operable unit (OU) to a ROD. The work plans present the current conceptual understanding of the OU in Chapters 2 and 3 and the details of the LFI in Chapter 5 and the QAPjP. Chapter 4 of the work plans presents the rationale and approach used in the work plan, but fails to

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adequately describe the follow-on activities and the sequencing/dependencies of all the activities required to reach an operable unit ROD. To assist the work plan authors in clarifying the interrelationships of the elements proposed in the work plans, IT has developed a logic diagram (Figure 1) which depicts a time-sequenced flow of activities required to reach a ROD for an operable unit. The diagram is based on the past practice strategy document and is specific to the rescoped work plans. Note that the diagram assumes that interim remedial measures (IRM) pathway is followed to accomplish early cleanups, i.e., no expedited response actions (ERAs) were identified for these operable units in the unit manager meetings. This chart is intended to be a visual aid in describing the entire process of characterization activities, risk assessments (RA), treatability studies, and feasibility studies (FS) for the high and low priority sites within an operable unit and for the operable unit as a whole. Figure 2 depicts the flow of activities for the entire 100 Area from initial characterization through the implementation of final cleanup remedies.

Each element of these logic diagrams is described below and is referenced in additional work plan comments which follow. Figure 1 is a time-sequenced logic diagram which describes the activities conducted in selecting a final remedy for an operable unit.

3.1 Time-Sequenced Logic - LFI Through OU ROD (Figure 1)

STEP 1: LIMITED FIELD INVESTIGATION (LFI)

This LFI is a data collection/characterization activity for the high priority sites in an operable unit and consists of data compilation, non-intrusive investigations, intrusive investigations, and data evaluation subtasks. High and low priority sites were agreed upon at unit manager meetings by the TPA parties. The LFI, along with data from the 100 Area Wide Studies and the IRM risk assessment, is documented in the LFI Report, a secondary document. The LFI, the Area Wide Studies, and the 100 Area FS are conducted concurrently.

STEPS 2 THROUGH 6: AREA-WIDE STUDIES

The area wide studies consist of a series of investigations being conducted on a 100 Area or Hanford-wide basis. These investigations include the river impact study, the shoreline studies, the ecological study, the cultural resources study, and the Hanford background study. These studies will provide data to be used in the LFI Report and in all phases of risk assessment. The Area Wide Studies will be conducted in parallel with the LFI and the 100 Area FS.

STEP 7: 100 AREA RISK ASSESSMENT METHODOLOGY

The 100 Area Risk Assessment Methodology is presented in the document Hanford Site Baseline Risk Assessment Methodology (DOE/RL, 1991). This document will serve as the basis for all risk assessments to be performed at Hanford and will ensure consistent application of risk assessment methodology to be employed in the 100 Areas. The various

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levels of risk assessment include:

- Risk assessment for IRM decisions
- Baseline risk assessment for low priority sites
- Risk assessments for remedial alternatives assessments as part of focused feasibility studies
- Cumulative risk assessment for final OU remedy selection.

STEP 8: IRM RISK ASSESSMENT

The IRM risk assessment utilizes existing information, data collected during the LFI for the high priority sites, and data from the area wide studies for use in IRM decisions prior to the IRM focused feasibility study. The IRM risk assessment should incorporate all available data and be as quantitative as possible, but in the absence of sufficient data to perform a quantitative risk assessment, a qualitative risk assessment can be used for IRM selection (as defined in the past practice strategy).

STEP 9: LFI REPORT

The LFI Report is a secondary document summarizing the data collection activities conducted during the limited field investigation of the high priority sites. The report includes information from the IRM risk assessment and the area wide studies. The LFI Report will be summarized in the Interim ROD document. This report will be compiled at the same time as the IRM/FFS Report and the IRM Plan.

STEP 10: 100 AREA FEASIBILITY STUDY (PHASES I & II)

The 100 Area Feasibility Study, Phases I and II consists of four subtasks: contaminants of concern identification, ARARs identification, alternatives development, and alternatives screening. These subtasks will be performed on an 100 Area-wide basis and will provide the foundation for all subsequent focused feasibility studies to be performed for IRM selection and for final remedy selection in each operable unit. This Phase I/II study does <u>not</u> include detailed analysis of alternatives. The focused FSs will perform the detailed analysis using site-specific data. Details of the 100 Areas FS are defined in the Project Plan for this effort (IT, 1991).

STEP 11: FOCUSED FEASIBILITY STUDY (IRM)

This focused FS (IRM) consists of a <u>detailed analysis</u> of the alternatives developed in the 100 Area FS for selection of the alternative to be implemented for the IRM. Modeling will be performed as part of the detailed analysis, if required, and alternative risk analysis will be performed at the same level as the IRM risk assessment presented in Step 8. Information from the treatability studies and technology demonstration projects (See Step 18) will be used in the analysis of alternatives. The FFS (IRM) is documented in the FFS Report (IRM).

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STEP 12: FFS REPORT (IRM)

The FFS Report (IRM) is a primary document summarizing the data from the 100 Area FS, the treatability studies and demonstration projects, and the detailed analyses conducted during the focused feasibility study for IRM alternative selection. The FFS Report (IRM) will be incorporated into the Interim ROD document along with the LFI Report and the IRM Plan.

STEP 13: IRM PLAN

The IRM Plan is a primary document describing the plan to implement the IRMs for an operable unit. The IRM Plan, which is essentially the same as a conventional CERCLA Proposed Plan, serves as the primary means of public notification for solicitation of comment on the proposed action. This document will be prepared following the issuance of the LFI Report and the FFS Report (IRM).

STEP 14: INTERIM ROD

The Interim ROD is a primary document which summarizes all information contained in the LFI Report, the FFS Report (IRM), and the IRM Plan. The ROD is defined as the CERCLA document used to select the method of remedial action to be implemented at a site after the FS/proposed plan process has been completed. In this case, the Interim ROD covers the high priority site(s) and the specific remedial actions implemented as IRMs. A final operable unit ROD will be issued after the low priority sites are characterized as necessary and the cumulative risk assessment and focused FS for final remedy selection have been completed for the operable unit as a whole.

STEP 15: LOW PRIORITY LFI

The low priority waste sites in an operable unit were identified in meetings between DOE, EPA, and Ecology. Characterization activities will be conducted on these sites as agreed in the meetings and as necessary based on risk assessment needs. Not all low priority sites will be characterized prior to remediation; some may be remediated during cleanup of adjacent sites. Although the LFI of low priority sites will be conducted later in the process, all low priority sites must be addressed prior to final operable unit remedy selection. Data from this LFI will be used to develop a baseline risk assessment for the low priority sites and to perform a cumulative risk assessment for the entire operable unit. The information from this investigation will be compiled in a Low Priority LFI Report.

STEP 16: LOW PRIORITY BASELINE RISK ASSESSMENT

The low priority baseline risk assessment will use data collected during the LFI of the high priority sites, the LFI for the low priority sites, and the 100 Area Wide Activities and will be documented in the Low Priority LFI Report. The low priority risk assessment will be

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integrated into the cumulative risk assessment for the operable unit.

STEP 17: LOW PRIORITY LFI REPORT

The information from the low priority LFI and the low priority baseline risk assessment will be compiled and presented in the Low Priority LFI Report.

STEP 18: TREATABILITY STUDIES AND TECHNOLOGY DEMONSTRATIONS

Needs for treatability studies and technology demonstrations to support future detailed analyses of remedial alternatives will be identified in the 100 Area FS. Information collected in these studies and demonstrations will be used in the FFS for IRM selection and in the FFS for final remedy selection for the operable unit. These studies and demonstrations can be conducted upon their identification in the 100 Area FS and may run concurrently with the high priority LFI and IRM risk assessment.

STEP 19: WASTE DISPOSAL SITE DEVELOPMENT

Prior to implementation of IRMs or final remedies, the issue of waste disposal must be addressed. Development of a site to dispose of wastes removed from the operable units will be an ongoing process but obviously some disposal capacity must be in place before remedial activities which generate significant waste volumes can commence.

STEP 20: IRM IMPLEMENTATION

IRMs proposed in the IRM Plan and the Interim ROD will be implemented at this point. The implementation will consist of three basic phases: the design phase, the construction phase, and the operations phase. These phases will vary in scope and complexity among IRMs with respect to manpower needs, equipment expenditures, durations, etc. This activity can run concurrently with other activities such as the low priority LFIs. Any data collected as a result of the IRM implementation will be used in the cumulative risk assessment and the final remedy selection for the operable unit.

STEP 21: CUMULATIVE RISK ASSESSMENT

The cumulative risk assessment will utilize data collected in both the high and low priority LFIs, the Area Wide Studies, the treatability studies, the IRMs, and any additional studies which may be required to evaluate the cumulative risk associated with the waste sites in the operable unit. This risk assessment will then be used in the focused feasibility study for final remedy selection to evaluate alternatives for the final cleanup of the operable unit.

STEP 22: FOCUSED FEASIBILITY STUDY FOR FINAL REMEDY SELECTION

Using the alternatives developed and screened in the 100 Area FS,

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information from the focused feasibility studies for IRMs, and the cumulative risk assessment, a final FFS will be performed to select alternatives to be used in final cleanup of the operable unit. The study will be summarized in a primary document.

STEP 23: OPERABLE UNIT FFS REPORT

The Operable Unit FFS Report summarizes the information from the FFS for final remedy selection. The report will be used to develop the Operable Unit Proposed Plan and the Operable Unit ROD.

STEP 24: OPERABLE UNIT PROPOSED PLAN/ROD

The Operable Unit Proposed Plan and Operable Unit ROD present a summary of all information generated from the various studies conducted at the operable unit and for the 100 Areas. The Proposed Plan differs from the ROD summary in that it is brief and is written in simple layman's terms, since it is used primarily to inform members of the public. The primary reports generated during the process will be referenced and a preferred final remedy for operable unit cleanup will be recommended.

Figure 2 is a logic diagram depicting the relationships between all operable unit activities leading to closure on a 100 Area basis.

3.2 Time-Sequenced Logic for the 100 Aggregate Area (Figure 2)

While the previous diagram showed the flow of activities on a site-by-site basis for an individual OU, this diagram depicts the logic for the aggregate area as a whole, showing how all OU activities roll up into final remedy decisions and implementation for the whole 100 Area. The steps described below are conducted in a continuing and overlapping sequence for each operable unit starting with the highest priority OU and moving towards the lowest priority. The sequence overlaps such that, for example, final remedy implementation may be underway for the highest priority OU while the lowest priority OU may still be in the LFI phase. Specific steps are described as follows:

STEP 1: 100 AREA WIDE STUDIES

The 100 Area Wide Studies consist of a series of investigations being conducted on either a 100 Area or Hanford-wide basis. These investigations include the river impact study, the shoreline studies, the ecological study, the cultural resources study, and the Hanford background study. These studies provide data for the risk assessments for both IRM and final remedy selection.

STEP 2: 100 AREA RISK ASSESSMENT METHODOLOGY

The 100 Area Risk Assessment Methodology is presented in the draft document Hanford Site Baseline Risk Assessment Methodology (DOE/RL, 1991). This document will serve as the basis for all risk assessments to be performed at Hanford and will ensure consistent application of

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risk assessment in light of the strategy to be employed in the 100 Areas. The methodology will be used in the risk assessments for the high priority sites, the low priority sites, and the cumulative risk assessment necessary for final remedy selection.

STEP 3: 100 AREA FEASIBILITY STUDY (PHASES I AND II)

The 100 Area Feasibility Study consists of four subtasks: contaminants of concern identification, ARARs identification, alternatives development, and alternatives screening. These subtasks will be performed on an Area wide basis and will provide the foundation for the focused feasibility studies to be performed for each operable unit and for final remedy selection.

STEP 4: LFI/RA HIGH PRIORITY SITES

The LFI/RA for high priority sites consists of data collection and a risk assessment based on available data which will be used in the selection of IRMs. The risk assessment may be qualitative if sufficient information for a complete quantitative baseline RA is not available.

STEP 5: FFS/IRMs HIGH PRIORITY SITES

The FFS/IRMs for the high priority sites consist of the detailed analysis for alternatives identified in the 100 Aggregate Area FS and the resulting proposed IRMs for each operable unit.

STEP 6: IRM IMPLEMENTATION HIGH PRIORITY SITES

The implementation of IRMs at the high priority sites in each operable unit will satisfy the need for earlier cleanup action at the Hanford Site; also additional data for a quantitative risk assessment will be collected as IRMs are implemented.

STEP 7: LFI/RA LOW PRIORITY SITES

The LFI/RA for low priority sites will be conducted as necessary at each operable unit. The information will be used in the cumulative risk assessment and final remedy selection.

STEP 8: CUMULATIVE RA/FFS

The cumulative RA/FFS step compiles all the data collected for an operable unit and combines the data into a quantitative RA to be used in the FFS for final remedy selection.

STEP 9: OU RODS

The ROD for each operable unit summarizes the data collected throughout the RFI/CMS process and presents the preferred method of final cleanup for each operable unit.

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STEP 10: FINAL REMEDY IMPLEMENTATION

The final cleanup remedies for an operable unit will be implemented in this stage of the process.

4.0 WORK PLAN COMMENTS

Comments specific to the two work plans reviewed are presented below. General comments are listed first and present an overview of the specific comments which follow. The specific comments are presented in three sections: comments specific to both work plans; comments specific to 100-DR-1 work plan; and comments specific to 100-HR-3 work plan.

4.1 General Comments

The comments presented here are general in nature and represent an overview of suggestions for improvement of the work plans. Specific comments are presented in later sections.

1. The scope and objectives of the work plans need to be more clearly defined. The work plan has two objectives 1) to present a detailed plan to collect and compile data on the high priority sites through the LFI and 2) to present an overview of the process and steps leading to the ROD for the operable unit.

2. The dual terminology created by the use of both CERCLA and RCRA authorities is very confusing. A single set of terms should be developed and used consistently throughout all the work plans, and it is suggested that CERCLA terminology be used as the standard, similar to our suggested descriptions given in Section 3.0 of this review document. It is understood that Ecology may object to this. If use of CERCLA terminology is not possible, then a consistent set of RCRA terminology should be used and not interchanged with CERCLA. One approach might be to include a glossary at the front of the document defining terms and the functional equivalency of terms. For example, focused CMS is functionally equivalent to focused FS.

3. The entire process from RFI/CMS to operable unit ROD should be presented in a time-sequenced format, as suggested in Section 3.0 of this document. This information is vital to understanding the role of the work defined in the work plan as it relates to the entire cleanup process as defined in the strategy document. The information should be included in Chapter 4 of the work plan as part of the rationale and strategy discussion.

4. The relationships between the work plans and the 100 Area-wide Studies being conducted should be presented early in the document and with sufficient detail to give a clear picture of information flows. The type of information being collected in each study should be described. An example is the 100 Area FS where lists of contaminants of concern and ARARs are being developed. These studies should be referred to in appropriate sections in the work plan to add clarity to the

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discussions concerning activities which relate to the area-wide studies.

4.2 Specific Comments Common to Both Work Plans

The following comments relate to the same sections in each of the work plans; the page numbers for both work plans are included for reference.

1. Section 1.1
   100-DR-1 Page WP 1-2, 100-HR-3 Page WP 1-2

   The purpose and scope of the RFI/CMS is presented in Section 1.1. This section should include a statement of purpose and scope of the work plan. The work plan should describe in detail the data collection process of the limited field investigation with a general description of the entire process through the operable unit ROD. Chapter 5 of the work plan and the QAPjP present the detail of work activities for the LFI. Chapters 1 and 4 should include more information on the big picture. Figures 1 and 2 and accompanying text in Section 3.0 of this review document could be used to present a more concise, clear description of the flow of activities necessary to reach an operable unit ROD and begin final cleanup at the OU.

2. Section 3.2,
   100-DR-1 Page WP 3-15, 100-HR-3 Page WP 3-14

   This section discusses potential corrective action requirements (CAR). The text for this section should clearly state that the CARs presented are general, preliminary, may not be complete, and thus are of limited utility. Reference should be made to the ARARs development being conducted as part of the 100 Area Feasibility Study. A discussion of the relationship between the 100 Area FS ARARs development and subsequent documents should be included.

   The three types of CARs are each presented in a different format: the contaminant-specific CARs are bulleted and include either no standards or an example standard, then refer to the regulation for complete standards; the action-specific CARs are bulleted but only include the regulation title and the general citation; and the location-specific CARs are presented in tabular format and include detailed citations as well as requirements, prerequisites, and descriptions of the regulation. All the CARs should be presented in a similar and consistent format.

3. Section 3.3
   100-DR-1 Page WP 3-20, 100-HR-3 Page WP 3-18

   Section 3.3 is a preliminary qualitative assessment of the impacts of the known contaminants based on existing data. The final sentence of the page discusses the refinement of conclusions of the section but it is vague. Additional discussion of the relationships between data collection and the various risk assessments which will be performed in the operable unit would clarify the section. The text from Figure 1 of

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this document could be used here. The role of the risk assessment methodology development should be discussed in this section.

4. Section 3.3.2
100-DR-1 Page WP 3-23, 100-HR-3 Page WP 3-23

This section is titled "Contaminant Characteristics" and presents the criteria used to determine contaminants of concern (COC) for the operable unit. Reference should be made to the COC determinations being conducted as part of the 100 Area FS.

An example of the type of discrepancy which exists between the work plan and current studies is the half-life cutoff used for radionuclides. The 100 Area FS uses a two year half-life cutoff, i.e., any radionuclide whose half-life is shorter than two years is not considered as a contaminant of concern (except for N reactor). This cutoff allows for a minimum of 10 half-lives since the last reactor (other than N) was shutdown at the K Area more than twenty years ago. The work plan uses a one year cutoff which results in a decayed value of 1E-06 of the original activity of the radionuclide.

5. Section 3.4
100-DR-1 Page WP 3-27, 100-HR-3 Page WP 3-27

This section presents preliminary corrective action objectives and corrective measure alternatives. Several new terms are presented in this section, but are not adequately defined. Also terms are used interchangeably which do not represent identical concepts. A glossary should be developed using consistent definitions from the TPA, the strategy document, and other accepted sources. The following terms require definitions:

Limited field investigation (LFI)
RCRA facility investigation (RFI)
Remedial investigation (RI)
Feasibility study (FS)
Focused feasibility study (FFS)
Corrective measures study (CMS)
Focused corrective measures study (focused CMS)
Final corrective measures study (Final CMS)
Record of Decision (ROD)
Final ROD
Interim remedial action
Interim corrective measure
Interim remedial measure (IRM)
Aggregate area/focused corrective measure study

These terms should be clearly defined and consistently used throughout the document. Using a single set of terms would greatly reduce the confusion although Ecology will probably object to adopting CERCLA terminology. If RCRA terminology is used, it should not be mixed with CERCLA terminology (See General Comment 2).

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6. Section 3.4.4
100-DR-1 Page WP 3-32, 100-HR-3 Page WP 3-33

The term aggregate area/focused corrective measures study is used in the final paragraph of the section. This term is unclear and should be defined in greater detail so the meaning of the paragraph is clear.

7. Section 4.1
100-DR-1 Page WP 4-1, 100-HR-3 Page WP 4-1

This section attempts to present the rationale for the RFI/CMS process leading to the OU ROD. The rationale is rather vague and incomplete. Figures 1 and 2, or a similar diagram, should be used to explain the entire process to operable unit ROD. The charts visually represent the interrelationships and activity dependencies and clarify the need for each step of the process.

8. Section 4.1
100-DR-1 Pages WP 4-1 to 4-9, 100-HR-3 Pages WP 4-1 to 4-9

This section presents the rationale for the RFI/CMS and outlines the data quality objectives process. The purposes for data collection are presented early in the section and are reiterated throughout the following subsections. Some inconsistencies exist in the purposes. The primary purpose of the work plan is data collection for determination of the IRMs. Pages WP 4-1 and -2 of the 100-HR-3 work plan include a list of project purposes which are used to justify each activity of the field program, yet lists the primary purpose third on the list. If data collection for IRM determination is primary it should be listed first with the other purposes being secondary. This theme should be carried throughout the entire section.

9. Section 4.1.1.2
100-DR-1 Page WP 4-4, 100-HR-3 Page WP 4-4

The second paragraph states that the 100 Area aggregate investigations and the low priority sites will be described, yet they are never fully addressed. No references are made to the sections where these are to be discussed. Section 4.1 should include the big picture concepts, either in text or by use of diagrams such as Figures 1 and 2 of this document, which address both the 100 Area aggregate investigations and the low priority sites.

10. Section 4.1.2.2
100-DR-1 Page WP 4-6, 100-DR-3 Page WP 4-6

The work plans state that the methodology for conducting risk assessment is under development. The risk assessment methodology was issued in September, 1991 in draft form and should be referenced here.

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11. Section 4.1.2.3
100-DR-1 Page WP 4-7, 100-HR-3 Page WP 4-7

A brief mention of treatability studies is made in this section. The rest of the work plan is devoid of discussion of treatability studies and technology demonstrations. Information on these activities needs to be included in the work plan even if none are currently identified. Data from these activities will be used to supplement the FFS and IRM selection. Treatability study and technology demonstration needs will be identified in the 100 Area FS.

12. Section 4.1.2.4
100-DR-1 Page WP 4-7, 100-HR-3 Page WP 4-7

The section on baseline risk assessment should incorporate the risk assessment methodology for the Hanford Site.

13. Section 4.1.2.4
100-DR-1 Page WP 4-7, 100-HR-3 Page WP 4-7

The third paragraph of the section references input parameters for modeling activities which will be based on results of "recent studies at the Hanford Site" but does not describe the scope of these studies sufficient to understand how they will support subsequent activities. The studies should be listed and briefly described to at least indicate the types of information they will generate.

14. Section 4.1.2.5
100-DR-1 Page WP 4-8, 100-HR-3 Page WP 4-9

This section should reference the ARARs development being conducted as part of the 100 Area FS.

15. Section 4.1.2.6
100-DR-1 Page WP 4-9, 100-HR-3 Page WP 4-9

This section tends to be confusing and should be reworked. The flow of information and sequence of activities is not clearly defined. Use of the type of information given in Figures 1 and 2 could be useful here. Reference should be made to the 100 Area FS.

The term final CMS should be better defined to clarify the purpose of the section and to clarify the relationship between the focused CMS and the final CMS.

16. Section 4.2.1
100-DR-1 Page WP 4-10, 100-HR-3 Page WP 4-10

LFIs and IRMs are presented as the preferred pathways for the work in this operable unit. The rationale for using the IRM pathway instead of the ERA pathway should be briefly stated. This information can be extracted from the past practice strategy document.

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17. Section 5.1.8
100-DR-1 Page WP 5-16, 100-HR-3 Page WP 5-16

The ecological investigation is one of the 100 Area-wide activities. These should be briefly described early in the work plan and in Appendix D-2. The relationship between the 100 Area-wide activities and the operable unit specific activities should be clearly delineated. The flow of information and data uses associated with the area-wide studies should be briefly discussed or a reference to this information as presented in Chapter 4 should be made.

18. Section 5.1.11
100-DR-1 Page WP 5-17, 100-HR-3 Page WP 5-17

The types of risk assessments should be clearly defined and differentiated. The ROD process will include the risk assessment methodology development, the risk assessment (primarily qualitative) for IRM selection, the risk assessment for the low priority sites (quantitative, if data are obtainable, otherwise qualitative) for the low priority sites, and the cumulative (quantitative) for use in final remedy selection. These risk assessments tend to become confused in the text in this section; they should not be used interchangeably. Care should be taken to specify the appropriate level of RA at the appropriate point in time.

19. Section 5.1.11
100-DR-1 Page WP 5-17, 100-HR-3 Page WP 5-17

The first paragraph of this section discusses the baseline risk assessment and the data which will be used in the RA. One of the data sources listed is the corrective measures study, which is incorrect. No data collection is proposed for the CMS and the baseline RA is actually a data source which supports the CMS.

20. Section 5.1.11.1
100-DR-1 Page WP 5-18, 100-HR-3 Page WP 5-18

The contaminants of concern identification activity being performed in the 100 Area FS should be referred to in this section. The contaminants of concern listed in the work plan are based on existing data and should be stated as preliminary. The contaminants of concern may change based on work being conducted in the 100 Area FS and as data are collected in the LFI.

21. Section 5.1.11.2
100-DR-1 Page WP 5-19, 100-HR-3 Page WP 5-19

The final paragraph of this section is very vague. It is not at all clear as to the value of the uncertainties analysis and its further use in decision-making. The paragraph either needs to be expanded and made more specific or deleted.

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The RCRA Facility Investigation Report is a defined as a secondary document in the Operable Unit Schedule included in the work plan. The report should also be defined as a secondary document in the text.

24. Section 5.2
100-DR-1 Page WP 5-20, 100-HR-3 Page WP 5-20

One term for the focused CMS should be defined and used throughout this section. The text is confusing because focused CMS, CMS, final FS, and summary FS are all used here with no clear differentiation between the terms. A standard glossary of terms should be developed and adhered to. Using terms interchangeably, when in fact they have different meanings or connotations, should be avoided.

25. Section 5.2.3
100-DR-1 Page WP 5-24, 100-HR-3 Page WP 5-22

The operable unit schedules which are included as part of the work plans show the various reports which will be generated in the LFI/focused CMS process leading to IRMs. These reports should be defined in this section. Two reports are discussed here, the corrective measures report and the proposed plan, but the text is unclear as to exactly which reports are being referenced. The text should clearly state the report name, the type of information to be included in the report, and the type of document, either primary or secondary. A clear differentiation should be made between the IRM CMS report, the IRM Plan, and the Interim ROD and the final CMS and ROD for the operable unit.

26. Section 5.2.4
100-DR-1 Page WP 5-26, 100-HR-3 Page WP 5-26

This section is entitled "Final Corrective Measures Study" and implies a final CMS for the entire 100 Area which would result in the issuance of an area-wide ROD. The strategy document defines the final remedy selection path on an operable unit basis and in discussions with the regulatory agencies, it was agreed that the strategy document would not extend beyond the OU ROD. The issue of an aggregate area ROD remains a point for future negotiation; therefore the work plans should discuss the process up to and including the operable unit ROD.

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5.0 REFERENCES

Thompson, K.M., 1991, Hanford Past Practice Investigation Strategy, DOE/RL-91-40, Draft A, U.S. Department of Energy, Washington, D.C.

IT Corporation, 1991, Hanford 100 Aggregate Area Feasibility Study (Phase I and Phase II) Project Plan, Revision 1, 9/23/91

DOE/RL, 1991, Hanford Site Baseline Risk Assessment Methodology, Predecisional Draft, U.S. Department of Energy, Washington, D.C.

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5.0 REFERENCES

Thompson, K.M., 1991, Hanford Past Practice Investigation Strategy, DOE/RL-91-40, Draft A, U.S. Department of Energy, Washington, D.C.

IT Corporation, 1991, Hanford 100 Aggregate Area Feasibility Study (Phase I and Phase II) Project Plan, Revision 1, 9/23/91

DOE/RL, 1991, Hanford Site Baseline Risk Assessment Methodology, Predecisional Draft, U.S. Department of Energy, Washington, D.C.

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TIME-SEQUENCED LOGIC DIAGRAM - LFI THROUGH OU ROD

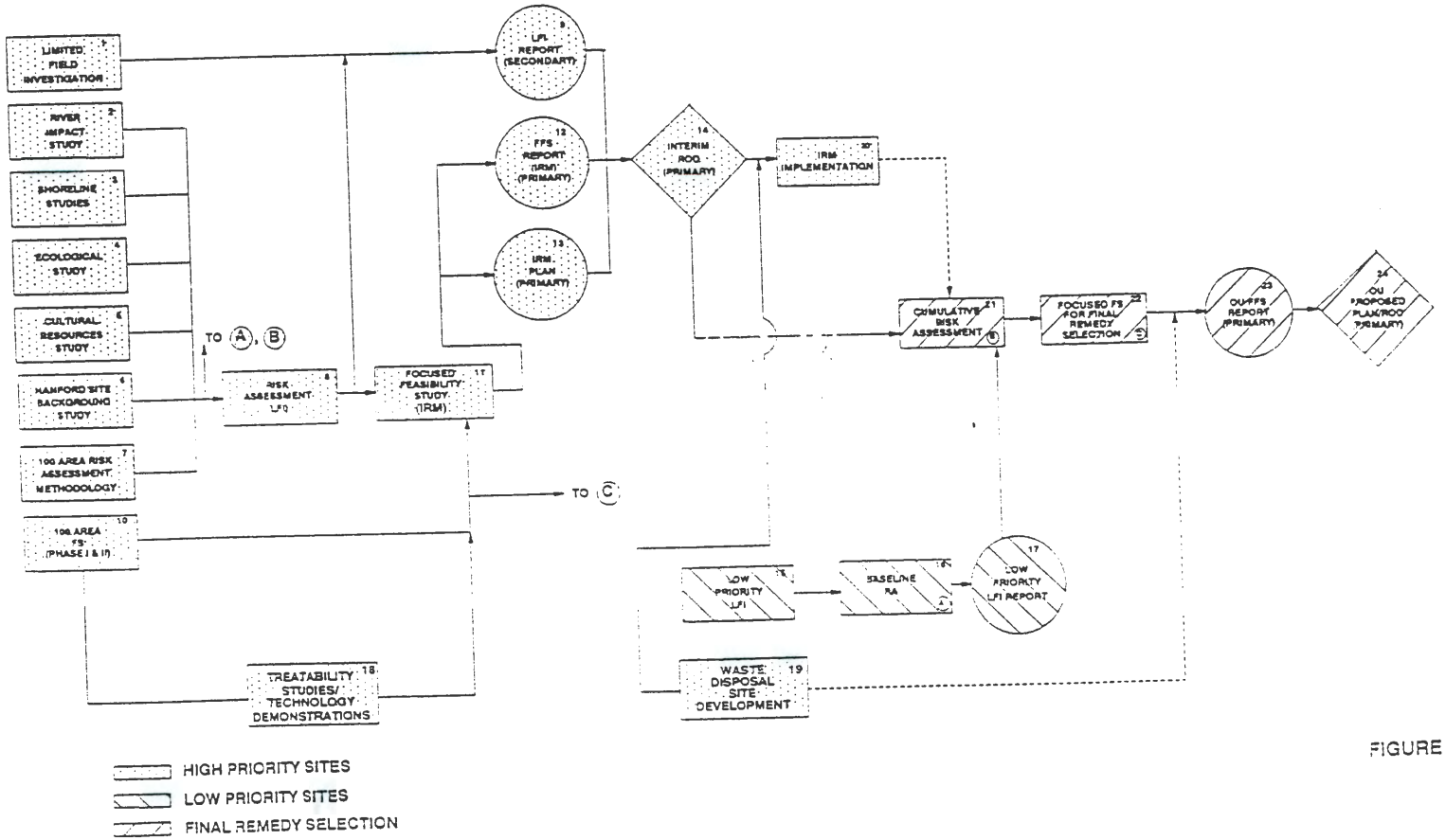
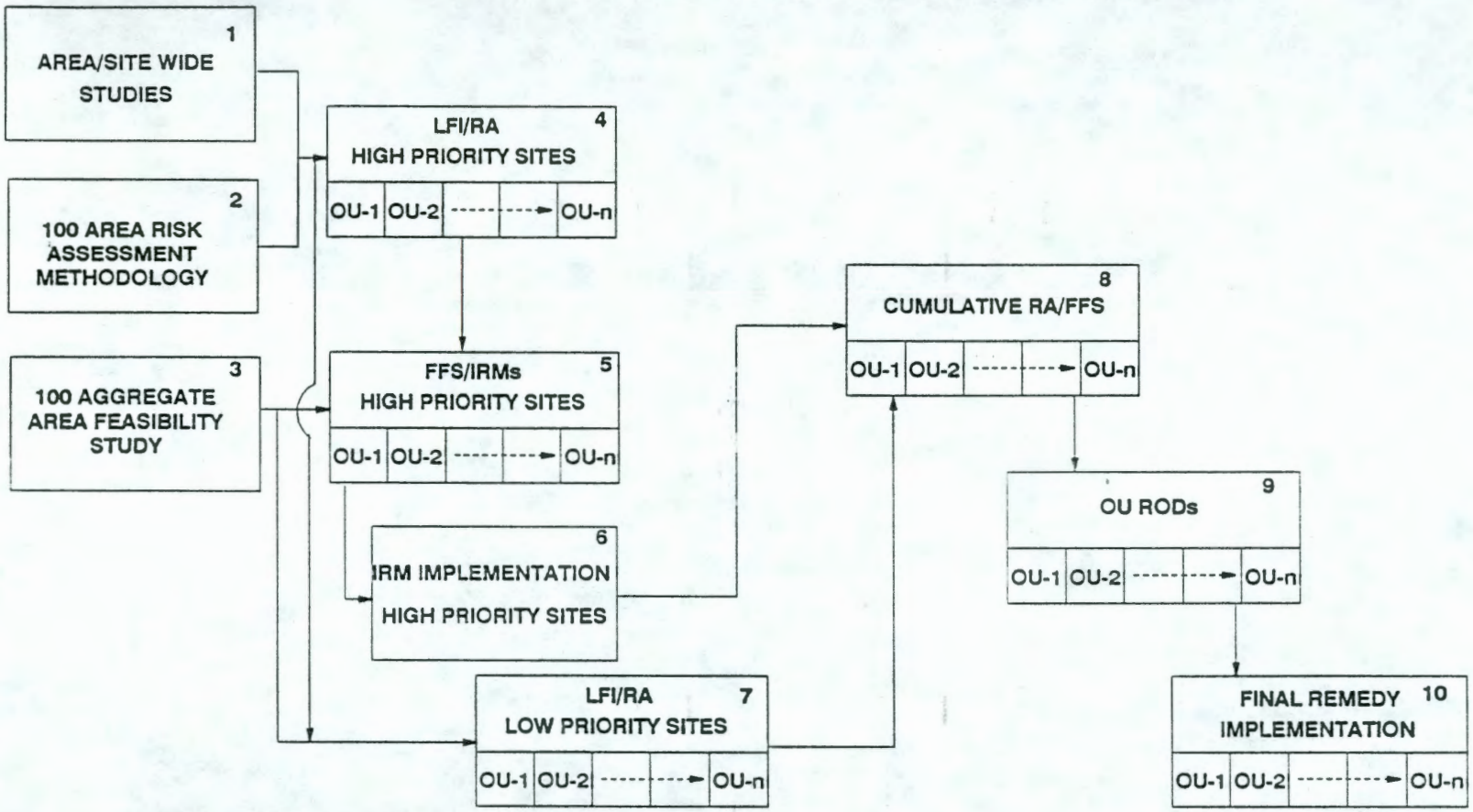


FIGURE 1

AGGREGATE AREA

TIME-SEQUENCED LOGIC FOR OUs TO FINAL REMEDY IMPLEMENTATION



LFI - LIMITED FIELD INVESTIGATION
RA - RISK ASSESSMENT
OU - OPERABLE UNIT
FFS - FOCUS FEASIBILITY STUDY
IRM - INTERIM REMEDIAL MEASURE
ROD - RECORD OF DECISION

FIGURE 2

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