

0048428

050455

Environmental  
Restoration  
Contractor**ERC Team**  
**Meeting Minutes**

Job No. 22192

Written Response Required NO

Due Date N/A

Actionee N/A

CC N/A

OU 100-NR-1, 100-NR-2

TSD T-1-2, D-1-2

ERA N/A

Subject Code 8150

**SUBJECT** 100-NR-1 AND 100-NR-2 PROPOSED PLANS DRAFT B COMMENT RESOLUTION MEETING**TO** Distribution**FROM** E. T. Coenenberg *ETC***DATE** August 22, 1997**ATTENDEES**E. T. Coenenberg (ERC) H9-03  
L. E. Gadbois (EPA) B5-01  
B. Mukherjee (ERC) H0-17  
S. J. Ingle (ERC) H9-02  
D. E. Olson (RL) H9-12  
P. R. Staats (Ecology) B5-18  
M. H. Sturges (ERC) H9-01  
B. L. Vedder (ERC) H0-17**DISTRIBUTION**Attendees  
M. C. Kelly H9-01  
Document and Information Services H0-09

A meeting on the above subject was held on August 7, 1997, at Conference room 2C22 at 3350 George Washington Way to discuss the preliminary assessment of and draft responses to comments provided by the U.S. Environmental Protection Agency (EPA) on the 100-NR-1 and 100-NR-2 Proposed Plans<sup>1</sup> and the associated Fact Sheets. After establishing that the Fact Sheets could be used as the bridge between the technically-based Proposed Plans and the public, the discussion focused on the comment resolution package.

**Point of Compliance Issue**

The initial, and most important, issue discussed involves interpretation of Model Toxics Control Act point of compliance for soil cleanup standards established at 15 feet below ground surface<sup>2</sup>. Interpretation of this regulation, while applicable to all waste sites, has the greatest impact on the three treatment, storage, and disposal (TSD) units that have discharge cribs and trenches with bottoms below natural grade. The interpretation contained in the draft Proposed Plans, and applied by the U. S. Department of Energy, Richland Operations Office (RL) and the Washington State Department of Ecology (Ecology) is, in their opinion,

<sup>1</sup>The applicable proposed plans are DOE/RL-96-102, *Proposed Plan for Interim Remedial Actions at the 100-NR-1 Source Sites Operable Unit* and the 100-NR-2 *Groundwater Operable Unit* and DOE/RL-97-30, *Proposed Plan for Interim Remedial Action of the Treatment, Storage, and Disposal Units and Associated Sites in the 100-NR-1 Operable Unit*.

<sup>2</sup>The applicable regulation is *Washington Administrative Code*, 173-340-740(6)(c) "For soil cleanup levels based on human exposure via direct contact, the point of compliance shall be established in the soils throughout the site from the ground surface to fifteen feet below the ground surface. This represents a reasonable estimate of the depth of soil that could be excavated and distributed at the soil surface as a result of site development activities."

consistent with the intent of the regulation and calls for excavation of the cribs and trenches 15 feet below the surrounding grade. Figure 1 illustrates the basic configuration of a crib and indicates ground 0 and 15 feet as interpreted by RL and Ecology. RL and Ecology do not propose to take credit for overburdens which may have been added under the RARA program.

EPA, on the other hand, interprets the regulation to mean that excavation begins at the surface where discharges were made during operations of the disposal unit. In this case, ground 0 would be the bottom of the cribs and excavation would be required to 15 feet below that point. Figure 2 illustrates the excavation strategy using the EPA interpretation. It is EPA's contention that this is the interpretation that is being practiced in the 100-B/C Area at Hanford and that interpretation should be consistently applied throughout the 100 Area. It was noted, however, that there are other places within the state where the DOE/Ecology interpretation has been applied.

In addition to the interpretations presented by DOE/Ecology and EPA, there are variations that could also be considered for application in the 100-N Area. Figure 3 illustrates other potential interpretations.

After much discussion, it was determined that this issue could not be resolved in the August 7 meeting. It was decided that at least one more meeting would be held among attendees of the August 7 meeting. It was agreed that, if resolution could not be reached at the follow-on meeting, tentatively scheduled for August 13, the issue would be further discussed at a final meeting among attendees, tentatively on August 18. If resolution had still not occurred by August 18, it was agreed that the issue would be elevated to the next level within the agencies. With assistance from BHI and CHI Regulatory Support, Mr. Mukherjee has the action to gather additional information concerning application of this regulation in the 100-B/C Area, and estimating volume and budget impacts of applying the EPA interpretation by August 13, 1997. It was also discussed that, if the interpretation changes, the CMS would also have to be modified along with the Proposed Plans.

Upon agreement to revisit the 15 feet issue at the next meeting, discussions continued regarding the remainder of the comment package as follows:

#### **Deed Restriction/Institutional Controls Issue**

Mr. Gadbois pointed out that the Legal staff in Seattle is concerned about the deed restriction issue being used at Hanford. Since there is no deed, there is no deed restriction, therefore, there are no institutional controls. Mr. Gadbois provided an extract from the 100-HR-3 and 100-KR-4 Record of Decision (Attachment 1) regarding Human Access Institutional Controls which he recommends be used in the Proposed Plans. Mr. Olson agreed to subject the language to a legal review and utilize it in the Proposed Plans as appropriate.

#### **Technical Nature of Proposed Plans**

Mr. Gadbois indicated that these Proposed Plans are very technical in nature, and that proposed plans are not normally presented in this manner. While agreeing that many of the people who would be reading the document would be technically competent and familiar with Hanford, he does not think it meets our obligation to address the common citizen. He suggested that while the 100-BC-1, 100-DR-1, and 100-HR-1 Proposed Plans were very technical and resulted in a ROD, they were not a good model upon which to base other proposed plans. He suggested that if RL and Ecology would agree to make the fact sheets the introductory matter to the Proposed Plans, then the technical portions of the Plans would not have to be edited out, nor would the Plans have to be rewritten. It was agreed that the Fact Sheets would become an integral part of the Proposed Plans.

### **RCRA/CERCLA Integration Language**

Mr. Gadbois said that his preliminary review of the RCRA/CERCLA integration language indicated that it was satisfactory, however, he could not endorse it until his Legal staff had an opportunity to review it. Upon receipt of an evaluation from his Legal staff, he will indicate any proposed changes.

### **Specific Comments**

**Page 7, Comment 13.** Mr. Gadbois indicated that it should be made clear in the Proposed Plans why there was interest in using the Ranger Scenario, i.e., that it does not contain an ingestion exposure pathway. Although this is clearly indicated in the CMS, it should be brought forward to the Proposed Plans as well.

**Page 9, Comment 18.** Regarding the text that will be added that begins, "Authorization of the selected action under RCRA..." Mr. Gadbois felt that the sentence, "This modification will incorporate, by reference, the CERCLA remedy selection ROD into the RCRA permit for the purpose of satisfying RCRA requirements." should be made much more visible. He indicated that this sentence was the key to addressing the concern of the commentor, and that it should not be buried in superfluous text.

**Page 19 and 20.** Mr. Gadbois believes that an important thought is lost in terms of the dose rate for multiple contaminants. The current table makes it appear that fifteen mrem/yr is expected for each contaminant. He suggests a footnote to the tables to clarify cumulative dose involving multiple contaminants. Also, cleanup levels in the tables should be consistent with one another. For example, the cleanup level for Sr-90 is indicated as either 4.4 or 3.7, depending on which table is used. The numbers should be consistent with the rest of the 100 Area.

**Page 21, Comment 44.** It was agreed that the first sentence of the response would be changed as follows:

Soil contamination (~~neither~~ radioactive ~~nor~~ or nonradioactive) was not found at these sites: ...

**Page 21, Comment 45.** It was agreed that the response would be changed as follows:

Because of this groundwater contamination, these sites will undergo modified closure pursuant to the Washington State dangerous waste regulations ~~and upon~~ via modification of the RCRA Sitewide Permit to incorporate the closure plan contained in Appendix B of the CMS.

**Page 24, Comment 53.** This definition needs to include the description of a modified barrier.

**Page 25, Comment 55.** Mr. Gadbois discussed that the cleanup levels for deep soils used in these Proposed Plans should be the same as the rest of the 100 Area. Mr. Gadbois indicated that it is important that the documents reflect the model that was used and the parameters of the modeling used to derive the cleanup levels for soil that are protective of groundwater. Mr. Gadbois suggested that it would be acceptable to identify the location in the CMS that contains this information rather than adding another column to the table. However, at a minimum, the Proposed Plans must specify the concept of how the numbers were developed. It was agreed that calculation of deep soil cleanup levels will be consistent with the rest of the 100 Area unless there is site-specific data that can be used at the time.

**Page 29, Comment 67.** Mr. Gadbois pointed out that the second sentence of the response defining Interim safe storage is incomplete. It was agreed that the sentence would be corrected.

**Page 30, Comment 70.** Mr. Gadbois suggested that the proposed response still does not answer the questions of what acceptable levels are and who they are acceptable to. He accepts that there is no ARAR for removing plutonium underlying the crib, and recommends that this be pointed out in the document as a 'good gesture/good stewardship/responsible management' action. Or he suggested that it could be identified as an action for ALARA purposes.

**Page 33, Comment 78.** It was agreed that the second sentence to the response would be changed as follows:

However, the revegetation activities are not part of nor necessary for completion of the ~~CERCLA~~ remedial actions proposed in this plan.

**Pages 35 and 36, Comment 86 (3).** In discussing work at the shoreline site, it is important to list the *Clean Water Act*, *Endangered Species Act*, and *Migratory Bird Treaty Act* as part of the discussion on ARARs. Otherwise, perhaps this discussion could be omitted all together. However, as long as ARARs are mentioned, you must put these regulations in and they must be referenced wherever there is a proposed action, not where there is no action proposed.

**Page 36, Comment 87.** Mr. Gadbois still has questions about the origin of the \$4.5 million future cost discussed in the remove/disposal estimate for the shoreline. It was agreed that **Mr. Sturges would research the costs and provide clarification or modification to the estimates.**

**Page 38, Comment 91,** third paragraph, third sentence of response where text will be added. It was agreed that the sentence would be changed as follows:

The implementability of a Soil Flush Alternative is ~~very~~ questionable.

**Page 41, Comment 93.** It was agreed that the definition of Cryogenic Barrier will be changed as follows:

An impermeable barrier constructed by freezing subsurface soils and groundwater over an extended area near the shoreline thus diverting contaminated groundwater around the frozen barrier allowing time for radionuclide contaminants to decay before migrating to the river.

**Page 43, Comment 101.** If the proposed comment resolution is read literally, it does not reflect the agreement that was reached in previous meetings. It was unclear to Mr. Gadbois whether this response implies that, at the end of five years, the pump and treat operation would be stopped. It was agreed that we would examine the language that had been previously created regarding the options that could be pursued with the pump and treat operation. In addition, it was suggested that the problem with the response might be resolved by deleting the first sentence.

**Page 45, Comment 109.** Mr. Gadbois and Mr. Staats discussed whether EPA should be mentioned in the Proposed Plans, and if so, who the EPA point of contact should be. It was agreed that Ecology would prefer that EPA be listed in the Plans. Mr. Gadbois agreed that he should then be listed as the point of contact.

**Fact Sheets**

Mr. Gadbois gave some suggestions on the Fact Sheets that will simplify the language and he also suggested that a few of the more important points be made in the Fact Sheets. specifically, what the potential threats to the public and the environment are, discussion of institutional controls. and the fact that the pump and treat system does not adequately address the problem for the long term. Additional, specific recommendations will be incorporated into the next draft.

**Graphics**

Mr. Gadbois had no specific comments on the graphic entitled Overview of Waste Site Cleanup Process and Associated Documents. On the color graphic depicting the environmental cleanup strategies in the 100 Area and the 100-N Area, Mr. Gadbois suggested deleting the following information about the 100 Area Remaining Sites Project: ~350 solid waste sites, +~90 100-IU-2 and-6 soil sites, and changing to ~440 soil sites. This comment was accepted and has been incorporated into the graphic.

Attachment: 1. Extract from the 100-HR-3 and 100-KR-4 Record of Decision

Concurrence:

  
\_\_\_\_\_  
D. E. Olson, Project Manager  
U. S. Department of Energy, Richland Operations Office

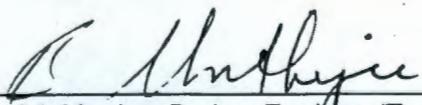
8/22/97  
Date

  
\_\_\_\_\_  
P. R. Staats, Unit Manager  
Washington State Department of Ecology

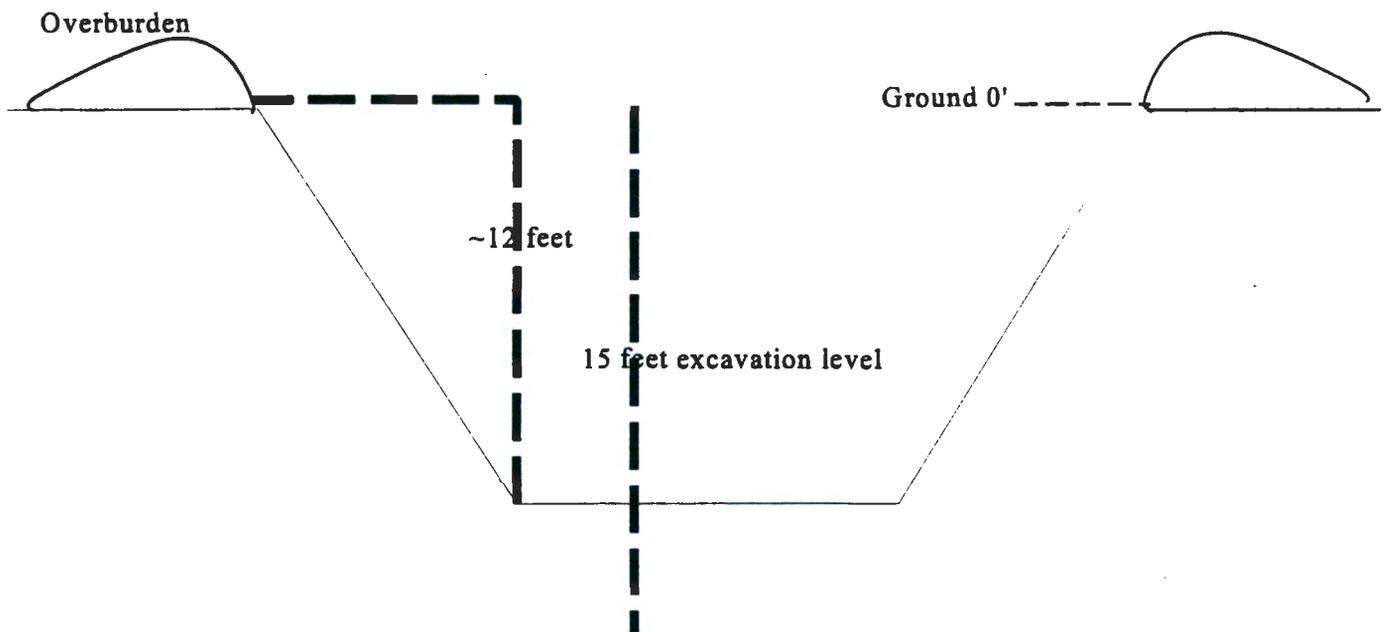
8/22/97  
Date

  
\_\_\_\_\_  
L. E. Gadbois, Unit Manager  
U. S. Environmental Protection Agency

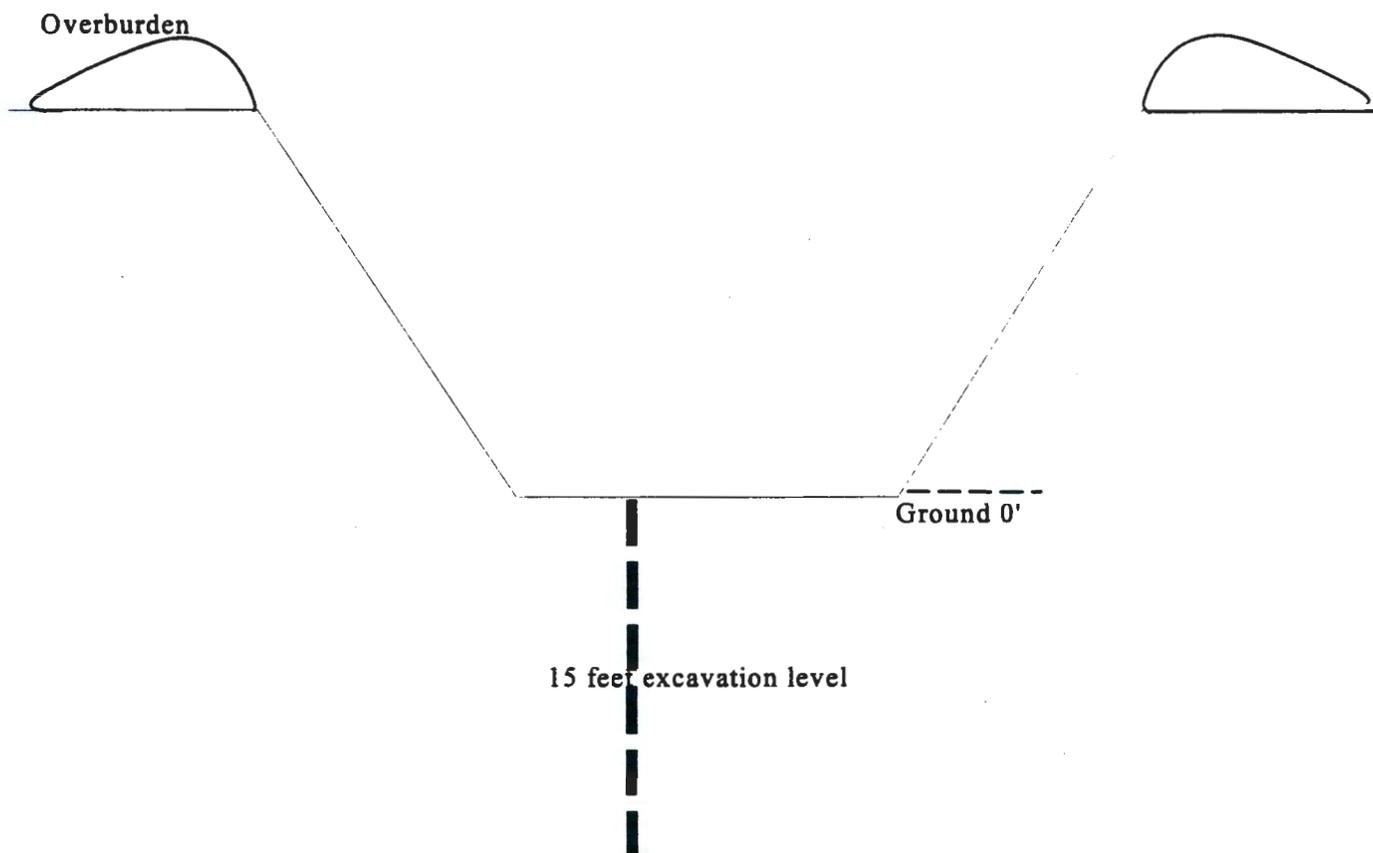
8-22-97  
Date

  
\_\_\_\_\_  
B. Mukherjee, Project Engineer/Task Lead  
Environmental Restoration Contractor

8/22/97  
Date



**Figure 1. DOE-RL/Ecology Interpretation of MTCA 15 Foot Depth Concept.**



**Figure 2. EPA Interpretation of MTCA 15 Foot Depth Concept.**

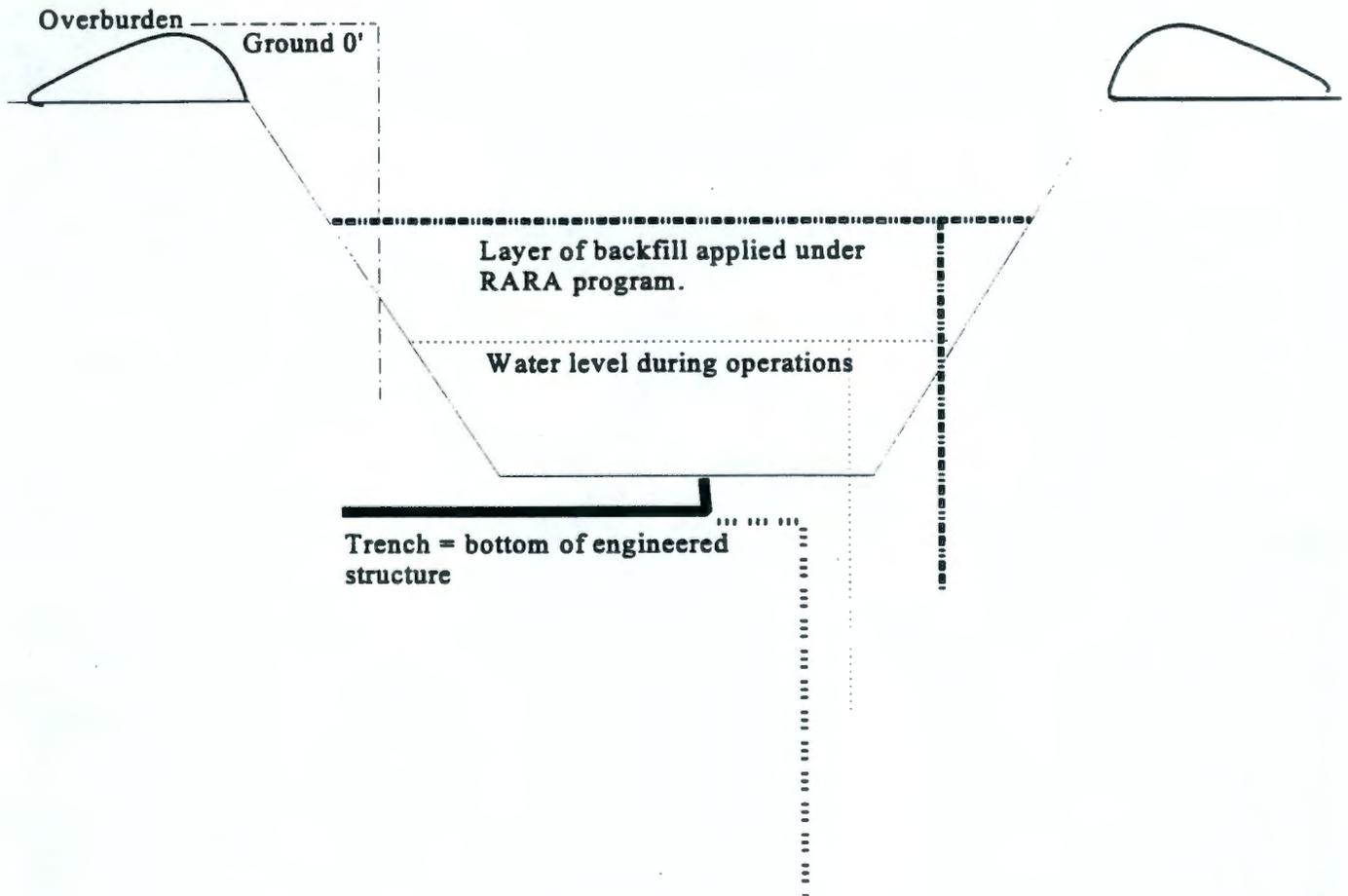


Figure 3. Other Potential Interpretations of MTCA 15 Foot Depth Concept.

---

Author: Laurence E Gadbois at HANFORD02A  
Date: 8/6/97 4:01 PM  
TO: Phillip R Staats  
BCC: Laurence E Gadbois  
Subject: Institutional Control Language

----- Message Contents -----

Phil:

Attached is a copy of the 100-HR-3 & 100-KR-4 ROD for your use. For your convenience, I have extracted the institutional control paragraph from the selected remedy and pasted it below. This should work. See you tomorrow.

--Larry--

#### Human Access Institutional Controls

Institutional controls are required to prevent human exposure to groundwater. The DOE is responsible for establishing and maintaining land use and access restrictions until MCLs and risk-based criteria are met or the final remedy is selected. Institutional controls include placing written notification of the remedial action in the facility land use master plan. The DOE will prohibit any activities that would interfere with the remedial activity without EPA and Ecology concurrence. In addition, measures necessary to ensure the continuation of these restrictions will be taken in the event of any transfer or lease of the property before a final remedy is selected. A copy of the notification will be given to any prospective purchaser/transferee before any transfer or lease. The DOE will provide EPA and Ecology with written verification that these restrictions have been put in place.

Environmental  
Restoration  
Contractor **ERC Team**  
**Meeting Minutes**

Job No. 22192  
Written Response Required? NO  
Closes CCN: N/A  
OF: 100-NR-1, 100-NR-2  
TSD: D-1-2, T-1-2  
ERA: N/A  
Subject Code: 4170, 8150

**SUBJECT** 100-NR-1/100-NR-2 DISCUSSION OF 15 FT POINT OF COMPLIANCE  
ISSUE AND COMMENT RESOLUTION ON PROPOSED PLANS

**TO** Distribution

**FROM** E. T. Coenenberg *ETA*

**DATE** August 22, 1997

**ATTENDEES**

E. T. Coenenberg, ERC, H9-02  
J. W. Darby, ERC, H0-17  
L. E. Gadbois, EPA, B5-01  
B. Mukherjee, ERC, H0-17  
S. J. Ingle, ERC, H9-02  
D. E. Olson, DOE-RL, H0-12  
W. W. Soper, Ecology, B5-18  
P. R. Staats, Ecology, B5-18  
M. H. Sturges, ERC, H9-01  
B. L. Vedder, ERC, H0-17

**DISTRIBUTION**

Attendees  
M. C. Kelly H9-01  
Document and Information Services H0-09

A meeting was held on Wednesday, August 13, 1997, to discuss and resolve issues regarding the interpretation of the Model Toxics Control Act (MTCA) point of compliance<sup>1</sup> issue, to review revised drafts of the Fact Sheets, and to review minutes from the August 7, 1997, meeting on the same subject.

**Point of Compliance Issue**

Mr. Olson prefaced the discussion of the 15 ft issue by stating that he was aware that Mr. Gadbois had talked with Messrs. Faulk and Sherwood, U. S. Environmental Protection Agency (EPA), and that he assumed we were all in agreement on how the MTCA 15 ft measurement should be applied. Mr. Olson introduced Mr. John Darby, BHI Design Engineering Manager, to provide a presentation of specific examples in the 100-BC area where MTCA is being applied. Mr. Darby explained that he had met with Mr. Alvin Langstaff, BHI Lead Engineer for 100-B/C Projects, to develop the presentation.

Mr. Darby provided a series of three diagrams (Attachment 1) showing typical sections corresponding to actual 100-B/C Area sites. Mr. Darby explained that surrounding grade, i.e., ground zero (start of the 15 ft measurement), is determined by judging the average of the elevations of the various grades surrounding the site, as well as considering how the site will be backfilled and recontoured. The first diagram shows a site

<sup>1</sup> The applicable regulation is Washington Administrative Code, 173-340-740(6)(c) "For soil cleanup levels based on human exposure via direct contact, the point of compliance shall be established in the soils throughout the site from the ground surface to fifteen feet below the ground surface. This represents a reasonable estimate of the depth of soil that could be excavated and distributed at the soil surface as a result of site development activities."

where the bottom of the engineered structure is above 15 ft, and the surrounding grade was determined using the averaging method. The typical section in the first diagram is analogous to 116-B-11. Reference drawings 0100B-DD-C007, Rev. 0 and 0100B-DD-C015, Rev. 0 for 116-B-11 Civil Plot Plan and Civil Sections and Details were reviewed to illustrate this typical section.

The second diagram, which is analogous to 116-C-1, shows an engineered structure that lies below 15 ft of surrounding grade. In this case, excavation would occur to extract the engineered structure, even though it would result in excavation below 15 ft from surrounding grade. It was noted that sampling would be conducted at the bottom of the engineered structure to determine if contamination levels exceed the "Deep Zone" criteria (protective of groundwater). Reference drawings 0100B-DD-C0008, Rev. 0 and 00100B-DD-C0014, Rev. 0 pertaining to 116-C-1 were reviewed during the meeting.

The third diagram is analogous to any site with shallow zone plumes, and shows a contamination plume beyond the area of expected contamination. In this case, where the plume is "chased" beyond the planned excavation, the average surrounding grade is not used as the reference grade, but rather the overlying ground surface elevation is used instead.

Mr. Olson provided a diagram showing cross sections of the 1301-N and 1325-N Cribs and Trenches indicating the proposed elevations for excavation (Attachment 2). Mr. Olson stated that generally, the proposed application of the 15 ft rule would result in excavation to 15 ft below average surrounding grade or the bottom of the engineered structure, whichever was deeper. In the case of these two sites, an additional 5 ft will be excavated for the purpose of removing the highest concentration of plutonium contamination beneath the sites. For 1301-N Crib, the top of the boulder field is used as ground zero (elevation ~440 ft), and excavating 15 ft below that level not only removes the engineered structure, but captures the plutonium as well.

At this point, Mr. Gadbois questioned where the mass of contamination would be for the 1301-N site, suggesting that the 15 ft rule must be balanced with removing the mass of contamination and protection of groundwater concepts. Mr. Olson explained that at the bottom of the proposed excavation zone, sampling would occur to determine if there is a marked decline in contamination concentrations that would justify ceasing excavation at that point.

Mr. Olson described the excavation methodology for the 1325-N Crib and Trench, stating that the original structure did not have a trench, and because of poor percolation, the crib was routinely overflowed. 1325-N is currently covered by concrete panels, and the overflow area is covered with cobbles. Average surrounding grade at 1325-N is ~451 ft, ~4 ft above the concrete panels, which lie at elevation 447 ft. At this site, the 15 ft depth would not capture the plutonium contamination expected beneath the crib and first third of the trench. Therefore, the effective excavation depth would be ~19 ft below average surrounding grade (451 ft msl [mean sea level]).

Mr. Gadbois wanted to know if there were any other Hanford sites where the site was in a hole, below natural grade. Mr. Olson suggested that the Emergency Dump Basin would be an example and also, suspected leaking underground pipes. Mr. Olson indicated that he did not think there were other such sites in the 100-NR-1 Operable Unit. It was noted that the ramifications of the 15 ft rule would be evaluated on a case-by-case basis.

**At the conclusion of the discussion, it was agreed that, in the case of 1301-N and 1325-N, average surrounding grade would be used to establish "ground zero" (i.e., the ground elevation to be considered the starting point for removal of contaminated soil for application of the 15 ft rule under the**

rural-residential scenario). In these cases, this also coincides generally with where contamination is first observed. The elevations agreed to are as follows:

- 455 ft above msl for 1301-N
- 451 ft above msl for 1325-N

### Fact Sheets

It was reiterated that, in the August 7 meeting, it was decided that the current versions of the Fact Sheets would become the *Summaries* to the Proposed Plans. Separate Fact Sheets will be developed, perhaps very similar to the Summaries, to satisfy the public involvement criteria. It was agreed that the graphics intended to accompany the Summaries should not be used in the Fact Sheets. It was agreed that this decision should be documented in the comment resolution package for general comment 4. Comments pertaining to the Fact Sheets (to be called Summaries) are bulleted below:

- The Summaries still contain technical language that should be stripped out, e.g., rural residential and RCRA closure.
- The Summaries should contain a discussion of the land use scenarios and why they were chosen, i.e., one with ingestion, the other without.
- The preferred alternatives must be highlighted in the Summaries.

Additional specific comments were documented on markups during the meeting and will be incorporated into the next draft of the Summaries. See Attachment 3 for the revised summaries.

### Institutional Controls

Mr. Mukherjee indicated that the redline/strike out versions of the Proposed Plans are due by August 22. He reiterated that there were two main points that were affecting this process, i.e., the 15 ft issue, which had been resolved during the meeting, and the institutional controls issue.

Mr. Gadbois explained that EPA was participating in nationwide legal discussions regarding institutional controls and particularly with respect to deed restrictions. He stated that the Proposed Plans should not refer to deed restrictions in any way. He suggested again that the language from the 100-HR-3/KR-4 ROD provides appropriate terminology with the exception that it does not address land use, only groundwater. Therefore, it was agreed that the 100-HR-3/100-KR-4 language would be modified to reflect both groundwater and land use, and otherwise would be used pending approval by Patrick Willison, DOE-RL Legal Counsel.

### RCRA/CERCLA Integration Language

Mr. Mukherjee asked Mr. Gadbois when to expect approval from his Legal Counsel on the RCRA/CERCLA Integration Language. Mr. Gadbois stated that he had called the Seattle office on August 11 and requested comments by August 13, but had not received any prior to today's meeting. He will forward any such comments and/or approval promptly upon receipt.

**Future Meetings**

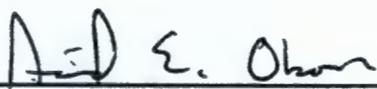
Mr. Olson stated that he planned to ensure that Mr. Willison would be at the meeting scheduled for August 22, which is when the Proposed Plans will be finalized and agreed to by the Tri-Parties.

**It was agreed that the August 18 time slot would remain open for comment resolution discussions if necessary. However, it was agreed that the meeting minutes from both the August 7 and August 13 meetings would be distributed to attendees electronically (without drawings). It was also agreed that comments requiring resolution from either meeting would be resolved via electronic mail between the parties prior to the August 18, meeting if possible. The goal would be to have all issues resolved and complete comment resolution prior to the August 22 meeting.**

It is noted that the drawings in the Corrective Measures Study pertaining to 1301-N and 1325-N will be revised.

- Attachments:
1. Handout Depicting Engineered Structure Above 15 ft, Engineered Structure Below 15 ft, and Plumes above 15 ft
  2. Remediation Zone Cross-Section for 116-N-1 and 116-N-3
  3. Summaries

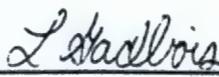
Concurrence:

  
 \_\_\_\_\_  
 D. E. Olson, Project Manager  
 U.S. Department of Energy, Richland Operations Office

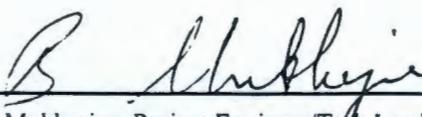
8/22/97  
 \_\_\_\_\_  
 Date

  
 \_\_\_\_\_  
 P. R. Staats, Unit Manager  
 Washington State Department of Ecology

8/22/97  
 \_\_\_\_\_  
 Date

  
 \_\_\_\_\_  
 L. E. Gadbois, Unit Manager  
 U.S. Environmental Protection Agency

8-22-97  
 \_\_\_\_\_  
 Date

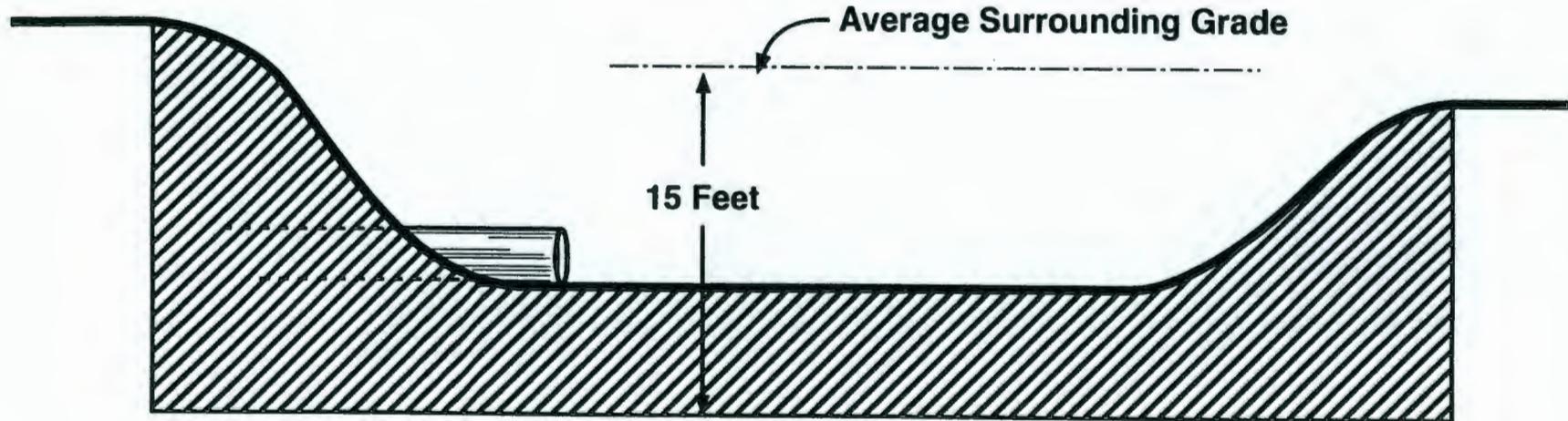
  
 \_\_\_\_\_  
 B. Mukherjee, Project Engineer/Task Lead  
 Environmental Restoration Contractor

8/22/97  
 \_\_\_\_\_  
 Date

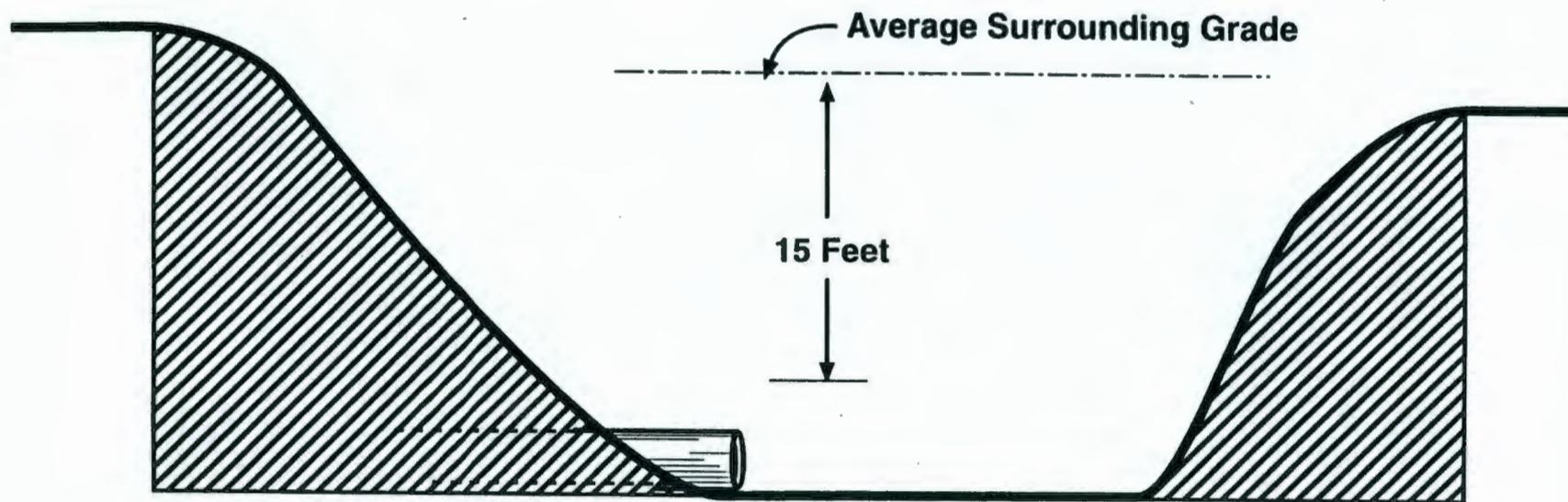
**ATTACHMENT 1**

**HANDOUTS DEPICTING ENGINEERING STRUCTURE ABOVE 15 FT,  
ENGINEERED STRUCTURE BELOW 15 FT, AND PLUMES ABOVE 15 FT**

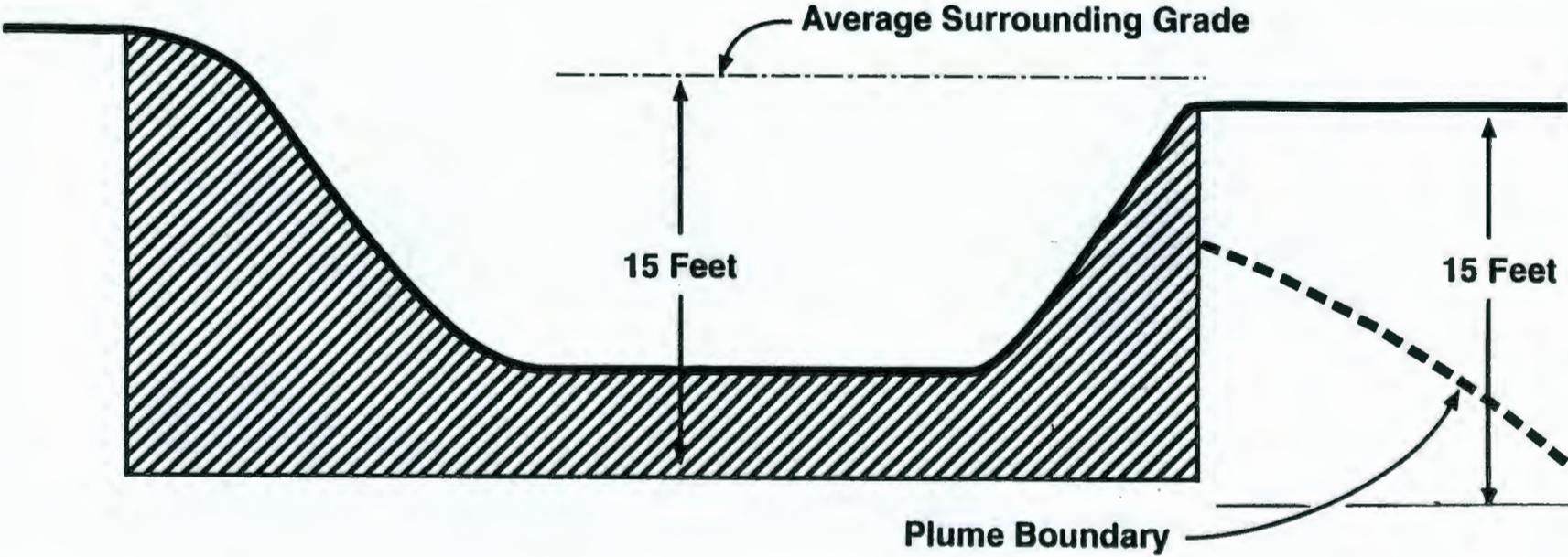
# Engineered Structure Above 15'



# Engineered Structure Below 15'



# Plumes Above 15'

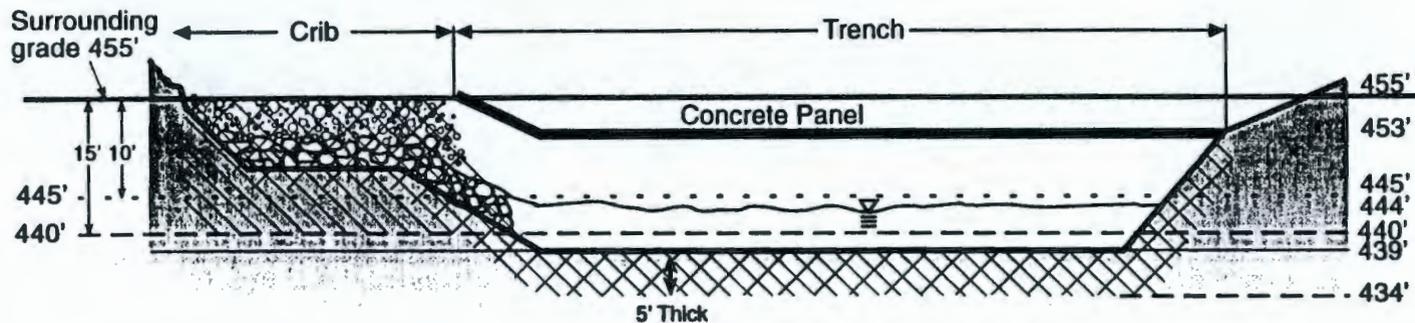


(3)

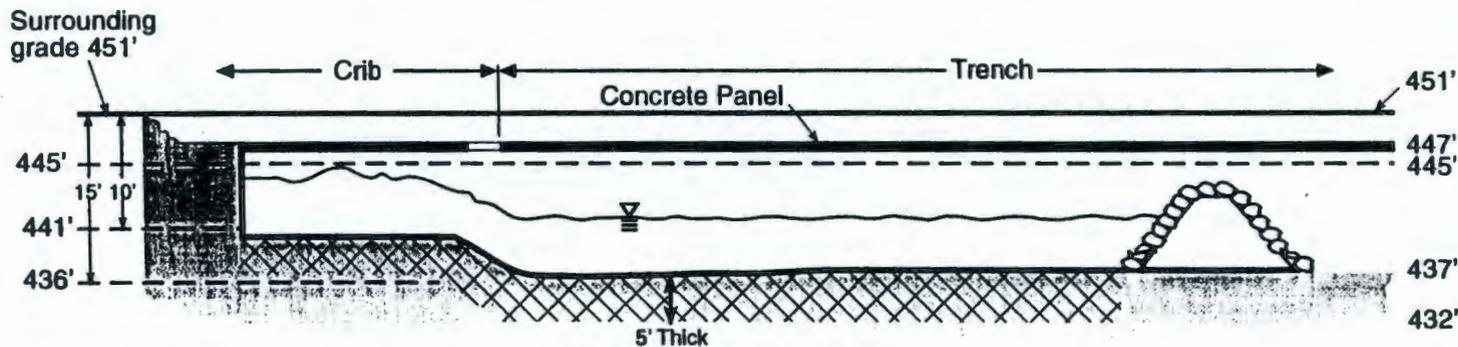
**ATTACHMENT 2**

**REMEDIATION ZONE CROSS-SECTION FOR 116-N-1 AND 116-N-3**

### 1301-N CROSS SECTION



### 1325-N CROSS SECTION



-  Excavation Zone - Rural-residential (15 ft below surrounding grade)
-  Excavation Zone - Recreational (10 ft below surrounding grade)
- 460' Elevation (ft above Mean Sea Level)

See Figure 4-1 and 4-2 for more detail.

E9701037.1

Figure 4-3. Remediation Zone Cross-Section for 116-N-1 and 116-N-3.

**ATTACHMENT 3**

**PROPOSED PLAN SUMMARY – 100-N AREA CONTAMINATED SOIL AND  
GROUNDWATER**

**PROPOSED PLAN SUMMARY – 100-N AREA TREATMENT, STORAGE, AND  
DISPOSAL UNITS**

## **PROPOSED PLAN SUMMARY**

### **100-N AREA TREATMENT, STORAGE, AND DISPOSAL UNITS**

**This Proposed Plan summary includes brief descriptions of the key issues for the 100-N Area Treatment, Storage, and Disposal (TSD) units. This summary is intended as a simplified introduction to readers who might not be familiar with the contaminated site cleanup process or Hanford issues. The detailed Proposed Plan is attached to this summary.**

The Tri-Parties (Washington State Department of Ecology [Ecology], the U.S. Environmental Protection Agency [EPA], and the U.S. Department of Energy, Richland Operations Office [DOE-RL]) are requesting comments on the proposed cleanup plan for contaminated soils associated with four treatment, storage, and disposal (TSD) units and two related sites next to the Columbia River at the Hanford Site located near Richland, Washington (Figure S-1). The location of these sites is commonly known as the 100-N Area. The Tri-Parties encourage you to comment on the cleanup alternatives described in this Proposed Plan and to comment on the proposed TSD unit closure plans contained in the *Corrective Measures Study(CMS)/Closure Plan* (published in DOE/RL-96-39). The selection of the cleanup alternative will be made taking public comment into consideration. Your comments will be accepted on both the Proposed Plan and the CMS/Closure Plans from <date> until <date>. You may also present your comments at a public meeting that will be held on <date> at <place>.

Some of the buildings and surrounding soils in the 100 Area of the Hanford Site were contaminated during operation of the nuclear reactors. The contamination poses a potential threat to the public and/or the environment. The potential threat to the public is exposure to people on or nearby the site to radiation and chemicals. The potential threat to the environment is contamination in the soil that has migrated to the groundwater and could eventually harm the Columbia River. Because of these potential threats, the Federal Government decided that the 100 Area was a high priority for cleanup and placed it on the National Priorities List (NPL). Sites on the NPL are eligible for cleanup under the Superfund Program, which is the common name given to the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA). A number

of other agreements and state and Federal laws such as the *Resource Conservation and Recovery Act* (RCRA) govern how the 100 Area will be cleaned up. Figure S-2 is a general overview of the cleanup process that shows where the public can become involved. It also shows how this Proposed Plan fits into the process and the work that has been done to help the Tri-Parties develop the Proposed Plan.

The 100-N Area is located in the north-central part of the Hanford Site along a section of the Columbia River known as the "Hanford Reach." It encompasses four distinct components that require cleanup:

- Contaminated soils and underground pipelines.
- Land areas used for treatment, storage, and disposal of wastes (called cribs and trenches) and associated pipelines not included above.
- Facilities (such as buildings and pipelines) to be decontaminated and/or taken out of service.
- Groundwater beneath the areas listed above.

Two separate Proposed Plans have been developed for cleanup of the contaminated soils, pipelines, and groundwater. One Proposed Plan deals with most of the contaminated soil sites in the 100-N Area and the groundwater beneath them. This Proposed Plan deals with the four TSD cribs and trenches and associated soil sites: the 116-N-1 Crib and Trench, 116-N-3 Crib and Trench, 120-N-1 Percolation Pond, and 120-N-2 Surface Impoundment, UPR-100-N-31 unplanned release spill site, and the 100-N-58 South Settling Pond. Also, a study called an Engineering Evaluation and Cost Analysis has been conducted to determine what should be done with the facilities and how much it would cost. Comments from the public on that study have been requested separately. Finally, the 100-N Reactor Building is currently being addressed in a separate program called

Interim Safe Storage. Figure S-3 provides a general diagram of the environmental cleanup strategy that is being pursued in the 100 Area as well as specific actions that are being proposed in the 100-N Area.

As summarized in the attached Proposed Plan, the Tri-Parties plan to use one of several alternatives to protect human health and the environment from potential hazards posed by the contaminated soils of the TSD units and related sites. The alternatives have been discussed in detail in the *CMS/Closure Plan* (published in the document DOE/RL-96-39). While the alternatives in this Proposed Plan are being evaluated, the Federal Government is taking actions to minimize the threats posed by the TSD units and related sites, such as restricting access to use of the land and groundwater. However, these safeguards provide only temporary protection. The actions proposed in this Proposed Plan will provide a longer term remedy to the potential risks.

The alternatives that were evaluated include:

- No action,
- Remove/dispose under a rural-residential exposure scenario,
- Remove/dispose under the ranger/industrial scenario,
- Remove/dispose/backfill/cap under the ranger/industrial scenario,
- Remove/dispose/vitrify/backfill under the ranger/industrial scenario.

Two land-use scenarios were analyzed in order to compare alternatives that contain a food consumption pathway with those that do not. The food consumption pathway, as included in the rural-residential exposure scenario, assumes that people eat food (either plants or animals) that was grown or raised on the land. However, the groundwater could not be used. Residents could not use water pumped from wells; they would need to be connected to a public water supply system. On the other hand, the ranger/industrial scenario assumes that food would not be grown on the land. Also, there would be no houses and people would not live on the land. Rather, the property would be used only for recreation or for industrial purposes, such as office space or shopping centers. Again, the water would not be supplied from the groundwater.

**The preferred cleanup alternative that is proposed by the Tri-Parties for the 116-N-1, 116-N-3, and UPR-100-N-31 sites is to remove and dispose of contaminated soil to allow land use consistent with the rural-residential exposure scenario. For the 120-N-1, 120-N-2, and 100-N-58 sites, no contaminated soil is left; however, the Tri-Parties propose to remove liners, structures, and pipelines, and backfill, regrade, and revegetate these sites.**

The primary purposes of this Proposed Plan are to:

- Describe the alternatives considered (which are presented in detail in DOE/RL-96-39);
- Compare the alternatives to determine the preferred alternative;
- Identify the preferred alternative for cleanup and explain the reasons for the preference;
- Solicit public review of and comments on all the alternatives described; and
- Provide information on how the public can be involved in the selection of the cleanup alternative for the 100-N Area TSD units and related sites.

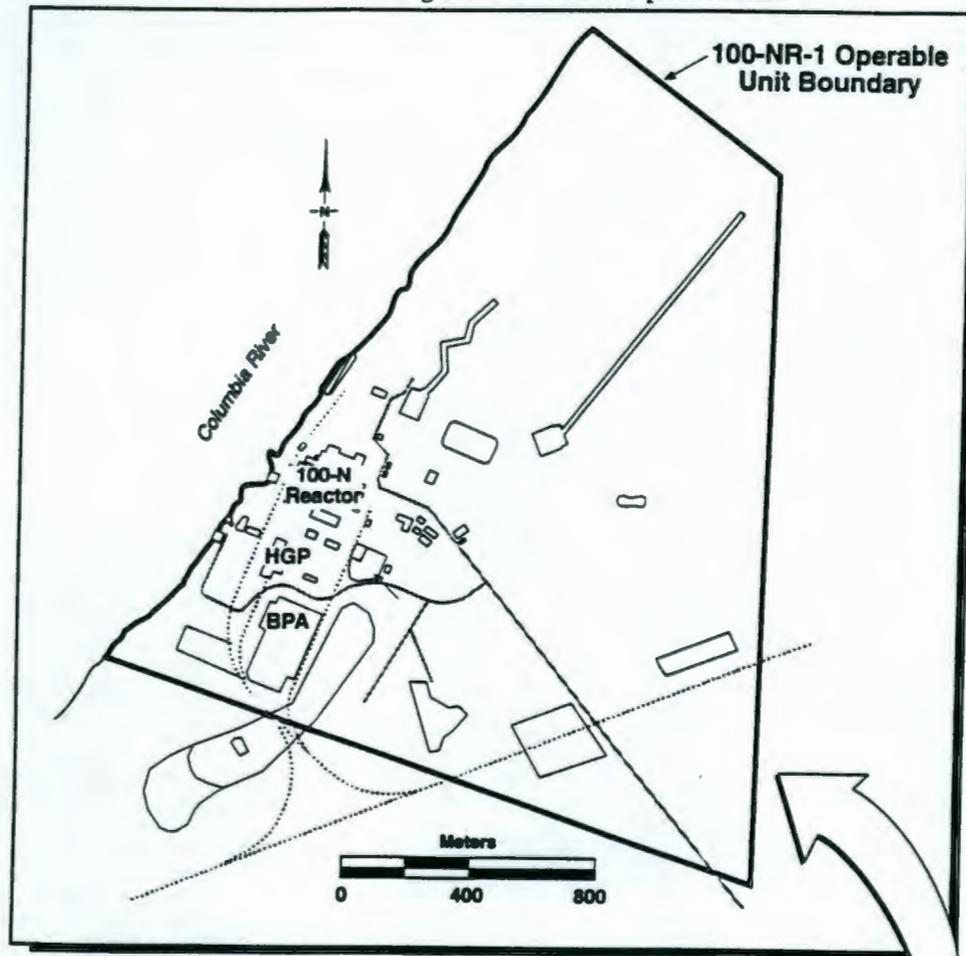
Once the Tri-Parties evaluate public comments regarding the proposed actions for the sites covered by this Proposed Plan, cleanup actions will be selected. Since this Proposed Plan involves sites that are also covered by the Hanford Facility RCRA Permit, the Permit will be modified by incorporation of the closure plans. The selected cleanup actions and other decisions will be documented in an Interim Action Record of Decision. Located at the end of this Proposed Plan is a list of related publications that the public is encouraged to review to gain a greater understanding of the cleanup plans for the 100-N Area TSD units and related sites.

**For a more detailed comparison of the cleanup alternatives and a discussion of the preferred alternative, refer to the Proposed Plan that follows this summary.**

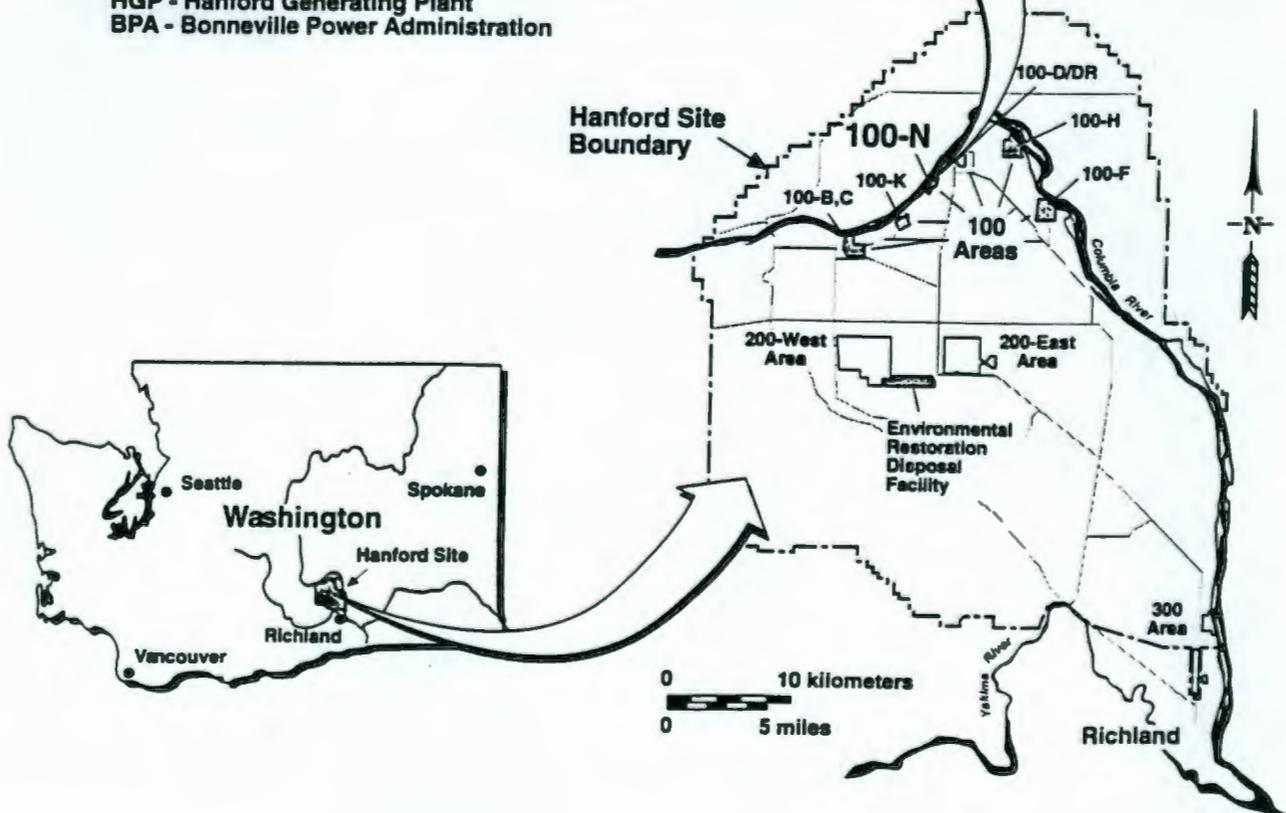
DOE/RL-97-30  
Draft B R/S

**Figure S-1. 100-NR-1 Operable Unit.**

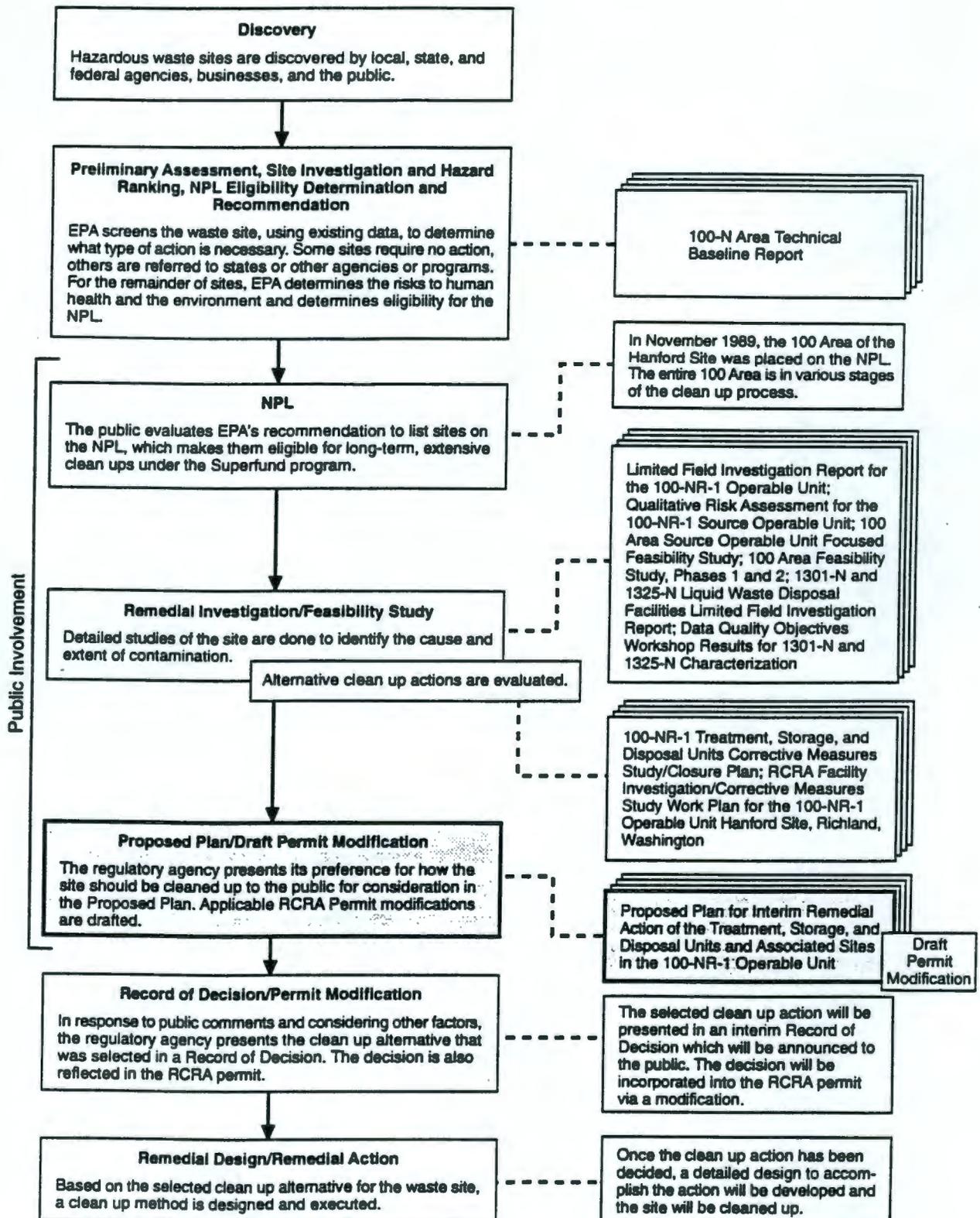
Figure 1. 100-NR-1 Operable Unit



HGP - Hanford Generating Plant  
BPA - Bonneville Power Administration



**Figure S-2. Overview of Waste Site Cleanup Process and Associated Documents.**



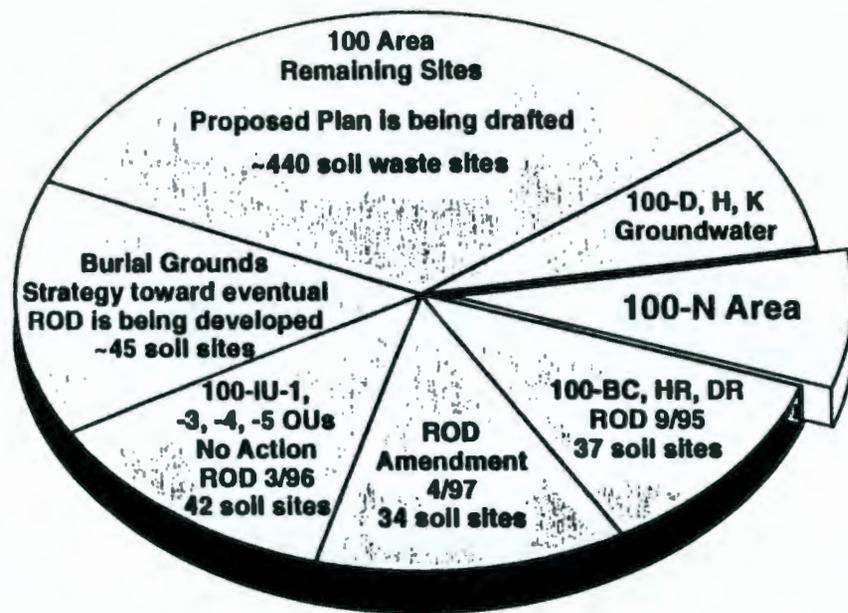
EPA - U.S. Environmental Protection Agency  
 NPL - National Priorities List  
 RCRA - Resource Conservation and Recovery Act of 1976

E9707096.2

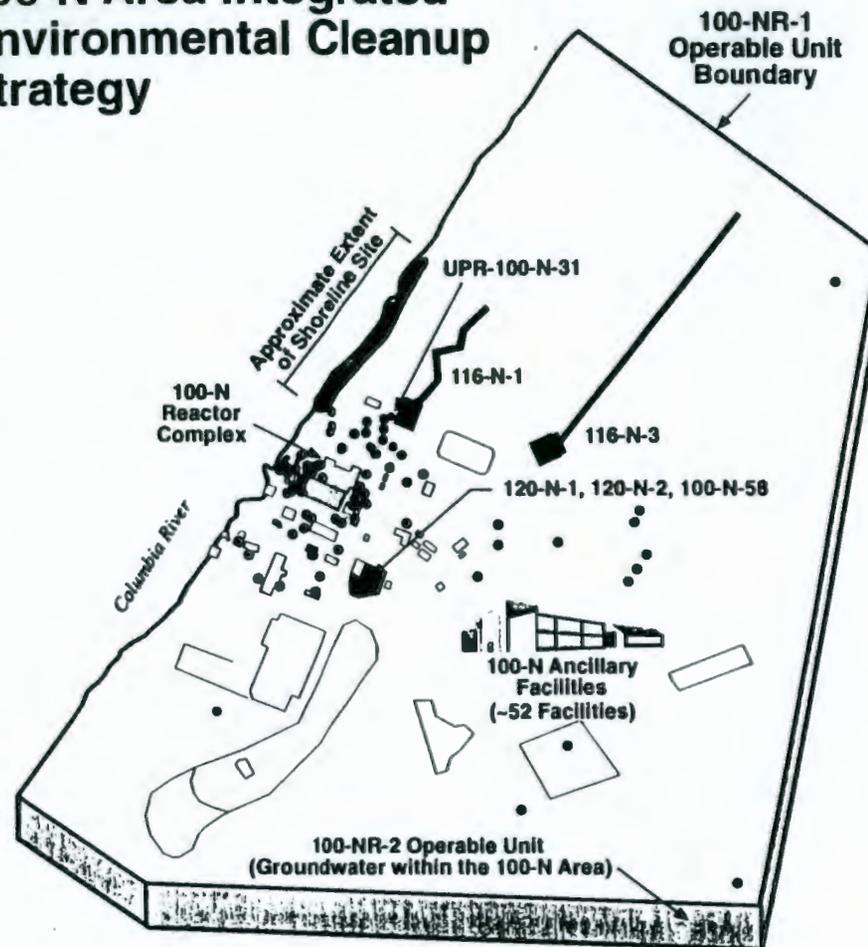
Note: The regulatory agency could be the U.S. EPA or the Washington State Department of Ecology.

**Figure S-3. Environmental Cleanup Strategy.**

# 100 Area Environmental Cleanup Strategy



# 100-N Area Integrated Environmental Cleanup Strategy



 Engineering Evaluation/Cost Analysis for the 100-N Area Ancillary Facilities and Integration Plan (~52 Facilities)

 Interim Safe Storage Program

 Proposed Plan for Interim Remedial Action of the Treatment, Storage, and Disposal Units and Associated Sites in the 100-NR-1 OU (6 Sites)

 Proposed Plan for Interim Remedial Actions at the 100-NR-1 Source Sites OU (81 Action Sites and 33 No Action Sites) and the 100-NR-2 Groundwater OU

OU = Operable Unit  
 ROD = Record Of Decision  
 IU = Independent Unit

---

## **PROPOSED PLAN SUMMARY**

### **100-N AREA CONTAMINATED SOIL AND GROUNDWATER**

---

**This Proposed Plan summary includes brief descriptions of the key issues for the 100-N Area contaminated soil and groundwater. This summary is intended as a simplified introduction to readers who might not be familiar with the contaminated site cleanup process or Hanford issues. The detailed Proposed Plan is attached to this summary.**

The Tri-Parties (Washington State Department of Ecology [Ecology], the U.S. Environmental Protection Agency [EPA], and the U.S. Department of Energy, Richland Operations Office [DOE-RL]) are requesting comments on the proposed cleanup plan for the contaminated soil and groundwater next to the Columbia River at the Hanford Site located near Richland, Washington (Figure S-1). The location of the contaminated soil and groundwater is commonly known as the 100-N Area. The Tri-Parties encourage you to comment on the cleanup alternatives described in this Proposed Plan. The selection of the cleanup alternative will be made taking public comment into consideration. Your comments will be accepted from <date> until <date>. You may also present your comments at a public meeting that will be held on <date> at <place>.

Some of the buildings and surrounding soils in the 100 Area of the Hanford Site were contaminated during operation of the nuclear reactors. The contamination poses a potential threat to the public and/or the environment. The potential threat to the public is exposure to people on or nearby the site to radiation and chemicals. The potential threat to the environment is contamination in the soil that has migrated to the groundwater and could eventually harm the Columbia River. Because of these potential threats, the Federal Government decided that the 100 Area was a high priority for cleanup and placed it on the National Priorities List (NPL). Sites on the NPL are eligible for cleanup under the Superfund Program, which is the common name given to the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA). A number of other state and Federal laws and agreements govern how the 100 Area will be cleaned up. Figure S-2 is a general overview of the cleanup process that shows where the public can become involved. It also shows how this

Proposed Plan fits into the process and the work that has been done to help the Tri-Parties develop the Proposed Plan.

The 100-N Area is located in the north-central part of the Hanford Site along a section of the Columbia River known as the "Hanford Reach." It encompasses four distinct components that require cleanup:

- Contaminated soils and underground pipelines.
- Land areas used for treatment, storage, and disposal of wastes (called cribs and trenches) and associated pipelines not included above.
- Facilities (such as buildings and pipelines) to be decontaminated and/or taken out of service.
- Groundwater beneath the areas listed above.

Two separate Proposed Plans have been developed for cleanup of the contaminated soils, pipelines, and groundwater. One Proposed Plan deals with the cribs and trenches and related soil sites. This Proposed Plan deals with most of the contaminated soil sites in the 100-N Area and the groundwater beneath them. Also, a study called an Engineering Evaluation and Cost Analysis has been conducted to determine what should be done with the facilities and how much it would cost. Comments from the public on that study have been requested separately. Finally, the 100-N Reactor Building is currently being addressed in a separate program called Interim Safe Storage. Figure S-3 provides a general diagram of the environmental cleanup strategy that is being pursued in the 100 Area as well as specific actions being proposed in the 100-N Area.

As summarized in the attached Proposed Plan, the Tri-Parties plan to use one of several alternatives to protect human health and the environment from potential hazards

posed by 100-N Area contaminated soils and groundwater. The alternatives have been discussed in detail in the *Corrective Measures Study (CMS)* (published in the document DOE/RL-95-111). While the alternatives in this Proposed Plan are being evaluated, the Federal Government is taking actions to minimize the threats posed by the contaminated soil and groundwater, such as restricting access to use of the land and groundwater. In addition, contaminated water is being pumped from the groundwater and treated to inhibit contamination of the Columbia River. However, these safeguards are costly and provide only temporary protection. The actions proposed in this Proposed Plan will provide a longer term remedy to the potential risks.

**The preferred cleanup alternatives that are proposed by the Tri-Parties for the 100-N Area contaminated soils include the following actions:**

- **Remove/Dispose of contaminated soil for radioactive, inorganic, burn pit, and surface solid waste sites,**
- **Remove/Ex Situ Bioremediate/Dispose (excavation of contaminated soils, periodic mixing of soil to expose soil to sun, and introduction of nutrients and bacteria to soil) for near-surface petroleum waste sites,**
- **In Situ Bioremediate (injection of bacteria and nutrients to soil beneath the surface) for deep petroleum waste sites, and**
- **Continued pump and treat with access restrictions for the shoreline waste site.**

**For the groundwater, the interim action recommended by the Tri-Parties is to maintain the existing pump and treat systems designed to remove strontium-90 contamination and reduce flow of contaminated water to the River while additional information is being gathered.**

The primary purposes of this Proposed Plan are to:

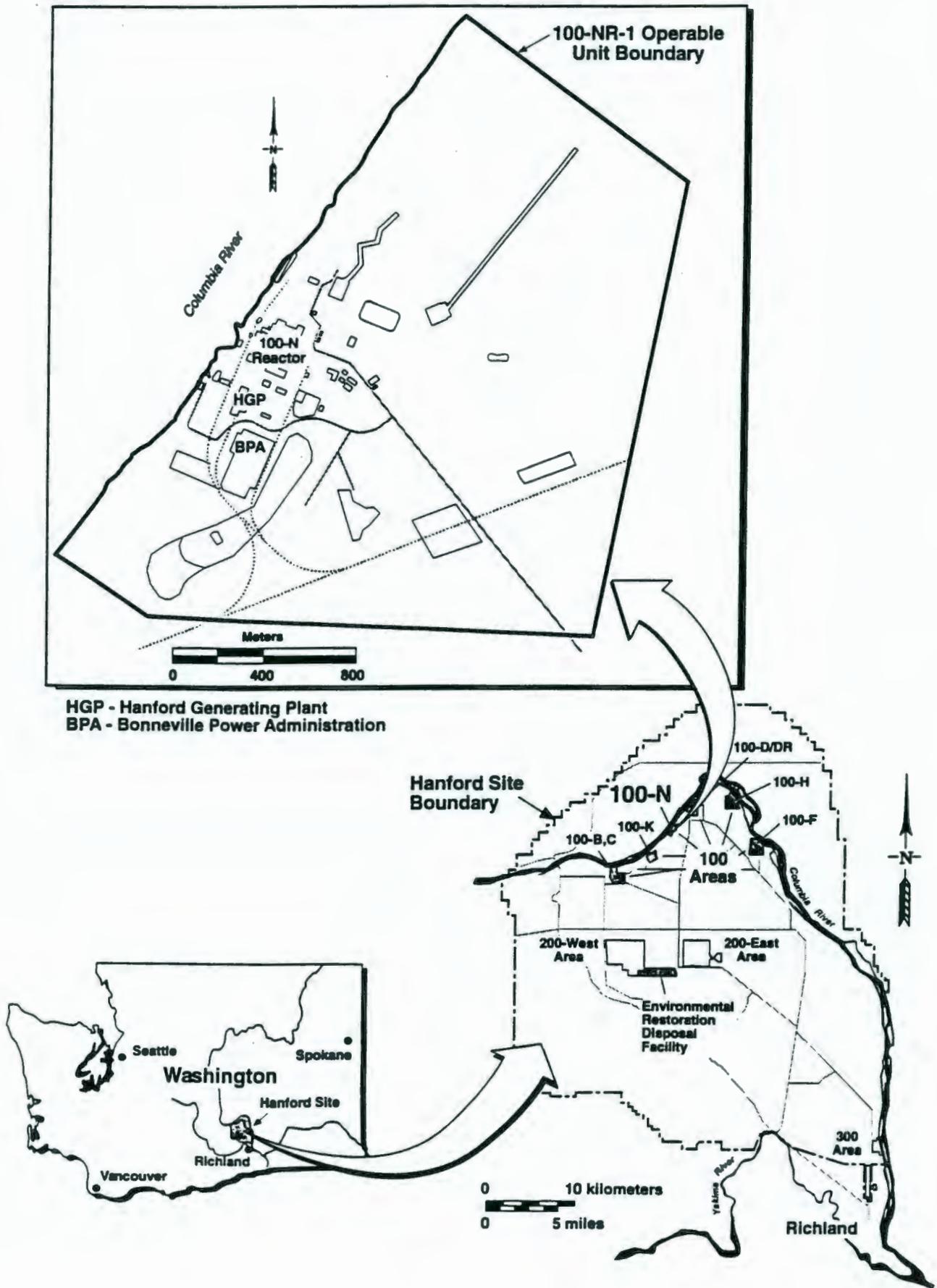
- Describe the alternatives considered (which are presented in detail in DOE/RL-95-111);
- Compare the alternatives to determine the preferred alternative;
- Identify the preferred alternative for cleanup and explain the reasons for the preference;
- Solicit public review of and comments on all the alternatives described; and
- Provide information on how the public can be involved in the selection of the cleanup alternative for the 100-N Area soil and groundwater.

Once the Tri-Parties evaluate public comments regarding the proposed actions for 100-N Area soil and groundwater, cleanup actions will be selected. The selected cleanup actions will be documented in an Interim Action Record of Decision. Located at the end of this Proposed Plan is a list of related publications that the public is encouraged to review to gain a greater understanding of the 100-N Area soil and groundwater cleanup plans.

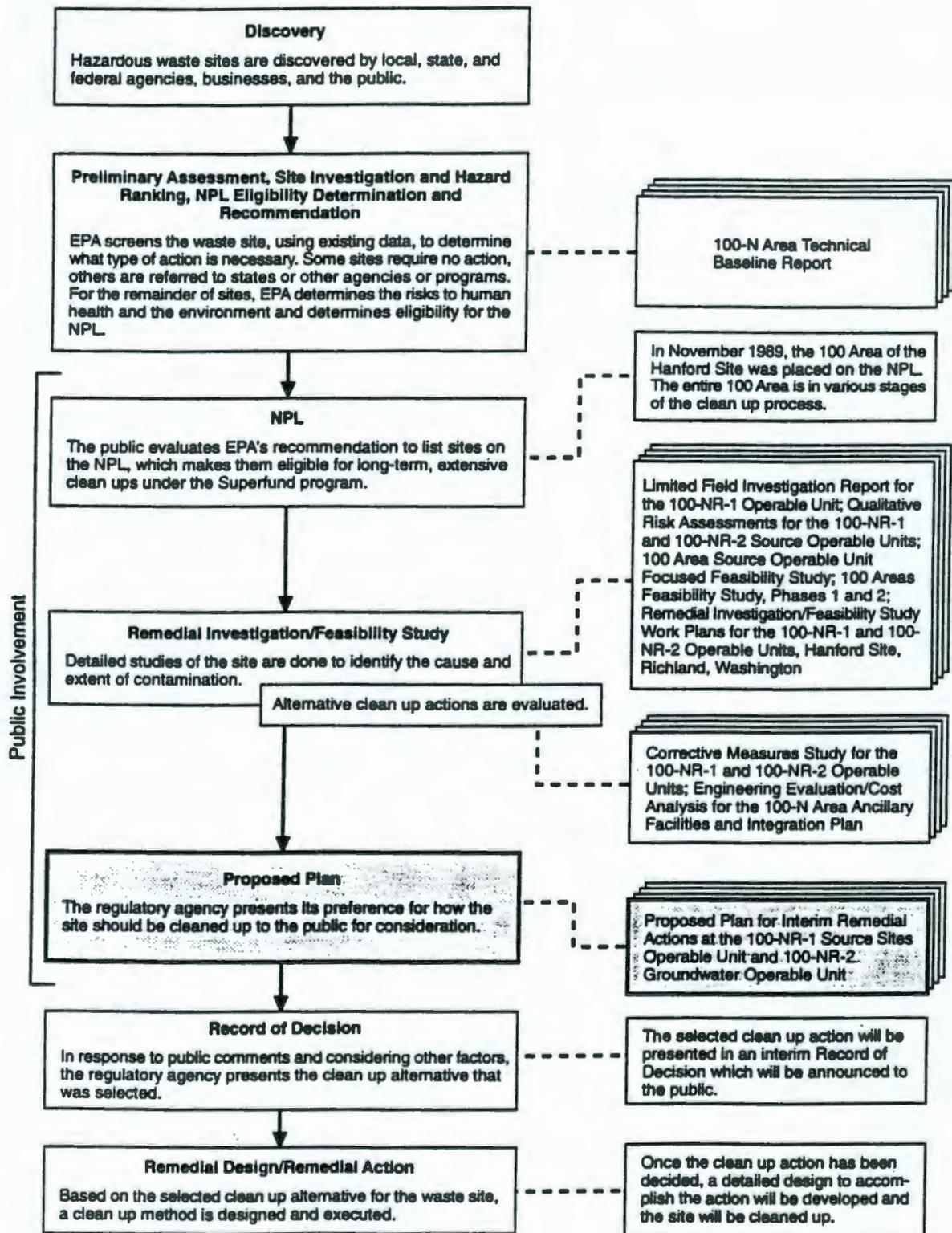
**For a more detailed comparison of the cleanup alternatives and a discussion of the preferred alternative, refer to the Proposed Plan that follows this summary.**

**Figure S-1. 100-NR-1 Operable Unit.**

Figure 1. 100-NR-1 Operable Unit



**Figure S-2. Overview of Waste Site Cleanup Process and Associated Documents.**



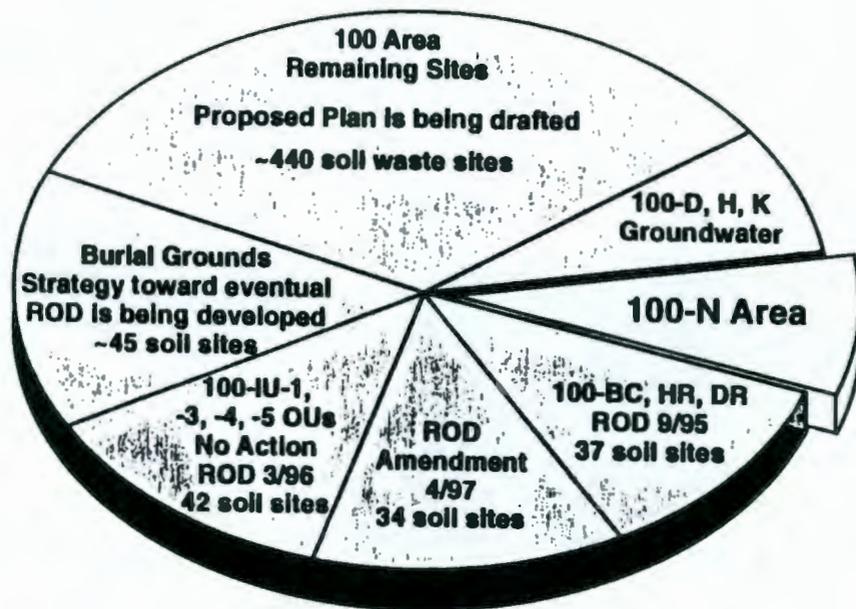
EPA - U.S. Environmental Protection Agency  
NPL - National Priorities List

E9707096.3

Note: The regulatory agency could be the U.S. EPA or the Washington State Department of Ecology.

**Figure S-3. Environmental Cleanup Strategy.**

# 100 Area Environmental Cleanup Strategy



# 100-N Area Integrated Environmental Cleanup Strategy



 Engineering Evaluation/Cost Analysis for the 100-N Area Ancillary Facilities and Integration Plan (~52 Facilities)

 Interim Safe Storage Program

OU = Operable Unit

ROD = Record Of Decision

IU = Independent Unit

 Proposed Plan for Interim Remedial Action of the Treatment, Storage, and Disposal Units and Associated Sites in the 100-NR-1 OU (6 Sites)

 Proposed Plan for Interim Remedial Actions at the 100-NR-1 Source Sites OU (81 Action Sites and 33 No Action Sites) and the 100-NR-2 Groundwater OU

Environmental Restoration Contractor **ERC Team**  
**Meeting Minutes**

Job No. 22192  
Written Response Required? NO  
Closes CCN? N/A  
OU 100-NR-1; 100-NR-2  
TSD D-1-2, T-1-2  
ERA N/A  
Subject Code: 4170; 8150

**SUBJECT** 100-NR-1/100-NR-2 AND TSD PROPOSED PLAN COMMENT RESOLUTION  
**TO** Distribution  
**FROM** E. T. Coenenberg *etc*  
**DATE** September 16, 1997

**ATTENDEES**

**DISTRIBUTION**

- E. T. Coenenberg, ERC, H9-03
- L. E. Gadbois, EPA, B5-01
- S. J. Ingle, ERC, H9-02
- B. Mukherjee, ERC, H0-17
- D. E. Olson, DOE-RL, H0-12
- P. R. Staats, Ecology, B5-18
- M. H. Sturges, ERC, H9-01
- B. L. Vedder, ERC, H0-17

- Attendees
- M. C. Kelly H9-01
- Document and Information Services H0-09

A meeting was held on August 18, 1997, for comment resolution on the 100-NR-1/100-NR-2 and TSD Proposed Plans. Four issues identified at the August 13, 1997, meeting that were unresolved were discussed as described below.

**RCRA/CERCLA Language**

The U.S. Environmental Protection Agency staff is reviewing the proposed language concerning RCRA and CERCLA integration. As of August 18, Mr. Gadbois reported that he had not received a definitive answer from EPA legal staff on the acceptability of the proposed language.

**Institutional Controls**

Mr. Olson reported that Mr. Willison of U.S. Department of Energy, Richland Operations Office, legal staff was satisfied with the proposed language concerning access controls. The proposed language was reviewed by Messrs. Gadbois and Staats during the meeting. See Attachment 1 for the agreed upon language that will be used in the Proposed Plans.

**Preliminary Remediation Goals (PRGs)**

The genesis of the issue regarding PRGs was that the tables comparing the maximum representative concentration and PRGs for each Proposed Plan contained different PRGs. There was also concern over whether the PRGs were consistent with those used for the 100-B/C Area. Mr. Mukherjee explained that the RESRAD model used to derive the PRGs uses the size of the site and contamination level as parameters, therefore, the PRGs would be specific to the dimensions and contamination of the site. Mr. Mukherjee noted,

however, that the discrepancies between the numbers in the respective Proposed Plans were very small and the benefit of having site-specific numbers was not in balance with the difficulty of explaining the complexities to the public. Therefore, Mr. Mukherjee suggested that we take the most conservative numbers and make them consistent between the Proposed Plans. Mr. Staats requested that the numbers also be made consistent with the 100-B/C ROD to the extent practicable.

Mr. Sturges requested clarification on whether it was intended that we use actual PRGs from the 100-B/C ROD, or numbers based in the site characteristics of the 100-N Area. Mr. Vedder suggested that the PRGs would be similar to those defined in the 100-B/C ROD, but the actual cleanup levels that would result in the 15 mrem/year dose would be established based on site characteristics at the 100-N Area. In other words, the methodology for derivation of PRGs (i.e., application of the RESRAD model) would be consistent with that of the 100-B/C ROD, but actual standards would reflect conditions unique to the 100-N Area. Regulators reiterated the necessity to indicate that PRGs are cumulative to 15 mrem/year for multiple contaminants.

After much discussion, it was determined that the tables would reflect the same PRGs with footnotes indicating the cumulative affect of multiple contaminants and that the PRGs were based on the modeling results of the most contaminated site.

#### **\$4.6 Million Cost for Shoreline Site**

At the previous meeting, and in the comments, EPA had requested an explanation of the \$4.6 million cost associated with remediation of the Shoreline Site. Mr. Sturges explained that the \$4.6 million was present worth of the \$10 million that had been accelerated over the 20 year period. However, Mr. Mukherjee proposed that the cost estimate be provided for the initial remediation effort, and that no figure be given for follow on work that may be required in the future. He suggested that a statement be included explaining that periodic comparable efforts and associated costs, as yet unestimated, may be incurred in the future. Messrs. Gadbois and Staats agreed with this approach.

#### **Meeting Minutes**

Draft minutes from the 8/7 meeting were previously disseminated electronically for review. In addition, minutes from the 8/13 meeting were distributed at the meeting. Some comments were received on each, and it was agreed that these would be finalized in preparation for signature at the 8/22 meeting. It was agreed that the final draft summary sheets would be attached to the 8/13 minutes. Also, it was agreed that draft minutes from this meeting would be available at the 8/22 meeting.

#### **August 22, 1997 Meeting**

A meeting is scheduled for Friday, August 22, 1997, which is intended as an all-day working session to finalize the two Proposed Plans. This will be accomplished on-line where agreed upon changes can be incorporated into the documents instantaneously. Neither Messrs. Gadbois nor Staats believed that they would have time to review a copy of the redline/strikeout Proposed Plans prior to the August 22 meeting, and therefore, it would not be necessary to electronically forward preview copies.

It was originally thought that Mr. Willison, DOE-RL, would be at the meeting to make legal interpretations of changes immediately as they were made. However, Mr. Olson reported that Mr. Willison would not be available for the meeting, but had agreed to review the products on the following Monday.

Mr. Mukherjee stated that he would be away from the office from August 28 through September 5, 1997, and that the Proposed Plans would not be forwarded to regulators before September 5, 1997.

Attachment: (1) Agreed Upon Institutional Controls Language

Concurrence:

  
\_\_\_\_\_  
D. E. Olson, Project Manager  
U.S. Department of Energy, Richland Operations Office

9/22/97  
Date

  
\_\_\_\_\_  
P. R. Staats, Unit Manager  
Washington State Department of Ecology

9/22/97  
Date

  
\_\_\_\_\_  
L. E. Gadbois, Unit Manager  
U.S. Environmental Protection Agency

9-22-97  
Date

  
\_\_\_\_\_  
B. Mukherjee, Project Engineer/Task Lead  
Environmental Restoration Contractor

9/22/97  
Date

#### Human Access Institutional Controls

Institutional controls are required to prevent human exposure to and use of contaminated land and groundwater. The DOE is responsible for establishing and maintaining land use and access restrictions until MCLs and risk-based criteria are met or the final remedy is selected. Institutional controls include placing written notification of the remedial action in the facility land use master plan. The DOE will prohibit any activities that would interfere with the remedial activity without EPA and Ecology concurrence. In addition, measures necessary to ensure the continuation of these restrictions will be taken in the event of any transfer or lease of the property before a final remedy is selected. A copy of the notification will be given to any prospective purchaser/transferee before any transfer or lease. The DOE will provide EPA and Ecology with written verification that these restrictions have been put in place.

Environmental  
Restoration  
Contractor **ERC Team**  
**Meeting Minutes**

051838

Job No. 22192  
Written Response Required? NO  
Closes CCN: N/A  
OU 100-NR-1; 100-N  
TSD: D-1-2, T-1-2  
ERA: N/A  
Subject Code: 4170; 8150

**SUBJECT** REVIEW OF THE REDLINE/STRIKEOUT VERSION OF THE 100-NR-1/100-NR-2 AND TSD PROPOSED PLANS

**TO** Distribution

**FROM** E. T. Coenenberg 

**DATE** September 16, 1997

**ATTENDEES**

E. T. Coenenberg, ERC, H9-03  
L. E. Gadbois, EPA, B5-01  
M. C. Kelly, ERC, H9-01  
B. Mukherjee, ERC, H0-17  
D. E. Olson, RL, H0-12  
P. R. Staats, Ecology, B5-18  
M. H. Sturges, ERC, H9-01  
B. L. Vedder, ERC, H0-17

**DISTRIBUTION**

Attendees  
V. R. Dronen, ERC, H0-17  
S. J. Ingle, ERC, H9-02  
Document and Information Services H0-09

A meeting on the above subject was held on August 22, 1997, in conference room 2C22 at 3350 George Washington Way to review the redline/strikeout versions of the 100-NR-1/100-NR-2 and TSD Proposed Plans. Prior to review of the redline/strikeout versions of the Proposed Plans, the following items were discussed:

**Issuance of the Proposed Plans as Revision 0**

Due to funding cuts, the 100-N Area Remedial Action Project was not funded for FY 1998. Issues discussed included the Proposed Plans should be completed as Draft C versions and then shelved until funding is available, or whether the Proposed Plans should be finalized as Revision 0. It was agreed that the EPA Region X comments on Draft B should be resolved and incorporated into the documents as Draft C. Mr. Mukherjee commented that for complete resolution of the comments, the Draft C should be resubmitted to EPA for review, and subsequently finalized as Revision 0, and issued to RL. This would bring the project to an acceptable stopping point. However, Mr. Olson noted that the documents should not be finalized as Revision 0 because they would need to be updated and re-reviewed when the project received funding, therefore, the documents would not be officially complete. It was agreed to further discuss this item at a later date.

*(Note: Mr. Olson and Mr. Mukherjee discussed the item on Monday, August 25, 1997, and agreed that the next version of the Proposed Plans would be issued as Draft C and resubmitted to EPA for a second review. Additional EPA comments on Draft C would then be resolved and the Revision 0 document prepared.)*

**Issuance of the Corrective Measures Studies (CMSs) as Revision 0**

Mr. Staats stated that the *Corrective Measures Study for the 100-NR-1 and 100-NR-2 Operable Units* and the *100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan* must be completed

and issued as Revision 0 and sent to Administrative Record (AR). It was agreed that the CMSs should be revised, to reflect the final agreed-upon changes during the EPA review of the Draft C Proposed Plans for issuance as Revision 0.

### **Issuance of the Previous Meeting Minutes**

The final minutes from the August 7, 1997, and August 13, 1997, meetings were signed by EPA. Ecology, RL, and BHI. It was noted that the diagram showing the cross sections of the 1301-N and 1325-N Cribs and Trenches attached to the August 13, 1997, minutes had the 436 elevation incorrectly placed. Ms. Coenberg took the action to correct the location of the 436 elevation on the diagram. After the diagram is corrected the minutes will be issued. The draft August 18, 1997, meeting minutes were distributed for review, and it was agreed to send the electronic file of the minutes to all reviewers. The meeting minutes will be signed once they are finalized, pending comments from the attendees. The discussion then focussed on whether these meeting minutes should be placed in the AR. It was agreed that the minutes and the EPA comment resolution package should be entered into the AR. However, it was noted that the request to enter these items into the AR would need to come from Mr. Staats, who agreed to formalize the request.

### **Review of the Redline/Strikeout of the Proposed Plans**

The review process used during the meeting consisted of a page by page review, with the attendees providing suggested changes which, upon agreement, were immediately incorporated into the text via the laptop computer.

The Proposed Plans draft Summary Sheets were reviewed first, followed by the TSD Proposed Plan. The review of the 100-NR-1 and 100-NR-2 Proposed Plan was postponed until a later date. In addition to the text changes made during this review process, the following action items resulted:

- Mr. Gadbois will obtain an answer from the EPA legal staff on the acceptability of the proposed language concerning RCRA and CERCLA integration.
- Ms. Coenberg will revise the text and tables in the TSD Proposed Plan, where appropriate, to match the current figures and elevations.
- Ms. Coenberg will clarify the statement "Nearly all of the risk to Great Basin Pocket Mouse...".
- Because the 100-NR-1/100-NR-2 Proposed Plan was not reviewed, Ms. Coenberg will revise this proposed plan, as appropriate, with the changes agreed upon during review of the TSD Proposed Plan.
- Ms. Coenberg will to prepare a draft schedule reflecting the scope of finalizing the CMSs to Revision 0 and completing the Proposed Plans to the agreed upon end point.

Mr. Olson requested a review of the documents once all of the changes listed above are incorporated. Mr. Mukherjee agreed to provide copies of the redline/strikeout versions to Mr. Olson, who would forward them on to Mr. Staats and Mr. Gadbois. He also suggested that after everyone had the opportunity to review the documents, another meeting could be scheduled to go through redline/strikeout versions.

Concurrence:

*D. E. Olson*

D. E. Olson, Project Manager  
U.S. Department of Energy, Richland Operations Office

*9/22/97*

Date

*P. R. Staats*

P. R. Staats, Unit Manager  
Washington State Department of Ecology

*9/22/97*

Date

*L. E. Gadbois*

L. E. Gadbois, Unit Manager  
U.S. Environmental Protection Agency

*9-22-97*

Date

*B. Mukherjee*

B. Mukherjee, Project Engineer/Task Lead  
Environmental Restoration Contractor

*9/22/97*

Date

Environmental  
Restoration  
Contractor **ERC Team**  
**Meeting Minutes**

Job No. 22192  
Written Response Required? NO  
Closes CCN: N/A  
OU: 100-NR-1  
TSD: D-1-2; T-1-2  
ERA: N/A  
Subject Code: 4170; 8150

**SUBJECT**

RESOLUTION OF 100-NR-1 TSD RCRA/CERCLA INTEGRATION  
LANGUAGE

**TO**

Distribution

**FROM**

E. T. Coenenberg *ET Coenenberg*

**DATE**

November 3, 1997

**ATTENDEES**

E. T. Coenenberg (ERC) H9-03  
L. E. Gadbois (EPA) B5-01  
G. I Goldberg (RL) H0-12  
K. K. Holliday (Ecology) B5-18  
M. C. Kelly (ERC) H9-01  
R. G. McLeod (RL) H0-12  
B. Mukherjee (ERC) H0-17  
D. E. Olson (RL) H0-12  
P. R. Staats (Ecology) B5-18  
B. L. Vedder (ERC) H0-02

**DISTRIBUTION**

Attendees  
J. G. April H9-03  
V. R. Dronen H0-17  
S. J. Ingle H9-02  
Document and Information Services H0-09

A meeting on the above subject was held on September 22, 1997, in conference room 2D03.

Meeting handouts/minute attachments:

1. 100-N Area RCRA/CERCLA Integration Strategy (flowchart shown as an overhead)
2. EPA response to draft RCRA/CERCLA Integration Language in 100-N Area Proposed Plans (Letter, EPA to Ecology, September 4, 1997)
3. Package of supporting materials for the following issues: incorporation of closure plan details into the Proposed Plan; deferral of certain closure plan details to CERCLA RD/RA phase; Class 3 versus Class 1 permit modification for incorporation of RCRA Corrective Actions into the Hanford Facility-Wide RCRA Permit; and. use of "open-ended" closure schedule.

D. E. Olson opened the meeting, stating that the purpose was to discuss RCRA/CERCLA integration and the concern that comments provided by EPA were inconsistent with the precedent set in previous documents. The 100-N Area RCRA/CERCLA Integration Strategy overhead was discussed (Attachment 1). P. R. Staats noted that the 1301-N/1325-N TSDs are scheduled to be incorporated into the sitewide permit in July of 1999, and that the 1324-N/NA TSDs are scheduled for incorporation in July of 1998.

**ISSUE 1: INCORPORATION OF CLOSURE PLAN DETAILS INTO THE PROPOSED PLAN*****Discussion***

D. E. Olson expressed that RL felt the level of detail currently included in the proposed plans is consistent with past proposed plans. An excerpt from the 300-FF-1/300-FF-5 Proposed Plan was provided for comparison (Attachment 3).

L. E. Gadbois stated that he felt that, because the Proposed Plans are so technical, more detail is needed to explain how RCRA closure will occur. He also wants the text to clarify that comments for the closure plans are also being requested. He felt that the 300-FF-1 example was different because a set of both CERCLA and RCRA documents was prepared, whereas the 100-NR-1 TSD information is provided in one document. B. L. Vedder suggested adding some language that clarifies the RCRA comment period for the closure plans is concurrent with the comment period on the Proposed Plans. (Use sentence very similar to that used in the 300-FF-1 example.)

P. R. Staats expressed concern over the tendency in EPA's comments on these Proposed Plans to diverge from what had been agreed to in the preparation of previous documents.

L. E. Gadbois responded that, although the comments expressed by EPA are somewhat inconsistent with past Hanford reviews, these changes are necessary to keep up with changes in interpretations occurring nationwide.

D. E. Olson felt that lessons from past documents have been incorporated into the preparation of these documents. He felt that "suggested" EPA comments are delaying the process of getting these documents out for public review.

P. R. Staats requested that specific changes to be made to the Proposed Plans be identified, with suggestions as to how the corrections should be made. L. E. Gadbois responded that the Proposed Plan needs to clearly state that the closure plans are located in the CMS and are also available for review during this comment period.

L. E. Gadbois felt that it would be appropriate to explain in the Proposed Plan how the RCRA closure steps checklist is addressed.

B. L. Vedder stated that the 300-FF-1/300-FF-5 Proposed Plan referred the reader to the closure plan for more detailed information, and that it did not provide an explanation.

L. E. Gadbois stated that the N-Area documents were getting a more thorough EPA review than past documents (such as 300 Area) because it is felt that more explanation is necessary to keep the public informed. P. R. Staats voiced concern as to why the 100-N Area is receiving more scrutiny than previous areas. He again stated that in order to address the comments, it would be necessary to know what precedent or interpretations have changed and what type of response is needed. L. E. Gadbois responded that these documents were sent to a different lawyer for EPA Region X review who is very well versed in RCRA and CERCLA and that he may take a different direction than previous reviewers. He noted that the document was also sent to D. Bartus in Seattle for review from the RCRA point of view.

D. E. Olson stated that legal issues are driving these comments from EPA, but have no affect on the remedies that the Proposed Plans present.

The amendment to the 100-Area ROD in March of 1997 set the precedent that this Proposed Plan is trying to follow.

B. L. Vedder suggested that a couple of sentences be incorporated into the Proposed Plan explaining that this will be the only Class 3 review, and that actions will be taken to meet the substantive and administrative requirements.

***Decision***

It was agreed that the 300-FF-1/300-FF-5 text explaining the closure plan review will be added to the Proposed Plan summary section.

**ISSUE 2: DEFERRAL OF CERTAIN CLOSURE PLAN DETAILS TO CERCLA RD/RA PHASE**

***Discussion***

It was shown that past (300 Area) documents provided for details to be worked out during remedial design/remedial action, and reviewed text provided in the CMS.

***Decision***

This was a non-issue. L. E. Gadbois agreed with the information provided.

**ISSUE 3: CLASS 3 VERSUS CLASS 1 PERMIT MODIFICATION FOR INCORPORATION OF RCRA CORRECTIVE ACTIONS INTO THE HANFORD FACILITY-WIDE RCRA PERMIT**

***Discussion***

RL presented its position: following completion of a CERCLA review process designed to comply with the Class 3 public participation requirements, a Class 1 modification could be used to administratively incorporate RCRA corrective actions into the permit. This approach is consistent with that used in the *100 Area Amended Record of Decision* which was approved in March of 1997.

***Action***

G. I. Goldberg agreed to forward electronic file for the 100 Area ROD amendment to L. E. Gadbois.

**ISSUE 4: USE OF "OPEN-ENDED" CLOSURE SCHEDULE**

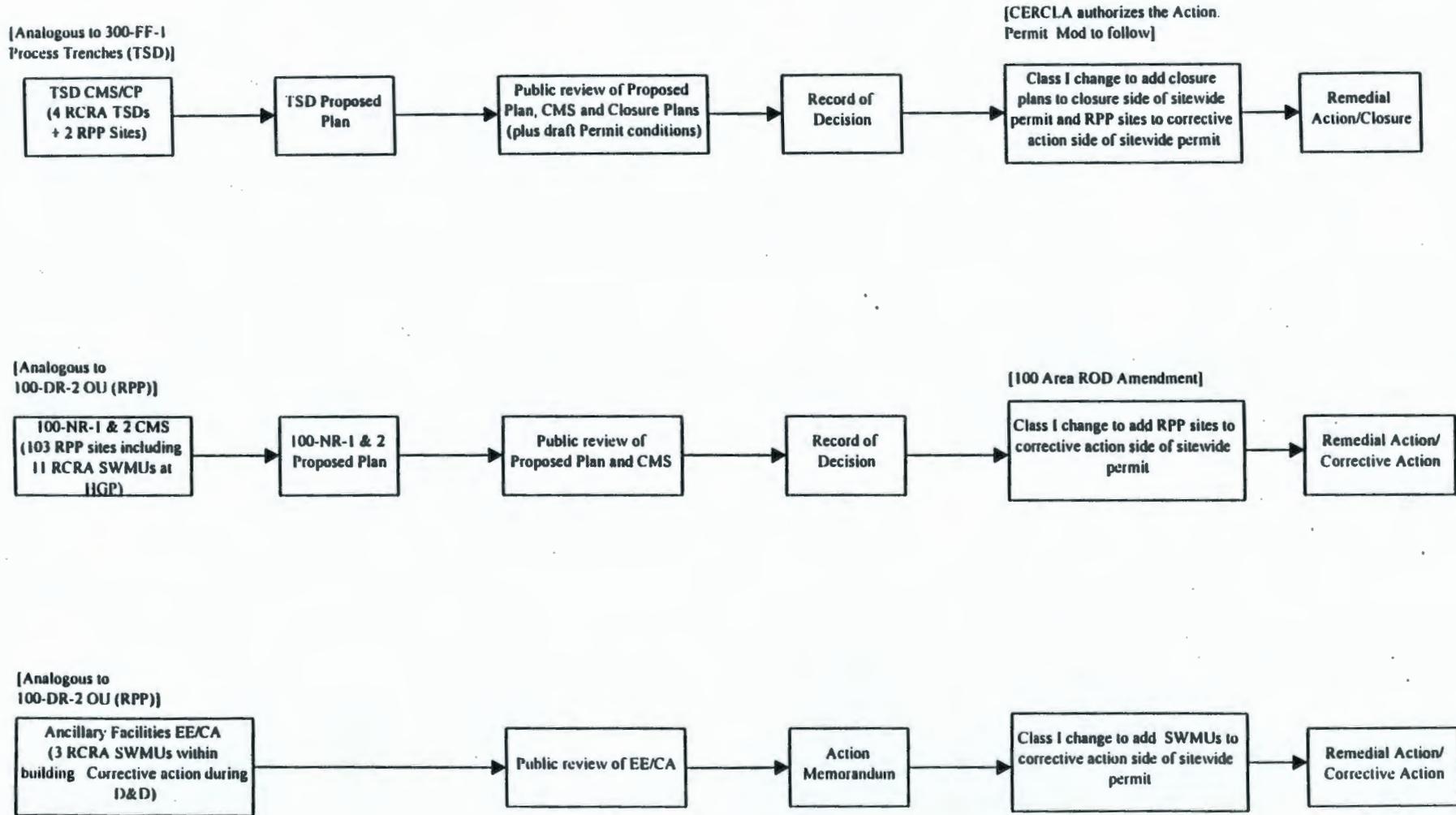
RL plans to implement CERCLA rules, which require a remediation start date within 15 months of ROD signature. If the funding is not available, the ROD will not be signed. The 1324-N/NA TSDs must be added to the permit modification this July, so if necessary, the Revision 0 CMS will be issued prior to the other Revision 0 documents.

***Action***

Text will be prepared and sent to L. E. Gadbois via cc:Mail containing proposed language addressing Class 1 and 3 issues for the TSD Proposed Plan. (This is the same issue for the RPP sites in the 100-NR-1/100-NR-2 Proposed Plan and is also applicable to the three SWMUs in the EE/CA.)

At the conclusion of the meeting it was agreed to obtain a placeholder on the October 8, 1997, IAMIT meeting to address any outstanding issues and that L. E. Gadbois would get back to D. E. Olson as to when to expect a response from EPA Region X legal review.

## 100-N Area RCRA/CERCLA Integration Strategy





UNITED

Post-it* Fax Note		7671	Date	# of pages ▶ 7
To <i>Davin Olson</i>		From <i>P. STAATS</i>		
Co./Dept.		Co.		
Phone #		Phone #		
Fax #		Fax #		

ERCLA

Phillip R. Staats  
 100-N Area Project Manager  
 Washington State Department of Ecology  
 1315 W. 4th Avenue  
 Kennewick, WA 99336

AUTOMATICALLY  
 EFSEC \_\_\_\_\_ N-Reactor \_\_\_\_\_  
 Milestones \_\_\_\_\_  
 Cross-reference \_\_\_\_\_

RE: EPA Response to Draft RCRA/CERCLA Integration Language in 100-N Area Proposed Plans.

Dear Mr. Staats:

This letter provides additional guidance to the Washington State Department of Ecology (Ecology) regarding 100-N Area Proposed Plans in response to items sent to the U.S. Environmental Protection Agency (EPA) for review. One of our main comments on the previous review of these documents regarded the integration of *Resource Conservation and Recovery Act* (RCRA) and *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) processes and requirements. The EPA has reviewed the draft responses to our previous comments on this topic that you have had sent to us. Our review indicates that the affected portion of the documents are not ready for public comment.

Enclosure 1 is our recommended changes that you should consider in light of and in addition to the general issues that we discussed by phone on August 26 (especially regarding establishment of Ecology policy on this issue). Most of our specific comments are provided as a rewrite of the draft text provided to us for review. For reference, that original text provided to EPA is included as enclosure 2. In addition to the revised draft text, scattered within the revised text are additional issues for Ecology to address.

If you have any questions on this information, please feel free to contact me at (509) 376-9884. I look forward to resolution of this issue to a level sufficient to finalize the 100-N Area Proposed Plans.

Sincerely,

*Laurence E. Gadbois*

Laurence E. Gadbois  
 100-N Area Support Regulatory Agency Project Manager

Enclosures as stated

cc: Steve Alexander, Ecology

NMWMP - Hanford

SEP 4 1997

Kennewick

SEP 03 07 07:43AM 1997 OF 2000001

Mr. Phillip R. Staats

Enclosure 1

September 3, 1997

EPA Response to Draft RCRA/CERCLA Integration Language  
in 100-N Area Proposed Plans

The revised text and other ideas presented below are intended as a starting point for Ecology to use. It isn't necessarily intended to substitute for the original language. The idea is to prompt thinking about what is needed in the Plan to make it clear to the public regarding; (1) what is going to be happening under RCRA and CERCLA, and (2) that CERCLA is not "trumping" RCRA decision-making. Towards that end, the following builds on what was provided to EPA for review in enclosure 2.

"As determined in the *Hanford Federal Facility Agreement and Consent Order*, also known as the Tri-Party Agreement, the 100-NR-1 and 100-NR-2 Operable Units are designated as operable units requiring corrective action under Section 3004(u) of RCRA (as implemented through the Washington Administrative Code [WAC] 173-303-645 and -646). In addition, the TSD units located within the Operable Units being addressed by this Proposed Plan will require closure (and, if clean closure is not possible, post-closure permitting) under RCRA Section 3005(e) (as implemented through WAC 173-303-610).

The *100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan* (DOE/RL-96-39) (CMS) was prepared to fulfill both the RCRA and CERCLA remedial action processes. The CMS was prepared in a manner which analyzed remedial alternatives for both RCRA corrective action purposes and for CERCLA remedial action purposes. EPA Headquarters issued a policy on September 24, 1996 which explains how the RCRA corrective action process can be functionally equivalent to a CERCLA remedial action process. As such, the CMS prepared for these operable units functions as a feasibility study under CERCLA for describing and analyzing remedial alternatives. In order to fulfill the requirements for the RCRA closure process, the TSD closure/postclosure plans for the 120-N-1 Percolation Pond, 120-N-2 Surface Impoundment, and the 116-N-1 and 116-N-3 liquid waste disposal facilities are included as appendices in the CMS.

*Phil--have Energy specify which units are subject to closure only and which are going to be subject to post-closure in the paragraph above. Also, later is a paragraph where Energy can specify in greater detail what is required for closure so that the public is fully aware of what is being done for closure. More specifically, Energy should explain how the Proposed Plans meets requirements of Ecology's clean closure guidance document (including closure performance standards), publication 94-111, August, 1994. This is necessary if this document is going to truly satisfy RCRA public participation requirements.*

Ecology, the EPA, and the DOE recognize the similarities between RCRA corrective action, RCRA closure, and CERCLA remedial action processes, and their common objective of protecting human health and the environment from potential releases of hazardous substances, hazardous wastes, or hazardous constituents. The regulatory requirements that govern remedial action decisions under RCRA corrective action and CERCLA are similar. The remedial action

selected for these operable units can be implemented in a manner which will allow the final remedial action under RCRA and CERCLA, as well as closure activities under RCRA, to meet the requirements of both statutes, as applicable. The RCRA corrective action requirements are codified at WAC 173-303-645 and -646, and are also specified in Section III.A of the HSWA portion of the site-wide RCRA permit. The RCRA closure/post-closure requirements are codified at WAC 173-303-610 [*Phil--Does the Ecology portion of the site-wide permit contain closure/postclosure requirements parallel to Section III.A of the HSWA component?*]. Specific requirements for TSD units at the 100-NR-1 and 100-NR-2 Operable Units meeting these regulatory and permit requirements are located in the closure plans attached to the CMS. (*Phil--Note the expanded comment on this below.*) These closure plans are located in the public information repositories located at \_\_\_\_\_.

*Phil--Here would be a good place for Energy to explain how the CERCLA decision document (which makes cleanup decisions based on risk) will satisfy and comply with RCRA clean closure requirements (which generally require soils to be clean enough to eat and water clean enough to drink, [Ecology says this by specifying MTCA Method A/B cleanup levels] and if that can't happen, post-closure permitting is required. Is the Proposed Plan going to specify RCRA closure requirements, or is that left to the closure plans appended to the CMS? The Proposed Plans are the more effective medium to solicit public comment rather than closure plans buried as appendices to a CMS that is referenced in the Proposed Plans. The Proposed Plan needs to set out the specific closure requirements so that the public can see what is being required for closure. This RCRA/CERCLA integration issue arises because RCRA closures require detailed plans the public comments on now versus the CERCLA process wherein the details are left to work out in the RD and RA work plans issued after the ROD is finalized. (See third from the last paragraph of this enclosure.) Remember - through the TPA, we have specifically said that RCRA requirements are fully applicable to both corrective action and closure/postclosure - we're implementing both programs concurrently, not deferring RCRA to CERCLA. Thus, it is essential to explicitly state required RCRA elements and how the documents (even if integrated) clearly reflect compliance).*

In order to satisfy the DOE's RCRA statutory and permit obligations regarding corrective action and closure, the decisions made in the CERCLA ROD will be incorporated by reference into the RCRA "base program" portion of the RCRA permit issued in 1994 by Ecology (closure requirements), and into the Hazardous and Solid Waste Amendments (HSWA) portion of the RCRA permit issued in 1994 by the EPA (corrective action requirements). Together, the base program portion of the permit and the HSWA portion of the permit constitute the RCRA "site-wide" permit. Currently, EPA is the lead regulatory agency for the HSWA portion of the site-wide RCRA permit, and Ecology is the lead regulatory agency for the "base program" portion of the site-wide RCRA permit. Ecology is planning to take over responsibility for the HSWA portion of the permit sometime in calendar year 1998. If that happens before this Proposed Plan goes out for public comment, then Ecology will be the lead regulatory agency for the entire site-wide RCRA permit, including corrective action required pursuant to HSWA.

Since this current public comment process is a joint process to satisfy CERCLA decision-making and RCRA corrective action and closure/post-closure plan approval decision-making, comments regarding this Proposed Plan under CERCLA and RCRA closure and corrective action requirements are currently being solicited from the public as well. Once the public comment period for this Proposed Plan and these RCRA closure and corrective action requirements has closed, Ecology will consider these comments, prepare the CERCLA ROD which will contain the selected remedial actions as well as the final closure plans, and prepare a response to public comments. A Class III permit modification will be used to add those portions of the ROD and/or CMS to the site-wide RCRA permit. [*Phil—This differs from what Ecology wants to do, which is to use Class I permit mods to add either closure or corrective action requirements into the site-wide permit.*] Notice of this public comment period was prepared by both EPA and Ecology so that the closure and corrective action requirements of RCRA and the site-wide permit are met. Once the site-wide permit is modified to incorporate the relevant portions of the CERCLA ROD and CMS by reference, the RCRA corrective action and closure/post-closure obligations will have been met.

Formal authorization of the closure plans under RCRA which are appendices to the CMS will occur at the time the CMS is incorporated by reference into the site-wide RCRA permit. The following is a list of the enforceable portions of the CMS which contain the closure plans for the \_\_\_\_ (specify units subject to closure, and post-closure, and the closure requirements for each unit, the authority for such requirements [i.e., specify section of RCRA statute or WAC regulations or site-wide permit condition number] and which agency [EPA or Ecology] is responsible for enforcing that requirement).

These incorporations by reference into the RCRA site-wide permit will occur through subsequent modifications of the base program and HSWA permit at the next scheduled modification. This modification will incorporate the CERCLA decision document (the ROD and relevant portions of the CMS) for these operable units for the purpose of satisfying RCRA corrective action and closure/post-closure requirements.”

*Phil — The expectation for RCRA closures is that they will proceed in a timely manner based on a negotiated schedule. If the Tri-Parties anticipate an implementation schedule different than the norm (which appears to be the case based on the latest budget discussions), this should be illustrated to the public for their comment. A working concept of that schedule, and where it is embodied (the TPA) should be provided in the Proposed Plans. RCRA does not allow open-ended closure schedules.*

Mr. Phillip R. Staats

Enclosure 2

September 3, 1997

Original Draft RCRA/CERCLA Integration Language  
Provided to EPA for Review

**EPA Comment 4.**

There needs to be a better explanation/understanding of the RCRA/CERCLA integration aspects of these proposed plans. Since these Proposed Plans are the first where RCRA TSDs are being cleaned up using CERCLA authority, there needs to be a better and clearer explanation UP FRONT regarding:

- (a) how the three agencies envisioned integrating CERCLA decisions under the RCRA corrective action scheme for TSDs;

**Response:** Accept. The following text explains the RCRA/CERCLA integration aspects of these proposed plans. This text will be added to the TSD proposed plan on page 1 after the second paragraph.

"As determined in the *Hanford Federal Facility Agreement and Consent Order*, also known as the Tri-Party Agreement, the 100-NR-1 and 100-NR-2 Operable Units are designated as operable units requiring corrective action under Section 3004(u) of RCRA (as implemented through Washington Administrative Code [WAC] 173-303-646). In addition, the TSD units subject to this Proposed Plan will require closure under RCRA Section 3005(e) (as implemented through WAC 173-303-600).

*The 100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan* (DOE/RL-96-39) (CMS) fulfills both the RCRA and CERCLA remedial action processes (i.e., the CMS is functionally equivalent to a CERCLA feasibility study) for describing and analyzing remedial alternatives. In order to fulfill the requirements for the RCRA closure process, the TSD closure/postclosure plans for the 120-N-1 Percolation Pond, 120-N-2 Surface Impoundment, and the 116-N-1 and 116-N-3 liquid waste disposal facilities are included as appendices in the CMS.

Ecology, the EPA, and the DOE recognize the similarities between RCRA closure and CERCLA remedial action processes, and their common objective of protecting human health and the environment from potential releases of hazardous substances, wastes, or constituents. The regulatory conditions, such as **Applicable or Relevant and Appropriate Requirements** (ARARs), controlling remediation should remain similar and consistent in implementation. Actions taken to remediate these operable units will comply with the provisions of both CERCLA and RCRA.

The CERCLA public involvement process, including public notice and opportunity to comment, will satisfy the public involvement requirements for the RCRA closure processes. The lead regulatory agency (Ecology) will prepare a CERCLA ROD (following the CERCLA public involvement process), which, after signature by the Tri-Parties will authorize the selected remedial action."

- (b) how RCRA documents (such as the CMS) can and is a substitute for a CERCLA FS;

**Response:** Accept. See response to general comment 4a.

- (c) how the CERCLA decision document (the ROD) will be incorporated by reference into the RCRA permit.

**Response:** Accept. See response to general comment 4a.

#### EPA Comment 17

Page 4, 3rd paragraph. The document states "In addition, as a consequence of placing the 100 Area on the NPL, actions taken to remediate these operable units will be required to comply with the provisions of CERCLA, which include public review and comment of this Proposed Plan and the selection of remedial actions in a ROD". This is not correct. Sites on the NPL do not have to be cleaned up using CERCLA processes. An alternate explanation of why RCRA TSDs are being cleaned up using CERCLA processes should be provided.

**Response:** Accept. The document will be revised to explain that the RCRA TSD Closure will be integrated with the CERCLA process to ensure that TSD closures and past-practice sites within an operable unit are addressed in a consistent and holistic manner. The TSD Closure process will be done in a manner which ensures compliance with the technical requirements of the Washington Hazardous Waste Management Act (Chapter 70.105) and implementing regulations, as explained in Section 5.5 of the Action Plan to the Tri-Party Agreement. Coordination of RCRA TSD Closure and CERCLA authorities in this manner is consistent with recent EPA policy. The policy explains that one allowable method for reducing inconsistency and duplication of effort when implementing RCRA closure requirements during CERCLA cleanups is to structure the CERCLA document to provide for concurrent compliance with closure requirements by referencing CERCLA requirements in the RCRA permit. (See EPA-HQ memo entitled "Coordination between RCRA Corrective Action and Closure and CERCLA Site Activities," dated September 24, 1996.) The EPA guidance also states the possibility of using a single process to satisfy both the RCRA and CERCLA public participation processes. Coordination of RCRA TSD closure/CERCLA authorities in a similar manner was done in the 300-FF-1 ROD.

See Response to General Comment 4a.

#### EPA Comment 18

Page 4, 3rd paragraph. Change to read "The lead regulatory agency (Ecology) will prepare a CERCLA ROD (following the CERCLA public involvement process), which ~~after signature by DOE and EPA~~ will authorize...". "This CERCLA public involvement process must ~~will also~~ satisfy the...".

**Response:** Accept. The text on page 4 will be revised as follows:

The lead regulatory agency (Ecology) will prepare a CERCLA ROD (following the CERCLA public involvement process), which after signature by Tri-Parties will authorize...". "This CERCLA public involvement process will also satisfy the..."

Additionally, the following text will be added to the response to general comment 4 that will be presented in the text on page 2:

"Authorization of the selected action under RCRA will occur through a subsequent modification to the Hanford Sitewide Permit at the next scheduled modification. This modification will incorporate, by reference, the CERCLA remedy selection ROD into the RCRA permit for the purpose of satisfying RCRA requirements. Ecology intends to use the Class I permit modification procedure for incorporation of RCRA requirements into the Hanford Sitewide Permit, unless other changes being made at the same time require that Class II or Class III permit modification procedures be used instead.

Authorization of the closure plans within the CMS will occur at the same time through the addition in the Hanford Sitewide Permit of a list of enforceable portions of the closure plans and other conditions for closure of the units under RCRA by Ecology. A Class III permit modification will be used to add these enforceable portions and conditions to the permit and to incorporate the closure plans into the permit by referencing the public review process completed through CERCLA."

**EPA Comment 19**

Page 4, 3rd paragraph. The document states that "This modification will incorporate by reference the CERCLA remedy selection ROD into the RCRA permit for the purpose of satisfying the RCRA corrective action requirements". What about the public involvement requirements for the RCRA sites? Are they the result of the corrective action or the permit modification? What about the closure requirements?

**Response:** Accept. See response to general comment 4a and specific comment 18.

## RCRA/CERCLA INTEGRATION ISSUES FOR

### 100-N AREA PROPOSED PLANS

#### Issue: Incorporation of Closure Plan Details into the Proposed Plan

- EPA comment, Enclosure 1, Page 1, 4th paragraph, 2nd - 4th sentences: *“Also, later is a paragraph where Energy can specify in greater detail what is required for closure so that the public is fully aware of what is being done for closure. More specifically, Energy should explain how the Proposed Plans meets requirements of Ecology’s clean closure guidance document (including closure performance standards), publication 94-111, August, 1994. This is necessary if this document is going to truly satisfy RCRA public participation requirements.”*

EPA comment, Enclosure 1, Page 2, 2nd paragraph, 2nd - 4th sentences: *“Is the Proposed Plan going to specify RCRA closure requirements, or is that left to the closure plans appended to the CMS? The Proposed Plans are the more effective medium to solicit public comment rather than closure plans buried as appendices to a CMS that is referenced in the Proposed Plans. The Proposed Plan needs to set out the specific closure requirements so that the public can see what is being required for closure.”*

- RL position: The level of detail in the draft Proposed Plan is consistent with other Hanford efforts integrating CERCLA remediation efforts with RCRA Closure Plans
  - *Fact Sheet: 300-FF-1 and 300-FF-5 Operable Units Proposed Plan - 300 Area Process Trenches Modified Closure Plan*
  - *Proposed Plan for the 300-FF-1 and 300-FF-5 Operable Units*
  - *Draft Proposed Plan Summary: 100-N Area Treatment, Storage and Disposal Units*
  - *Draft Proposed Plan for Interim Remedial Action of the Treatment, Storage, and Disposal Units and Associated Sites in the 100-NR-1 Operable Unit*

## **PROPOSED PLAN SUMMARY**

### **100-N AREA TREATMENT, STORAGE, AND DISPOSAL UNITS**

**This Proposed Plan summary includes brief descriptions of the key issues for the 100-N Area Treatment, Storage, and Disposal (TSD) units. This summary is intended as a simplified introduction to readers who might not be familiar with the contaminated site cleanup process or Hanford issues. The detailed Proposed Plan is attached to this summary.**

The Tri-Parties (Washington State Department of Ecology [Ecology], the U.S. Environmental Protection Agency [EPA], and the U.S. Department of Energy, Richland Operations Office [DOE-RL]) are requesting comments on the proposed cleanup plan for contaminated soils associated with four treatment, storage, and disposal (TSD) units and two related sites next to the Columbia River at the Hanford Site located near Richland, Washington (Figure S-1). The location of these sites is commonly known as the 100-N Area. ~~The Tri-Parties encourage you to comment on the cleanup alternatives described in this Proposed Plan and to comment on the proposed TSD unit closure plans contained in the Corrective Measures Study (CMS)/Closure Plan (published in DOE/RL-96-39).~~ <sup>move to offsite fact sheet text here</sup> The selection of the cleanup alternative will be made taking public comment into consideration. Your comments will be accepted on both the Proposed Plan and the CMS/Closure Plans from <date> until <date>. You may also present your comments at a public hearing that will be held on <date> at <place>.

Some of the buildings and surrounding soils in the 100 Area of the Hanford Site were contaminated during operation of the nuclear reactors. The contamination poses a potential threat to public health and/or the environment. The potential threat is exposure to people on or nearby the site to radiation and chemicals. The potential threat to the environment is contamination in the soil that has migrated to the groundwater and could eventually harm the Columbia River. Because of these potential threats, the Federal Government decided that the 100 Area was a high priority for cleanup and placed it on the National Priorities List (NPL). Hanford NPL sites are being cleaned up under the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA), which is commonly called Superfund. A number of other agreements and state and Federal laws

such as the *Resource Conservation and Recovery Act* (RCRA) govern how the 100 Area will be cleaned up. Figure S-2 is a general overview of the cleanup process that shows at what point the public can become involved. It also shows how this Proposed Plan fits into the process and the work that has been done to help the Tri-Parties develop the Proposed Plan.

The 100-N Area is located in the north-central part of the Hanford Site along a section of the Columbia River known as the "Hanford Reach." It encompasses four distinct components that require cleanup:

- Contaminated soils and underground pipelines.
- Land areas used for treatment, storage, and disposal of wastes (called cribs and trenches) and associated pipelines.
- Facilities (such as buildings, structures, and pipelines) to be decontaminated and/or taken out of service.
- Groundwater beneath the areas listed above.

Two separate Proposed Plans have been developed for cleanup of the contaminated soils, pipelines, and groundwater. One Proposed Plan deals with all additional contaminated soil sites in the 100-N Area and the groundwater beneath them. This Proposed Plan deals with the four TSD cribs and trenches and associated soil sites: the 116-N-1 Crib and Trench, 116-N-3 Crib and Trench, 120-N-1 Percolation Pond, and 120-N-2 Surface Impoundment, UPR-100-N-31 unplanned release spill site, and the 100-N-58 South Settling Pond. Also, a study called an Engineering Evaluation and Cost Analysis has been conducted to determine what should be done with the 100-N Area buildings and structures and how much it would cost. Comments from the public on that study have been requested separately. Finally, the 100-N Reactor Building is currently being addressed in a separate

program called Interim Safe Storage. Figure S-3 provides a general diagram of the environmental cleanup strategy that is being pursued in the 100 Area as well as specific actions that are being proposed in the 100-N Area.

As summarized in the attached Proposed Plan, the Tri-Parties plan to use one of several alternatives to protect human health and the environment from potential hazards posed by the contaminated soils of the TSD units and related sites. The alternatives have been discussed in detail in the *CMS/Closure Plan* (published in the document DOE/RL-96-39). While the alternatives in this Proposed Plan are being evaluated, the Federal Government is taking actions to minimize the threats posed by the TSD units and related sites, such as restricting access to use of the land and groundwater. However, these safeguards provide only temporary protection. The actions proposed in this Proposed Plan will provide a longer term remedy to the potential risks.

The alternatives that were evaluated include:

- No action,
- Remove/dispose under a rural-residential exposure scenario,
- Remove/dispose under the ranger/industrial scenario,
- Remove/dispose/backfill/cap under the ranger/industrial scenario,
- Remove/dispose/vitrify/backfill under the ranger/industrial scenario.

Two land-use scenarios were analyzed in order to compare alternatives that contain a food consumption pathway with those that do not. The food consumption pathway, as included in the rural-residential exposure scenario, assumes that people eat food (either plants or animals) that was grown or raised on the land. Residents would not use groundwater pumped from wells; rather they would need to be connected to a public water supply system. On the other hand, the ranger/industrial scenario assumes that food would not be grown on the land. Also, there would be no houses and people would not live on the land. Rather, the property would be used only for recreation or for industrial purposes, such as office space or shopping centers. Again, the water would not be supplied from the groundwater.

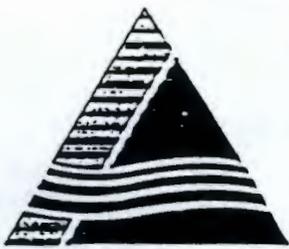
**The preferred cleanup alternative that is proposed by the Tri-Parties for the 116-N-1, 116-N-3, and UPR-100-N-31 sites is to remove and dispose of contaminated soil to allow land use consistent with the rural-residential exposure scenario. For the 120-N-1, 120-N-2, and 100-N-58 sites, no contaminated soil is left; however, the Tri-Parties propose to remove liners, structures, and pipelines, and backfill, regrade, and revegetate these sites.**

The primary purposes of this Proposed Plan are to:

- Describe the alternatives considered (which are presented in detail in DOE/RL-96-39);
- Compare the alternatives to determine the preferred alternative;
- Identify the preferred alternative for cleanup and explain the reasons for the preference;
- Solicit public review of and comments on all the alternatives described; and
- Provide information on how the public can be involved in the selection of the cleanup alternative for the 100-N Area TSD units and related sites.

Once the Tri-Parties evaluate public comments regarding the proposed actions for the sites covered by this Proposed Plan, cleanup actions will be selected. Since this Proposed Plan involves sites that are also covered by the Hanford Facility RCRA Permit, the Permit will be modified by incorporation of the closure plans. The selected cleanup actions and other decisions will be documented in an Interim Action Record of Decision. Located at the end of this Proposed Plan is a list of related publications that the public is encouraged to review to gain a greater understanding of the cleanup plans for the 100-N Area TSD units and related sites.

**For a more detailed comparison of the cleanup alternatives and a discussion of the preferred alternative, refer to the Proposed Plan that follows this summary.**



# 300-FF-1 and 300-FF-5 Operable Units Proposed Plan 300 Area Process Trenches Modified Closure Plan

FACT SHEET

## Tri-Party Agreement

The U.S. Department of Energy (USDOE), U.S. Environmental Protection Agency (EPA), and the Washington State Department of Ecology (Ecology) are seeking comments on a proposed plan for cleanup of the 300-FF-1 and 300-FF-5 Operable Units and a plan for the modified Resource Conservation and Recovery Act (RCRA) closure of the 300 Area Process Trenches. The proposed plan briefly describes cleanup alternatives considered for 300-FF-1 and 300-FF-5 and recommends preferred cleanup alternatives. After considering all public comments, the selected cleanup alternatives will be documented in a record of decision. The modified closure plan describes the cleanup and closure of the 300 Area Process Trenches. This is also the public's opportunity to comment on the closure and associated permit conditions which will be incorporated into the Hanford Facility Wide RCRA permit in 1996.

Related to the closure, Ecology has made a Determination of Non-significance under the State Environmental Policy Act (SEPA).

## BACKGROUND

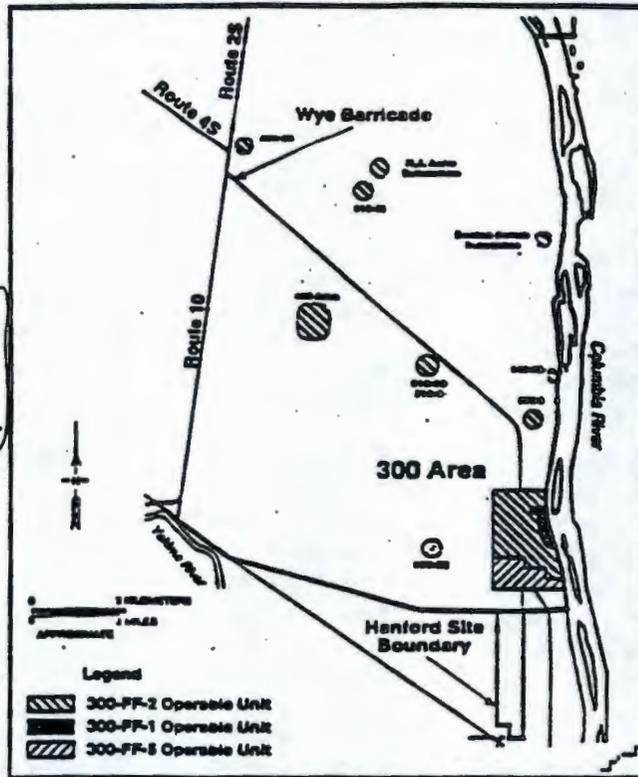
The Hanford Site's 300 Area, located immediately north of Richland, served as the fuels fabrication complex for the site's defense nuclear materials production reactors, which began operation in 1944. In the 1950s, the 300 Area also became the center for nuclear research and development at Hanford. Although the last of Hanford's plutonium production reactors ceased operations in 1988, the 300 Area has continued its research and development role.

In 1989, the 300 Area was listed on the EPA's National Priorities List for Superfund cleanup. Environmental concerns focused on the site's discharges to the ground of liquids containing radioactive and hazardous waste and the seepage of contaminated groundwater into the nearby Columbia River. Two of the 300 Area's cleanup units are 300-FF-1, which includes three wastewater disposal sites, solid waste burial grounds and miscellaneous soil contamination sites, and 300-FF-5, which addresses the groundwater under the 300 Area.

One of the wastewater sites, the 300 Area Process Trench located on the north end of the 300 Area about 1,000 feet from the river. Built in 1975, the trenches consist of two parallel unlined ditches. The trenches received up to 2.9 million gallons a day of contaminated wastewater. In 1991, an expedited response action removed contaminated soils from the trenches to reduce further impacts to the groundwater. At the same time, the USDOE reduced the volume of waste discharges to the trenches. All waste liquid discharges to the trenches ended in December 1991 when the USDOE began operation of the 300 Area Liquid Effluent Treatment facility.

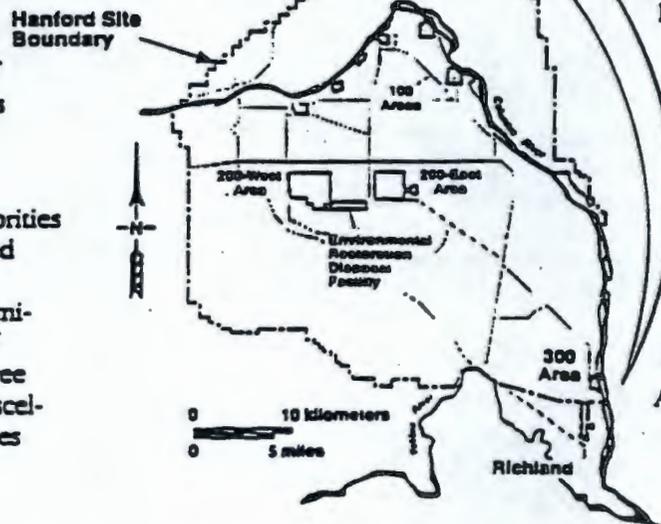
Final closure of the trenches is being carried out under RCRA and the Washington State Hazardous Waste Management Act because the trenches received dangerous waste after 1980. The 300 Area Process Trenches modified closure is being done because it is integrated with the 300-FF-1 Superfund cleanup to ensure the 300 Area cleanup conforms to the Hanford Tri-Party Agreement and is done in the most economical and efficient manner possible.

Final closure of the trenches is being carried out under RCRA and the Washington State Hazardous Waste Management Act because the trenches received dangerous waste after 1980. The 300 Area Process Trenches modified closure is being done because it is integrated with the 300-FF-1 Superfund cleanup to ensure the 300 Area cleanup conforms to the Hanford Tri-Party Agreement and is done in the most economical and efficient manner possible.



## PROPOSED PLAN

One proposed plan is issued for operation of the 300 Area. The operation includes burial and sites waste Area 0.



quantities of other hazardous and radioactive contaminants currently exceed the proposed cleanup standards.

Cleanup is to be carried out under the Superfund law and will achieve cleanup standards and prevent future release of contaminants from the soil to the groundwater. Alternatives for cleanup include no action, leaving waste in place with a soil cap, or excavation of part or all of the waste sites.

The preferred alternative for the wastewater disposal and miscellaneous soil contamination sites calls for excavation and disposal of contaminated soil in Hanford's Environmental Restoration Disposal Facility (ERDF). The disposal site cleanup in the preferred alternative would take four to seven years to complete at an estimated cost of \$24 million. This cost includes the closure of the 300 Area Process Trenches. The preferred alternative also calls for excavation and removal of contaminated materials from the 618-4 Burial Ground in the northwest corner of 300-FF-1. Cleanup of the three-acre burial ground would take two to three years and cost \$3.3 million. Contaminated material would be sent to ERDF.

### 300-FF-5

The 300-FF-5 operable unit investigation focused on groundwater under and river water near the 300 Area. Uranium is the most widespread groundwater contaminant although trichloroethene and dichloroethene are present in the groundwater in a localized area. The cleanup goal is to ensure that there is no unacceptable exposure to contaminated groundwater and that groundwater contaminant levels do not cause a release to the river that could pose an unacceptable risk to humans or the environment.

Groundwater cleanup alternatives include allowing contaminants to diminish naturally over time, slurry wall containment combined with pumping and treating groundwater, and sole reliance upon pumping and treating groundwater. The preferred alternative is to allow groundwater contaminants to naturally diminish over time. Groundwater monitoring will verify the reduction of contamination, and institutional controls such as deed restrictions on groundwater withdrawals will continue until cleanup standards are met. Under the preferred alternative, uranium contamination will drop to groundwater cleanup standards in 3 to 10 years, and other contaminants will not reach the river or surface water in concentrations exceeding cleanup standards.

### 300 AREA PROCESS TRENCHES MODIFIED CLOSURE PLAN

The 300 Area Process Trenches Modified Closure Plan describes the closure of the trenches, contaminated soil, piping, structures, and debris. Cleanup work will be completed in conjunction with the plan approved for 300-FF-1. The preferred alternative for 300 Area Process Trenches cleanup calls for excavation and disposal of soil until industrial cleanup standards are met.

### HOW YOU CAN BE INVOLVED

A 45-day comment period will start December 4, 1995, and end January 17, 1996. Copies of the 300-FF-1 Operable Unit and 300-FF-5 Operable Units Proposed Plan, SEPA documents, and the 300 Area Process Trenches Modified Closure Plan, and draft permit conditions are available for review at the following Hanford Public Information Repositories:

**SEATTLE**  
University of Washington  
Suzzallo Library  
Government Publications Room  
Seattle, WA  
ATTN: Eleanor Chase

**PORTLAND**  
Branford Price Millar Library  
Science and Engineering Libr  
934 SW Harrison  
Portland, OR  
ATTN: Michael Bowman or  
Susan Thomas

**SPOKANE**  
Gonzaga University  
Foley Center  
E. 502 Boone  
Spokane, WA  
ATTN: Tim Fuhman

**RICHLAND**  
USDOE Public Reading Room  
Washington State University  
100 Sprout Rd. Room 130 Wes  
Richland, WA  
ATTN: Terri Traub

All information in the repositories, plus the administrative record, including all data submitted by the applicants may be reviewed at the following administrative record locations:

**SEATTLE**  
U.S. Environ. Protection Agency  
1200 6th Ave.  
Park Place Building  
Haz. Waste Div. Records Center  
Seattle, WA 98101  
ATTN: Dawn Musgrove  
(206) 553-4494  
8:30 a.m. - 4:30 p.m. (M-F)

**LACEY**  
Washington State Dept. of Ec  
300 Desmond Drive S.E.  
Lacey, WA 98503  
ATTN: Tami Schwender  
(360) 407-7125  
9 a.m. - noon; 1-4 p.m. (M-F)

**RICHLAND**  
Westinghouse Hanford Co.  
Environ. Data Management Center  
2440 Stevens Center Place  
Richland, WA 99352  
ATTN: Debbi Isom  
(509) 376-2530  
9 a.m. - noon; 1-3:30 p.m. (M-F)

While no public meeting is currently planned, a meeting may be requested. To provide adequate notice for all Hanford stakeholders, public meeting requests should be submitted by December 19, 1995, to either of the addresses or phone numbers listed below.

**300-FF-1/300-FF-5  
Operable Units Proposed Plan**  
Dave Einan  
U.S. Environ. Protection Agency  
712 Swift Blvd.  
Suite 5  
Richland, WA 99352  
(509) 376-3883

**300 Area Process Trenches  
Modified Closure Plan**  
Ted Wooley  
Washington Dept. of Ecology  
Nuclear Waste Program  
1315 W. 4th Ave.  
Kennewick, WA 99336  
(509) 736-3012

Written comments may be submitted during the comment period to either Ecology or EPA at the addresses above. All who comment will receive responses to their comments. All public comments will be considered in making the decision on the proposed plans and modified closure.

**FOR MORE INFORMATION, CALL HANFORD  
CLEANUP TOLL-FREE, 1-800-321-2008.**

If you have special accommodation needs or would like this material in an alternative format (large type, Braille, cassette tape, or on computer) please contact: Michael Davis at (360) 407-7126 (Voice) or (360) 407-6206 (TDD)

# Proposed Plan for the 300-FF-1 and 300-FF-5 Operable Units

Date Published  
November 1995



United States  
Department of Energy

P.O. Box 550  
Richland, Washington 99352

Approved for Public Release

## PROPOSED PLAN FOR THE 300-FF-1 AND 300-FF-5 OPERABLE UNITS

### Hanford Site, Richland, Washington

DOE, EPA, AND ECOLOGY ARE SEEKING COMMENTS ON THIS PROPOSED PLAN  
(COMMENTS ARE BEING ACCEPTED FROM DECEMBER 4, 1995 TO JANUARY 17, 1996)

#### INTRODUCTION

This proposed plan describes the preferred alternatives for the remediation of Hanford's 300-FF-1 and 300-FF-5 Operable Units<sup>1</sup> and summarizes the background information and other alternatives considered for 300-FF-1 and 300-FF-5 Operable Units. The 300-FF-1 Operable Unit (300-FF-1) addresses former process (liquid) waste disposal sites, solid waste burial grounds, and other miscellaneous soil contamination sites in Hanford's 300 Area. The 300-FF-5 Operable Unit (300-FF-5) addresses the groundwater under the 300 Area.

This plan is issued by the U.S. Environmental Protection Agency (EPA), the federal regulatory agency governing site activities; the U.S. Department of Energy (DOE), the site owner who is conducting investigative and cleanup activities at the site; and the Washington State Department of Ecology (Ecology), the state regulatory agency for the site. The proposed plan has been developed according to the *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) using information detailed in the Remedial Investigation/Feasibility Study (RI/FS) reports. The EPA, DOE, and Ecology are issuing this proposed plan as part of their public participation responsibilities under Section 117(a) of the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA), commonly known as the "Superfund Law." *National Environmental Policy Act of 1969* (NEPA) values have been incorporated into the RI/FS reports.

This document is intended to be a fact sheet for public review that briefly describes the remedial alternatives analyzed, identifies preferred alternatives, and summarizes the information relied upon to recommend the preferred alternatives. The RI/FS reports and Administrative Record

file contain more complete sources of information describing the remedial action alternatives. A complete listing of Administrative Record and public information repository locations is provided on page 17.

In addition, public comments are being solicited in parallel for the 300 Area Process Trenches Modified Closure/Postclosure Plan. The 300 Area Process Trenches site is a *Resource Conservation and Recovery Act* (RCRA) disposal site in 300-FF-1 being closed under RCRA. The cleanup alternatives covered in this proposed plan include alternatives for the Process Trenches. The record of decision (ROD) for 300-FF-1 and 300-FF-5 will document the cleanup decision for the Process Trenches. This cleanup decision and specific permit conditions will be included in the Hanford RCRA Site-Wide Permit through a permit modification.

Alternatives considered for 300-FF-1 include leaving waste in place with a soil cap or excavating part or all of the waste sites. The preferred alternative for 300-FF-1 process waste sites and landfill areas is selective excavation and disposal of contaminated soil. The preferred alternative for the 618-4 Burial Ground located in the 300-FF-1 is excavation and removal. The 618-5 Burial Ground, originally part of 300-FF-1, has been transferred to 300-FF-2, which includes the remaining 300 Area burial grounds.

Alternatives considered for 300-FF-5 include allowing natural attenuation to reduce contamination, extracting and treating the contamination, or confining and treating the contamination. The preferred alternative for 300-FF-5 allows natural attenuation to reduce contamination. Reduction would be verified by groundwater monitoring. Use of contaminated groundwater for drinking purposes would be prevented by continuing institutional controls.

<sup>1</sup>Technical terms and other text in bold face are defined in the glossary at the end of the document.

Table 1. Contaminants of Concern Maximum Concentrations the 300-FF-1 Operable Unit Soil.

Contaminants of Concern	Maximum Concentration <sup>a</sup> Detected in Soils	Cleanup Levels	Source of Cleanup Level
Cobalt-60	81 pCi/g	15 mrem/yr <sup>b</sup>	40 CFR 196 <sup>c</sup>
Uranium-234	9,700 pCi/g		
Uranium-235	1,600 pCi/g		
Uranium-238	9,100 pCi/g		
Arsenic <sup>d</sup>	319 mg/kg <sup>e</sup>	188 mg/kg	MTCA <sup>f</sup>
Benzo(a)pyrene <sup>d</sup>	27 mg/kg <sup>e</sup>	18 mg/kg	MTCA <sup>f</sup>
Chrysene <sup>d</sup>	43 mg/kg <sup>e</sup>	18 mg/kg	MTCA <sup>f</sup>
Cadmium <sup>d</sup>	222 mg/kg <sup>e</sup>	21.5 mg/kg	MTCA <sup>f</sup>
Polychlorinated Biphenyls	42 mg/kg <sup>e</sup>	17 mg/kg	MTCA <sup>f</sup>
Thallium <sup>d</sup>	25,000 mg/kg <sup>e</sup>	245 mg/kg	MTCA <sup>f</sup>

<sup>a</sup>Data presented are maximum levels. These contaminant levels are limited to only a few areas (see Figure 4).

<sup>b</sup>An exposure assessment model is used to convert between soil concentrations (pCi/g) and dose levels (mrem/yr). For example, in 300-FF-1, the 15 mrem/yr dose from total uranium (uranium-234, -235, and -238) equates to 350 pCi/g.

<sup>c</sup>40 CFR 196 is a proposed regulation.

<sup>d</sup>Contaminants found only in the 300 Area Process Trenches Spoils Pile.

<sup>e</sup>These contaminant concentrations were found in locations that also had high total uranium concentrations (above 350 pCi/g).

<sup>f</sup>State of Washington, Model Toxic Control Act, Method C, Industrial Cleanup Values For Soils (MTCA Cleanup Levels and Risk Calculations, update August 31, 1994).

scraped out periodically to increase infiltration and the scraped material was placed along the sides of the ponds. Discharging of waste to the process ponds stopped in 1975.

The Process Trenches were built in 1975 to replace the ponds. Like the North and South Process Ponds, the Process Trenches received large volumes of process waste with peak discharges up to 2,000 gal/min. The contaminants of concern are uranium, cobalt-60, arsenic, benzo(a)pyrene, chrysene, cadmium, polychlorinated biphenyl, and thallium. In 1991, contaminated soils from the south end of the Process Trenches were moved to the dry north end, creating the Process Trenches Spoils Pile. This stopped process waste from passing through the contaminated soil and driving contamination to groundwater. Uranium concentrations in the underlying groundwater decreased rapidly after soils were moved. Discharges to the Process Trenches ceased in December 1994. Because the Process Trenches

~~received hazardous waste after 1980, the trenches are a RCRA disposal site. The ROD will present the remedial alternative to be implemented at this site. Information on the RCRA closure can be found in the 300 Area Process Trenches Modified Closure/Postclosure Plan, out for public review concurrent with this proposed plan.~~

Ash Pits received fly ash from the 300 Area Power Plant. Surface soil samples from the Ash Pits were analyzed, and metal concentrations below cleanup standards were detected. The Ash Pits were built over part of the South Process Pond, and contaminated soil and/or sludge from the pond operations may remain beneath the fly ash.

The Filter Backwash Pond and Retired Filter Backwash Pond received filter backwash from the 300 Area Water Filter Plant. Soil contamination levels beneath the Retired Filter Backwash Pond, which was built over part of the South Process Pond, are expected to be the same as the South

**PROPOSED PLAN FOR ~~(8) FINAL-INTERIM~~ REMEDIAL ACTION OF THE  
TREATMENT, STORAGE, AND DISPOSAL UNITS AND ASSOCIATED SITES IN THE  
100-NR-1 OPERABLE UNIT**

**Hanford Site, Richland, Washington**

**DOE, ECOLOGY, AND EPA ANNOUNCE PROPOSED PLAN**

This Proposed Plan identifies the preferred alternatives for ~~(8) final-interim~~ remedial action of the treatment, storage, and disposal (TSD) units and their associated sites in the 100-NR-1 Operable Unit, located at the Hanford Site (Figure S-1). The TSD units consist of contaminated soils, structures, and pipelines. There are four *Resource Conservation and Recovery Act* (RCRA) TSD units: the 116-N-1 Crib and Trench; the 116-N-3 Crib and Trench; the 120-N-1 Percolation Pond; and the 120-N-2 Surface Impoundment. There are two associated sites: the UPR-100-N-31 unplanned release (UPR) spill site; and the 100-N-58 South Settling Pond. This Proposed Plan also summarizes the other remedial alternatives analyzed for remedial action. The intent of the remedial action is to address contaminated areas that pose potential threats to human health and the environment. Other waste sites are included in the 100-NR-1 Operable Unit and they are addressed in a separate Proposed Plan entitled *Proposed Plan for Final Interim Remedial Actions at the 100-NR-1 Source Sites Operable Unit and Interim Remedial Action at the 100-NR-2 Groundwater Operable Unit* (DOE/RL-96-102).

This Proposed Plan is being issued by the Washington State Department of Ecology (Ecology), the lead regulatory agency; the U.S. Environmental Protection Agency (EPA), the support regulatory agency; and the U.S. Department of Energy (DOE), the responsible agency. Ecology, the EPA, and the DOE are issuing this Proposed Plan as part of their public participation responsibilities under Section 117(a) of the *Comprehensive Environmental Response, Compensation and Liability Act* (CERCLA), commonly known as the "Superfund Program." The DOE is also issuing this Proposed Plan as a part of its responsibility under the *National Environmental Policy Act* (NEPA). NEPA values including impacts to natural, cultural, and historical resources; socioeconomic aspects; and irreversible and irretrievable commitments of resources, are addressed in the *100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan*

**MARK YOUR CALENDAR**

Ecology, the EPA, and the DOE encourage you to comment during the public comment period on all of the remedial alternatives described in this Proposed Plan. **Public comment on the closure plans contained in Appendices A and B of the Corrective Measures Study is also requested.** Based on new information or public comments, Ecology, the EPA, and the DOE may modify the preferred alternatives or select other remedial alternatives presented in this Proposed Plan.

A 45-day public comment period for this 100-NR-1 TSD Units Proposed Plan and associated closure plans will be from ~~August 7, 1997 <date>~~, to ~~September 22, 1997 <date>~~. A public hearing on this Proposed Plan and associated closure plans is scheduled to be held on ~~September 7, 1997 <date>~~.

Send written comments to:

Phil Staats  
Washington State Department of Ecology  
1315 West Fourth Avenue  
Kennewick, Washington 99336-6018

(CMS) (DOE/RL-96-39). ~~(4)~~ This Proposed Plan also serves to satisfy the public review requirements needed for the sitewide permit modification.

(Following 4's respond to 4a, 4b, 4c, 6, 11, 17, & 19)  
As determined in the *Hanford Federal Facility Agreement and Consent Order*, also known as the Tri-Party Agreement, the 100-NR-1 and 100-NR-2 Operable Units are designated as operable units requiring corrective action under Section 3004(u) of RCRA (as implemented through Washington Administrative Code [WAC] 173-303-646). In addition, the TSD units subject to this Proposed Plan will require closure under RCRA Section 3005(e) (as implemented through WAC 173-303-600).

The 100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan (DOE/RL-96-39) fulfills both the RCRA and CERCLA remedial action processes (i.e., the CMS is functionally equivalent to a CERCLA feasibility study) for describing and analyzing remedial alternatives. In order to fulfill the requirements for the RCRA closure process, the TSD closure/postclosure plans for the 120-N-1 Percolation Pond, 120-N-2 Surface Impoundment, and the 116-N-1 and 116-N-3 liquid waste disposal facilities are included as appendices in the CMS.

Ecology, the EPA, and the DOE recognize the similarities between RCRA closure and CERCLA remedial action processes, and their common objective of protecting human health and the environment from potential releases of hazardous substances, wastes, or constituents. The regulatory conditions, such as Applicable or Relevant and Appropriate Requirements (ARARs), controlling remediation should remain similar and consistent in implementation. Actions taken to remediate these operable units will comply with the provisions of both CERCLA and RCRA.

The CERCLA public involvement process, including public notice and opportunity to comment, will satisfy the public involvement requirements for the RCRA closure processes. (6) Public comment on the closure plans is solicited in parallel with this Proposed Plan. The closure plans are contained in Appendices A and B of the CMS. This constitutes the public participation opportunity for the closure plan. The ROD will document the RCRA TSD closure decision for these units. (15) The lead regulatory agency (Ecology) will prepare a CERCLA ROD (following the CERCLA public involvement process), which, after signature by the Tri-Parties will authorize the selected remedial action. (18) Authorization of the selected action under RCRA will occur through a subsequent modification to the Hanford Sitewide Permit at the next scheduled modification. This modification will incorporate, by reference, the CERCLA remedy selection ROD into the RCRA permit for the purpose of satisfying RCRA requirements. Ecology intends to use the Class I permit modification procedure for incorporation of RCRA requirements into the Hanford Sitewide Permit, unless other changes being made at the same time require that Class II or Class III permit modification procedures be used instead.

Authorization of the closure plans within the CMS will occur at the same time through the addition in the Hanford Sitewide Permit of a list of enforceable portions of the closure plans and other conditions for closure of the units under RCRA by Ecology. A Class III permit modification will be used to add these enforceable portions and conditions to the permit and to incorporate the closure

plans into the permit by referencing the public review process completed through CERCLA.

This Proposed Plan briefly describes the remedial alternatives analyzed in the 100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan (DOE/RL-96-39). It identifies the preferred alternative for the TSD units and summarizes the information relied upon to recommend the preferred alternative for public review.

The remedial alternatives analyzed in the corrective measures study (CMS) for the 100-NR-1 TSD units requiring remedial action are No Action and Remove/Dispose for the rural-residential exposure scenario. The rural-residential scenario assumes unrestricted land use to a depth of 4.6 m. (13, 38) For the Modified Columbia River Comprehensive Impact Assessment (CRCA) ranger/industrial scenario, No Action, Remove/Dispose, Remove/Dispose/Backfill/Cap, and Remove/Dispose/Vitrify/Backfill alternatives were analyzed. The modified CRCA ranger/industrial scenario does not include the food ingestion pathway, but assumes occasional use of the ground surface with potential soil intrusion by humans, animals, and plants to a depth of 3 m. (Additional details of the scenario are in the 100-NR-1 TSD CMS, Appendix F.)

The final land use for the 100 Area of the Hanford Site has not been determined. For the purpose of this Proposed Plan, the preferred remedial alternative has been based on the rural-residential scenario so as to not preclude any future land use. Remedial action objectives and cleanup goals will be reevaluated if future land-use and groundwater-use determinations are inconsistent with the preferred remedial alternative presented in this plan.

(15) The preferred remedial alternative for the TSD units and associated sites in the 100-NR-1 Operable Unit presented in this Proposed Plan is as follows: Removal and Dispose of the contaminated soil and associated structures from the 116-N-1 and 116-N-3 Liquid Waste Disposal Facilities and the UPR-100-N-31 spill site, treatments as necessary, and disposal of the removed material at the Environmental Restoration Disposal Facility (ERDF), provided it meets ERDF waste acceptance criteria. (14) The ERDF is an on-site CERCLA landfill located on the 200 Area plateau in the central part of Hanford. The disposal of waste from inactive RCRA TSDs was determined to be within the definition of Hanford Site remediation waste provided in the ERDF ROD, as clarified by the explanation of significant differences (EPA et al 1996). The pipelines associated with the TSD units will either be removed and disposed, or sampled to determine whether they meet (50) remedial action goals and can be left in place. Treatment of

excavated soils would be conducted before disposal, as required, to meet land disposal restrictions and the ~~Environmental Restoration-Disposal Facility (ERDF)~~ waste acceptance criteria.

~~(16) As discussed in detail below, soil samples collected from 120-N-1, 120-N-2, and 100-N-58 contained no contamination above background levels for the Hanford Site as allowed under the Washington State Model Toxics Control Act (MTCOA) Method B. Because soil contaminant concentrations at these sites 120-N-1, 120-N-2, and 100-N-58 are less than the Washington State Model Toxics Control Act (MTCOA) Method B values, no remedial action of the soil column is required. However, due to the presence of a sulfate plume in the groundwater at concentrations above groundwater protection standards (i.e., maximum secondary contaminant level) #16 that was caused by past operation of these units, the sites will be closed under a modified closure pursuant to the Resource Conservation and Recovery Act (RCRA) and the Washington State dangerous waste regulations. The sites will be restored to their former condition through backfilling, recontouring, and revegetation and the groundwater will continue to be monitored in accordance with the dangerous waste regulations.<sup>1</sup>~~

Modified closure of the 120-N-1, 120-N-2, and 100-N-58 Percolation Pond system will not require remediation excavation, but the Hypalon™ liner and leak detection systems in the 120-N-2 Surface Impoundment will be removed and disposed as non-contaminated waste. In addition, the sampling shed and perimeter fence will be removed. Modified closure of the 120-N-1, 120-N-2, and 100-N-58 Percolation Pond system and associated piping is estimated to cost \$410,000 (this does not include costs for groundwater monitoring).

The preferred remedial alternative of No Action for 120-N-1, 120-N-2, and 100-N-58 is applicable because these sites pose no potential threat to human health and the environment. The preferred remedial alternative of Remove/Dispose for 116-N-1, 116-N-3, and UPR-100-N-31 will reduce risks to human health and the environment, ensure that contaminants present at these waste sites will not adversely impact existing groundwater quality beneath the sites or beneficial use of the Columbia River, and accommodate the goal of not precluding any future land use.

<sup>1</sup> Various locations in this Proposed Plan refer to revegetation efforts. Revegetation efforts will provide overall environmental benefit to the site and will be done as indicated. However, the revegetation activities are not part of nor necessary for the completion of the remedial action. Efforts will be made to avoid or minimize impacts to natural resources during remedial activities, and the natural Resource Trustees will be consulted during mitigation and restoration activities. (78, 79)

The preferred remedial alternatives presented in this Proposed Plan are the initial recommendations of Ecology, the EPA, and the DOE. Remedial alternatives will be selected only after the public has had the opportunity to comment on these recommendations and all comments have been reviewed and considered. The agencies are seeking comments on each alternative that has been considered and on all supporting documentation in the Administrative Record, not just on the preferred alternative. Comments may be made in person at the public hearing or may be submitted in writing to the address in the box on the first page. Written comments must be submitted by <date>. Responses to comments will be presented in a responsiveness summary that will be part of the Record of Decision (ROD), which is the legal decision document that presents the selected remedial actions. The public is also encouraged to review and comment on the closure plans contained in Appendices A and B of 100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan (DOE/RL-96-39). This and other related documents listed at the end of this Proposed Plan provide greater detail about these waste sites and are a part of the Administrative Record. In addition, Ecology will modify the Hanford Site-wide RCRA permit to incorporate by reference the CERCLA remedy selection in order to satisfy the RCRA closure and postclosure requirements for the TSDs.

## HANFORD SITE HISTORY

The Hanford Site is located in southeastern Washington (Figure S-1). It was established in 1943 to produce plutonium for nuclear weapons using reactors and chemical processing plants. The 100 Area of the Hanford Site is located along the Columbia River and includes nine inactive nuclear reactors used for plutonium production between 1943 and 1987. Operations at the Hanford Site are now focused on environmental restoration and waste management. In November 1989, the EPA designated the 100 Area of the Hanford Site a Superfund site and placed it on the National Priorities List (NPL) because of soil and groundwater contamination that resulted from past operation of the nuclear facilities. To organize cleanup efforts under Superfund, contaminated areas at the nine inactive reactors were subdivided into geographic areas called "operable units."

## 100-N AREA BACKGROUND

The 100-N Area is located in the north-central part of the Hanford Site along a section of the Columbia River known as the "Hanford Reach." It encompasses three distinct components requiring remedial action: the 100-NR-1 Source Sites Operable Unit, the 100-NR-2 Groundwater Operable Unit, and the TSD units within the 100-NR-1 Operable Unit.

land-use decision has not been made. two exposure scenarios (rural-residential and modified CRCIA ranger/industrial) were defined. These two exposure scenarios represent two general categories of potential land use: unrestricted and restricted. Both scenarios restrict the use of groundwater.

The *100 Area Source Operable Unit Focused Feasibility Study* (DOE/RL-94-61) identified six general response actions that could be applied to waste sites in the 100 Area. Because contaminant concentrations at 120-N-1, 120-N-2, and 100-N-58 are less than the Washington State MTCA Method B values, remedial alternatives (except No Action) were not evaluated for these sites.

For 116-N-1, 116-N-3, and UPR-100-N-31, the general response actions from the *100 Area Source Operable Unit Focused Feasibility Study Report* (DOE/RL-94-61) were used to identify remedial alternatives in the *100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan* (DOE/RL-96-39). The alternatives evaluated for remediation of 116-N-1, 116-N-3, and UPR-100-N-31 are as follows:

- No Action
- Remove/Dispose
- Remove/Dispose/Backfill/Cap (modified CRCIA Ranger/Industrial scenario only)
- Remove/Dispose/Vitrify/Backfill (modified CRCIA Ranger/Industrial scenario only).

The last two options (Remove/Dispose/Backfill/Cap and Remove/Dispose/Vitrify/Backfill) were evaluated only under the modified CRCIA Ranger/Industrial scenario because they would not accommodate the goal of not precluding any future land use.

#### Summary of Action at the 120-N-1, 120-N-2, and 100-N-58 Sites

Soil contamination (neither—radioactive nor nonradioactive) was not found at these sites; thus, no remedial alternatives were considered for the soil column. The sulfate plume in the groundwater under these units will be ~~remediated~~ addressed in accordance with the ROD for the 100-NR-2 Operable Unit (44) (expected to be issued at approximately the same time as the ROD for this proposed plan) and the Hanford Sitewide RCRA permit. Groundwater monitoring data continues to show exceedances of sulfate concentrations above the secondary drinking water standard (250 mg/L). Because of this groundwater contamination, these sites will undergo modified closure (rather than clean closure) pursuant to the Washington State dangerous waste regulations via modification of the RCRA Sitewide Permit to incorporate the closure plan contained in Appendix B of the CMS (45).

For this modified closure MTCA B cleanup levels will be attained. Groundwater monitoring will continue under the RCRA program until remediation is complete in accordance with the ROD and the units are clean closed through a modification to the permit. The buildings and piping will be removed, and the basins will then be backfilled, regraded, and revegetated. The estimated cost to implement closure at the 120-N-1/120-N-2/100-N-58 Percolation Pond complex is \$410,000 (this does not include the cost for groundwater monitoring).

#### Summary of Alternatives at the 116-N-1, 116-N-3, and UPR-100-N-31 Sites

Each of the alternatives (except No Action) under both land-use scenarios have a Remove/Dispose element. Table 3-4 summarizes the volumes of contaminated waste, piping, and demolition debris that would be removed and disposed.

**No Action Alternative.** The No Action Alternative was evaluated to provide a baseline for comparison to the other alternatives. It represents a situation where no additional restrictions, controls, or remedial actions are applied to a site. The No Action Alternative would not support an objective of not precluding any future land use in the 100 Area. There would be no cost to implement this alternative at 116-N-1, 116-N-3, and UPR-100-N-31.

**Remove/Dispose Alternative.** This alternative involves the following elements:

- Remove pipelines and aboveground structures
- Excavate clean overburden material
- Excavate contaminated soils
- Treat contaminated soils if required
- Dispose of contaminated material at ERDF
- Backfill, contour, and revegetate the sites.

Under this alternative contaminated media (soil, piping, and demolition waste) would be excavated, transported, and disposed at ERDF, in accordance with established waste acceptance criteria. Contaminated surface soils would be excavated to a depth of 3 m (modified CRCIA ranger/industrial) or 4.6 m (rural-residential) below surrounding grade or bottom of the engineered structure, whichever is deeper, at the 116-N-1 Crib, 116-N-3 Crib and Trench, and UPR-100-N-31. (47) The bottoms of the 116-N-1 Trench, 116-N-3 Crib, and 116-N-3 Trench are all lower than 4.6 m below the surrounding surface elevation so removal of these soils is not strictly required. However, a 1.5-in-thick layer below the bottom of the 116-N-1 Trench, 116-N-3 Crib, and 116-N-3 Trench is believed to be contaminated with plutonium-239/240 at concentrations above trace levels. This contaminated

**RCRA/CERCLA INTEGRATION ISSUES FOR  
100-N AREA PROPOSED PLANS**

**Issue: Deferral of Certain Closure Plan Details to CERCLA RD/RA Phase**

- EPA comment, Enclosure 1, Page 2, 2nd paragraph, 5th - 7th sentences: *“This RCRA/CERCLA integration issue arises because RCRA closures require detailed plans the public comments on now versus the CERCLA process wherein the details are left to work out in the RD and RA work plans issues after the ROD is finalized. Remember - through the TPA, we have specifically said that RCRA requirements are fully applicable to both corrective action and closure/postclosure - we’re implementing both programs concurrently, not deferring RCRA to CERCLA. Thus, it is essential to explicitly state required RCRA elements and how the documents (even if integrated) clearly reflect compliance.”*
- RL position: The approach in the draft Proposed Plans is consistent with that taken in other Hanford efforts, as well as with EPA guidance.
  - *300 Area Process Trenches Modified Closure/Postclosure Plan*
  - *Draft 1301-N and 1325-N Liquid Waste Disposal Facilities Closure Plan*
  - *Coordination between RCRA Corrective Action and Closure and CERCLA Site Activities*

# 300 Area Process Trenches Modified Closure/Postclosure Plan



United States  
Department of Energy  
Richland, Washington

For External Review

A

- 1 • *Phase I and II Feasibility Study for the 300-FF-1 Operable Unit* (DOE-RL 1993c)
- 2
- 3 • *Phase II Remedial Investigation Report for the 300-FF-1 Operable Unit: Physical Separation*
- 4 *of Soils Treatability Study* (DOE-RL 1994c)
- 5
- 6 • *Phase I Remedial Investigation Report for the 300-FF-5 Operable Unit* (DOE-RL 1993e)
- 7
- 8 • *Expedited Response Action Assessment for the 316-5 Process Trenches* (DOE-RL 1992a)
- 9
- 10 • *Phase III Feasibility Study Report for the 300-FF-1 Operable Unit* (DOE-RL 1995b)
- 11
- 12 • *Proposed Plan for the 300-FF-1 and 300-FF-5 Operable Units* (DOE-RL 1995c).
- 13

14 Implementation of the ROD is divided into three phases. These phases and their primary documents are  
15 described in Sections 7.3.9 through 7.3.11 of the Tri-Party Agreement Action Plan (Ecology et al. 1994).  
16 The phases are the remedial design phase, remedial action phase, and operation and maintenance (O&M)  
17 phase. The primary documents required for these phases are the remedial design report, remedial action  
18 work plan, and the O&M work plan. All of these documents require regulator approval. A more detailed  
19 list of CERCLA remedial action documents is presented in Table 9-3 of the Tri-Party Agreement Action  
20 Plan (Ecology et al. 1994). The schedule for each phase will be included in its primary document and  
21 reflected in the operable unit work schedule located in Appendix D of the Tri-Party Agreement Action  
22 Plan (Ecology et al. 1994).

23  
24 ~~The remedial action phase and the remedial action work plan will provide the detailed information~~  
25 ~~required by the CERCLA process to implement actions developed under the remedial design for~~  
26 ~~remediation at the 300-APT. This information will include remediation methodology, cleanup levels,~~  
27 ~~waste management and disposal methods, and sampling and analysis. The O&M phase and the O&M~~  
28 ~~work plan will provide information regarding site inspections, monitoring, and maintenance required~~  
29 ~~after remediation activities.~~

### 30 31 32 1.2.2 Closure Plan Format

33  
34 The Phase III FS report (DOE-RL 1995b) was provided to CERCLA regulators August 15, 1994, in  
35 accordance with Tri-Party Agreement Milestone M-15-03C. This closure plan was provided to Ecology  
36 on August 15, 1994, in accordance with Tri-Party Agreement Milestone M-20-32 (Ecology et al. 1994).

37  
38 The RCRA closure plan is separate, but coordinated with CERCLA documents. The closure plan  
39 discusses how CERCLA operable unit remedial options integrate with TSD unit closure options  
40 presented in regulations governing RCRA closures while meeting the requirements of  
41 WAC 173-303-610. Much of the TSD unit information required to satisfy WAC 173-303-610 closure  
42 plan content requirements (e.g., background information, TSD unit description, waste inventory) is taken  
43 from CERCLA documents for the 300-FF-1 Operable Unit RI/FS process.

44  
45 Information required for Chapters 6.0 (Closure Strategy and Performance Standards) and 7.0 (Closure  
46 Activities) of the closure plan that is not available from published CERCLA predecessor documents is  
47 obtained through coordination with the concurrently developed CERCLA Phase III FS Report (DOE-RL  
48 1995b). The CERCLA 300-FF-1 remedial action activities in support of TSD unit closure will be

1 incorporated into the closure plan during revision intervals coordinated with the CERCLA review  
2 process presented in Figure 9-1 of the Tri-Party Agreement Action Plan (Ecology et al. 1994).  
3  
4

### 5 1.2.3 Basis for RCRA/CERCLA Integration

6

7 The RCRA/CERCLA integration for closure of the 300 APT is being pursued as a Tri-Party  
8 Agreement-driven activity that is physically appropriate and programmatically feasible.  
9

10 1.2.3.1 Physical Appropriateness. The integration of RCRA/CERCLA activities ensures physical  
11 consistency of these activities by protecting human health and the environment. Integration capitalizes  
12 on CERCLA's prior history of 300 APT remediation. It also allows the 300 APT cleanup to use the same  
13 cleanup levels, remediation technology, and waste handling methods as the operable unit to capitalize on  
14 the economies of a one-time, larger scale CERCLA operable unit operation.  
15

16 The Tri-Party Agreement Action Plan requires that the closure of TSD units must consider all hazardous  
17 substances, including radionuclides. The Tri-Party Agreement Action Plan allows that radionuclides not  
18 addressed under TSD unit closure be addressed under CERCLA authority. The operable unit will  
19 address pervasive radionuclides at the TSD unit (Section 4.3.3) in a manner that will effectively mitigate  
20 risk from dangerous waste constituents (DOE-RL 1995b). Integration of the two units' activities will  
21 ensure adherence to Tri-Party Agreement Action Plan requirements regarding cleanup of all hazardous  
22 substances.  
23

24 The CERCLA group and CERCLA regulations have a history of involvement with 300 APT remediation  
25 dating from the 316-5 Process Trenches Expedited Response Action (ERA) in 1991. The ERA was  
26 performed under CERCLA authority with regulator approval to mitigate environmental hazards and to  
27 facilitate the RI/FS process for the 300-FF-1 Operable Unit CERCLA remedial action. The ERA is  
28 discussed in detail in Section 2.4. The CERCLA operable unit involvement in 300 APT remediation will  
29 continue after the TSD unit has ceased operations as a logical extension of prior remedial activities at the  
30 300 APT.  
31

32 If treatment by soil washing is the selected remedial alternative, this activity will require both units to  
33 use the same cleanup levels and waste disposal methods. The soil washing unit will be remediating both  
34 RCRA and CERCLA unit soils simultaneously, and the remediated soils will be used interchangeably as  
35 backfill for both units. Separation of the treatment waste or product according to unit will not be  
36 practical.  
37

38 Activity integration is enhanced by coinciding submittal dates for the RCRA closure plan and the Phase  
39 III FS report (DOE-RL 1995b) presented in the Tri-Party Agreement, Appendix D (Ecology et al. 1994).  
40 The closure plan approval schedule presented in Figure 9-2 of the Tri-Party Agreement Action Plan  
41 coordinates closely with the scheduled arrival date of the ROD of August 1995. This is also the  
42 approximate due date to regulators of Revision 1 of the closure plan.  
43

44 1.2.3.2 RCRA and CERCLA Program Equivalency. The WAC 173-303-610 closure process and  
45 the CERCLA remedial action process are functionally equivalent for TSD unit closure purposes.  
46 Functional equivalency ensures equal protection of human health and the environment, although unit  
47 processes may be different.  
48

- 1 • A groundwater monitoring network has been established around the facility (Schalla et  
2 al. 1988b).
- 3
- 4 • In the summer of 1991, an ERA was conducted at the site to reduce the future impacts of the  
5 contamination to groundwater. Contaminated sediments located at the bottom and sides of the  
6 trenches were excavated and relocated to impoundment areas within the TSD unit.  
7 Characterization and post-ERA soil sampling of both trenches were performed  
8 (DOE-RL 1992a).
- 9
- 10 • In January 1992, the flow rate to the process trenches was reduced to 1,137 L/min  
11 (300 gal/min). This was done to reduce potential impacts to groundwater and the Columbia  
12 River.
- 13
- 14 • In January 1995, the 300 APT was physically isolated from receiving any further discharges.
- 15
- 16 • The 300-FF-1 Operable Unit RI/FS has been conducted to determine the nature and extent of  
17 contamination within the TSD, and has provided alternatives for remediation.
- 18

19 The entire 300 Area, including the 300-FF-1 Operable Unit and the 300 APT TSD unit location, is  
20 expected to remain an industrial area for the foreseeable future (Drummond 1992). Administrative  
21 controls will restrict public access, thereby eliminating risk to the general public. The RI has identified  
22 the only substantive risk as being to onsite industrial workers; their exposures will be administratively  
23 controlled.

### 24 25 26 **6.2.3 Return Land to Appearance and Use of Surrounding Area**

27  
28 The appearance and use of the 300 APT unit site after closure will be consistent with the future use of the  
29 property as an industrial site. If an immediate use of the property requiring the construction of  
30 impervious surfaces is not indicated, the area will likely be contoured to control drainage and  
31 revegetated.

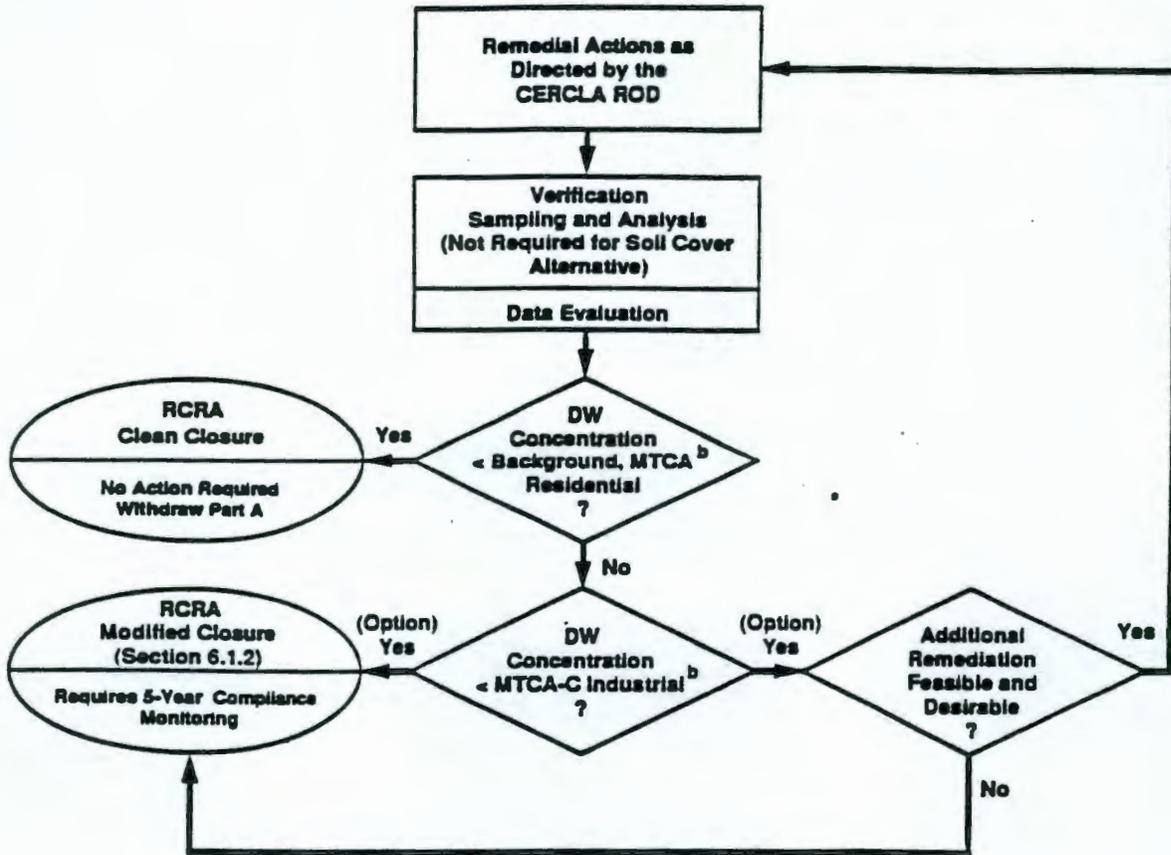
## 32 33 34 **6.3 CLOSURE ACTIVITIES**

35  
36 **The following steps to closure consider only the remedial alternatives that are applicable to the TSD unit**  
37 **and are currently under consideration by the CERCLA remedy selection process (these alternatives are**  
38 **discussed in Chapter 7.0 of this document). These activities will be implemented during the remedial**  
39 **action phase based on the descriptions in the remedial action work plan and its support documents.**

- 40
- 41 • If TSD unit soil contamination is remediated, it will be accomplished under CERCLA  
42 authority. The remedy and cleanup levels selected by the CERCLA ROD will protect human  
43 health and the environment. TSD unit piping and structures may be demolished and removed  
44 as needed to gain access to underlying unit soils for remediation.
- 45
- 46 • Final status groundwater monitoring under WAC 173-303-645 will be initiated.
- 47

- 1 • TSD unit waste will be managed under CERCLA authority and stored and disposed of as  
2 agreed to with RCRA regulators.  
3
  - 4 • If RCRA closure verification sampling and analysis are required, such activities will be  
5 performed by CERCLA according to the approved 300-FF-1 Operable Unit SAP.  
6
  - 7 • The analytical results of TSD unit sampling will be evaluated by the CERCLA unit for  
8 achievement of remedial action objectives and by the RCRA unit to determine the appropriate  
9 TSD unit closure option (i.e., clean or modified).  
10
  - 11 • Upon completion of the remedial action, the site will be restored [e.g., excavation(s) backfilled,  
12 recontoured, revegetated] as appropriate for future land use.  
13
  - 14 • Unit closure certification will be performed.  
15
  - 16 • Postremediation care for modified closure will be performed if necessary. Certification of final  
17 closure will be performed on completion of postremediation care.  
18
- 19 Closure activities will be monitored by an independent registered professional engineer who will certify  
20 that closure activities were accomplished in accordance with the specifications of the approved closure  
21 plan. The certification will be sent by registered mail or an equivalent delivery service to Ecology and  
22 the EPA, Region 10. The closure activities will be completed in accordance with the schedule contained  
in this plan (Figure 7-2) after approval of this plan by the EPA and Ecology.

Figure 6-1. Closure Strategy.



Note: <sup>a</sup> TSD unit is the sole source of dangerous waste.  
<sup>b</sup> DW concentration already shown to be below MTCA-C Industrial Standards.

Background = Hanford Site-wide background threshold (upper limit range of concentrations) for soil (DOE-RL 1992b).

CERCLA = *Comprehensive Environmental Response, Compensation, and Liability Act of 1980.*

Clean Closure = Closure based on the criterion that dangerous waste is not present in concentrations above the greater value of background, LOQ, or residential; no further remedial action to be taken.

DW = Dangerous waste as defined in WAC 173-303.

LOQ = Limit of quantitation; the level above which quantitative analysis can be obtained with a specified degree of confidence; generally  $10\sigma \pm 3\sigma$ .

Modified Closure = Closure based on the criterion that dangerous waste concentrations are greater than residential, but less than or equal to industrial; compliance monitoring is required.

MTCA = *Model Toxics Control Act (WAC 173-304) residential and industrial formulas.*

RCRA = *Resource Conservation and Recovery Act of 1976.*

H0502017.2

## 7.0 CLOSURE ACTIVITIES

The physical activities required to close the 300 APT TSD unit ~~will be integrated with the CERCLA remedial action process for the 300-FF-1 Operable Unit. These activities will reflect the closure specifications stipulated in the ROD for the 300-FF-1 Operable Unit. ROD closure specifications are not yet available but are anticipated to be consistent with one of the alternatives presented in the Phase III FS proposals.~~ The closure plan presents the physical remedial activities and sampling and analysis required for each alternative presented in the Phase III FS applicable to TSD unit closure. Groundwater remediation will be addressed by 300-FF-5 Operable Unit CERCLA documentation.

### 7.1 STORED WASTE REMOVAL

The 300 APT unit consists of two unlined infiltration trenches that no longer receive effluent from the 300 Area process sewer. There is currently no containerized waste requiring removal from the 300 APT TSD unit because none was ever stored there. No record exists of direct dumping of any other waste form (e.g., buried drums, contaminated equipment) at the trenches.

Contaminated unit soils and sediments were relocated within the TSD unit as a regulator-approved activity of the ERA (Section 2.4). These remain at the unit in direct contact with the ground and are covered. These sediments are contaminated unit media, not stored waste, and will be remediated in a manner consistent with other unit soils.

Liquid waste is no longer discharged to the trenches. The trenches have been allowed to dewater through percolation and evaporation. This leaves only residual soil and structure contamination for physical closure activities.

### 7.2 REMEDIAL ALTERNATIVES

The remedies being considered by the Phase III FS for process waste units including the 300 APT are soil cover; consolidation and soil cover; selective excavation and disposal; or excavation, soil washing, and fines disposal. All of these methods are described in detail in the *Phase III Feasibility Study Report for the 300-FF-1 Operable Unit* (DOE-RL 1995b). The remedy selection criteria used in preparing the list of alternatives included protection of human health and the environment; compliance with ARARs; long-term effectiveness; short-term effectiveness; reduction in mobility, toxicity, and volume; cost; state acceptance; and community acceptance (DOE-RL 1993d).

All TSD unit alternatives will require short-term (during remedial action) and long-term (after remedial action) monitoring and institutional controls. Short-term monitoring is discussed in Section 7.4.1, and long-term monitoring is discussed in Chapter 8.0. Except for the soil cover alternative, all remedial alternatives applicable to the TSD unit will also share the common elements of excavation, transportation of contaminated soils, waste fixation, and waste disposal, as discussed in Section 7.4.1. Field screening will be performed on excavated materials to determine the presence or absence of dangerous waste prior to disposal or consolidation.

### **A3.4.2 Inspection, Maintenance, and Replacement of Wells**

Each time a well is sampled, the well head and associated structures are inspected. Problems with the pump or with the sample (e.g., excessive turbidity) are also noted. Repairs are made according to approved contractor procedures. Subsurface inspection and maintenance is performed on a 3- to 5-year schedule, or as needed to repair problems identified during sampling.

If a monitoring well becomes unsuitable for use, the monitoring program will be reevaluated to determine if a new or existing well should be substituted.

## **A4.0 CLOSURE ACTIVITIES**

The physical activities required to close 1301-N and 1325-N in accordance with WAC 173-303-610 and the Permit will be integrated with the ROD for this TSD CMS. The ROD and the remedial design for the selected alternative will specify further the closure activities that will be required for CERCLA remedial action. Closure activities necessary to comply with dangerous waste regulations and the Permit will need to be consistent with CERCLA activities. CERCLA activities will be required to include elements necessary for closure of a dangerous waste unit. The Closure Plan presents the physical remedial activities and the sampling and analysis required to comply with WAC 173-303-610 and the Permit for each of the remedial alternatives presented in this TSD CMS and as defined in Section A1.2.

The closure activities are discussed in this section to highlight the site-specific elements of removal or characterization as clean of structures and piping for the 1301-N and 1325-N units. The other closure activities are not well defined for these sites at present but will be developed during the remedial design phase. Additional details about the alternatives can be found in Section 5.2 of the TSD CMS.

### **A4.1 REMOVAL OF STRUCTURES**

The structures in 1301-N and 1325-N include concrete structures and earthen basins and trenches. The 1301-N structures are discussed in Section 2.4.1 of the TSD CMS. Figure 2-5 shows the earthen crib structure, and Figure 2-6 shows the concrete weir box. Figures 2-8 and 2-9 illustrate the trench. Figures 2-10 through 2-13 show the trench cover support beams and cover panel configuration.

Structures in 1325-N are discussed in Section 2.4.3 of the TSD CMS Report. Figures 2-17 and 2-18 show the crib, concrete cover, and effluent distribution system. Figures 2-19 and 2-20 show the trench and tie-in structure.

**MEMORANDUM**

**SUBJECT:** Coordination between RCRA Corrective Action and Closure and CERCLA Site Activities

**FROM:** Steven A. Herman  
Assistant Administrator  
Office of Enforcement and Compliance Assurance

Elliott P. Laws  
Assistant Administrator  
Office of Solid Waste and Emergency Response

**TO:** RCRA/CERCLA National Policy Managers  
Regions I-X

Good RCRA/CERCLA coordination has become increasingly important as our offices have reorganized and programs have assumed new organizational relationships. We believe that, in general, coordination of site cleanup activities among EPA RCRA, EPA CERCLA and state/tribal cleanup programs has improved greatly; however, we are aware of examples of some remaining coordination difficulties. In this memo, we discuss three areas: acceptance of decisions made by other remedial programs; deferral of activities and coordination among EPA RCRA, EPA CERCLA and state/tribal cleanup programs; and coordination of the specific standards and administrative requirements for closure of RCRA regulated units with other cleanup activities. We also announce a revision to the Agency's policy on the use of fate and transport calculations to meet the "clean closure" performance standard under RCRA. We hope the guidance offered here will assist in your continuing efforts to eliminate duplication of effort, streamline cleanup processes, and build effective relationships with the states and tribes.

This memorandum focuses on coordination between CERCLA and RCRA cleanup programs; however, we believe the approaches outlined here are also applicable to coordination between either of these programs and certain state or tribal cleanup programs that meet appropriate criteria. For example, over half of the states have "Superfund-like" authorities. In some cases, these state authorities are substantially equivalent in scope and

effect to the federal CERCLA program and to the state or federal RCRA corrective action program. In accordance with the 1984 Indian Policy, EPA recognizes tribes as sovereign nations, and will work with them on a government-to-government basis when coordinating cleanup efforts on lands under tribal jurisdiction.

In addition to the guidance provided in this memorandum, two other on-going initiatives address coordination of RCRA and CERCLA. First, EPA is currently coordinating an inter-agency and state "Lead Regulator Workgroup." This workgroup intends to provide guidance where overlapping cleanup authorities apply at federal facilities that identifies options for coordinating oversight and deferring cleanup from one program to another. We intend for today's memorandum and the pending guidance from the Lead Regulator Workgroup to work in concert to improve RCRA/CERCLA integration and coordination. Second, EPA has also requested comment on RCRA/CERCLA integration issues in the May 1, 1996 Advanced Notice of Proposed Rulemaking--Corrective Action for Releases From Solid Waste Management Units at Hazardous Waste Management Facilities (61 FR 19432; commonly referred to as the RCRA "Subpart S" ANPR). We intend to coordinate all of these efforts as we develop further policy on integration issues.

#### Acceptance of Decisions Made by Other Remedial Programs

Generally, cleanups under RCRA corrective action or CERCLA will substantively satisfy the requirements of both programs.<sup>1</sup> We believe that, in most situations, EPA RCRA and CERCLA site managers can defer cleanup activities for all or part of a site from one program to another with the expectation that no further cleanup will be required under the deferring program. For example, when investigations or studies have been completed under one program, there should be no need to review or repeat those investigations or studies under another program. Similarly, a remedy that is acceptable under one program should be presumed to meet the standards of the other.

It has been our experience that, given the level of site-specific decision-making required for cleaning up sites, differences among the implementation approaches of the various remedial programs primarily reflect differences in professional judgement rather than structural inconsistencies in the programs themselves. Where there are differences in approaches among remedial programs, but not in their fundamental purposes or objectives (e.g., differences in analytical QA/QC procedures), these differences should not necessarily prevent deferral. We encourage program implementors to focus on whether the end results of the remedial activities

---

<sup>1</sup> In a few, limited cases, program differences may be sufficiently great to prevent deferral to the other program (e.g., the inability of CERCLA to address petroleum releases or RCRA to address certain radioactive materials). In these instances we encourage remedial programs to coordinate closely with each other to minimize duplication of effort, including oversight.

program or a state/tribal "Superfund-like" cleanup program to take the lead. In these cases, the RCRA permit/order should defer corrective action at all of the facility to CERCLA or a state/tribal cleanup program. For example, where program priorities differ, and a cleanup under CERCLA has already been completed or is underway at a RCRA facility, corrective action conditions in the RCRA permit/order could state that the existence of a CERCLA action makes separate RCRA action unnecessary. In this case, there would be no need for the RCRA program to revisit the remedy at some later point in time. Where the CERCLA program has already selected a remedy, the RCRA permit could cite the CERCLA decision document (e.g., ROD), but would not necessarily have to incorporate that document by reference. RCRA permits/orders can also defer corrective action in a similar way for cleanups undertaken under state/tribal programs provided the state/tribal action protects human health and the environment to a degree at least equivalent to that required under the RCRA program.

Superfund policy on deferral of CERCLA sites for listing on the NPL while states and tribes oversee response actions is detailed in the May 3, 1995 OSWER Directive 9375.6-11 ("Guidance on Deferral of NPL Listing Determinations While States Oversee Response Actions"). The intent of this policy is to accelerate the rate of response actions by encouraging a greater state or tribal role, while maintaining protective cleanups and ensuring full public participation in the decision-making process. Once a deferral response is complete, EPA will remove the site from CERCLIS and will not consider the site for the NPL unless the Agency receives new information of a release or potential release that poses a significant threat to human health or the environment. The state and tribal deferral policy is available for sites not listed on the NPL; deferral of final NPL sites must be addressed under the Agency's deletion policy, as described above.

#### Coordination Between Programs

While deferral from one program to another is typically the most efficient and desirable way to address overlapping cleanup requirements, in some cases, full deferral will not be appropriate and coordination between programs will be required. The goal of any approach to coordination of remedial requirements should be to avoid duplication of effort (including oversight) and second-guessing of remedial decisions. We encourage you to be creative and focus on the most efficient path to the desired environmental result as you craft strategies for coordination of cleanup requirements under RCRA and CERCLA and between federal and state/tribal cleanup programs.

Several approaches for coordination between programs at facilities subject to both RCRA and CERCLA are currently in use. It is important to note that options for coordination at federal facilities subject to CERCLA §120 may differ from those at non-federal facilities because of certain prescriptive requirements under §120. EPA anticipates issuing further guidance on coordination options specific to federal facilities through the interagency Lead

are substantively similar when making deferral decisions and to make every effort to resolve differences in professional judgement to avoid imposing two regulatory programs.

We are committed to the principle of parity between the RCRA corrective action and CERCLA programs and to the idea that the programs should yield similar remedies in similar circumstances. To further this goal, we have developed and continue to develop a number of joint (RCRA/CERCLA) guidance documents. For example, the several "Presumptive Remedies," which are preferred technologies for common categories of sites, and the Guidance for Evaluating the Technical Impracticability of Ground-Water Restoration (OSWER Directive 9234.2-25, September 1993), which recognizes the impracticability of achieving groundwater restoration at certain sites, are applicable to both RCRA and CERCLA cleanups. For more information on the concept of parity between the RCRA and CERCLA programs see: 54 FR 41000, esp. 41006-41009 (October 4, 1989), RCRA deferral policy; 54 FR 10520 (March 13, 1989), National Priorities List for Uncontrolled Hazardous Waste Sites Listing Policy for Federal Facilities; 55 FR, 30798, esp. 30852-30853 (July 27, 1990), Proposed Rule for Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities; 60 FR 14641 (March 20, 1995), Deletion Policy for RCRA Facilities; and, 61 FR 19432 (May 1, 1996), Corrective Action for Releases From Solid Waste Management Units at Hazardous Waste Management Facilities, Advanced Notice of Proposed Rulemaking.

#### Program Deferral

The concept of deferral from one program to another is already in general use at EPA. For example, it has long been EPA's policy to defer facilities that may be eligible for inclusion on the National Priorities List (NPL) to the RCRA program if they are subject to RCRA corrective action (unless they fall within certain exceptions, such as federal facilities). Recently, EPA expanded on this policy by issuing criteria for deleting sites that are on the NPL and deferring their cleanup to RCRA corrective action (attached).<sup>2</sup> When a site is deleted from the NPL and deferred to RCRA, problems of jurisdictional overlap and duplication of effort are eliminated, because the site will be handled solely under RCRA authority. Corrective action permits or orders should address all releases at a CERCLA site being deferred to RCRA; some RCRA permits or orders may need to be modified to address all releases before a site is deleted from the NPL.

While EPA's general policy is for facilities subject to both CERCLA and RCRA to be cleaned up under RCRA, in some cases, it may be more appropriate for the federal CERCLA

---

<sup>2</sup> Currently, the RCRA deletion policy does not pertain to federal facilities, even if such facilities are also subject to Subtitle C of RCRA. Site Managers are encouraged to use interagency agreements to eliminate duplication of effort at federal facilities: the Lead Regulator Workgroup intends to provide additional guidance on coordinating oversight and deferring cleanup from one program to another at federal facilities.

Regulator Workgroup. Current approaches that are in use include:

*Craft CERCLA or RCRA decision documents so that cleanup responsibilities are divided.* CERCLA and RCRA decision documents do not have to require that the entire facility be cleaned up under one or the other program. For example, at some facilities being cleaned up under CERCLA, the RCRA units (regulated or solid waste) are physically distinct and could be addressed under RCRA. In these cases, the CERCLA decision documents can focus CERCLA activities on certain units or areas, and designate others for action under RCRA. When units or areas are deferred from CERCLA to RCRA, the CERCLA program should include a statement (e.g., in a ROD or memorandum submitted to the administrative record) that successful completion of these activities would eliminate the need for further cleanup under CERCLA at those units and minimal review would be necessary to delete the site from the NPL. Similarly, when units or areas are deferred from RCRA to CERCLA, RCRA permits or orders can reference the CERCLA cleanup process and state that complying with the terms of the CERCLA requirements would satisfy the requirements of RCRA.

*Establish timing sequences in RCRA and CERCLA decision documents.* RCRA and CERCLA decision documents can establish schedules according to which the requirements for cleanup at all or part of a facility under one authority would be determined only after completion of an action under the other authority. For example, RCRA permits/orders can establish schedules of compliance which allow decisions as to whether corrective action is required to be made after completion of a CERCLA cleanup or a cleanup under a state/tribal authority. After the state or CERCLA response is carried out, there should be no need for further cleanup under RCRA and the RCRA permit/order could simply make that finding. Similarly, CERCLA or state/tribal cleanup program decision documents could delay review of units or areas that are being addressed under RCRA, with the expectation that no additional cleanup will need to be undertaken pending successful completion of the RCRA activities, although CERCLA would have to go through the administrative step of deleting the site from the NPL.

A disadvantage of this approach is that it contemplates subsequent review of cleanup by the deferring program and creates uncertainty by raising the possibility that a second round of cleanup may be necessary. Therefore, we recommend that program implementers look first to approaches that divide responsibilities, as described above. A timing approach, however, may be most appropriate in certain circumstances, for example, where two different regulatory agencies are involved. Whenever a timing approach is used, the final review by the deferring program will generally be very streamlined. In conducting this review, there should be a strong presumption that the cleanup under the other program is adequate and that reconsidering the remedy should

rarely be necessary.

The examples included in this memo demonstrate several possible approaches to deferring action from one cleanup program to another. For example, under RCRA, situations are described where the RCRA corrective action program would make a finding that no action is required under RCRA because the hazard is already being addressed under the CERCLA program, which EPA believes affords equivalent protection. In other examples, the RCRA program defers not to the CERCLA program *per se*, but either defers to a particular CERCLA ROD or actually incorporates such ROD by reference into a RCRA permit or order. In addition, there are examples where the Agency commits to revisit a deferral decision once the activity to which RCRA action is being deferred is completed; in other situations, reevaluation is not contemplated. As discussed in this memorandum, no single approach is recommended, because the decision of whether to defer action under one program to another and how to structure such a deferral is highly dependant on site-specific and community circumstances. In addition, the type of deferral chosen may raise issues concerning, for example, the type of supporting documentation that should be included in the administrative record for the decision, as well as issues concerning availability and scope of administrative and judicial review.

Agreements on coordination of cleanup programs should be fashioned to prevent revisiting of decisions and should be clearly incorporated and cross-referenced into existing or new agreements, permits or orders. We recognize that this up-front coordination requires significant resources. Our expectation is that, over the long-term, duplicative Agency oversight will be reduced and cleanup efficiency will be enhanced.

#### RCRA Closure and Post-Closure

Some of the most significant RCRA/CERCLA integration issues are associated with coordination of requirements for closure of RCRA regulated units<sup>3</sup> with other cleanup activities. Currently, there are regulatory distinctions between requirements for closure of RCRA regulated units and other cleanup requirements (e.g., RCRA corrective action requirements). RCRA regulated units are subject to specific standards for operation, characterization of releases, ground water corrective action and closure. Coordination of these standards with other remedial activities can be challenging. In the November 8, 1994 proposed Post-Closure Rule (59 FR 55778), EPA requested comment on an approach that would reduce or eliminate the regulatory distinction between cleanup of releases from closed or closing regulated units and cleanup of non-regulated unit releases under RCRA corrective action. The Office of Solid Waste will address this issue further in the final Post-Closure and

---

<sup>3</sup> In this document, the term "regulated unit" refers to any surface impoundment, waste pile, land treatment unit or landfill that receives (or has received) hazardous waste after July 26, 1982 or that certified closure after January 26, 1983.

Subpart S rules.

At the present time, however, the dual regulatory structure for RCRA closure and other cleanup activities remains in place. There are several approaches program implementors can use to reduce inconsistency and duplication of effort when implementing RCRA closure requirements during CERCLA cleanups or RCRA corrective actions. These approaches are analogous to the options discussed above for coordination between cleanup programs. For example, a clean-up plan for a CERCLA-~~operable~~ unit that physically encompasses a RCRA regulated unit could be structured to provide for concurrent compliance with CERCLA and the RCRA closure and post-closure requirements. ~~In this example, the RCRA permit/order could cite the ongoing CERCLA cleanup, and incorporate the CERCLA requirements by reference. RCRA public-participation requirements would have to be met for the permit/order to be issued; however, at many sites it may be possible to use a single process to meet this need under RCRA and CERCLA.~~

At some sites, inconsistent cleanup levels have been applied for removal and decontamination ("clean closure") of regulated units and for site-wide remediation under CERCLA or RCRA corrective action. Where this has happened, clean closure levels have been generally set at background levels while, at the same site, cleanup levels have been at higher, risk-based concentrations. To avoid this inconsistency and to better coordinate between different regulatory programs, we encourage you to use risk-based levels when developing clean-closure standards. The Agency has previously presented its position on the use of background and risk-based levels as clean closure standards (52 FR 8704-8709, March 19, 1987; attached). This notice states that clean closure levels are to be based on health-based levels approved by the Agency. If no Agency-approved level exists, then background concentrations may be used or a site owner may submit sufficient data on toxicity to allow EPA to determine what the health-based level should be.

EPA continues to believe, as stated in the March 19, 1987 notice, that risk-based approaches are protective and appropriate for clean-closure determinations. In EPA's view, a regulatory agency could reasonably conclude that a regulated unit was clean-closed under RCRA if it was cleaned up under Superfund, RCRA corrective action, or certain state/tribal cleanup programs to the performance standard for clean closure. This performance standard can be met with the use of risk-based levels. RCRA units that did not achieve the closure performance standard under a cleanup would remain subject to RCRA capping and post-closure care requirements.

The 1987 federal register notice described EPA's policy that the use of fate and transport models to establish risk levels would be inappropriate for clean closure determinations. This discussion, however, also included the statement that, after additional experience with clean closures, "the Agency may decide that a less stringent approach is sufficiently reliable to assure that closures based on such analyses are fully protective of human health and the environment." After nine years of further experience, EPA believes that, consistent with the use of risk-based standards in its remedial programs, use of fate and

transport models to establish risk levels can be appropriate to establish clean closure determinations. EPA today announces that it is changing its 1987 policy on evaluating clean closure under RCRA to allow use of fate and transport models to support clean closure demonstrations. EPA intends to publish this change in the Federal Register in the near future.

We encourage you to consider risk-based approaches when developing cleanup levels for RCRA regulated units and to give consideration to levels set by state/tribal programs which use risk-based approaches. EPA is developing guidance on risk-based clean closure and on the use of models to meet the clean closure performance standard.

Since almost all states oversee the closure/post-closure process and more than half implement RCRA corrective action, coordination of RCRA corrective action and closure will often be solely a state issue. However, if a state is not authorized for corrective action, or if a facility is subject to CERCLA as well as RCRA corrective action, close coordination between federal and state agencies will be necessary. As discussed above, actual approaches to coordination or deferral at any site should be developed in consideration of site-specific and community concerns.

#### Summary

We encourage you to continue your efforts to coordinate activities between the RCRA and CERCLA programs and between state, tribal and federal cleanup programs. We are aware that several of the EPA Regions are considering developing formal mechanisms to ensure that coordination will occur among these programs. We endorse these efforts and encourage all Regions, states and tribes to consider the adoption of mechanisms or policies to ensure coordination. If you have any questions on the issues discussed in this memorandum, or on other RCRA/CERCLA issues, please call Hugh Davis at (703) 308-8633.

#### attachments

cc: Craig Hooks, FFEO  
Barry Breen, OSRE  
Robert Van Heuvelen, ORE  
Steve Luftig, OERR  
Michael Shapiro, OSW  
Jim Woolford, FFRRO  
Regional RCRA Branch Chiefs  
Regional CERCLA Branch Chiefs  
Federal Facilities Leadership Council  
Tom Kennedy, Association of States and Territorial Solid Waste Management Officials  
Robert Roberts, Environmental Council of States  
John Thomasian, National Governors Association  
Brian Zwit, National Association of Attorneys General

## RCRA/CERCLA INTEGRATION ISSUES FOR

### 100-N AREA PROPOSED PLANS

#### Issue: Class 3 Versus Class 1 Permit Modification for Incorporation of RCRA Corrective

#### Actions into the Hanford Facility-Wide RCRA Permit

- EPA comment, Enclosure 1, Page 3, 1st paragraph, 4th sentence: *“This differs from what Ecology wants to do, which is to use Class 1 permit mods to add either closure or corrective action requirements into the site-wide permit.”*
- RL position: Following completion of a CERCLA review process designed to comply with the Class 3 public participation requirements, a Class 1 modification could be used to administratively incorporate RCRA corrective actions into the permit.
  - Use of a Class 1 modification for incorporation of RCRA corrective action following completion of the CERCLA process is consistent with the approach used in the *100 Area Amended Record of Decision*
  - *100 Area Amended Record of Decision*

**United States Environmental Protection Agency  
Region X  
1200 Sixth Avenue  
Seattle, Washington 98101**

**U.S. Department of Energy  
Hanford Site - 100 Area  
Benton County, Washington**

**Amended Record of Decision  
Decision Summary and Responsiveness Summary**

**March 1997**

## **6. Implementability**

The existing Interim Remedial Action ROD and this amendment have the same approach to remediation of the waste sites. Therefore, both are essentially the same with respect to meeting this criterion. The addition of 34 more sites will allow for better long-term planning of remedial action construction, transportation, and disposal activities.

## **7. Cost**

The Interim Remedial Action ROD estimated cost of remediation of the original 37 sites was \$491 million. The updated estimate for those 37 sites is \$82 million. This amendment would also add 34 more sites at an estimated cost of \$112 million. This amendment represents an 83% reduction in the estimated cost for the original 37 sites, and a 60% total reduction from the September 1995 ROD. The Tri-Parties will continue to work towards further streamlining activities in order to focus resources on cleanup.

## **Modifying Criteria**

### **8. State Acceptance**

The State of Washington has concurred with this proposed amendment.

### **9. Community Acceptance**

Newspaper notices, a fact sheet, and a proposed plan were issued on December 15, 1996. One comment was received during the 30-day public comment period. That comment was in support of the proposed amendment and is included in the Responsiveness Summary that is included as Appendix B of this amendment.

## **RCRA PAST-PRACTICE OPERABLE UNIT REQUIREMENTS**

Waste sites in the 100-DR-2 Operable Unit are included in this action. Wastes from remediation of this RCRA past-practice unit can be disposed of at the ERDF according to the provisions made in the August 1, 1996, Explanation of Significant Differences (ESD) for the January 20, 1995, ERDF ROD. No redesignation of regulatory pathway from RCRA Past Practice (RPP) to CERCLA Past Practice (CPP) is required prior to disposal of wastes from this operable unit at ERDF. However, the ERDF ESD does require that all waste be the subject of a CERCLA decision document prior to disposal at the ERDF.

To meet applicable requirements of both CERCLA and RCRA while avoiding unnecessary duplication, the regulatory agencies will take the following steps for RPP waste that is to be disposed at the ERDF. The lead regulatory agency will prepare a CERCLA decision document following the CERCLA public involvement process that will authorize the selected response action. This ROD amendment meets this requirement for the RPP sites addressed herein.

~~In addition, Ecology will modify the Hanford Site-Wide RCRA Permit at the next scheduled modification. This modification will incorporate by reference the CERCLA remedy selection decision documents into the RCRA permit for purposes of satisfying corrective action requirements of WAC 173-303-646. Because the public received notice of the proposed remedy under CERCLA and was provided with an opportunity to comment, Ecology intends to use the Class I permit modification procedures for such changes, unless other changes being made at the same time require that Class II or Class III permit modification procedures be used instead. Specifically, a chapter will be added in Part IV of the Dangerous Waste portion of the RCRA permit for each RPP operable unit that is being addressed. Each chapter will incorporate by reference the documents upon which the CERCLA decision document was based, the CERCLA decision document, and any remedial design and/or remedial action documents. The schedule for completion shall be as specified in the approved CERCLA remedial design report. The Hanford Site-Wide RCRA Permit will be modified again by removing each of these chapters after the area addressed by the chapter has been deleted from the NPL and no further action is required, including institutional controls or monitoring. Again, Ecology intends to use the Class I permit modification procedures when removing these chapters, unless other changes being made at the same time require that Class II or Class III permit modification procedures be used instead. NPL deletion will occur only after applicable CERCLA requirements, including public involvement, have been met.~~

The Tri-Party Agreement recognizes the similarity of the RPP and CPP processes, and their common objective of protecting human health and the environment from potential releases of hazardous substances, wastes, or constituents. The regulatory conditions, such as ARARS, controlling remediation should remain similar and consistent in implementation whether a waste site is designated as RPP or CPP.

## STATUTORY DETERMINATIONS

Considering the new information that has been developed and the broadening of the scope of cleanup activities, the EPA and Ecology believe that the amended interim remedy (remove, treat as required, and dispose) remains protective of human health and the environment, complies with Federal and state requirements that are applicable or relevant and appropriate to this remedial action, and is cost-effective. The addition of 34 analogous sites to the original 37 high-priority radioactive liquid waste sites selected for remediation in the September 1995 Interim Remedial Action ROD does not change the applicability of statutory requirements. The remediation project will continue to utilize permanent solutions to the maximum extent practicable for 100 Area source waste sites. However, because treatment of the principal threats of the sites was not found to be practicable, this amended interim remedy does not satisfy the statutory preference for treatment of a principal element.

**RCRA/CERCLA INTEGRATION ISSUES FOR  
100-N AREA PROPOSED PLANS**

**Issue: Use of "Open-Ended" Closure Schedule**

- EPA comment, Enclosure 1, Page 3, last paragraph: *"The expectation for RCRA closures is that they will proceed in a timely manner based on a negotiated schedule. If the Tri-Parties anticipate an implementation schedule different than the norm (which appears to be the case based on the latest budget discussions), this should be illustrated to the public for their comment. A working concept of that schedule, and where it is embodied (the TPA) should be provided in the Proposed Plans. RCRA does not allow open-ended closure schedules."*
  
- RL position: The Closure Plans would provide a time line and a year of start for closure/remediation activities, and is therefore not "open-ended" as the EPA comment implies. The time lines are similar to the schedule presented in the *300 Area Process Trenches Modified Closure/Postclosure Plan* but, unlike the 300 APT Closure Plan, the 100-N Closure Plans identify the specific year that remediation activities will begin. (Also note that EPA and Ecology regulations only require identification of the expected year of closure in cases where trust funds are used to establish financial assurance - a situation which is not relevant to RCRA closures at federal facilities.)
  - *300 Area Process Trenches Modified Closure/Postclosure Plan*
  - *Draft 1301-N and 1325-N Liquid Waste Disposal Facilities Closure Plans*
  - *Draft 1324-N Surface Impoundment and 1324-NA Percolation Pond Closure Plan*

1       **7.5       OTHER CLOSURE ACTIVITIES**

2  
3       Other TSD unit closure activities may be identified in future 300-FF-1 Operable Unit remedial action  
4 documents in support of TSD unit closure. As information regarding other TSD unit closure activities  
5 becomes available from the CERCLA document governing the activity, Ecology will be notified.  
6

7       Equipment used during the remediation of the process trenches will be decontaminated in accordance  
8 with the appropriate CERCLA operable unit working documents.  
9

10  
11       **7.6       CONTINGENCY CLOSURE PLAN**

12  
13       WAC 173-303-610(3) requires that closure plans for surface impoundments, such as the 300 APT TSD  
14 unit, contain a contingency plan in case the unit must close with dangerous waste remaining above action  
15 levels. This contingency is normally identified as landfill closure. However, characterization sampling  
16 has indicated that RCRA soil contamination is below MTCA Method C industrial levels that qualify the  
17 site for modified closure. Consequently, a contingency plan for closure of this unit as a landfill is not  
18 necessary. Postclosure care of this unit under the conditions of modified closure as the stated closure  
19 strategy (Chapter 6.0) will be addressed in Chapter 8.0.  
20

21  
22       **7.7       PERSONNEL TRAINING**

23  
24       Appendix 7C contains a brief description of training courses. This training fulfills WAC 173-303-330  
25 requirements for safety and site access training for work at a hazardous waste site containing both  
26 radioactive and dangerous waste hazards. All personnel entering the TSD unit during closure must have  
27 OSHA 40-hour hazardous waste training, as required by 29 CFR 1910.120.  
28

29  
30       **7.8       SCHEDULE OF CLOSURE**

31  
32       Figure 7-3 reflects the overall schedule for activities within the 300-FF-1 Operable Unit, which includes  
33 the closure of the 300 APT. As an integrated activity, and in accordance with submittal schedules  
34 presented in Appendix D of the Tri-Party Agreement Action Plan, RCRA closure plan preparation has  
35 been coordinated with preparation of the CERCLA *Phase III Feasibility Study Report for the 300-FF-1*  
36 *Operable Unit* (DOE-RL 1995b). These documents will remain on the same schedule for review, public  
37 comment, and finalization.  
38

39       Closure of the 300 APT will begin, subsequent to the approval of the ROD and concurrent with remedial  
40 activity for the 300-FF-1 Operable Unit. However, remediation activities in support of closure can begin  
41 before closure plan approval with prior notification to Ecology.  
42

300 APT Closure Activity Schedule (Integrated with remediation of the 300-FF-1 Operable Unit)

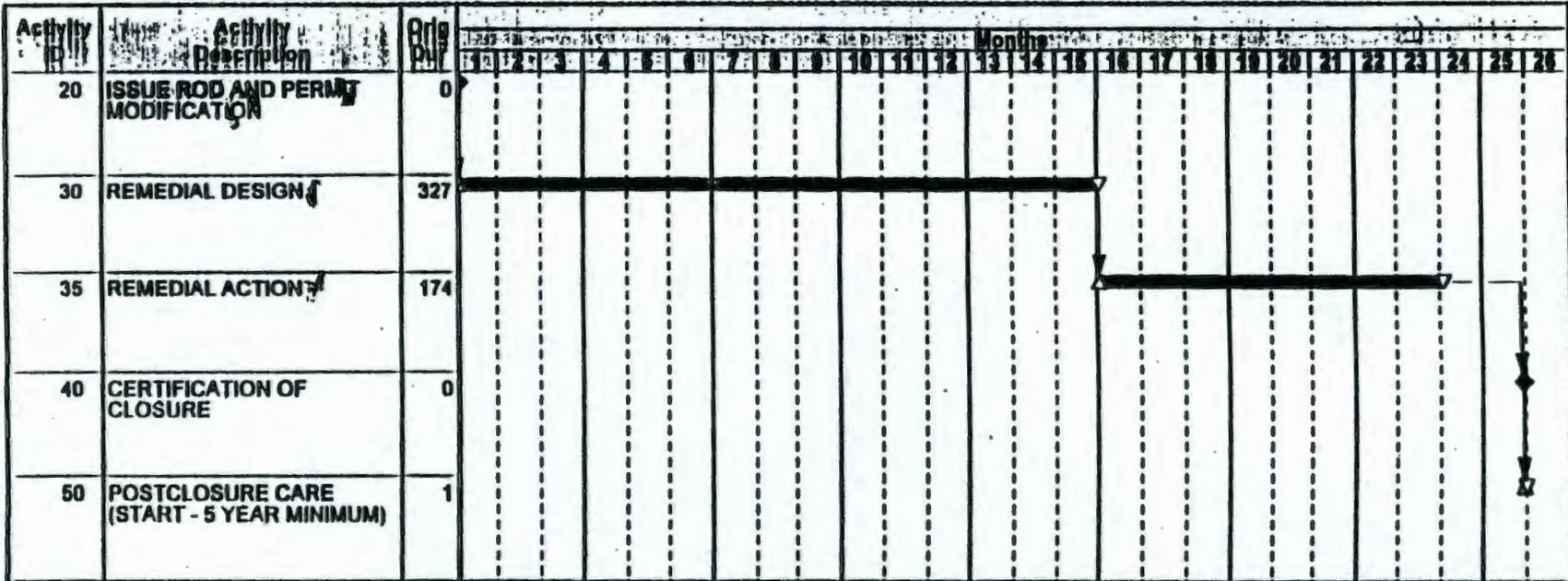


Figure 7-3. Schedule for Closure.

NOTE: Post-closure care (in accordance with Chapter 8 of this plan) will be initiated immediately after certification of closure. Such care will continue for a minimum of 5 years, and coordinated with the Record of Decision which will undergo review by the regulatory agencies. Post-closure care will continue in accordance with the requirements of conditions II.K.3a (institutional controls) and II.K.3.b (periodic assessments) of the Hanford Facility Dangerous Waste Permit.

F7-3

Project Start: 01/01/93  
 Project Finish: 08/01/97  
 Date Date: 01/01/93  
 Print Date: 08/01/93

Legend:  
 [Bar with arrow] Early Start  
 [Bar with diagonal lines] Program Bar  
 [Bar with vertical lines] Critical Activity

300 APT CLOSURE SUMMARY SCHEDULE

**DRAFT****A4.8 CLOSURE CONTACT**

The DOE-RL will be the official contact for 1301-N and 1325-N during the postclosure period at the following address:

Director, Environmental Assurance, Permits, and Policy Division\*  
U.S. Department of Energy  
Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352

\*or its equivalent should there be a future reorganization at DOE-RL

**A4.9 CLOSURE SCHEDULE**

The closure schedule for 1301-N and 1325-N is presented in Figure A-4. The remediation of 1325-N will begin in 1999, 15 months after the date of issuance of the ROD. Following completion of 1325-N remediation, 1301-N remediation will begin. The durations have been taken from the long-range plan for remediation of the 100-N Area.

**A4.10 AMENDMENT OF CLOSURE PLAN**

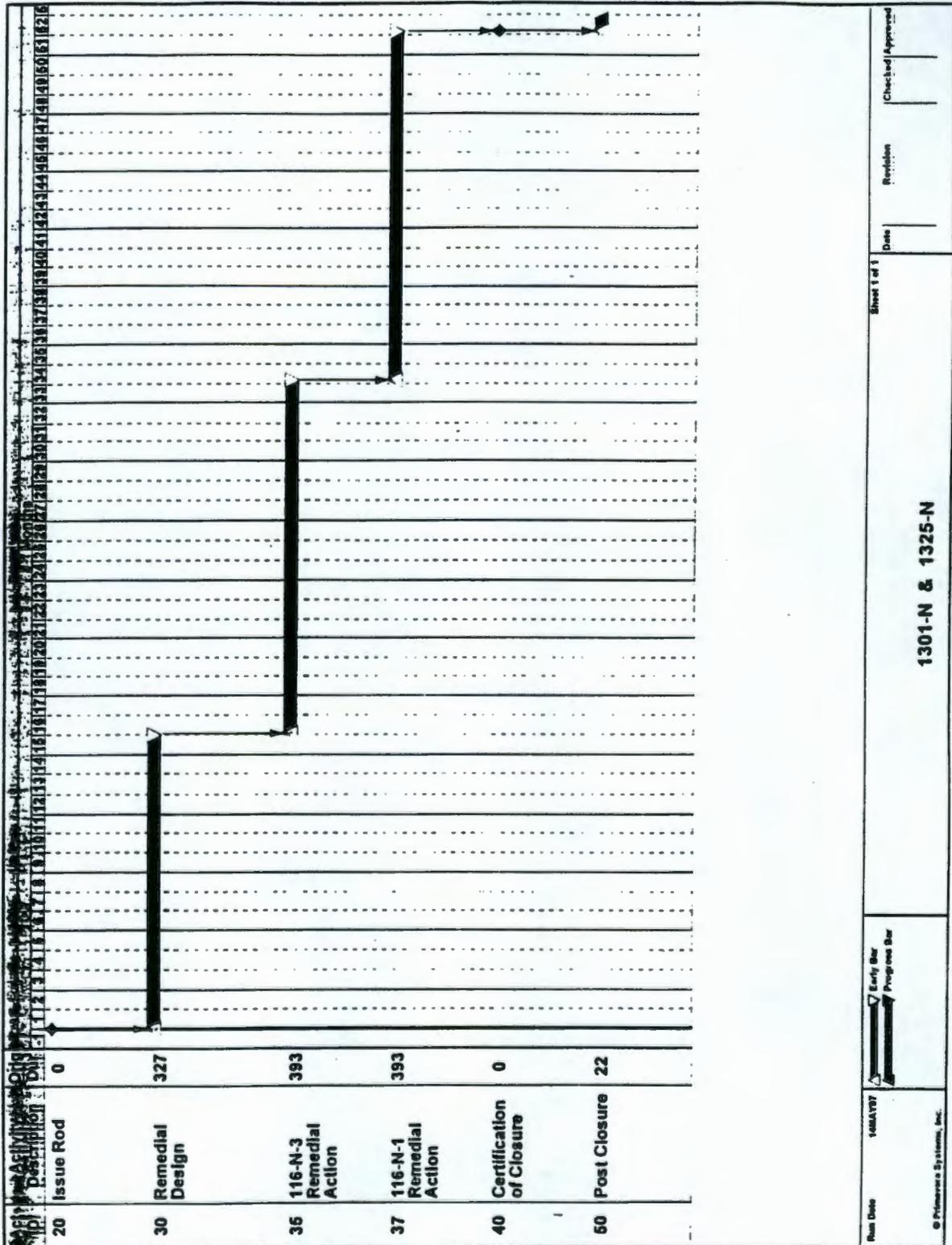
The 1301-N and 1325-N closure plan will be amended whenever changes in closure activities or postclosure requirements occur and prior to certification of closure and postclosure, respectively, that would constitute a Class 1, 2, or 3 modification to the Permit (WAC 173-303-830).

**A4.11 CERTIFICATION OF CLOSURE**

In accordance with WAC 173-303-610(6), within 60 days of closure of 1301-N and 1325-N, RL will submit to Ecology a certification of closure signed by both RL and an independent registered professional engineer. The certification will specify that the units have been closed in accordance with specifications contained within the approved closure plan, as amended, and as contained in the Permit.

DRAFT

Figure A-4. Closure Schedule for 1301-N and 1325-N.



DRAFT

#### **B4.5 SITE RESTORATION**

After the system structures and piping have been removed or they have been characterized as clean, the earthen basins will be backfilled, regraded, and revegetated in a manner consistent with the prior site condition.

#### **B4.6 PERSONNEL TRAINING**

No radioactive or dangerous waste constituent hazards are expected to be encountered during closure activities at 1324-N and 1324-NA, nor are dangerous wastes expected to be generated. However, should hazards be encountered or dangerous waste be generated that were not anticipated, training will be provided to site personnel in accordance with the site-specific training plan contained in Attachment B-4.

Training required during closure activities for personnel involved in the groundwater monitoring program are the same as those identified in Section 5.5 the Postclosure Plan.

#### **B4.7 CLOSURE CONTACT**

The DOE-RL will be the official contact during the postclosure period at the following address:

Director, Environmental Assurance, Permits, and Policy Division\*  
U.S. Department of Energy  
Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352

\*or its equivalent should there be a future reorganization at DOE-RL

#### **B4.8 CLOSURE SCHEDULE**

The closure schedule for 1324-N and 1324-NA is presented in Figure B-4. The durations have been taken from the long-range plan for remediation of the 100-N Area. Remediation of these units will begin within 15 months after signing of the ROD.

#### **B4.9 AMENDMENT OF CLOSURE PLAN**

The 1324-N and 1324-NA closure plan will be amended whenever changes in closure activities or postclosure requirements occur and prior to certification of closure and postclosure.

Figure B-4. Closure Schedule for 1324-N and 1324-NA.

