START

0032327

ENGINEERING CHANGE NOTICE

Page 1 of 2

1. ECN 189924

Proj. ECN

2. ECN Category (mark one)	3. Originator's Name, Organization, MSIN, and Telephone No.		4. Date
Supplemental []	J. A. Locklair, Environmental Restoration Safety Support, H4-67, 6-4409		October 23, 1993
Direct Revision [x]	5. Project Title/No./Work Order No.	6. Bldg./Sys./Fac. No.	7. Impact Level
Change ECN []	WHC-SD-EN-SAD-005, REV. 1-A, Soil Physical Separations Treatability Safety Assessment for 100 and 300 Areas	N/A	2 ESQ
Temporary []			
Standby []			
Supersedure []	8. Document Numbers Changed by this ECN (includes sheet no. and rev.)	9. Related ECN No(s).	10. Related PO No.
Cancel/Void []	WHC-SD-EN-SAD-005, REV. 0, REV.1	N/A	N/A

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

Changes explain if the evaporation option is exercised, effluent that has been processed by the water treatment system must meet specific purgewater criteria. Purgewater criteria are provided in Appendix E.

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

13b. Justification Details

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

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A-7900-013-1 (06/92)

ENGINEERING CHANGE NOTICE

1. ECN (use no. from pg. 1): 189924

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
N/A		

20. Approvals

	Signature	Date		Signature	Date
OPERATIONS AND ENGINEERING			ARCHITECT-ENGINEER		
Cog Engineer G. C. Henckel III	[signature]	10/20/93	PE		
Cog. Mgr. W. L. Johnson	R A Carlson for WLJ	10/20/93	QA		
QA T. L. Bennington	Jim Johnson for TLB	10/21/93	Safety		
Safety M. A. Tredway	[signature] for M.A.T. via telecon	10/26/93	Design		
Security N/A			Environ.		
Environ. K. A. Gano	[signature] for KAGano	10/20/93	Other		
Projects/Programs N/A			Radiation K. A. Smith	MRK for D.B. Tullis via telecon	10/26/93
Tank Waste Remediation System N/A			Ind. Safety	~~L. C. Hastam~~ Approved via telecon MRKerr	10/23/93
Facilities Operations N/A			DEPARTMENT OF ENERGY		
Restoration & Remediation N/A			Signature or Letter No.		
Operations & Support Services N/A					
IRM N/A			ADDITIONAL		
Other ERSS N. R. Kerr	MRK	10/20/93			
RRSA J. J. Zimmer					

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ENGINEERING CHANGE NOTICE

1. ECN (use no. from pg. 1): 189924

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	ENGINEERING		CONSTRUCTION			
[] Yes	Additional	[] $	Additional	[] $	Improvement	[]
[X] No	Savings	[] $	Savings	[] $	Delay	[]

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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
N/A		

20. Approvals

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OPERATIONS AND ENGINEERING		ARCHITECT-ENGINEER	
Cog Engineer G. C. Henckel III	10/20/93	PE	
Cog. Mgr. W. L. Johnson for WLJ	10/20/93	QA	
QA T. L. Bennington for TLB	10/21/93	Safety	
Safety M. A. Tredway via telecon	10/26/93	Design	
Security N/A		Environ.	
Environ. K. A. Gano for KAGano	10/20/93	Other	
Projects/Programs N/A		Radiation K. A. Smith MK for via telecon	10/26/93
Tank Waste Remediation System N/A		Ind. Safety ~~L. C. Haslam~~ O. B. Tullis Approved via telecon	10/29/93
Facilities Operations N/A		DEPARTMENT OF ENERGY	
Restoration & Remediation N/A		Signature or Letter No.	
Operations & Support Services N/A			
IRM N/A		ADDITIONAL	
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WHC-SD-EN-SAD-005, REV. 1-A

List attachments.
Appendixes A, B, C, D, and E

Date Release Required
October 25, 1993

Title Soil Physical Separations Treatability Safety Assessment for 100 and 300 Areas

Unclassified Category UC-

Impact Level 2 ESQ

New or novel (patentable) subject matter? [X] No [] Yes
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	Yes	No
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SUPPORTING DOCUMENT

1. Total Pages 108

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5. Key Words

Radiological and chemical hazards
Soil physical separations treatability
Safety assessment

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11-1-93 [illegible]

6. Author

Name: J. A. Locklair

JRK
Signature

Organization/Charge Code 29550/PE7HB

7. Abstract

Potential hazards are addressed in this assessment and operational safety limits are provided to assure safe operation of soil physical separation treatment activities at the Hanford Site.

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RECORD OF REVISION

(1) Document Number: WHC-SD-EN-SAD-005

Page

(2) Title: Soil Physical Separations Treatability Safety Assessment for 100 and 300 Areas

CHANGE CONTROL RECORD

(3) Revision	(4) Description of Change - Replace, Add, and Delete Pages	Authorized for Release (5) Cog. Engr.	(6) Cog. Mgr. Date
[redacted]	(7) Rev. 0 released per EDT 129412, 3/24/92 Rev. 1 released per ECN 189909 Rev. 1-A released per ECN 189924		
1	Changes expand the soil washing system to the 100 and 300 Areas. ECN-189909	G. C. Henckel III (signature on file)	W. L. Johnson (signature on file)
1-A RS	Replace table of contents and pages 8 and 7. Additions explain if the evaporation option is exercised, effluent that has been processed by the water treatment system must meet specific purgewater criteria. Appendix E has been added to provide the purgewater collection criteria. ECN-189924	G. C. Henckel III 10/26/93	W. L. Johnson RACarlson for WLJ. 10/26/93

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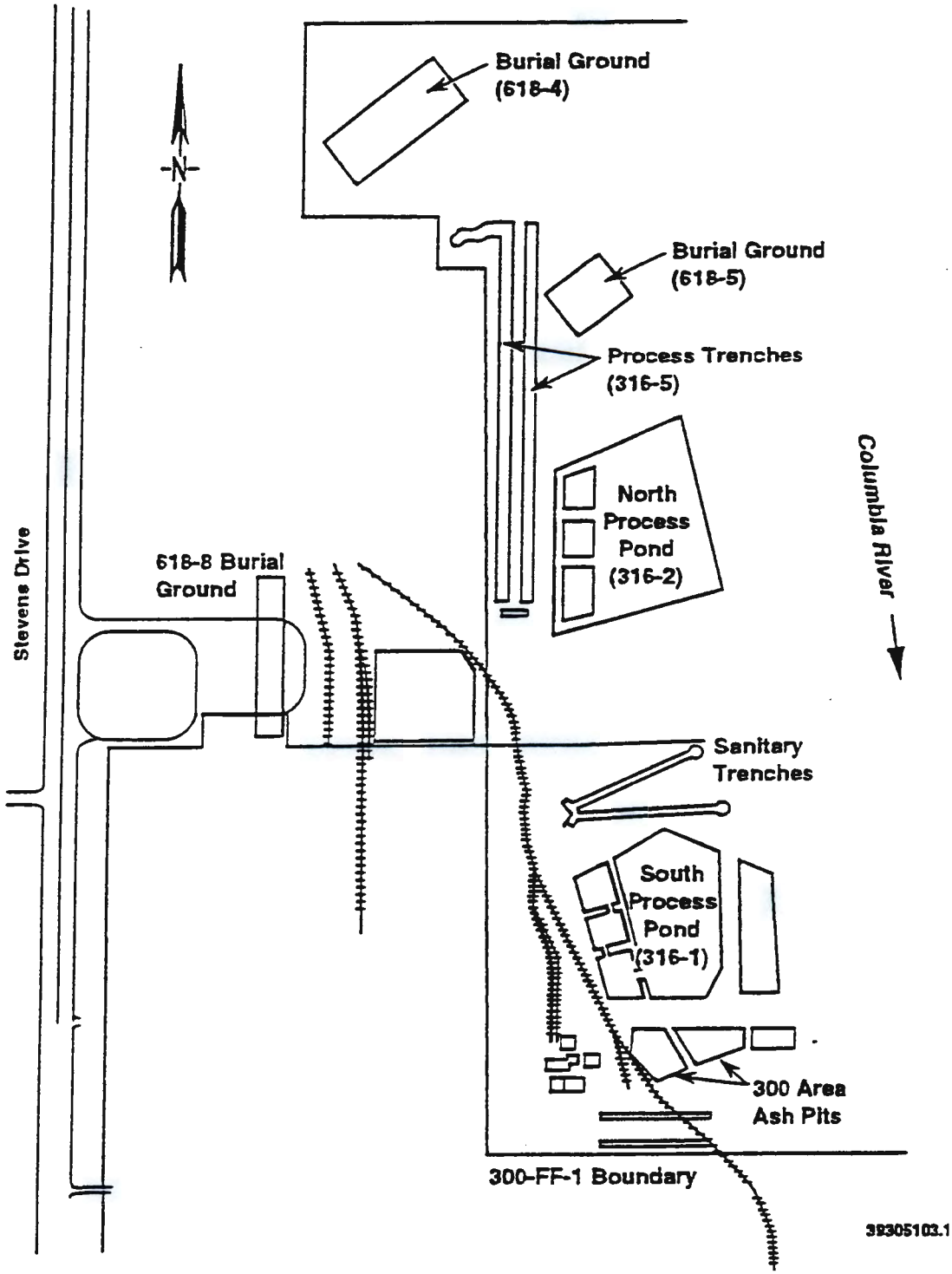
Figure 3. Layout of the 300-FF-1 Operable Unit.



The clean gravel, rock, and sand will be returned to the excavation site. The hazardous material particulates will be collected and stored onsite for an undetermined length of time in conformance with the requirements specified by regulatory agencies until a disposal plan is developed and implemented.

2.10 PROCESS DESCRIPTION

Soil physical separation processes have been used for many years in the mineral processing industry for removing materials by washing and concentrating a desired particle size or mineral. The soil separation system analyzed in this assessment has the potential to reduce the volume of contaminated material by 80% to 90%. Typical separation equipment consists of a wet grizzly feeder that will separate rocks and other large debris and remove contaminants by washing. A sketch of a typical placer system is shown in Figure 4. A detailed description of the process and equipment is provided in Field and Henckel (1991).

Soil and rock material will be stabilized to reduce fugitive dust emission and removed from the trench and process pond (located about 4.6 m [15 ft] below grade) using front-end loaders or similar equipment. The material will then be transported to the nearby equipment site and loaded onto a conveyer belt system where it will be entered into the soil physical treatment equipment and washed with water and chemical extractants to partition radioactive and hazardous chemical constituents from the sand and gravel. The chemical extractants will be nonhazardous and environmentally acceptable. The gravel and coarse sand will be separated from fine sand, silt, and heavy metals in the soil using classification equipment to segregate fine particles. Following dewatering, the clean gravel, rock, and sand will be returned to the excavation site. Dewatered soil is estimated to retain a moisture content of approximately 20%. This retained moisture content will eliminate any dust generation during transport back to the storage site in the process pond or trench.

Most hazardous material is expected to be particles or attached to particles smaller than 106 μm. Particles of this size are expected to be removed in the water wash stream and will settle out in the containment units. There are three primary options for disposing of contaminated particles. The first option is to containerize material in drums or boxes and immediately transport to a waste repository in the 200 Areas or store onsite temporarily and then ship to a waste repository. The second option is to return the contaminated material to the source locations in the process pond or trench where it will be permanently stabilized or covered with the clean soil material. The third option is to store the contaminated material for an undetermined length of time in the containment units to allow sampling and analysis of the material. A permanent disposal plan for the contaminated solids and effluent water will be developed and implemented following the sampling and analysis.

Effluent water from the separation process will be recycled and stored in containment units for sampling and analysis. The water will be evaporated or disposed of in accordance with applicable WHC and DOE requirements. If the evaporation option is exercised, effluent that has been processed by the water treatment system must meet purgewater criteria for discharge back to soils prior to forced or solar evaporation. Appendix E contains the purgewater collection criteria from WHC-CM-7-5, *Environmental Compliance*, Table 8.3.

APPENDIX E

PURGEWATER COLLECTION CRITERIA

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Table E-1. Purgewater Collection Criteria***.
(sheet 1 of 6)

Constiteunt	Detn. Limit	Collection Criteria	Units	Basis[1]
1,1,1,2-tetrachlorethane	10.0	50.0	PPB[2]	PQL
1,1,1-trichloromethane	5.0	2000.0	PPB	MCL
1,1,2,2-tetrachloroethane	5.0	24000.0	PPB	CFWTL
1,1,2-trichloromethane	5.0	2000.0	PPB	MCL[3]
1,1-dichloroethane	5.0	10.0	PPB	PQL
1,1-dichloroethylene	10.0	70.0	PPB	MCL
1,2,3,4-tetrachlorobenzene	10.0	500.0	PPB	CFWTL
1,2,3,5-tetrachlorobenzene	10.0	500.0	PPB	CFWTL
1,2,3-trichlorobenzene	10.0	500.0	PPB	CFWTL
1,2,3-trichloropropane	10.0	50.0	PPB	PQL
1,2,4,5-tetrachlorobenzene	10.0	100.0	PPB	PQL
1,2,4-trichlorobenzene	10.0	100.0	PPB	PQL
1,2-dibromo-3-chloropropane	10.0	50.0	PPB	PQL
1,2-dibromoethane	10.0	50.0	PPB	PQL
1,2-dichlorobenzene	10.0	500.0	PPB	CFWTL
1,2-dichloroethane	5.0	50.0	PPB	MCL
1,2-dichloropropane	5.0	57000.0	PPB	CFWTL
1,3,5-trichlorobenzene	10.0	500.0	PPB	CFWTL
1,3-dichlorobenzene	10.0	500.0	PPB	CFWTL
1,3-dichloropropane	5.0	2440.0	PPB	CFWTL
1,4-dichloro-2-butane	10.0	50.0	PPB	PQL
1,4-naphthoquinone	10.0	100.0	PPB	PQL
1-napthylamine	10.0	100.0	PPB	PQL
2,3,4,6-tetrachorophenol	10.0	100.0	PPB	PQL
2,4,5-T	2.0	20.0	PPB	PQL
2,4,5-TP silvex	2.0	100.0	PPB	MCL
2,4,5-trichlorophenol	10.0	100.0	PPB	PQL
2,4,5-trichlorophenol	10.0	9700.0	PPB	CFWTL
2,4-O	2.0	1000.0	PPB	MCL
2,4-dichlorophenol	10.0	3650.0	PPB	CFWTL
2,4-dimethylphenol	10.0	50.0	PPB	PQL
2,4-dinitrophenol	10.0	500.0	PPB	PQL
2,4-dinitrotoluene	10.0	2300.0	PPB	CFWTL
2,6-dichlorophenol	10.0	100.0	PPB	PQL
2,6-dinitrotoluene	10.0	2300.0	PPB	CFWTL
2-Hexanone	50.0	500.0	PPB	PQL
2-Methylnaphthalene	10.0	100.0	PPB	PQL
2-acatylaminofluorene	10.0	100.0	PPB	PQL
2-chloronaphthalene	10.0	100.0	PPB	PQL
2-chlorophenol	10.0	20000.0	PPB	CFWTL
2-naphthylamine	10.0	100.0	PPB	PQL
2-picoline	10.0	50.0	PPB	PQL
3,3'-dichlorobenzidine	10.0	200.0	PPB	PQL
3,3'-dimethylbenzidine	10.0	100.0	PPB	PQL

***Derived from WHC-CM-7-5.

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Table E-1. Purgewater Collection Criteria.
(sheet 2 of 6)

Constiteunt	Detn. Limit	Collection Criteria	Units	Basis[1]
3-methylcholanthrene	10.0	100.0	PPB	PQL
4,6-dinitro-o-cresol and salts	10.0	500.0	PPB	PQL
4-Nitroquinoline 1-oxide	10.0	100.0	PPB	PQL
4-aminobyphenyl	10.0	100.0	PPB	PQL
4-bromophenyl phenyl ether	10.0	100.0	PPB	PQL
5-nitro-o-toluidine	10.0	100.0	PPB	PQL
7,12-dimethylbenz[a]anthracane	10.0	100.0	PPB	PQL
Acenaphthalene	10.0	100.0	PPB	PQL
Acenapthene	10.0	5200.0	PPB	CFWTL
Acetone	10.0	1000.0	PPB	PQL
Acetonitrila	10.0	1000.0	PPB	PQL
Acetophenone	10.0	100.0	PPB	PQL
Acrolein	10.0	210.0	PPB	CFWTL
Acrylonitrile	10.0	25000.0	PPB	CFWTL
Aldrin	.1	.5	PPB	PQL
Allyl Chloride	100.0	100.0	PPB	PQL[4]
Alpha,alpha-dimethylphenethyla	10.0	100.0	PPB	PQL
Alpha-BHC	.1	.5	PPB	PQL
Aniline	10.0	100.0	PPB	PQL
Anthracane	10.0	100.0	PPB	PQL
Antimony, filtered	100.0	16000.0	PPB	CFWTL
Antimony-125	48.0	3000.0	pCi/L	MCL
Aramite	10.0	100.0	PPB	CFWTL
Arochlor 1016	1.0	1.0	PPB	CFWTL[4]
Arochlor 1221	1.0	1.0	PPB	CFWTL[4]
Arochlor 1232	1.0	1.0	PPB	CFWTL[4]
Arochlor 1242	1.0	1.0	PPB	CFWTL[4]
Arochlor 1248	1.0	1.0	PPB	CFWTL[4]
Arochlor 1254	1.0	1.0	PPB	CFWTL[4]
Arochlor 1260	1.0	1.0	PPB	CFWTL[4]
Arsenic, filtered	5.0	480.0	PPB	CFWTL
Barium, filtered	6.0	10000.0	PPB	MCL
Benz[a]anthracane	10.0	100.0	PPB	PQL
Benzene	5.0	50.0	PPB	MCL
Benzo(ghi)perylene	10.0	100.0	PPB	PQL
Benzo(k)fluoranthene	10.0	100.0	PPB	PQL
Benzo(a)pyrene	10.0	190.0	PPB	PQL
Benzo(b)fluoranthene	10.0	100.0	PPB	PQL
Benzyl Alcohol	10.0	200.0	PPB	PQL
Beryllium, filtered	5.0	53.0	PPB	CFWTL
Beta-BHC	.1	.5	PPB	PQL
Bis(1-chloro-1-methyl) ether	10.0	100.0	PPB	PQL
Bis(2-chloroethoxy) methane	10.0	100.0	PPB	PQL
Bis(2-chloroethyl) ether	10.0	100.0	PPB	PQL

Table E-1. Purgewater Collection Criteria.
(sheet 3 of 6)

Constituent	Detn. Limit	Collection Criteria	Units	Basis[1]
Bis(chloromethly) ether	5.0	100.0	PPB	PQL
Bromodichloromethane	5.0	10.0	PPB	PQL
Bromoform	5.0	20.0	PPB	PQL
Cadmium, filtered	2.0	11.0	PPB	
CFWTLCarbon disulfide	10.0	50.0	PPB	PQL
Carbon tetrachloride	5.0	50.0	PPB	MCL
Carbon-14	20.0	20000.0	pCi/L	MCL
Cesium-137	20.0	2000.0	pCi/L	MCL
Chlordane	1.0	1.0	PPB	CFWTL[4]
Chloride	500.0	2500000.0	PPB	MCL
Chlorobenzene	5.0	20.0	PPB	PQL
Chlorobenzene (by ABN)	10.0	20.0	PPB	PQL
Chlorobenzilate	300.0	300.0	PPB	PQL
Chloroethane	10.0	50.0	PPB	PQL
Chloroform	5.0	1000.0	PPB	MCL
Chromium(VI)	50.0	110.0	PPB	CFWTL
Chromium, filtered	10.0	110.0	PPB	CFWTL[5]
Chrysene	10.0	100.0	PPB	PQL
Cobalt-60	22.5	1000.0	pCi/L	MCL
Copper, filtered	10.0	120.0	PPB	CFWTL
Cresols	10.0	100.0	PPB	PQL
Cyanide	10.0	52.0	PPB	CFWTL
DOD	.1	1.0	PPB	PQL
DOE	.1	0.5	PPB	PQL
DOT	.1	.1	PPB	CFWTL[4]
Delta-BHC	.1	1.0	PPB	PQL
Di-n-propylnitrosamine	10.0	100.0	PPB	PQL
Dibenz[a,h]anthracene	10.0	100.0	PPB	PQL
Dibenzofuran	10.0	100.0	PPB	PQL
Dibromochloromethane	5.0	10.0	PPB	PQL
Dichlorodifluoromethane	10.0	50.0	PPB	PQL
Dieldrin	.1	.1	PPB	CFWTL[4]
Dillate	10.0	100.0	PPB	PQL
Dimethoate	2.0	100.0	PPB	PQL
Dinitrobenzene	10.0	100.0	PPB	PQL
Dinoseb	10.0	10.0	PPB	PQL
Dioxane	500.0	1500.0	PPB	PQL
Dioxin	.1	.1	PPB	CFWTL[4]
Diphenylamine	10.0	100.0	PPB	PQL
Disulfoton	2.0	20.0	PPB	PQL
Endosulfan I	.1	.6	PPB	CFWTL
Endrin	.1	.1	PPB	CFWTL[4]
Ethyl benzene	5.0	20.0	PPB	PQL
Ethyl methacrylate	10.0	50.0	PPB	PQL

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Table E-1. Purgewater Collection Criteria.
(sheet 4 of 6)

Constituent	Detn. Limit	Collection Criteria	Units	Basis[1]
Ethyl methanesulfonate	10.0	100.0	PPB	PQL
Fluoranthene	10.0	100.0	PPB	PQL
Fluorene	10.0	100.0	PPB	MCL
Fluoride	500.0	20000.0	PPB	MCL
Gross alpha	4.0	150.0	pCi/L	MCL
Gross beta	8.0	500.0	pCi/L	
MCLHeptachlor	.1	.1	PPB	CFWTL[4]
Heptchlor epoxide	.1	10.0	PPB	PQL
Hexachlorobenzene	10.0	10.0	PPB	PQL[4]
Hexachlorobutadiene	10.0	93.0	PPB	CFWTL
Hexachlorocyclopentadiene	10.0	52.0	PPB	CFWTL
Hexachloroethane	10.0	5400.0	PPB	CFWTL
Hexachlorophene	10.0	100.0	PPB	PQL
Hexachloropropene	10.0	100.0	PPB	PQL
Hydrogen sulfide	10.0	20.0	PPB	CFWTL
Indeno(1,2,,3-cd)pyrene	10.0	100.0	PPB	PQL
Iodine-129	1.0	10.0	pCi/L	MCL
Iodine-131	20.0	30.0	pCi/L	MCL
Iodomethane	10.0	50.0	PPB	PQL
Iron, filtered	30.0	3000.0	PPB	MCL
Isobutyl Alcohol	10000.0	10000.0	PPB	PQL[4]
Isodrin	10.0	100.0	PPB	PQL
Isophorone	10.0	100.0	PPB	PQL
Isosafrole	10.0	100.0	PPB	PQL
Kapone	1.0	100.0	PPB	PQL
Lead, filtered	5.0	32.0	PPB	CFWTL
Lindane, gamma-BHC	.1	.8	PPB	CFWTL
Manganese, filtered	5.0	500.0	PPB	MCL
Mercury, filtered	.1	.1	PPB	CFWTL
Methacrylonitrile	10.0	50.0	PPB	PQL
Methapyrilene	10.0	100.0	PPB	PQL
Methoxychlor	3.0	3.0	PPB	CFWTL[4]
Methyl bromide	10.0	100.0	PPB	PQL
Methyl chloride	10.0	10.0	PPB	PQL
Methyl ethyl ketone	10.0	100.0	PPB	PQL
Methyl isobutyl ketone	10.0	50.0	PPB	PQL
Methyl methacrylate	10.0	20.0	PPB	PQL
Methyl methanesulfonate	10.0	100.0	PPB	PQL
Methyl parathion	2.0	5.0	PPB	PQL
N-Nitrosodiphenylamine	10.0	100.0	PPB	PQL
N-nitrosodi-n-butylamine	10.0	100.0	PPB	PQL
N-nitrosodiethylamine	10.0	100.0	PPB	PQL
N-nitrosodimethylamine	10.0	100.0	PPB	PQL
N-nitrosomethylethylamine	10.0	100.0	PPB	PQL

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Table E-1. Purgewater Collection Criteria.
(sheet 5 of 6)

Constituent	Detn. Limit	Collection Criteria	Units	Basis[1]
N-nitrosomorpholine	10.0	100.0	PPB	PQL
N-nitrosopiperidine	10.0	100.0	PPB	PQL
Naphthalene	10.0	6200.0	PPB	CFWTL
Nickel, filtered	10.0	1600.0	PPB	CFWTL
Nickel-63	10.0	500.0	pCi/L	MCL
Nitrate	500.0	450000.0	PPB	MCL
Nitrobenzine	10.0	100.0	PPB	PQL
Nitrosopyrrolidine	10.0	100.0	PPB	PQL
O,O,O-triethyl phosphorothioate	10.0	100.0	PPB	PQL
O-toluidine hydrochloride	10.0	100.0	PPB	PQL
P-chloro-m-cresol	10.0	50.0	PPB	PQL
P-chloroaniline	10.0	200.0	PPB	PQL
P-dimethylaminoazobenzene	10.0	100.0	PPB	PQL
P-nitroaniline	10.0	500.0	PPB	PQL
Parathion	2.0	2.0	PPB	CFWTL[4]
Pcdd's	.0	.1	PPB	PQL
Pcdf's	.0	.1	PPB	PQL
Pentachlorobenzene	10.0	100.0	PPB	PQL
Pentachloroethane	10.0	11000.0	PPB	CFWTL
Pentachloronitrobenzene	10.0	100.0	PPB	PQL
Pentachlorophenol	50.0	130.0	PPB	CFWTL
Phenacatin	10.0	100.0	PPB	PQL
Phenanthrene	10.0	100.0	PPB	PQL
Phenol	10.0	25600.0	PPB	CFWTL
Phenylenediamine	10.0	100.0	PPB	PQL
Phorate	2.0	20.0	PPB	PQL
Phthalic acid esters	10.0	30.0	PPB	CFWTL
Plutonium-238	.1	16.0	pCi/L	DCG
Plutonium-239,40	.1	12.0	pCi/L	DCG
Pronamide	10.0	100.0	PPB	PQL
Propionitrile	5.0	50.0	PPB	PQL
Pyrene	10.0	100.0	PPB	PQL
Pyridine	500.0	500.0	PPB	PQL
Radium	1.0	50.0	pCi/L	MCL
Ruthenium-103	20.0	2000.0	PPB	MCL
Ruthenium-106	172.5	300.0	pCi/L	MCL
Safrol	10.0	100.0	PPB	PQL
Selenium	5.0	100.0	PPB	MCL
Silver, filtered	10.0	10.0	PPB	CFWTL[4]
Strontium-89	5.0	200.0	pCi/L	MCL
Strontium-90	5.0	80.0	pCi/L	MCL
Styrene	5.0	10.0	PPB	PQL
Sulfate	500.0	2500000.0	PPB	MCL
Sym-trinitrobenzene	10.0	100.0	PPB	PQL

Table E-1. Purgewater Collection Criteria.
(sheet 6 of 6)

Constituent	Detn. Limit	Collection Criteria	Units	Basis[1]
Technetium-99	15.0	9000.0	pCi/L	MCL
Tetrachloroethylene	5.0	8400.0	PPB	CFWTL
Tetraethylpyrophosphate	2.0	100.0	PPB	PQL
Thallium	5.0	400.0	PPB	CFWTL
Tin, filtered	30.0	80000.0	PPB	PQL
Toluene	5.0	20.0	PPB	PQL
Toxaphene	1.0	1.0	PPB	CFWTL[4]
Trans-1,2-dichloroethylene	5.0	10.0	PPB	PQL
Trichloroethylene	5.0	50.0	PPB	MCL
Trichloromonofluoromethane	10.0	50.0	PPB	
PQLUranium	.5	400.0	pCi/L	DCG
Uranium, chemical	.7	590.0	UG/L	DCG
Vanadium, filtered	5.0	400.0	PPB	PQL
Vinyl Acetate	5.0	50.0	PPB	PQL
Vinyl chloride	10.0	20.0	PPB	MCL
Xylene-m	5.0	50.0	PPB	PQL
Xylene-a,o	5.0	50.0	PPB	PQL
Zinc, filtered	5.0	1100.0	PPB	CFWTL
m-Nitroaniline	10.0	500.0	PPB	PQL
o-Nitroaniline	10.0	500.0	PPB	PQL
p-Dichlorobenzene	10.0	500.0	PPB	PQL
p-Nitrophenol	10.0	1500.0	PPB	CFWTL

[1]The bases for collection of criteria are as follows:

MCL - 10% the Maximum Contaminant Level as defined in 40 CFR 141, 40 CFR 143, and EPA 570/9-76-003

PQL - 10% the Practical Quantitation Limit as listed in Appendix IX of 40 CFR 264

CFWTL - 10% the Chronic Freshwater Toxicity Level as defined in EPA 440/5-86-001

DCG - 10% one-twenty-fifth of the Derived Concentration Guide as listed in DOE Order 5400.5

[2]Parts per billion.

[3]Based on 10% MCL for 1,1,1-trichloromethane.

[4]Criteria are below current detection limit so detection limit is used as criterion.

[5]All chromium is assumed to be hexavalent.

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