START

0021015

ENGINEERING CHANGE NOTICE

Page 1 of 7

1. ECN 164709

Proj. ECN

2. ECN Category (mark one)	Supplemental	[X]	Change ECN	[]	Supersedure	[]	
Cancel/Void	[]	Direct Revision	[]	Temporary	[]	Discovery	[]

3. Originator's Name, Organization, MSIN, and Telephone No. W81221
James W. Roberts, 100/1100 Environmental Restoration Engineering, H4-55, 376-5164

4. Date
April 20, 1992

5. Project Title/No./Work Order No. PH1AA
Description of Work for the 100-BC-5 Groundwater Operable Unit

6. Bldg./Sys./Fac. No.
100 BC Area

7. Impact Level
3

8. Document Number Affected (include rev. and sheet no.)
WHC-SD-EN-AP-070, REV. 2 19368

9. Related ECN No(s).
164703

10. Related PO No.
NA

11a. Modification Work	11b. Work Package Doc. No.	11c. Complete Installation Work	11d. Complete Restoration (Temp. ECN only)
[] Yes (fill out Blk. 11b) [X] No (NA Blks. 11b, 11c, 11d)	NA	NA Cog. Engineer Signature & Date	NA Cog. Engineer Signature & Date

12. Description of Change
See attached Project Change Forms

MAY 1992 RECEIVED EDMC

13a. Justification (mark one)							
Criteria Change	[X]	Environmental	[]	Facilitate Const.	[]		
Design Error/Omission	[]	Design Improvement	[]	As-Found	[]	Const. Error/Omission	[]

13b. Justification Details
See attached Project Change Forms

14. Distribution (include name, MSIN, and no. of copies)
See attached.

RELEASE STAMP

OFFICIAL RELEASE BY WHC
DATE MAY 11 1992
Sta. 21
20

A-7900-013-2 (11/88) (EF) GEF095
Engineering Change Notice

A-7900-013-1 (11/88)

9212257911228

ENGINEERING CHANGE NOTICE	Page 2 of 7	1. ECN (use no. from pg. 1) 164709

15. Design Verification Required	16. Cost Impact				17. Schedule Impact (days)	
	ENGINEERING		CONSTRUCTION			
[] Yes	Additional	[] $	Additional	[] $	Improvement	[]
[X] No	Savings	[] $	Savings	[] $	Delay	[]

18. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 12. Enter the affected document number in Block 19.

SDD/DD	[]	Seismic/Stress Analysis	[]	Tank Calibration Manual	[]
Functional Design Criteria	[]	Stress/Design Report	[]	Health Physics Procedure	[]
Operating Specification	[]	Interface Control Drawing	[]	Spares Multiple Unit Listing	[]
Criticality Specification	[]	Calibration Procedure	[]	Test Procedures/Specification	[]
Conceptual Design Report	[]	Installation Procedure	[]	Component Index	[]
Equipment Spec.	[]	Maintenance Procedure	[]	ASME Coded Item	[]
Const. Spec.	[]	Engineering Procedure	[]	Human Factor Consideration	[]
Procurement Spec.	[]	Operating Instruction	[]	Computer Software	[]
Vendor Information	[]	Operating Procedure	[]	Electric Circuit Schedule	[]
OM Manual	[]	Operational Safety Requirement	[]	ICRS Procedure	[]
FSAR/SAR	[]	IEFD Drawing	[]	Process Control Manual/Plan	[]
Safety Equipment List	[]	Cell Arrangement Drawing	[]	Process Flow Chart	[]
Radiation Work Permit	[]	Essential Material Specification	[]	Purchase Requisition	[]
Environmental Impact Statement	[]	Fac. Proc. Samp. Schedule	[]		[]
Environmental Report	[]	Inspection Plan	[]		[]
Environmental Permit	[]	Inventory Adjustment Request	[]		[]

19. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision	Document Number/Revision	Document Number Revision

20. Approvals

Signature	Date	Signature	Date
OPERATIONS AND ENGINEERING		ARCHITECT-ENGINEER	
Cog./Project Engineer T.W. Robyt	4/16/92	PE	
Cog./Project Engr. Mgr. [illegible]	4/16/92	QA	
QA Mary Corrigan	4-16-92	Safety	
Safety		Design	
Security		Other	
Proj. Prog./Dept. Mgr.			
Def. React. Div.			
Chem. Proc. Div.			
Def. Wst. Mgmt. Div.		DEPARTMENT OF ENERGY	
Adv. React. Dev. Div.			
Proj. Dept.			
Environ. Div.		ADDITIONAL	
IRM Dept.			
Facility Rep. (Ops.)			
Other			

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ECN No. 164709

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ATTACHMENT 1

100-BC-5 DESCRIPTION OF WORK PROJECT CHANGE FORM

Date: 3/25/92

Person Initiating Change: J.W. Roberts

Change: Section 3.3 Soil Sampling (Physical Property) first paragraph, second sentence: change phrase "(anything > 25 mrem) to "(anything > detectable)"

Reason for Change: No facility capable of analyzing physical property samples that are radioactive presently exists.

APPROVAL:

Field Team Leader: J.W. Apel 3/30/92

Operable Unit Coordinator: J.W. Roberts 3/25/92

Quality Assurance: Dana Corrigan 3-27-92

ATTACHMENT 1

100-BC-5 DESCRIPTION OF WORK PROJECT CHANGE FORM

Date: 3/25/92

Person Initiating Change: J. W. Roberts

Change: Section 4.0 QA/QC Requirements; under Soil: Delete #3 and revise to read "Field blanks are not required." Revise #5 to read "... (site) facility and analyze for volatile organics only. The media shall be silica sand." Revise #6 to read "... as duplicates and analyze for the constituents listed in Table 1. The media shall be silica sand."

Reason for Change: Changes follow the guidance given in OSWER Directive 9355.0-7B App. C, Sec C-6 and the 12/88 CLP Users Guide. Use of silica sand as the equipment blank provides the necessary quality information for the sampling with a media which is similar to soil while avoiding some of the problems inherent with transporting liquids.

APPROVAL:

Field Team Leader: J.W. Spieker 3/30/92

Operable Unit Coordinator: J. W. Roberts 3/25/92

Quality Assurance: [signature] 3-27-92

ECN No. 164709

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ATTACHMENT 1

100-BC-5 DESCRIPTION OF WORK PROJECT CHANGE FORM

Date: 3/25/92

Person Initiating Change: J.W. Roberts

Change: 1) Update the contaminants of concern list to show the appropriate sample methods and holding times. See table 1.
2) Update the sampling order in section 3.4.3.

Reason for Change: 1) Errors were noted in the sample methods and holding times 2) Errors were noted in the sampling order - Anions were not listed.
See attached sheets

APPROVAL:

Field Team Leader: J.W. Roberts 3/30/92

Operable Unit Coordinator: J.W. Roberts 3/25/92

Quality Assurance: Dany Cannon 3-27-92

Analytical soil samples will not be taken in wells 199-B2-13 and 199-B8-6 unless screening action levels are exceeded. One analytical soil sample will be taken at the bottom of the unconfined aquifer in well 199-B2-12. If additional samples are required, they will be collected by the screening criteria described previously and recorded in the borehole log (EII 9.1, Geologic Logging) (WHC 1988c).

3.4.2 Groundwater

Groundwater samples will be collected from each well per EII 5.8 Groundwater Sampling (WHC 1988c) within 1 month of developing the well and analyzed for the full suite of parameters listed below for the first two rounds of sampling (Section 5.1.6.3 of the 100-BC-5 work plan) (DOE/RL 1991).

3.4.3 Analyses

Samples collected for chemical analysis will be analyzed for the full suite of CERCLA Contract Laboratory Program (CLP) Target Compound List and Target Analyte List constituents, specific anions that may be present, and for radionuclides. Estimated quantity of material needed for analyses are shown in Tables 1 and 2. The laboratory will use existing Level IV CLP methods and methods approved under their contract for radiological analyses (Level V). Sample custody will follow procedures as outlined in EII 5.1, "Chain of Custody" (WHC 1988c).

Table 1. Contaminants of Concern (Soil).

Analyte	Method	Holding time	Container/volume (ml)
ICP/AA metals Mercury	CLP	6 months 28 d	G 250
Cyanide	CLP	14 days	G 125
VOA	CLP	14 days	G 125
Semi-VOA PCB's/Pesticides	CLP	7 days[1]	aG 250
Gross alpha Gross beta Gamma spec. Strontium-90 Carbon-14 Uranium-235, 238 Plutonium-238, 239 Americium-241	lab SOP	6 months	G 1,000
Anions Fluoride Nitrate Sulfate	~~CLP~~ EPA 300.0/modified	48 hours	G 250
Total Activity (222-S Lab)	N/A	6 months	G or P small vial (at least 1 gram)

[1] 7 days for extraction, 40 days after analysis for extraction.

AA = atomic absorber
CLP = Contract Laboratory Program
ICP = inductively coupled plasma
PCB = polychlorinated biphenyl
N/A = not applicable
SOP = standard operating procedures
VOA = volatile organic analyses
G = glass
aG = amber glass
P = Plastic

Table 2. Contaminants of Concern (Groundwater).

Analyte	Method	Holding Time	Container/volume
ICP/AA metals Mercury	CLP	6 months	P 3 X 1,000 ml[2]
Cyanide	CLP	14 days	P 3 X 1,000 ml[2]
VOA	CLP	14 days	Gs 3 X 40 ml
Semi-VOA PCB's/Pesticides	CLP	7 days[1]	aG 3 X 2,000 ml[2]
Anions	EPA 300.0	48 hours	G 500 ml
Conductivity	9050	28 days	G 500 ml
Gross alpha Gross beta Gamma spec. Strontium-90 Technetium-99 Uranium-235, 238 Plutonium-239, 240 Americium-241	lab SOP	6 months	P 6,000 ml
Carbon-14	lab SOP	6 months	P 500 ml
Tritium	lab SOP	6 months	Gs 250 ml
Total Activity	N/A	6 months	G or P small vial (at least 1 ml)

[1] 7 days for extraction, 40 days after analysis for extraction.
[2] 3X is required for QA/QC in the CLP protocol.

AA = atomic absorber
CLP = Contract Laboratory Program
ICP = inductively coupled plasma
PCB = polychlorinated biphenyl
N/A = not applicable
SOP = standard operating procedures
VOA = volatile organic analyses
G = glass
aG = amber glass
P = plastic

If full sample volume requirements cannot be met, the sampling scientist will record the volume obtained in the sampling scientists logbook per EII 1.5, Field Logbooks (WHC 1988c) and analyze in the following order:

1. ~~Volatiles/Semi-volatiles~~ 1. Volatiles
2. Target Analyte List 2. Semi-volatiles/PCB/Pesticides
3. PCB's/Pesticides 3. TAL
4. Gamma spec 4. [redacted] Radioisotopes
5. Alpha spec 5. [redacted] Anions
6. Strontium-90 6. Total Activity
7. Technetium-99
8. Carbon-14
9. Gross alpha
10. Gross beta

3.5 GEOPHYSICAL LOGGING

Gross-gamma log all groundwater wells, performing the work in two stages: Stage 1 after completing the first 20 ft of drilling before reducing to a smaller casing. If the gross-gamma tool is not available within 4 h of when needed, skip logging the first 20 ft. Stage 2 after reaching total depth

INFORMATION RELEASE REQUEST

References: WHC-CM-3-4

COMPLETE FOR ALL TYPES OF RELEASE

Purpose

- [ ] Speech or Presentation (Check only one suffix)
  - [ ] Full Paper
  - [ ] Summary
  - [ ] Abstract
  - [ ] Visual Aid
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- [ ] Reference
- [X] Technical Report
- [ ] Thesis or Dissertation
- [ ] Manual
- [ ] Brochure/Flier
- [ ] Software/Database
- [ ] Controlled Database
- [ ] Other

New ID Number: ECN-164709

Existing ID Number (include revision, volume, etc.): WHC-SD-EN-AP-070, REV 2

If previously cleared, list ID number: WHC-SD-EN-AP-070, REV 2

Date Release Required: APRIL 20, 1992

Title: DESCRIPTION OF WORK FOR THE 100-BC-5 GROUNDWATER OPERABLE UNIT

Unclassified Category: UC-

Impact Level: 3

COMPLETE FOR SPEECH OR PRESENTATION

Title of Journal: NA

Group or Society Sponsoring: NA

Date(s) of Conference or Meeting: NA

City/State: NA

Will proceedings be published? [ ] Yes [X] No

Will material be handed out? [ ] Yes [X] No

Title of Conference or Meeting: NA

CHECKLIST FOR SIGNATORIES

Review Required per WHC-CM-3-4	Yes	No	Reviewer Name (printed)	Signature	Date
Classification/Unclassified Controlled Nuclear Information	[ ]	[X]			
Patent - General Counsel	[X]	[ ]	SW BERGIN	S W Bergin	4/24/92
Legal - General Counsel	[X]	[ ]			
Applied Technology/Export Controlled Information or International Program	[ ]	[X]			
WHC Program	[X]	[ ]	TM Wintczak	T M Wintczak	5/7/92
Communications	~~[X]~~	~~[X]~~	EJ Campbell	Eric Campbell	4/27/92
DOE-RL Program	[X]	[ ]	M J FURMAN.	M J Furman	4/29/92
Publication Services	[X]	[ ]	P Hirmann for D. E. Smith		5/1/92
Other Program	[ ]	[X]			
References Available to Intended Audience	[X]	[ ]	J. W. ROBERTS	J.W. Roberts	4/16/92
Transmit to DOE-HQ/Office of Scientific and Technical Information	[ ]	[X]			

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

Author/Requestor (Printed/Signature) Date: J. W. Roberts, J.W. Roberts, 4/16/92

Responsible Manager (Printed/Signature) Date: R. P. Henckel, R P Henckel, 4/16/92

Intended Audience

[ ] Internal [ ] Sponsor [X] External

INFORMATION RELEASE ADMINISTRATION APPROVAL STAMP

Stamp is required before release. Release is contingent upon resolution of mandatory comments.

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APR 27 1991

APPROVED FOR RELEASE OFFICIAL US DOCUMENT Date 5/8/92

Date Received 4/20/92

9211235791235

DISTRIBUTION SHEET

To: R. P. Henckel

From: J. W. Roberts

Date: April 20, 1992

Project Title/Work Order:

DESCRIPTION OF WORK FOR THE 100-BC-5 GROUNDWATER OPERABLE UNIT

EDT No.:

ECN No.: 164709

Name	MSIN	With Attachment	EDT/ECN & Comment	EDT/ECN Only
G. S. Corrigan	H4-16	x		
R. E. Day	H4-55	x		
J. D. Fancher	N3-05	x		
K. A. Gano	X0-21	x		
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