

START

Sta. 21 20
FEB 04 1993

ENGINEERING DATA TRANSMITTAL

2. To: (Receiving Organization) Distribution	3. From: (Originating Organization) Environmental Engineering Support, 81340	4. Related EDT No.: NA
5. Proj./Prog./Dept./Div.: 100 Area Treatability Tests	6. Cog. Engr.: J. G. Field	7. Purchase Order No.: NA
8. Originator Remarks: For Approval		9. Equip./Component No.: NA
11. Receiver Remarks:		10. System/Bldg./Facility: NA
		12. Major Assm. Dwg. No.: NA
		13. Permit/Permit Application No.: NA
		14. Required Response Date: 1/14/93



9413093.0026

15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Impact Level	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	WHC-SD-EN-AP-118		0	100 Area Test Pit Sampling for Soil Washing Bench-Scale Tests, Description of Work	3Q	1		

16. KEY			
Impact Level (F)	Reason for Transmittal (G)		Disposition (H) & (I)
1, 2, 3, or 4 (see MRP 5.43)	1. Approval 2. Release 3. Information	4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION (See Impact Level for required signatures)											
(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.
1	/	Cog. Eng. J. G. Field	<i>J. G. Field</i>	1/12/93	H6-05	EDMC (2)				H6-08	
1	/	Cog. Mgr. J. G. Woolard	<i>J. G. Woolard</i>	1/13/93	H6-05	CENTRAL FILES (2)				18-04	
1	/	QA T. L. Bennington	<i>T. L. Bennington</i>	1/13/93	H4-16						
		Safety									
		Env.									
1	/	S. J. Guzek	<i>S. J. Guzek</i>	1/13/93	H6-04						
1		R. P. Henckel	<i>R. P. Henckel</i>	1-18-93	H6-02						

18. Signature of EDT Originator <i>J. G. Field</i> Date: 1/12/93	19. Authorized Representative for Receiving Organization Date:	20. Cognizant/Project Engineer's Manager <i>J. G. Woolard</i> Date: 1/20/93	21. DOE APPROVAL (if required) Ltr. No. <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments
--	---	---	--

SUPPORTING DOCUMENT

1. Total Pages 11

<p>2. Title 100 Area Test Pit Sampling for Soil Washing Bench-Scale Tests, Description of Work</p>	<p>3. Number WHC-SD-EN-AP-118</p>	<p>4. Rev No. 0</p>
<p>5. Key Words Treatability Test CERCLA</p>	<p>6. Author Name: J. G. Field <i>J. G. Field</i> 1/13/93 Signature Organization/Charge Code 81340/P71AA</p>	
<p>7. Abstract</p>		
<p>8. PURPOSE AND USE OF DOCUMENT This document was prepared for use within the U.S. Department of Energy and its contractors. It is to be used only to perform, direct, or integrate work under U.S. Department of Energy contracts. This document is not approved for public release until reviewed.</p> <p>PATENT STATUS This document copy, since it is transmitted in advance of patent clearance, is made available in confidence solely for use in performance of work under contracts with the U.S. Department of Energy. This document is not to be published nor its contents otherwise disseminated or used for purposes other than specified above before patent approval for such release or use has been secured, upon request, from the Patent Counsel, U.S. Department of Energy Field Office, Richland, WA.</p> <p>DISCLAIMER - This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, nor any of their contractors, subcontractors or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or any third party's use or the results of such use of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.</p>	<p>10. RELEASE STAMP</p> <div data-bbox="1049 1053 1503 1287" style="border: 1px solid black; padding: 5px;"> <p>OFFICIAL RELEASE BY WHC DATE FEB 04 1993 <i>Sta. 21</i></p> </div>	
<p>9. Impact Level 3Q</p>		

**APPROVED FOR
PUBLIC RELEASE**
1-15-93 *V. Solis*

9413093-0087

Control Number <p style="text-align: center;">42</p>	100 NPL Agreement/Change Control Form ___ Change <input checked="" type="checkbox"/> Agreement ___ Information Operable Unit: <u>Treatability</u> 100-BC-1, 100-DR-1	Date Submitted: 1/15/93 Date Approved:								
Document Number and Title: 100 Area Test Pit Sampling for Soil Washing Bench-Scale Tests, Description of Work, WHC-SD-EN-AP-118, Rev. 0		Date Document Last Issued: To be issued								
Originator: J. G. Field		Phone: 6-3753								
Summary Description: Signatures are for concurrence with the Description of Work (WHC-SD-EN-AP-118). Concurrence with the description of work constitutes approval to proceed with field sampling as stated in the Description of work, including: excavating a test pit up to 30 ft below grade and backfilling using only soil removed from the pit.										
Justification and Impact of Change:										
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-bottom: 1px solid black;"> R. E. Day <u>RE. Day</u> WHC Operable Unit Coordinator </td> <td style="width: 50%; border-bottom: 1px solid black; text-align: right;"> <u>1/13/93</u> Date </td> </tr> <tr> <td style="border-bottom: 1px solid black;"> E. D. Goller <u>ED Goller</u> DOE Unit Manager </td> <td style="border-bottom: 1px solid black; text-align: right;"> <u>1/14/93</u> Date </td> </tr> <tr> <td style="border-bottom: 1px solid black;"> R. B. Hibbard <u>Jeff Phillips FOR.</u> Ecology Unit Manager </td> <td style="border-bottom: 1px solid black; text-align: right;"> <u>1/26/93</u> Date </td> </tr> <tr> <td style="border-bottom: 1px solid black;"> D. A. Faulk <u>DA Faulk</u> Env. Protection Agency Unit Manager </td> <td style="border-bottom: 1px solid black; text-align: right;"> <u>1-19-93</u> Date </td> </tr> </table> <p>Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement Section 9.3</p>			R. E. Day <u>RE. Day</u> WHC Operable Unit Coordinator	<u>1/13/93</u> Date	E. D. Goller <u>ED Goller</u> DOE Unit Manager	<u>1/14/93</u> Date	R. B. Hibbard <u>Jeff Phillips FOR.</u> Ecology Unit Manager	<u>1/26/93</u> Date	D. A. Faulk <u>DA Faulk</u> Env. Protection Agency Unit Manager	<u>1-19-93</u> Date
R. E. Day <u>RE. Day</u> WHC Operable Unit Coordinator	<u>1/13/93</u> Date									
E. D. Goller <u>ED Goller</u> DOE Unit Manager	<u>1/14/93</u> Date									
R. B. Hibbard <u>Jeff Phillips FOR.</u> Ecology Unit Manager	<u>1/26/93</u> Date									
D. A. Faulk <u>DA Faulk</u> Env. Protection Agency Unit Manager	<u>1-19-93</u> Date									

9413093.0038

CONTENTS

1.0 SCOPE OF WORK 1

2.0 GENERAL REQUIREMENTS 1

 2.1 HEALTH AND SAFETY 1

 2.2 PREREQUISITES 4

3.0 SAMPLING AND FIELD ACTIVITIES 4

 3.1 TEST PIT SOIL SCREENING 4

 3.2 TEST PIT EXCAVATION 4

 3.3 TEST PIT GEOLOGIC SAMPLING 6

 3.4 TEST PIT SOIL SAMPLING 6

 3.5 ABANDONING THE TEST PIT 6

4.0 SCHEDULE 7

5.0 CHANGES TO DESCRIPTION OF WORK 7

6.0 REFERENCES 7

FIGURES:

1 Location of the 116-C-1 Test Pit 2

2 Location of the 116-D-1B Test Pit 3

3 Schematic of Test Pit 5

9413093.0039

1.0 SCOPE OF WORK

This description of work details the field activities associated with backhoe excavation and sampling of two test pits: one at the inlet end of the 116-C-1 trench located in the 100-BC-1 Operable Unit; and the other at the inlet end of the 116-D-1B trench in the 100-DR-1 Operable Unit. Work will be performed to obtain soil samples for 100 Area Bench-Scale Treatability Tests, as specified in the *100 Area Soil Washing Treatability Test Plan* (DOE-RL 1992). The description of work will serve as a field guide for those performing the work. It should be used in conjunction with the *Environmental Investigations and Site Characterization Manual* (WHC 1988a) for specific procedures. Test pit locations are shown on Figures 1 and 2.

Neither test pit 116-C-1 nor 116-D-1B are located inside of a surface radiation zone. However, the sites are currently surrounded by permanent concrete monuments and underground contamination warning signs. Low level radioactivity is expected to be encountered at depths of 15 to 30 ft. The maximum depth of test pits will be 30 ft.

As strict compliance with the requirements of Washington Administrative Code (WAC) 173-160, *Dangerous Waste Regulations*, is impractical; therefore, this description of work constitutes a request for variance thereunder. Approval of this description of work, by the Washington Department of Ecology, constitutes approval of the variance. The 5-day notification given to regulatory agencies at Hanford will satisfy the notification requirement of WAC 173-160-(055). No precedent is established by agreeing to include the above references to WAC 173-160.

2.0 GENERAL REQUIREMENTS

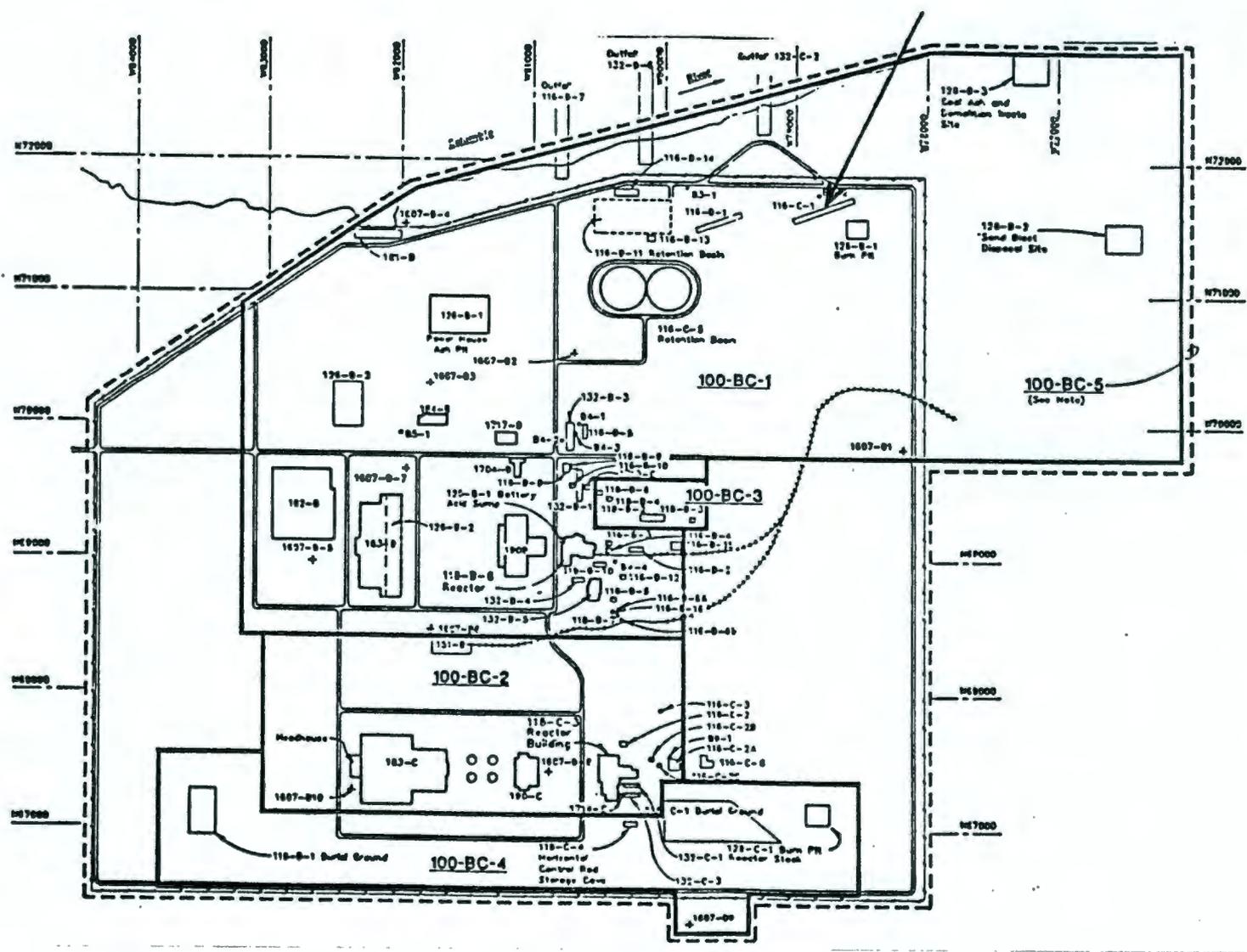
2.1 HEALTH AND SAFETY

All personnel working to this description of work will have completed the 40-Hour Hazardous Waste Site Worker Training Program and will perform all work in accordance with the following:

- WHC-EP-0383, *Environmental Engineering, Technology, and Permitting Function Quality Assurance Program Plan* (WHC 1990)
- WHC-CM-4-10, *Radiation Protection* (WHC 1988b)
- WHC-CM-4-11, *ALARA Program* (WHC 1988c)
- WHC-CM-4-3, *Industrial Safety Manual*, Vol. 1 through 3 (WHC 1987)
- WHC-CM-7-5, *Environmental Compliance Manual* (WHC 1988d)
- WHC-SD-EN-SAD-002, Rev 0, *100 Area Low Hazard Characterization Activities Safety Assessment* (Taylor 1991)
- Site-specific Hazardous Waste Operations Plan and Radiation Work Permit.

9413093.0040

Figure 2. Location of the 116-D-1B Test Pit.



2.2 PREREQUISITES

A Hazardous Waste Operations Plan and Radiation Work Permit are required, and a checklist for tasks requiring no readiness review per Environmental Investigation Instruction (EII) 1.13, Environmental Engineering and Geotechnology Readiness Review (WHC 1988a) will be signed and dated by the cognizant engineer or field team leader (FTL) prior to the start of work.

3.0 SAMPLING AND FIELD ACTIVITIES

3.1 TEST PIT SOIL SCREENING

Excavated material removed from the test pit will be field screened by the FTL, or designee, for evidence of volatile organics and radionuclides.

Volatile organics are not expected, but will be screened for health and safety reasons. An organic vapor monitor (OVM) will be used, maintained, and calibrated consistent with EII 3.2, Health and Safety Monitoring Instruments, and EII 3.4, Field Screening (WHC 1988a). The action level for the OVM is any reading above background for 1 minute in the breathing zone. If this is encountered personnel will stop work and move upwind of the soils. The Site Safety Officer will attempt to identify compounds and determine what upgrades in personal protective equipment (PPE) are necessary, if any.

Radionuclides will be screened per EII 3.4, Field Screening (WHC 1988a) to determine the highest level of radioactivity for sampling. Field screening results will be recorded in the field logbook per EII 1.5, Field Logbook (WHC 1988a). Radionuclides will be monitored at 5 ft intervals to 15 ft and thereafter about one-half bucket of soil will be removed at a time. Each one-half bucket will be screened for radioactivity levels. The safety level for radionuclides will be as specified in the radiation work permit (RWP) and as determined by the health physics technician (HPT) responsible.

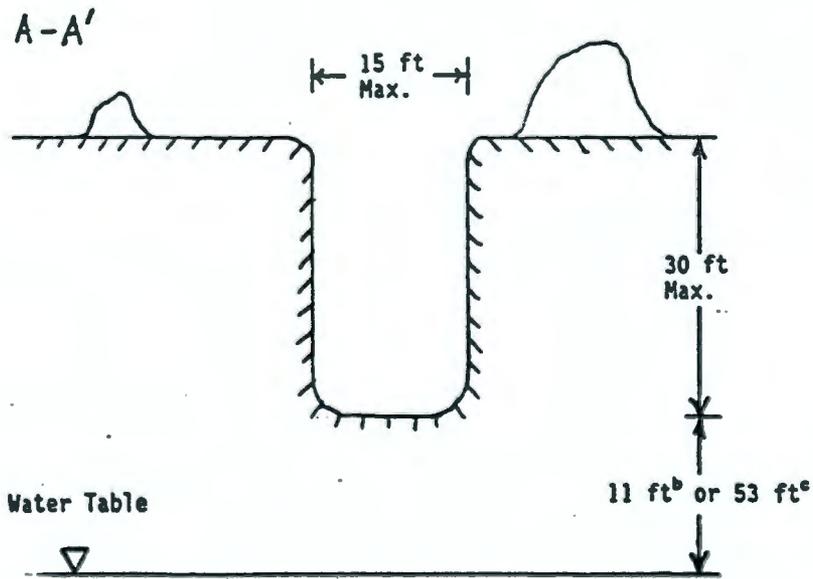
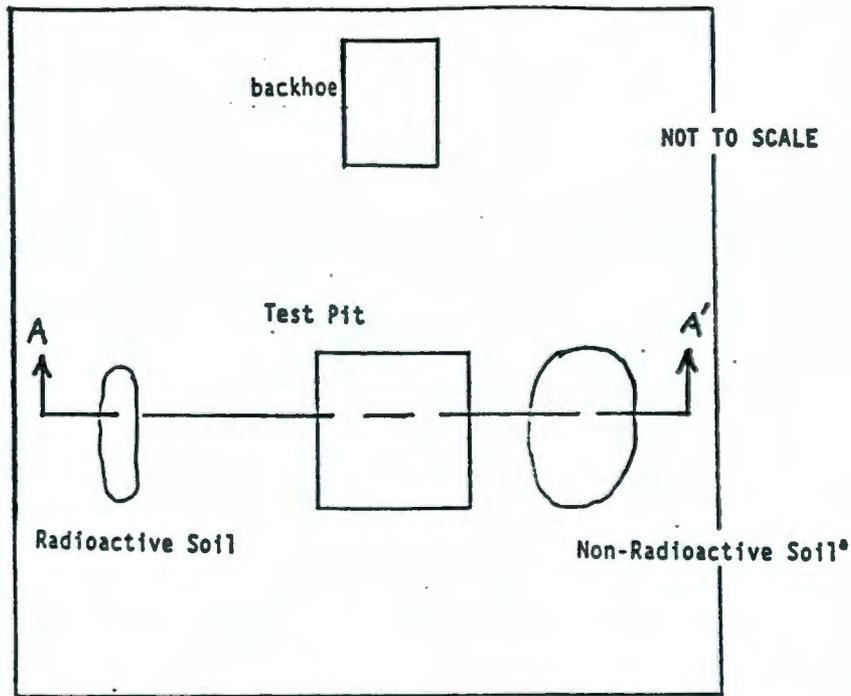
3.2 TEST PIT EXCAVATION

Test pit soils will be sandy gravel with cobble material. Test pit dimensions will be about 15 by 15 ft and no deeper than 30 ft below grade. A schematic of a test pit is shown in Figure 3.

The highest levels of radioactivity are expected to be encountered between 15 and 20 ft. The static groundwater levels for the 116-C-1 trench and 116-D-1B trench are reported at 41 and 83 ft, respectively ((WIDS 1991).

Safety personnel have determined that no engineering design is required for this trench on the basis that no personnel will enter the test pit at any time, and that the backhoe and personnel within the zone will maintain a safe distance away from the test pit as specified in the Hazardous Waste Operation Permit.

Figure 3. Schematic Drawing of the Proposed Excavation.



^aRadioactivity <100 counts per minute above background.

^bDepth to water table for 116-C-1 Trench.

^cDepth to water table for 116-D-1B Trench.

9413093.0044

Between depths of 15 to 30 ft, if soil radioactivity exceeds 100 counts per minute above average background levels, the soils will be acceptable for sampling. These soils will be distributed on plastic located at a safe distance from the test pit (as specified in the Hazardous Waste Operations Plan).

All other soils will be placed in a temporary stockpile near the pit. Excavation will be discontinued when the radioactivity level of soils decreases for several bucketloads or at a maximum depth of 30 ft below grade. Radioactive soils (>100 counts per minute above established background levels) will be distributed on plastic and further screened as needed to obtain representative samples for soil washing tests. The pile or piles with the highest level of radioactivity will be collected. Between test pit locations, the excavator bucket will be cleaned of visible dirt.

At the direction of the FTL, plastic or other covering may be placed on the ground adjacent to the excavation for the temporary stockpiling of excavated material.

If soil radioactivity levels >100 counts per minute above background are not found in the test pit, a second test pit will be excavated within the designated waste site at a location to be determined by the project engineer and FTL. If acceptable radioactivity levels are not identified in the second test pit; work at that site will be discontinued, and WHC, DOE, and regulatory agencies will discuss alternate locations for obtaining samples.

3.3 TEST PIT GEOLOGIC SAMPLING

No geologic sampling will occur at the test pit.

3.4 TEST PIT SOIL SAMPLING

About 55 gal of soil from each test pit will be placed in 5-gal containers. These samples will be collected using hand tools and standard soil sampling techniques per EII 5.2, Soil and Sediment Sampling (WHC 1988a). Soil containers will be transported to PNL for testing and analyses in accordance with the *100 Area Treatability Soil Washing Test Plan* (DOE-RL 1992) and the *100 Area Soil Washing Bench-Scale Test Procedures* (WHC 1992).

Sample depths will be estimated using measured dimensions of the backhoe bucket and arm. Measurements may be marked on the bucket using soapstone or other noncontaminating marker. If a more precise method of measuring sample depths is used, it will be identified in the field logbook.

3.5 ABANDONING THE TEST PIT

After all samples have been collected at a particular location or if acceptable radioactive soils are not identified within a depth of 30 ft, the excavated pit will be backfilled in approximately the reverse order, so that the first bucketful excavated is the last bucketful backfilled. Care will be taken to protect groundwater by backfilling the test pit the same day it is excavated, and by compacting backfill soil using the backhoe bucket.

Sample custody will follow the procedures as specified in EII 5.1, Chain of Custody (WHC 1988a).

All waste generated as a result of test pit investigation activities and all soil sampled and tested in the laboratory will be handled as stated in EII 4.3, Control of CERCLA and other Past-Practice Investigation Derived Waste (WHC 1988a).

4.0 SCHEDULE

Excavation in the 100-BC-1 Operable unit is scheduled to begin on January 19, 1993. This is expected to be completed within 1 day. Excavation in 100-DR-1 will then take place on January 29, 1993.

This schedule is subject to change and the DOE-RL Operable Unit Manager will be contacted for current status. An Agreement Activity Notification form will be issued at least 5 days prior to the start of field work.

5.0 CHANGES TO DESCRIPTION OF WORK

Changes to this description of work will be submitted on an Engineering Change Notice. Copies will be submitted to the lead regulatory agency and appropriate field personnel. Any significant changes to this description of work will require approval from regulatory agencies.

6.0 REFERENCES

- DOE-RL, 1992, *100 Area Soil Washing Treatability Test Plan*, DOE/RL-92-51, Draft A, U. S. Department of Energy, Richland Field Office, Richland, Washington.
- Taylor, 1991, *100 Area Low Hazard Characterization Activities Safety Assessment*, WHC-SD-EN-SAD-002, Rev. 0, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1987, *Industrial Safety Manual*, WHC-CM-4-3, 3 Vols., Westinghouse Hanford Company, Richland, Washington.
- WHC, 1988a, *Environmental Investigations and Site Characterization Manual*, WHC-CM-7-7, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1988b, *Radiation Protection*, WHC-CM-4-10, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1988c, *ALARA Program*, WHC-CM-4-11, Westinghouse Hanford Company, Richland, Washington.

9413093.0046

- WHC, 1988d, *Environmental Compliance Manual*, WHC-CM-7-5, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1990, *Environmental Engineering, Technology, and Permitting Function Quality Assurance Program Plan*, WHC-EP-0383, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1992, *100 Area Soil Washing Bench-Scale Test Procedures*, WHC-SD-EN-TI-087, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

9413093.0047

Complete for all Types of Release

Purpose <input type="checkbox"/> Speech or Presentation <input type="checkbox"/> Full Paper (Check only one suffix) <input type="checkbox"/> Summary <input type="checkbox"/> Abstract <input type="checkbox"/> Visual Aid <input type="checkbox"/> Speakers Bureau <input type="checkbox"/> Poster Session <input type="checkbox"/> Videotape	<input type="checkbox"/> Reference <input checked="" type="checkbox"/> Technical Report <input type="checkbox"/> Thesis or Dissertation <input type="checkbox"/> Manual <input type="checkbox"/> Brochure/Flier <input type="checkbox"/> Software/Database <input type="checkbox"/> Controlled Document <input type="checkbox"/> Other	ID Number (include revision, volume, etc.) WHC-SD-EN-AP-118, Rev. 0 List attachments. N/A Date Release Required <p align="right">1/14/93</p>
---	---	--

Title 100 Area Test Pit Sampling for Soil Washing Bench-Scale Tests, Description of Work.	Unclassified Category UC-	Impact Level 3Q
--	-------------------------------------	---------------------------

New or novel (patentable) subject matter? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If "Yes", has disclosure been submitted by WHC or other company? <input type="checkbox"/> No <input type="checkbox"/> Yes Disclosure No(s).	Information received from others in confidence, such as proprietary data, trade secrets, and/or inventions? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (Identify)
---	---

Copyrights? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If "Yes", has written permission been granted? <input type="checkbox"/> No <input type="checkbox"/> Yes (Attach Permission)	Trademarks? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (Identify)
---	---

Complete for Speech or Presentation

Title of Conference or Meeting NA	Group or Society Sponsoring NA
Date(s) of Conference or Meeting	City/State
Will proceedings be published? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Will material be handed out? <input type="checkbox"/> Yes <input type="checkbox"/> No	

Title of Journal

CHECKLIST FOR SIGNATORIES

Review Required per WHC-CM-3-4	Yes	No	Reviewer - Signature Indicates Approval
			Name (printed) Signature Date
Classification/Unclassified Controlled Nuclear Information	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Patent - General Counsel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>J. SW BERGLIN</i> <i>J. Sw Berglin</i> <i>1/14/93</i>
Legal - General Counsel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Applied Technology/Export Controlled Information or International Program	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
WHC Program/Project	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Communications	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
RL Program/Project	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Publication Services	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>L. Hermann</i> <i>L. Hermann</i> <i>1/15/93</i>
Other Program/Project	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Information conforms to all applicable requirements. The above information is certified to be correct.

References Available to Intended Audience	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Transmit to DOE-HQ/Office of Scientific and Technical Information	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Author/Requestor (Printed/Signature)	Date	
J. G. Field <i>J. G. Field</i>	1/13/93	
Intended Audience	<input type="checkbox"/> Internal <input type="checkbox"/> Sponsor <input checked="" type="checkbox"/> External	
Responsible Manager (Printed/Signature)	Date	
J. G. Woolard <i>J. G. Woolard</i>	1/13/93	

INFORMATION RELEASE ADMINISTRATION APPROVAL STAMP	
Stamp is required before release. Release is contingent upon resolution of mandatory comments.	
	
Date Cancelled	Date Disapproved