9613406.2362

START

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ENGINEERING CHANGE NOTICE

Page 1 of 2

1. ECN 630700

Proj. ECN

2. ECN Category (mark one)	3. Originator's Name, Organization, MSIN, and Telephone No.	3a. USQ Required?	4. Date
Supplemental [] Direct Revision [X] Change ECN [] Temporary [] Standby [] Supersedure [] Cancel/Void []	D. B. Barnett, HTS, Groundwater Management, H6-06, 372-1284	[] Yes [X] No	03/11/96
	5. Project Title/No./Work Order No. Groundwater Screening Evaluation/Monitoring Plan--200 Area Effluent Treatment Facility (Project C-018H)	6. Bldg./Sys./Fac. No. N/A	7. Approval Designator E
	8. Document Numbers Changed by this ECN (includes sheet no. and rev.) WHC-SD-C018H-PLN-004, Rev. 1	9. Related ECN No(s). 626163	10. Related PO No.

11a. Modification Work	11b. Work Package No.	11c. Modification Work Complete	11d. Restored to Original Condition (Temp. or Standby ECN only)
[] Yes (fill out Blk. 11b) [X] No (NA Blks. 11b, 11c, 11d)	N/A	N/A Cog. Engineer Signature & Date	N/A Cog. Engineer Signature & Date

12. Description of Change

Correction to document WHC-SD-C018H-PLN-004, Rev. 1, replace pages 3-7, D.1-5, D.1-6, D.1-7, and D.1-8, with attached sheets.

13a. Justification (mark one)

Criteria Change	[]	Design Improvement	[]	Environmental	[]	Facility Deactivation	[]
As-Found	[]	Facilitate Const	[]	Const. Error/Omission	[]	Typo Error/Omission	[X]

13b. Justification Details

See Block 12.

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

See Distribution Sheet

RELEASE STAMP
MAR 18 1996
DATE:
STA: 21
HANFORD RELEASE
ID: 24

MAR 1996
RECEIVED
EDMC

A-7900-013-2 (11/94) GEF095

A-7900-013-1

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ENGINEERING CHANGE NOTICE	Page 2 of 2	1. ECN (use no. from pg. 1) 630700

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	[]	Tickler File	[]
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
NA		

20. Approvals

	Signature	Date
OPERATIONS AND ENGINEERING		
Cog. Eng. D. B. Barnett	D B Barnett	3/12/96
Cog. Mgr. J. S. Schmid	J S Schmid	3/12/96
Environ. D. L. Flyckt	D L Flyckt	3/12/96

	Signature	Date
ARCHITECT-ENGINEER		
PE		
QA		
Safety		
Design		
Environ.		
Other		
DEPARTMENT OF ENERGY		
Signature or a Control Number that tracks the Approval Signature		
ADDITIONAL		

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RECORD OF REVISION	(1) Document Number WHC-SD-C018H-PLN-004, Rev. 1A	Page

(2) Title
Ground Water Screening Evaluation/Monitoring Plan -- 200 Area Effluent Treatment Facility (Project C-018H)

CHANGE CONTROL RECORD

(3) Revision	(4) Description of Change - Replace, Add, and Delete Pages	Authorized for Release	
		(5) Cog. Engr.	(6) Cog. Mgr. Date
1	(7) ECN-626163, 1/12/96		
1A RS	Replace pages 3-7, D.1-5, D.1-6, D.1-7, and D.1-8 with attached sheets. ECN-630700	D. B. Barnett 3/15/96	J. S. Schmid 3/15/96

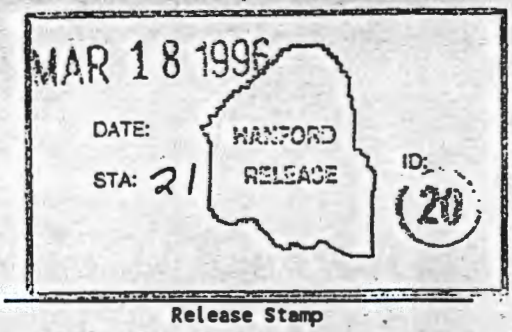
Ground Water Screening Evaluation/Monitoring Plan -- 200 Area Effluent Treatment Facility (Project C-018H)

J. D. Davis
Westinghouse Hanford Company, Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-87RL10930

EDT/ECN: 626163 UC: 703
Org Code: 86270 Charge Code: A2100
B&R Code: EW3130020 Total Pages: 240

Key Words: Effluent Treatment Facility, Ground water monitoring, ground water modeling, ground water chemistry.

Abstract:
Davis, J. D., D. B. Barnett, C. J. Chou, P. B. Freeman, 1995, Ground Water Screening Evaluation/Monitoring Plan -- 200 Area Effluent Treatment Facility (Project C-018H), WHC-SD-C-018H-PLN-004, Westinghouse Hanford Company, Richland, Washington.



Release Approval — Date: 3-18-96

Release Stamp

Approved for Public Release

(footnote 4) indicates that results exceeding permit enforcement limits for acetone, ammonia, chloroform, copper (total), tetrahydrofuran, and sulfate will not violate the permit as long as these results do not exceed the water-quality standards identified in WAC 173-200 and Permit ST-4500. No enforcement limits for gross alpha, gross beta, strontium-90, and tritium are designated in Permit ST-4500, so comparisons are not possible for these constituents. Tritium concentrations will be evaluated using the tritium tracking network described in Section 3.7. As noted in Section 2.3.4.1 an average pH (field) of 8.1, with a range of 7.7 to 8.5, was reported for downgradient well 699-48-77D during six successive quarters of baseline data collection.

3.5.4 Reporting

Ground-water monitoring results will be summarized and reported on the Discharge Monitoring Report Form. If a constituent is detected in well 699-48-77C and/or 699-48-77D in a concentration that equals or exceeds the Early Warning Value, an Early Warning Report will be prepared to notify Ecology. This report will be written and submitted to Ecology within 10 calendar days from the date of detection of the Early Warning Value. At a minimum, the information in this report will include the following:

- Concentration of contaminant(s) that attained or exceeded the early warning value
- Concentrations of other contaminants monitored
- Location(s) and sampling date(s)
- Concentrations of other contaminants determined for previous sampling dates.

3.6 SAMPLING AND ANALYTICAL PROTOCOL

This section describes or references procedures for well purging, documentation of sample collection methods, chain-of-custody requirements, and laboratory analyses. Detailed descriptions of standard sampling and analysis procedures for specific analytes are provided by reference to the corresponding environmental investigations instructions (EII) (WHC 1988). Subcontractors will be contractually required to perform work according to preapproved standard operating procedures.

3.6.1 Well Purging

All sampling activities performed at the well sites will be recorded in the appropriate field logbook, as specified by EII 1.5, Field Log Books. Hydrostar pumps will continue to be used in existing monitoring wells for purging and sampling. Prior to sampling each well, the static water level will be measured and recorded as specified by EII 10.2, Measurement of Ground Water Levels. Based on the measured water level and well construction specifications, the volume of water in the well will be calculated and documented in the well sampling form and field notebook. As specified by EII 5.8, Ground-Water Sampling, each well will be purged prior to sampling until the approved criteria are met. Purgewater will be managed according to EII 10.3, Purgewater Management. For instances in which the well is pumped dry because of very slow recharge, the sample will be collected after recharge. Samples will be collected and preserved in the field as specified by EII 5.8, Ground-Water Sampling. Sampling personnel have the option not to decontaminate equipment if either single-use or dedicated sampling equipment is used.

Table D.1-2. Status Summary of Background Values Based on Currently Available Data for Downgradient Well 699-48-77C.

Analyte	Quarters of Data[a]	Tolerance Limits	Comment
Ammonium	4	ND	DL range = 30 - 50 ppb
Acetone	5	ND	DL range = 2.6 - 100 ppb
Acetophenone	6	ND	DL range = 1.5 - 20 ppb
Arsenic, unfiltered	4	ND	DL range = 1.4 - 2.7 ppb
Benzene	6	ND	DL range[b] = 0.11 - 5 ppb
Beryllium, unfiltered	4	ND	DL range = 0.1 - 0.6 ppb
Cadmium, unfiltered	4	ND	DL range = 1.5 - 3.1 ppb
Carbon tetrachloride	6	ND	DL range = 3 - 5 ppb
Chloroform	6	ND	DL range[b] = 0.76 - 5 ppb
Chromium, unfiltered	4	ND	DL range = 2.8 - 15.7 ppb
Copper, unfiltered	4	ND	DL range = 5.0 - 13.6 ppb
Gross Alpha	6	9.4 pCi/L	see Table D.2-2
Gross Beta	6	14 pCi/L	see Table D.2-2
Iron, unfiltered	3	ND	DL range = 75.6 - 96.6 ppb
TOC	5	ND	DL range = 320 - 1,000 ppb
Lead, unfiltered	4	ND	DL range = 0.80 - 1.10 ppb
Mercury, unfiltered	4	ND	DL range = 0.10 - 0.20 ppb
Methyl chloride	6	ND	DL range[b] = 0.15 - 10 ppb
Methylene chloride	3	ND	DL range = 3 - 5 ppb
N-Nitrosodimethylamine	6	ND	DL range = 1.2 - 10 ppb
Nitrate (as NO_3)	6	29,300 ppb	see Table D.2-2
Nitrite (as NO_2)	4	ND	DL range = 70 - 110 ppb
Nitrogen; TKN-N	NA	NA	not analyzed
Strontium-90	2	ND	DL range = 0.73 - 0.77 pCi/L
Sulfate	6	21,400 ppb	see Table D.2-2
Tetrachloroethene	6	ND	DL range[b] = 0.13 - 5 ppb
Trichloroethane; 1,1,2	6	ND	DL range[b] = 0.16 - 5 ppb
Tritium	6	2,100	see Table D.2-2
pH, field	6	[7.1, 8.5]	see Table D.2-2

Table D.1-2. Status Summary of Background Values Based on Currently Available Data for Downgradient Well 699-48-77C.

Analyte	Quarters of Data[a]	Tolerance Limits	Comment
Conductivity, field	6	310 μmho/cm	see Table D.2-2
Phthalate	6	ND	DL range = 1 - 10 ppb
Tetrahydrofuran	4	ND	DL range = 2.8 - 100 ppb
Total dissolved solids	6	240 ppm	see Table D.2-2
Total suspended solids	4	ND	DL range = 1 - 5 ppm
Iodine-129	4	ND	DL range = -0.45 - 3.32 pCi/L

NA = not available. DL = method detection limit.
ND = essentially not detected.
[a]excluding outlier(s) and/or unusable data due to a QC deficiency.
[b]lower limit was associated with GC and/or different laboratory.

Table D.1-3. Status Summary of Background Values Based on Currently Available Data for Downgradient Well 699-48-77D.

Analyte	Quarters of Data[a]	Tolerance Limits	Comment
Ammonium	4	ND	DL range = 30 - 50 ppb
Acetone	6	ND	DL range = 2.6 - 100 ppb
Acetophenone	6	ND	DL range = 1.5 - 20 ppb
Arsenic, unfiltered	4	ND	DL range = 2.1 - 2.7 ppb
Benzene	6	ND	DL range = 0.11 - 5 ppb
Beryllium, unfiltered	4	ND	DL range = 0.1 - 0.6 ppb
Cadmium, unfiltered	4	ND	DL range = 1.5 - 3.1 ppb
Carbon tetrachloride	6	ND	DL range = 1 - 3 ppb
Chloroform	6	ND	DL range[b] = 0.74 - 5 ppb
Chromium, unfiltered	4	ND	DL range = 8.6 - 12.9 ppb
Copper, unfiltered	4	ND	DL range = 5.0 - 10.9 ppb
Gross Alpha	6	26 pCi/L	see Table D.2-3
Gross Beta	6	7.4 pCi/L	see Table D.2-3
Iron, unfiltered	3	ND	DL range = 53.0 - 75.4 ppb
TOC	5	ND	DL range = 320 - 1,000 ppb
Lead, unfiltered	4	ND	DL range = 0.80 - 1.10 ppb
Mercury, unfiltered	4	ND	DL range = 0.10 - 0.20 ppb
Methyl chloride	6	ND	DL range[b] = 0.15 - 10 ppb
Methylene chloride	3	ND	DL range = 3 - 5 ppb
N-Nitrosodimethylamine	6	ND	DL range = 1.2 - 10 ppb
Nitrate (as NO_3^-)	6	29,500 ppb	see Table D.2-3
Nitrite (as NO_2^-)	4	ND	DL range = 70 - 110 ppb
Nitrogen; TKN-N	NA	NA	not analyzed
Strontium-90	2	ND	DL range = 0.72 - 0.78 pCi/L
Sulfate	6	25,100 ppb	see Table D.2-3
Tetrachloroethene	6	ND	DL range[b] = 0.13 - 5 ppb
Trichloroethane; 1,1,2	6	ND	DL range[b] = 0.16 - 5 ppb
Tritium	6	1,600	see Table D.2-3
pH, field	6	[6.7, 9.4]	see Table D.2-3

Table D.1-3. Status Summary of Background Values Based on Currently Available Data for Downgradient Well 699-48-77D.

Analyte	Quarters of Data[a]	Tolerance Limits	Comment
Conductivity, field	6	320 μmho/cm	see Table D.2-3
Phthalate	6	ND	DL range = 1 - 10 ppb
Tetrahydrofuran	4	ND	DL range = 2.8 - 100 ppb
Total dissolved solids	6	240 ppm	see Table D.2-3
Total suspended solids	4	ND	DL range = 1 - 2 ppm
Iodine-129	4	ND	DL range = -0.04 - 2.87 pCi/L

NA = not available. DL = method detection limit.
ND = essentially not detected.
[a]excluding outlier(s) and/or unusable data due to a QC deficiency.
[b]lower limit was associated with GC and/or different laboratory.

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