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DOE/RL-98-47  
Draft B

# Environmental Restoration Disposal Facility Leachate Delisting Petition



United States  
Department of Energy

For External Review

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# **Environmental Restoration Disposal Facility Leachate Delisting Petition**

Date Published  
October 1998



**United States Department of Energy**

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P.O. Box 550, Richland, Washington 99352

**For External Review**

## EXECUTIVE SUMMARY

The Environmental Restoration Disposal Facility (ERDF) is a *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*-regulated facility located on the Hanford Site. ERDF accepts contaminated soils and debris from Hanford National Priorities List sites. The facility generates leachate from the infiltration of precipitation through the wastes placed in ERDF. Because some *Resource Conservation and Recovery Act of 1976* (RCRA)-regulated listed wastes have been placed in ERDF, the leachate is a listed waste, and subject to RCRA management. Delisting the leachate under the scenario presented in this petition would be protective of human health and the environment and will allow it to be managed under a less stringent (and less costly) program.

Limited sampling of the leachate conducted to date indicates that constituent concentrations do not exceed delisting levels. The sampling that has been performed, however, does not encompass all of the constituents of concern, was not subject to a full data validation protocol, and represents only a limited period of leachate generation. The proposed delisting, therefore, will be an upfront process to be based on the satisfactory results of the initial round of sampling. Delisting status will be conditional, based on the results of an ongoing sampling program and management of the leachate as described in this petition.

The sampling program described in this petition includes a baseline characterization of the leachate against delisting levels. An initial leachate sample will be analyzed to establish the baseline leachate quality and to determine whether the leachate is suitable for delisting. A semi-annual sampling program will monitor constituents that are within a defined percentage of the delisting level. Samples will be collected every 2 years to evaluate the full suite of constituents of concern.



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## ACRONYMS AND ABBREVIATIONS

BHI	Bechtel Hanford, Inc.
CAS#	chemical abstract service number
CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>
CFR	<i>Code of Federal Regulations</i>
CML	Composite Model for Landfills
CMTP	Composite Model for Leachate Migration with Transformation Products
COC	contaminant of concern
COPC	contaminant of potential concern
D&D	decontamination and decommissioning
DAF	dilution/attenuation factor
DOE	U.S. Department of Energy
DQA	data quality assessment
DQO	data quality objective
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
EQL	estimated quantitation limit
ERC	Environmental Restoration Contractor
ERDF	Environmental Restoration Disposal Facility
ESD	Explanation of Significant Difference
ETF	Effluent Treatment Facility
HEIS	Hanford Environmental Information System
IATA	International Air Transport Association
LERF	Liquid Effluent Retention Facility
LWPF	Liquid Waste Processing Facility
MDL	method detection limit
NOS	not otherwise specified
NPL	National Priorities List
OU	operable unit
PCB	polychlorinated biphenyl
PQL	practical quantitation limit
QA	quality assurance
QC	quality control
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
ROD	Record of Decision
SAF	sample authorization form
SAP	Sampling and Analysis Plan
STR	Site Technical Representative
SVOA	semivolatile organic analyte
TDS	total dissolved solids
Tri-Party Agreement	<i>Hanford Federal Facility Agreement and Consent Order</i>
TSS	total suspended solids
VOA	volatile organic analyte

**ACRONYMS AND ABBREVIATIONS (Cont.)**

WAC	<i>Washington Administrative Code</i>
WAC	waste acceptance criteria



## 1.0 ADMINISTRATIVE INFORMATION

### 1.1 NAME OF PETITIONER

U.S. Department of Energy,  
Richland Operations Office

### 1.2 CONTACTS

For additional information, contact:

<b>Name</b>	<b>Title</b>	<b>Telephone Number</b>
Owen C. Robertson	Senior Project Manager Environmental Restoration Projects Division	(509) 373-6295

Mailing Address for Contact:

U.S. Department of Energy  
Richland Operations Office  
P.O. Box 550  
MSIN H0-12  
Richland, Washington 99352

### 1.3 FACILITY NAME AND LOCATION

Environmental Restoration Disposal Facility  
200 Area  
Hanford Site, Richland, Washington

### 1.4 DESCRIPTION OF PROPOSED DELISTING ACTION

On January 20, 1995, the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), and the Washington State Department of Ecology (Ecology) signed the Environmental Restoration Disposal Facility (ERDF) Record of Decision (ROD) (EPA 1995) to provide waste disposal capacity for remediation waste from contaminated areas at the Hanford Site. The ERDF ROD provides the overall plan to construct the facility and dispose of remediation waste. The facility design includes two adjacent disposal cells for placement of wastes and incorporates a *Resource Conservation and Recovery Act of 1976* (RCRA) liner system that meets minimum technology requirements to collect any leachate generated.

An Explanation of Significant Difference (ESD) (EPA et al. 1996) to the ERDF ROD was issued on July 26, 1996, which authorized the conditional use of the leachate for dust suppression and waste compaction through a waiver provision until the leachate is delisted. The ERDF ESD identified the intention to delist the leachate from regulation as a hazardous waste. The waiver was proposed as an alternative until sufficient data became available to support a determination that the liquid is, in fact, a nonhazardous waste. The leachate is considered a listed hazardous waste because a small volume of soil presumed to have contacted carbon tetrachloride (F001 listed) at very low concentrations was disposed to ERDF. Other listed hazardous constituents could be disposed to ERDF in the future, causing the leachate to be listed as F039. The leachate also is designated as a state-only dangerous waste, F003, for the presence of methanol. The purpose of this petition is to delist both the federal listed and state-only listed constituents of the leachate.

Leachate from the ERDF currently is transported to the Liquid Waste Processing Facility (LWPF) in the 200 East Area of the Hanford Site for treatment and disposal. The Effluent Treatment Facility (ETF), a permitted waste treatment and disposal facility, along with the Liquid Effluent Retention Facility (LERF) are the primary facilities that comprise the LWPF. Wastewaters are stored in basins at the LERF prior to treatment in the ETF to eliminate hazardous and radioactive constituents. Treated wastewaters from the ETF are disposed to the ground. Effluent from the ETF has been the subject of a previous delisting petition approved by the EPA in 1995 (60 FR 6054).

Existing leachate characterization data indicate that, in general, constituent concentrations are below docket values and delisting levels. These data cannot be used to support delisting, however, because the data that have been gathered to date were not subject to full validation and did not evaluate all of the constituents of concern. This petition, therefore, will be an upfront and conditional petition, premised on the DOE providing data to the EPA that supports the delisting. Ongoing exclusion from management as a hazardous waste will be conditioned on the leachate meeting the limits established in this petition, as demonstrated through a verification sampling program, and continued management of the leachate as described in this petition.

In order to delist the leachate, it must be demonstrated that the concentrations of hazardous contaminants found in the leachate are protective of human health and the environment if the leachate were not managed under the hazardous waste rules. The demonstration will include comparison of leachate sample results with delisting levels. Delisting levels in general are based on EPA risk-based docket values; docket values and delisting levels for this petition are presented in Table 1-1. Table 1-1 lists all of the identified constituents of concern (COCs) for the leachate; some of these constituents do not have an established docket value. If a constituent without a docket value is detected in a leachate sample, the DOE will determine with the EPA an approach for establishing a delisting level. Table 1-1 also lists the maximum detected results for those COCs that have been analyzed for in the leachate; if more than one sample showed the presence of a constituent, the highest value is reported. Leachate analysis to date has been conducted primarily to characterize water quality for shipment to ETF; therefore, data do not exist for all delisting COCs.

**Table 1-1. Environmental Restoration Disposal Facility  
Leachate Delisting Levels. (5 Sheets)**

CAS#	Constituent	Docket Value *	Delisting Level *	Maximum Concentration Detected in Leachate *
100-02-7	4-Nitrophenol	TBD		ND
100-41-4	Ethyl benzene	70000	1680000	ND
100-42-5	Styrene	100	2400	ND
100-51-6	Benzyl alcohol	10000	240000	NA
101-55-3	4-Bromophenylphenyl ether	TBD		ND
1024-57-3	Heptachlor epoxide	0.2	4.8	NA
105-67-9	2,4-Dimethylphenol	700	16800	ND
106-46-7	1,4-Dichlorobenzene	4	96	ND
106-50-3	p-Phenylenediamine	7000	168000	NA
106-93-4	Ethylene dibromide	0.05	1.2	NA
106-99-0	1,3-Butadiene	TBD		NA
107-02-8	Acrolein	700	16800	NA
107-05-1	3-Chloropropene	4	96	NA
107-06-2	1,2-Dichloroethane	5	120	ND
107-13-1	Acrylonitrile	0.2	4.8	NA
108-05-4	Acetic acid vinyl ester	40000	960000	NA
108-10-1	4-Methyl-2-pentanone	2000	48000	ND
108-60-1	Bis(2-Chloroisopropyl) ether	1	24	ND
108-88-3	Toluene	1000	24000	2 J
108-90-7	Chlorobenzene	100	2400	ND
108-95-2	Phenol	20000	480000	ND
109-99-9	Tetrahydrofuran (THF - furan indicator)	TBD		NA
110-75-8	2-Chloroethyl vinyl ether	TBD		NA
110-86-1	Pyridine	40	960	NA
111-44-4	Bis(2-chloroethyl) ether	0.08	1.92	ND
111-91-1	Bis(2-Chloroethoxy)methane	TBD		ND
117-81-7	Bis(2-ethylhexyl) phthalate	6	144	14
117-84-0	Di-n-octylphthalate	700	16800	ND
120-12-7	Anthracene	10000	240000	ND
120-82-1	1,2,4-Trichlorobenzene	70	1680	ND
120-83-2	2,4-Dichlorophenol	100	2400	ND
122-39-4	N,N-Diphenylamine	900	21600	NA
122-66-7	1,2-Diphenylhydrazine	0.1	2.4	NA
123-91-1	1,4-Dioxane	8	192	NA
124-48-1	Dibromochloromethane	1	24	ND
126-68-1	O,O,O-Triethyl phosphorothioate	TBD		NA
126-98-7	2-Methyl-2-propenenitrile	4	96	NA
127-18-4	1,1,2,2-Tetrachloroethene	5	120	ND
129-00-0	Pyrene	1000	24000	TIC

**Table 1-1. Environmental Restoration Disposal Facility  
Leachate Delisting Levels. (5 Sheets)**

CAS#	Constituent	Docket Value *	Delisting Level *	Maximum Concentration Detected in Leachate *
131-11-3	Dimethyl phthalate	400000	9600000	ND
131-89-5	2-Cyclohexyl-4,6-dinitrophenol	TBD		NA
1319-77-3	Cresols, total	2000	48000	ND
1330-20-7	Xylene	10000	240000	ND
1336-36-3	Polychlorinated biphenyls (PCBs)	0.5	12	NA
134-32-7	alpha-Naphthylamine	TBD		NA
141-78-6	Acetic acid ethyl ester	30000	720000	NA
14265-44-2	Phosphate	TBD		840
14797-55-8	Nitrate	TBD		19300
14797-65-0	Nitrite	TBD		ND
14808-79-8	Sulfate	TBD		534000
156-59-2	1,2-cis-Dichloroethene	400	9600	NA
156-60-5	1,2-trans-Dichloroethene	700	16800	NA
1634-02-2	Tetrabutylthiuram disulfide	TBD		NA
16887-00-6	Chloride	TBD		443000
16984-48-8	Fluoride	4000	96000	1180
193-39-5	Indeno(1,2,3-cd)pyrene	0.21	5.04	ND
205-99-2	Benzo(b)fluoranthene	0.071	1.704	ND
206-44-0	Fluoranthene	1000	24000	TIC
207-08-9	Benzo(k)fluoranthene	25.2	604.8	ND
218-01-9	Chrysene	2.7	64.8	ND
22781-23-3	Bendiocarb	TBD		ND
24959-67-9	Bromide	TBD		NA
26545-73-3	Dichloropropanol	TBD		NA
309-00-2	Aldrin	0.005	0.12	ND
319-84-6	alpha-BHC	0.01	0.24	NA
319-85-7	beta-BHC	0.05	1.2	NA
50-00-0	Formaldehyde	7000	168000	NA
50-29-3	4,4-DDT	0.3	7.2	ND
50-32-8	Benzo(a)pyrene	0.2	4.8	ND
51-28-5	2,4-Dinitrophenol	70	1680	ND
53-70-3	Dibenz[a,h]anthracene	0.011	0.264	ND
541-73-1	1,3-Dichlorobenzene	1,890	45360	ND
542-75-6	1,3-Dichloropropene	0.5	12	NA
56-23-5	Carbon tetrachloride	5	120	ND
56-55-3	Benzo(a)anthracene	0.077	1.848	ND
57-12-5	Cyanide	200	4800	NA
57-97-6	7,12-Dimethylbenz[a]anthracene	TBD		NA
58-89-9	gamma-BHC (lindane)	0.2	4.8	ND

**Table 1-1. Environmental Restoration Disposal Facility  
Leachate Delisting Levels. (5 Sheets)**

CAS#	Constituent	Docket Value *	Delisting Level *	Maximum Concentration Detected in Leachate *
59-50-7	4-Chloro-3-methylphenol	1260	30240	ND
59-89-2	N-Nitrosomorpholine	TBD		NA
591-08-2	1-Acetyl-2-thiourea	TBD		NA
60-29-7	Ethyl ether	7000	168000	NA
60-57-1	Dieldrin	0.005	0.12	ND
62-50-0	Ethyl methanesulfonate	0.0003	0.0072	NA
62-53-3	Aniline	10	240	NA
62-75-9	N-Nitroso-N,N-dimethylamine	0.002	0.048	NA
621-64-7	N-Nitroso-di-n-propylamine	0.01	0.24	ND
67-56-1	Methyl alcohol	20000	480000	NA
67-64-1	2-Propanone (acetone)	4000	96000	17 J
67-66-3	Chloroform	100	2400	ND
67-72-1	Hexachloroethane	6	144	ND
70-30-4	Hexachlorophene	10	240	NA
71-36-3	n-Butyl alcohol	4000	96000	NA
71-43-2	Benzene	5	120	ND
71-55-6	1,1,1-Trichloroethane	200	4800	ND
72-20-8	Endrin	2	48	ND
72-54-8	4,4-DDD	0.4	9.6	ND
72-55-9	4,4-DDE	0.3	7.2	ND
74-83-9	Bromomethane	50	1200	ND
74-87-3	Chloromethane	33.7	808.8	ND
7429-90-5	Aluminum	TBD		213
7439-92-1	Lead	15	360	ND
7439-95-4	Magnesium	TBD		65300
7439-96-5	Manganese	TBD		17.7
7439-97-6	Mercury	2	48	0.16 J
7440-02-0	Nickel	100	2400	10.2 J
7440-09-7	Potassium	TBD		17000
7440-21-3	Silicon	TBD		NA
7440-22-4	Silver	200	4800	ND
7440-23-5	Sodium	TBD		249000
7440-28-0	Thallium	2	48	ND
7440-31-5	Tin, metal	21000	504000	NA
7440-36-0	Antimony	6	144	ND
7440-38-2	Arsenic	50	1200	32.6
7440-39-3	Barium	2000	48000	63.3 J
7440-41-7	Beryllium	4	96	0.77 J
7440-43-9	Cadmium	5	120	ND

**Table 1-1. Environmental Restoration Disposal Facility  
Leachate Delisting Levels. (5 Sheets)**

CAS#	Constituent	Docket Value *	Delisting Level *	Maximum Concentration Detected in Leachate *
7440-47-3	Chromium	100	2400	13.9
7440-48-4	Cobalt	2100	50400	ND
7440-50-8	Copper	1300	31200	6.4 J
7440-62-2	Vanadium	300	7200	52.9
7440-66-6	Zinc	10000	240000	49.7
7440-70-2	Calcium	TBD		227000
75-00-3	Chloroethane	TBD		ND
75-01-4	1-Chloroethene (vinyl chloride)	2	48	ND
75-05-8	Acetonitrile	200	4800	NA
75-09-2	Dichloromethane (methylene chloride)	5	120	ND
75-15-0	Carbon disulfide	4000	96000	ND
75-25-2	Tribromomethane	100	2400	ND
75-27-4	Bromodichloromethane	1.4	33.6	ND
75-34-3	1,1-Dichloroethane	0.9	21.6	ND
75-35-4	1,1-Dichloroethene	7	168	ND
75-69-4	Trichlorofluoromethane	10000	240000	NA
75-70-7	Trichloromethanethiol	TBD		NA
75-71-8	Dichlorodifluoromethane	7000	168000	NA
76-13-1	1,2,2-Trichlorotrifluoroethane (Freon 113)	1000000	24000000	NA
76-44-8	Heptachlor	0.1	2.4	ND
7664-41-7	Ammonia	TBD		285
7782-49-2	Selenium	50	1200	3.1 J
78-59-1	Isophorone	90	2160	ND
78-83-1	2-Methylpropyl alcohol	10000	240000	NA
78-87-5	1,2-Dichloropropane	5	120	ND
78-93-3	2-Butanone (MEK)	20000	480000	ND
79-00-5	1,1,2-Trichloroethane	5	120	ND
79-01-6	1,1,2-Trichloroethylene	8	192	ND
79-34-5	1,1,2,2-Tetrachloroethane	0.4	9.6	ND
8001-35-2	Toxaphene	3	72	ND
83-32-9	Acenaphthene	2000	48000	ND
84-66-2	Diethyl phthalate	30000	720000	ND
84-74-2	Di-n-butylphthalate	4000	96000	TIC
85-68-7	Butylbenzylphthalate	7000	168000	9 J
86-30-6	N-Nitrosodiphenylamine	20	480	ND
86-73-7	Fluorene	1000	24000	ND
87-68-3	Hexachlorobutadiene	1	24	ND
87-86-5	Pentachlorophenol	0.7	16.8	ND
88-06-2	2,4,6-Trichlorophenol	8	192	ND

**Table 1-1. Environmental Restoration Disposal Facility  
Leachate Delisting Levels. (5 Sheets)**

CAS#	Constituent	Docket Value *	Delisting Level *	Maximum Concentration Detected in Leachate *
91-20-3	Naphthalene	1000	24000	TIC
91-58-7	2-Chloronaphthalene	3000	72000	ND
91-59-8	2-Naphthylamine	0.1	2.4	NA
94-75-7	2,4-D	70	1680	ND
95-50-1	1,2-Dichlorobenzene	600	14400	ND
95-57-8	2-Chlorophenol	200	4800	ND
95-70-5	2,5-Diaminotoluene	96000	2304000	NA
95-95-4	2,4,5-Trichlorophenol	4000	96000	ND
98-82-8	(1-Methylethyl)benzene	1000	24000	NA
98-86-2	Acetophenone	4000	96000	NA
98-95-3	Nitrobenzene	20	480	ND
99-65-0	1,3-Dinitrobenzene	4	96	NA

\*All results in µg/L except where noted.

CAS# = chemical abstract services number  
 J = estimated value  
 NA = not analyzed  
 ND = not detected  
 TBD = to be determined  
 TIC = tentatively identified compound

In general, the proposed delisting level for a particular constituent contained in the ERDF leachate will be set at the lower of (1) the characteristic dangerous waste levels found in the *Washington Administrative Code* (WAC) Section 173-303, for determining the characteristic aspects of the waste, or (2) constituent concentrations provided in the EPA delisting docket (supplied to the DOE by Region 10 EPA) multiplied by 24. With the exception of four compounds, the delisting docket values were provided by EPA Region 10 staff and represent health-based values for these specific constituents. These four compounds were from sources as flagged in Table 1-1. The "24 times" factor represents a dilution/attenuation factor (DAF) developed according to the procedures set forth in the Composite Model for Landfills (EPACML), found in 56 FR 33000, July 18, 1991. This DAF is based on management in an unlined surface impoundment, the worst-case management scenario for the leachate. If detected concentrations exceed the docket value for a particular constituent, these results will be reported to EPA for a determination as to the appropriate response action. The delisting levels establish values for constituents below which the leachate would be considered to be protective of human health and the environment. Leachate that meets these delisting levels will continue to be sent to the LWPF in the 200 East Area of the Hanford Site. A limited volume of the leachate may be

recycled in the trench for waste compaction or dust suppression provided the leachate meets delisting levels.

If a constituent in the leachate exceeds the delisting levels, and there is no justifiable basis for adjusting the limit for that constituent as discussed in Section 3.2.3, the DOE/Environmental Restoration Contractor (ERC) will establish the appropriate management procedures for the leachate under RCRA after consultation with the EPA.

The delisting process that is described in this petition is based on the regulations established by the EPA as set out in Title 40, *Code of Federal Regulations* (CFR), Section 260.22. These requirements are reflected in the provisions of the State of Washington requirements for exempting and excluding wastes found in WAC 173-303-072. The federal delisting process described in 40 CFR is substantially equivalent to the Washington State requirements for a petition, codified at WAC 173-303-910. It is the intention of DOE to delist both the federally and state-only regulated constituents in the leachate. The EPA is the lead agency for the ERDF project. Ecology will review and comment on this petition and has indicated support for the delisting of the ERDF leachate. BHI and its team are the ERC for the DOE at the Hanford Site.

## 1.5 STATEMENT OF NEED/JUSTIFICATION

Sampling and analyses of the leachate performed to date indicate that constituent concentrations are below any listed or characteristic values for hazardous waste. Nonetheless, leachate must currently be managed as a regulated waste due to prescribed regulatory requirements. These requirements impose physical and administrative limitations on the storage, handling, treatment, and disposal of the liquid. Before shipment to the LWPF for treatment and disposal, leachate is currently stored in two aboveground "modu-tanks." The modu-tanks consist of double plastic liners supported by circular steel frames, adjacent to the ERDF. These units are subject to occasional leakage from the primary containment into the secondary liners. This leakage does not conform to the "zero-leakage" standard for hazardous waste storage tanks; leakage rates are more similar to those encountered in hazardous waste surface impoundments.

Because the leachate currently is classified as a regulated, listed waste under RCRA, it is required to be managed as a hazardous waste. Based on the analytical data that have been generated to date, the EPA has authorized a limited waiver for some uses of the leachate within the ERDF (e.g., dust control, waste compaction). Leachate that is transported to ETF for treatment, however, must meet transportation requirements for regulated hazardous waste. The proposed delisting levels would provide protection of human health and the environment under any reasonable management scenario. The leachate will continue to be managed in a protective manner; leachate will continue to be conveyed to the ETF for treatment and disposal. Delisting will allow a more reasonable and cost-effective strategy to be used by the DOE in managing the leachate.

The current cost of shipping waste to LWPF has averaged approximately \$100,000 annually; this amount is expected to reflect a high end for transportation, based on leachate generation rates experienced to date. Construction of a pipeline to allow direct transfer to the LWPF will cost approximately \$100,000—the same amount as 1 year of shipping. Direct transfer as a non-RCRA waste will result in additional cost savings due to the reduced paperwork requirements for this transfer. Delisting will allow a more flexible and cost-effective management of leachate without posing a threat to human health or the environment. After delisting, the waste will be managed under an approved management plan. Leachate will continue to be transferred to the ETF, a permitted waste treatment facility, for treatment and disposal via pipeline. This transfer can be accomplished through a less onerous process with less likelihood of spills or accident, as compared to the current method of transportation.

The EPA docket provides constituent concentrations to calculate delisting levels. Based on EPA guidance, found in 56 FR 33000, DOE developed a 24 times DAF for the leachate as it moves through a subsurface environment, based on a surface impoundment scenario, as provided in the model developed by the EPA. This 24 times factor will be applied to the docket values to derive a delisting level for COC. Limited analyses of the leachate, which represent only 18 months of operational history for the ERDF, indicate that constituent concentrations in the leachate are substantially lower than the 24 times values. These data, although limited in their coverage and not subject to validation, suggest that it is appropriate for the DOE to proceed with the submission of this petition to delist the leachate from the ERDF.

The ERDF is managed by the ERC for the DOE under the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA). When alternative remedial actions are considered for a CERCLA site, the alternatives generally are evaluated against nine criteria, found at 40 CFR 300, 430 (e)(a)(iii). Although alternatives to delisting are not being formally evaluated as a part of the petition, a comparison of the proposed action against these criteria provides a favorable perspective on the proposal. For example, delisting and the associated management of the leachate will ensure protection of human health and the environment; leachate will continue to be treated at ETF, further reducing any concerns associated with water quality; and cost savings will be achieved by delisting through the elimination of hazardous waste handling requirements. Ecology concurs with the proposed delisting action.

**1.6 CERTIFICATION STATEMENT**

I certify under penalty of law that I personally examined and am familiar with the information submitted in this petition and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

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Petitioner

John D. Wagoner, Manager  
U.S. Department of Energy,  
Richland Operations Office

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Date

## 2.0 WASTE AND LEACHATE MANAGEMENT HISTORY

The ERDF began operation on July 1, 1996. The design of ERDF is a single, 21-m- (70-ft-) deep trench consisting of two side-by-side cells, with final dimensions of 439 m (1,420 ft) long by 219 m (720 ft) wide at the top of the trench and 305 m (1,000 ft) long by 152 m (500 ft) wide at the bottom. The facility is equipped with a RCRA double-liner and leachate collection and recovery system. The same RCRA design selected for the existing ERDF disposal cells will be used for the Phase II expansion, which is scheduled to be completed in mid-1999. Phase II involves the construction of two additional cells adjacent to the existing cells. All four cells will be connected to the same leachate collection and storage system. The leachate recovery system consists of a sump in each disposal cell, a pump to recover the leachate, and two aboveground leachate storage units (modu-tanks) to collect the leachate before use or treatment (Figure 2-1). The storage units each consist of free-standing steel walls with two flexible-membrane liners and a floating cover. Each unit has a storage capacity of approximately 757,000 L (200,000 gal). The amount of leachate generated from the operation of the two disposal cells is approximately 7,570,800 L (2 million gal) in the first 2 years of operation.

As of June 30, 1998, approximately 1 million tons (570,000 yd<sup>3</sup>) of waste from remedial action sites at Hanford have been placed in the two disposal cells currently authorized to receive waste. The majority of waste is in the form of contaminated soil with some contaminated demolition and debris material. Nearly all of the waste is contaminated with low-level radioactivity and only minor amounts of hazardous substances. Approximately 740.2 tons (422.9 yd<sup>3</sup>) of F001 listed waste were part of the total soil and debris disposed; this translates to approximately 0.07% of the total waste volume. This section describes the operational history of ERDF to date, as well as the current management and characterization practices for the leachate.

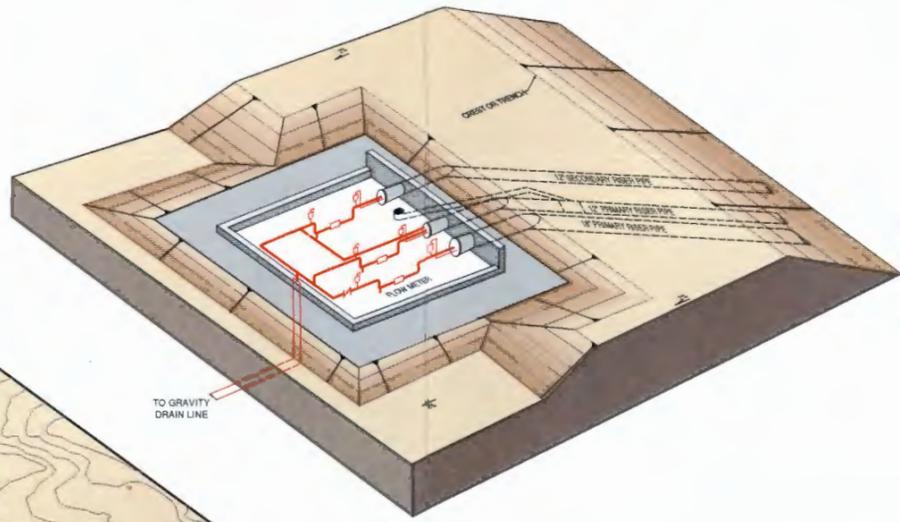
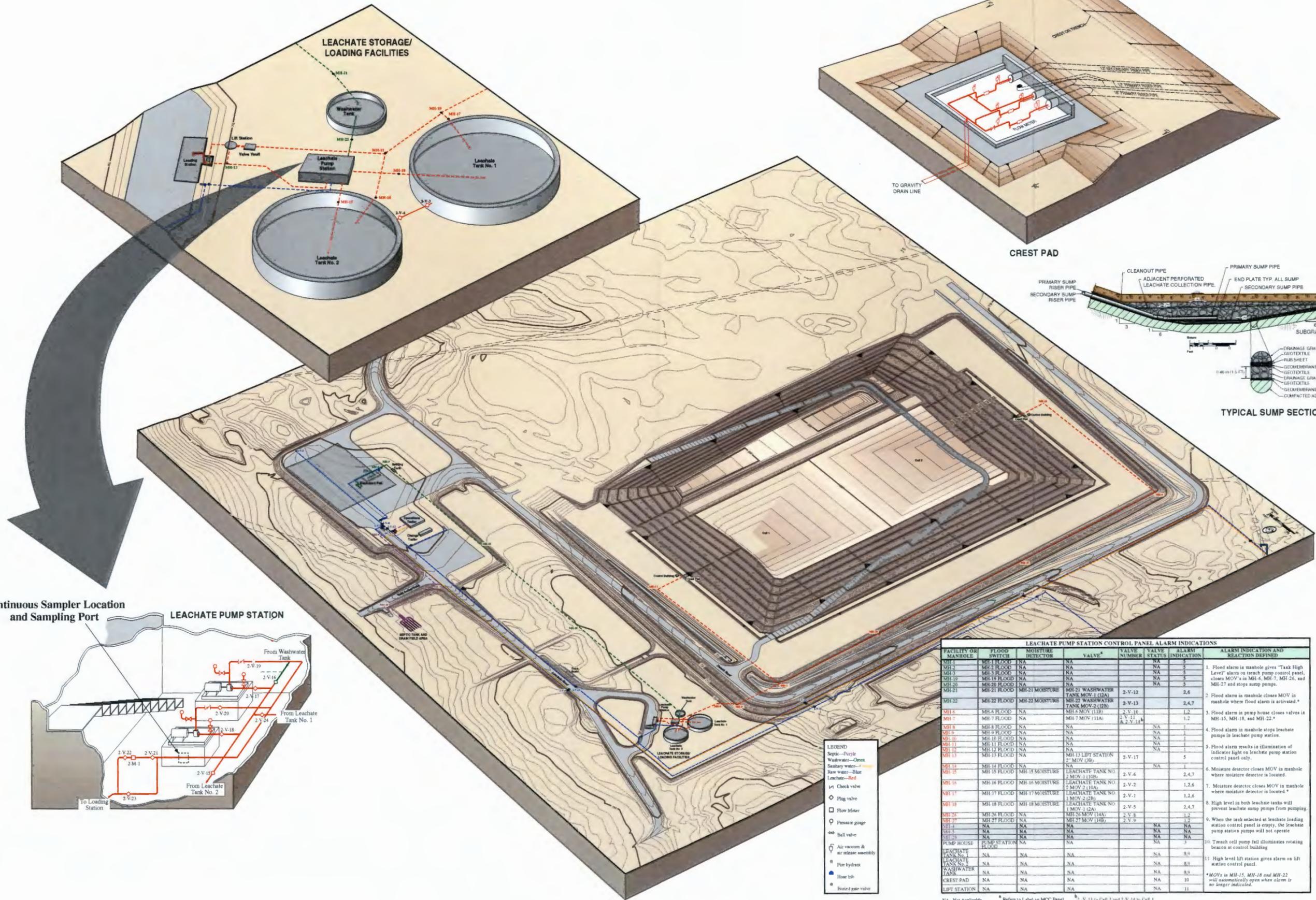
### 2.1 WASTE DISPOSAL AND LEACHATE GENERATION IN THE ENVIRONMENTAL RESTORATION DISPOSAL FACILITY

Three National Priorities List (NPL) sites are currently designated at the Hanford Site: the 100 Area, 200 Areas, and 300 Area. Full-scale remediation at the Hanford 100 Area site commenced under the Environmental Restoration program in July 1996. Remediation on the 100 Area NPL waste units currently accounts for 65% to 70% of the waste disposed in ERDF. The 300 Area remediation began in July 1997 and currently accounts for approximately 30% of the waste disposed in ERDF. Demolition debris generated by the decontamination and decommissioning (D&D) program accounts for less than 1% of the total ERDF waste stream. Minor amounts of waste originate from the 200 Area NPL site, primarily from site investigations.

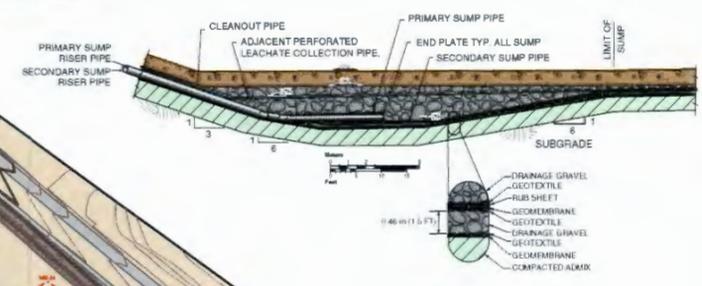


**Figure 2-1. Environmental Restoration Disposal Facility  
Leachate Recovery System.**

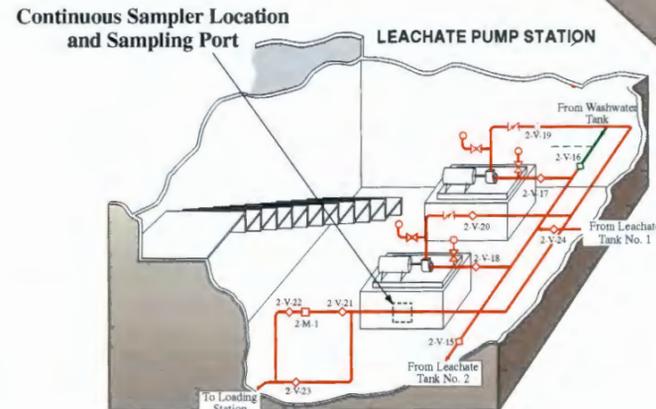




CREST PAD



TYPICAL SUMP SECTION



LEACHATE PUMP STATION CONTROL PANEL ALARM INDICATIONS						
FACILITY OR MANHOLE	SWITCH	MOISTURE DETECTOR	VALVE*	VALVE NUMBER	VALVE STATUS	ALARM INDICATION AND REACTION DEFINED
MH-1	MH-1 FLOOD	NA	NA	NA	NA	3
MH-2	MH-2 FLOOD	NA	NA	NA	NA	5
MH-3	MH-3 FLOOD	NA	NA	NA	NA	5
MH-19	MH-19 FLOOD	NA	NA	NA	NA	5
MH-20	MH-20 FLOOD	NA	NA	NA	NA	5
MH-21	MH-21 FLOOD	MH-21 MOISTURE	MH-21 WASHWATER TANK MOV-1 (12A)	2-V-12	NA	2.6
MH-22	MH-22 FLOOD	MH-22 MOISTURE	MH-22 WASHWATER TANK MOV-2 (12B)	2-V-13	NA	2.6, 7
MH-6	MH-6 FLOOD	NA	MH-7 MOV (11B)	2-V-10	NA	1.2
MH-7	MH-7 FLOOD	NA	MH-7 MOV (11A)	2-V-11	NA	1.2
MH-8	MH-8 FLOOD	NA	NA	NA	NA	1
MH-9	MH-9 FLOOD	NA	NA	NA	NA	1
MH-10	MH-10 FLOOD	NA	NA	NA	NA	1
MH-11	MH-11 FLOOD	NA	NA	NA	NA	1
MH-12	MH-12 FLOOD	NA	NA	NA	NA	1
MH-13	MH-13 FLOOD	NA	MH-13 LIPT STATION 2' MOV (1B)	2-V-17	NA	5
MH-14	MH-14 FLOOD	NA	NA	NA	NA	1
MH-15	MH-15 FLOOD	MH-15 MOISTURE	LEACHATE TANK NO. 2 MOV-1 (10B)	2-V-6	NA	2.4, 7
MH-16	MH-16 FLOOD	MH-16 MOISTURE	LEACHATE TANK NO. 2 MOV-2 (10A)	2-V-2	NA	1.2, 6
MH-17	MH-17 FLOOD	MH-17 MOISTURE	LEACHATE TANK NO. 1 MOV-1 (2A)	2-V-1	NA	1.2, 6
MH-18	MH-18 FLOOD	MH-18 MOISTURE	LEACHATE TANK NO. 1 MOV-2 (2B)	2-V-5	NA	2.4, 7
MH-24	MH-24 FLOOD	NA	MH-24 MOV (14A)	2-V-8	NA	1.2
MH-25	MH-25 FLOOD	NA	MH-25 MOV (14B)	2-V-9	NA	1.2
MH-2	NA	NA	NA	NA	NA	NA
MH-3	NA	NA	NA	NA	NA	NA
MH-28	NA	NA	NA	NA	NA	NA
PUMP HOUSE	PUMP STATION	NA	NA	NA	NA	3
LEACHATE TANK No. 1	NA	NA	NA	NA	NA	8.0
LEACHATE TANK No. 2	NA	NA	NA	NA	NA	8.0
WASHWATER TANK	NA	NA	NA	NA	NA	8.0
CREST PAD	NA	NA	NA	NA	NA	10
LIPT STATION	NA	NA	NA	NA	NA	11

- LEGEND
- Septic—Purple
  - Wastewater—Green
  - Sanitary water—Blue
  - Raw water—Blue
  - Leachate—Red
  - Check valve
  - Plug valve
  - Flow Meter
  - Pressure gauge
  - Ball valve
  - Air vacuum & air release assembly
  - Fire hydrant
  - House bib
  - Isolated gate valve

NA - Not Applicable    \* Refers to Label on MCC Panel    2-V-11 to Cell 2 and 2-V-14 to Cell 1

1. Flood alarm in manhole gives "Tank High Level" alarm on trash pump control panel, closes MOV's in MH-6, MH-7, MH-26, and MH-27 and stops sump pumps.
  2. Flood alarm in manhole closes MOV in manhole where flood alarm is activated.\*
  3. Flood alarm in pump house closes valves in MH-15, MH-18, and MH-22.\*
  4. Flood alarm in manhole stops leachate pumps in leachate pump station.
  5. Flood alarm results in illumination of indicator light on leachate pump station control panel only.
  6. Moisture detector closes MOV in manhole where moisture detector is located.
  7. Moisture detector closes MOV in manhole where moisture detector is located.\*
  8. High level in both leachate tanks will prevent leachate sump pumps from pumping.
  9. When the tank selected at leachate loading station control panel is empty, the leachate pump station pumps will not operate.
  10. Trash cell pump fail illuminates rotating beacon at control building.
  11. High level lift station gives alarm on lift station control panel.
- \*MOV's in MH-15, MH-18 and MH-22 will automatically open when alarm is no longer indicated.

### 2.1.1 Waste Sources

The ERDF is authorized to accept waste originating from environmental restoration on the Hanford Site. No waste from an ongoing production process or waste originating from off the Hanford Site is accepted for disposal at ERDF. The primary waste stream currently consists of soil from past-practice liquid waste disposal units that are contaminated with low levels of radioactivity.

A ROD was issued in September 1996 for remediation of high-priority liquid waste disposal sites in the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (OUs). The ERDF was designated as the preferred disposal alternative for waste generated from these remedial actions. High-priority liquid waste disposal sites include retention basins, effluent trenches, sludge trenches, cribs, french drains, and effluent pipelines. An amendment to the ROD authorized remediation of 34 additional radioactive liquid waste disposal sites. These sites are the source of a significant percentage of the volume of waste sent to ERDF.

In July 1996, a ROD was signed for the 300-FF-1 and 300-FF-5 OUs. The 300-FF-1 OU contains source waste units related to process ponds and trenches, sewer systems, landfills, and burial grounds. The ROD authorizes ERDF as the preferred disposal alternative for waste generated from the remediation of sites in 300-FF-1. The 300-FF-5 is a groundwater OU that is being monitored and institutionally controlled, and does not currently generate waste.

A number of other RODs and Action Memoranda subsequently have been issued designating ERDF as the preferred disposal alternative. The combined waste load from these remedial actions constitutes a small percentage of the total ERDF waste.

The primary source of ERDF leachate is a result of precipitation infiltrating through the waste after rain or snowmelt. Waste arriving at the facility is mostly contaminated soil that contains a small percentage of moisture as a result of dust control activities at the remediation sites. Additional water may be added at the ERDF disposal point to further control dust. If necessary, water is added to the waste subsequent to disposal to provide for optimal compaction. Only a relatively small portion (10% or less) of the leachate generated is used in the trench for such purposes; this use is authorized under a waiver issued by EPA.

### 2.1.2 Leachate Generation

ERDF generated approximately 14,763,060 L (3.9 million gal) of leachate from opening in July 1996 until July 1998. The facility operated only one of the two currently open cells until August 1997, when the second cell began to accept waste. Since that time leachate has been collected from the two cells instead of one. Prior to placement of waste in cell 2, leachate generated from cell 2 was discharged to the storm sewer. Waste minimization efforts to reduce the amount of leachate generated at ERDF currently include efforts at the remediation sites to minimize water used for dust control on incoming waste, as well as when the waste is placed in the trench at ERDF. Further waste minimization efforts include reuse of leachate in the trench for dust control and waste compaction whenever possible. Other potential ways to reduce leachate sent for treatment is to allow solar evaporation to occur.

During the 6 months of operation in 1996, 13.35 cm (7.62 in.) of rainfall were recorded at the Hanford Site; this amount exceeds the normal annual precipitation value of 16.66 cm (6.56 in.). Higher than normal rainfall also was seen in the first half of 1997, 9.57 cm (3.77 in.) versus 8.53 cm (3.36 in.) of normal precipitation. This amount of precipitation (28.93 cm [11.39 in.] over a 12-month period) resulted in abnormally large volumes of leachate being generated. Leachate generation over the second year of operations decreased by 87% over the first year, although precipitation dropped by only 40%. Factors that contributed to this reduction include lower precipitation, higher evaporation rates, drier soil being placed in the landfill, and more soil placed in ERDF, which results in a higher capacity to retain water.

The characteristics and volume of the leachate are expected to vary somewhat over time, based on the number of cells that are open and actively accepting waste and the volume of waste present in each cell. In general, the leachate is not anticipated to contain regulated concentrations of volatile or semivolatile organic analytes (VOA or SVOA). This assumption is based on the fact that the wastes that are being disposed at ERDF have been generated primarily from sites where the contaminated materials have been residing in the open environment for many years. VOA and SVOA constituents should have degraded over the time periods that are involved with these sites. Other constituents that may be present in the waste materials have been subject to environmental degradation and leaching as a result of natural environmental processes.

Approximately 6,813,720 L (1.8 million gal) of collected leachate has been transported to date for treatment at the ETF; the balance was used for dust control, waste compaction, or was lost to evaporation. ERDF's projected maximum annual leachate volume is estimated at 3,785,400 L (1 million gal) per year per cell when a cell is in operation. Once a cell has reached waste capacity, an interim cover will be placed over the cell. A final cover will be placed over the entire facility as part of the closure plan. Leachate generation will be significantly reduced over time once the final cover is in place.

### **2.1.3 Leachate Disposition**

Leachate from cells that have received waste is collected in two aboveground modu-tanks (leachate tanks No. 1 and No. 2) with secondary containment/leak detection (Figure 2-1). Rain water and snowmelt that percolates through soils in open cells that are not yet receiving waste will continue to be discharged to the site stormwater system. A third unit is designated to collect washwater from ERDF decontamination operations, but may be used to collect leachate, if necessary.

The liners of the ERDF waste disposal cells are connected to a drainage sump to capture leachate that percolates through the waste, as well as any leachate that may breach the primary liner system. The modu-tanks collect the leachate before use or treatment. Leachate that is not used for dust control or waste compaction currently is transported by tanker truck to the 200 Area LWPF for treatment. Secondary waste from the treatment process is transported back to ERDF for disposal.

To date, ERDF has collected approximately 7,570,800 L (2 million gal) of leachate from two disposal cells. Approximately 6,813,720 L (1.8 million gal) of this water has been trucked to the 200 Area LWPF for processing, and 757,080 L (0.2 million gal) were retained in the leachate and washwater storage units, used for dust suppression or waste compaction, or lost to evaporation.

## 2.2 SAMPLING AND MONITORING

This section describes the current program for characterizing ERDF waste and leachate from the facility.

### 2.2.1 Waste Characterization

The ERDF waste acceptance criteria (WAC) (BHI 1998) require that all waste disposed at the facility be characterized on the basis of source, physical form, and contaminant concentration levels. Characterization identifies the nature and extent of radioactive and dangerous/hazardous material contamination and describes the physical properties of the waste material. Characterization is based on historical analytical data, process knowledge, field screening, sample collection and analyses, or a combination of these factors.

Radioactive waste constituents must be adequately characterized to permit proper segregation, treatment, storage, and/or disposal. This characterization ensures that the major radionuclide content of the waste is known and recorded during the waste management process. Although radionuclide characterization is a concern for ERDF acceptance, this aspect of the waste is not a consideration for delisting. The sampling strategy discussed in subsequent portions of this document does not include a strategy to characterize radionuclides. Radionuclides will continue to be managed under the authority of other regulatory programs, however, and characterized to support disposal alternatives for leachate. DOE Order 5820.2A, for example, governs the characterization of wastes containing radionuclides. The *Hanford Site Radiological Control Manual* (HSRCM-1 1996) contains procedures to ensure that worker exposure is within acceptable limits, as required under 10 CFR 835. The sampling plan developed to support this petition includes sampling/characterization components to characterize the radionuclides in the leachate. This characterization will be required prior to shipment of leachate to the LWPF.

Waste shipped to ERDF is evaluated to determine if it is dangerous/hazardous and if the waste is prohibited from placement in ERDF due to land disposal restriction status. This determination is made by reference to existing waste characterization data, through waste analysis, or by citation of pertinent approved land disposal restriction waivers or variances. Waste placed in ERDF is also managed to ensure radiological waste acceptance criteria are met.

Based on the characterization information, generators develop waste profiles and a waste designation that must be approved by ERDF management for each waste source (or sufficiently similar group of waste sources). Waste profiles are provided to the ERDF management and operations team prior to shipment of waste to ensure compliance with the ERDF WAC (BHI 1998) and to facilitate planning of waste transportation and disposal actions.

All ERDF users implement a verification program to ensure that waste intended for disposal at the ERDF is within the established waste profile. Verification activities include field observations, process monitoring, sample collection and analyses, or a combination of these processes. Verification activities involving process monitoring or sample collection and analyses are planned and documented. For small waste streams, characterization and verification activities may consist of a single event. If a determination is made through verification activities that the physical nature, constituents, or constituent concentrations are not covered by or exceed those documented in the approved waste profile, the ERDF management and operations team is notified. After a project reevaluation of the assumptions used for waste profiling and characterization, the profile is revised to reflect the new values and submitted for acceptance to the ERDF management and operations team. If the profile does not conform to the ERDF WAC (BHI 1998), alternative treatment, storage, and/or disposal will be required.

### 2.2.2 Leachate Sampling

Leachate is sampled and analyzed before transport to the LWPF. Results of the analyses conducted through December 1997 are summarized in Tables 2-1 through 2-5 along with the relevant docket values. These tables show results only for those compounds that were detected in leachate samples; analysis of leachate encompassed a much wider list of organic and inorganic compounds, as well as additional radionuclides. All sampling results to date are contained in Appendix A (Table A-1) for reference. Data presented for current sample results were validated by comparison to field and laboratory blanks, per EPA Organic and Inorganic Functional Guidelines (EPA 1994). Appendix B includes a description of the data validation process. Tables 2-1 through 2-5 provide the validated analytical results. These results indicate that currently monitored constituents are below the docket values for these compounds. Some of the constituents presented in these tables do not have an associated docket value; results are provided for information only.

**Table 2-1. Summary Statistics For Volatile Organic Compounds  
With At Least One Detected Concentration.**

CAS#	Compound	EQL	Delisting Level	Non-Detects	Detects				
				Count	Count	Min	Max	Mean	SD
67-64-1	2-Propanone (acetone)	20	96,000	10	1	17	17	17	NA
108-88-3	Toluene	5	24,000	10	1	2 J	2 J	2 J	NA

Units =  $\mu\text{g/L}$

CAS# = chemical abstract service number

EQL = estimated quantitation limit

J = estimated concentration, result is below EQL

NA = not applicable

SD = standard deviation

**Table 2-2. Summary Statistics For Semivolatile Organic Compounds  
With At Least One Detected Concentration.**

CAS#	Compound	EQL	Delisting Level	Non-Detects		Detects			
				Count	Count	Min	Max	Mean	SD
117-81-7	Bis(2-ethylhexyl) phthalate <sup>(1)</sup>	10	144	6	5	1	14	5.6	4.93
85-68-7	Butylbenzyl-phthalate	10	168,000	10	1	9 J	9 J	9 J	NA

<sup>(1)</sup>Some results are qualified as shown in Appendix B. Because this summarizes results from many samples with multiple qualifiers (U, J), each qualifier for each result is shown in Appendix B.

Units = µg/L

J = estimated concentration, result is below EQL

CAS# = chemical abstract service number

NA = not applicable

EQL = estimated quantitation limit

SD = standard deviation

**Table 2-3. Summary Statistics For Inorganic Compounds  
With At Least One Detected Value.**

CAS#	Compound	EQL	Delisting Level	Non-Detects		Detects <sup>(1)</sup>			
				Count	Count	Min	Max	Mean	SD
7429-90-5	Aluminum	200		9	2	213	422	318	148
7440-38-2	Arsenic	10	1,200	0	11	13.6	32.6	21.8	5.07
7440-39-3	Barium	200	48,000	0	11	29.4	63.3	41.9	9.98
7440-41-7	Beryllium	5	96	3	8	0.33	0.77	0.58	0.18
7440-70-2	Calcium	5,000		0	11	75,500	227,000	124,955	39,132
7440-47-3	Chromium	10	2,400	4	7	3.8	13.9	8.93	4.24
7440-50-8	Copper	25	31,200	10	1	10.2	10.2	10.2	NA
7439-89-6	Iron	100		7	4	102	798	480	313
7439-95-4	Magnesium	5,000		0	11	21,000	65,300	36,855	11,085
7439-96-5	Manganese	15		2	9	4.4	17.7	10.4	5.31
7439-97-6	Mercury	0.2	48	9	2	0.16	0.16	0.16	NA
7440-02-0	Nickel	40	2,400	10	1	10.2	10.2	10.2	NA
7440-09-7	Potassium	5,000		0	11	10,600	17,000	13,364	1,691
7440-23-5	Sodium	5,000		0	11	179,000	249,000	216,000	25,791
7440-62-2	Vanadium	50	7,200	1	10	27.3	52.9	35.1	8.01
7440-66-6	Zinc	20	240,000	9	2	19.5	49.7	34.6	21

<sup>(1)</sup>Some results are qualified as shown in Appendix B. Because this summarizes all results from many samples with multiple qualifiers (U, J), each qualifier for each result is shown in Appendix B.

Units = µg/L

NA = not applicable

CAS# = chemical abstract service number

SD = standard deviation

EQL = estimated quantitation limit



from the individual queries identified in Figures 2-2 through 2-5 are included in Appendix A. The term contaminant of potential concern ("COPC") is used during evaluation of the constituents; once selected as a contaminant of concern, the term "COC" is used.

**Table 2-6. Organic Contaminant of Concern Selection Logic.**

Figure 2-2. Environmental Restoration Disposal Facility Organic Data. Figure 2-2 provides the approach that was used to classify the organic analytes into one group of tentatively identified compounds and detected organic compounds in the ERDF leachate.

Figure 2-3. Organic Regulatory Input List. Figure 2-3 provides the logic for the consolidation of the starting lists of organic compounds from relevant regulatory source documents and to divide constituents into organic and nonorganic compounds (metals, organometallics, test parameters, radionuclides) to simplify their review.

Figure 2-4. Organic Compound Evaluation for Analysis. Figure 2-4 compares Figure 2-2 to the list of regulated analytes to establish the compounds that will be evaluated for analysis.

Figure 2-5. Organic Analytical Method Assessment. Figure 2-5 shows the evaluation process for determining whether regulated organic analytes that were not analyzed previously can be analyzed by established SW-846 analytical methods, modified SW-846 methods, or other analytical methods and provides organic baseline COCs.

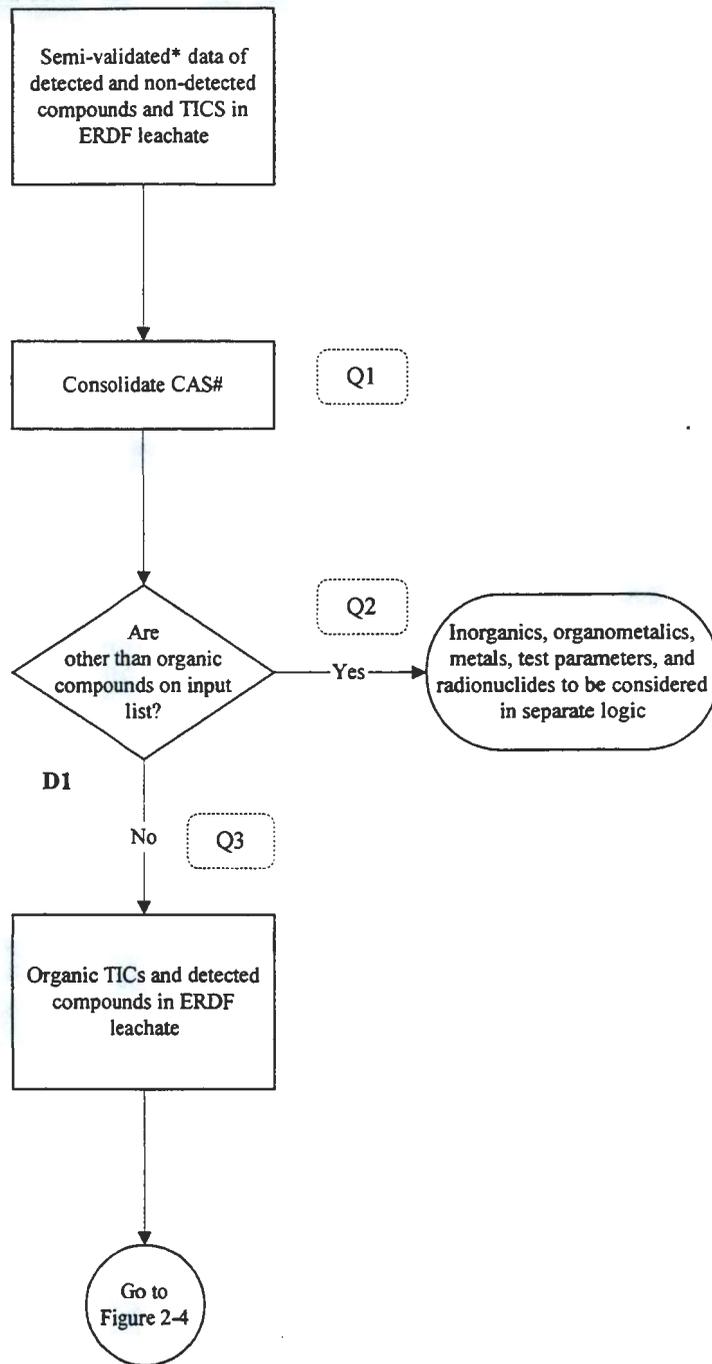
COC = contaminant of concern  
ERDF = Environmental Restoration Disposal Facility

**2.2.3.1 Environmental Restoration Disposal Facility Organic Data.** The initiation point for selection of analytes in Figure 2-2 is the list of validated and nonvalidated analytical data from existing samples of the ERDF leachate. This list includes detected and nondetected analytes from historical ERDF leachate data. The chemical abstract service numbers (CAS#) from this list were consolidated to ensure compatibility with CAS#s in later steps. This step included, for example, combining various Aroclors into one polychlorinated biphenyl (PCB) class. The question "Are other than organic compounds on the input list" is presented in D1 to focus this logic on organic compounds. Other analytical constituents, such as organometallics and metals, are addressed in Section 2.2.4.

Appendix A, Table A-2 (Q2) presents the list of metals, test parameters, and organometallics, which were evaluated in the leachate. Although previous analyses of leachate evaluated radionuclide constituents, they are not being addressed as part of this petition.

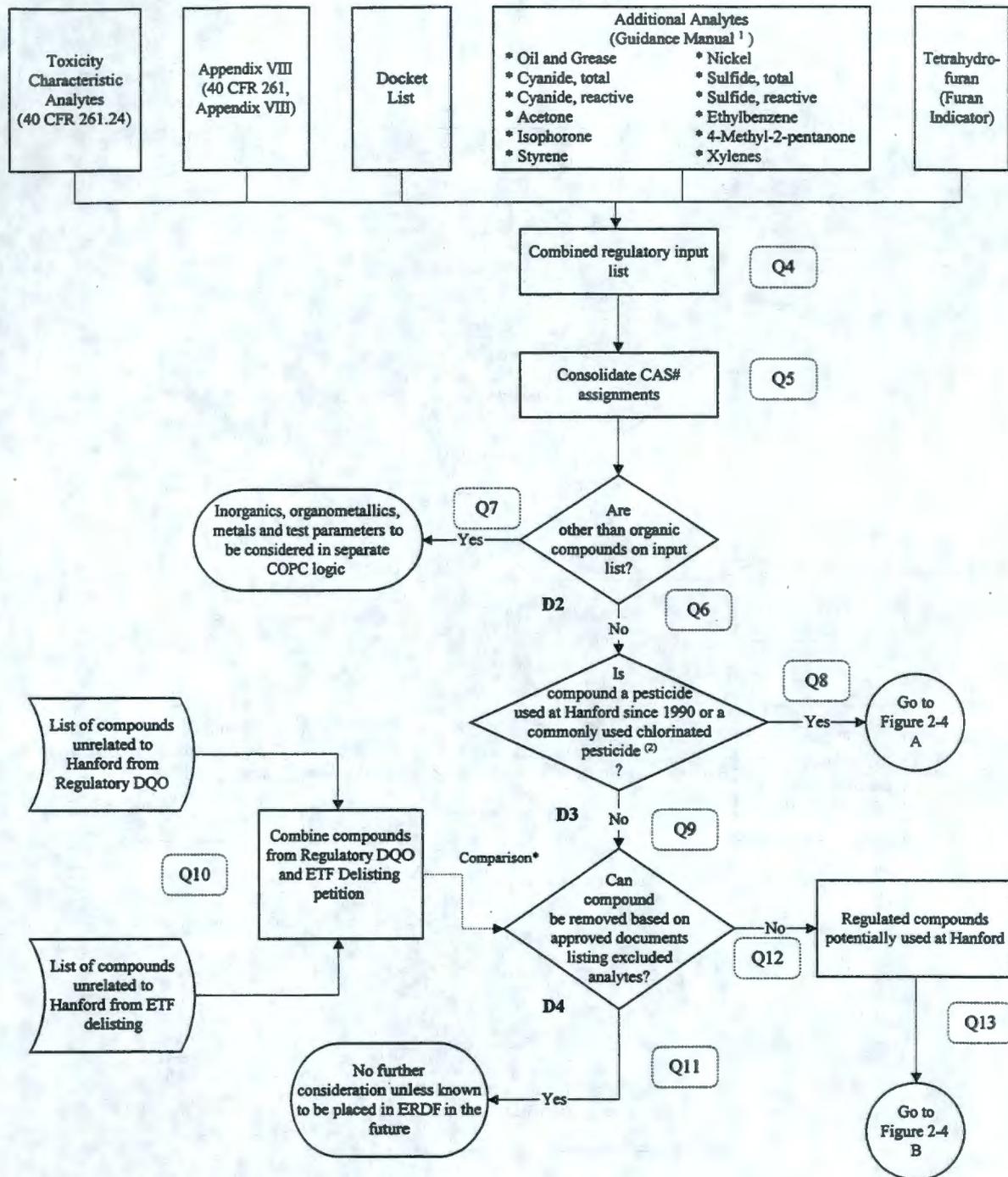
The organic analytes then were screened to separate those detected in the leachate. Tentatively identified compounds and compounds with positive detects in ERDF leachate (Appendix A, Table A-3, Q3) were then moved forward for additional consideration.

Figure 2-2. Environmental Restoration Disposal Facility Organic Data.



\* Metal, volatile, and semi-volatile data were validated for blank contamination only.

Figure 2-3. Organic Input List.

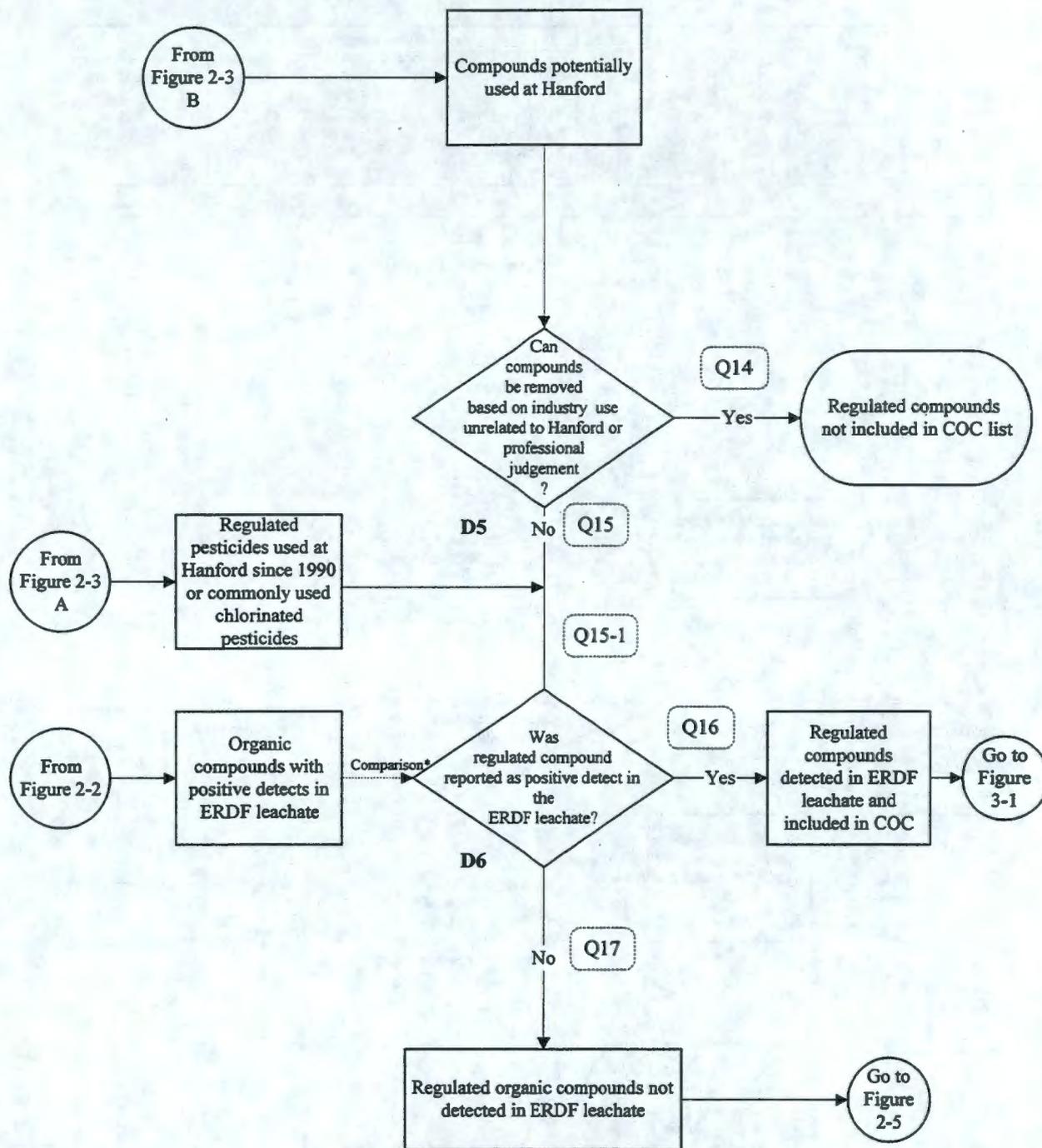


1) *Petitions to Delist Hazardous Wastes, A Guidance Manual*, 2nd edition, EPA 530-R-93-007 (EPA 1993).

2) Chlorinated pesticides from the ETF Delisting Petition (DOE-RL 1993).

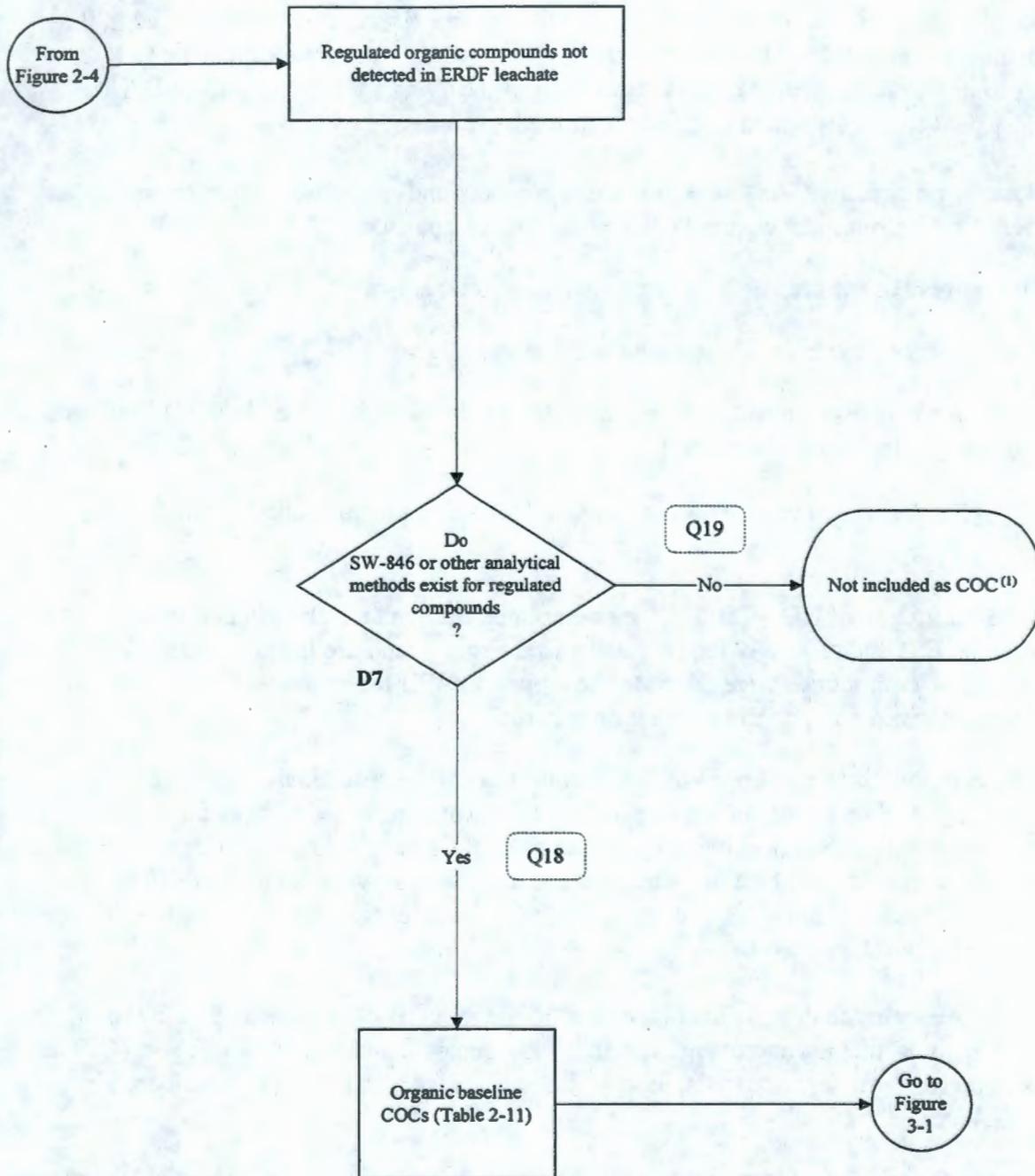
\* During this comparison the total number of compounds from the inflow might not be represented in the total number of compounds in the outflow. Duplicate and nonregulated compounds were not considered.

Figure 2-4. Organic Compound Evaluation for Analysis.



\* During this comparison the total number of compounds from the inflow might not be represented in the total number of compounds in the outflow. Nonregulated compounds are not considered.

Figure 2-5. Organic Analytical Method Assessment.



(1)Methods were found for all analytes of concern; therefore, zero analytes are present in Q19.

**2.2.3.2 Organic Input List.** Figure 2-3 presents the logic for the determination of the regulated organic COCs. The toxicity characteristic analytes from 40 CFR 261.24, the Appendix VIII list of chemicals and compounds from 40 CFR 261, additional analytes from the *Petitions to Delist Hazardous Wastes, A Guidance Manual* (EPA 1993), and the list of analytes presented in the EPA delisting docket list, based on potential risk, were used as a starting point. The COPCs from each source were combined into a master list and the CAS#s were consolidated. The following steps were incorporated into the consolidation process:

1. Because no specific CAS#s are available for compounds such as oil and grease, unique identification numbers were established for this comparison.
2. The isomers of the cresols were consolidated as total cresol.
3. The isomers of xylene are listed separately in the database.
4. Appendix VIII lists classes of compounds "Not Otherwise Specified" (NOS), such as the following chlorinated compounds:
  - Benzenes, ethanes, fluorocarbons, naphthalene, phenols, alkyl ethers
  - PCBs.

To allow the evaluation of NOS COPCs, the compounds fitting these classifications were identified in the ERDF database based on waste profile sheets, and are listed in Appendix A, Table A-4. These compounds were added to the Appendix VIII list in the ERDF database to facilitate computerized comparison to delisting criteria.

Many of the compounds in the Appendix VIII list do not list the specific isomer. The compounds listed as they appear in the Appendix VIII list are presented in Appendix A, Table A-4, along with the isomers being evaluated as COPCs. Dioxins and furans are byproducts of incomplete combustion. Furans are also used as solvents. Tetrahydrofuran was selected to represent the furan class of compounds used as solvents. Tetrahydrofuran is a commonly used laboratory solvent.

The question "Are other than organic compounds on the input list?" is presented in D2 to segregate inorganics, metals, and organometallics for a separate evaluation. Table A-5 (Q7) in Appendix A presents this list of metals, inorganics, and organometallics to be considered in Sections 2.2.4 and 2.2.5.

In decision D3, the regulated compounds from D2 were compared to the list of pesticides known to be used at the Hanford Site since 1990. This comparison identified two pesticides, bendiocarb and 2, 4-D, that will remain in the list of compounds potentially used at the Hanford Site. The chlorinated pesticides that were both on the regulatory list and kept for analysis in the ETF delisting petition were kept on the analyte list (DOE-RL 1993). The remaining regulated compounds were compared in D4 to the results from previous studies of Hanford data, to eliminate compounds previously determined not to be used at the Hanford Site.

Two major documents supply useful information for this petition concerning regulated compounds highly unlikely to have been used at the Hanford Site. One document was created during the Regulatory data quality objective (DQO) process (PNNL 1998a), which evaluated the potential contents of 177 high-level waste tanks at the Hanford Site (PNNL 1998b). Although the Regulatory DQO used a different starting list than the ERDF delisting petition, some constituents are common to both starting lists. Constituents that were eliminated from further consideration by the Regulatory DQO can be excluded from further consideration for the ERDF leachate based on the established fact that they were not previously used at the Hanford Site. The second document is the ETF delisting petition (DOE-RL 1993), which also resulted in a list of chemicals unlikely to have been used at the Hanford Site. Tables 2-7 and 2-8 further describe the logic that was used to screen COPCs using these two documents.

**Table 2-7. Regulatory Data Quality Objective – Analytes Not Used at Hanford.  
(2 Sheets)**

The starting list of regulated contaminants of potential concern (COPCs) was reviewed by the technical staff of Pacific Northwest National Laboratory, the Washington State Department of Ecology, and independent consultants to screen for specific compounds typically used in industries or applications unrelated to Hanford Site activities. The general categories for evaluation are listed below:

- Pesticides
- Military Ordnance
- Dyestuff
- Pharmaceutical
- Solvents
- Consumer
- Group/Mixture
- Polymer
- Independent Review.

A discussion of each category is presented below with examples of COPCs considered within each category present. Material Safety Data Sheets, the Merck Index, and other technical databases were consulted to evaluate the potential uses of each compound. A team of technical experts with extensive Hanford Site experience reviewed the information to assess whether the compounds would have been used in processes at the Hanford Site. The detailed list of removed compounds in each category is included in Table A-6 (Q10).

**Pesticides.** Compounds included in this category, and referred to in this logic as pesticides, include pesticides, miticides, insecticides, fungicides, rodenticides, and herbicides. A detailed discussion of the method to identify the pesticides/miticides/insecticides that were excluded and included in the logic is provided in the Regulatory data quality objective (DQO). The records for uses of pesticides at the Hanford Site before 1990 were incomplete. Compounds that were narrowly focused on specific crops or pests not applicable to the Hanford Site were not evaluated further in the Regulatory DQO. Available information suggests that pesticides used at Hanford were used primarily within enclosed operating facilities and offices, not the “outdoor” environment. Only compounds whose removal from consideration could be justified were eliminated from additional consideration. Examples of compounds determined not to have been used at the Hanford Site include TEPP (CAS# 107-49-3) and naled (CAS# 300-76-5).

**Military.** This category includes compounds such as explosives and chemical war agents. Examples of COPCs include nitrogen mustard N-oxide (CAS# 126-85-2) and nitroglycerin (CAS# 55-63-0).

**Table 2-7. Regulatory Data Quality Objective – Analytes Not Used at Hanford.  
(2 Sheets)**

**Dyestuff.** This category includes compounds used in the fabrication of dyes or actual dyes used in all types of materials, food, textiles, etc. Examples of these COPCs include xylydine (CAS# 1300-73-8) and o-anisidine (CAS# 90-04-0).

**Pharmaceuticals.** This category includes chemicals used in making pharmaceuticals. An example of a compound used in pharmaceuticals is safrole (CAS# 94-59-7).

**Solvent.** This category includes solvents that were not used in Hanford processes. An example is epichlorohydrin (CAS# 106-89-8), a solvent for natural and synthetic resins, gums, cellulose esters and ethers, paints, varnishes, nail enamels and lacquers, and cements for celluloid.

**Consumer.** This category includes chemicals used in consumer products. An example is isosafrole (CAS# 120-58-1), used to manufacture heliotropin, to modify oriental perfumes, to strengthen soap perfumes, and in small quantities together with methyl salicylate as an additive in root beer and sarsaparilla flavors.

**Group/Mixtures.** This category includes mixtures such as turpentine and asphalt.

**Polymers.** This category includes chemicals used to make polymers such as neoprene and rubbers. 4,4'-methylenebisbenzenamine dihydrochloride (CAS# 13552-44-8), for example, is used as a closed-system intermediate in the production of 4,4'-methylenediphenyl diisocyanate, which is used in rigid urethane foams for insulation material, in semiflexible polyurethane foams for automobile safety cushioning, and in the manufacture of elastomers such as spandex fibers. It is also used as a curing agent for epoxy resins (as a cross-linking agent), in the manufacture of 4,4'-methylenebis (cyclohexaneamine), in the formation of a polyamide imide or a polyester imide (which is used as a wire coating), in the preparation of azo dyes, as a reagent in the analysis of tungsten and sulfates, as a corrosion inhibitor for iron under acidic conditions, as a curative for neoprene rubber, in a heat-sensitive hair-setting cream, and in the formulation of polyurethanes for encapsulating instruments for measuring water flow.

**Independent Review.** Independent consultants with extensive Hanford onsite experience performed an independent review of the regulatory compounds. Based on their professional judgement, certain regulatory compounds could be eliminated as not being used at Hanford.

**Table 2-8. Effluent Treatment Facility Delisting—Chemicals  
Excluded from Regulatory List.**

The ETF delisting petition addressed treated waste from evaporator condensate from tank farms. Tank farms accepted a wide range of waste from Hanford Site processes from 1950 through the 1970's. The approved delisting petition for the ETF examined all compounds potentially used at Hanford to identify those that could be expected in the condensate. The petition considered categories of compounds similar to those reviewed in the Regulatory DQO, e.g., pesticides, ordnance, dyestuff, etc. The ETF Delisting Petition, C-018H Surrogate Test Solution, Table D-1 (DOE/RL-92-72, Rev. 1, August 1993) lists the compounds and the reason for removal from the ETF lists. Compounds that are salts or NOS were excluded. The NOS compounds, as previously discussed, are addressed by analysis of the specific underlying metal or salt identified in the ERDF database.

DQO = data quality objective  
ERDF = Environmental Restoration Disposal Facility  
ETF = Effluent Treatment Facility  
NOS = not otherwise specified

Both the Regulatory DQO and the ETF "Not Used at Hanford" lists are considered applicable to ERDF. Table A-6 (Q10) (Appendix A) presents the full list of COPCs that were eliminated based on the analyses from those two projects. These lists were used to eliminate from consideration regulated materials not present on the Hanford Site and, thus, not in the ERDF leachate (Table A-7, Q11). Table A-7 (Appendix A) does not include all of the compounds listed in Table A-6, because those projects used different regulatory starting lists.

From the logic illustrated in Figure 2-3, a table of regulated organic compounds potentially used at the Hanford Site is presented in Table A-8 (Q13) (Appendix A).

**2.2.3.2 Organic Compound Evaluation for Analysis.** In Figure 2-4, the list of regulated organic compounds was reviewed to identify uses by industries unrelated to Hanford (D5); this step involved an assessment of the remaining compounds to determine whether the COPC was likely to be present on the Hanford Site. A preliminary review of the analyte list suggested that some of the regulated compounds remaining on the list could be eliminated based on industry use or professional judgement. This evaluation was based on the search of publications and Material Safety Data Sheets to determine the compound's industrial use, its stability or half-life in water, or its solubility in water. Because this petition applies to leachate, organic compounds insoluble in water should not be considered for analysis. The EPA evaluated a number of constituents for evaluation in groundwater on this basis where the agency developed the Appendix IX list for 40 CFR 264. Compounds eliminated in this study are listed in Table A-9 (Q14).

Decision D6 then compares the remaining compounds potentially used at the Hanford Site against the analytes detected in ERDF leachate, from Figure 2-2. The logic developed in Figure 2-4 results in the following sets of analytes:

- Regulated organic compounds detected in ERDF leachate that will continue to be analyzed, Table A-10 (Q16), and
- Regulated organic compounds not detected in ERDF leachate that will be evaluated for analysis, Table A-11 (Q17).

**2.2.3.3 Organic Analytical Method Evaluation.** Figure 2-5 provides the logic used to evaluate compounds not detected in the leachate for future analysis. The regulated organic compounds not detected in ERDF leachate were evaluated to determine whether they are amenable to analysis by SW-846. If an analytical method from SW-846, a modified SW-846 method, or other analytical method exists for the regulated compound, the analyte was retained as a COPC (Q18). If no method exists, the compound was not included as a COC (Q19). Methods or proposed methods have been found for all analytes; therefore, no organic analytes result from Q19. The analytes from this evaluation (Q18) are included as COCs in Table 2-11.

## 2.2.4 Metals and Ions

The regulated metals/ions, inorganic compounds, and organometallic compounds from the Figure 2-3 source documents were compared to the historical ERDF leachate data from Figure 2-2. Although the logic used is similar to the process used to select organic analytes,

inorganic and organometallic compounds disassociate to the ions in acidic solutions used during analysis of metals and are measured as ions in EPA anion and cation methods. The relevant analyses are for the cation or the anion form. Therefore, inorganic and organic compounds must be separated into regulated form to compare their ionic components against the analytical results.

1. The inorganic and organometallic ERDF leachate results were consolidated in Table A-12.
2. The regulated inorganic and organometallic compounds were listed, and the resulting cations and anions were consolidated in Table A-13.

The comparison of the outputs from 1 and 2 above results in the following groups of metals/ions:

- Metals/ions on the regulatory list and not analyzed in the ERDF leachate
- Metals/ions on the regulatory list and analyzed in the ERDF leachate multiple times
- Metal/ions analyzed in the ERDF leachate that are not on the regulatory input list.

The following discussion presents the logic of including or excluding metals/ions in the list of COPCs from these groups.

**2.2.4.1 Metals/Ions on the Regulated List and Not Analyzed in the Leachate.** Table 2-9 identifies those metals/ions that are on the list of regulated compounds that have never been analyzed in the ERDF leachate.

**Table 2-9. Regulated Metals/Ions Not Analyzed for in the Environmental Restoration Disposal Facility Leachate.**

CAS#	Constituent	Ion	COPC
1333-86-4	Carbon black	C	No
57-12-5	Cyanide	CN	Yes
7440-04-2	Osmium	Os	No
7440-31-5	Tin, metal	Sn	Yes
7723-14-0	Phosphorous	P	No
24959-67-9	Bromine	Br	No
63705-05-5	Sulfur	S	No
3812-32-6	Carbonate	Co <sub>3</sub>	No
18540-29-9	Chromium (VI)	Cr (VI)	No
16065-83-1	Chromium (III) ion	Cr (III)	Yes

CAS# = chemical abstract service number  
COPC = contaminant of potential concern

Carbon black and carbonate are neither regulated by health-based requirements nor listed in the docket. If carbonate is present, it will be associated with another metal cation. Carbon black and carbonate, therefore, will not be included as COCs.

Cyanide has an established delisting level in the docket. Although cyanide is not expected to be present in the leachate, baseline data will be gathered and evaluated. Therefore, cyanide remains a COC.

Osmium is seldom used in industry and is not listed in the Klem and Agnew inventories of the inorganics at the Hanford Site or those that are likely to be in the tank waste (Klem 1990, Agnew 1997). No risk level is provided in the docket; therefore, osmium is not retained as a COC.

Hexavalent chromium has not been analyzed in the ERDF leachate. Hexavalent chromium is on the docket list and has a delisting limit, but is not on the Appendix VIII list. Total chromium, which includes chromium III and VI, has been detected in leachate samples 12 times with results ranging from 3.8 to 13.9  $\mu\text{g/L}$ . The delisting level for hexavalent chromium is 2,400  $\mu\text{g/L}$  (24 x 100  $\mu\text{g/L}$ ) and for total chromium is 2,400  $\mu\text{g/L}$ . Therefore, total chromium will be used as an indicator for hexavalent. If total chromium levels exceed 12 times the docket values, hexavalent chromium will be measured in the next two rounds of sampling.

Tin has a docket value, and for that reason it will be included as a baseline COC.

Phosphorous, bromine, and sulfur are not on the docket list as anions or as part of compounds and have not been analyzed in the leachate. Therefore, these anions will not be included as baseline COCs.

#### **2.2.4.2 Metals/Ions on the Regulated List and Analyzed in the Leachate Multiple Times.**

Table A-14 lists the metals/ions from the list of regulated compounds, the number of the times detected in the leachate, number of times analyzed, and compares the results to 24 times the docket values. No metals or ions analyzed have been found at concentrations above the docket values; therefore, all are below the delisting level.

The analytes for which delisting levels can be established will be kept on the baseline COC list and are listed in Table 2-11. Those analytes that have been excluded from the initial COCs list are identified in Table A-15.

#### **2.2.4.3 Metals/Ions Analyzed in the Leachate that are not on the Regulated Input List.**

Table 2-10 identifies the analytes that are not on the Appendix VIII or the docket list; therefore, they will not be analyzed and are not considered COCs.

The remaining metals are incorporated in the list of initial COCs identified in Table 2-11.

**Table 2-10. Detected Metals in the Environmental Restoration Disposal Facility Included Neither in Regulatory Input nor Docket List.**

CAS#	Constituent	Ion
7439-89-6	Iron	Fe
7439-95-4	Magnesium	Mg
7440-61-1	Uranium	U

CAS# = chemical abstract service number

**Table 2-11. Initial Baseline Organic and Inorganic Contaminants of Concern (Q26). (6 Sheets)**

CAS#	Constituent	SW-846 Method	Proposed Analytical Method
100-02-7	4-Nitrophenol	8270C	
100-41-4	Ethyl benzene	8260B	
100-42-5	Styrene	8260B	
100-51-6	Benzyl alcohol	8270C	
101-55-3	4-Bromophenylphenyl ether	8270C	
1024-57-3	Heptachlor epoxide	8081A	
105-67-9	2,4-Dimethylphenol	8270C	
106-46-7	1,4-Dichlorobenzene	8270C	
106-50-3	p-Phenylenediamine	8270C	
106-93-4	Ethylene dibromide	8260B	
106-99-0	1,3-Butadiene		8260B
107-02-8	Acrolein	8260B	
107-05-1	3-Chloropropene	8260B	
107-06-2	1,2-Dichloroethane	8260B	
107-13-1	Acrylonitrile	8260B	
108-05-4	Acetic acid vinyl ester	8260B	
108-10-1	4-Methyl-2-pentanone	8260B	
108-60-1	Bis(2-Chloroisopropyl) ether	8270C	
108-88-3	Toluene	8260B	
108-90-7	Chlorobenzene	8260B	
108-95-2	Phenol	8270C	
109-99-9	Tetrahydrofuran (THF – furan indicator)		8270C

**Table 2-11. Initial Baseline Organic and Inorganic Contaminants of Concern (Q26). (6 Sheets)**

CAS#	Constituent	SW-846 Method	Proposed Analytical Method
110-75-8	2-Chloroethyl vinyl ether	8260B	
110-86-1	Pyridine	8270C	
111-44-4	Bis(2-chloroethyl) ether	8270C	
111-91-1	Bis(2-Chloroethoxy)methane	8270C	
117-81-7	Bis(2-ethylhexyl) phthalate	8270C	
117-84-0	Di-n-octylphthalate	8270C	
120-12-7	Anthracene	8270C	
120-82-1	1,2,4-Trichlorobenzene	8270C	
120-83-2	2,4-Dichlorophenol	8270C	
122-39-4	N,N-Diphenylamine	8270C	
122-66-7	1,2-Diphenylhydrazine	8270C	
123-91-1	1,4-Dioxane	8260B	
124-48-1	Dibromochloromethane	8260B	
126-68-1	O,O,O-Triethyl phosphorothioate	8270C	
126-98-7	2-Methyl-2-propenenitrile	8260B	
127-18-4	1,1,2,2-Tetrachloroethene	8260B	
129-00-0	Pyrene	8270C	
131-11-3	Dimethyl phthalate	8270C	
131-89-5	2-Cyclohexyl-4,6-dinitrophenol	8270C	
1319-77-3	Cresols, total	8270C	
1330-20-7	Xylene	8260B	
1336-36-3	Polychlorinated biphenyls (PCBs)	8082	
134-32-7	alpha-Naphthylamine	8270C	
141-78-6	Acetic acid ethyl ester	8260B	
14265-44-2	Phosphate	9056	
14797-55-8	Nitrate	9056	
14797-65-0	Nitrite	9056	
14808-79-8	Sulfate	9056	
156-59-2	1,2-cis-Dichloroethene		8260B
156-60-5	1,2-trans-Dichloroethene	8260B	

**Table 2-11. Initial Baseline Organic and Inorganic Contaminants of Concern (Q26). (6 Sheets)**

CAS#	Constituent	SW-846 Method	Proposed Analytical Method
1634-02-2	Tetrabutylthiuram disulfide		9030B/9034/9215
16887-00-6	Chloride	9056	
16984-48-8	Fluoride	9056	
193-39-5	Indeno(1,2,3-cd)pyrene	8270C	
205-99-2	Benzo(b)fluoranthene	8270C	8310
206-44-0	Fluoranthene	8270C	
207-08-9	Benzo(k)fluoranthene	8270C	
218-01-9	Chrysene	8270C	
22781-23-3	Bendiocarb	8321A	
24959-67-9	Bromide <sup>(1)</sup>	9056	
26545-73-3	Dichloropropanol		8260B
309-00-2	Aldrin	8081A	
319-84-6	alpha-BHC	8081A	
319-85-7	beta-BHC	8081A	
50-00-0	Formaldehyde	8315A	6252B
50-29-3	4,4-DDT	8081A	
50-32-8	Benzo(a)pyrene	8270C	
51-28-5	2,4-Dinitrophenol	8270C	
53-70-3	Dibenz[a,h]anthracene	8270C	8310
541-73-1	1,3-Dichlorobenzene	8270C	
542-75-6	1,3-Dichloropropene	8260B	
56-23-5	Carbon tetrachloride	8260B	
56-55-3	Benzo(a)anthracene	8270C	8310
57-12-5	Cyanide	9012A	
57-97-6	7,12-Dimethylbenz[a]anthracene	8270C	
58-89-9	gamma-BHC (lindane)	8081A	
59-50-7	4-Chloro-3-methylphenol	8270C	
59-89-2	N-Nitrosomorpholine	8270C	
591-08-2	1-Acetyl-2-thiourea	8270C	
60-29-7	Ethyl ether	8260B	

**Table 2-11. Initial Baseline Organic and Inorganic Contaminants of Concern (Q26). (6 Sheets)**

CAS#	Constituent	SW-846 Method	Proposed Analytical Method
60-57-1	Dieldrin	8081A	
62-50-0	Ethyl methanesulfonate	8270C	
62-53-3	Aniline	8270C	
62-75-9	N-Nitroso-N,N-dimethylamine	8270C	8070A
621-64-7	N-Nitroso-di-n-propylamine	8270C	8070A
67-56-1	Methyl alcohol	8015B	
67-64-1	2-Propanone (acetone)	8260B	
67-66-3	Chloroform	8260B	
67-72-1	Hexachloroethane	8270C	
70-30-4	Hexachlorophene	8270C	
71-36-3	n-Butyl alcohol	8260B	
71-43-2	Benzene	8260B	
71-55-6	1,1,1-Trichloroethane	8260B	
72-20-8	Endrin	8081A	
72-54-8	4,4-DDD	8081A	
72-55-9	4,4-DDE	8081A	
74-83-9	Bromomethane	8260B	
74-87-3	Chloromethane	8260B	
7429-90-5	Aluminum	6010B	
7439-92-1	Lead	6010B	
7439-95-4	Magnesium <sup>a</sup>	6010B	
7439-96-5	Manganese	6010B	
7439-97-6	Mercury	7470A	
7440-02-0	Nickel	6010B	
7440-09-7	Potassium	6010B	
7440-21-3	Silicon <sup>a</sup>	6010B	
7440-22-4	Silver	6010B	
7440-23-5	Sodium	6010B	
7440-28-0	Thallium	6010B	
7440-31-5	Tin, metal	6010B	

**Table 2-11. Initial Baseline Organic and Inorganic Contaminants of Concern (Q26). (6 Sheets)**

CAS#	Constituent	SW-846 Method	Proposed Analytical Method
7440-36-0	Antimony	6010B	
7440-38-2	Arsenic	6010B	
7440-39-3	Barium	6010B	
7440-41-7	Beryllium	6010B	
7440-43-9	Cadmium	6010B	
7440-47-3	Chromium	6010B	
7440-48-4	Cobalt	6010B	
7440-50-8	Copper	6010B	
7440-62-2	Vanadium	6010B	
7440-66-6	Zinc	6010B	
7440-70-2	Calcium	6010B	
75-00-3	Chloroethane	8260B	
75-01-4	1-Chloroethene (vinyl chloride)	8260B	
75-05-8	Acetonitrile	8260B	
75-09-2	Dichloromethane (methylene chloride)	8260B	
75-15-0	Carbon disulfide	8260B	
75-25-2	Tribromomethane	8260B	
75-27-4	Bromodichloromethane	8260B	
75-34-3	1,1-Dichloroethane	8260B	
75-35-4	1,1-Dichloroethene	8260B	
75-69-4	Trichlorofluoromethane	8260B	
75-70-7	Trichloromethanethiol		8260B <sup>b</sup>
75-71-8	Dichlorodifluoromethane	8260B	
76-13-1	1,2,2-Trichlorotrifluoroethane (Freon 113)	8260B	
76-44-8	Heptachlor	8081A	
7664-41-7	Ammonia		350.2/350.1/350.3
7782-49-2	Selenium	6010B	
78-59-1	Isophorone	8270C	
78-83-1	2-Methylpropyl alcohol	8260B	
78-87-5	1,2-Dichloropropane	8260B	

**Table 2-11. Initial Baseline Organic and Inorganic Contaminants of Concern (Q26). (6 Sheets)**

CAS#	Constituent	SW-846 Method	Proposed Analytical Method
78-93-3	2-Butanone (MEK)	8260B	
79-00-5	1,1,2-Trichloroethane	8260B	
79-01-6	1,1,2-Trichloroethylene	8260B	
79-34-5	1,1,2,2-Tetrachloroethane	8260B	
8001-35-2	Toxaphene	8081A	
83-32-9	Acenaphthene	8270C	
84-66-2	Diethyl phthalate	8270C	
84-74-2	Di-n-butylphthalate	8270C	
85-68-7	Butylbenzylphthalate	8270C	
86-30-6	N-Nitrosodiphenylamine	8270C	
86-73-7	Fluorene	8270C	
87-68-3	Hexachlorobutadiene	8270C	
87-86-5	Pentachlorophenol	8270C	
88-06-2	2,4,6-Trichlorophenol	8270C	
91-20-3	Naphthalene	8270C	
91-58-7	2-Chloronaphthalene	8270C	
91-59-8	2-Naphthylamine	8270C	
94-75-7	2,4-D	8151A	
95-50-1	1,2-Dichlorobenzene	8270C	
95-57-8	2-Chlorophenol	8270C	
95-70-5	2,5-Diaminotoluene		8270C
95-95-4	2,4,5-Trichlorophenol	8270C	
98-82-8	(1-Methylethyl)benzene	8260B	
98-86-2	Acetophenone	8270C	
98-95-3	Nitrobenzene	8270C	
99-65-0	1,3-Dinitrobenzene	8270C	

<sup>a</sup>Analyte is part of Liquid Waste Processing Facility waste acceptance criteria and not present due to delisting assessment.

<sup>b</sup>Analyte will be reported as a tentatively identified compound (TIC).

CAS# = chemical abstract service number

### 2.2.5 Other Constituents/Test Parameters

Analyses that were removed from both the ERDF database (Figure 2-2) and the regulatory input list (Figure 2-3) include radionuclides and physical parameters, such as pH. Radionuclides are being analyzed per DOE and EPA requirements under other regulatory programs but are not part of the RCRA delisting process. Because the radionuclide makeup of the leachate must be characterized prior to shipment to the LWPF, radionuclide analysis will be included in the sampling and analysis program. Because the leachate must meet dangerous waste criteria for characteristic waste, as well as delisting criteria for specific COCs, testing will be performed in accordance with the requirements of WAC 173-303-090 to ensure that the leachate is not a characteristic waste. The leachate will not be tested for ignitability, based on process knowledge. The following analyses also have been added to the test list in Section 3.8 (analytical methods) for the general water quality information that they provide and to support characterization requirements for the ETF:

- pH
- Specific conductance
- Total dissolved solids
- Total organic carbon
- Total suspended solids
- Oil and grease.

The outputs from the logic presented in Figures 2-2 through 2-5 provide the basis for the sample design logic, illustrated and discussed in Section 3.0. Table 2-11 presents the complete list of COCs for baseline analysis.

In addition to the analyses required to support delisting, ERDF leachate must be characterized to ensure that it meets the ETF WAC (DOE-RL 1993). Silicon, bromide, and magnesium have been added to Table 2-11 to meet ETF WAC concerns.

### 3.0 SAMPLING AND ANALYSIS PLAN

As noted in Section 1.0, this petition is an upfront petition. Because the DOE does not have sufficient data for the EPA to determine whether the ERDF leachate will meet delisting criteria, DOE will continue to manage the leachate as hazardous until this determination can be made. When this demonstration can be provided to the satisfaction of the EPA, DOE will manage the leachate as nonhazardous. Once the leachate has been delisted, it will continue to be shipped to the LWPF for treatment and disposal. This section presents the sampling objectives, developed from the logic in Section 2.0, along with the sampling plan.

#### 3.1 SAMPLING OBJECTIVES

There are currently two alternatives for handling the ERDF leachate: store the leachate and reuse it at the ERDF facility (under an EPA waiver), or transport the leachate to the LWPF for treatment. Authorized alternatives for reuse of the leachate include dust suppression and waste compaction. These two alternatives will continue to be the methods used to manage the leachate if it is delisted. Whether the leachate is reused or transported to the LWPF, sampling is required to determine initial and ongoing compliance with the delisting criteria. Characterization data also will be required for treatment at the ETF. Therefore, the objectives of leachate sampling include:

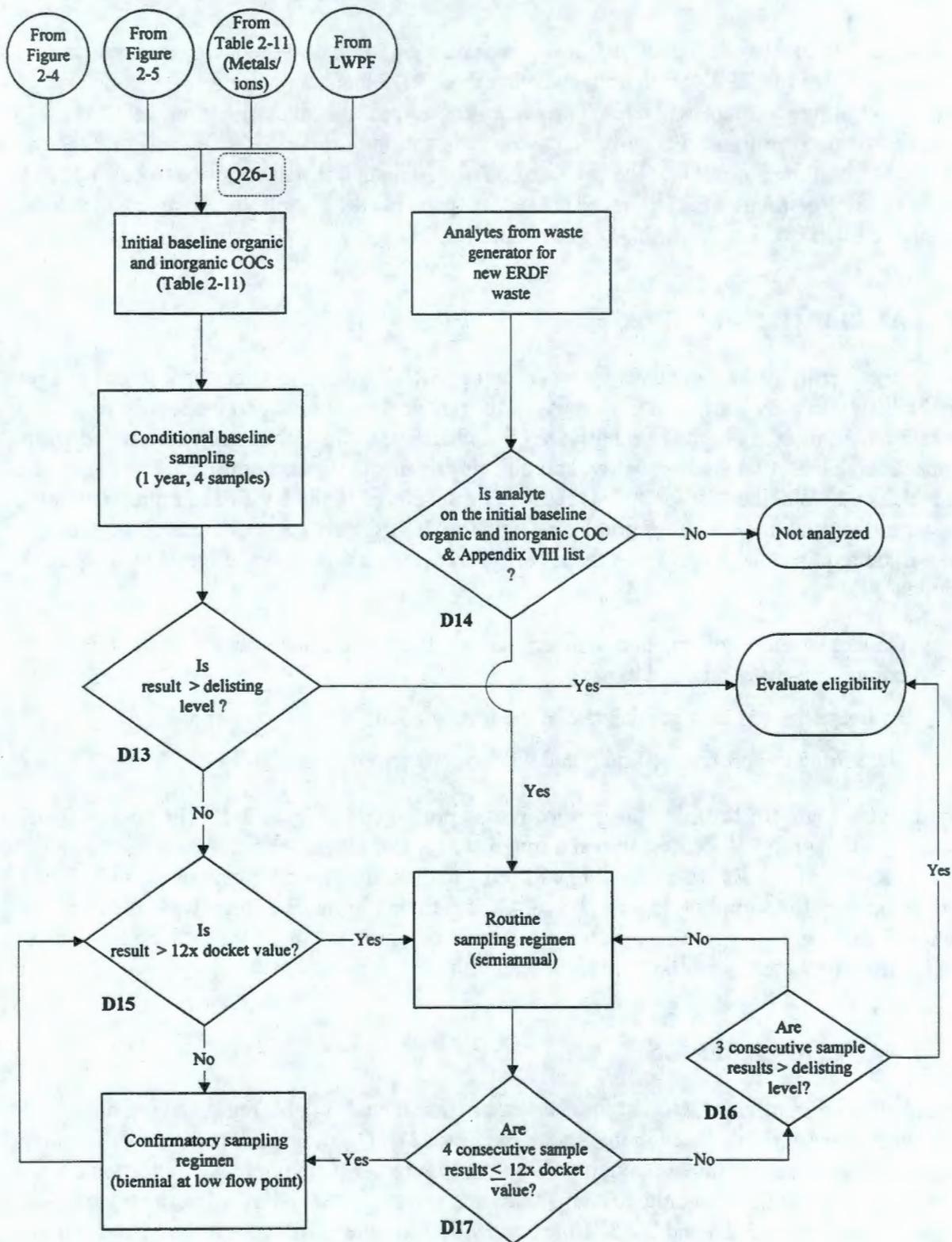
1. Collect baseline information to determine whether the leachate can be delisted on a compound-by-compound basis.
2. Evaluate the ongoing compliance of the leachate with delisting criteria.
3. Determine the profile for liquid that will be transferred to the LWPF.

The sampling logic for fulfilling these objectives is presented in Figure 3-1. The eligibility of the leachate for delisting will be determined through analysis of characterization samples collected from the modu-tanks. Routine sampling will provide data to support objectives 2 and 3. The basic premise of the sampling logic is that all COCs (titled "Initial Baseline Inorganic and Organic COCs" in Figure 3-1) are placed into one of two groups: those that will be monitored on a confirmatory basis, and those that will be monitored on a routine basis.

#### 3.2 ANALYTICAL DESIGN

The organic and inorganic COC list for characterization includes those regulated organic compounds previously detected in the leachate (Figure 2-4, Q16); organic compounds not found in the leachate, but determined through the logic in Figure 2-5 (Q18) to require additional monitoring; and the list of inorganic compounds and test parameters derived in the logic presented in Sections 2.2.4 and 2.2.5. Characterization sampling will take place by the end of 1998 to establish the baseline constituent values for the leachate. The list of initial COCs that will be evaluated for delisting is presented in Table 2-11.

Figure 3-1. Sampling Logic.



Because the limited sampling performed to date did not provide a full characterization profile of the leachate, the baseline characterization sampling program will provide a thorough quarterly analysis of the leachate over a 1-year period. Initial sampling to characterize the leachate for delisting will take place by the end of 1998. The results of this analysis will be compared to the delisting levels provided in Table 1-1 to determine whether delisting can proceed. If the leachate achieves compliance with delisting levels in any sampling round, it will be managed as nonhazardous. Those COCs whose analytical results from baseline sampling indicate that their concentrations are below 12 times the docket value (50% of the delisting level) will be moved into a confirmatory sampling regimen. Compounds without a docket value will be compared to 50% of the delisting level instead of the 12 times the docket value. In all subsequent text, any reference to 12 times the docket value includes both 12 times the docket value and 50% of the delisting level for compounds without docket values. COCs detected at concentrations greater than 12 times the docket value, but below the delisting level, will be monitored on a routine basis. Confirmatory sampling will take place every 2 years. Routine sampling will take place every 6 months.

Twelve times the docket value was selected as a "warning" level, which indicates a need for more frequent analysis. COCs that are not detected above the 12 times concentration are considered to be below regulatory concern.

A determination as to delisting will be made by the EPA based on the results of the initial characterization sampling. If the results of the initial analyses indicate that the COCs do not exceed the delisting levels, DOE can begin to manage the leachate as a nonhazardous waste. Characterization sampling will continue, however, for 1 year to establish baseline water quality for the leachate. This sampling will consist of quarterly sampling for all of the analytes listed in Table 2-11. In addition, samples will be collected in the midpoint of every quarter for the routine sample analytes, those reported at greater than 12 times their docket values in the initial sample results.

After the first year, sample collection and analysis will move into the routine sampling program, as illustrated in Figure 3-1. Routine sampling will take place every 6 months. Analyses will be conducted for all COCs identified in the characterization samples at levels greater than 12 times their docket value. Analyses will also be performed for physical parameters and other constituents required by the ETF. Every 2 years, samples will be analyzed for the full suite of COCs identified in Table 2-11. Depending on the results of analyses, COCs may move from the routine sampling list to the confirmatory list, or vice-versa. Figure 3-1 illustrates the mechanisms to move analytes between confirmatory and routine sampling regimens, as well as to determine whether analytes from new wastes entering ERDF are assigned a sampling regimen.

Over time, it is anticipated that some analytes initially requiring routine monitoring will be below the 12 times criteria continuously for consecutive sample events and could be moved into a confirmatory sampling regimen. Therefore, if data for four consecutive samples indicate that the analytical results are less than the 12 times criteria, that analyte will be moved into the confirmatory sampling regimen and only analyzed for on a biennial basis.

Because of the changing environment and waste inventory, it also is anticipated that analytical results from the confirmatory sampling program may indicate that an analyte's concentration increases over time and should be routinely monitored. In this case, if the concentration of a compound evaluated during a confirmatory sample event exceeds the 12 times criteria, the analyte will be moved into the routine sampling regime. The analyte subsequently must meet the 12 times criteria for four consecutive sample events before it can be reclassified as a confirmatory analyte.

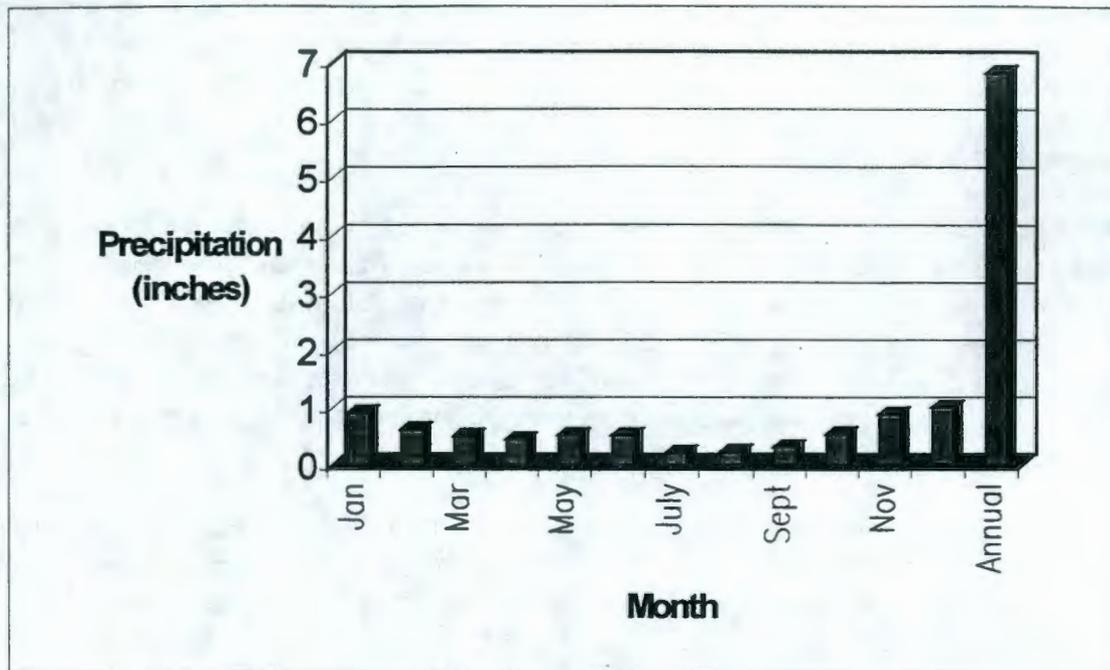
### 3.2.1 Rationale

Several factors may contribute to the variability of leachate analytical results and should be considered when determining the frequency of sample collection. Factors that may affect chemical, physical, and biological processes occurring within the facility include (1) seasonality, (2) waste stream, (3) configuration of ERDF, and (4) operational changes that may take place over time. Seasonal variations in temperature and precipitation affect the composition of the leachate. As noted in Section 2.1, seasonal and annual climate changes can significantly affect the volume of leachate generated at the ERDF.

For the year beginning in July 1996, ERDF generated approximately 6,435,180 L (1.7 million gal) of leachate from cell 1. During the second year of operation beginning in July 1997, ERDF generated approximately 1,514,160 L (0.4 million gal) of leachate from the combined operation of cells 1 and 2. The large difference in leachate generation between the two years is primarily a result of differences in precipitation and the amount of waste in the cells. The yearly total precipitation for the 1996-1997 operation was 28.9 cm (11.4 in.); for 1997-1998 the total was approximately 16.3 cm (6.4 in.). For comparison, the average annual precipitation from 1947 through 1997 has been 17.34 cm (6.83 in.). Figure 3-2 illustrates the average precipitation values at the Hanford Site for the past 50 years. Based on average precipitation, ERDF would be expected to collect from 757,080 to 1,135,620 L (0.2 to 0.3 million gal) of leachate per operating disposal cell per year, with a maximum annual leachate generation rate approaching 13,248,900 L (3.5 million gal). ERDF is expected to have up to three cells operating at one time after expansion, which could generate 2,271,240 to 3,406,860 L (0.6 to 0.9 million gal) annually during years of average precipitation. However, the leachate generated could be substantially more during years of high precipitation, as experienced in 1995 and 1996 (31.3 and 30.9 cm [12.31 and 12.19 in.], respectively). Leachate generation is enhanced when there is little waste in the cell, because the waste serves as a sponge to retard the precipitation. Smaller volumes of waste in a cell results in faster conversion of precipitation to leachate, due to shorter travel time through the soil column. Smaller volumes also result in less surface contact of pore water with wastes and, therefore, less potential for contamination in leachate.

The "wet" season at the Hanford Site typically occurs between November and February, which also generally corresponds to the coldest months of the year. June through September are typically the driest months, which correspond to the warmest weather months. The proposed sampling program is expected to be capable of characterizing any seasonal variations. If experience shows that only limited volumes of leachate are generated or shipped in dry months, the sampling program will be evaluated to consider grab samples for this time period.

Figure 3-2. Hanford Site Average Precipitation Values, 1946 - 1997.



ERDF may accept waste from different areas within the Hanford Site, but generally only receives waste from a subset of areas over a period of months. The waste matrix, as well as the COCs associated with the waste, may influence leachate concentrations. Therefore, at least semi-annually, the waste matrix will be evaluated by the project engineer for variability. If waste matrices not previously received enter the facility, the monitoring program will be evaluated to consider the regulated COPCs that are defined in the waste profile, but are not currently being monitored. This evaluation will include risk drivers, as identified in the docket list, that are placed in the ERDF in significantly greater volumes than previously disposed at ERDF. It is anticipated that the proposed sample approach will be sufficient to monitor any changes in leachate concentration that may be affected by waste matrix.

The ERDF ROD authorizes the construction of two disposal cells; the ROD amendment authorizes the construction of two additional cells. As new cells are constructed and full cells are capped, the volume and composition of the leachate may be affected by variations in the waste matrices exposed to precipitation (i.e., waste within a capped cell may not generate as much leachate, and a cell that is open, but not receiving waste, will generate "cleaner" leachate than a cell actively receiving waste). It is difficult to determine the effects on the leachate of a different configuration of the facility; however, the proposed sampling is expected to be frequent enough to identify any changes that may be attributed to variations in open cells. In addition, mixing within the storage units provide a buffer that reduces the variability associated with leachate from different cells. Therefore, additional sampling is not proposed when the configuration of the facility changes.

The final factor considered for its effects on the leachate is operational changes at the facility. Such changes may include the amount of liquid used for dust suppression and compaction, and opening a new cell for waste placement. Removal of the floating covers from the storage units or redesign of the leachate storage facility could result in higher evaporation rates, concentrating some COCs in the leachate. The proposed sampling plan will accommodate this variability.

### 3.2.2 Sampling Strategy

The leachate that is stored in the modu-tanks is representative of liquids that have been generated from the ERDF for a period of time. The tank contents at any time, therefore, should be representative of leachate quality. Because this is an upfront petition, DOE will collect a grab sample from each of the tanks in 1998 to characterize the leachate quality for delisting. The results from the analyses of these samples will provide the basis for the conditional delisting of the leachate. Delisting status will be conditioned on the continued achievement of the delisting levels and management of the leachate as described in this petition.

The goal of this petition is to delist the leachate that is stored at ERDF. Delisting will allow the leachate to be stored and conveyed to the LWPF without being managed as a hazardous waste. Sampling must accomplish the dual goal of characterizing the leachate to ensure that it continues to meet delisting criteria and provide data to support treatment at LWPF. Because the leachate is being stored for shipment to LWPF, characterizing the leachate at a location near the transfer point was selected to provide a representative sample that meets both of these needs. Figure 2-1 identifies the sample location, which is downstream from the modu-tanks. The initial samples that will be collected for baseline characterization, however, may be obtained with peristaltic pumps, directly from the modu-tanks.

A flow-proportional device will be used to collect representative leachate samples for all monitored compounds except volatile organics and oil and grease. A grab sample will be collected for volatiles and oil and grease analysis when the composite sample from the flow-proportional device is retrieved for analysis. Flow-proportional samples will present a volume-averaged profile of the leachate over time, as opposed to a grab sample that reflects only a limited volume of the leachate stream. The sampling device will be installed in-line between the storage tanks and the discharge point to the pipeline for transfer to LWPF or to tankers. The flow-proportional device will be triggered by the flowmeter that will measure leachate volumes shipped from ERDF. The device will be calibrated to collect samples based on the projected volume of leachate that will be shipped over the upcoming sample period. Because stored leachate might not be transferred to the LWPF during periods of low leachate generation, grab samples may be required to be collected to characterize this material. The need for grab samples will be evaluated, based on leachate generation and transfer rates.

Over time, it is anticipated that compounds will be placed in ERDF that have not been evaluated through previous analysis of the leachate. Waste streams that have not previously been placed in ERDF will be evaluated for the presence of compounds that are not on record as being contained in ERDF wastes. These compounds will be evaluated against the initial list of COCs (Table 2-11) to determine whether constituents are regulated, could have been used at the

Hanford Site, can be analyzed for, and are identified as a risk driver on the EPA docket list. Compounds that remain after this screen (the same process that was used to develop the initial COC list) will be evaluated for testing in the routine sampling program. If, after 1 year, the compound is not detected above the 12 times level, the compound will be eliminated from the routine monitoring list.

### 3.2.3 Revisiting Limits

Analyses of leachate over time may indicate that individual constituents appear at levels that are above 12 times the docket value and approach the delisting levels. When a constituent appears in the analytical results at a concentration that is above 12 times the docket value, an assessment will be performed to determine (1) whether there is a justifiable basis for the analytical result and (2) whether the limit that has been established for the constituent is appropriate. Analytical results will be evaluated through the data validation process; potential reasons to question the results include, for example, laboratory contamination, improper calibration of analytical equipment, and results that are within the detection capability of the equipment but of questionable accuracy. If the data validation process reveals a basis for questioning specific results and the reported values are above 12 times the docket value, a grab sample will be collected to reevaluate the results for the specific constituent of concern. If the results from the grab sample indicate that the COC is not present at levels that exceed 12 times the docket value, the results of this investigation will be recorded for reference in case of a recurrence. If results of the grab sample analysis indicate that the COC is present at levels that exceed 12 times the docket values, DOE will evaluate the established delisting level for appropriateness.

As noted in Section 1.4, docket values established by the EPA provide the basis for the delisting levels. The docket values reflect EPA's assessment of the risk levels associated with these constituents, based on the Agency's experience at other RCRA facilities. Delisting levels were established by application of a 24 times DAF to these docket values. In some cases, the 24 times value may not be the appropriate DAF value for delisting. If values for a COC are confirmed as being present above 12 times the docket value, DOE will perform an assessment of the specific delisting level to determine whether there is a basis to request an adjustment to the specific delisting level from the EPA.

The primary exposure concern for the leachate is via the groundwater pathway. Delisting levels are intended to be protective of the groundwater quality. If analysis indicates that a COC is above 12 times the docket values, the DOE will evaluate the delisting level for that COC against background levels in groundwater for that constituent, if background values are available. If this comparison suggests that the delisting level may be overly protective of groundwater (i.e., below background concentrations), DOE will suggest an alternative value for the delisting level and request an adjustment from the EPA.

If there is no basis for adjustment to the delisting level based on background groundwater concentrations, the DOE will evaluate the underlying criteria for that delisting level. This evaluation will include, for example, a review of the risk assumptions that provided the basis for the docket value. A literature/database search may be conducted to determine whether there is

new or different information (e.g., alternative risk levels) that could support a different delisting level. The DOE might evaluate the DAF assumptions by conducting contaminant-specific transport modeling (e.g., Composite Model for Leachate Migration with Transformation Products [EPACMTP], EPACML) to determine whether there is a justifiable basis for adjusting the delisting level. The approach to be applied will be determined on a case-by-case basis after consultation with the EPA. The results will be presented to the EPA for its evaluation and a determination whether an adjustment to the delisting level is appropriate. These steps will be taken by DOE when the data first indicate that concentrations exceed 12 times the docket values.

### **3.3 PROJECT ORGANIZATION AND RESPONSIBILITY**

This section provides the organizational and project roles and responsibilities for sample collection, laboratory analysis, data management, and data assessment for ERDF leachate characterization and monitoring activities.

#### **3.3.1 Project Responsibility**

Site Technical Representative: The ERC/ERDF site technical representative (STR) is responsible for coordinating efforts of support organizations as needed to complete the required tasks. The STR determines the timing and volume of leachate transfers.

Project Engineer: The ERC/ERDF project engineer has the primary responsibility of directing and approving all technical aspects of the leachate characterization. Responsibilities include leachate flow volume calculations for programming of the automatic sampler to ensure that collected samples are representative of the leachate and assessment of incoming waste profiles to evaluate any need for additional analysis.

Project Environmental Lead: The ERC/ERDF environmental lead is responsible for interfacing with the regulators to ensure that the characterization objectives for the leachate are consistent with regulatory requirements.

Project Technician: An ERC/ERDF technician is responsible for inspections of the automatic sampler, documenting the inspections in the field logbook, and interfacing with ERDF operations and sampling support groups to ensure that the sampler functions as required.

#### **3.3.2 Support Responsibilities**

The following organizations will be responsible for performing all services to the ERDF project in accordance with the requirements in this sampling and analysis plan (SAP).

Sample Management: Sample Management is responsible for coordinating the sampling, laboratory services, data reporting, and data validation for leachate characterization. Additional responsibilities include handling and storage of deliverables generated through the process.

Project Chemist/Sample Coordinator: The chemist will ensure that validation is performed by qualified validators that may be ERC or qualified subcontractors. The chemist will assess the analytical data after validation and compare it to the warning levels (12 times docket) and delisting levels (24 times docket). The chemist will coordinate with the project engineer to ensure that analytes are added to and removed from the sampling program, as provided on the logic presented in Figure 3-1.

Analytical Field Services: Analytical Field Services will provide qualified samplers to program the flow-proportional sampler, based on projected flow rates provided by the project engineer. Field Services will collect, package, and ship leachate samples to the laboratory.

Data Management: Data Management will provide support for access to information stored in the Hanford Environmental Information System (HEIS) database.

Data Assessment: A statistician and the project chemist will assess the data for trends and perform statistical analysis after the first year of data collection, and on an ongoing basis, to evaluate trends in leachate quality.

ERC Quality Programs: Quality assurance (QA) assessments and surveillances will be provided by the ERC Quality Management organization.

### **3.4 SAMPLE COLLECTION**

This section provides the requirements for collection, packaging, and shipment of leachate samples. Sample collection will be performed in accordance with this SAP and approved ERC procedures.

#### **3.4.1 Sample Collection Techniques**

An automatic sampler will be used to collect flow-proportional, representative composite samples of the leachate. The flow-proportioned samples will be based on equal increments of flow as measured by an associated flowmeter. The flowmeter is being installed to measure the volumes of leachate pumped from the modu-tanks to the LWPF. The automatic sampler will be installed downstream of this flowmeter. The composite sample consists of small aliquots collected in a single container over pre-determined increments of flow and will provide the most representative sample of the flow over the sample period. The composite sample will be analyzed for all monitored compounds except VOAs and oil and grease. A grab sample will be collected for VOA analysis and the oil and grease analysis.

**3.4.1.1 Automatic Sample Collection.** The automatic sampler will be programmed to collect flow-proportional aliquots for the composite leachate sample. It is anticipated that a 19-L (5-gal) container will provide sufficient sample volume for laboratory analysis of all monitored compounds. Programming of the sampler will take into consideration the anticipated volumes and associated time frames of leachate collection to adequately determine the proper aliquot collection volumes for the upcoming sampling period and ensure that the composite is

representative of the total leachate flow. The ERDF project engineer will assist the ERC sampling organization in determining individual sample aliquot volumes required for the automatic sampler, based on total leachate that will be transferred during the sampling period. A total volume of 19 L (5 gal) for the composite sample will be required for the analyses that have been identified. The size of the individual aliquots and sample intervals (i.e., gallons pumped between samples) must be established for each sample period and programmed into the device by Analytical Field Services.

A refrigerated automatic sampler will be permanently installed inside the ERDF leachate pump station (see Figure 2-1). An ERC procedure will be prepared for operation and maintenance of the automatic sampler. The components of the automatic sampler that will be addressed during procurement and within the procedure include the following:

- **Electronic controller.** The electronic controller will be programmed to run the leachate sampling routine. The controller activates the pumping system to collect the samples and deposit them in the sample container, as prescribed by the sampling program.
- **Sample delivery system.** The automatic sampler will use a peristaltic pump. The advantages of the peristaltic pump is that the sample only touches the sample tubing.
- **Sample intake.** The sample intake is the first point where the leachate sample enters the sampler. The sample intake should be large enough to allow the sample to enter without any obstruction. The intake should be made of a material that will not alter the sample through leaching or absorption.
- **Sample transport line.** The sample transport line connected to the sample intake will be made of an inert material (Teflon) that will not alter the sample, chemically or physically, through leaching, absorption, or desorption. Precautions will be taken to ensure that the line is free of kinks, twists, and sharp bends; the line should be as short as possible.
- **Sample storage.** The sample container will be placed inside the refrigerated compartment of the automatic sampler for collection of the composite. The sample container type and volume will be selected to meet the requirements of the sample authorization form (SAF) and in accordance with EPA requirements for cleaning and sample container compatibility.
- **Power source.** The automatic sampler will be located inside the ERDF leachate pumping station and will use an AC line power source

**3.4.1.2 Grab Volatile Organic Analyte and Oil and Grease Sample Collection.** A discrete grab sample will be collected for VOAs and for the oil and grease analysis from a tap near the automatic sampler or directly from the modu-tanks. The rationale for the collection of a grab sample is that VOAs are lost into the air space of the sample container if a continuous or automatic compositing sampler is used. In addition, because losses of grease will occur on sampling equipment, the collection of a composite sample is impractical. The grab sample will

be manually collected at the time that the composite sample is removed from the automatic sampler. Although this method for evaluating VOAs and oil and grease is not consistent with the composite approach used for other constituents, this approach will provide a more accurate, if limited, representation of concentrations than compositing. Table 3-1 includes, for VOAs and oil and grease, methods requiring grab samples.

**Table 3-1. Sampling and Holding Time Requirements for the Contaminants of Concern Analytical Methods. (3 sheets)**

Analytical Method	Title	Preferred Sample Volume	Total Sample Volume, QC included	Container	Preservation	Hold Time		Priority
						Sampling to Prep	Prep to Analysis	
<b>Composite Sample</b>								
6010B	Inductively Coupled Plasma-Atomic Emission Spectrometry	100 mL	300 mL	Glass or plastic	HNO <sub>3</sub> to pH<2	6 months		3
7470A	Mercury in Liquid Waste (Manual Cold Vapor Technique)	100 mL	300 mL	Glass or plastic	HNO <sub>3</sub> to pH<2	28 days		5
8070A <sup>a</sup>	Nitrosamines by GC	1 L	3 L	Amber glass with Teflon-lined lid	Cool, 4°C	7 days	40 days	2
8081A/ 8082	Organochlorine Pesticides by GC/PCBs by GC	1 L	3 L	Glass, Teflon-lined cap	Cool, 4°C	7 days	40 days	4
8151A	Chlorinated Herbicides by GC Using Methylation or Pentafluorobenzoylation Derivatization: Capillary Column Techniques	1 L	3 L	Amber glass with Teflon-lined lid	Cool, 4°C	7 days	40 days	Of lower priority
8270C <sup>b</sup>	Semivolatile Organic Compounds by GC/MS	1 L	3 L	Amber glass with Teflon-lined lid	Cool, 4°C	7 days	40 days	1
8315A <sup>c</sup>	Determination of Carbonyl Compounds by HPLC	100 mL	300 mL	Glass, Teflon-lined cap	Cool, 4°C	3 days	3 days	Of lower priority
8310 <sup>b</sup>	Solvent Extractable PAHs HPLC with UV and/or fluorescence	1 L	3 L	Glass, Teflon-lined cap	Cool, 4°C	7 days	40 days	Of lower priority
8318	N-Methylcarbamates by HPLC	100 mL	300 mL	Amber glass with Teflon-lined lid	Cool, 4°C; adjust pH 4-5 with 0.1N chloroacetic acid	7 days	40 days	Of lower priority
9010B	Total and Amenable Cyanide (Distillation/Automated Colorimetric)	500 mL	1,500 mL	Glass or plastic	Cool, 4°C; if oxidizing agents present add 5 mL 0.1N NaAsO <sub>2</sub> per L or 0.06 g of ascorbic acid per L; adjust pH>12 with 50% NaOH	14 days		6

**Table 3-1. Sampling and Holding Time Requirements for the Contaminants of Concern Analytical Methods. (3 sheets)**

Analytical Method	Title	Preferred Sample Volume	Total Sample Volume, QC included	Container	Preservation	Hold Time		Priority
						Sampling to Prep	Prep to Analysis	
9056	Determination of Inorganic Anions by Ion Chromatography	100 mL	100 mL	Glass or plastic	Cool, 4°C	48 hr		7
9060	Total Organic Carbon	100 mL	100 mL	Glass	Cool, 4°C; adjust pH<2 with HCl or H2SO4	28 days		Of lower priority
9050A	Specific Conductance	100 mL	100 mL	Glass or plastic	Cool, 4°C	28 days		Of lower priority
9040	pH Electrometric Measurement	100 mL	100 mL	Glass or plastic	Cool, 4°C	Analyze immediately		8
160.1	Total Dissolved Solids	100 mL	300 mL	Glass or plastic	Cool, 4°C	7 days		Of lower priority
160.2	Total Suspended Solids	100 mL	300 mL	Glass or plastic	Cool, 4°C	7 days		Of lower priority
350.2 (distill) followed by 350.1 or 350.3	Ammonia	400 mL	1,200 mL	Glass or plastic	Cool, 4°C; adjust pH<2 with H2SO4	28 days		Of lower priority
<b>Total Volume for Composite Sample<sup>d</sup></b>		<b>5.4 – 6.5 L</b>	<b>13.9– 17.2 L</b>					
Grab Sample								
6252A <sup>c</sup>	PFBHA liquid-liquid extraction by GC method	2 x 40 mL	6 x 40 mL	40-mL glass vial with Teflon-lined septum caps	Cool, 4°C	48 hours		Of lower priority
8015	Alcohols by GC	2 x 40 mL	6 x 40 mL	40-mL glass vial with Teflon-lined septum caps	Cool, 4°C	14 days		3
8260B	Volatile Organic Compounds by GC/MS	2 x 40 mL	6 x 40 mL	40-mL glass vial with Teflon-lined septum caps	Cool, 4°C, adjust pH<2 with H2SO4, HCl, or solid NaHSO4	14 days		2
9030B/ 9034 or 9215	Sulfide by distillation followed by Colorimetric or ISE	250 mL	500 mL	Glass or plastic	Cool, 4°C; add zinc acetate per 100 mL, adjust pH> with NaOH	7 days		6

**Table 3-1. Sampling and Holding Time Requirements for the Contaminants of Concern Analytical Methods. (3 sheets)**

Analytical Method	Title	Preferred Sample Volume	Total Sample Volume, QC included	Container	Preservation	Hold Time		Priority
						Sampling to Prep	Prep to Analysis	
9070	Total Recoverable Oil and Grease (Gravimetric, Separatory Funnel Extraction)	1 L	3 L	Glass	Cool, 4°C; adjust pH < 2 with HCl	28 days		Of lower priority
<b>Total Volume for Grab Sample<sup>d</sup></b>		1.41-1.49 L	3.98-4.22 L					

<sup>a</sup>Nitrosamines may be analyzed by 8070A or 8270C depending on which method will achieve detection limits in Table 3-2.

<sup>b</sup>PAHs may be analyzed by either 8270C or 8310 provided that practical quantitation limits in Table 3-2 are met.

<sup>c</sup>Either method may be used for formaldehyde.

<sup>d</sup>Volume depends on methods selected.

GC = gas chromatography

HPLC = high performance liquid chromatography

ISE = ion-selective electrode

MS = mass spectrometry

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyl

UV = ultraviolet

### 3.4.2 Sample Equipment Decontamination

The automatic sampler will be conditioned before first use and after maintenance operations that include exchange of the sampling tubing, by flushing the equipment and components with deionized water.

### 3.4.3 Sample Locations and Frequencies

The ERDF leachate sample collection system located at the leachate pump station will be the key monitoring location. Composite samples will be collected using the automatic sampler at a location where the total effluent flow is accessible. Grab samples will be collected at a tap near the automatic sampler or from the modu-tank itself. Figure 2-1 shows the sample collection location of the automatic sampler.

### 3.4.4 Corrective Action

If, for any reason, the composite sampler malfunctions or is not available, grab samples for the appropriate suite of analyses will be collected from the tap or from one of the modu-tanks. Grab samples also may be used to collect samples at times of limited flow. If, for example, insufficient leachate is pumped during the sample period to generate an adequate composite sample to perform the required analyses, Field Services will collect additional grab sample volume to make up the shortfall in the composite sample. This volume will be added to the composite sample in the field before preparation of samples for shipment.

Because the composite sampler will be programmed based on projected leachate pump rates, the actual volume pumped could significantly exceed the volumes that are used for determining the size and timing of individual aliquots. If this occurs, the composite may not accurately represent the total quantity of leachate pumped. If the total volume pumped over the sample period exceeds by more than 30% the volume used to calculate aliquots for a sample period (based on analysis of flowmeter records), Field Services will collect a leachate sample from the grab sample tap or modu-tank at the time of sample collection and add this volume to the composite before packing samples for shipment. The amount of grab samples collected should be proportional to the amount of excess leachate pumped (e.g., if 50% more leachate than projected was pumped over a sample period, 50% of the composite sample volume—2 gal—should be collected as a grab sample and added to the composite).

### 3.4.5 Sample Volume, Preservation, and Holding Times

The volume of sample collected depends upon the type and number of analyses needed, as reflected in the parameters to be measured and the requirements of the analytical laboratory being used. Sample volume must be sufficient for all analyses, including laboratory QA/quality control (QC). Several analytes may be analyzed by one of two methods requiring different volumes. Therefore, the total volume depends on the methods selected. The total composite volume required for analyses is 13.2 L (3.5 gal) with a total sampler capacity of up to 19 L (5 gal). Final sample volumes will be specified in the SAF; SAF procedures are found in BHI-EE-01, *Environmental Investigations Procedures*, EIP 2.0, "Sample Event Coordination." Table 3-1 lists the analytical methods, preferred volumes, and a prioritized list of methods for analysis in the event of insufficient sample collection for analysis of the complete list of COCs. Sample analyses were prioritized based on multi-analyte methods and higher health-risk associated analytes.

Sample preservation ensures that the sample remains representative of the leachate from the time of collection until the time of analysis. Sample preservation techniques consist of refrigeration and pH adjustment. Because sample deterioration can take place during the sample compositing process, it will be necessary to refrigerate the samples during compositing, in addition to preserving any aliquot samples before shipment to the laboratory. Samples will be refrigerated to  $4^{\circ} \pm 2^{\circ}\text{C}$  during compositing to decrease the potential for chemical degradation. After samples are aliquoted into bottles for specific analyses, samples will be preserved per Table 3-1. Refrigeration continues using wet ice (or equivalent) during sample shipment and until the sample is received in the laboratory for analysis. Final sample preservation requirements will be specified in the SAF and are shown in Table 3-1.

In addition to preservation techniques, holding times between sample collection and analysis must be met for the sample data to be considered valid. The leachate composite becomes a sample upon the removal of the composite sample from the 19-L (5-gal) container. At that point, holding time limitations begin. Final sample holding times will be specified in the SAF and are shown in Table 3-1.

### **3.4.6 Sample Documentation**

All information pertinent to field sampling and analysis will be recorded in bound logbooks in accordance with BHI-EE-01, EIP 1.5, "Field Logbooks." Entries made in the logbook will be dated and signed by the individual who makes the entry.

### **3.4.7 Sample Identification and Labeling**

The Hanford Sample Data Tracking database will be used to track the sample and laboratory results. Sample numbers will be issued to the sampling organization in accordance with BHI-EE-01, EIP 2.0, "Sample Event Coordination." Each sample will be identified and labeled with a unique sample number. The sample location, date, and time of collection along with the corresponding number will be recorded on the chain-of-custody form and in the field sampling logbook.

Each sample container will be labeled with the following information using a waterproof marker on firmly affixed, water-resistant labels:

- Sample number
- Sample collection date/time
- Name/initials of sampler
- Analysis required
- Preservation method, if applicable.

### **3.4.8 Chain-of-Custody Procedures**

All samples will be controlled from the point of origin to the analytical laboratory in accordance with BHI-EE-01, EIP 3.0, "Chain of Custody." A chain-of-custody record will be initiated in the field at the time of collection and will accompany each set of samples. Chain-of-custody procedures will be followed throughout the sample collection, transfer, analysis, and disposal to ensure that the integrity of the sample is maintained.

A custody seal (evidence tape) will be affixed to the lid of each sample container. The custody seal will be initialed and dated by the sampler at the time the container is sealed.

### **3.4.9 Sample Packaging and Shipping**

Samples will be packaged and shipped in accordance with BHI-EE-01, EIP 3.1, "Sample Packaging and Shipment." After the samples are properly labeled, they will be placed in a transportation package along with the chain of custody and sample analysis request form. Samples will be placed in sufficient ice to maintain the temperature at  $4^{\circ} \pm 2^{\circ}\text{C}$  throughout the shipment.

Most samples will not require any special transportation precautions except careful packaging to prevent breakage and/or spillage. The sample shipment must comply with applicable U.S.

Department of Transportation Hazardous Materials Regulations (49 CFR 171-177) and International Air Transport Association (IATA) air shipment requirements.

### **3.5 SAMPLING QUALITY ASSURANCE AND QUALITY CONTROL**

Quality assurance requirements for sampling are established in BHI-QA-03, *Quality Assurance Program Plans*, Procedure 5.1, "Field Sampling Quality Assurance Program Plan." All sampling personnel will be sufficiently trained to ensure the acquisition of complete and high-quality data.

#### **3.5.1 Equipment Operation and Calibration**

All sampling and field measurement equipment used to support this project will be calibrated to operate within the specifications provided by the manufacturer and in accordance with applicable ERC procedures. Calibrations will be performed as stipulated by the manufacturer's calibration procedure, the project-specific calibration requirements, or as specified within the requirements defined by the analytical method.

#### **3.5.2 Preventive Maintenance**

All measurement and testing equipment used in the field that directly affects the quality of the analytical data is subject to preventive maintenance measures that ensure minimization of measurement system downtime.

Analytical Field Services will be responsible for maintenance of the automatic sampler in accordance with manufacturers' recommendations. An ERDF project technician will perform routine inspections of the equipment and notify Analytical Field Services if problems occur with the equipment. Maintenance requirements, such as parts lists and instructions, will be included in the operating procedure for the automatic sampler. Field repairability of the sampler may be limited to replacement of expendable items or certain mechanical parts. Electronic parts must be repaired by a skilled technician who has access to the proper test equipment, which may, therefore, require repair by the manufacturer.

#### **3.5.3 Field Quality Control Requirements**

QC samples are introduced into the collection system to monitor the adequacy of the sampling system and the integrity of the samples during their transfer from the field collection point through the laboratory analysis. QC requirements for the field sample collection process are defined as follows:

- One container rinsate blank will be collected from the 19-L (5-gal) carboy for each new sampling event. The equipment rinsate blank will assess the cleanliness of the 19-L (5-gal) sample container and the effectiveness of the container decontamination process. The rinsate blank will be collected using ASTM Type II water passed through the decontaminated 19-L (5-gal) sampling container prior to starting the next sampling event.

The rinsate blank will be analyzed for the same chemical constituents as actual samples collected during the sampling period. All sample results will be evaluated to determine the possible effects of any contamination that may be introduced by the sample collection container, as detected in the rinsate blank.

The container rinsate blanks will be collected and submitted to the laboratory at the time of collecting the current composite sample; however, the analytical results will correlate to the subsequent composite sampling event.

- One field duplicate sample of the leachate will be collected for each sampling event. Field duplicates are composed of two samples produced from the same matrix and collected at the same location. The field duplicates provide information concerning the homogeneity of the matrix, as well as an evaluation of the precision of the sampling and analysis process.

When the sampling event cycle is completed, and aliquots are prepared for the individual sample analyses, equal aliquots will be assigned to field duplicate samples.

- One VOA trip blank will be collected for every VOA sampling event. Trip blanks are samples prepared by adding clean, analyte-free water to sample containers for analysis of volatile organic compounds. Preservatives are added to the blank, and the containers are sealed before the sampling trip. Trip blanks are usually prepared in the laboratory and are transported with empty sample containers to the site of work and remain sealed until analyzed with the collected samples at the laboratory. Trip blanks permit evaluation of contamination generated from sample containers or occurring during the shipping and laboratory storage process.

## 3.6 LABORATORY ANALYSIS

### 3.6.1 Analytical Methods

Analytical methods will be as defined in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (EPA 1997), except for ammonia, total suspended solids (TSS), and total dissolved solids (TDS). Ammonia, TSS, and TDS analytical methods will be as defined in *Chemical Analysis of Water and Wastes* (EPA 1995). Table 3-2 identifies analytes and the associated method references and target detection limits identification for all COCs. Analyses will be performed on unfiltered samples. Analyses are expected to be performed on and reported as undiluted samples except for quantification of constituents exceeding the upper calibration limit of the associated analytical method.

**Table 3-2. Comparison of Delisting Levels and Quantitation Limits  
for the Contaminants of Concern. (6 Sheets)**

CAS#	Constituent	Method ID	Delisting Level <sup>a</sup>	Lab PQL/EQL <sup>a</sup>	Comments
7429-90-5	Aluminum	6010B		31	
7440-36-0	Antimony	6010B	144	43	
7440-38-2	Arsenic	6010B	1200	82	
7440-39-3	Barium	6010B	48000	0.4	
7440-41-7	Beryllium	6010B	96	0.4	
7440-43-9	Cadmium	6010B	120	3.3	
7440-70-2	Calcium	6010B		16	
7440-47-3	Chromium	6010B	2400	2.7	
7440-48-4	Cobalt	6010B	50400	4.3	
7440-50-8	Copper	6010B	3120	4.1	
7439-92-1	Lead	6010B	360	30	
7439-95-4	Magnesium	6010B	b	5000	
7439-96-5	Manganese	6010B		1	
7440-02-0	Nickel	6010B	2400	15	
7440-09-7	Potassium	6010B		2200	
7782-49-2	Selenium	6010B	1200	61	
7440-21-3	Silicon	6010B	b	5000	
7440-22-4	Silver	6010B	4800	6	
7440-23-5	Sodium	6010B		34	
7440-28-0	Thallium	6010B	48	44	
7440-31-5	Tin	6010B		35	
7440-62-2	Vanadium	6010B	7200	2.9	
7440-66-6	Zinc	6010B	240000	2.3	
7439-97-6	Mercury	7470A	48	0.03	
72-54-8	4,4-DDD	8081A	9.6	0.007	
72-55-9	4,4-DDE	8081A	7.2	0.005	
50-29-3	4,4-DDT	8081A	7.2	0.01	
309-00-2	Aldrin	8081A	0.12	0.01	
319-84-6	alpha-BHC	8081A	0.24	0.006	
319-85-7	beta-BHC	8081A	1.2	0.019	
60-57-1	Dieldrin	8081A	0.12	0.008	
72-20-8	Endrin	8081A	48	0.005	
58-89-9	Gamma-BHC (lindane)	8081A	4.8	0.009	
76-44-8	Heptachlor	8081A	2.4	0.011	
1024-57-3	Heptachlor epoxide	8081A	4.8	0.005	
8001-35-2	Toxaphene	8081A	72	0.14	

**Table 3-2. Comparison of Delisting Levels and Quantitation Limits  
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CAS#	Constituent	Method ID	Delisting Level <sup>a</sup>	Lab PQL/EQL <sup>a</sup>	Comments
1336-36-3	Polychlorinated biphenyls (PCBs)	8082	12	0.5 – 9.0 depending on Aroclor	
94-75-7	2,4-D	8151A	1680	4	
71-55-6	1,1,1-Trichloroethane	8260B	4800	0.89	
79-34-5	1,1,2,2-Tetrachloroethane	8260B	9.6	1.5	
127-18-4	1,1,2,2-Tetrachloroethene	8260B	120	0.92	
79-00-5	1,1,2-Trichloroethane	8260B	120	0.5	
79-01-6	1,1,2-Trichloroethylene	8260B	192	2	
75-34-3	1,1-Dichloroethane	8260B	21.6	1	
75-35-4	1,1-Dichloroethene	8260B	168	0.97	
76-13-1	1,2,2-Trichlorotrifluoroethane (Freon 113)	8260B	24000000	10	
156-59-2	1,2-cis-Dichloroethene	8260B	9600	0.51	
107-06-2	1,2-Dichloroethane	8260B	120	0.72	
78-87-5	1,2-Dichloropropane	8260B	120	1	
156-60-5	1,2-trans-Dichloroethene	8260B	16800	5	
106-99-0	1,3-Butadiene	8260B		10 <sup>c</sup>	
542-75-6	1,3-Dichloropropene	8260B	12	AS ISOMERS	
10061-01-5	cis-1,3-Dichloropropene	8260B		0.51	
10061-02-6	trans-1,3-Dichloropropene	8260B		0.29	
123-91-1	1,4-Dioxane	8260B	192	100 <sup>d</sup>	PQL with 25 mL (100 µg/L)
75-01-4	1-Chloroethene (vinyl chloride)	8260B	48	3.4	
98-82-8	(1-Methylethyl)benzene	8260B	24000	5	
78-93-3	2-Butanone (MEK)	8260B	480000	2.1	
4170-30-3	2-Butenaldehyde	8260B		100 <sup>c</sup>	
110-75-8	2-Chloroethyl vinyl ether	8260B		3.1	
126-98-7	2-Methyl-2-propenenitrile (methacrylonitrile)	8260B	96	2.2	
78-83-1	2-Methylpropyl alcohol (isobutyl alcohol)	8260B	240000	380	
67-64-1	2-Propanone (acetone)	8260B	96000	9.7	
107-18-6	2-Propen-1-ol (allyl alcohol)	8260B		100 <sup>c</sup>	
107-05-1	3-Chloropropene (allyl chloride)	8260B	96	1.2	
108-10-1	4-Methyl-2-pentanone (MIBK)	8260B	48000	1	
141-78-6	Acetic acid ethyl ester (ethyl acetate)	8260B	720000	10	

**Table 3-2. Comparison of Delisting Levels and Quantitation Limits for the Contaminants of Concern. (6 Sheets)**

CAS#	Constituent	Method ID	Delisting Level <sup>a</sup>	Lab PQL/EQL <sup>a</sup>	Comments
108-05-4	Acetic acid vinyl ester (vinyl acetate)	8260B	960000	3.6	
75-05-8	Acetonitrile	8260B	4800	23.5	
107-02-8	Acrolein	8260B	16800	21.4	
107-13-1	Acrylonitrile	8260B	4.8	1.7 <sup>d</sup>	PQL with 25 mL ~1.7 µg/L
71-43-2	Benzene	8260B	120	0.84	
75-27-4	Bromodichloromethane	8260B	33.6	0.5	
74-83-9	Bromomethane	8260B	1200	1.4	
75-15-0	Carbon disulfide	8260B	96000	0.74	
56-23-5	Carbon tetrachloride	8260B	120	0.71	
108-90-7	Chlorobenzene	8260B	2400	0.75	
75-00-3	Chloroethane	8260B		1	
67-66-3	Chloroform	8260B	2400	0.86	
74-87-3	Chloromethane	8260B	808.8	2.3	
124-48-1	Dibromochloromethane	8260B	24	0.33	
75-71-8	Dichlorodifluoromethane	8260B	168000	2.3	
75-09-2	Dichloromethane (methylene chloride)	8260B	120	3.8	
26545-73-3	Dichloropropanol	8260B		100 <sup>e</sup>	
100-41-4	Ethyl benzene	8260B	1680000	1.3	
60-29-7	Ethyl ether	8260B	168000	10	
106-93-4	Ethylene dibromide	8260B	1.2	0.34	
67-56-1	Methyl alcohol	8015	480000	5000	
71-36-3	n-Butyl alcohol	8260B	96000	12.6	
100-42-5	Styrene	8260B	2400	0.64	
108-88-3	Toluene	8260B	24000	0.79	
75-25-2	Tribromomethane (bromoform)	8260B	2400	0.36	
75-69-4	Trichlorofluoromethane	8260B	240000	2	
75-70-7	Trichloromethanethiol	8260B		e	To be measured as TIC
1330-20-7	Xylene	8260B	240000	0.71	
120-82-1	1,2,4-Trichlorobenzene	8270C	1680	1.1	
122-66-7	1,2-Diphenylhydrazine	8270C	2.4	10 <sup>f</sup>	
106-46-7	1,4-Dichlorobenzene	8270C	96	5	
591-08-2	1-Acetyl-2-thiourea	8270C		1000	
95-95-4	2,4,5-Trichlorophenol	8270C	96000	0.76	
88-06-2	2,4,6-Trichlorophenol	8270C	192	1.2	
120-83-2	2,4-Dichlorophenol	8270C	2400	1.2	
105-67-9	2,4-Dimethylphenol	8270C	16800	0.79	

**Table 3-2. Comparison of Delisting Levels and Quantitation Limits  
for the Contaminants of Concern. (6 Sheets)**

CAS#	Constituent	Method ID	Delisting Level *	Lab PQL/EQL*	Comments
51-28-5	2,4-Dinitrophenol	8270C	1680	2.3	
95-70-5	2,5-Diaminotoluene	8270C	2304000	1000 <sup>c</sup>	Degrades during extraction <sup>g</sup>
91-58-7	2-Chloronaphthalene	8270C	72000	1.4	
95-57-8	2-Chlorophenol	8270C	4800	1.2	
131-89-5	2-Cyclohexyl-4,6-dinitrophenol	8270C		100	
91-59-8	2-Naphthylamine	8270C	2.4	4.4 <sup>f</sup>	
101-55-3	4-Bromophenylphenyl ether	8270C		1.9	
59-50-7	4-Chloro-3-methylphenol	8270C		1.1	
100-02-7	4-Nitrophenol	8270C		2.1	
57-97-6	7,12-Dimethylbenz[a]anthracene	8270C		4.4	
83-32-9	Acenaphthene	8270C	48000	1.6	
98-86-2	Acetophenone	8270C	96000	3.4	
134-32-7	alpha-Naphthylamine	8270C		4.4	
62-53-3	Aniline	8270C	240	2.7	
120-12-7	Anthracene	8270C	240000	1.6	
56-55-3	Benzo(a)anthracene	8270C or 8310	1.848	1.0 <sup>h</sup>	
50-32-8	Benzo(a)pyrene	8270C	4.8	2.2	
205-99-2	Benzo(b)fluoranthene	8270C or 8310	1.704	1.0 <sup>h</sup>	
207-08-9	Benzo(k)fluoranthene	8270C	604.8	1.1	
100-51-6	Benzyl alcohol	8270C	240000	0.93	
111-91-1	Bis(2-Chloroethoxy)methane	8270C		1.6	
111-44-4	Bis(2-chloroethyl) ether	8270C	1.92	1.5	
108-60-1	Bis(2-Chloroisopropyl) ether	8270C		3.1	
117-81-7	Bis(2-ethylhexyl) phthalate	8270C	144	2.9	
85-68-7	Butylbenzylphthalate	8270C	168000	2.2	
218-01-9	Chrysene	8270C	64.8	2.1	
1319-77-3	Cresols, total	8270C	48000	10 PER ISOMER	
95-48-7	o-Cresol	8270C	48000	0.97	
108-39-4	m-Cresol	8270C	48000	10	
106-44-5	p-Cresol	8270C	48000	0.69	
53-70-3	Dibenz[a,h]anthracene	8270C or 8310	0.264	0.15 <sup>h</sup>	
25321-22-6	Dichlorobenzene	8270C		AS ISOMERS	
95-50-1	1,2-Dichlorobenzene	8270C	14400	1.2	

**Table 3-2. Comparison of Delisting Levels and Quantitation Limits  
for the Contaminants of Concern. (6 Sheets)**

CAS#	Constituent	Method ID	Delisting Level <sup>a</sup>	Lab PQL/EQL <sup>a</sup>	Comments
541-73-1	1,3-Dichlorobenzene	8270C		1.3	
106-46-7	1,4-Dichlorobenzene	8270C	96	1.4	
84-66-2	Diethyl phthalate	8270C	720000	1.6	
131-11-3	Dimethyl phthalate	8270C	9600000	1.3	
84-74-2	Di-n-butylphthalate	8270C	96000	1.6	
25154-54-5	Dinitrobenzene	8270C		AS ISOMERS	
99-65-0	1,3-Dinitrobenzene	8270C	96	3.8	
100-25-4	1,4-Dinitrobenzene	8270C	240	100 <sup>c</sup>	Hydrolyzes during extraction <sup>b</sup>
117-84-0	Di-n-octylphthalate	8270C	16800	1.8	
62-50-0	<i>Ethyl methanesulfonate</i>	8270C	0.0072	3.3 <sup>f</sup>	
206-44-0	Fluoranthene	8270C	24000	1.6	
86-73-7	Fluorene	8270C	24000	1.5	
87-68-3	Hexachlorobutadiene	8270C	24	0.89	
67-72-1	Hexachloroethane	8270C	144	0.98	
70-30-4	Hexachlorophene	8270C	240	10	
193-39-5	Indeno(1,2,3-cd)pyrene	8270C	5.04	2.5	
78-59-1	Isophorone	8270C	2160	1.4	
122-39-4	N,N-Diphenylamine	8270C	21600	5	
91-20-3	Naphthalene	8270C	24000	1.4	
98-95-3	Nitrobenzene	8270C	480	1.2	
621-64-7	<i>N-Nitroso-di-n-propylamine</i>	8270C or 8070A	0.24	0.46 <sup>f</sup>	PQL 8070A (0.46 ug/L)
86-30-6	N-Nitrosodiphenylamine	8270C	480	1.5	
59-89-2	N-Nitrosomorpholine	8270C		10	
62-75-9	<i>N-Nitroso-N,N-dimethylamine</i>	8270C or 8070A	0.048	1.3 <sup>f</sup>	PQL 8070A (0.15 ug/L)
126-68-1	O,O,O-Triethyl phosphorothioate	8270C		5	
87-86-5	Pentachlorophenol	8270C	16.8	1.6	
108-95-2	Phenol	8270C	480000	0.42	
106-50-3	p-Phenylenediamine	8270C	168000	100	
129-00-0	Pyrene	8270C	24000	1.6	
110-86-1	Pyridine	8270C	960	0.96	
109-99-9	Tetrahydrofuran (THF – furan indicator)	8270C		10	
50-00-0	Formaldehyde	8315A or 6252B		5000 <sup>c</sup>	
22781-23-3	Bendiocarb	8318		0.01	
57-12-5	Cyanide	9010B	4800	3.1	

**Table 3-2. Comparison of Delisting Levels and Quantitation Limits for the Contaminants of Concern. (6 Sheets)**

CAS#	Constituent	Method ID	Delisting Level <sup>a</sup>	Lab PQL/EQL <sup>a</sup>	Comments
1634-02-2	Tetrabutylthiuram disulfide	9030B/9034 or 9030B/9215		500	This compound is likely to dissociate to sulfide. Sulfide analysis is specified
	PH	9040		0.1 pH unit	
	Specific conductance	9050A		0.15 umhos/cm	
24959-67-9	Bromide	9056	<sup>(4)</sup>	250	
16887-00-6	Chloride	9056		100	
16984-48-8	Fluoride	9056	96000	50	
14797-55-8	Nitrate	9056		50	
14797-65-0	Nitrite	9056		50	
14265-44-2	Phosphate	9056		250	
14808-79-8	Sulfate	9056		250	
7664-41-7	Ammonia	350.1 or 350.3		30	Distill by method 350.2, followed by analysis by either 350.1 (colorimetric) or 350.3 (ISE)
	Total organic carbon	9060		530	
	Oil and grease	9070		500	
	Total dissolved solids	160.1		4700	
	Total suspended solids	160.2		1000	

NOTE: Shading and *italics* indicate analytes where PQL/EQL is above or equal to delisting levels.

<sup>a</sup>Unless otherwise noted, all values are in µg/L.

<sup>b</sup>Added to meet Effluent Treatment Facility waste acceptance criteria; therefore, no delisting level is required.

<sup>c</sup>PQLs are estimated based on compounds of similar functional groups. These compounds are not typically analyzed by the stated methods. After petition approval and before sample collection, method validation will be done to ensure PQLs below the delisting level can be attained.

<sup>d</sup>A layer purge volume will be attempted (25 mL instead of 5 mL), which should decrease PQL. This is estimated and will be verified before sample analysis.

<sup>e</sup>PQL will be estimated based on compounds of similar volatility and structure. No other technical information could be found for this compound.

<sup>f</sup>Lower detection limits will be achieved by either:

- a. single extraction of layer sample volume
- b. combining multiple extractions and concentrations to same final volume
- c. concentration to smaller sample volume than specified in the method.

<sup>g</sup>Degradation and hydrolysis are discussed in method 8270C.

<sup>h</sup>PQL is based on method 8310.

ISE = ion-selective electrode

PQL = practical quantitation limit

### 3.6.2 Detection Limits

Method detection limits (MDLs) and estimated quantitation limits (EQLs), as defined in Chapter 1 of SW-846, will be used to assess method sensitivity. The MDL is the lowest amount of the analyte that can be detected in a sample, based on the analytical method. Laboratories report practical quantitation limits (PQLs), which is another term that is equivalent to the EQL. PQL/EQL values typically are higher than the MDL and reflect levels that are routinely achieved in a variety of sample matrices. Table 3-2 lists the analytes, the method, the delisting level (24 times the docket value), and the laboratory PQLs/EQLs. Where the PQL/EQL previously reported is above the delisting level, the detection limits for the analyte associated with proposed methods as listed in Table 2-11 have not been evaluated using the method specified. The evaluation will be done after approval of the delisting petition and before the initial sample collection. The PQL evaluation will be part of the method validation for the analytes being "added" to the methods in question. Additionally, the laboratories currently under contract must prove that the laboratory can satisfactorily perform any methods not typically performed under the existing contract (e.g., methods 8315A, 6252B, 8310, 8070A). Performing an MDL and PQL study per Chapter 1 of SW-846 is part of this proof of performance. This proof will be generated before samples are collected to ensure that PQLs meet those listed in Table 3-2.

In order to meet PQLs specified, some methods must either use larger sample volumes or concentrate the sample more; these analytes are footnoted in Table 3-2. Even with additional sample and concentration, some analytes may not be detectable below the delisting level. These five analytes are footnoted with a "3" and highlighted in Table 3-2. Literature survey of standard methods and research methods in the literature did not produce any methods that will analyze these compounds below the delisting level with confidence. The laboratory will attempt to use a larger sample or concentrate the final extract and report the lowest PQLs possible. After the evaluation, the delisting level for these five analytes will be adjusted based on the logic in Table 3-3. Table 3-3 lists the relationships between the PQL/EQL, the delisting level, and the proposed approach for evaluation of the data.

**Table 3-3. Relationship Between Practical Quantitation Limits/Estimated Quantitation Limits and Delisting Levels Versus the Approach to Decision Making.**

Relationship Between PQL/EQL and Delisting Level	Approach to Decision Making
PQLs are below the delisting level.	No further alteration to the limits or the method is required. Decisions can be made by direct comparison to the analytical result provided no matrix effects degrade PQL/EQLs.
EQL and PQLs are equal to or above the delisting level.	Use the PQL as the delisting level provided it is $\leq$ EQL in SW-846.

EQL = estimated quantitation limit

MDL = minimum detection limit

PQL = practical quantitation limit

### 3.6.3 Laboratory Quality Assurance and Control

For samples analyzed according to SW-846 procedures, all of the QC requirements outlined in that document and in the applicable method will apply. At a minimum, the following QC shall be performed:

- One method blank for every 20 samples, analytical batch, or sample delivery group (whichever is most frequent) will be used to monitor contamination resulting from the sample preparation process for each analytical method.
- One laboratory control sample or blank spike will be performed for every 20 samples, analytical batch, or sample delivery group (whichever is most frequent) of samples for each analytical method criteria to monitor the effectiveness of the sample preparation process. The results from the analysis are used to assess laboratory performance.
- As appropriate to the method, a combination of either (1) a matrix spike and matrix spike duplicate, or (2) a matrix spike and duplicate sample will be prepared and analyzed for each 20 samples, analytical batch, or delivery group (whichever is most frequent). This QC step will be performed on an ERDF leachate sample. The matrix spike results are a measure of the accuracy of the analytes of interest that are measured in the sample matrix. Laboratory duplicates or matrix spike duplicates are used to assess precision and will be analyzed at the same frequency as the matrix spikes.

### 3.6.4 Laboratory Quality Control Acceptance Criteria

The definitions of matrix spikes, matrix spike duplicates, and sample duplicates found in Chapter 1 of SW-846 (EPA 1997) are used for this project. Matrix spikes will measure accuracy via percent recovery, as defined in Chapter 1 of SW-846. Relative percent difference and relative standard deviation, as defined in Chapter 1 of SW-846, will be used to assess precision. The accuracy and precision limits that are listed in the SW-846 methods will be applied to the results from the leachate for each sampling round. Analytes without accuracy and precision limits in SW-846 will be assessed based on statistical evaluation of laboratory control sample results using the same formulas presented for the compounds with limits. Because the leachate will be aqueous with low probability of interferences, this is a reasonable approach.

## 3.7 DATA MANAGEMENT

### 3.7.1 Data Reporting

The laboratory must prepare a report summarizing the results of analysis, including associated laboratory QC. Data summaries shall include, at a minimum, sample identity, sampling and analysis dates, reduced data results, analytical detection limits for nondetect results, and a detailed case narrative for the following investigative and QC samples (as appropriate to the method):

- ERDF samples
- All associated laboratory method blanks
- Associated batch matrix spike/surrogate recoveries
- Associated batch duplicate/matrix spike duplicate relative percent differences
- Associated batch laboratory control sample recoveries.

### 3.7.2 Data Validation

Level C data validation has been selected for leachate data per ERC procedures (WHC 1993a, 1993b). This approach allows the review of all QC data, transcription error verification, and holding time review. This level is the middle validation level and does not require review of raw data and recalculation of data. The basic elements of this validation level include evaluation of the following parameters (as appropriate to the method):

- Required analysis hold times
- Associated batch method blank results
- Associated batch matrix spike/surrogate recoveries
- Associated batch duplicate/matrix spike duplicate relative percent differences
- Associated batch laboratory control sample recoveries
- Reported analytical detection limits for nondetect results.

Should problems arise from the level C review, the project will perform recalculation and review of raw data. Level C validation will be performed by qualified Sample Management personnel or by a qualified subcontractor. Subcontract validation requirements will be defined in procurement documentation or work orders, as appropriate.

### 3.7.3 Data Management

Data generated as a result of laboratory analysis will be managed and stored by the Sample Management organization, as outlined in BHI-EE-01, Section 2.0, "Sample Management."

All validated reports and supporting analytical data packages shall be subject to final technical review by qualified reviewers before their final submittal to regulatory agencies or inclusion in reports or technical memoranda, at the direction of the ERDF STR. Electronic data access, when appropriate, is through computerized databases (such as HEIS). Where electronic data are not available, hard copies will be provided in accordance with Section 9.6 of the *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) (Ecology et al. 1994).

## 3.8 AUDITING AND ASSESSMENT

The ERC Quality Programs department may conduct random surveillance and assessments to verify compliance with the requirements outlined in this SAP, the ERC Quality Management Plan (Section 2.0, BHI-QA-01), and the ERC procedures and regulatory requirements. Collectively, the surveillance and assessments will address quality-affecting activities that

include, but are not limited to, measurement system accuracy, field activities, data collection, processing, validation, management, and QA programs.

Random surveillance and assessments will be structured to meet the following system and performance audit classification. System audits consist of the evaluation of the measurement system components to determine their proper selection and use. Performance audits ensure the accuracy of the total system and its individual parts.

### 3.9 DATA QUALITY ASSESSMENT

Once the monitoring data have been verified and validated by a chemist, the results will be evaluated by means of formal process and statistical tests that result in conclusions and recommendations for the sampling and analysis of leachate. This evaluation is commonly called a data quality assessment (DQA).

The DQA will be ongoing to coincide with the collection of monitoring data. In general, DQA activities include the following:

1. Review project objectives and sampling design
2. Conduct a preliminary data review
3. Perform statistical analysis of the data
4. Draw conclusions from the data and make recommendations.

Project objectives will be reviewed when sufficient data have been generated to allow a reevaluation of the project objectives to ensure that they are still valid. The preliminary data review includes reviewing the QA and QC reports, tabulating the data in different forms, and graphically exploring the data. A preliminary data review can identify patterns, relationships, and potential anomalies that may need to be further explored. Statistical analysis may include the examination of time plots and performance of statistical tests to determine the significance of trends. Once graphical and quantitative analyses are performed, the results will be interpreted and conclusions and recommendations documented.

Moving average statistics may be used to determine compliance with delisting levels, in accordance with the sampling design specified in Section 3.2 of this document. Until enough data are collected to adequately identify cycles or trends, single concentrations will be used. Statistical estimates may be used once adequate data are collected. Either a single concentration or a statistical value will be compared with 12 times the docket values to determine whether an analyte should be monitored on a routine or confirmatory basis. Each time new data are collected, the same DQA procedure will take place to ensure ongoing compliance with delisting criteria.

Recommendations about the status of each analyte being monitored will be made on the same schedule that data are being collected to ensure that the monitoring status of each analyte remains up to date. Recommendations should be made in the context of the historical data and with respect to the waste management processes being performed at the site. The addition of new or

different waste streams and the management processes at the facility will be considered each time that data are assessed.

Over time, enough data may be collected to perform more involved statistical analyses, such as trend analysis, control chart analysis, time series modeling, and correlation analyses between analytes. These analyses may provide better estimates of uncertainty than a moving standard deviation, and their use should be considered for incorporation into the overall data assessment program.

### **3.10 CORRECTIVE ACTIONS**

If, at any time after the delisting of the identified waste, DOE possesses or is otherwise made aware of any environmental data or any other data relevant to the delisted waste indicating that any constituent identified in Table 2-12 is at a level in the environment higher than the delisting level established in Table 1-1 for that constituent, then DOE will report such data in writing to the Regional Administrator within 10 days of first possessing or being made aware of such data.

Based on the information described in the above paragraph and any other information received from any other source, the Regional Administrator will make a preliminary determination as to whether the reported information requires Agency action to protect human health or the environment. Further action may require suspending or revoking the exclusion, or other appropriate response necessary to protect human health and the environment.

If the Regional Administrator determines that the reported information does require Agency action, the Regional Administrator will notify DOE in writing of the actions the Regional Administrator believes are necessary to protect human health and the environment. The notice shall include a statement of the proposed action and a statement providing the facility with an opportunity to present information as to why the proposed Agency action is not necessary or to suggest an alternative action. The DOE shall have 10 days from the date of the Regional Administrator's notice to present such information.

#### 4.0 REFERENCES

- 10 CFR 835, "Occupational Radiation Protection," *Code of Federal Regulations*, as amended.
- 40 CFR 260.22, "Petitions to Amend Part 261 to Exclude a Waste Produced at a Particular Facility," *Code of Federal Regulations*, as amended.
- 40 CFR 261, "Identification and Listing of Hazardous Waste," *Code of Federal Regulations*, as amended.
- 40 CFR 264, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," *Code of Federal Regulations*, as amended.
- 49 CFR, "Transportation," *Code of Federal Regulations*, as amended.
- 49 CFR 171-177, "Department of Transportation Hazardous Materials Requirements," *Code of Federal Regulations*, as amended.
- 56 FR 3209, 1991, "Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Proposed Use of EPA's Composite Model for Landfills (EPACML) and Proposed Exclusion," *Federal Register*, Volume 56, No. 138 (July 18).
- 60 FR 6054, 1995, "Proposed Rule and Request for Comment," *Federal Register*, Volume 60, (February 1).
- Agnew, S. M., 1997, *Hanford Tank Chemical and Radionuclide Inventories: HDW Model*, Rev. 4, LA-UR-96-3860, Los Alamos National Laboratory, Los Alamos, New Mexico.
- BHI-EE-01, *Environmental Investigations Procedures*, Bechtel Hanford, Inc., Richland, Washington.
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- BHI, 1998, *Environmental Restoration Disposal Facility Waste Acceptance Criteria*, BHI-00139, Rev. 3, Bechtel Hanford, Inc., Richland, Washington.
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, 42 U.S.C. 9601, et seq.
- DOE Order 5820.2A, *Radioactive Waste Management*, as amended, U.S. Department of Energy, Washington, D.C.

- DOE-RL, 1993, *200 Area Effluent Treatment Facility: Delisting Petition*, DOE/RL-92-72, Rev. 1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
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- EPA, 1993, *Petitions to Delist Hazardous Wastes, A Guidance Manual*, EPA 530/R-93/007, Second Edition, Prepared by the Science Applications International Corporation, Falls Church, Virginia, for the Delisting Section Office of Solid Waste, U.S. Environmental Protection Agency, Washington, D.C.
- EPA, 1994, *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, EPA 540/R-94/013, Office of Emergency and Remedial Response, U.S. Environmental Protection Agency, Washington, D.C.
- EPA, 1995, *ERDF Record of Decision*, U.S. Environmental Protection Agency, Washington, D.C.
- EPA, 1995, *Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, U.S. Environmental Protection Agency, Washington, D.C.
- EPA, 1997, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, 3rd Edition, as amended by Updates I (July, 1992), IIA (August, 1993), IIB (January, 1995), and III, U.S. Environmental Protection Agency, Washington, D.C.
- EPA, Ecology, and DOE, 1996, *U.S. Department of Energy Environmental Restoration Disposal Facility - Hanford Site Benton County, Washington - Explanation of Significant Difference*, U.S. Environmental Protection Agency, Washington State Department of Ecology, and U.S. Department of Energy, Olympia, Washington.
- HSRCM-1, 1996, *Hanford Site Radiological Control Manual*, Hanford Site Contractors, Richland, Washington.
- Klem, M. J., 1990, *Inventory of Chemicals Used at Hanford Site Production Plants and Support Operations (1944-1980)*, WHC-EP-0172, Rev. 1, Westinghouse Hanford Company, Richland, Washington.
- PNNL, 1998a, *Regulatory Data Quality Objectives Supporting Tank Waste Remediation System Privatization Project*, PNL-#### (to be issued in September 1998), Pacific Northwest National Laboratory, Richland, Washington.
- PNNL, 1998b (Draft), *A Compilation of Regulated Organic Constituents Not Associated with the Hanford Site, Richland, Washington*, PNL-11927, Pacific Northwest National Laboratory, Richland, Washington.
- Resource Conservation and Recovery Act of 1976*, 42 U.S.C. 6901 et seq.

WAC 173-303, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended.

WHC, 1993a, *Data Validation Procedures for Radiological Analyses*, WHC-SD-EN-SPP-001, Rev. 2, Westinghouse Hanford Company, Richland, Washington.

WHC, 1993b, *Data Validation Procedures for Chemical Analysis*, WCH-SD-ED-SPP-002, Rev. 2, Westinghouse Hanford Company, Richland, Washington.



**APPENDIX A**  
**SUPPORTING DATA FOR CONTAMINANT**  
**OF CONCERN SELECTION**



Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
100-01-6	4-Nitroaniline	96-103	50	ug/L			ND		SVOA
100-01-6	4-Nitroaniline	97-200	50	ug/L			ND		SVOA
100-01-6	4-Nitroaniline	97-210	50	ug/L			ND		SVOA
100-01-6	4-Nitroaniline	97-220	50	ug/L			ND		SVOA
100-01-6	4-Nitroaniline	97-230	50	ug/L			ND		SVOA
100-01-6	4-Nitroaniline	97-240	50	ug/L			ND		SVOA
100-01-6	4-Nitroaniline	97-250	50	ug/L			ND		SVOA
100-01-6	4-Nitroaniline	97-260	50	ug/L			ND		SVOA
100-01-6	4-Nitroaniline	97-270	50	ug/L			ND		SVOA
100-01-6	4-Nitroaniline	97-280	50	ug/L			ND		SVOA
100-01-6	4-Nitroaniline	97-290	50	ug/L			ND		SVOA
100-02-7	4-Nitrophenol	96-103	50	ug/L			ND		SVOA
100-02-7	4-Nitrophenol	97-200	50	ug/L			ND		SVOA
100-02-7	4-Nitrophenol	97-210	50	ug/L			ND		SVOA
100-02-7	4-Nitrophenol	97-220	50	ug/L			ND		SVOA
100-02-7	4-Nitrophenol	97-230	50	ug/L			ND		SVOA
100-02-7	4-Nitrophenol	97-240	50	ug/L			ND		SVOA
100-02-7	4-Nitrophenol	97-250	50	ug/L			ND		SVOA
100-02-7	4-Nitrophenol	97-260	50	ug/L			ND		SVOA
100-02-7	4-Nitrophenol	97-270	50	ug/L			ND		SVOA
100-02-7	4-Nitrophenol	97-280	50	ug/L			ND		SVOA
100-02-7	4-Nitrophenol	97-290	50	ug/L			ND		SVOA
100-41-4	Ethyl benzene	96-101A	5	ug/L			ND		VOA
100-41-4	Ethyl benzene	97-200	5	ug/L			ND		VOA
100-41-4	Ethyl benzene	97-210	5	ug/L			ND		VOA
100-41-4	Ethyl benzene	97-220	5	ug/L			ND		VOA
100-41-4	Ethyl benzene	97-230	5	ug/L			ND		VOA
100-41-4	Ethyl benzene	97-240	5	ug/L			ND		VOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
100-41-4	Ethyl benzene	97-250	5	ug/L			ND		VOA
100-41-4	Ethyl benzene	97-260	5	ug/L			ND		VOA
100-41-4	Ethyl benzene	97-270	5	ug/L			ND		VOA
100-41-4	Ethyl benzene	97-280	5	ug/L			ND		VOA
100-41-4	Ethyl benzene	97-290	5	ug/L			ND		VOA
100-42-5	Styrene	96-101A	5	ug/L			ND		VOA
100-42-5	Styrene	97-200	5	ug/L			ND		VOA
100-42-5	Styrene	97-210	5	ug/L			ND		VOA
100-42-5	Styrene	97-220	5	ug/L			ND		VOA
100-42-5	Styrene	97-230	5	ug/L			ND		VOA
100-42-5	Styrene	97-240	5	ug/L			ND		VOA
100-42-5	Styrene	97-250	5	ug/L			ND		VOA
100-42-5	Styrene	97-260	5	ug/L			ND		VOA
100-42-5	Styrene	97-270	5	ug/L			ND		VOA
100-42-5	Styrene	97-280	5	ug/L			NR		VOA
100-42-5	Styrene	97-290	5	ug/L			ND		VOA
10045-97-3	Cs-137	96-100		pCi/L			ND		Rad
10045-97-3	Cs-137	97-200		pCi/L			ND		Rad
10045-97-3	Cs-137	97-210		pCi/L			ND		Rad
10045-97-3	Cs-137	97-220		pCi/L			ND		Rad
10045-97-3	Cs-137	97-230		pCi/L			ND		Rad
10045-97-3	Cs-137	97-240		pCi/L			ND		Rad
10045-97-3	Cs-137	97-250		pCi/L			ND		Rad
10045-97-3	Cs-137	97-260		pCi/L			ND		Rad
10045-97-3	Cs-137	97-290		pCi/L			ND		Rad
10061-01-5	cis-1,3-Dichloropropene	96-101A	5	ug/L			ND		VOA
10061-01-5	cis-1,3-Dichloropropene	97-200	5	ug/L			ND		VOA
10061-01-5	cis-1,3-Dichloropropene	97-210	5	ug/L			ND		VOA
10061-01-5	cis-1,3-Dichloropropene	97-220	5	ug/L			ND		VOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
10061-01-5	cis-1,3-Dichloropropene	97-230	5	ug/L			ND		VOA
10061-01-5	cis-1,3-Dichloropropene	97-240	5	ug/L			ND		VOA
10061-01-5	cis-1,3-Dichloropropene	97-250	5	ug/L			ND		VOA
10061-01-5	cis-1,3-Dichloropropene	97-260	5	ug/L			ND		VOA
10061-01-5	cis-1,3-Dichloropropene	97-270	5	ug/L			ND		VOA
10061-01-5	cis-1,3-Dichloropropene	97-280	5	ug/L			NR		VOA
10061-01-5	cis-1,3-Dichloropropene	97-290	5	ug/L			ND		VOA
10061-02-6	trans-1,3-Dichloropropene	96-101A	5	ug/L			ND		VOA
10061-02-6	trans-1,3-Dichloropropene	97-200	5	ug/L			ND		VOA
10061-02-6	trans-1,3-Dichloropropene	97-210	5	ug/L			ND		VOA
10061-02-6	trans-1,3-Dichloropropene	97-220	5	ug/L			ND		VOA
10061-02-6	trans-1,3-Dichloropropene	97-230	5	ug/L			ND		VOA
10061-02-6	trans-1,3-Dichloropropene	97-240	5	ug/L			ND		VOA
10061-02-6	trans-1,3-Dichloropropene	97-250	5	ug/L			ND		VOA
10061-02-6	trans-1,3-Dichloropropene	97-260	5	ug/L			ND		VOA
10061-02-6	trans-1,3-Dichloropropene	97-270	5	ug/L			ND		VOA
10061-02-6	trans-1,3-Dichloropropene	97-280	5	ug/L			NR		VOA
10061-02-6	trans-1,3-Dichloropropene	97-290	5	ug/L			ND		VOA
101-55-3	4-Bromophenylphenyl ether	96-103	10	ug/L			ND		SVOA
101-55-3	4-Bromophenylphenyl ether	97-200	10	ug/L			ND		SVOA
101-55-3	4-Bromophenylphenyl ether	97-210	10	ug/L			ND		SVOA
101-55-3	4-Bromophenylphenyl ether	97-220	10	ug/L			ND		SVOA
101-55-3	4-Bromophenylphenyl ether	97-230	10	ug/L			ND		SVOA
101-55-3	4-Bromophenylphenyl ether	97-240	10	ug/L			ND		SVOA
101-55-3	4-Bromophenylphenyl ether	97-250	10	ug/L			ND		SVOA
101-55-3	4-Bromophenylphenyl ether	97-260	10	ug/L			ND		SVOA
101-55-3	4-Bromophenylphenyl ether	97-270	10	ug/L			ND		SVOA
101-55-3	4-Bromophenylphenyl ether	97-280	10	ug/L			ND		SVOA
101-55-3	4-Bromophenylphenyl ether	97-290	10	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
10198-40-0	Co-60	96-100		pCi/L			ND		Rad
10198-40-0	Co-60	97-200		pCi/L			ND		Rad
10198-40-0	Co-60	97-210		pCi/L			ND		Rad
10198-40-0	Co-60	97-220		pCi/L			ND		Rad
10198-40-0	Co-60	97-230		pCi/L			ND		Rad
10198-40-0	Co-60	97-240		pCi/L			ND		Rad
10198-40-0	Co-60	97-250		pCi/L			ND		Rad
10198-40-0	Co-60	97-260		pCi/L			ND		Rad
10198-40-0	Co-60	97-290		pCi/L			ND		Rad
103-65-1	Propylbenzene					X			
104-76-7	2-Ethyl-1-hexanol					X			
105-67-9	2,4-Dimethylphenol	96-103	10	ug/L			ND		SVOA
105-67-9	2,4-Dimethylphenol	97-200	10	ug/L			ND		SVOA
105-67-9	2,4-Dimethylphenol	97-210	10	ug/L			ND		SVOA
105-67-9	2,4-Dimethylphenol	97-220	10	ug/L			ND		SVOA
105-67-9	2,4-Dimethylphenol	97-230	10	ug/L			ND		SVOA
105-67-9	2,4-Dimethylphenol	97-240	10	ug/L			ND		SVOA
105-67-9	2,4-Dimethylphenol	97-250	10	ug/L			ND		SVOA
105-67-9	2,4-Dimethylphenol	97-260	10	ug/L			ND		SVOA
105-67-9	2,4-Dimethylphenol	97-270	10	ug/L			ND		SVOA
105-67-9	2,4-Dimethylphenol	97-280	10	ug/L			ND		SVOA
105-67-9	2,4-Dimethylphenol	97-290	10	ug/L			ND		SVOA
106-44-5	4-Methylphenol	96-103	10	ug/L			ND		SVOA
106-44-5	4-Methylphenol	97-200	10	ug/L			ND		SVOA
106-44-5	4-Methylphenol	97-210	10	ug/L			ND		SVOA
106-44-5	4-Methylphenol	97-220	10	ug/L			ND		SVOA
106-44-5	4-Methylphenol	97-230	10	ug/L			ND		SVOA
106-44-5	4-Methylphenol	97-240	10	ug/L			ND		SVOA
106-44-5	4-Methylphenol	97-250	10	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
106-44-5	4-Methylphenol	97-260	10	ug/L			ND		SVOA
106-44-5	4-Methylphenol	97-270	10	ug/L			ND		SVOA
106-44-5	4-Methylphenol	97-280	10	ug/L			ND		SVOA
106-44-5	4-Methylphenol	97-290	10	ug/L			ND		SVOA
106-46-7	1,4-Dichlorobenzene	96-103	10	ug/L			ND		SVOA
106-46-7	1,4-Dichlorobenzene	97-200	10	ug/L			ND		SVOA
106-46-7	1,4-Dichlorobenzene	97-210	10	ug/L			ND		SVOA
106-46-7	1,4-Dichlorobenzene	97-220	10	ug/L			ND		SVOA
106-46-7	1,4-Dichlorobenzene	97-230	10	ug/L			ND		SVOA
106-46-7	1,4-Dichlorobenzene	97-240	10	ug/L			ND		SVOA
106-46-7	1,4-Dichlorobenzene	97-250	10	ug/L			ND		SVOA
106-46-7	1,4-Dichlorobenzene	97-260	10	ug/L			ND		SVOA
106-46-7	1,4-Dichlorobenzene	97-270	10	ug/L			ND		SVOA
106-46-7	1,4-Dichlorobenzene	97-280	10	ug/L			ND		SVOA
106-46-7	1,4-Dichlorobenzene	97-290	10	ug/L			ND		SVOA
106-47-8	4-Chloroaniline	96-103	10	ug/L			ND		SVOA
106-47-8	4-Chloroaniline	97-200	10	ug/L			ND		SVOA
106-47-8	4-Chloroaniline	97-210	10	ug/L			ND		SVOA
106-47-8	4-Chloroaniline	97-220	10	ug/L			ND		SVOA
106-47-8	4-Chloroaniline	97-230	10	ug/L			ND		SVOA
106-47-8	4-Chloroaniline	97-240	10	ug/L			ND		SVOA
106-47-8	4-Chloroaniline	97-250	10	ug/L			ND		SVOA
106-47-8	4-Chloroaniline	97-260	10	ug/L			ND		SVOA
106-47-8	4-Chloroaniline	97-270	10	ug/L			ND		SVOA
106-47-8	4-Chloroaniline	97-280	10	ug/L			ND		SVOA
106-47-8	4-Chloroaniline	97-290	10	ug/L			ND		SVOA
1066-40-6	Trimethylsilanol					X			
107-06-2	1,2-Dichloroethane	96-101A	5	ug/L			ND		VOA
107-06-2	1,2-Dichloroethane	97-200	5	ug/L			ND		VOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
107-06-2	1,2-Dichloroethane	97-210	5	ug/L			ND		VOA
107-06-2	1,2-Dichloroethane	97-220	5	ug/L			ND		VOA
107-06-2	1,2-Dichloroethane	97-230	5	ug/L			ND		VOA
107-06-2	1,2-Dichloroethane	97-240	5	ug/L			ND		VOA
107-06-2	1,2-Dichloroethane	97-250	5	ug/L			ND		VOA
107-06-2	1,2-Dichloroethane	97-260	5	ug/L			ND		VOA
107-06-2	1,2-Dichloroethane	97-270	5	ug/L			ND		VOA
107-06-2	1,2-Dichloroethane	97-280	5	ug/L			ND		VOA
107-06-2	1,2-Dichloroethane	97-290	5	ug/L			ND		VOA
108-10-1	4-Methyl-2-pentanone	96-101A	20	ug/L			ND		VOA
108-10-1	4-Methyl-2-pentanone	97-200	20	ug/L			ND		VOA
108-10-1	4-Methyl-2-pentanone	97-210	20	ug/L			ND		VOA
108-10-1	4-Methyl-2-pentanone	97-220	20	ug/L			ND		VOA
108-10-1	4-Methyl-2-pentanone	97-230	20	ug/L			ND		VOA
108-10-1	4-Methyl-2-pentanone	97-240	20	ug/L			ND		VOA
108-10-1	4-Methyl-2-pentanone	97-250	20	ug/L			ND		VOA
108-10-1	4-Methyl-2-pentanone	97-260	20	ug/L			ND		VOA
108-10-1	4-Methyl-2-pentanone	97-270	20	ug/L			ND		VOA
108-10-1	4-Methyl-2-pentanone	97-280	20	ug/L			NR		VOA
108-10-1	4-Methyl-2-pentanone	97-290	20	ug/L			ND		VOA
108-60-1	Bis(2-Chloroisopropyl) ether	96-103	10	ug/L			ND		SVOA
108-60-1	Bis(2-Chloroisopropyl) ether	97-200	10	ug/L			ND		SVOA
108-60-1	Bis(2-Chloroisopropyl) ether	97-210	10	ug/L			ND		SVOA
108-60-1	Bis(2-Chloroisopropyl) ether	97-220	10	ug/L			ND		SVOA
108-60-1	Bis(2-Chloroisopropyl) ether	97-230	10	ug/L			ND		SVOA
108-60-1	Bis(2-Chloroisopropyl) ether	97-240	10	ug/L			ND		SVOA
108-60-1	Bis(2-Chloroisopropyl) ether	97-250	10	ug/L			ND		SVOA
108-60-1	Bis(2-Chloroisopropyl) ether	97-260	10	ug/L			ND		SVOA
108-60-1	Bis(2-Chloroisopropyl) ether	97-270	10	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
108-60-1	Bis(2-Chloroisopropyl) ether	97-280	10	ug/L			ND		SVOA
108-60-1	Bis(2-Chloroisopropyl) ether	97-290	10	ug/L			ND		SVOA
108-88-3	Toluene	96-101A	5	ug/L			ND		VOA
108-88-3	Toluene	97-200	5	ug/L			ND		VOA
108-88-3	Toluene	97-210	5	ug/L			ND		VOA
108-88-3	Toluene	97-220	5	ug/L			ND		VOA
108-88-3	Toluene	97-230	5	ug/L			ND		VOA
108-88-3	Toluene	97-240	5	ug/L			ND		VOA
108-88-3	Toluene	97-250	5	ug/L			ND		VOA
108-88-3	Toluene	97-260	5	ug/L			ND		VOA
108-88-3	Toluene	97-270	10	ug/L	2			J	VOA
108-88-3	Toluene	97-280	5	ug/L			ND		VOA
108-88-3	Toluene	97-290	5	ug/L			ND		VOA
108-90-7	Chlorobenzene	96-101A	5	ug/L			ND		VOA
108-90-7	Chlorobenzene	97-200	5	ug/L			ND		VOA
108-90-7	Chlorobenzene	97-210	5	ug/L			ND		VOA
108-90-7	Chlorobenzene	97-220	5	ug/L			ND		VOA
108-90-7	Chlorobenzene	97-230	5	ug/L			ND		VOA
108-90-7	Chlorobenzene	97-240	5	ug/L			ND		VOA
108-90-7	Chlorobenzene	97-250	5	ug/L			ND		VOA
108-90-7	Chlorobenzene	97-260	5	ug/L			ND		VOA
108-90-7	Chlorobenzene	97-270	5	ug/L			ND		VOA
108-90-7	Chlorobenzene	97-280	5	ug/L			ND		VOA
108-90-7	Chlorobenzene	97-290	5	ug/L			ND		VOA
108-95-2	Phenol	96-103	10	ug/L			ND		SVOA
108-95-2	Phenol	97-200	10	ug/L			ND		SVOA
108-95-2	Phenol	97-210	10	ug/L			ND		SVOA
108-95-2	Phenol	97-220	10	ug/L			ND		SVOA
108-95-2	Phenol	97-230	10	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
108-95-2	Phenol	97-240	10	ug/L			ND		SVOA
108-95-2	Phenol	97-250	10	ug/L			ND		SVOA
108-95-2	Phenol	97-260	10	ug/L			ND		SVOA
108-95-2	Phenol	97-270	10	ug/L			ND		SVOA
108-95-2	Phenol	97-280	10	ug/L			ND		SVOA
108-95-2	Phenol	97-290	10	ug/L			ND		SVOA
111-44-4	Bis(2-chloroethyl) ether	96-103	10	ug/L			ND		SVOA
111-44-4	Bis(2-chloroethyl) ether	97-200	10	ug/L			ND		SVOA
111-44-4	Bis(2-chloroethyl) ether	97-210	10	ug/L			ND		SVOA
111-44-4	Bis(2-chloroethyl) ether	97-220	10	ug/L			ND		SVOA
111-44-4	Bis(2-chloroethyl) ether	97-230	10	ug/L			ND		SVOA
111-44-4	Bis(2-chloroethyl) ether	97-240	10	ug/L			ND		SVOA
111-44-4	Bis(2-chloroethyl) ether	97-250	10	ug/L			ND		SVOA
111-44-4	Bis(2-chloroethyl) ether	97-260	10	ug/L			ND		SVOA
111-44-4	Bis(2-chloroethyl) ether	97-270	10	ug/L			ND		SVOA
111-44-4	Bis(2-chloroethyl) ether	97-280	10	ug/L			ND		SVOA
111-44-4	Bis(2-chloroethyl) ether	97-290	10	ug/L			ND		SVOA
111-91-1	Bis(2-Chloroethoxy)methane	96-103	10	ug/L			ND		SVOA
111-91-1	Bis(2-Chloroethoxy)methane	97-200	10	ug/L			ND		SVOA
111-91-1	Bis(2-Chloroethoxy)methane	97-210	10	ug/L			ND		SVOA
111-91-1	Bis(2-Chloroethoxy)methane	97-220	10	ug/L			ND		SVOA
111-91-1	Bis(2-Chloroethoxy)methane	97-230	10	ug/L			ND		SVOA
111-91-1	Bis(2-Chloroethoxy)methane	97-240	10	ug/L			ND		SVOA
111-91-1	Bis(2-Chloroethoxy)methane	97-250	10	ug/L			ND		SVOA
111-91-1	Bis(2-Chloroethoxy)methane	97-260	10	ug/L			ND		SVOA
111-91-1	Bis(2-Chloroethoxy)methane	97-270	10	ug/L			ND		SVOA
111-91-1	Bis(2-Chloroethoxy)methane	97-280	10	ug/L			ND		SVOA
111-91-1	Bis(2-Chloroethoxy)methane	97-290	10	ug/L			ND		SVOA
112-40-3	n-Dodecane					X			

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
117-81-7	Bis(2-ethylhexyl) phthalate	96-103	10	ug/L			U	U	SVOA
117-81-7	Bis(2-ethylhexyl) phthalate	97-200	10	ug/L			ND		SVOA
117-81-7	Bis(2-ethylhexyl) phthalate	97-210	10	ug/L			ND		SVOA
117-81-7	Bis(2-ethylhexyl) phthalate	97-220	10	ug/L	1			J	SVOA
117-81-7	Bis(2-ethylhexyl) phthalate	97-230	10	ug/L			ND		SVOA
117-81-7	Bis(2-ethylhexyl) phthalate	97-240	10	ug/L			U	U	SVOA
117-81-7	Bis(2-ethylhexyl) phthalate	97-250	10	ug/L	6			J	SVOA
117-81-7	Bis(2-ethylhexyl) phthalate	97-260	10	ug/L	1			J	SVOA
117-81-7	Bis(2-ethylhexyl) phthalate	97-270	10	ug/L	6			J	SVOA
117-81-7	Bis(2-ethylhexyl) phthalate	97-280	10	ug/L			U	U	SVOA
117-81-7	Bis(2-ethylhexyl) phthalate	97-290	10	ug/L	14				SVOA
117-84-0	Di-n-octylphthalate	96-103	10	ug/L			ND		SVOA
117-84-0	Di-n-octylphthalate	97-200	10	ug/L			ND		SVOA
117-84-0	Di-n-octylphthalate	97-210	10	ug/L			ND		SVOA
117-84-0	Di-n-octylphthalate	97-220	10	ug/L			ND		SVOA
117-84-0	Di-n-octylphthalate	97-230	10	ug/L			ND		SVOA
117-84-0	Di-n-octylphthalate	97-240	10	ug/L			ND		SVOA
117-84-0	Di-n-octylphthalate	97-250	10	ug/L			ND		SVOA
117-84-0	Di-n-octylphthalate	97-260	10	ug/L			ND		SVOA
117-84-0	Di-n-octylphthalate	97-270	10	ug/L			ND		SVOA
117-84-0	Di-n-octylphthalate	97-280	10	ug/L			ND		SVOA
117-84-0	Di-n-octylphthalate	97-290	10	ug/L			ND		SVOA
118-74-1	Hexachlorobenzene	96-103	10	ug/L			ND		SVOA
118-74-1	Hexachlorobenzene	97-200	10	ug/L			ND		SVOA
118-74-1	Hexachlorobenzene	97-210	10	ug/L			ND		SVOA
118-74-1	Hexachlorobenzene	97-220	10	ug/L			ND		SVOA
118-74-1	Hexachlorobenzene	97-230	10	ug/L			ND		SVOA
118-74-1	Hexachlorobenzene	97-240	10	ug/L			ND		SVOA
118-74-1	Hexachlorobenzene	97-250	10	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
118-74-1	Hexachlorobenzene	97-260	10	ug/L			ND		SVOA
118-74-1	Hexachlorobenzene	97-270	10	ug/L			ND		SVOA
118-74-1	Hexachlorobenzene	97-280	10	ug/L			ND		SVOA
118-74-1	Hexachlorobenzene	97-290	10	ug/L			ND		SVOA
120-12-7	Anthracene	96-103	10	ug/L			ND		SVOA
120-12-7	Anthracene	97-200	10	ug/L			ND		SVOA
120-12-7	Anthracene	97-210	10	ug/L			ND		SVOA
120-12-7	Anthracene	97-220	10	ug/L			ND		SVOA
120-12-7	Anthracene	97-230	10	ug/L			ND		SVOA
120-12-7	Anthracene	97-240	10	ug/L			ND		SVOA
120-12-7	Anthracene	97-250	10	ug/L			ND		SVOA
120-12-7	Anthracene	97-260	10	ug/L			ND		SVOA
120-12-7	Anthracene	97-270	10	ug/L			ND		SVOA
120-12-7	Anthracene	97-280	10	ug/L			ND		SVOA
120-12-7	Anthracene	97-290	10	ug/L			ND		SVOA
120-82-1	1,2,4-Trichlorobenzene	96-103	10	ug/L			ND		SVOA
120-82-1	1,2,4-Trichlorobenzene	97-200	10	ug/L			ND		SVOA
120-82-1	1,2,4-Trichlorobenzene	97-210	10	ug/L			ND		SVOA
120-82-1	1,2,4-Trichlorobenzene	97-220	10	ug/L			ND		SVOA
120-82-1	1,2,4-Trichlorobenzene	97-230	10	ug/L			ND		SVOA
120-82-1	1,2,4-Trichlorobenzene	97-240	10	ug/L			ND		SVOA
120-82-1	1,2,4-Trichlorobenzene	97-250	10	ug/L			ND		SVOA
120-82-1	1,2,4-Trichlorobenzene	97-260	10	ug/L			ND		SVOA
120-82-1	1,2,4-Trichlorobenzene	97-270	10	ug/L			ND		SVOA
120-82-1	1,2,4-Trichlorobenzene	97-280	10	ug/L			ND		SVOA
120-82-1	1,2,4-Trichlorobenzene	97-290	10	ug/L			ND		SVOA
120-83-2	2,4-Dichlorophenol	96-103	10	ug/L			ND		SVOA
120-83-2	2,4-Dichlorophenol	97-200	10	ug/L			ND		SVOA
120-83-2	2,4-Dichlorophenol	97-210	10	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
120-83-2	2,4-Dichlorophenol	97-220	10	ug/L			ND		SVOA
120-83-2	2,4-Dichlorophenol	97-230	10	ug/L			ND		SVOA
120-83-2	2,4-Dichlorophenol	97-240	10	ug/L			ND		SVOA
120-83-2	2,4-Dichlorophenol	97-250	10	ug/L			ND		SVOA
120-83-2	2,4-Dichlorophenol	97-260	10	ug/L			ND		SVOA
120-83-2	2,4-Dichlorophenol	97-270	10	ug/L			ND		SVOA
120-83-2	2,4-Dichlorophenol	97-280	10	ug/L			ND		SVOA
120-83-2	2,4-Dichlorophenol	97-290	10	ug/L			ND		SVOA
121-14-2	2,4-Dinitrotoluene	96-103	10	ug/L			ND		SVOA
121-14-2	2,4-Dinitrotoluene	97-200	10	ug/L			ND		SVOA
121-14-2	2,4-Dinitrotoluene	97-210	10	ug/L			ND		SVOA
121-14-2	2,4-Dinitrotoluene	97-220	10	ug/L			ND		SVOA
121-14-2	2,4-Dinitrotoluene	97-230	10	ug/L			ND		SVOA
121-14-2	2,4-Dinitrotoluene	97-240	10	ug/L			ND		SVOA
121-14-2	2,4-Dinitrotoluene	97-250	10	ug/L			ND		SVOA
121-14-2	2,4-Dinitrotoluene	97-260	10	ug/L			ND		SVOA
121-14-2	2,4-Dinitrotoluene	97-270	10	ug/L			ND		SVOA
121-14-2	2,4-Dinitrotoluene	97-280	10	ug/L			ND		SVOA
121-14-2	2,4-Dinitrotoluene	97-290	10	ug/L			ND		SVOA
124-48-1	Dibromochloromethane	96-101A	5	ug/L			ND		VOA
124-48-1	Dibromochloromethane	97-200	5	ug/L			ND		VOA
124-48-1	Dibromochloromethane	97-210	5	ug/L			ND		VOA
124-48-1	Dibromochloromethane	97-220	5	ug/L			ND		VOA
124-48-1	Dibromochloromethane	97-230	5	ug/L			ND		VOA
124-48-1	Dibromochloromethane	97-240	5	ug/L			ND		VOA
124-48-1	Dibromochloromethane	97-250	5	ug/L			ND		VOA
124-48-1	Dibromochloromethane	97-260	5	ug/L			ND		VOA
124-48-1	Dibromochloromethane	97-270	5	ug/L			ND		VOA
124-48-1	Dibromochloromethane	97-280	5	ug/L			NR		VOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
124-48-1	Dibromochloromethane	97-290	5	ug/L			ND		VOA
12587-46-1	Gross alpha	96-100		pCi/L	12.8				Rad
12587-46-1	Gross alpha	97-200		pCi/L	3.46				Rad
12587-46-1	Gross alpha	97-210		pCi/L	7.79				Rad
12587-46-1	Gross alpha	97-220		pCi/L	11.6				Rad
12587-46-1	Gross alpha	97-230		pCi/L	8.51				Rad
12587-46-1	Gross alpha	97-240		pCi/L	8.44				Rad
12587-46-1	Gross alpha	97-250		pCi/L	10.3				Rad
12587-46-1	Gross alpha	97-260		pCi/L	11.8				Rad
12587-46-1	Gross alpha	97-290		pCi/L	27.2				Rad
12587-47-2	Gross beta	96-100		pCi/L	26.7				Rad
12587-47-2	Gross beta	97-200		pCi/L	24.2				Rad
12587-47-2	Gross beta	97-210		pCi/L	20.3				Rad
12587-47-2	Gross beta	97-220		pCi/L	18.5				Rad
12587-47-2	Gross beta	97-230		pCi/L	15.6				Rad
12587-47-2	Gross beta	97-240		pCi/L	15.4				Rad
12587-47-2	Gross beta	97-250		pCi/L	15.6				Rad
12587-47-2	Gross beta	97-260		pCi/L	18.3				Rad
12587-47-2	Gross beta	97-290		pCi/L	26.8				Rad
127-18-4	1,1,2,2-Tetrachloroethene	96-101A	5	ug/L			ND		VOA
127-18-4	1,1,2,2-Tetrachloroethene	97-200	5	ug/L			ND		VOA
127-18-4	1,1,2,2-Tetrachloroethene	97-210	5	ug/L			ND		VOA
127-18-4	1,1,2,2-Tetrachloroethene	97-220	5	ug/L			ND		VOA
127-18-4	1,1,2,2-Tetrachloroethene	97-230	5	ug/L			ND		VOA
127-18-4	1,1,2,2-Tetrachloroethene	97-240	5	ug/L			ND		VOA
127-18-4	1,1,2,2-Tetrachloroethene	97-250	5	ug/L			ND		VOA
127-18-4	1,1,2,2-Tetrachloroethene	97-260	5	ug/L			ND		VOA
127-18-4	1,1,2,2-Tetrachloroethene	97-270	5	ug/L			ND		VOA
127-18-4	1,1,2,2-Tetrachloroethene	97-280	5	ug/L			ND		VOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
127-18-4	1,1,2,2-Tetrachloroethene	97-290	5	ug/L			ND		VOA
129-00-0	Pyrene					X			
129-00-0	Pyrene	96-103	10	ug/L			ND		SVOA
129-00-0	Pyrene	97-200	10	ug/L			ND		SVOA
129-00-0	Pyrene	97-210	10	ug/L			ND		SVOA
129-00-0	Pyrene	97-220	10	ug/L			ND		SVOA
129-00-0	Pyrene	97-230	10	ug/L			ND		SVOA
129-00-0	Pyrene	97-240	10	ug/L			ND		SVOA
129-00-0	Pyrene	97-250	10	ug/L			ND		SVOA
129-00-0	Pyrene	97-260	10	ug/L			ND		SVOA
129-00-0	Pyrene	97-270	10	ug/L			ND		SVOA
129-00-0	Pyrene	97-280	10	ug/L			ND		SVOA
129-00-0	Pyrene	97-290	10	ug/L			ND		SVOA
131-11-3	Dimethyl phthalate	96-103	10	ug/L			ND		SVOA
131-11-3	Dimethyl phthalate	97-200	10	ug/L			ND		SVOA
131-11-3	Dimethyl phthalate	97-210	10	ug/L			ND		SVOA
131-11-3	Dimethyl phthalate	97-220	10	ug/L			ND		SVOA
131-11-3	Dimethyl phthalate	97-230	10	ug/L			ND		SVOA
131-11-3	Dimethyl phthalate	97-240	10	ug/L			ND		SVOA
131-11-3	Dimethyl phthalate	97-250	10	ug/L			ND		SVOA
131-11-3	Dimethyl phthalate	97-260	10	ug/L			ND		SVOA
131-11-3	Dimethyl phthalate	97-270	10	ug/L			ND		SVOA
131-11-3	Dimethyl phthalate	97-280	10	ug/L			ND		SVOA
131-11-3	Dimethyl phthalate	97-290	10	ug/L			ND		SVOA
132-64-9	Dibenzofuran	96-103	10	ug/L			ND		SVOA
132-64-9	Dibenzofuran	97-200	10	ug/L			ND		SVOA
132-64-9	Dibenzofuran	97-210	10	ug/L			ND		SVOA
132-64-9	Dibenzofuran	97-220	10	ug/L			ND		SVOA
132-64-9	Dibenzofuran	97-230	10	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
132-64-9	Dibenzofuran	97-240	10	ug/L			ND		SVOA
132-64-9	Dibenzofuran	97-250	10	ug/L			ND		SVOA
132-64-9	Dibenzofuran	97-260	10	ug/L			ND		SVOA
132-64-9	Dibenzofuran	97-270	10	ug/L			ND		SVOA
132-64-9	Dibenzofuran	97-280	10	ug/L			ND		SVOA
132-64-9	Dibenzofuran	97-290	10	ug/L			ND		SVOA
1330-20-7	Xylene	97-200	5	ug/L			ND		VOA
1330-20-7	Xylene	97-210	5	ug/L			ND		VOA
1330-20-7	Xylene	97-220	5	ug/L			ND		VOA
1330-20-7	Xylene	97-230	5	ug/L			ND		VOA
1330-20-7	Xylene	97-240	5	ug/L			ND		VOA
1330-20-7	Xylene	97-250	5	ug/L			ND		VOA
1330-20-7	Xylene	97-260	5	ug/L			ND		VOA
1330-20-7	Xylene	97-270	5	ug/L			ND		VOA
1330-20-7	Xylene	97-280	5	ug/L			NR		VOA
1330-20-7	Xylene	97-290	5	ug/L			ND		VOA
13966-00-2	K-40	96-100		pCi/L			ND		Rad
13966-00-2	K-40	97-200		pCi/L			ND		Rad
13966-00-2	K-40	97-210		pCi/L			ND		Rad
13966-00-2	K-40	97-220		pCi/L			ND		Rad
13966-00-2	K-40	97-230		pCi/L			ND		Rad
13966-00-2	K-40	97-240		pCi/L			ND		Rad
13966-00-2	K-40	97-250		pCi/L			ND		Rad
13966-00-2	K-40	97-260		pCi/L			ND		Rad
13966-00-2	K-40	97-290		pCi/L			ND		Rad
13966-02-4	Be-7	96-100		pCi/L			ND		Rad
13966-02-4	Be-7	97-200		pCi/L			ND		Rad
13966-02-4	Be-7	97-210		pCi/L			ND		Rad
13966-02-4	Be-7	97-220		pCi/L			ND		Rad

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
13966-02-4	Be-7	97-230		pCi/L			ND		Rad
13966-02-4	Be-7	97-240		pCi/L			ND		Rad
13966-02-4	Be-7	97-250		pCi/L			ND		Rad
13966-02-4	Be-7	97-260		pCi/L			ND		Rad
13966-02-4	Be-7	97-290		pCi/L			ND		Rad
13967-48-1	Ru-106	96-100		pCi/L			ND		Rad
13967-48-1	Ru-106	97-200		pCi/L			ND		Rad
13967-48-1	Ru-106	97-210		pCi/L			ND		Rad
13967-48-1	Ru-106	97-220		pCi/L			ND		Rad
13967-48-1	Ru-106	97-230		pCi/L			ND		Rad
13967-48-1	Ru-106	97-240		pCi/L			ND		Rad
13967-48-1	Ru-106	97-250		pCi/L			ND		Rad
13967-48-1	Ru-106	97-260		pCi/L			ND		Rad
13967-48-1	Ru-106	97-290		pCi/L			ND		Rad
13967-70-9	Cs-134	96-100		pCi/L			ND		Rad
13967-70-9	Cs-134	97-200		pCi/L			ND		Rad
13967-70-9	Cs-134	97-210		pCi/L			ND		Rad
13967-70-9	Cs-134	97-220		pCi/L			ND		Rad
13967-70-9	Cs-134	97-230		pCi/L			ND		Rad
13967-70-9	Cs-134	97-240		pCi/L			ND		Rad
13967-70-9	Cs-134	97-250		pCi/L			ND		Rad
13967-70-9	Cs-134	97-260		pCi/L			ND		Rad
13967-70-9	Cs-134	97-290		pCi/L			ND		Rad
14234-35-6	Sb-125	96-100		pCi/L			ND		Rad
14234-35-6	Sb-125	97-200		pCi/L			ND		Rad
14234-35-6	Sb-125	97-210		pCi/L			ND		Rad
14234-35-6	Sb-125	97-220		pCi/L			ND		Rad
14234-35-6	Sb-125	97-230		pCi/L			ND		Rad
14234-35-6	Sb-125	97-240		pCi/L			ND		Rad

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
14234-35-6	Sb-125	97-250		pCi/L			ND		Rad
14234-35-6	Sb-125	97-260		pCi/L			ND		Rad
14234-35-6	Sb-125	97-290		pCi/L			ND		Rad
14265-44-2	Phosphate	96-109		mg/L					WetChem
14265-44-2	Phosphate	96-111		mg/L			ND		WetChem
14265-44-2	Phosphate	96-113		mg/L					WetChem
14265-44-2	Phosphate	97-200		mg/L			ND		WetChem
14265-44-2	Phosphate	97-210		mg/L			ND		WetChem
14265-44-2	Phosphate	97-220		mg/L			ND		WetChem
14265-44-2	Phosphate	97-230		mg/L	0.84				WetChem
14265-44-2	Phosphate	97-240		mg/L			ND		WetChem
14265-44-2	Phosphate	97-250		mg/L			ND		WetChem
14265-44-2	Phosphate	97-260		mg/L	0.551				WetChem
14265-44-2	Phosphate	97-270		mg/L	0.41				WetChem
14265-44-2	Phosphate	97-280		mg/L	0.54				WetChem
14265-44-2	Phosphate	97-290		mg/L	0.72				WetChem
14391-16-3	Eu-155	96-100		pCi/L			ND		Rad
14391-16-3	Eu-155	97-200		pCi/L			ND		Rad
14391-16-3	Eu-155	97-210		pCi/L			ND		Rad
14391-16-3	Eu-155	97-220		pCi/L			ND		Rad
14391-16-3	Eu-155	97-230		pCi/L			ND		Rad
14391-16-3	Eu-155	97-240		pCi/L			ND		Rad
14391-16-3	Eu-155	97-250		pCi/L			ND		Rad
14391-16-3	Eu-155	97-260		pCi/L			ND		Rad
14391-16-3	Eu-155	97-290		pCi/L			ND		Rad
14797-55-8	Nitrate	96-109		mg/L					WetChem
14797-55-8	Nitrate	96-111		mg/L	3.42				WetChem
14797-55-8	Nitrate	96-113		mg/L					WetChem
14797-55-8	Nitrate	97-200		mg/L	10.8				WetChem

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
14797-55-8	Nitrate	97-210		mg/L	19.3				WetChem
14797-55-8	Nitrate	97-220		mg/L	11.8				WetChem
14797-55-8	Nitrate	97-230		mg/L	11.4				WetChem
14797-55-8	Nitrate	97-240		mg/L	8.36				WetChem
14797-55-8	Nitrate	97-250		mg/L	9.39				WetChem
14797-55-8	Nitrate	97-260		mg/L	8.34				WetChem
14797-55-8	Nitrate	97-270		mg/L	9.43				WetChem
14797-55-8	Nitrate	97-280		mg/L	15.7				WetChem
14797-55-8	Nitrate	97-290		mg/L	12.2				WetChem
14797-65-0	Nitrite	96-109		mg/L					WetChem
14797-65-0	Nitrite	96-111		mg/L			ND		WetChem
14797-65-0	Nitrite	96-113		mg/L					WetChem
14797-65-0	Nitrite	97-200		mg/L			ND		WetChem
14797-65-0	Nitrite	97-210		mg/L			ND		WetChem
14797-65-0	Nitrite	97-220		mg/L			ND		WetChem
14797-65-0	Nitrite	97-230		mg/L			ND		WetChem
14797-65-0	Nitrite	97-240		mg/L			ND		WetChem
14797-65-0	Nitrite	97-250		mg/L			ND		WetChem
14797-65-0	Nitrite	97-260		mg/L			ND		WetChem
14797-65-0	Nitrite	97-270		mg/L			ND		WetChem
14797-65-0	Nitrite	97-280		mg/L			ND		WetChem
14797-65-0	Nitrite	97-290		mg/L			ND		WetChem
14808-79-8	Sulfate	96-109		mg/L					WetChem
14808-79-8	Sulfate	96-111		mg/L	247				WetChem
14808-79-8	Sulfate	96-113		mg/L					WetChem
14808-79-8	Sulfate	97-200		mg/L	373				WetChem
14808-79-8	Sulfate	97-210		mg/L	534				WetChem
14808-79-8	Sulfate	97-220		mg/L	395				WetChem
14808-79-8	Sulfate	97-230		mg/L	326				WetChem

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
14808-79-8	Sulfate	97-240		mg/L	250				WetChem
14808-79-8	Sulfate	97-250		mg/L	330				WetChem
14808-79-8	Sulfate	97-260		mg/L	291				WetChem
14808-79-8	Sulfate	97-270		mg/L	270				WetChem
14808-79-8	Sulfate	97-280		mg/L	249				WetChem
14808-79-8	Sulfate	97-290		mg/L	251				WetChem
15585-10-1	Eu-154	96-100		pCi/L			ND		Rad
15585-10-1	Eu-154	97-200		pCi/L			ND		Rad
15585-10-1	Eu-154	97-210		pCi/L			ND		Rad
15585-10-1	Eu-154	97-220		pCi/L			ND		Rad
15585-10-1	Eu-154	97-230		pCi/L			ND		Rad
15585-10-1	Eu-154	97-240		pCi/L			ND		Rad
15585-10-1	Eu-154	97-250		pCi/L			ND		Rad
15585-10-1	Eu-154	97-260		pCi/L			ND		Rad
15585-10-1	Eu-154	97-290		pCi/L			ND		Rad
16887-00-6	Chloride	96-109		mg/L					WetChem
16887-00-6	Chloride	96-111		mg/L	154				WetChem
16887-00-6	Chloride	96-113		mg/L					WetChem
16887-00-6	Chloride	97-200		mg/L	388				WetChem
16887-00-6	Chloride	97-210		mg/L	443				WetChem
16887-00-6	Chloride	97-220		mg/L	367				WetChem
16887-00-6	Chloride	97-230		mg/L	164				WetChem
16887-00-6	Chloride	97-240		mg/L	287				WetChem
16887-00-6	Chloride	97-250		mg/L	273				WetChem
16887-00-6	Chloride	97-260		mg/L	225				WetChem
16887-00-6	Chloride	97-270		mg/L	198				WetChem
16887-00-6	Chloride	97-280		mg/L	177				WetChem
16887-00-6	Chloride	97-290		mg/L	193				WetChem
16984-48-8	Fluoride	96-109		mg/L					WetChem

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
16984-48-8	Fluoride	96-111		mg/L	1.18				WetChem
16984-48-8	Fluoride	96-113		mg/L					WetChem
16984-48-8	Fluoride	97-200		mg/L	0.94				WetChem
16984-48-8	Fluoride	97-210		mg/L	0.93				WetChem
16984-48-8	Fluoride	97-220		mg/L	1.05				WetChem
16984-48-8	Fluoride	97-230		mg/L	1				WetChem
16984-48-8	Fluoride	97-240		mg/L	0.73				WetChem
16984-48-8	Fluoride	97-250		mg/L	1.17				WetChem
16984-48-8	Fluoride	97-260		mg/L	0.9				WetChem
16984-48-8	Fluoride	97-270		mg/L	0.94				WetChem
16984-48-8	Fluoride	97-280		mg/L	0.87				WetChem
16984-48-8	Fluoride	97-290		mg/L	1.1				WetChem
1825-61-2	Methoxytrimethylsilane					X			
191-24-2	Benzo(ghi)perylene	96-103	10	ug/L			ND		SVOA
191-24-2	Benzo(ghi)perylene	97-200	10	ug/L			ND		SVOA
191-24-2	Benzo(ghi)perylene	97-210	10	ug/L			ND		SVOA
191-24-2	Benzo(ghi)perylene	97-220	10	ug/L			ND		SVOA
191-24-2	Benzo(ghi)perylene	97-230	10	ug/L			ND		SVOA
191-24-2	Benzo(ghi)perylene	97-240	10	ug/L			ND		SVOA
191-24-2	Benzo(ghi)perylene	97-250	10	ug/L			ND		SVOA
191-24-2	Benzo(ghi)perylene	97-260	10	ug/L			ND		SVOA
191-24-2	Benzo(ghi)perylene	97-270	10	ug/L			ND		SVOA
191-24-2	Benzo(ghi)perylene	97-280	10	ug/L			ND		SVOA
191-24-2	Benzo(ghi)perylene	97-290	10	ug/L			ND		SVOA
193-39-5	Indeno(1,2,3-cd)pyrene	96-103	10	ug/L			ND		SVOA
193-39-5	Indeno(1,2,3-cd)pyrene	97-200	10	ug/L			ND		SVOA
193-39-5	Indeno(1,2,3-cd)pyrene	97-210	10	ug/L			ND		SVOA
193-39-5	Indeno(1,2,3-cd)pyrene	97-220	10	ug/L			ND		SVOA
193-39-5	Indeno(1,2,3-cd)pyrene	97-230	10	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
193-39-5	Indeno(1,2,3-cd)pyrene	97-240	10	ug/L			ND		SVOA
193-39-5	Indeno(1,2,3-cd)pyrene	97-250	10	ug/L			ND		SVOA
193-39-5	Indeno(1,2,3-cd)pyrene	97-260	10	ug/L			ND		SVOA
193-39-5	Indeno(1,2,3-cd)pyrene	97-270	10	ug/L			ND		SVOA
193-39-5	Indeno(1,2,3-cd)pyrene	97-280	10	ug/L			ND		SVOA
193-39-5	Indeno(1,2,3-cd)pyrene	97-290	10	ug/L			ND		SVOA
205-99-2	Benzo(b)fluoranthene	96-103	10	ug/L			ND		SVOA
205-99-2	Benzo(b)fluoranthene	97-200	10	ug/L			ND		SVOA
205-99-2	Benzo(b)fluoranthene	97-210	10	ug/L			ND		SVOA
205-99-2	Benzo(b)fluoranthene	97-220	10	ug/L			ND		SVOA
205-99-2	Benzo(b)fluoranthene	97-230	10	ug/L			ND		SVOA
205-99-2	Benzo(b)fluoranthene	97-240	10	ug/L			ND		SVOA
205-99-2	Benzo(b)fluoranthene	97-250	10	ug/L			ND		SVOA
205-99-2	Benzo(b)fluoranthene	97-260	10	ug/L			ND		SVOA
205-99-2	Benzo(b)fluoranthene	97-270	10	ug/L			ND		SVOA
205-99-2	Benzo(b)fluoranthene	97-280	10	ug/L			ND		SVOA
205-99-2	Benzo(b)fluoranthene	97-290	10	ug/L			ND		SVOA
206-44-0	Fluoranthene					X			
206-44-0	Fluoranthene	96-103	10	ug/L			ND		SVOA
206-44-0	Fluoranthene	97-200	10	ug/L			ND		SVOA
206-44-0	Fluoranthene	97-210	10	ug/L			ND		SVOA
206-44-0	Fluoranthene	97-220	10	ug/L			ND		SVOA
206-44-0	Fluoranthene	97-230	10	ug/L			ND		SVOA
206-44-0	Fluoranthene	97-240	10	ug/L			ND		SVOA
206-44-0	Fluoranthene	97-250	10	ug/L			ND		SVOA
206-44-0	Fluoranthene	97-260	10	ug/L			ND		SVOA
206-44-0	Fluoranthene	97-270	10	ug/L			ND		SVOA
206-44-0	Fluoranthene	97-280	10	ug/L			ND		SVOA
206-44-0	Fluoranthene	97-290	10	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
207-08-9	Benzo(k)fluoranthene	96-103	10	ug/L			ND		SVOA
207-08-9	Benzo(k)fluoranthene	97-200	10	ug/L			ND		SVOA
207-08-9	Benzo(k)fluoranthene	97-210	10	ug/L			ND		SVOA
207-08-9	Benzo(k)fluoranthene	97-220	10	ug/L			ND		SVOA
207-08-9	Benzo(k)fluoranthene	97-230	10	ug/L			ND		SVOA
207-08-9	Benzo(k)fluoranthene	97-240	10	ug/L			ND		SVOA
207-08-9	Benzo(k)fluoranthene	97-250	10	ug/L			ND		SVOA
207-08-9	Benzo(k)fluoranthene	97-260	10	ug/L			ND		SVOA
207-08-9	Benzo(k)fluoranthene	97-270	10	ug/L			ND		SVOA
207-08-9	Benzo(k)fluoranthene	97-280	10	ug/L			ND		SVOA
207-08-9	Benzo(k)fluoranthene	97-290	10	ug/L			ND		SVOA
208-96-8	Acenaphthylene	96-103	10	ug/L			ND		SVOA
208-96-8	Acenaphthylene	97-200	10	ug/L			ND		SVOA
208-96-8	Acenaphthylene	97-210	10	ug/L			ND		SVOA
208-96-8	Acenaphthylene	97-220	10	ug/L			ND		SVOA
208-96-8	Acenaphthylene	97-230	10	ug/L			ND		SVOA
208-96-8	Acenaphthylene	97-240	10	ug/L			ND		SVOA
208-96-8	Acenaphthylene	97-250	10	ug/L			ND		SVOA
208-96-8	Acenaphthylene	97-260	10	ug/L			ND		SVOA
208-96-8	Acenaphthylene	97-270	10	ug/L			ND		SVOA
208-96-8	Acenaphthylene	97-280	10	ug/L			ND		SVOA
208-96-8	Acenaphthylene	97-290	10	ug/L			ND		SVOA
218-01-9	Chrysene	96-103	10	ug/L			ND		SVOA
218-01-9	Chrysene	97-200	10	ug/L			ND		SVOA
218-01-9	Chrysene	97-210	10	ug/L			ND		SVOA
218-01-9	Chrysene	97-220	10	ug/L			ND		SVOA
218-01-9	Chrysene	97-230	10	ug/L			ND		SVOA
218-01-9	Chrysene	97-240	10	ug/L			ND		SVOA
218-01-9	Chrysene	97-250	10	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
218-01-9	Chrysene	97-260	10	ug/L			ND		SVOA
218-01-9	Chrysene	97-270	10	ug/L			ND		SVOA
218-01-9	Chrysene	97-280	10	ug/L			ND		SVOA
218-01-9	Chrysene	97-290	10	ug/L			ND		SVOA
26601-64-9	1,1'-Biphenyl, hexachloro					X			
35065-27-1	2,2',4,4',5,5'-hexachloro-1,1'-Biphenyl					X			
35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl					X			
355-02-2	Perfluoro(methylcyclohexane)					X			
38380-01-7	1,1'-Biphenyl, 2,2',4,4',5-pentachloro					X			
38380-04-0	1,1'-Biphenyl, 2,2',3,4',5',?-hexachloro					X			
50-32-8	Benzo(a)pyrene	96-103	10	ug/L			ND		SVOA
50-32-8	Benzo(a)pyrene	97-200	10	ug/L			ND		SVOA
50-32-8	Benzo(a)pyrene	97-210	10	ug/L			ND		SVOA
50-32-8	Benzo(a)pyrene	97-220	10	ug/L			ND		SVOA
50-32-8	Benzo(a)pyrene	97-230	10	ug/L			ND		SVOA
50-32-8	Benzo(a)pyrene	97-240	10	ug/L			ND		SVOA
50-32-8	Benzo(a)pyrene	97-250	10	ug/L			ND		SVOA
50-32-8	Benzo(a)pyrene	97-260	10	ug/L			ND		SVOA
50-32-8	Benzo(a)pyrene	97-270	10	ug/L			ND		SVOA
50-32-8	Benzo(a)pyrene	97-280	10	ug/L			ND		SVOA
50-32-8	Benzo(a)pyrene	97-290	10	ug/L			ND		SVOA
51-28-5	2,4-Dinitrophenol	96-103	50	ug/L			ND		SVOA
51-28-5	2,4-Dinitrophenol	97-200	50	ug/L			ND		SVOA
51-28-5	2,4-Dinitrophenol	97-210	50	ug/L			ND		SVOA
51-28-5	2,4-Dinitrophenol	97-220	50	ug/L			ND		SVOA
51-28-5	2,4-Dinitrophenol	97-230	50	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
51-28-5	2,4-Dinitrophenol	97-240	50	ug/L			ND		SVOA
51-28-5	2,4-Dinitrophenol	97-250	50	ug/L			ND		SVOA
51-28-5	2,4-Dinitrophenol	97-260	50	ug/L			ND		SVOA
51-28-5	2,4-Dinitrophenol	97-270	50	ug/L			ND		SVOA
51-28-5	2,4-Dinitrophenol	97-280	50	ug/L			ND		SVOA
51-28-5	2,4-Dinitrophenol	97-290	50	ug/L			ND		SVOA
52663-67-9	1,1'-Biphenyl, 2,2',3,3',5,5'-hexachloro					X			
53-70-3	Dibenz[a,h]anthracene	96-103	10	ug/L			ND		SVOA
53-70-3	Dibenz[a,h]anthracene	97-200	10	ug/L			ND		SVOA
53-70-3	Dibenz[a,h]anthracene	97-210	10	ug/L			ND		SVOA
53-70-3	Dibenz[a,h]anthracene	97-220	10	ug/L			ND		SVOA
53-70-3	Dibenz[a,h]anthracene	97-230	10	ug/L			ND		SVOA
53-70-3	Dibenz[a,h]anthracene	97-240	10	ug/L			ND		SVOA
53-70-3	Dibenz[a,h]anthracene	97-250	10	ug/L			ND		SVOA
53-70-3	Dibenz[a,h]anthracene	97-260	10	ug/L			ND		SVOA
53-70-3	Dibenz[a,h]anthracene	97-270	10	ug/L			ND		SVOA
53-70-3	Dibenz[a,h]anthracene	97-280	10	ug/L			ND		SVOA
53-70-3	Dibenz[a,h]anthracene	97-290	10	ug/L			ND		SVOA
534-52-1	4,6-Dinitro-o-cresol	96-103	50	ug/L			ND		SVOA
534-52-1	4,6-Dinitro-o-cresol	97-200	50	ug/L			ND		SVOA
534-52-1	4,6-Dinitro-o-cresol	97-210	50	ug/L			ND		SVOA
534-52-1	4,6-Dinitro-o-cresol	97-220	50	ug/L			ND		SVOA
534-52-1	4,6-Dinitro-o-cresol	97-230	50	ug/L			ND		SVOA
534-52-1	4,6-Dinitro-o-cresol	97-240	50	ug/L			ND		SVOA
534-52-1	4,6-Dinitro-o-cresol	97-250	50	ug/L			ND		SVOA
534-52-1	4,6-Dinitro-o-cresol	97-260	50	ug/L			ND		SVOA
534-52-1	4,6-Dinitro-o-cresol	97-270	50	ug/L			ND		SVOA
534-52-1	4,6-Dinitro-o-cresol	97-280	50	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
534-52-1	4,6-Dinitro-o-cresol	97-290	50	ug/L			ND		SVOA
540-59-0	1,2-Dichloroethylene	96-101A	5	ug/L			ND		VOA
540-59-0	1,2-Dichloroethylene	97-200	5	ug/L			ND		VOA
540-59-0	1,2-Dichloroethylene	97-210	5	ug/L			ND		VOA
540-59-0	1,2-Dichloroethylene	97-220	5	ug/L			ND		VOA
540-59-0	1,2-Dichloroethylene	97-230	5	ug/L			ND		VOA
540-59-0	1,2-Dichloroethylene	97-240	5	ug/L			ND		VOA
540-59-0	1,2-Dichloroethylene	97-250	5	ug/L			ND		VOA
540-59-0	1,2-Dichloroethylene	97-260	5	ug/L			ND		VOA
540-59-0	1,2-Dichloroethylene	97-270	5	ug/L			ND		VOA
540-59-0	1,2-Dichloroethylene	97-280	5	ug/L			NR		VOA
540-59-0	1,2-Dichloroethylene	97-290	5	ug/L			ND		VOA
541-73-1	1,3-Dichlorobenzene	96-103	10	ug/L			ND		SVOA
541-73-1	1,3-Dichlorobenzene	97-200	10	ug/L			ND		SVOA
541-73-1	1,3-Dichlorobenzene	97-210	10	ug/L			ND		SVOA
541-73-1	1,3-Dichlorobenzene	97-220	10	ug/L			ND		SVOA
541-73-1	1,3-Dichlorobenzene	97-230	10	ug/L			ND		SVOA
541-73-1	1,3-Dichlorobenzene	97-240	10	ug/L			ND		SVOA
541-73-1	1,3-Dichlorobenzene	97-250	10	ug/L			ND		SVOA
541-73-1	1,3-Dichlorobenzene	97-260	10	ug/L			ND		SVOA
541-73-1	1,3-Dichlorobenzene	97-270	10	ug/L			ND		SVOA
541-73-1	1,3-Dichlorobenzene	97-280	10	ug/L			ND		SVOA
541-73-1	1,3-Dichlorobenzene	97-290	10	ug/L			ND		SVOA
56-23-5	Carbon tetrachloride	96-101A	5	ug/L			ND		VOA
56-23-5	Carbon tetrachloride	97-200	5	ug/L			ND		VOA
56-23-5	Carbon tetrachloride	97-210	5	ug/L			ND		VOA
56-23-5	Carbon tetrachloride	97-220	5	ug/L			ND		VOA
56-23-5	Carbon tetrachloride	97-230	5	ug/L			ND		VOA
56-23-5	Carbon tetrachloride	97-240	5	ug/L			ND		VOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
56-23-5	Carbon tetrachloride	97-250	5	ug/L			ND		VOA
56-23-5	Carbon tetrachloride	97-260	5	ug/L			ND		VOA
56-23-5	Carbon tetrachloride	97-270	5	ug/L			ND		VOA
56-23-5	Carbon tetrachloride	97-280	5	ug/L			ND		VOA
56-23-5	Carbon tetrachloride	97-290	5	ug/L			ND		VOA
56-55-3	Benzo(a)anthracene	96-103	10	ug/L			ND		SVOA
56-55-3	Benzo(a)anthracene	97-200	10	ug/L			ND		SVOA
56-55-3	Benzo(a)anthracene	97-210	10	ug/L			ND		SVOA
56-55-3	Benzo(a)anthracene	97-220	10	ug/L			ND		SVOA
56-55-3	Benzo(a)anthracene	97-230	10	ug/L			ND		SVOA
56-55-3	Benzo(a)anthracene	97-240	10	ug/L			ND		SVOA
56-55-3	Benzo(a)anthracene	97-250	10	ug/L			ND		SVOA
56-55-3	Benzo(a)anthracene	97-260	10	ug/L			ND		SVOA
56-55-3	Benzo(a)anthracene	97-270	10	ug/L			ND		SVOA
56-55-3	Benzo(a)anthracene	97-280	10	ug/L			ND		SVOA
56-55-3	Benzo(a)anthracene	97-290	10	ug/L			ND		SVOA
57-10-3	n-Hexadecanoic acid					X			
57-11-4	n-Octadecanoic acid					X			
59-50-7	4-Chloro-3-methylphenol	96-103	10	ug/L			ND		SVOA
59-50-7	4-Chloro-3-methylphenol	97-200	10	ug/L			ND		SVOA
59-50-7	4-Chloro-3-methylphenol	97-210	10	ug/L			ND		SVOA
59-50-7	4-Chloro-3-methylphenol	97-220	10	ug/L			ND		SVOA
59-50-7	4-Chloro-3-methylphenol	97-230	10	ug/L			ND		SVOA
59-50-7	4-Chloro-3-methylphenol	97-240	10	ug/L			ND		SVOA
59-50-7	4-Chloro-3-methylphenol	97-250	10	ug/L			ND		SVOA
59-50-7	4-Chloro-3-methylphenol	97-260	10	ug/L			ND		SVOA
59-50-7	4-Chloro-3-methylphenol	97-270	10	ug/L			ND		SVOA
59-50-7	4-Chloro-3-methylphenol	97-280	10	ug/L			ND		SVOA
59-50-7	4-Chloro-3-methylphenol	97-290	10	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
591-78-6	2-Hexanone	96-101A	20	ug/L			ND		VOA
591-78-6	2-Hexanone	97-200	20	ug/L			ND		VOA
591-78-6	2-Hexanone	97-210	20	ug/L			ND		VOA
591-78-6	2-Hexanone	97-220	20	ug/L			ND		VOA
591-78-6	2-Hexanone	97-230	20	ug/L			ND		VOA
591-78-6	2-Hexanone	97-240	20	ug/L			ND		VOA
591-78-6	2-Hexanone	97-250	20	ug/L			ND		VOA
591-78-6	2-Hexanone	97-260	20	ug/L			ND		VOA
591-78-6	2-Hexanone	97-270	20	ug/L			ND		VOA
591-78-6	2-Hexanone	97-280	20	ug/L			NR		VOA
591-78-6	2-Hexanone	97-290	20	ug/L			ND		VOA
606-20-2	2,6-Dinitrotoluene	96-103	10	ug/L			ND		SVOA
606-20-2	2,6-Dinitrotoluene	97-200	10	ug/L			ND		SVOA
606-20-2	2,6-Dinitrotoluene	97-210	10	ug/L			ND		SVOA
606-20-2	2,6-Dinitrotoluene	97-220	10	ug/L			ND		SVOA
606-20-2	2,6-Dinitrotoluene	97-230	10	ug/L			ND		SVOA
606-20-2	2,6-Dinitrotoluene	97-240	10	ug/L			ND		SVOA
606-20-2	2,6-Dinitrotoluene	97-250	10	ug/L			ND		SVOA
606-20-2	2,6-Dinitrotoluene	97-260	10	ug/L			ND		SVOA
606-20-2	2,6-Dinitrotoluene	97-270	10	ug/L			ND		SVOA
606-20-2	2,6-Dinitrotoluene	97-280	10	ug/L			ND		SVOA
606-20-2	2,6-Dinitrotoluene	97-290	10	ug/L			ND		SVOA
611-14-3	2-Ethyltoluene					X			
620-14-4	3-Ethyltoluene					X			
621-64-7	N-Nitroso-di-n-propylamine	96-103	10	ug/L			ND		SVOA
621-64-7	N-Nitroso-di-n-propylamine	97-200	10	ug/L			ND		SVOA
621-64-7	N-Nitroso-di-n-propylamine	97-210	10	ug/L			ND		SVOA
621-64-7	N-Nitroso-di-n-propylamine	97-220	10	ug/L			ND		SVOA
621-64-7	N-Nitroso-di-n-propylamine	97-230	10	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
621-64-7	N-Nitroso-di-n-propylamine	97-240	10	ug/L			ND		SVOA
621-64-7	N-Nitroso-di-n-propylamine	97-250	10	ug/L			ND		SVOA
621-64-7	N-Nitroso-di-n-propylamine	97-260	10	ug/L			ND		SVOA
621-64-7	N-Nitroso-di-n-propylamine	97-270	10	ug/L			ND		SVOA
621-64-7	N-Nitroso-di-n-propylamine	97-280	10	ug/L			ND		SVOA
621-64-7	N-Nitroso-di-n-propylamine	97-290	10	ug/L			ND		SVOA
67-64-1	2-Propanone (Acetone)	96-101A	20	ug/L			ND		VOA
67-64-1	2-Propanone (Acetone)	97-200	20	ug/L			ND		VOA
67-64-1	2-Propanone (Acetone)	97-210	20	ug/L			ND		VOA
67-64-1	2-Propanone (Acetone)	97-220	20	ug/L			ND		VOA
67-64-1	2-Propanone (Acetone)	97-230	20	ug/L			ND		VOA
67-64-1	2-Propanone (Acetone)	97-240	20	ug/L			ND		VOA
67-64-1	2-Propanone (Acetone)	97-250	10	ug/L	14			U	VOA
67-64-1	2-Propanone (Acetone)	97-260	20	ug/L			ND		VOA
67-64-1	2-Propanone (Acetone)	97-270	20	ug/L			ND		VOA
67-64-1	2-Propanone (Acetone)	97-280	20	ug/L			NR		VOA
67-64-1	2-Propanone (Acetone)	97-290	20	ug/L	17			J	VOA
67-66-3	Chloroform	96-101A	5	ug/L			ND		VOA
67-66-3	Chloroform	97-200	5	ug/L			ND		VOA
67-66-3	Chloroform	97-210	5	ug/L			ND		VOA
67-66-3	Chloroform	97-220	5	ug/L			ND		VOA
67-66-3	Chloroform	97-230	5	ug/L			ND		VOA
67-66-3	Chloroform	97-240	5	ug/L			ND		VOA
67-66-3	Chloroform	97-250	5	ug/L			ND		VOA
67-66-3	Chloroform	97-260	5	ug/L			ND		VOA
67-66-3	Chloroform	97-270	5	ug/L			ND		VOA
67-66-3	Chloroform	97-280	5	ug/L			ND		VOA
67-66-3	Chloroform	97-290	5	ug/L			ND		VOA
67-72-1	Hexachloroethane	96-103	10	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
67-72-1	Hexachloroethane	97-200	10	ug/L			ND		SVOA
67-72-1	Hexachloroethane	97-210	10	ug/L			ND		SVOA
67-72-1	Hexachloroethane	97-220	10	ug/L			ND		SVOA
67-72-1	Hexachloroethane	97-230	10	ug/L			ND		SVOA
67-72-1	Hexachloroethane	97-240	10	ug/L			ND		SVOA
67-72-1	Hexachloroethane	97-250	10	ug/L			ND		SVOA
67-72-1	Hexachloroethane	97-260	10	ug/L			ND		SVOA
67-72-1	Hexachloroethane	97-270	10	ug/L			ND		SVOA
67-72-1	Hexachloroethane	97-280	10	ug/L			ND		SVOA
67-72-1	Hexachloroethane	97-290	10	ug/L			ND		SVOA
7005-72-3	4-Chlorophenylphenyl ether	96-103	10	ug/L			ND		SVOA
7005-72-3	4-Chlorophenylphenyl ether	97-200	10	ug/L			ND		SVOA
7005-72-3	4-Chlorophenylphenyl ether	97-210	10	ug/L			ND		SVOA
7005-72-3	4-Chlorophenylphenyl ether	97-220	10	ug/L			ND		SVOA
7005-72-3	4-Chlorophenylphenyl ether	97-230	10	ug/L			ND		SVOA
7005-72-3	4-Chlorophenylphenyl ether	97-240	10	ug/L			ND		SVOA
7005-72-3	4-Chlorophenylphenyl ether	97-250	10	ug/L			ND		SVOA
7005-72-3	4-Chlorophenylphenyl ether	97-260	10	ug/L			ND		SVOA
7005-72-3	4-Chlorophenylphenyl ether	97-270	10	ug/L			ND		SVOA
7005-72-3	4-Chlorophenylphenyl ether	97-280	10	ug/L			ND		SVOA
7005-72-3	4-Chlorophenylphenyl ether	97-290	10	ug/L			ND		SVOA
71-43-2	Benzene	96-101A	5	ug/L			ND		VOA
71-43-2	Benzene	97-200	5	ug/L			ND		VOA
71-43-2	Benzene	97-210	5	ug/L			ND		VOA
71-43-2	Benzene	97-220	5	ug/L			ND		VOA
71-43-2	Benzene	97-230	5	ug/L			ND		VOA
71-43-2	Benzene	97-240	5	ug/L			ND		VOA
71-43-2	Benzene	97-250	5	ug/L			ND		VOA
71-43-2	Benzene	97-260	5	ug/L			ND		VOA

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
71-43-2	Benzene	97-270	5	ug/L			ND		VOA
71-43-2	Benzene	97-280	5	ug/L			ND		VOA
71-43-2	Benzene	97-290	5	ug/L			ND		VOA
71-55-6	1,1,1-Trichloroethane	96-101A	5	ug/L			ND		VOA
71-55-6	1,1,1-Trichloroethane	97-200	5	ug/L			ND		VOA
71-55-6	1,1,1-Trichloroethane	97-210	5	ug/L			ND		VOA
71-55-6	1,1,1-Trichloroethane	97-230	5	ug/L			ND		VOA
71-55-6	1,1,1-Trichloroethane	97-240	5	ug/L			ND		VOA
71-55-6	1,1,1-Trichloroethane	97-250	5	ug/L			ND		VOA
71-55-6	1,1,1-Trichloroethane	97-260	5	ug/L			ND		VOA
71-55-6	1,1,1-Trichloroethane	97-270	5	ug/L			ND		VOA
71-55-6	1,1,1-Trichloroethane	97-280	5	ug/L			NR		VOA
71-55-6	1,1,1-Trichloroethane	97-290	5	ug/L			ND		VOA
74-83-9	Bromomethane	96-101A	5	ug/L			ND		VOA
74-83-9	Bromomethane	97-200	5	ug/L			ND		VOA
74-83-9	Bromomethane	97-210	5	ug/L			ND		VOA
74-83-9	Bromomethane	97-220	5	ug/L			ND		VOA
74-83-9	Bromomethane	97-230	5	ug/L			ND		VOA
74-83-9	Bromomethane	97-240	5	ug/L			ND		VOA
74-83-9	Bromomethane	97-250	5	ug/L			ND		VOA
74-83-9	Bromomethane	97-260	5	ug/L			ND		VOA
74-83-9	Bromomethane	97-270	5	ug/L			ND		VOA
74-83-9	Bromomethane	97-280	5	ug/L			NR		VOA
74-83-9	Bromomethane	97-290	5	ug/L			ND		VOA
74-87-3	Chloromethane	96-101A	10	ug/L			ND		VOA
74-87-3	Chloromethane	97-200	10	ug/L			ND		VOA
74-87-3	Chloromethane	97-210	10	ug/L			ND		VOA
74-87-3	Chloromethane	97-220	10	ug/L			ND		VOA
74-87-3	Chloromethane	97-230	10	ug/L			ND		VOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
74-87-3	Chloromethane	97-240	10	ug/L			ND		VOA
74-87-3	Chloromethane	97-250	10	ug/L			ND		VOA
74-87-3	Chloromethane	97-260	10	ug/L			ND		VOA
74-87-3	Chloromethane	97-270	10	ug/L			ND		VOA
74-87-3	Chloromethane	97-280	10	ug/L			ND		VOA
74-87-3	Chloromethane	97-290	10	ug/L			ND		VOA
7429-90-5	Aluminum	96-106	200	ug/L			ND		Metals
7429-90-5	Aluminum	97-200	200	ug/L			U	U	Metals
7429-90-5	Aluminum	97-210	200	ug/L			U	U	Metals
7429-90-5	Aluminum	97-220	200	ug/L			ND		Metals
7429-90-5	Aluminum	97-230	200	ug/L	213				Metals
7429-90-5	Aluminum	97-240	200	ug/L			ND		Metals
7429-90-5	Aluminum	97-250	200	ug/L			ND		Metals
7429-90-5	Aluminum	97-260	200	ug/L			U	U	Metals
7429-90-5	Aluminum	97-270	200	ug/L	422			J	Metals
7429-90-5	Aluminum	97-280	200	ug/L			ND		Metals
7429-90-5	Aluminum	97-290	200	ug/L			ND		Metals
7439-89-6	Iron	96-106	100	ug/L			U		Metals
7439-89-6	Iron	97-200	100	ug/L	102				Metals
7439-89-6	Iron	97-210	100	ug/L			U	U	Metals
7439-89-6	Iron	97-220	100	ug/L			U	U	Metals
7439-89-6	Iron	97-230	100	ug/L	353				Metals
7439-89-6	Iron	97-240	100	ug/L			U	U	Metals
7439-89-6	Iron	97-250	100	ug/L			U	U	Metals
7439-89-6	Iron	97-260	100	ug/L	798				Metals
7439-89-6	Iron	97-270	100	ug/L	666				Metals
7439-89-6	Iron	97-280	100	ug/L			U	U	Metals
7439-89-6	Iron	97-290	100	ug/L			U	U	Metals
7439-92-1	Lead	96-106	3	ug/L			ND		Metals

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
7439-92-1	Lead	97-200	3	ug/L			ND		Metals
7439-92-1	Lead	97-210	3	ug/L			ND		Metals
7439-92-1	Lead	97-220	3	ug/L			ND		Metals
7439-92-1	Lead	97-230	3	ug/L			ND		Metals
7439-92-1	Lead	97-240	3	ug/L			ND		Metals
7439-92-1	Lead	97-250	3	ug/L			ND		Metals
7439-92-1	Lead	97-260	3	ug/L			U	U	Metals
7439-92-1	Lead	97-270	3	ug/L			ND		Metals
7439-92-1	Lead	97-280	3	ug/L			ND		Metals
7439-92-1	Lead	97-290	3	ug/L			ND		Metals
7439-95-4	Magnesium	96-106	5000	ug/L	21000				Metals
7439-95-4	Magnesium	97-200	5000	ug/L	42600				Metals
7439-95-4	Magnesium	97-210	5000	ug/L	65300				Metals
7439-95-4	Magnesium	97-220	5000	ug/L	43000				Metals
7439-95-4	Magnesium	97-230	5000	ug/L	33500				Metals
7439-95-4	Magnesium	97-240	5000	ug/L	32000				Metals
7439-95-4	Magnesium	97-250	5000	ug/L	32900				Metals
7439-95-4	Magnesium	97-260	5000	ug/L	32200				Metals
7439-95-4	Magnesium	97-270	5000	ug/L	32700				Metals
7439-95-4	Magnesium	97-280	5000	ug/L	34100				Metals
7439-95-4	Magnesium	97-290	5000	ug/L	36100				Metals
7439-96-5	Manganese	96-106	15	ug/L	5.1			J	Metals
7439-96-5	Manganese	97-200	15	ug/L	9			J	Metals
7439-96-5	Manganese	97-210	15	ug/L	6.2			J	Metals
7439-96-5	Manganese	97-220	15	ug/L	4.4			J	Metals
7439-96-5	Manganese	97-230	15	ug/L	11.6			J	Metals
7439-96-5	Manganese	97-240	15	ug/L	4.6			J	Metals
7439-96-5	Manganese	97-250	15	ug/L			U	U	Metals
7439-96-5	Manganese	97-260	15	ug/L	17.7				Metals

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
7439-96-5	Manganese	97-270	15	ug/L	17.5				Metals
7439-96-5	Manganese	97-280	15	ug/L			U	U	Metals
7439-96-5	Manganese	97-290	15	ug/L	12.2			J	Metals
7439-97-6	Mercury	96-106	0.2	ug/L	0.16			J	Metals
7439-97-6	Mercury	97-200	0.2	ug/L	0.16			J	Metals
7439-97-6	Mercury	97-210	0.2	ug/L			ND		Metals
7439-97-6	Mercury	97-220	0.2	ug/L			ND		Metals
7439-97-6	Mercury	97-230	0.2	ug/L			ND		Metals
7439-97-6	Mercury	97-240	0.2	ug/L			ND		Metals
7439-97-6	Mercury	97-250	0.2	ug/L			ND		Metals
7439-97-6	Mercury	97-260	0.2	ug/L			ND		Metals
7439-97-6	Mercury	97-270	0.2	ug/L			ND		Metals
7439-97-6	Mercury	97-280	0.2	ug/L			ND		Metals
7439-97-6	Mercury	97-290	0.2	ug/L			NR		Metals
7440-02-0	Nickel	96-106	40	ug/L	10.2			J	Metals
7440-02-0	Nickel	97-200	40	ug/L			ND		Metals
7440-02-0	Nickel	97-210	40	ug/L			ND		Metals
7440-02-0	Nickel	97-220	40	ug/L			ND		Metals
7440-02-0	Nickel	97-230	40	ug/L			ND		Metals
7440-02-0	Nickel	97-240	40	ug/L			ND		Metals
7440-02-0	Nickel	97-250	40	ug/L			ND		Metals
7440-02-0	Nickel	97-260	40	ug/L			ND		Metals
7440-02-0	Nickel	97-270	40	ug/L			ND		Metals
7440-02-0	Nickel	97-280	40	ug/L			ND		Metals
7440-02-0	Nickel	97-290	40	ug/L			ND		Metals
7440-09-7	Potassium	96-106	5000	ug/L	13800				Metals
7440-09-7	Potassium	97-200	5000	ug/L	13900				Metals
7440-09-7	Potassium	97-210	5000	ug/L	17000				Metals
7440-09-7	Potassium	97-220	5000	ug/L	14000				Metals

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
7440-09-7	Potassium	97-230	5000	ug/L	10600				Metals
7440-09-7	Potassium	97-240	5000	ug/L	11300				Metals
7440-09-7	Potassium	97-250	5000	ug/L	12700				Metals
7440-09-7	Potassium	97-260	5000	ug/L	12800				Metals
7440-09-7	Potassium	97-270	5000	ug/L	12600				Metals
7440-09-7	Potassium	97-280	5000	ug/L	14200				Metals
7440-09-7	Potassium	97-290	5000	ug/L	14100				Metals
7440-22-4	Silver	96-106	10	ug/L			ND		Metals
7440-22-4	Silver	97-200	10	ug/L			ND		Metals
7440-22-4	Silver	97-210	10	ug/L			ND		Metals
7440-22-4	Silver	97-220	10	ug/L			ND		Metals
7440-22-4	Silver	97-230	10	ug/L			ND		Metals
7440-22-4	Silver	97-240	10	ug/L			ND		Metals
7440-22-4	Silver	97-250	10	ug/L			ND		Metals
7440-22-4	Silver	97-260	10	ug/L			ND		Metals
7440-22-4	Silver	97-270	10	ug/L			ND		Metals
7440-22-4	Silver	97-280	10	ug/L			ND		Metals
7440-22-4	Silver	97-290	10	ug/L			ND		Metals
7440-23-5	Sodium	96-106	5000	ug/L	207000				Metals
7440-23-5	Sodium	97-200	5000	ug/L	249000				Metals
7440-23-5	Sodium	97-210	5000	ug/L	247000				Metals
7440-23-5	Sodium	97-220	5000	ug/L	248000				Metals
7440-23-5	Sodium	97-230	5000	ug/L	179000				Metals
7440-23-5	Sodium	97-240	5000	ug/L	226000				Metals
7440-23-5	Sodium	97-250	5000	ug/L	228000				Metals
7440-23-5	Sodium	97-260	5000	ug/L	191000				Metals
7440-23-5	Sodium	97-270	5000	ug/L	191000				Metals
7440-23-5	Sodium	97-280	5000	ug/L	191000				Metals
7440-23-5	Sodium	97-290	5000	ug/L	219000				Metals

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
7440-28-0	Thallium	96-106	10	ug/L			ND		Metals
7440-28-0	Thallium	97-200	10	ug/L			ND		Metals
7440-28-0	Thallium	97-210	10	ug/L			ND		Metals
7440-28-0	Thallium	97-220	10	ug/L			ND		Metals
7440-28-0	Thallium	97-230	10	ug/L			ND		Metals
7440-28-0	Thallium	97-240	10	ug/L			ND		Metals
7440-28-0	Thallium	97-250	10	ug/L			ND		Metals
7440-28-0	Thallium	97-260	10	ug/L			ND		Metals
7440-28-0	Thallium	97-270	10	ug/L			ND		Metals
7440-28-0	Thallium	97-280	10	ug/L			ND		Metals
7440-28-0	Thallium	97-290	10	ug/L			ND		Metals
7440-36-0	Antimony	96-106	60	ug/L			ND		Metals
7440-36-0	Antimony	97-200	60	ug/L			ND		Metals
7440-36-0	Antimony	97-210	60	ug/L			ND		Metals
7440-36-0	Antimony	97-220	60	ug/L			ND		Metals
7440-36-0	Antimony	97-230	60	ug/L			ND		Metals
7440-36-0	Antimony	97-240	60	ug/L			ND		Metals
7440-36-0	Antimony	97-250	60	ug/L			ND		Metals
7440-36-0	Antimony	97-260	60	ug/L			ND		Metals
7440-36-0	Antimony	97-270	60	ug/L			ND		Metals
7440-36-0	Antimony	97-280	60	ug/L			ND		Metals
7440-36-0	Antimony	97-290	60	ug/L			ND		Metals
7440-38-2	Arsenic	96-106	10	ug/L	26.2				Metals
7440-38-2	Arsenic	97-200	10	ug/L	18.8				Metals
7440-38-2	Arsenic	97-210	10	ug/L	13.6				Metals
7440-38-2	Arsenic	97-220	10	ug/L	17.2				Metals
7440-38-2	Arsenic	97-230	10	ug/L	32.6				Metals
7440-38-2	Arsenic	97-240	10	ug/L	22.5				Metals
7440-38-2	Arsenic	97-250	10	ug/L	22.8				Metals

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
7440-38-2	Arsenic	97-260	10	ug/L	20.4				Metals
7440-38-2	Arsenic	97-270	10	ug/L	22.1				Metals
7440-38-2	Arsenic	97-280	10	ug/L	18.8				Metals
7440-38-2	Arsenic	97-290	10	ug/L	25.2				Metals
7440-39-3	Barium	96-106	200	ug/L	42			J	Metals
7440-39-3	Barium	97-200	200	ug/L	47.4			J	Metals
7440-39-3	Barium	97-200	200	ug/L	47.4				Metals
7440-39-3	Barium	97-210	200	ug/L	63.3			J	Metals
7440-39-3	Barium	97-220	200	ug/L	39.3			J	Metals
7440-39-3	Barium	97-230	200	ug/L	53.6			J	Metals
7440-39-3	Barium	97-240	200	ug/L	29.4			J	Metals
7440-39-3	Barium	97-250	200	ug/L	31.7			J	Metals
7440-39-3	Barium	97-260	200	ug/L	35.9			J	Metals
7440-39-3	Barium	97-270	200	ug/L	39.6			J	Metals
7440-39-3	Barium	97-280	200	ug/L	34.4			J	Metals
7440-39-3	Barium	97-290	200	ug/L	44.3			J	Metals
7440-41-7	Beryllium	96-106	5	ug/L	0.52			J	Metals
7440-41-7	Beryllium	97-200	5	ug/L	0.42			J	Metals
7440-41-7	Beryllium	97-210	5	ug/L	0.71			J	Metals
7440-41-7	Beryllium	97-220	5	ug/L	0.33			J	Metals
7440-41-7	Beryllium	97-230	5	ug/L	0.62			J	Metals
7440-41-7	Beryllium	97-240	5	ug/L	0.73			J	Metals
7440-41-7	Beryllium	97-250	5	ug/L	0.77			J	Metals
7440-41-7	Beryllium	97-260	5	ug/L			ND		Metals
7440-41-7	Beryllium	97-270	5	ug/L	0.76			J	Metals
7440-41-7	Beryllium	97-280	5	ug/L			U	U	Metals
7440-41-7	Beryllium	97-290	5	ug/L			U	U	Metals
7440-43-9	Cadmium	96-106	5	ug/L			ND		Metals
7440-43-9	Cadmium	97-200	5	ug/L			ND		Metals

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
7440-43-9	Cadmium	97-210	5	ug/L			ND		Metals
7440-43-9	Cadmium	97-220	5	ug/L			ND		Metals
7440-43-9	Cadmium	97-230	5	ug/L			ND		Metals
7440-43-9	Cadmium	97-240	5	ug/L			ND		Metals
7440-43-9	Cadmium	97-250	5	ug/L			ND		Metals
7440-43-9	Cadmium	97-260	5	ug/L			ND		Metals
7440-43-9	Cadmium	97-270	5	ug/L			ND		Metals
7440-43-9	Cadmium	97-280	5	ug/L			ND		Metals
7440-43-9	Cadmium	97-290	5	ug/L			ND		Metals
7440-47-3	Chromium	96-106	10	ug/L	7.9			J	Metals
7440-47-3	Chromium	97-200	10	ug/L	4.2			J	Metals
7440-47-3	Chromium	97-210	10	ug/L			ND		Metals
7440-47-3	Chromium	97-220	10	ug/L			ND		Metals
7440-47-3	Chromium	97-230	10	ug/L			ND		Metals
7440-47-3	Chromium	97-240	10	ug/L	3.8			J	Metals
7440-47-3	Chromium	97-250	10	ug/L			U	U	Metals
7440-47-3	Chromium	97-260	10	ug/L	12				Metals
7440-47-3	Chromium	97-270	10	ug/L	13.9				Metals
7440-47-3	Chromium	97-280	10	ug/L	13.5				Metals
7440-47-3	Chromium	97-290	10	ug/L	7.2			J	Metals
7440-48-4	Cobalt	96-106	50	ug/L			ND		Metals
7440-48-4	Cobalt	97-200	50	ug/L			ND		Metals
7440-48-4	Cobalt	97-210	50	ug/L			ND		Metals
7440-48-4	Cobalt	97-220	50	ug/L			ND		Metals
7440-48-4	Cobalt	97-230	50	ug/L			ND		Metals
7440-48-4	Cobalt	97-240	50	ug/L			ND		Metals
7440-48-4	Cobalt	97-250	50	ug/L			ND		Metals
7440-48-4	Cobalt	97-260	50	ug/L			ND		Metals
7440-48-4	Cobalt	97-270	50	ug/L			ND		Metals

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
7440-48-4	Cobalt	97-280	50	ug/L			ND		Metals
7440-48-4	Cobalt	97-290	50	ug/L			ND		Metals
7440-50-8	Copper	96-106	25	ug/L			U		Metals
7440-50-8	Copper	97-200	25	ug/L			U	U	Metals
7440-50-8	Copper	97-210	25	ug/L	10.2			J	Metals
7440-50-8	Copper	97-220	25	ug/L			U	U	Metals
7440-50-8	Copper	97-230	25	ug/L			U	U	Metals
7440-50-8	Copper	97-240	25	ug/L			U	U	Metals
7440-50-8	Copper	97-250	25	ug/L			U	U	Metals
7440-50-8	Copper	97-260	25	ug/L			U	U	Metals
7440-50-8	Copper	97-270	25	ug/L			U	U	Metals
7440-50-8	Copper	97-280	25	ug/L			U	U	Metals
7440-50-8	Copper	97-290	25	ug/L			U	U	Metals
7440-61-1	Uranium	96-100		pCi/L			NR		Rad
7440-61-1	Uranium	97-200		pCi/L			NR		Rad
7440-61-1	Uranium	97-210		pCi/L			NR		Rad
7440-61-1	Uranium	97-220		pCi/L			NR		Rad
7440-61-1	Uranium	97-230		pCi/L			NR		Rad
7440-61-1	Uranium	97-240		pCi/L			NR		Rad
7440-61-1	Uranium	97-250		pCi/L			NR		Rad
7440-61-1	Uranium	97-260		pCi/L			NR		Rad
7440-61-1	Uranium	97-290		pCi/L	213				Rad
7440-62-2	Vanadium	96-106	50	ug/L	52.9				Metals
7440-62-2	Vanadium	97-200	50	ug/L	39.9			J	Metals
7440-62-2	Vanadium	97-210	50	ug/L	27.9			J	Metals
7440-62-2	Vanadium	97-220	50	ug/L	27.3			J	Metals
7440-62-2	Vanadium	97-230	50	ug/L	34			J	Metals
7440-62-2	Vanadium	97-240	50	ug/L	31.9			J	Metals
7440-62-2	Vanadium	97-250	50	ug/L			U	U	Metals

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
7440-62-2	Vanadium	97-260	50	ug/L	28.9			J	Metals
7440-62-2	Vanadium	97-270	50	ug/L	34.9			J	Metals
7440-62-2	Vanadium	97-280	50	ug/L	38.4			J	Metals
7440-62-2	Vanadium	97-290	50	ug/L	51.6				Metals
7440-66-6	Zinc	96-106	20	ug/L			U		Metals
7440-66-6	Zinc	97-200	20	ug/L			U	U	Metals
7440-66-6	Zinc	97-210	20	ug/L	19.5			J	Metals
7440-66-6	Zinc	97-220	20	ug/L			U	U	Metals
7440-66-6	Zinc	97-230	20	ug/L			U	U	Metals
7440-66-6	Zinc	97-240	20	ug/L			U	U	Metals
7440-66-6	Zinc	97-250	20	ug/L			U	U	Metals
7440-66-6	Zinc	97-260	20	ug/L	49.7				Metals
7440-66-6	Zinc	97-270	20	ug/L			U	U	Metals
7440-66-6	Zinc	97-280	20	ug/L			U	U	Metals
7440-66-6	Zinc	97-290	20	ug/L			U	U	Metals
7440-70-2	Calcium	96-106	5000	ug/L	75500				Metals
7440-70-2	Calcium	97-200	5000	ug/L	151000				Metals
7440-70-2	Calcium	97-210	5000	ug/L	227000				Metals
7440-70-2	Calcium	97-220	5000	ug/L	143000				Metals
7440-70-2	Calcium	97-230	5000	ug/L	110000				Metals
7440-70-2	Calcium	97-240	5000	ug/L	107000				Metals
7440-70-2	Calcium	97-250	5000	ug/L	113000				Metals
7440-70-2	Calcium	97-260	5000	ug/L	106000				Metals
7440-70-2	Calcium	97-270	5000	ug/L	110000				Metals
7440-70-2	Calcium	97-280	5000	ug/L	113000				Metals
7440-70-2	Calcium	97-290	5000	ug/L	119000				Metals
75-00-3	Chloroethane	96-101A	10	ug/L			ND		VOA
75-00-3	Chloroethane	97-200	10	ug/L			ND		VOA
75-00-3	Chloroethane	97-210	10	ug/L			ND		VOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
75-00-3	Chloroethane	97-220	10	ug/L			ND		VOA
75-00-3	Chloroethane	97-230	10	ug/L			ND		VOA
75-00-3	Chloroethane	97-240	10	ug/L			ND		VOA
75-00-3	Chloroethane	97-250	10	ug/L			ND		VOA
75-00-3	Chloroethane	97-260	10	ug/L			ND		VOA
75-00-3	Chloroethane	97-270	10	ug/L			ND		VOA
75-00-3	Chloroethane	97-280	10	ug/L			NR		VOA
75-00-3	Chloroethane	97-290	10	ug/L			ND		VOA
75-01-4	1-Chloroethene (Vinyl Chloride)	96-101A	10	ug/L			ND		VOA
75-01-4	1-Chloroethene (Vinyl Chloride)	97-200	10	ug/L			ND		VOA
75-01-4	1-Chloroethene (Vinyl Chloride)	97-210	10	ug/L			ND		VOA
75-01-4	1-Chloroethene (Vinyl Chloride)	97-220	10	ug/L			ND		VOA
75-01-4	1-Chloroethene (Vinyl Chloride)	97-230	10	ug/L			ND		VOA
75-01-4	1-Chloroethene (Vinyl Chloride)	97-240	10	ug/L			ND		VOA
75-01-4	1-Chloroethene (Vinyl Chloride)	97-250	10	ug/L			ND		VOA
75-01-4	1-Chloroethene (Vinyl Chloride)	97-260	10	ug/L			ND		VOA
75-01-4	1-Chloroethene (Vinyl Chloride)	97-270	10	ug/L			ND		VOA
75-01-4	1-Chloroethene (Vinyl Chloride)	97-280	10	ug/L			ND		VOA
75-01-4	1-Chloroethene (Vinyl Chloride)	97-290	10	ug/L			ND		VOA
75-09-2	Dichloromethane (Methylene Chloride)	96-101A	5	ug/L			ND		VOA
75-09-2	Dichloromethane (Methylene Chloride)	97-200	5	ug/L			ND		VOA
75-09-2	Dichloromethane (Methylene Chloride)	97-210	5	ug/L			ND		VOA
75-09-2	Dichloromethane (Methylene Chloride)	97-220	5	ug/L			ND		VOA
75-09-2	Dichloromethane (Methylene Chloride)	97-230	10	ug/L			U	U	VOA
75-09-2	Dichloromethane (Methylene Chloride)	97-240	5	ug/L			ND		VOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
	Chloride)								
75-09-2	Dichloromethane (Methylene Chloride)	97-250	10	ug/L				U	VOA
75-09-2	Dichloromethane (Methylene Chloride)	97-260	5	ug/L			ND		VOA
75-09-2	Dichloromethane (Methylene Chloride)	97-270	5	ug/L			ND		VOA
75-09-2	Dichloromethane (Methylene Chloride)	97-280	5	ug/L			NR		VOA
75-09-2	Dichloromethane (Methylene Chloride)	97-290	5	ug/L			ND		VOA
75-15-0	Carbon disulfide	96-101A	5	ug/L			ND		VOA
75-15-0	Carbon disulfide	97-200	5	ug/L			ND		VOA
75-15-0	Carbon disulfide	97-210	5	ug/L			ND		VOA
75-15-0	Carbon disulfide	97-220	5	ug/L			ND		VOA
75-15-0	Carbon disulfide	97-230	5	ug/L			ND		VOA
75-15-0	Carbon disulfide	97-240	5	ug/L			ND		VOA
75-15-0	Carbon disulfide	97-250	5	ug/L			ND		VOA
75-15-0	Carbon disulfide	97-260	5	ug/L			ND		VOA
75-15-0	Carbon disulfide	97-270	5	ug/L			ND		VOA
75-15-0	Carbon disulfide	97-280	5	ug/L			NR		VOA
75-15-0	Carbon disulfide	97-290	5	ug/L			ND		VOA
75-25-2	Tribromomethane	96-101A	10	ug/L			ND		VOA
75-25-2	Tribromomethane	97-200	10	ug/L			ND		VOA
75-25-2	Tribromomethane	97-210	10	ug/L			ND		VOA
75-25-2	Tribromomethane	97-220	10	ug/L			ND		VOA
75-25-2	Tribromomethane	97-230	10	ug/L			ND		VOA
75-25-2	Tribromomethane	97-240	10	ug/L			ND		VOA
75-25-2	Tribromomethane	97-250	10	ug/L			ND		VOA
75-25-2	Tribromomethane	97-260	10	ug/L			ND		VOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
75-25-2	Tribromomethane	97-270	10	ug/L			ND		VOA
75-25-2	Tribromomethane	97-280	10	ug/L			ND		VOA
75-25-2	Tribromomethane	97-290	10	ug/L			ND		VOA
75-27-4	Bromodichloromethane	96-101A	5	ug/L			ND		VOA
75-27-4	Bromodichloromethane	97-200	5	ug/L			ND		VOA
75-27-4	Bromodichloromethane	97-210	5	ug/L			ND		VOA
75-27-4	Bromodichloromethane	97-220	5	ug/L			ND		VOA
75-27-4	Bromodichloromethane	97-230	5	ug/L			ND		VOA
75-27-4	Bromodichloromethane	97-240	5	ug/L			ND		VOA
75-27-4	Bromodichloromethane	97-250	5	ug/L			ND		VOA
75-27-4	Bromodichloromethane	97-260	5	ug/L			ND		VOA
75-27-4	Bromodichloromethane	97-270	5	ug/L			ND		VOA
75-27-4	Bromodichloromethane	97-280	5	ug/L			NR		VOA
75-27-4	Bromodichloromethane	97-290	5	ug/L			ND		VOA
75-34-3	1,1-Dichloroethane	96-101A	5	ug/L			ND		VOA
75-34-3	1,1-Dichloroethane	97-200	5	ug/L			ND		VOA
75-34-3	1,1-Dichloroethane	97-210	5	ug/L			ND		VOA
75-34-3	1,1-Dichloroethane	97-220	5	ug/L			ND		VOA
75-34-3	1,1-Dichloroethane	97-230	5	ug/L			ND		VOA
75-34-3	1,1-Dichloroethane	97-240	5	ug/L			ND		VOA
75-34-3	1,1-Dichloroethane	97-250	5	ug/L			ND		VOA
75-34-3	1,1-Dichloroethane	97-260	5	ug/L			ND		VOA
75-34-3	1,1-Dichloroethane	97-270	5	ug/L			ND		VOA
75-34-3	1,1-Dichloroethane	97-280	5	ug/L			ND		VOA
75-34-3	1,1-Dichloroethane	97-290	5	ug/L			ND		VOA
75-35-4	1,1-Dichloroethene	96-101A	5	ug/L			ND		VOA
75-35-4	1,1-Dichloroethene	97-200	5	ug/L			ND		VOA
75-35-4	1,1-Dichloroethene	97-210	5	ug/L			ND		VOA
75-35-4	1,1-Dichloroethene	97-220	5	ug/L			ND		VOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
75-35-4	1,1-Dichloroethene	97-230	5	ug/L			ND		VOA
75-35-4	1,1-Dichloroethene	97-240	5	ug/L			ND		VOA
75-35-4	1,1-Dichloroethene	97-250	5	ug/L			ND		VOA
75-35-4	1,1-Dichloroethene	97-260	5	ug/L			ND		VOA
75-35-4	1,1-Dichloroethene	97-270	5	ug/L			ND		VOA
75-35-4	1,1-Dichloroethene	97-280	5	ug/L			ND		VOA
75-35-4	1,1-Dichloroethene	97-290	5	ug/L			ND		VOA
7664-41-7	Ammonia	96-109		ug/L			ND		WetChem
7664-41-7	Ammonia	96-111		ug/L					WetChem
7664-41-7	Ammonia	96-113		ug/L					WetChem
7664-41-7	Ammonia	97-200		ug/L			ND		WetChem
7664-41-7	Ammonia	97-210		ug/L			ND		WetChem
7664-41-7	Ammonia	97-220		ug/L			ND		WetChem
7664-41-7	Ammonia	97-230		ug/L			ND		WetChem
7664-41-7	Ammonia	97-240		ug/L			ND		WetChem
7664-41-7	Ammonia	97-250		ug/L			ND		WetChem
7664-41-7	Ammonia	97-260		ug/L			ND		WetChem
7664-41-7	Ammonia	97-270		ug/L			ND		WetChem
7664-41-7	Ammonia	97-280		ug/L			ND		WetChem
7664-41-7	Ammonia	97-290		ug/L	151				WetChem
77-47-4	Hexachlorocyclopentadiene	96-103	50	ug/L			ND		SVOA
77-47-4	Hexachlorocyclopentadiene	97-200	50	ug/L			ND		SVOA
77-47-4	Hexachlorocyclopentadiene	97-210	50	ug/L			ND		SVOA
77-47-4	Hexachlorocyclopentadiene	97-220	50	ug/L			ND		SVOA
77-47-4	Hexachlorocyclopentadiene	97-230	50	ug/L			ND		SVOA
77-47-4	Hexachlorocyclopentadiene	97-240	50	ug/L			ND		SVOA
77-47-4	Hexachlorocyclopentadiene	97-250	50	ug/L			ND		SVOA
77-47-4	Hexachlorocyclopentadiene	97-260	50	ug/L			ND		SVOA
77-47-4	Hexachlorocyclopentadiene	97-270	50	ug/L			ND		SVOA

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
77-47-4	Hexachlorocyclopentadiene	97-280	50	ug/L			ND		SVOA
77-47-4	Hexachlorocyclopentadiene	97-290	50	ug/L			ND		SVOA
7782-49-2	Selenium	96-106	5	ug/L			ND		Metals
7782-49-2	Selenium	97-200	5	ug/L			ND		Metals
7782-49-2	Selenium	97-210	5	ug/L			ND		Metals
7782-49-2	Selenium	97-220	5	ug/L			ND		Metals
7782-49-2	Selenium	97-230	5	ug/L			ND		Metals
7782-49-2	Selenium	97-240	5	ug/L			ND		Metals
7782-49-2	Selenium	97-250	5	ug/L			ND		Metals
7782-49-2	Selenium	97-260	5	ug/L			ND		Metals
7782-49-2	Selenium	97-270	5	ug/L			ND		Metals
7782-49-2	Selenium	97-280	5	ug/L			U	U	Metals
7782-49-2	Selenium	97-290	5	ug/L			ND		Metals
78-59-1	Isophorone	96-103	10	ug/L			ND		SVOA
78-59-1	Isophorone	97-200	10	ug/L			ND		SVOA
78-59-1	Isophorone	97-210	10	ug/L			ND		SVOA
78-59-1	Isophorone	97-220	10	ug/L			ND		SVOA
78-59-1	Isophorone	97-230	10	ug/L			ND		SVOA
78-59-1	Isophorone	97-240	10	ug/L			ND		SVOA
78-59-1	Isophorone	97-250	10	ug/L			ND		SVOA
78-59-1	Isophorone	97-260	10	ug/L			ND		SVOA
78-59-1	Isophorone	97-270	10	ug/L			ND		SVOA
78-59-1	Isophorone	97-280	10	ug/L			ND		SVOA
78-59-1	Isophorone	97-290	10	ug/L			ND		SVOA
78-87-5	1,2-Dichloropropane	96-101A	5	ug/L			ND		VOA
78-87-5	1,2-Dichloropropane	97-200	5	ug/L			ND		VOA
78-87-5	1,2-Dichloropropane	97-210	5	ug/L			ND		VOA
78-87-5	1,2-Dichloropropane	97-220	5	ug/L			ND		VOA
78-87-5	1,2-Dichloropropane	97-230	5	ug/L			ND		VOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
78-87-5	1,2-Dichloropropane	97-240	5	ug/L			ND		VOA
78-87-5	1,2-Dichloropropane	97-250	5	ug/L			ND		VOA
78-87-5	1,2-Dichloropropane	97-260	5	ug/L			ND		VOA
78-87-5	1,2-Dichloropropane	97-270	5	ug/L			ND		VOA
78-87-5	1,2-Dichloropropane	97-280	5	ug/L			ND		VOA
78-87-5	1,2-Dichloropropane	97-290	5	ug/L			ND		VOA
78-93-3	2-Butanone (MEK)	96-101A	20	ug/L			ND		VOA
78-93-3	2-Butanone (MEK)	97-200	20	ug/L			ND		VOA
78-93-3	2-Butanone (MEK)	97-210	20	ug/L			ND		VOA
78-93-3	2-Butanone (MEK)	97-220	20	ug/L			ND		VOA
78-93-3	2-Butanone (MEK)	97-230	20	ug/L			ND		VOA
78-93-3	2-Butanone (MEK)	97-240	20	ug/L			ND		VOA
78-93-3	2-Butanone (MEK)	97-250	20	ug/L			ND		VOA
78-93-3	2-Butanone (MEK)	97-260	20	ug/L			ND		VOA
78-93-3	2-Butanone (MEK)	97-270	20	ug/L			ND		VOA
78-93-3	2-Butanone (MEK)	97-280	20	ug/L			ND		VOA
78-93-3	2-Butanone (MEK)	97-290	20	ug/L			ND		VOA
79-00-5	1,1,2-Trichloroethane	96-101A	5	ug/L			ND		VOA
79-00-5	1,1,2-Trichloroethane	97-200	5	ug/L			ND		VOA
79-00-5	1,1,2-Trichloroethane	97-210	5	ug/L			ND		VOA
79-00-5	1,1,2-Trichloroethane	97-220	5	ug/L			ND		VOA
79-00-5	1,1,2-Trichloroethane	97-230	5	ug/L			ND		VOA
79-00-5	1,1,2-Trichloroethane	97-240	5	ug/L			ND		VOA
79-00-5	1,1,2-Trichloroethane	97-250	5	ug/L			ND		VOA
79-00-5	1,1,2-Trichloroethane	97-260	5	ug/L			ND		VOA
79-00-5	1,1,2-Trichloroethane	97-270	5	ug/L			ND		VOA
79-00-5	1,1,2-Trichloroethane	97-280	5	ug/L			NR		VOA
79-00-5	1,1,2-Trichloroethane	97-290	5	ug/L			ND		VOA
79-01-6	1,1,2-Trichloroethylene	96-101A	5	ug/L			ND		VOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
79-01-6	1,1,2-Trichloroethylene	97-200	5	ug/L			ND		VOA
79-01-6	1,1,2-Trichloroethylene	97-210	5	ug/L			ND		VOA
79-01-6	1,1,2-Trichloroethylene	97-220	5	ug/L			ND		VOA
79-01-6	1,1,2-Trichloroethylene	97-230	5	ug/L			ND		VOA
79-01-6	1,1,2-Trichloroethylene	97-240	5	ug/L			ND		VOA
79-01-6	1,1,2-Trichloroethylene	97-250	5	ug/L			ND		VOA
79-01-6	1,1,2-Trichloroethylene	97-260	5	ug/L			ND		VOA
79-01-6	1,1,2-Trichloroethylene	97-270	5	ug/L			ND		VOA
79-01-6	1,1,2-Trichloroethylene	97-280	5	ug/L			ND		VOA
79-01-6	1,1,2-Trichloroethylene	97-290	5	ug/L			ND		VOA
79-34-5	1,1,2,2-Tetrachloroethane	96-101A	5	ug/L			ND		VOA
79-34-5	1,1,2,2-Tetrachloroethane	97-200	5	ug/L			ND		VOA
79-34-5	1,1,2,2-Tetrachloroethane	97-210	5	ug/L			ND		VOA
79-34-5	1,1,2,2-Tetrachloroethane	97-220	5	ug/L			ND		VOA
79-34-5	1,1,2,2-Tetrachloroethane	97-230	5	ug/L			ND		VOA
79-34-5	1,1,2,2-Tetrachloroethane	97-240	5	ug/L			ND		VOA
79-34-5	1,1,2,2-Tetrachloroethane	97-250	5	ug/L			ND		VOA
79-34-5	1,1,2,2-Tetrachloroethane	97-260	5	ug/L			ND		VOA
79-34-5	1,1,2,2-Tetrachloroethane	97-270	5	ug/L			ND		VOA
79-34-5	1,1,2,2-Tetrachloroethane	97-280	5	ug/L			ND		VOA
79-34-5	1,1,2,2-Tetrachloroethane	97-290	5	ug/L			ND		VOA
80-17-1	Benzene Sulfohydrazide					X			
83-32-9	Acenaphthene	96-103	10	ug/L			ND		SVOA
83-32-9	Acenaphthene	97-200	10	ug/L			ND		SVOA
83-32-9	Acenaphthene	97-210	10	ug/L			ND		SVOA
83-32-9	Acenaphthene	97-220	10	ug/L			ND		SVOA
83-32-9	Acenaphthene	97-230	10	ug/L			ND		SVOA
83-32-9	Acenaphthene	97-240	10	ug/L			ND		SVOA
83-32-9	Acenaphthene	97-250	10	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
83-32-9	Acenaphthene	97-260	10	ug/L			ND		SVOA
83-32-9	Acenaphthene	97-270	10	ug/L			ND		SVOA
83-32-9	Acenaphthene	97-280	10	ug/L			ND		SVOA
83-32-9	Acenaphthene	97-290	10	ug/L			ND		SVOA
84-66-2	Diethyl phthalate	96-103	10	ug/L			ND		SVOA
84-66-2	Diethyl phthalate	97-200	10	ug/L			ND		SVOA
84-66-2	Diethyl phthalate	97-210	10	ug/L			ND		SVOA
84-66-2	Diethyl phthalate	97-220	10	ug/L			ND		SVOA
84-66-2	Diethyl phthalate	97-230	10	ug/L			ND		SVOA
84-66-2	Diethyl phthalate	97-240	10	ug/L			ND		SVOA
84-66-2	Diethyl phthalate	97-250	10	ug/L			ND		SVOA
84-66-2	Diethyl phthalate	97-260	10	ug/L			ND		SVOA
84-66-2	Diethyl phthalate	97-270	10	ug/L			ND		SVOA
84-66-2	Diethyl phthalate	97-280	10	ug/L			ND		SVOA
84-66-2	Diethyl phthalate	97-290	10	ug/L			ND		SVOA
84-74-2	Di-n-butylphthalate					X			
84-74-2	Di-n-butylphthalate	96-103	10	ug/L			ND		SVOA
84-74-2	Di-n-butylphthalate	97-200	10	ug/L			ND		SVOA
84-74-2	Di-n-butylphthalate	97-210	10	ug/L			ND		SVOA
84-74-2	Di-n-butylphthalate	97-220	10	ug/L			ND		SVOA
84-74-2	Di-n-butylphthalate	97-230	10	ug/L			ND		SVOA
84-74-2	Di-n-butylphthalate	97-240	10	ug/L			ND		SVOA
84-74-2	Di-n-butylphthalate	97-250	10	ug/L			ND		SVOA
84-74-2	Di-n-butylphthalate	97-260	10	ug/L			ND		SVOA
84-74-2	Di-n-butylphthalate	97-270	10	ug/L			ND		SVOA
84-74-2	Di-n-butylphthalate	97-280	10	ug/L			ND		SVOA
84-74-2	Di-n-butylphthalate	97-290	10	ug/L			ND		SVOA
85-01-8	Phenanthrene					X			
85-01-8	Phenanthrene	96-103	10	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
85-01-8	Phenanthrene	97-200	10	ug/L			ND		SVOA
85-01-8	Phenanthrene	97-210	10	ug/L			ND		SVOA
85-01-8	Phenanthrene	97-220	10	ug/L			ND		SVOA
85-01-8	Phenanthrene	97-230	10	ug/L			ND		SVOA
85-01-8	Phenanthrene	97-240	10	ug/L			ND		SVOA
85-01-8	Phenanthrene	97-250	10	ug/L			ND		SVOA
85-01-8	Phenanthrene	97-260	10	ug/L			ND		SVOA
85-01-8	Phenanthrene	97-270	10	ug/L			ND		SVOA
85-01-8	Phenanthrene	97-280	10	ug/L			ND		SVOA
85-01-8	Phenanthrene	97-290	10	ug/L			ND		SVOA
85-68-7	Butylbenzylphthalate	96-103	10	ug/L			ND		SVOA
85-68-7	Butylbenzylphthalate	97-200	10	ug/L			ND		SVOA
85-68-7	Butylbenzylphthalate	97-210	10	ug/L			ND		SVOA
85-68-7	Butylbenzylphthalate	97-220	10	ug/L			ND		SVOA
85-68-7	Butylbenzylphthalate	97-230	10	ug/L			ND		SVOA
85-68-7	Butylbenzylphthalate	97-240	10	ug/L			ND		SVOA
85-68-7	Butylbenzylphthalate	97-250	10	ug/L			ND		SVOA
85-68-7	Butylbenzylphthalate	97-260	10	ug/L			ND		SVOA
85-68-7	Butylbenzylphthalate	97-270	10	ug/L			ND		SVOA
85-68-7	Butylbenzylphthalate	97-280	10	ug/L			ND		SVOA
85-68-7	Butylbenzylphthalate	97-290	10	ug/L	9			J	SVOA
86-30-6	N-Nitrosodiphenylamine	96-103	10	ug/L			ND		SVOA
86-30-6	N-Nitrosodiphenylamine	97-200	10	ug/L			ND		SVOA
86-30-6	N-Nitrosodiphenylamine	97-210	10	ug/L			ND		SVOA
86-30-6	N-Nitrosodiphenylamine	97-220	10	ug/L			ND		SVOA
86-30-6	N-Nitrosodiphenylamine	97-230	10	ug/L			ND		SVOA
86-30-6	N-Nitrosodiphenylamine	97-240	10	ug/L			ND		SVOA
86-30-6	N-Nitrosodiphenylamine	97-250	10	ug/L			ND		SVOA
86-30-6	N-Nitrosodiphenylamine	97-260	10	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
86-30-6	N-Nitrosodiphenylamine	97-270	10	ug/L			ND		SVOA
86-30-6	N-Nitrosodiphenylamine	97-280	10	ug/L			ND		SVOA
86-30-6	N-Nitrosodiphenylamine	97-290	10	ug/L			ND		SVOA
86-73-7	Fluorene	96-103	10	ug/L			ND		SVOA
86-73-7	Fluorene	97-200	10	ug/L			ND		SVOA
86-73-7	Fluorene	97-210	10	ug/L			ND		SVOA
86-73-7	Fluorene	97-220	10	ug/L			ND		SVOA
86-73-7	Fluorene	97-230	10	ug/L			ND		SVOA
86-73-7	Fluorene	97-240	10	ug/L			ND		SVOA
86-73-7	Fluorene	97-250	10	ug/L			ND		SVOA
86-73-7	Fluorene	97-260	10	ug/L			ND		SVOA
86-73-7	Fluorene	97-270	10	ug/L			ND		SVOA
86-73-7	Fluorene	97-280	10	ug/L			ND		SVOA
86-73-7	Fluorene	97-290	10	ug/L			ND		SVOA
86-74-8	Carbazole	96-103	10	ug/L			ND		SVOA
86-74-8	Carbazole	97-200	10	ug/L			ND		SVOA
86-74-8	Carbazole	97-210	10	ug/L			ND		SVOA
86-74-8	Carbazole	97-220	10	ug/L			ND		SVOA
86-74-8	Carbazole	97-230	10	ug/L			ND		SVOA
86-74-8	Carbazole	97-240	10	ug/L			ND		SVOA
86-74-8	Carbazole	97-250	10	ug/L			ND		SVOA
86-74-8	Carbazole	97-260	10	ug/L			ND		SVOA
86-74-8	Carbazole	97-270	10	ug/L			ND		SVOA
86-74-8	Carbazole	97-280	10	ug/L			ND		SVOA
86-74-8	Carbazole	97-290	10	ug/L			ND		SVOA
87-68-3	Hexachlorobutadiene	96-103	10	ug/L			ND		SVOA
87-68-3	Hexachlorobutadiene	97-200	10	ug/L			ND		SVOA
87-68-3	Hexachlorobutadiene	97-210	10	ug/L			ND		SVOA
87-68-3	Hexachlorobutadiene	97-220	10	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
87-68-3	Hexachlorobutadiene	97-230	10	ug/L			ND		SVOA
87-68-3	Hexachlorobutadiene	97-240	10	ug/L			ND		SVOA
87-68-3	Hexachlorobutadiene	97-250	10	ug/L			ND		SVOA
87-68-3	Hexachlorobutadiene	97-260	10	ug/L			ND		SVOA
87-68-3	Hexachlorobutadiene	97-270	10	ug/L			ND		SVOA
87-68-3	Hexachlorobutadiene	97-280	10	ug/L			ND		SVOA
87-68-3	Hexachlorobutadiene	97-290	10	ug/L			ND		SVOA
87-86-5	Pentachlorophenol	96-103	50	ug/L			ND		SVOA
87-86-5	Pentachlorophenol	97-200	50	ug/L			ND		SVOA
87-86-5	Pentachlorophenol	97-210	50	ug/L			ND		SVOA
87-86-5	Pentachlorophenol	97-220	50	ug/L			ND		SVOA
87-86-5	Pentachlorophenol	97-230	50	ug/L			ND		SVOA
87-86-5	Pentachlorophenol	97-240	50	ug/L			ND		SVOA
87-86-5	Pentachlorophenol	97-250	50	ug/L			ND		SVOA
87-86-5	Pentachlorophenol	97-260	50	ug/L			ND		SVOA
87-86-5	Pentachlorophenol	97-270	50	ug/L			ND		SVOA
87-86-5	Pentachlorophenol	97-280	50	ug/L			ND		SVOA
87-86-5	Pentachlorophenol	97-290	50	ug/L			ND		SVOA
88-06-2	2,4,6-Trichlorophenol	96-103	10	ug/L			ND		SVOA
88-06-2	2,4,6-Trichlorophenol	97-200	10	ug/L			ND		SVOA
88-06-2	2,4,6-Trichlorophenol	97-210	10	ug/L			ND		SVOA
88-06-2	2,4,6-Trichlorophenol	97-220	10	ug/L			ND		SVOA
88-06-2	2,4,6-Trichlorophenol	97-230	10	ug/L			ND		SVOA
88-06-2	2,4,6-Trichlorophenol	97-240	10	ug/L			ND		SVOA
88-06-2	2,4,6-Trichlorophenol	97-250	10	ug/L			ND		SVOA
88-06-2	2,4,6-Trichlorophenol	97-260	10	ug/L			ND		SVOA
88-06-2	2,4,6-Trichlorophenol	97-270	10	ug/L			ND		SVOA
88-06-2	2,4,6-Trichlorophenol	97-280	10	ug/L			ND		SVOA
88-06-2	2,4,6-Trichlorophenol	97-290	10	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
88-74-4	2-Nitroaniline	96-103	50	ug/L			ND		SVOA
88-74-4	2-Nitroaniline	97-200	50	ug/L			ND		SVOA
88-74-4	2-Nitroaniline	97-210	50	ug/L			ND		SVOA
88-74-4	2-Nitroaniline	97-220	50	ug/L			ND		SVOA
88-74-4	2-Nitroaniline	97-230	50	ug/L			ND		SVOA
88-74-4	2-Nitroaniline	97-240	50	ug/L			ND		SVOA
88-74-4	2-Nitroaniline	97-250	50	ug/L			ND		SVOA
88-74-4	2-Nitroaniline	97-260	50	ug/L			ND		SVOA
88-74-4	2-Nitroaniline	97-270	50	ug/L			ND		SVOA
88-74-4	2-Nitroaniline	97-280	50	ug/L			ND		SVOA
88-74-4	2-Nitroaniline	97-290	50	ug/L			ND		SVOA
88-75-5	2-Nitrophenol	96-103	10	ug/L			ND		SVOA
88-75-5	2-Nitrophenol	97-200	10	ug/L			ND		SVOA
88-75-5	2-Nitrophenol	97-210	10	ug/L			ND		SVOA
88-75-5	2-Nitrophenol	97-220	10	ug/L			ND		SVOA
88-75-5	2-Nitrophenol	97-230	10	ug/L			ND		SVOA
88-75-5	2-Nitrophenol	97-240	10	ug/L			ND		SVOA
88-75-5	2-Nitrophenol	97-250	10	ug/L			ND		SVOA
88-75-5	2-Nitrophenol	97-260	10	ug/L			ND		SVOA
88-75-5	2-Nitrophenol	97-270	10	ug/L			ND		SVOA
88-75-5	2-Nitrophenol	97-280	10	ug/L			ND		SVOA
88-75-5	2-Nitrophenol	97-290	10	ug/L			ND		SVOA
91-20-3	Naphthalene					X			
91-20-3	Naphthalene	96-103	10	ug/L			ND		SVOA
91-20-3	Naphthalene	97-200	10	ug/L			ND		SVOA
91-20-3	Naphthalene	97-210	10	ug/L			ND		SVOA
91-20-3	Naphthalene	97-220	10	ug/L			ND		SVOA
91-20-3	Naphthalene	97-230	10	ug/L			ND		SVOA
91-20-3	Naphthalene	97-240	10	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
91-20-3	Naphthalene	97-250	10	ug/L			ND		SVOA
91-20-3	Naphthalene	97-260	10	ug/L			ND		SVOA
91-20-3	Naphthalene	97-270	10	ug/L			ND		SVOA
91-20-3	Naphthalene	97-280	10	ug/L			ND		SVOA
91-20-3	Naphthalene	97-290	10	ug/L			ND		SVOA
91-57-6	2-Methylnaphthalene	96-103	10	ug/L			ND		SVOA
91-57-6	2-Methylnaphthalene	97-200	10	ug/L			ND		SVOA
91-57-6	2-Methylnaphthalene	97-210	10	ug/L			ND		SVOA
91-57-6	2-Methylnaphthalene	97-220	10	ug/L			ND		SVOA
91-57-6	2-Methylnaphthalene	97-230	10	ug/L			ND		SVOA
91-57-6	2-Methylnaphthalene	97-240	10	ug/L			ND		SVOA
91-57-6	2-Methylnaphthalene	97-250	10	ug/L			ND		SVOA
91-57-6	2-Methylnaphthalene	97-260	10	ug/L			ND		SVOA
91-57-6	2-Methylnaphthalene	97-270	10	ug/L			ND		SVOA
91-57-6	2-Methylnaphthalene	97-280	10	ug/L			ND		SVOA
91-57-6	2-Methylnaphthalene	97-290	10	ug/L			ND		SVOA
91-58-7	2-Chloronaphthalene	96-103	10	ug/L			ND		SVOA
91-58-7	2-Chloronaphthalene	97-200	10	ug/L			ND		SVOA
91-58-7	2-Chloronaphthalene	97-210	10	ug/L			ND		SVOA
91-58-7	2-Chloronaphthalene	97-220	10	ug/L			ND		SVOA
91-58-7	2-Chloronaphthalene	97-230	10	ug/L			ND		SVOA
91-58-7	2-Chloronaphthalene	97-240	10	ug/L			ND		SVOA
91-58-7	2-Chloronaphthalene	97-250	10	ug/L			ND		SVOA
91-58-7	2-Chloronaphthalene	97-260	10	ug/L			ND		SVOA
91-58-7	2-Chloronaphthalene	97-270	10	ug/L			ND		SVOA
91-58-7	2-Chloronaphthalene	97-280	10	ug/L			ND		SVOA
91-58-7	2-Chloronaphthalene	97-290	10	ug/L			ND		SVOA
91-94-1	3,3 -Dichlorobenzidine	96-103	50	ug/L			ND		SVOA
91-94-1	3,3 -Dichlorobenzidine	97-200	50	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
91-94-1	3,3 -Dichlorobenzidine	97-210	50	ug/L			ND		SVOA
91-94-1	3,3 -Dichlorobenzidine	97-220	50	ug/L			ND		SVOA
91-94-1	3,3 -Dichlorobenzidine	97-230	50	ug/L			ND		SVOA
91-94-1	3,3 -Dichlorobenzidine	97-240	50	ug/L			ND		SVOA
91-94-1	3,3 -Dichlorobenzidine	97-250	50	ug/L			ND		SVOA
91-94-1	3,3 -Dichlorobenzidine	97-260	50	ug/L			ND		SVOA
91-94-1	3,3 -Dichlorobenzidine	97-270	50	ug/L			ND		SVOA
91-94-1	3,3 -Dichlorobenzidine	97-280	50	ug/L			ND		SVOA
91-94-1	3,3 -Dichlorobenzidine	97-290	50	ug/L			ND		SVOA
95-48-7	o-Cresol	96-103	10	ug/L			ND		SVOA
95-48-7	o-Cresol	97-200	10	ug/L			ND		SVOA
95-48-7	o-Cresol	97-210	10	ug/L			ND		SVOA
95-48-7	o-Cresol	97-220	10	ug/L			ND		SVOA
95-48-7	o-Cresol	97-230	10	ug/L			ND		SVOA
95-48-7	o-Cresol	97-240	10	ug/L			ND		SVOA
95-48-7	o-Cresol	97-250	10	ug/L			ND		SVOA
95-48-7	o-Cresol	97-260	10	ug/L			ND		SVOA
95-48-7	o-Cresol	97-270	10	ug/L			ND		SVOA
95-48-7	o-Cresol	97-280	10	ug/L			ND		SVOA
95-48-7	o-Cresol	97-290	10	ug/L			ND		SVOA
95-50-1	1,2-Dichlorobenzene	96-103	10	ug/L			ND		SVOA
95-50-1	1,2-Dichlorobenzene	97-200	10	ug/L			ND		SVOA
95-50-1	1,2-Dichlorobenzene	97-210	10	ug/L			ND		SVOA
95-50-1	1,2-Dichlorobenzene	97-220	10	ug/L			ND		SVOA
95-50-1	1,2-Dichlorobenzene	97-230	10	ug/L			ND		SVOA
95-50-1	1,2-Dichlorobenzene	97-240	10	ug/L			ND		SVOA
95-50-1	1,2-Dichlorobenzene	97-250	10	ug/L			ND		SVOA
95-50-1	1,2-Dichlorobenzene	97-260	10	ug/L			ND		SVOA
95-50-1	1,2-Dichlorobenzene	97-270	10	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
95-50-1	1,2-Dichlorobenzene	97-280	10	ug/L			ND		SVOA
95-50-1	1,2-Dichlorobenzene	97-290	10	ug/L			ND		SVOA
95-57-8	2-Chlorophenol	96-103	10	ug/L			ND		SVOA
95-57-8	2-Chlorophenol	97-200	10	ug/L			ND		SVOA
95-57-8	2-Chlorophenol	97-210	10	ug/L			ND		SVOA
95-57-8	2-Chlorophenol	97-220	10	ug/L			ND		SVOA
95-57-8	2-Chlorophenol	97-230	10	ug/L			ND		SVOA
95-57-8	2-Chlorophenol	97-240	10	ug/L			ND		SVOA
95-57-8	2-Chlorophenol	97-250	10	ug/L			ND		SVOA
95-57-8	2-Chlorophenol	97-260	10	ug/L			ND		SVOA
95-57-8	2-Chlorophenol	97-270	10	ug/L			ND		SVOA
95-57-8	2-Chlorophenol	97-280	10	ug/L			ND		SVOA
95-57-8	2-Chlorophenol	97-290	10	ug/L			ND		SVOA
95-63-6	1,2,4-Trimethylbenzene					X			
95-95-4	2,4,5-Trichlorophenol	96-103	10	ug/L			ND		SVOA
95-95-4	2,4,5-Trichlorophenol	97-200	10	ug/L			ND		SVOA
95-95-4	2,4,5-Trichlorophenol	97-210	10	ug/L			ND		SVOA
95-95-4	2,4,5-Trichlorophenol	97-220	10	ug/L			ND		SVOA
95-95-4	2,4,5-Trichlorophenol	97-230	10	ug/L			ND		SVOA
95-95-4	2,4,5-Trichlorophenol	97-240	10	ug/L			ND		SVOA
95-95-4	2,4,5-Trichlorophenol	97-250	10	ug/L			ND		SVOA
95-95-4	2,4,5-Trichlorophenol	97-260	10	ug/L			ND		SVOA
95-95-4	2,4,5-Trichlorophenol	97-270	10	ug/L			ND		SVOA
95-95-4	2,4,5-Trichlorophenol	97-280	10	ug/L			ND		SVOA
95-95-4	2,4,5-Trichlorophenol	97-290	10	ug/L			ND		SVOA
98-95-3	Nitrobenzene	96-103	10	ug/L			ND		SVOA
98-95-3	Nitrobenzene	97-200	10	ug/L			ND		SVOA
98-95-3	Nitrobenzene	97-210	10	ug/L			ND		SVOA
98-95-3	Nitrobenzene	97-220	10	ug/L			ND		SVOA

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
98-95-3	Nitrobenzene	97-230	10	ug/L			ND		SVOA
98-95-3	Nitrobenzene	97-240	10	ug/L			ND		SVOA
98-95-3	Nitrobenzene	97-250	10	ug/L			ND		SVOA
98-95-3	Nitrobenzene	97-260	10	ug/L			ND		SVOA
98-95-3	Nitrobenzene	97-270	10	ug/L			ND		SVOA
98-95-3	Nitrobenzene	97-280	10	ug/L			ND		SVOA
98-95-3	Nitrobenzene	97-290	10	ug/L			ND		SVOA
99-09-2	m-Nitroaniline	96-103	10	ug/L			ND		SVOA
99-09-2	m-Nitroaniline	97-200	10	ug/L			ND		SVOA
99-09-2	m-Nitroaniline	97-210	10	ug/L			ND		SVOA
99-09-2	m-Nitroaniline	97-220	10	ug/L			ND		SVOA
99-09-2	m-Nitroaniline	97-230	10	ug/L			ND		SVOA
99-09-2	m-Nitroaniline	97-240	10	ug/L			ND		SVOA
99-09-2	m-Nitroaniline	97-250	10	ug/L			ND		SVOA
99-09-2	m-Nitroaniline	97-260	10	ug/L			ND		SVOA
99-09-2	m-Nitroaniline	97-270	10	ug/L			ND		SVOA
99-09-2	m-Nitroaniline	97-280	10	ug/L			ND		SVOA
99-09-2	m-Nitroaniline	97-290	10	ug/L			ND		SVOA
pH	pH	96-109							WetChem
pH	pH	96-111							WetChem
pH	pH	96-113			7.76				WetChem
pH	pH	97-200			8.5				WetChem
pH	pH	97-210			7.66				WetChem
pH	pH	97-220			7.94				WetChem
pH	pH	97-230			8.16				WetChem
pH	pH	97-240			7.91				WetChem
pH	pH	97-250			7.85				WetChem
pH	pH	97-260			7.78				WetChem
pH	pH	97-270			7.74				WetChem

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
pH	pH	97-280			7.82				WetChem
pH	pH	97-290			7.51				WetChem
SpecCond	Specific Conductance	96-109		uMHOS/cm					WetChem
SpecCond	Specific Conductance	96-111		uMHOS/cm					WetChem
SpecCond	Specific Conductance	96-113		uMHOS/cm					WetChem
SpecCond	Specific Conductance	97-200		uMHOS/cm					WetChem
SpecCond	Specific Conductance	97-210		uMHOS/cm					WetChem
SpecCond	Specific Conductance	97-220		uMHOS/cm					WetChem
SpecCond	Specific Conductance	97-230		uMHOS/cm					WetChem
SpecCond	Specific Conductance	97-240		uMHOS/cm					WetChem
SpecCond	Specific Conductance	97-250		uMHOS/cm					WetChem
SpecCond	Specific Conductance	97-260		uMHOS/cm					WetChem
SpecCond	Specific Conductance	97-270		uMHOS/cm	1595				WetChem
SpecCond	Specific Conductance	97-280		uMHOS/cm	1673				WetChem
SpecCond	Specific Conductance	97-290		uMHOS/cm	1670				WetChem
TDS	Total Dissolved Solids	96-109		mg/L					WetChem
TDS	Total Dissolved Solids	96-111		mg/L					WetChem
TDS	Total Dissolved Solids	96-113		mg/L					WetChem
TDS	Total Dissolved Solids	97-200		mg/L					WetChem
TDS	Total Dissolved Solids	97-210		mg/L					WetChem
TDS	Total Dissolved Solids	97-220		mg/L					WetChem
TDS	Total Dissolved Solids	97-230		mg/L					WetChem
TDS	Total Dissolved Solids	97-240		mg/L					WetChem
TDS	Total Dissolved Solids	97-250		mg/L					WetChem
TDS	Total Dissolved Solids	97-260		mg/L					WetChem
TDS	Total Dissolved Solids	97-270		mg/L	1080				WetChem
TDS	Total Dissolved Solids	97-280		mg/L	1090				WetChem
TDS	Total Dissolved Solids	97-290		mg/L	1050				WetChem
TOC	Total Organic Carbon	96-109		mg/L					WetChem

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

Table A-1. ERDF Leachate Data (Q1, 162 unique compounds). (56 Sheets)

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	TIC	Reported	Evaluation Report	Class
TOC	Total Organic Carbon	96-111		mg/L					WetChem
TOC	Total Organic Carbon	96-113		mg/L					WetChem
TOC	Total Organic Carbon	97-200		mg/L					WetChem
TOC	Total Organic Carbon	97-210		mg/L					WetChem
TOC	Total Organic Carbon	97-220		mg/L					WetChem
TOC	Total Organic Carbon	97-230		mg/L					WetChem
TOC	Total Organic Carbon	97-240		mg/L					WetChem
TOC	Total Organic Carbon	97-250		mg/L					WetChem
TOC	Total Organic Carbon	97-260		mg/L					WetChem
TOC	Total Organic Carbon	97-270		mg/L					WetChem
TOC	Total Organic Carbon	97-280		mg/L	9.74				WetChem
TOC	Total Organic Carbon	97-290		mg/L	12.1				WetChem
TSS	Total Suspended Solids	96-109		mg/L					WetChem
TSS	Total Suspended Solids	96-111		mg/L					WetChem
TSS	Total Suspended Solids	96-113		mg/L					WetChem
TSS	Total Suspended Solids	97-200		mg/L					WetChem
TSS	Total Suspended Solids	97-210		mg/L					WetChem
TSS	Total Suspended Solids	97-220		mg/L					WetChem
TSS	Total Suspended Solids	97-230		mg/L					WetChem
TSS	Total Suspended Solids	97-240		mg/L					WetChem
TSS	Total Suspended Solids	97-250		mg/L					WetChem
TSS	Total Suspended Solids	97-260		mg/L					WetChem
TSS	Total Suspended Solids	97-270		mg/L	17				WetChem
TSS	Total Suspended Solids	97-280		mg/L	3				WetChem
TSS	Total Suspended Solids	97-290		mg/L	4				WetChem

**Table A-2. ERDF Leachate Data Consisting of Metals, Organometalics, Test Parameters and Radionuclides to be Considered Separately (Q2, 47 compounds).**

CAS#	Constituent
10045-97-3	Cs-137
10198-40-0	Co-60
12587-46-1	Gross alpha
12587-47-2	Gross beta
13966-00-2	K-40
13966-02-4	Be-7
13967-48-1	Ru-106
13967-70-9	Cs-134
14234-35-6	Sb-125
14265-44-2	Phosphate
14391-16-3	Eu-155
14797-55-8	Nitrate
14797-65-0	Nitrite
14808-79-8	Sulfate
15585-10-1	Eu-154
16887-00-6	Chloride
16984-48-8	Fluoride
7429-90-5	Aluminum
7439-89-6	Iron
7439-92-1	Lead
7439-95-4	Magnesium
7439-96-5	Manganese
7439-97-6	Mercury
7440-02-0	Nickel
7440-09-7	Potassium
7440-22-4	Silver
7440-23-5	Sodium
7440-28-0	Thallium
7440-36-0	Antimony
7440-38-2	Arsenic
7440-39-3	Barium
7440-41-7	Beryllium
7440-43-9	Cadmium
7440-47-3	Chromium
7440-48-4	Cobalt
7440-50-8	Copper
7440-61-1	Uranium
7440-62-2	Vanadium
7440-66-6	Zinc
7440-70-2	Calcium
7664-41-7	Ammonia
7782-49-2	Selenium
pH	pH
SpecCond	Specific Conductance
TDS	Total Dissolved Solids
TOC	Total Organic Carbon
TSS	Total Suspended Solids

Table A-3. TICs and Organic Detected Compounds in  
ERDF Leachate (Q3, 27 unique compounds).

CAS#	Constituent	Sample ID	Detection Limit	Unit	Evaluated Result	Evaluation Report	Class
103-65-1	Propylbenzene						
104-76-7	2-Ethyl-1-hexanol						
1066-40-6	Trimethylsilanol						
108-88-3	Toluene	97-270	10	ug/L	2	J	VOA
112-40-3	n-Dodecane						
117-81-7	Bis(2-ethylhexyl) phthalate	97-220	10	ug/L	1	J	SVOA
117-81-7	Bis(2-ethylhexyl) phthalate	97-250	10	ug/L	6	J	SVOA
117-81-7	Bis(2-ethylhexyl) phthalate	97-260	10	ug/L	1	J	SVOA
117-81-7	Bis(2-ethylhexyl) phthalate	97-270	10	ug/L	6	J	SVOA
117-81-7	Bis(2-ethylhexyl) phthalate	97-290	10	ug/L	14		SVOA
129-00-0	Pyrene						
1825-61-2	Methoxytrimethylsilane						
206-44-0	Fluoranthene						
26601-64-9	1,1'-Biphenyl, hexachloro						
35065-27-1	2,2',4,4',5,5'-hexachloro-1,1'-Biphenyl						
35065-29-3	2,2',3,4,4',5,5'-Heptachlorobiphenyl						
355-02-2	Perfluoro(methylcyclohexane)						
38380-01-7	1,1'-Biphenyl, 2,2',4,4',5-pentachloro						
38380-04-0	1,1'-Biphenyl, 2,2',3,4',5',?-hexachloro						
52663-67-9	1,1'-Biphenyl, 2,2',3,3',5,5'-hexachloro						
57-10-3	n-Hexadecanoic acid						
57-11-4	n-Octadecanoic acid						
611-14-3	2-Ethyltoluene						
620-14-4	3-Ethyltoluene						
67-64-1	2-Propanone (Acetone)	97-250	10	ug/L	14	U	VOA
67-64-1	2-Propanone (Acetone)	97-290	20	ug/L	17	J	VOA
80-17-1	Benzene Sulfohydrazide						
84-74-2	Di-n-butylphthalate						
85-01-8	Phenanthrene						
85-68-7	Butylbenzylphthalate	97-290	10	ug/L	9	J	SVOA
91-20-3	Naphthalene						
95-63-6	1,2,4-Trimethylbenzene						

**Table A-4. Compounds Representing Not Otherwise Specified  
Appendix VIII Constituents in the Database.**

CAS#	Constituent	Represented by	Name
106-44-5	4-Methylphenol	1319-77-3	Cresols, total
108-39-4	m-Cresol	1319-77-3	Cresols, total
110-00-9	Furan	109-99-9	Tetrahydrofuran (THF - Furan Indicator)
11097-69-1	PCB-1254	1336-36-3	Polychlorinated biphenyls (PCBs)
12674-11-2	PCB-1016	1336-36-3	Polychlorinated biphenyls (PCBs)
25321-22-6	Dichlorobenzene	106-46-7	1,4-Dichlorobenzene
25321-22-6	Dichlorobenzene	541-73-1	1,3-Dichlorobenzene
25321-22-6	Dichlorobenzene	95-50-1	1,2-Dichlorobenzene
25322-20-7	Tetrachloroethane	630-20-6	1,1,1,2-Tetrachloroethane
25322-20-7	Tetrachloroethane	79-34-5	1,1,2,2-Tetrachloroethane
25323-30-2	Dichloroethylene	156-59-2	1,2-cis-Dichloroethene
25323-30-2	Dichloroethylene	156-60-5	1,2-trans-Dichloroethene
25323-30-2	Dichloroethylene	75-35-4	1,1-Dichloroethene
25735-29-9	Trichloropropane	96-18-4	1,2,3-Trichloropropane
26638-19-7	Dichloropropane	78-87-5	1,2-Dichloropropane
26952-23-8	Dichloropropene	542-75-6	1,3-Dichloropropene
35576-91-1	Nitrosamines	62-75-9	N-Nitroso-N,N-dimethylamine
35576-91-1	Nitrosamines	86-30-6	N-Nitrosodiphenylamine
35576-91-1	Nitrosamines	621-64-7	N-Nitroso-di-n-propylamine
95-48-7	o-Cresol	1319-77-3	Cresols, total

**Table A-5. Regulatory Compounds Consisting of Metals, Organometalics and Test Parameters to be Considered Separately (Q7, 90 compounds). (3 Sheets)**

CAS#	Constituent
10102-43-9	Nitric oxide
10102-44-0	Nitrogen dioxide
10102-45-1	Thallium(I) nitrate
12039-52-0	Thallium selenite
128-03-0	Potassium dimethyldithiocarbamate
128-04-1	Sodium dimethyldithiocarbamate
1303-28-2	Arsenic pentoxide
1314-32-5	Thallic oxide
1314-62-1	Vanadium pentoxide
1314-84-7	Zinc phosphide
131522	Sodium pentachlorophenate
1327-53-3	Arsenic trioxide
1335-32-6	Lead subacetate
13463-39-3	Nickel carbonyl
136-30-1	Sodium dibutyldithiocarbamate
137-29-1	Copper dimethyldithiocarbamate
137-30-4	Ziram
137-41-7	Potassium n-methyldithiocarbamate
137-42-8	Metam Sodium
13765-19-0	Calcium chromate
143-33-9	Sodium cyanide
14324-55-1	Ethyl ziram
144-34-3	Selenium, tetrakis (dimethyl-dithiocarbamate)
148-18-5	Sodium diethyldithiocarbamate
151-50-8	Potassium cyanide
15339-36-3	Manganese dimethyldithiocarbamate
16065-83-1	Chromium (III) ion
16984-48-8	Fluoride
18496-25-8	Sulfide
18496-25-8R	Sulfide, reactive
18540-29-9	Chromium(VI)
20816-12-0	Osmium tetroxide
20859-73-8	Aluminum phosphide
25567-55-9	2,3,4,6-Tetrachlorophenol, sodium salt
301-04-2	Lead acetate
353-50-4	Carbon oxyfluoride
460-19-5	Cyanogen

**Table A-5. Regulatory Compounds Consisting of Metals, Organometalics and Test Parameters to be Considered Separately (Q7, 90 compounds). (3 Sheets)**

CAS#	Constituent
506-61-6	Potassium silver cyanide
506-64-9	Silver cyanide
506-68-3	Cyanogen bromide
506-77-4	Cyanogen chloride
51-12-5	Cyanides, as CN
51026-28-9	Potassium hydroxymethyl-n-methyl-dithiocarbamate
53535-27-6	2,3,4,6-Tetrachlorophenol, potassium salt
542-62-1	Barium cyanide
544-92-3	Copper cyanide
557-19-7	Nickel cyanide
557-21-1	Zinc cyanide
563-68-8	Thallium(I) acetate
57-12-5	Cyanide
57-12-5R	Cyanide, reactive
592-01-8	Calcium cyanide
62-38-4	Phenylmercury acetate
62-74-8	Fluoroacetic acid, sodium salt (Fratol)
628-86-4	Mercury fulminate
630-10-4	Selenourea
6533-73-9	Thallium(I) carbonate
74-90-8	Hydrogen cyanide
7439-92-1	Lead
7439-97-6	Mercury
7440-02-0	Nickel
7440-22-4	Silver
7440-28-0	Thallium
7440-31-5	Tin, metal
7440-36-0	Antimony
7440-38-2	Arsenic
7440-39-3	Barium
7440-41-7	Beryllium
7440-43-9	Cadmium
7440-47-3	Chromium
7440-48-4	Cobalt
7440-50-8	Copper
7440-62-2	Vanadium
7440-66-6	Zinc
7446-18-6	Thallium(I) sulfate

**Table A-5. Regulatory Compounds Consisting of Metals, Organometalics and Test Parameters to be Considered Separately (Q7, 90 compounds). (3 Sheets)**

CAS#	Constituent
7446-27-7	Lead phosphate
7488-56-4	Selenium sulfide
75-44-5	Phosgene
7664-39-3	Hydrogen fluoride
7778-39-4	Arsenic acid
7782-49-2	Selenium
7783-00-8	Selenium dioxide
7783-06-4	Hydrogen sulfide
7791-12-0	Thallium(I) chloride
78-00-2	Tetraethyl lead
7803-55-6	Ammonium vanadate
7978-73-6	Potassium pentachlorophenate
8007-45-2	Coal tar creosote
98-05-5	Benzeneearsonic acid
O&G	Oil and grease

Table A-6. Regulated Compounds from the Regulatory DQO and the ETF Delisting Petition Potentially Used in Industries Unrelated to Hanford (O10, 228 compounds). (8 Sheets)

CAS#	Constituent	Pesticide	Military	Dyestuff	Pharmaceutical	Solvent	Consumer	Group/Mixture	Polymer	Independent Review	ETF Delisting	Regulatory DQO
100-01-6	4-Nitroaniline									X	X	X
100-44-7	Benzyl chloride									X	X	X
100-75-4	N-Nitrosopiperidine									X	X	X
101-14-4	4,4'-Methylenebis(2-chloroaniline)									X	X	X
101-27-9	Barban	X								X		X
101-77-9	4,4-Methylene dianiline								X	X		X
101-80-4	4,4'-Diaminodiphenyl ether			X						X		X
105-60-2	Caprolactam, vapor						X			X		X
10595-95-6	N-Nitrosomethylethylamine									X	X	X
106-47-8	4-Chloroaniline									X	X	X
106-49-0	p-Toluidine									X	X	X
106-51-4	p-Benzoquinone									X	X	X
106-89-8	Epichlorohydrin					X				X	X	X
10605-21-7	Carbendazim	X								X		X
107-19-7	Propargyl alcohol									X	X	X
107-20-0	Chloroacetaldehyde									X	X	X
107-30-2	Chloromethyl methyl ether									X	X	X
107-41-5	Hexylene glycol						X			X		X
107-49-3	Tetraethyl pyrophosphate									X	X	X
108-31-6	Maleic anhydride (2,5-Furandione)									X	X	X
108-44-1	m-Toluidine								X	X		X
108-46-3	Resorcinol (1,3-Benzenediol)									X	X	X
108-98-5	Thiophenol									X	X	X
109-87-5	Methylal						X			X		X
110-80-5	2-Ethoxyethanol									X	X	X
111-30-8	Glutaraldehyde				X					X		X
1114-71-2	Pebulate	X								X		X
1120-71-4	1,3-Propane sultone									X	X	X
114-26-1	Propoxur	X								X		X
115-29-7	Endosulfan	X								X		X
115-90-2	Fensulfothion	X								X		X
117-79-3	2-Aminoanthraquinone					X						X
118-96-7	2,4,6-Trinitrotoluene		X							X		X

Table A-6. Regulated Compounds from the Regulatory DQO and the ETF Delisting Petition Potentially Used in Industries Unrelated to Hanford (O10, 228 compounds). (8 Sheets)

CAS#	Constituent	Pesticide	Military	Dyestuff	Pharmaceutical	Solvent	Consumer	Group/Mixture	Polymer	Independent Review	ETF Delisting	Regulatory DQO
119-90-4	3,3'-Dimethoxybenzidine			X						X	X	X
119-93-7	3,3'-Dimethylbenzidine			X						X	X	X
120-58-1	Isosafrole						X			X	X	X
120-80-9	Catechol				X					X		X
121-14-2	2,4-Dinitrotoluene									X	X	X
121-75-5	Malathion	X								X		X
121-82-4	Cyclonite		X							X		X
122-42-9	Propham	X								X		X
126-72-7	Tris(2,3-dibromopropyl) phosphate						X			X	X	X
126-85-2	Nitrogen mustard N-oxide		X							X	X	X
126-99-8	Chloroprene									X	X	X
1300-73-8	Xylidine		X	X						X		X
13121-70-5	Cyhexatin	X								X		X
13552-44-8	4,4-Methylenedianiline dihydrochloride								X	X		X
136-78-7	Sesone	X								X		X
137-26-8	Thiram				X					X	X	X
137-30-4	Ziram	X								X		X
13838-16-9	Enflurane				X					X		X
139-91-3	5-(Morpholinomethyl)-3-amino-2-oxazolidinone (furaltudone)				X					X		X
1395-21-7	Subtilisins							X				X
140-57-8	Aramite	X								X	X	X
141-66-2	Dicrotophos	X								X		X
143-50-0	Kepone	X								X	X	X
14484-64-1	Ferbam	X								X		X
1477-55-0	m-Xylene-a,a'-diamine								X	X		X
151-56-4	Ethyleneimine									X	X	X
151-67-7	Halothane						X			X		X
1563-38-8	Carbofuran phenol	X								X		X
1563-66-2	Carbofuran	X								X		X
1615-80-1	N,N'-Diethylhydrazine									X	X	X
1646-88-4	Aldicarb sulfone									X	X	X

Table A-6. Regulated Compounds from the Regulatory DQO and the ETF Delisting Petition Potentially Used in Industries Unrelated to Hanford (O10, 228 compounds). (8 Sheets)

CAS#	Constituent	Pesticide	Military	Dyestuff	Pharmaceutical	Solvent	Consumer	Group/Mixture	Polymer	Independent Review	ETF Delisting	Regulatory DQO
16752-77-5	Methomyl	X								X		X
1694-09-3	Benzyl violet 4b			X						X		X
1746-01-6	TCDD (Dioxin/Furan Indicator)											X
17804-35-2	Benomyl	X								X		X
1888-71-7	Hexachloropropylene									X	X	X
189-55-9	Dibenzo[a,i]pyrene										X	
189-64-0	Dibenzo[a,h]pyrene										X	
1912-24-9	Atrazine	X								X		X
192-65-4	Dibenzo[a,e]pyrene										X	
1929-77-7	Vernolate	X								X		X
1929-82-4	Nitrapyrin	X								X		X
2008-41-5	Butylate	X								X		X
2032-65-7	Methiocarb	X								X		X
205-82-3	Benzo[j]fluoranthene										X	
2104-64-5	EPN	X								X		X
21087-64-9	Metribuzin	X								X		X
2179-59-1	Allyl propyl disulfide						X			X		X
2212-67-1	Molinate	X								X		X
22224-92-6	Fenamiphos	X								X		X
224-42-0	Dibenz[a,j]acridine										X	
226-36-8	Dibenz[a,h]acridine										X	
2303-17-5	Triallate	X								X		X
23135-22-0	Oxamyl	X								X		X
23564-05-8	Thiophanate-methyl	X								X		X
23950-58-5	Pronamide	X								X	X	X
2465-27-2	Auramine (technical grade)			X						X		X
2631-37-0	Promecarb	X								X		X
2646-17-5	Oil orange SS			X						X		X
28434-86-8	3,3'-Dichloro-4,4'-diaminodiphenyl ether			X						X		X
29191-52-4	Anisidine (o-,p- isomers)			X						X		X
2971-90-6	Clopidol	X								X		X
298-00-0	Methyl parathion	X								X	X	X

Table A-6. Regulated Compounds from the Regulatory DQO and the ETF Delisting Petition Potentially Used in Industries Unrelated to Hanford (O10, 228 compounds). (8 Sheets)

CAS#	Constituent	Pesticide	Military	Dyestuff	Pharmaceutical	Solvent	Consumer	Group/Mixture	Polymer	Independent Review	ETF Delisting	Regulatory DQO
298-02-2	Phorate	X								X	X	X
298-04-4	Disulfoton	X								X	X	X
299-84-3	Ronnel	X								X		X
299-86-5	Crufomate	X								X		X
300-76-5	Naled	X								X		X
302-70-5	Nitrogen mustard N-oxide hydrochloride		X							X		X
30558-43-1	A2213	X								X		X
315-18-4	Mexacarbate	X								X		X
333-41-5	Diazinon	X								X		X
3383-96-8	Temephos	X								X		X
3424-82-6	o,p'-DDE (2,4'-DDE)	X								X		X
35400-43-2	Sulprofos	X								X		X
3547-04-4	DDE (p,p'-Dichlorodiphenyldichloroethylene)	X								X		X
3689-24-5	Tetraethylthiopyrophosphate (TEDP)	X								X	X	X
3761-53-3	Ponceau MX			X						X		X
465-73-6	Isodrin										X	
4685-14-7	Paraquat	X								X		X
479-45-8	Tetryl		X							X		X
509-14-8	Tetranitromethane		X							X	X	X
51-79-6	Ethyl carbamate (urethane)									X	X	X
510-15-6	Chlorobenzilate										X	
52-85-7	Famphur				X					X	X	X
528-29-0	Dinitrobenzene, all isomers							X				X
53-19-0	o,p'-DDD (2,4'-DDD)	X								X		X
53-96-3	2-Acetylaminofluorene									X	X	X
532-27-4	a-Chloroacetophenone		X							X		X
534-52-1	4,6-Dinitro-o-cresol									X	X	X
54-11-5	Nicotine				X					X	X	X
540-59-0	1,2-Dichloroethylene										X	
540-73-8	1,2-Dimethylhydrazine									X	X	X

Table A-6. Regulated Compounds from the Regulatory DQO and the ETF Delisting Petition Potentially Used in Industries Unrelated to Hanford (O10, 228 compounds). (8 Sheets)

CAS#	Constituent	Pesticide	Military	Dyestuff	Pharmaceutical	Solvent	Consumer	Group/Mixture	Polymer	Independent Review	ETF Delisting	Regulatory DQO
542-88-1	Dichloromethyl ether									X	X	X
55-18-5	N-Nitrosodiethylamine									X	X	X
55-38-9	Fenthion	X								X		X
55-63-0	Nitroglycerin		X							X		X
555-84-9	1-(5-Nitrofurfurylidene)amino)-2-imidazolidinone	X								X		X
55720-99-5	Chlorinated diphenyl oxide							X				X
56-38-2	Parathion	X								X	X	X
56-49-5	3-Methylcholanthrene										X	
563-12-2	Ethion	X								X		X
57-24-9	Strychnine	X								X	X	X
57-47-6	Physostigmine				X					X		X
57-64-7	Physostigmine salicylate				X					X		X
58-90-2	2,3,4,6-Tetrachlorophenol										X	
59-87-0	Nitrofurazone				X					X		X
59355-75-8	Methyl acetylene-propadiene mixture (MAPP)							X				X
59669-26-0	Thiodicarb	X								X		X
60-11-7	p-Dimethylaminoazobenzene									X	X	X
606-20-2	2,6-Dinitrotoluene			X						X		X
608-93-5	Pentachlorobenzene									X	X	X
61-82-5	Amitrole	X								X	X	X
615-53-2	N-Nitroso-N-methylurethane									X	X	X
62-44-2	Phenacetin	X								X	X	X
62-73-7	Dichlorvas	X								X		X
62-74-8	Fluoroacetic acid, sodium salt (Fratol)	X								X	X	X
63-25-2	Carbaryl	X								X		X
630-20-6	1,1,1,2-Tetrachloroethane										X	
636-21-5	o-Toluidine hydrochloride			X						X	X	X
6423-43-4	Propylene glycol dinitrate		X							X		X
66-27-3	Methyl methanesulfonate									X	X	X
67-45-8	Furazolidone				X					X		X

Table A-6. Regulated Compounds from the Regulatory DQO and the ETF Delisting Petition Potentially Used in Industries Unrelated to Hanford (O10, 228 compounds). (8 Sheets)

CAS#	Constituent	Pesticide	Military	Dyestuff	Pharmaceutical	Solvent	Consumer	Group/Mixture	Polymer	Independent Review	ETF Delisting	Regulatory DQO
680-31-9	Hexamethylphosphoramide	X								X		X
684-93-5	N-Nitroso-N-methylurea									X	X	X
68476-85-7	Liquified petroleum gas							X				X
6923-22-4	Monocrotophos	X								X		X
696-28-6	Dichlorophenylarsine									X	X	X
72-43-5	Methoxychlor										X	
74-88-4	Iodomethane									X	X	X
74-93-1	Thiomethanol									X	X	X
74-95-3	Dibromomethane									X	X	X
75-47-8	Iodoform				X					X		X
759-73-9	N-Nitroso-N-ethylurea									X	X	X
759-94-4	EPTC	X								X		X
76-01-7	Pentachloroethane										X	
76-06-2	Chloropicrin		X							X		X
76-22-2	Camphor, synthetic						X			X		X
764-41-0	1,4-Dichloro-2-butene									X	X	X
765-34-4	Glycidylaldehyde									X	X	X
77-78-1	Dimethyl sulfate									X	X	X
7782-41-4	Fluorine									X	X	X
7786-34-7	Mevinphos	X								X		X
78-30-8	Triorthocresyl phosphate	X								X		X
78-34-2	Dioxathion	X								X		X
7803-51-2	Phosphine				X					X		X
789-02-6	o,p'-DDT (2,4'-DDT)	X								X		X
79-06-1	Acrylamide									X	X	X
79-44-7	Dimethylcarbamoyl chloride									X	X	X
79-46-9	2-Nitropropane									X	X	X
80-62-6	Methyl methacrylate									X	X	X
8001-58-9	Creosote									X	X	X
8006-64-2	Turpentine							X				X
8022-00-2	Methyl demeton	X								X		X
8052-42-4	Asphalt (petroleum) fumes							X				X
8065-48-3	Demeton	X								X		X

Table A-6. Regulated Compounds from the Regulatory DQO and the ETF Delisting Petition Potentially Used in Industries Unrelated to Hanford (O10, 228 compounds). (8 Sheets)

CAS#	Constituent	Pesticide	Military	Dyestuff	Pharmaceutical	Solvent	Consumer	Group/Mixture	Polymer	Independent Review	ETF Delisting	Regulatory DQO
81-81-2	Warfarin	X								X		X
82-68-8	Pentachloronitrobenzene (PCNB)										X	
83-26-1	Pindone	X								X		X
83-79-4	Rotenone	X								X		X
838-88-0	4,4'-Methylenebis(2-methylaniline)								X	X		X
85-00-7	Diquat	X								X		X
85-44-9	Phthalic anhydride									X	X	X
86-50-0	Azinphos-methyl	X								X		X
86-88-4	alpha-Naphthylthiourea									X	X	X
87-65-0	2,6-Dichlorophenol									X	X	X
88-85-7	2-sec-Butyl-4,6-dinitrophenol; syn Dinoseb										X	
90-04-0	o-Anisidine			X						X		X
91-80-5	Methapyrilene				X					X	X	X
91-94-1	3,3 -Dichlorobenzidine			X						X		X
92-67-1	4-Aminobiphenyl									X	X	X
92-84-2	Phenothiazine	X								X		X
92-87-5	Benzidine			X						X		X
924-16-3	N-Nitrosodi-n-butylamine									X	X	X
93-72-1	Silvex (2,4,5-TP)										X	
93-76-5	2,4,5-T										X	
930-55-2	N-Nitrosopyrrolidine									X	X	X
94-59-7	Safrole				X					X	X	X
94-75-7	2,4-D										X	
944-22-9	Fonofos	X								X		X
95-53-4	o-Toluidine (2-methylaniline)									X	X	X
95-54-5	1,2-Phenylenediamine						X			X		X
95-80-7	Toluene-2,4-diamine									X	X	X
95-94-3	1,2,4,5-Tetrachlorobenzene									X	X	X
96-12-8	1,2-Dibromo-3-chloropropane										X	
96-18-4	1,2,3-Trichloropropane									X	X	X
96-45-7	Ethylenethiourea									X	X	X
97-63-2	Ethyl methacrylate									X	X	X

**Table A-6. Regulated Compounds from the Regulatory DQO and the ETF Delisting Petition Potentially Used in Industries Unrelated to Hanford (Q10, 228 compounds). (8 Sheets)**

CAS#	Constituent	Pesticide	Military	Dyestuff	Pharma- ceutical	Solvent	Consumer	Group/ Mixture	Polymer	Independent Review	ETF Delisting	Regulatory DQO
97-77-8	Disulfiram				X							X
98-00-1	Furfuryl alcohol						X			X		X
98-07-7	Benzotrithloride									X	X	X
98-87-3	Benzal chloride									X	X	X
99-55-8	5-Nitro-o-toluidine									X	X	X

Table A-7. Regulated Organic Compounds Potentially Used in Industries  
 Unrelated to Hanford and Not Considered for Analysis  
 Unless known to be placed in ERDF in the Future  
 (Q11, 138 compounds). (4 Sheets)

CAS#	Constituent	Pesticide	Military	Dyestuff	Pharmaceutical	Solvent	Consumer	Group/Mixture	Polymer	Independent Review	ETF Delisting	Regulatory DQO
100-01-6	4-Nitroaniline									X	X	X
100-44-7	Benzyl chloride									X	X	X
100-75-4	N-Nitrosopiperidine									X	X	X
101-14-4	4,4'-Methylenebis(2-chloroaniline)									X	X	X
101-27-9	Barban	X								X		X
10595-95-6	N-Nitrosomethylethylamine									X	X	X
106-47-8	4-Chloroaniline									X	X	X
106-49-0	p-Toluidine									X	X	X
106-51-4	p-Benzoquinone									X	X	X
106-89-8	Epichlorohydrin					X				X	X	X
10605-21-7	Carbendazim	X								X		X
107-19-7	Propargyl alcohol									X	X	X
107-20-0	Chloroacetaldehyde									X	X	X
107-30-2	Chloromethyl methyl ether									X	X	X
107-49-3	Tetraethyl pyrophosphate									X	X	X
108-31-6	Maleic anhydride (2,5-Furandione)									X	X	X
108-46-3	Resorcinol (1,3-Benzenediol)									X	X	X
108-98-5	Thiophenol									X	X	X
110-80-5	2-Ethoxyethanol									X	X	X
1114-71-2	Pebulate	X								X		X
1120-71-4	1,3-Propane sultone									X	X	X
114-26-1	Propoxur	X								X		X
115-29-7	Endosulfan	X								X		X
119-90-4	3,3'-Dimethoxybenzidine			X						X	X	X
119-93-7	3,3'-Dimethylbenzidine			X						X	X	X
120-58-1	Isosafrole						X			X	X	X
121-14-2	2,4-Dinitrotoluene									X	X	X
122-42-9	Propham	X								X		X
126-72-7	Tris(2,3-dibromopropyl) phosphate						X			X	X	X
126-85-2	Nitrogen mustard N-oxide		X							X	X	X
126-99-8	Chloroprene									X	X	X
137-26-8	Thiram				X					X	X	X
140-57-8	Aramite	X								X	X	X
143-50-0	Kepone	X								X	X	X
14484-64-1	Ferbam	X								X		X
151-56-4	Ethyleneimine									X	X	X

**Table A-7. Regulated Organic Compounds Potentially Used in Industries  
Unrelated to Hanford and Not Considered for Analysis  
Unless known to be placed in ERDF in the Future  
(Q11, 138 compounds). (4 Sheets)**

CAS#	Constituent	Pesticide	Military	Dyestuff	Pharma- ceutical	Solvent	Consumer	Group/ Mixture	Polymer	Independent Review	ETF Delisting	Regulatory DQO
1563-38-8	Carbofuran phenol	X								X		X
1563-66-2	Carbofuran	X								X		X
1615-80-1	N,N'-Diethylhydrazine									X	X	X
1646-88-4	Aldicarb sulfone									X	X	X
16752-77-5	Methomyl	X								X		X
1746-01-6	TCDD (Dioxin/Furan Indicator)											X
17804-35-2	Benomyl	X								X		X
1888-71-7	Hexachloropropylene									X	X	X
189-55-9	Dibenzo[a,i]pyrene										X	
189-64-0	Dibenzo[a,h]pyrene										X	
192-65-4	Dibenzo[a,e]pyrene										X	
1929-77-7	Vernolate	X								X		X
2008-41-5	Butylate	X								X		X
2032-65-7	Methiocarb	X								X		X
205-82-3	Benzo[j]fluoranthene										X	
2212-67-1	Molinate	X								X		X
224-42-0	Dibenz[a,j]acridine										X	
226-36-8	Dibenz[a,h]acridine										X	
2303-17-5	Triallate	X								X		X
23135-22-0	Oxamyl	X								X		X
23564-05-8	Thiophanate-methyl	X								X		X
23950-58-5	Pronamide	X								X	X	X
2631-37-0	Promecarb	X								X		X
298-00-0	Methyl parathion	X								X	X	X
298-02-2	Phorate	X								X	X	X
298-04-4	Disulfoton	X								X	X	X
30558-43-1	A2213	X								X		X
315-18-4	Mexacarbate	X								X		X
3689-24-5	Tetraethylthiopyrophosphate (TEDP)	X								X	X	X
465-73-6	Isodrin										X	
509-14-8	Tetranitromethane		X							X	X	X
51-79-6	Ethyl carbamate (urethane)									X	X	X
510-15-6	Chlorobenzilate										X	
52-85-7	Famphur				X					X	X	X
53-96-3	2-Acetylaminofluorene									X	X	X

Table A-7. Regulated Organic Compounds Potentially Used in Industries  
 Unrelated to Hanford and Not Considered for Analysis  
 Unless known to be placed in ERDF in the Future  
 (Q11, 138 compounds). (4 Sheets)

CAS#	Constituent	Pesticide	Military	Dyestuff	Pharma- ceutical	Solvent	Consumer	Group/ Mixture	Polymer	Independent Review	ETF Delisting	Regulatory DQO
534-52-1	4,6-Dinitro-o-cresol									X	X	X
54-11-5	Nicotine				X					X	X	X
540-73-8	1,2-Dimethylhydrazine									X	X	X
542-88-1	Dichloromethyl ether									X	X	X
55-18-5	N-Nitrosodiethylamine									X	X	X
55-63-0	Nitroglycerin		X							X		X
56-38-2	Parathion	X								X	X	X
56-49-5	3-Methylcholanthrene										X	
57-24-9	Strychnine	X								X	X	X
57-47-6	Physostigmine				X					X		X
57-64-7	Physostigmine salicylate				X					X		X
58-90-2	2,3,4,6-Tetrachlorophenol										X	
59669-26-0	Thiodicarb	X								X		X
60-11-7	p-Dimethylaminoazobenzene									X	X	X
606-20-2	2,6-Dinitrotoluene			X						X		X
608-93-5	Pentachlorobenzene									X	X	X
61-82-5	Amitrole	X								X	X	X
615-53-2	N-Nitroso-N-methylurethane									X	X	X
62-44-2	Phenacetin	X								X	X	X
63-25-2	Carbaryl	X								X		X
630-20-6	1,1,1,2-Tetrachloroethane										X	
636-21-5	o-Toluidine hydrochloride			X						X	X	X
66-27-3	Methyl methanesulfonate									X	X	X
684-93-5	N-Nitroso-N-methylurea									X	X	X
696-28-6	Dichlorophenylarsine									X	X	X
72-43-5	Methoxychlor										X	
74-88-4	Iodomethane									X	X	X
74-93-1	Thiomethanol									X	X	X
74-95-3	Dibromomethane									X	X	X
759-73-9	N-Nitroso-N-ethylurea									X	X	X
759-94-4	EPTC	X								X		X
76-01-7	Pentachloroethane										X	
764-41-0	1,4-Dichloro-2-butene									X	X	X
765-34-4	Glycidylaldehyde									X	X	X
77-78-1	Dimethyl sulfate									X	X	X
7782-41-4	Fluorine									X	X	X

Table A-7. Regulated Organic Compounds Potentially Used in Industries  
 Unrelated to Hanford and Not Considered for Analysis  
 Unless known to be placed in ERDF in the Future  
 (Q11, 138 compounds). (4 Sheets)

CAS#	Constituent	Pesticide	Military	Dyestuff	Pharma- ceutical	Solvent	Consumer	Group/ Mixture	Polymer	Independent Review	ETF Delisting	Regulatory DQO
7803-51-2	Phosphine				X					X		X
79-06-1	Acrylamide									X	X	X
79-44-7	Dimethylcarbamoyl chloride									X	X	X
79-46-9	2-Nitropropane									X	X	X
80-62-6	Methyl methacrylate									X	X	X
81-81-2	Warfarin	X								X		X
82-68-8	Pentachloronitrobenzene (PCNB)										X	
85-44-9	Phthalic anhydride									X	X	X
86-88-4	alpha-Naphthylthiourea									X	X	X
87-65-0	2,6-Dichlorophenol									X	X	X
88-85-7	2-sec-Butyl-4,6-dinitrophenol; syn Dinoseb										X	
91-80-5	Methapyrilene				X					X	X	X
91-94-1	3,3 -Dichlorobenzidine			X						X		X
92-67-1	4-Aminobiphenyl									X	X	X
92-87-5	Benzidine			X						X		X
924-16-3	N-Nitrosodi-n-butylamine									X	X	X
93-72-1	Silvex (2,4,5-TP)										X	
93-76-5	2,4,5-T										X	
930-55-2	N-Nitrosopyrrolidine									X	X	X
94-59-7	Safrole				X					X	X	X
95-53-4	o-Toluidine (2-methylaniline)									X	X	X
95-80-7	Toluene-2,4-diamine									X	X	X
95-94-3	1,2,4,5-Tetrachlorobenzene									X	X	X
96-12-8	1,2-Dibromo-3-chloropropane										X	
96-18-4	1,2,3-Trichloropropane									X	X	X
96-45-7	Ethylenethiourea									X	X	X
97-63-2	Ethyl methacrylate									X	X	X
97-77-8	Disulfiram				X							X
98-07-7	Benzotrichloride									X	X	X
98-87-3	Benzal chloride									X	X	X
99-55-8	5-Nitro-o-toluidine									X	X	X

**Table A-8. Regulated Organic Compounds Potentially Used at Hanford (Q13, 245 compounds). (5 Sheets)**

CAS#	Constituent
100-02-7	4-Nitrophenol
100-25-4	1,4-Dinitrobenzene
100-41-4	Ethyl benzene
100-42-5	Styrene
100-51-6	Benzyl alcohol
101-55-3	4-Bromophenylphenyl ether
1024-57-3	Heptachlor Epoxide
103-85-5	Phenylthiourea
105-67-9	2,4-Dimethylphenol
106-46-7	1,4-Dichlorobenzene
106-50-3	p-Phenylenediamine
106-93-4	Ethylene dibromide
106-99-0	1,3-Butadiene
107-02-8	Acrolein
107-05-1	3-Chloropropene
107-06-2	1,2-Dichloroethane
107-10-8	n-Propylamine
107-12-0	Propionitrile
107-13-1	Acrylonitrile
107-18-6	2-Propen-1-ol (Allyl alcohol)
108-05-4	Acetic acid vinyl ester
108-10-1	4-Methyl-2-pentanone
108-60-1	Bis(2-Chloroisopropyl) ether
108-88-3	Toluene
108-90-7	Chlorobenzene
108-95-2	Phenol
109-06-8	2-Methylpyridine (2-Picoline)
109-77-3	Malononitrile
109-99-9	Tetrahydrofuran (THF - Furan Indicator)
110-75-8	2-Chloroethyl vinyl ether
110-86-1	Pyridine
111-44-4	Bis(2-chloroethyl) ether
111-54-6	Ethylenebisdithiocarbamic acid
111-91-1	Bis(2-Chloroethoxy)methane
1116-54-7	N-Nitrosodiethanolamine
1129-41-5	Metolcarb (3-methylcholanthrene)
1134-23-2	Cycloate
115-02-6	Azaserine
116-06-3	Aldicarb
117-81-7	Bis(2-ethylhexyl) phthalate
117-84-0	Di-n-octylphthalate
118-74-1	Hexachlorobenzene
119-38-0	Isolan
120-12-7	Anthracene
120-54-7	Bis(pentamethylene)-thiuram tetrasulfide
120-82-1	1,2,4-Trichlorobenzene
120-83-2	2,4-Dichlorophenol
121-44-8	Triethylamine
122-09-8	alpha,alpha-Dimethylphenethylamine

**Table A-8. Regulated Organic Compounds Potentially Used at Hanford (Q13, 245 compounds). (5 Sheets)**

CAS#	Constituent
122-39-4	N,N-Diphenylamine
122-66-7	1,2-Diphenylhydrazine
123-33-1	Maleic hydrazide
123-63-7	Paraldehyde
123-91-1	1,4-Dioxane
124-48-1	Dibromochloromethane
126-68-1	O,O,O-Triethyl phosphorothioate
126-98-7	2-Methyl-2-propenenitrile
127-18-4	1,1,2,2-Tetrachloroethene
129-00-0	Pyrene
130-15-4	1,4-Naphthoquinone
131-11-3	Dimethyl phthalate
131-89-5	2-Cyclohexyl-4,6-dinitrophenol
1319-77-3	Cresols, total
13256-22-9	N-Nitrososarcosine
1330-20-7	Xylene
1336-36-3	Polychlorinated biphenyls (PCBs)
1338-23-4	Methyl ethyl ketone peroxide
134-32-7	alpha-Naphthylamine
1402-68-2	Aflatoxins
141-78-6	Acetic acid ethyl ester
145-73-3	Endothall
1464-53-5	1,2,3,4-Diepoxybutane
148-82-3	Melphalan (alanine nitrogen mustard)
14901-08-7	Cycasin
152-16-9	Octamethylpyrophosphoramidate
156-59-2	1,2-cis-Dichloroethene
156-60-5	1,2-trans-Dichloroethene
1634-02-2	Tetrabutylthiuram disulfide
16543-55-8	N-Nitrosornicotine
17702-57-7	Formparanate
18883-66-4	Streptozotocin
193-39-5	Indeno(1,2,3-cd)pyrene
194-59-2	7H-Dibenzo[c,g]carbazole
205-99-2	Benzo(b)fluoranthene
206-44-0	Fluoranthene
207-08-9	Benzo(k)fluoranthene
20830-81-3	Daunomycin
218-01-9	Chrysene
225-51-4	Benz[c]acridine
22781-23-3	Bendiocarb
22961-82-6	Bendiocarb phenol
2303-16-4	Diallate
23422-53-9	Formetanate hydrochloride
25154-54-5	Dinitrobenzene
25265-76-3	Phenylenediamine
25376-45-8	Toluenediamine
26419-73-8	Tirpate
26471-62-5	Toluene diisocyanate

**Table A-8. Regulated Organic Compounds Potentially Used at Hanford (Q13, 245 compounds). (5 Sheets)**

CAS#	Constituent
26545-73-3	Dichloropropanol
2763-96-4	5-(Aminomethyl)-3-isoxazolol
297-97-2	O,O-Diethyl O-pyrazinyl phosphoro- thioate
302-01-2	Hydrazine
305-03-3	Chlorambucil
309-00-2	Aldrin
311-45-5	Diethyl-p-nitrophenyl phosphate
319-84-6	alpha-BHC
319-85-7	beta-BHC
3288-58-2	o, o-Diethyl -S- methyl dithiophosphate
357-57-3	Brucine
39196-18-4	Thiofanox
4170-30-3	2-Butenaldehyde
4549-40-0	N-Nitrosomethylvinylamine
492-80-8	Auramine
494-03-1	Chlornaphazin
496-72-0	Toluene-3,4-diamine
50-00-0	Formaldehyde
50-07-7	Mitomycin C
50-18-0	Cyclophosphamide
50-29-3	4,4-DDT
50-32-8	Benzo(a)pyrene
50-55-5	Reserpine
504-24-5	4-Aminopyridine
505-60-2	Mustard gas
51-28-5	2,4-Dinitrophenol
51-43-4	Epinephrine
51-52-5	Propylthiouracil
51-75-2	Nitrogen mustard
52-24-4	Tris(1-aziridinyl)phosphine sulfide
52888-80-9	Prosulfocarb
53-70-3	Dibenz[a,h]anthracene
533-74-4	Dazomet
5344-82-1	1-(o-Chlorophenyl)thiourea
541-53-7	Dithiobiuret, syb 2,4-Dithiobiuret
541-73-1	1,3-Dichlorobenzene
542-75-6	1,3-Dichloropropene
542-76-7	3-Chloropropionitrile
55-91-4	Diisopropylfluorophosphate (DFP)
55285-14-8	Carbosulfan
55406-53-6	3-Iodo-2-propynyl n-butylcarbamate
56-04-2	Methylthiouracil
56-23-5	Carbon tetrachloride
56-53-1	Diethylstilbesterol
56-55-3	Benzo(a)anthracene
57-14-7	1,1-Dimethylhydrazine
57-74-9	Chlordane
57-97-6	7,12-Dimethylbenz[a]anthracene
58-89-9	gamma-BHC (Lindane)

**Table A-8. Regulated Organic Compounds Potentially Used at Hanford (Q13, 245 compounds). (5 Sheets)**

CAS#	Constituent
59-50-7	4-Chloro-3-methylphenol
59-89-2	N-Nitrosomorpholine
591-08-2	1-Acetyl-2-thiourea
5952-26-1	Diethylene glycol, dicarbamate
598-31-2	Bromoacetone
60-29-7	Ethyl ether
60-34-4	Methylhydrazine
60-51-5	Dimethoate
60-57-1	Dieldrin
62-50-0	Ethyl methanesulfonate
62-53-3	Aniline
62-55-5	Thioacetamide (Ethanethioamide)
62-56-6	Thiourea
62-75-9	N-Nitroso-N,N-dimethylamine
621-64-7	N-Nitroso-di-n-propylamine
624-83-9	Methyl isocyanate
6358-53-8	Citrus red No. 2
64-00-6	m-Cumenyl methylcarbamate
64-18-6	Formic acid
640-19-7	Fluoroacetamide
644-64-4	Dimetilan
66-75-1	Uracil mustard
67-56-1	Methyl alcohol
67-64-1	2-Propanone (Acetone)
67-66-3	Chloroform
67-72-1	Hexachloroethane
692-42-2	Diethylarsine
70-25-7	MNNG (N-Methyl-N'-nitro-N-nitrosoguanidine)
70-30-4	Hexachlorophene
71-36-3	n-Butyl alcohol
71-43-2	Benzene
71-55-6	1,1,1-Trichloroethane
72-20-8	Endrin
72-54-8	4,4-DDD
72-55-9	4,4-DDE
72-57-1	Trypan blue
74-83-9	Bromomethane
74-87-3	Chloromethane
75-00-3	Chloroethane
75-01-4	1-Chloroethene (Vinyl Chloride)
75-05-8	Acetonitrile
75-09-2	Dichloromethane (Methylene Chloride)
75-15-0	Carbon disulfide
75-21-8	Oxirane (Ethylene Oxide)
75-25-2	Tribromomethane
75-27-4	Bromodichloromethane
75-34-3	1,1-Dichloroethane
75-35-4	1,1-Dichloroethene
75-36-5	Acetyl chloride

**Table A-8. Regulated Organic Compounds Potentially Used at Hanford (Q13, 245 compounds). (5 Sheets)**

CAS#	Constituent
75-55-8	2-Methylaziridine
75-60-5	Cacodylic acid
75-69-4	Trichlorofluoromethane
75-70-7	Trichloromethanethiol
75-71-8	Dichlorodifluoromethane
75-86-5	2-Methylactonitrile
75-87-6	Chloral
757-58-4	Hexaethyl tetraphosphate
76-13-1	1,2,2-Trichlorotrifluoroethane (Freon 113)
76-44-8	Heptachlor
77-47-4	Hexachlorocyclopentadiene
78-59-1	Isophorone
78-83-1	2-Methylpropyl alcohol
78-87-5	1,2-Dichloropropane
78-93-3	2-Butanone (MEK)
79-00-5	1,1,2-Trichloroethane
79-01-6	1,1,2-Trichloroethylene
79-19-6	Thiosemicarbazide
79-22-1	Methyl chlorocarbonate
79-34-5	1,1,2,2-Tetrachloroethane
8001-35-2	Toxaphene
81-07-2	Saccharin
823-40-5	Toluene-2,6-diamine
83-32-9	Acenaphthene
84-66-2	Diethyl phthalate
84-74-2	Di-n-butylphthalate
85-68-7	Butylbenzylphthalate
86-30-6	N-Nitrosodiphenylamine
86-73-7	Fluorene
86-74-8	Carbazole
87-68-3	Hexachlorobutadiene
87-86-5	Pentachlorophenol
88-06-2	2,4,6-Trichlorophenol
91-20-3	Naphthalene
91-58-7	2-Chloronaphthalene
91-59-8	2-Naphthylamine
94-58-6	Dihydrosafrole
94-75-7	2,4-D
95-06-7	Sulfallate
95-50-1	1,2-Dichlorobenzene
95-57-8	2-Chlorophenol
95-70-5	2,5-Diaminotoluene
95-95-4	2,4,5-Trichlorophenol
97-74-5	Tetrabutylthiuram monosulfide
98-82-8	(1-Methylethyl)benzene
98-86-2	Acetophenone
98-95-3	Nitrobenzene
99-35-4	1,3,5-Trinitrobenzene
99-65-0	1,3-Dinitrobenzene

Table A-9. Regulated Organic Compounds Eliminated Based on Professional Judgement (Q14, 121 compounds). (4 Sheets)

CAS #	Constituent	Pesticide	Military	Dyestuff	Pharmaceutical	Fungicide	Consumer	R&D	Stability	Polymer	Agriculture	Not Commercially Produced	Solvent	Miscellaneous
100-25-4	1,4-Dinitrobenzene			X										
103-85-5	Phenylthiourea	X												
107-10-8	n-Propylamine	X		X	X					X				
107-12-0	Propionitrile												X	
107-18-6	2-Propen-1-ol (Allyl alcohol)					X								
109-06-8	2-Methylpyridine (2-Picoline)												X	
109-77-3	Malononitrile				X			X						
111-54-6	Ethylenebisdithiocarbamic acid					X								
1116-54-7	N-Nitrosodiethanolamine							X						
1129-41-5	Metolcarb (3-methylcholanthrene)	X												
1134-23-2	Cycloate	X												
115-02-6	Azaserine				X									
116-06-3	Aldicarb	X												
118-74-1	Hexachlorobenzene	X												
119-38-0	Isolan													X
120-54-7	Bis(pentamethylene)-thiuram tetrasulfide						X							
121-44-8	Triethylamine			X										
122-09-8	alpha,alpha-Dimethylphenethylamine						X							
123-33-1	Maleic hydrazide	X												
123-63-7	Paraldehyde				X					X			X	
130-15-4	1,4-Naphthoquinone									X				
13256-22-9	N-Nitrososarcosine											X		
1338-23-4	Methyl ethyl ketone peroxide									X				
1402-68-2	Aflatoxins							X						
145-73-3	Endothall	X												
1464-53-5	1,2,3,4-Diepoxybutane							X		X				
148-82-3	Melphalan (alanine nitrogen mustard)				X									
14901-08-7	Cycasin				X							X		

Table A-9. Regulated Organic Compounds Eliminated Based on Professional Judgement (Q14, 121 compounds). (4 Sheets)

CAS #	Constituent	Pesticide	Military	Dyestuff	Pharmaceutical	Fungicide	Consumer	R&D	Stability	Polymer	Agriculture	Not Commercially Produced	Solvent	Miscellaneous
152-16-9	Octamethylpyrophosphoramide	X												
16543-55-8	N-Nitrosomnicotine						X							
17702-57-7	Formparanate	X												
18883-66-4	Streptozotocin				X									
194-59-2	7H-Dibenzo[c,g]carbazole											X		
20830-81-3	Daunomycin				X									
225-51-4	Benz[c]acridine											X		
22961-82-6	Bendiocarb phenol	X												
2303-16-4	Diallate	X												
23422-53-9	Formetanate hydrochloride	X												
25154-54-5	Dinitrobenzene			X										
25265-76-3	Phenylenediamine									X				
25376-45-8	Toluenediamine			X										
26419-73-8	Tirpate										X			
26471-62-5	Toluene diisocyanate								X					
2763-96-4	5-(Aminomethyl)-3-isoxazolol				X									
297-97-2	O,O-Diethyl O-pyrazinyl phosphoro-thioate	X												
302-01-2	Hydrazine								X					
305-03-3	Chlorambucil				X									
311-45-5	Diethyl-p-nitrophenyl phosphate				X									
3288-58-2	o, o-Diethyl -S- methyl dithiophosphate										X			
357-57-3	Brucine	X												
39196-18-4	Thiofanox	X												
4170-30-3	2-Butenaldehyde	X			X								X	
4549-40-0	N-Nitrosomethylvinylamine							X						
492-80-8	Auramine			X										
494-03-1	Chlornaphazin				X									
496-72-0	Toluene-3,4-diamine			X			X							X
50-07-7	Mitomycin C				X									
50-18-0	Cyclophosphamide				X									

Table A-9. Regulated Organic Compounds Eliminated Based on Professional Judgement (Q14, 121 compounds). (4 Sheets)

CAS #	Constituent	Pesticide	Military	Dyestuff	Pharmaceutical	Fungicide	Consumer	R&D	Stability	Polymer	Agriculture	Not Commercially Produced	Solvent	Miscellaneous
50-55-5	Reserpine				X									
504-24-5	4-Aminopyridine				X									
505-60-2	Mustard gas		X											
51-43-4	Epinephrine				X									
51-52-5	Propylthiouracil				X									
51-75-2	Nitrogen mustard		X											
52-24-4	Tris(1-aziridinyl)phosphine sulfide				X									
52888-80-9	Prosulfocarb										X			
533-74-4	Dazomet	X									X			
5344-82-1	1-(o-Chlorophenyl)thiourea	X												
541-53-7	Dithiobiuret, syb 2,4-Dithiobiuret	X												
542-76-7	3-Chloropropionitrile				X					X				
55-91-4	Diisopropylfluorophosphate (DFP)				X									
55285-14-8	Carbosulfan										X			
55406-53-6	3-Iodo-2-propynyl n-butylcarbamate					X								
56-04-2	Methylthiouracil				X									
56-53-1	Diethylstilbesterol				X									
57-14-7	1,1-Dimethylhydrazine								X					
57-74-9	Chlordane	X												
5952-26-1	Diethylene glycol, dicarbamate				X									
598-31-2	Bromoacetone		X											
60-34-4	Methylhydrazine		X											
60-51-5	Dimethoate	X												
62-55-5	Thioacetamide (Ethanethioamide)												X	
62-56-6	Thiourea						X		X					
624-83-9	Methyl isocyanate	X							X	X				
6358-53-8	Citrus red No. 2			X										
64-00-6	m-Cumenyl methylcarbamate	X												
64-18-6	Formic acid													X

Table A-9. Regulated Organic Compounds Eliminated Based on Professional Judgement (Q14, 121 compounds). (4 Sheets)

CAS #	Constituent	Pesticide	Military	Dyestuff	Pharmaceutical	Fungicide	Consumer	R&D	Stability	Polymer	Agriculture	Not Commercially Produced	Solvent	Miscellaneous
640-19-7	Fluoroacetamide	X												
644-64-4	Dimetilan	X												
66-75-1	Uracil mustard				X									
692-42-2	Diethylarsine				X									
70-25-7	MNNG (N-Methyl-N'-nitro-N-nitrosoguanidine)				X			X						
72-57-1	Trypan blue			X										
75-21-8	Oxirane (Ethylene Oxide)					X								
75-36-5	Acetyl chloride			X	X									
75-55-8	2-Methylaziridine				X				X					
75-60-5	Cacodylic acid	X												
75-86-5	2-Methylacetonitrile							X						
75-87-6	Chloral	X												
757-58-4	Hexaethyl tetraphosphate	X												
77-47-4	Hexachlorocyclopentadiene	X												
79-19-6	Thiosemicarbazide	X												
79-22-1	Methyl chlorocarbonate	X	X											
81-07-2	Saccharin						X							
823-40-5	Toluene-2,6-diamine			X						X				
86-74-8	Carbazole			X										
94-58-6	Dihydrosafrole						X							
95-06-7	Sulfallate	X												
97-74-5	Tetrabutylthiuram monosulfide									X				
99-35-4	1,3,5-Trinitrobenzene		X											

**Table A-10. Regulated Organic Compounds  
Detected in ERDF Leachate and Included  
as COPC (Q16, 8 compounds).**

CAS#	Constituent
108-88-3	Toluene
117-81-7	Bis(2-ethylhexyl) phthalate
129-00-0	Pyrene
206-44-0	Fluoranthene
67-64-1	2-Propanone (Acetone)
84-74-2	Di-n-butylphthalate
85-68-7	Butylbenzylphthalate
91-20-3	Naphthalene

**Table A-11. Regulated Organic Compounds  
Not Detected in ERDF Leachate  
(Q17, 115 compounds). (3 Sheets)**

CAS#	Constituent
100-02-7	4-Nitrophenol
100-41-4	Ethyl benzene
100-42-5	Styrene
100-51-6	Benzyl alcohol
101-55-3	4-Bromophenylphenyl ether
1024-57-3	Heptachlor Epoxide
105-67-9	2,4-Dimethylphenol
106-46-7	1,4-Dichlorobenzene
106-50-3	p-Phenylenediamine
106-93-4	Ethylene dibromide
106-99-0	1,3-Butadiene
107-02-8	Acrolein
107-05-1	3-Chloropropene
107-06-2	1,2-Dichloroethane
107-13-1	Acrylonitrile
108-05-4	Acetic acid vinyl ester
108-10-1	4-Methyl-2-pentanone
108-60-1	Bis(2-Chloroisopropyl) ether
108-90-7	Chlorobenzene
108-95-2	Phenol
109-99-9	Tetrahydrofuran (THF - Furan Indicator)
110-75-8	2-Chloroethyl vinyl ether
110-86-1	Pyridine
111-44-4	Bis(2-chloroethyl) ether
111-91-1	Bis(2-Chloroethoxy)methane
117-84-0	Di-n-octylphthalate
120-12-7	Anthracene
120-82-1	1,2,4-Trichlorobenzene
120-83-2	2,4-Dichlorophenol

**Table A-11. Regulated Organic Compounds  
Not Detected in ERDF Leachate  
(Q17, 115 compounds). (3 Sheets)**

CAS#	Constituent
122-39-4	N,N-Diphenylamine
122-66-7	1,2-Diphenylhydrazine
123-91-1	1,4-Dioxane
124-48-1	Dibromochloromethane
126-68-1	O,O,O-Triethyl phosphorothioate
126-98-7	2-Methyl-2-propenenitrile
127-18-4	1,1,2,2-Tetrachloroethene
131-11-3	Dimethyl phthalate
131-89-5	2-Cyclohexyl-4,6-dinitrophenol
1319-77-3	Cresols, total
1330-20-7	Xylene
1336-36-3	Polychlorinated biphenyls (PCBs)
134-32-7	alpha-Naphthylamine
141-78-6	Acetic acid ethyl ester
156-59-2	1,2-cis-Dichloroethene
156-60-5	1,2-trans-Dichloroethene
1634-02-2	Tetrabutylthiuram disulfide
193-39-5	Indeno(1,2,3-cd)pyrene
205-99-2	Benzo(b)fluoranthene
207-08-9	Benzo(k)fluoranthene
218-01-9	Chrysene
26545-73-3	Dichloropropanol
319-84-6	alpha-BHC
319-85-7	beta-BHC
50-00-0	Formaldehyde
50-32-8	Benzo(a)pyrene
51-28-5	2,4-Dinitrophenol
53-70-3	Dibenz[a,h]anthracene
541-73-1	1,3-Dichlorobenzene
542-75-6	1,3-Dichloropropene
56-23-5	Carbon tetrachloride
56-55-3	Benzo(a)anthracene
57-97-6	7,12-Dimethylbenz[a]anthracene
59-50-7	4-Chloro-3-methylphenol
59-89-2	N-Nitrosomorpholine
591-08-2	1-Acetyl-2-thiourea
60-29-7	Ethyl ether
62-50-0	Ethyl methanesulfonate
62-53-3	Aniline
62-75-9	N-Nitroso-N,N-dimethylamine
621-64-7	N-Nitroso-di-n-propylamine
67-56-1	Methyl alcohol
67-66-3	Chloroform
67-72-1	Hexachloroethane
70-30-4	Hexachlorophene
71-36-3	n-Butyl alcohol
71-43-2	Benzene
71-55-6	1,1,1-Trichloroethane

**Table A-11. Regulated Organic Compounds  
Not Detected in ERDF Leachate  
(Q17, 115 compounds). (3 Sheets)**

CAS#	Constituent
74-83-9	Bromomethane
74-87-3	Chloromethane
75-00-3	Chloroethane
75-01-4	1-Chloroethene (Vinyl Chloride)
75-05-8	Acetonitrile
75-09-2	Dichloromethane (Methylene Chloride)
75-15-0	Carbon disulfide
75-25-2	Tribromomethane
75-27-4	Bromodichloromethane
75-34-3	1,1-Dichloroethane
75-35-4	1,1-Dichloroethene
75-69-4	Trichlorofluoromethane
75-71-8	Dichlorodifluoromethane
76-13-1	1,2,2-Trichlorotrifluoroethane (Freon 113)
78-59-1	Isophorone
78-83-1	2-Methylpropyl alcohol
78-87-5	1,2-Dichloropropane
78-93-3	2-Butanone (MEK)
79-00-5	1,1,2-Trichloroethane
79-01-6	1,1,2-Trichloroethylene
79-34-5	1,1,2,2-Tetrachloroethane
83-32-9	Acenaphthene
84-66-2	Diethyl phthalate
86-30-6	N-Nitrosodiphenylamine
86-73-7	Fluorene
87-68-3	Hexachlorobutadiene
87-86-5	Pentachlorophenol
88-06-2	2,4,6-Trichlorophenol
91-58-7	2-Chloronaphthalene
91-59-8	2-Naphthylamine
95-50-1	1,2-Dichlorobenzene
95-57-8	2-Chlorophenol
95-70-5	2,5-Diaminotoluene
95-95-4	2,4,5-Trichlorophenol
98-82-8	(1-Methylethyl)benzene
98-86-2	Acetophenone
98-95-3	Nitrobenzene
99-65-0	1,3-Dinitrobenzene

**Table A-12. Unique Ions of ERDF Leachate Inorganic and Organometalic Compounds (31 compounds).**

CAS#	Constituent	Ions
7429-90-5	Aluminum	Al
7664-41-7	Ammonia	NH <sub>4</sub>
7440-36-0	Antimony	Sb
7440-38-2	Arsenic	As
7440-39-3	Barium	Ba
7440-41-7	Beryllium	Be
7440-43-9	Cadmium	Cd
7440-70-2	Calcium	Ca
16887-00-6	Chloride	Cl
7440-47-3	Chromium	Cr
7440-48-4	Cobalt	Co
7440-50-8	Copper	Cu
16984-48-8	Fluoride	F
7439-89-6	Iron	Fe
7439-92-1	Lead	Pb
7439-95-4	Magnesium	Mg
7439-96-5	Manganese	Mn
7439-97-6	Mercury	Hg
7440-02-0	Nickel	Ni
14797-55-8	Nitrate	NO <sub>3</sub>
1594-56-5	Nitrite	NO <sub>2</sub>
14265-44-2	Phosphate	PO <sub>4</sub>
7440-09-7	Potassium	K
7782-49-2	Selenium	Se
7440-22-4	Silver	Ag
7440-23-5	Sodium	Na
14808-79-8	Sulfate	SO <sub>4</sub>
7440-28-0	Thallium	Tl
7440-61-1	Uranium	U
7440-62-2	Vanadium	V
7440-66-6	Zinc	Zn

**Table A-13. Unique Ions of Inorganic and Organometallic Compounds from Regulatory Input List (38 compounds).**

CAS#	Constituent	Ions
7429-90-5	Aluminum	Al
7664-41-7	Ammonia	NH <sub>4</sub>
7440-36-0	Antimony	Sb
7440-38-2	Arsenic	As
7440-39-3	Barium	Ba
7440-41-7	Beryllium	Be
7726-95-6	Bromine	Br
7440-43-9	Cadmium	Cd
7440-70-2	Calcium	Ca
1333-86-4	Carbon black	C
3812-32-6	Carbonate	CO <sub>3</sub>
16887-00-6	Chloride	Cl
7440-47-3	Chromium	Cr
16065-83-1	Chromium (III) ion	Cr (III)
18540-29-9	Chromium(VI)	Cr(VI)
7440-48-4	Cobalt	Co
7440-50-8	Copper	Cu
57-12-5	Cyanide	CN
16984-48-8	Fluoride	F
7439-92-1	Lead	Pb
7439-96-5	Manganese	Mn
7439-97-6	Mercury	Hg
7440-02-0	Nickel	Ni
14797-55-8	Nitrate	NO <sub>3</sub>
14797-65-0	Nitrite	NO <sub>2</sub>
7440-04-2	Osmium	Os
14265-44-2	Phosphate	PO <sub>4</sub>
7723-14-0	Phosphorus	P
7440-09-7	Potassium	K
7782-49-2	Selenium	Se
7440-22-4	Silver	Ag
7440-23-5	Sodium	Na
14808-79-8	Sulfate	SO <sub>4</sub>
63705-05-5	Sulfur	S
7440-28-0	Thallium	Tl
7440-31-5	Tin, metal	Sn
7440-62-2	Vanadium	V
7440-66-6	Zinc	Zn

**Table A-14. Detected Metals in ERDF Leachate with Analysis Frequencies and Associated Docket Values (30 compounds).**

Class	CAS#	Constituent	# Detects	Min Value Detect <sup>(1)</sup>	Max Value Detect <sup>(1)</sup>	# Analyzed	Docket Value <sup>(1)</sup>	Delisting Level <sup>(1)</sup>
Metals	7429-90-5	Aluminum	2	213	422	11		
Metals	7440-36-0	Antimony	0			11	6	144
Metals	7440-38-2	Arsenic	11	13.6	32.6	11	50	1200
Metals	7440-39-3	Barium	12	29.4	63.3	12	2000	48000
Metals	7440-41-7	Beryllium	8	0.33	0.77	11	4	96
Metals	7440-43-9	Cadmium	0			11	5	120
Metals	7440-70-2	Calcium	11	75500	227000	11		
Metals	7440-47-3	Chromium	7	3.8	13.9	11	100	2400
Metals	7440-48-4	Cobalt	0			11	2100	50400
Metals	7440-50-8	Copper	1	10.2	10.2	11	1300	31200
Metals	7439-89-6	Iron	4	102	798	11		
Metals	7439-92-1	Lead	0			11	15	360
Metals	7439-95-4	Magnesium	11	21000	65300	11		
Metals	7439-96-5	Manganese	9	4.4	17.7	11		
Metals	7439-97-6	Mercury	2	0.16	0.16	11	2	48
Metals	7440-02-0	Nickel	1	10.2	10.2	11	100	2400
Metals	7440-09-7	Potassium	11	10600	17000	11		
Metals	7782-49-2	Selenium	0			11	50	1200
Metals	7440-22-4	Silver	0			11	200	4800
Metals	7440-23-5	Sodium	11	179000	249000	11		
Metals	7440-28-0	Thallium	0			11	2	48
Metals	7440-62-2	Vanadium	10	27.3	52.9	11	300	7200
Metals	7440-66-6	Zinc	2	19.5	49.7	11	10000	240000
WetChem	7664-41-7	Ammonia	1	151	151	13		
WetChem	16887-00-6	Chloride	11	154000	443000	13		
WetChem	16984-48-8	Fluoride	11	730	1180	13	4000	96000
WetChem	14797-55-8	Nitrate	11	3420	19300	13		
WetChem	14797-65-0	Nitrite	0			13		
WetChem	14265-44-2	Phosphate	5	410	840	13		
WetChem	14808-79-8	Sulfate	11	247000	534000	13		

<sup>(1)</sup>Units = ug/L.

**Table A-15. Metals/Ions from the Regulatory Input List  
not Included as COPC (7 compounds).**

CAS#	Constituent	Ions
24959-67-9	Bromine	Br
1333-86-4	Carbon black	C
16065-83-1	Chromium (III) ion	Cr(III)
18540-29-9	Chromium(VI)	Cr(VI)
7440-04-2	Osmium	Os
7723-14-0	Phosphorus	P
63705-05-5	Sulfur	S

**APPENDIX B**

**CURSIVE DATA VALIDATION OF THE ENVIRONMENTAL  
RESTORATION DISPOSAL FACILITY LEACHATE  
DATA FOR BLANK CONTAMINATION**



## **B1.0 PURPOSE**

ERDF performed analyses on the leachate collected from each batch before shipping the leachate in tankers to the Effluent Treatment Facility (ETF) (now the Liquid Waste Processing Facility [LWPF]). The available analytical data included leachate samples, laboratory methods blanks and field blanks. Most of the laboratory blanks showed detections of a number of analytes, which demonstrate laboratory contamination. To obtain a better understanding of the presented analytical data, the detections observed in the instrument blanks need to be taken into consideration when evaluating the results of the leachate samples.

Every leachate sample submitted for analysis was also accompanied by a field blank. Field blanks demonstrate whether contamination exists in the field. To assess whether the concentration in the ERDF leachate sample is actually present or due to laboratory/field sampling contamination, the sample data were validated.

A comparison of analytical data to laboratory blanks and field blanks was done by performing a cursive validation. This cursive validation only concentrated on the possible blank contamination found in the analyses of volatile, semi-volatile compounds, and metals analyses. The blanks submitted with the WetChem analytical data did not show any blank contamination; therefore, WetChem data were not included in this data validation. The data validation did not include evaluation of calibrations because full data packages were not readily available; calibration data are on file in the laboratory. The matrix spikes and duplicate analyses were also not evaluated.

## B2.0 GUIDANCE

To perform the cursive data validation, the EPA Contract Laboratory Program National Functional Guidelines for Organic and Inorganic data (February 1994) were used. These guidelines provide the following limits and validation actions concerning blank data:

- **Inorganic:**

Sample results greater than the instrument detection limit (IDL) but less than 5 times (5x) the amount found in the associated blank were qualified as undetected (U). For any result reported as a negative value, the absolute value was used instead of the negative result.

- **Organic:**

- (1) Compounds detected in the sample (other than the common lab contaminants) that were also detected in the associated blank were qualified as undetected (U) at the Contract Required Quantitation Limit (CRQL, also called reporting limit) if the sample concentration is less than 5 times (5x) the blank concentration.
- (2) Compounds detected in the samples that are common lab contaminants, such as acetone and methylene chloride for volatiles and the phthalates for the semi-volatiles, that were also detected in the associated blank were qualified as undetected (U) at the CRQL if the sample concentration was less than 10 times (10x) the blank concentration.
- (3) For all compounds, if the sample result was greater than the CRQL, but less than the 5x or 10x multiple of the blank result, the CRQL was raised to the amount of the sample result.
- (4) If the sample result was less than the CRQL, no adjustment of the CRQL was necessary.

**B3.0 DATA USED**

Summary data packages were available for this validation. Each report included a laboratory blank. It is assumed that the laboratory compiled the packages correctly and the associated blanks and samples were presented in each package. This cursive validation did not include an evaluation of the correct correlation between laboratory blanks and analytical samples.

The ERDF samples and field blanks reviewed are listed in Table B3-1; each field blank is listed with the associated sample(s). The association between samples and field blanks is based on documentation provided by ERDF project management. The association of laboratory blanks and ERDF samples and field samples is based on the individual data packages submitted by the laboratory.

**Table B3-1. ERDF Leachate Samples.**

ERDF Sample ID	ERDF Field Blank ID	VOA Laboratory Blank ID	SVOA Laboratory Blank ID	Metals Laboratory Blank ID
96-100, 96-101A	96-102B	QCBLK126700-1	QCBLK126242-1	QCBLK126739-1
96-103, 96-104 (Dup)	96-105	QCBLK126700-1	QCBLK126242-1	QCBLK126739-1
96-106, 96-107 (Dup)	96-108	QCBLK126700-1	QCBLK126242-1	QCBLK126739-1
96-109	96-110	QCBLK126700-1	QCBLK126242-1	QCBLK126739-1
96-111	96-112	QCBLK126700-1	QCBLK126242-1	QCBLK126739-1
96-113	96-114	QCBLK126700-1	QCBLK126242-1	QCBLK126739-1
97-200	97-201	QCBLK127015-*	QCBLK126848-*	QCBLK126872-*
97-210	97-211	QCBLK129379-1	QCBLK129176-1	QCBLK129218-1
97-220	97-221	QCBLK129379-*	QCBLK129176-1	QCBLK129369-1
97-230	97-231	QCBLK130857-1	QCBLK129363-1	QCBLK129602-1
97-240	97-241	QCBLK130325-1	QCBLK130064-1	QCBLK130348-1
97-250	97-251	QCBLK130857-1	QCBLK130894-1	QCBLK130714-1
97-260	97-261	QCBLK135329-1	QCBLK135066-1	QCBLK135352-1
97-270	97-271	QCBLK138793-1	QCBLK138313-1	QCBLK138481-1
97-280	97-281	QCBLK156492-1	QCBLK155585-1	QCBLK155771-1
97-290, 97-292 (Dup)	97-291	QCBLK161499-1	QCBLK161501-1	QCBLK162009-1

\* Last digit was illegible on photocopy

## B4.0 VALIDATION PROCESS

All the steps of the validation process are included in Table B4-1.

The reported detections were listed in the spreadsheet for the leachate samples and field blanks, Table B4-1. In the first step of the validation process, the results from the associated laboratory blanks were entered into the column "Lab Blank Results." The next column, "Lab Blank Validation Limit" provides the 5x or 10x validation limit as explained in Section B2.0. The sample and field blank results were compared to the validation limit. In accordance with the guidance, detections reported below the validation limit were qualified as undetected (U).

In the second step of the validation process, any detection reported in the field blank was entered into the respective location in the column "Field Blank Result." The next column, "Field Blank Validation Limit" calculated the appropriate 5x or 10x validation limit. The sample results were then compared to the field blank limit and sample results below the limit were qualified as undetected (U).

The summary of the validation process results are listed in the last two columns, "Final Validated Results" and "Final Data Qualifier," respectively. The final validated results do not include field blank results.

## **B5.0 RESULTS**

The validated results based on contamination found in the associated lab and field blanks, are presented in the column "Final Validated Result." The associated final data analysis is presented separately from the numerical values due to later database applications.

No unusual observations were made with the exception of acetone in sample 97-250. The detection of acetone in sample 97-250 was qualified as undetected (U), and the reporting limit was raised to the sample result based on the organic validation rule #3. However, only for this particulate sample, the laboratory reported a lower detection limit of 10 ug/L instead of the 20 ug/L for acetone than was used for the analyses of all the other samples. Acetone was reported at 14 ug/L, and after validation, the reporting limit was raised to 14 ug/L. If this sample had been analyzed at the same reporting limit as the other samples, no adjustment to the reporting limit would have been necessary.

Table B4-1. ERDF Leachate Data, Validation Process. (10 Sheets)

Class	Sample ID	Constituent	CAS#	Lab Sample Result	Unit	Detection Limit	Lab Blank Result	Lab Blank Validation Limit	Validated Result Based on Lab Blank	Validation Qualifier	Field Blank Result	Field Blank Validation Limit	Final Validated Result <sup>(1)</sup>	Final Data Qualifier
Metals	96-106	Arsenic	7440-38-2	26.2	ug/L	10			26.2				26.2	
Metals	96-106	Barium	7440-39-3	42	ug/L	200			42	J			42	J
Metals	96-106	Beryllium	7440-41-7	0.52	ug/L	5			0.52	J			0.52	J
Metals	96-106	Calcium	7440-70-2	75500	ug/L	5000	106	530	75500				75500	
Metals	96-106	Chromium	7440-47-3	7.9	ug/L	10			7.9	J			7.9	J
Metals	96-106	Copper	7440-50-8	24.7	ug/L	25	5.9	29.5	25	U			25	U
Metals	96-106	Iron	7439-89-6	157	ug/L	100	48.5	242.5	100	U			100	U
Metals	96-106	Magnesium	7439-95-4	21000	ug/L	5000	161	805	21000				21000	
Metals	96-106	Manganese	7439-96-5	5.1	ug/L	15	0.71	3.55	5.1	J			5.1	J
Metals	96-106	Mercury	7439-97-6	0.16	ug/L	0.2			0.16	J			0.16	J
Metals	96-106	Nickel	7440-02-0	10.2	ug/L	40			10.2	J			10.2	J
Metals	96-106	Potassium	7440-09-7	13800	ug/L	5000			13800				13800	
Metals	96-106	Sodium	7440-23-5	207000	ug/L	5000	107	535	207000		642	3210	207000	
Metals	96-106	Vanadium	7440-62-2	52.9	ug/L	50	4.6	23	52.9				52.9	
Metals	96-106	Zinc	7440-66-6	47.5	ug/L	20	8.9	44.5	47.5		171	855	20	U
Metals	96-107	Arsenic	7440-38-2	25.4	ug/L	10			25.4				25.4	
Metals	96-107	Barium	7440-39-3	38.8	ug/L	200	1.4	7	38.8	J			38.8	J
Metals	96-107	Beryllium	7440-41-7	0.35	ug/L	5			0.35	J			0.35	J
Metals	96-107	Calcium	7440-70-2	71400	ug/L	5000	106	530	71400				71400	
Metals	96-107	Chromium	7440-47-3	5.2	ug/L	10			5.2	J			5.2	J
Metals	96-107	Copper	7440-50-8	18.3	ug/L	25	5.9	29.5	25	U			25	U
Metals	96-107	Iron	7439-89-6	104	ug/L	100	48.5	242.5	100	U			100	U
Metals	96-107	Magnesium	7439-95-4	20000	ug/L	5000	161	805	20000				20000	
Metals	96-107	Manganese	7439-96-5	4	ug/L	15	0.71	3.55	4	J			4	J
Metals	96-107	Mercury	7439-97-6	0.16	ug/L	0.2			0.16	J			0.16	J
Metals	96-107	Potassium	7440-09-7	11400	ug/L	5000			11400				11400	
Metals	96-107	Sodium	7440-23-5	197000	ug/L	5000	107	535	197000		642	3210	197000	
Metals	96-107	Vanadium	7440-62-2	44.4	ug/L	50	4.6	23	44.4	J			44.4	J
Metals	96-107	Zinc	7440-66-6	51	ug/L	20	8.9	44.5	51		171	855	20	U
Metals	96-108	Barium	7440-39-3	1.4	ug/L	200	1.4	7	200	U				
Metals	96-108	Calcium	7440-70-2	311	ug/L	5000	106	530	5000	U				
Metals	96-108	Copper	7440-50-8	6.6	ug/L	25	5.9	29.5	25	U				
Metals	96-108	Iron	7439-89-6	38.8	ug/L	100	48.5	242.5	100	U				

Field Blank data are presented in *italic font*.

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(1) No values presented for field blanks  
U = undetected at CRDL or CRQL  
J = estimated value, below CRDL or CRQL

Table B4-1. ERDF Leachate Data, Validation Process. (10 Sheets)

Class	Sample ID	Constituent	CAS#	Lab Sample Result	Unit	Detection Limit	Lab Blank Result	Lab Blank Validation Limit	Validated Result Based on Lab Blank	Validation Qualifier	Field Blank Result	Field Blank Validation Limit	Final Validated Result <sup>(1)</sup>	Final Data Qualifier
<i>Metals</i>	<i>96-108</i>	<i>Magnesium</i>	<i>7439-95-4</i>	<i>94.2</i>	<i>ug/L</i>	<i>5000</i>	<i>161</i>	<i>805</i>	<i>5000</i>	<i>U</i>				
<i>Metals</i>	<i>96-108</i>	<i>Manganese</i>	<i>7439-96-5</i>	<i>1.2</i>	<i>ug/L</i>	<i>15</i>	<i>0.71</i>	<i>3.55</i>	<i>15</i>	<i>U</i>				
<i>Metals</i>	<i>96-108</i>	<i>Sodium</i>	<i>7440-23-5</i>	<i>642</i>	<i>ug/L</i>	<i>5000</i>	<i>107</i>	<i>535</i>	<i>642</i>	<i>J</i>				
<i>Metals</i>	<i>96-108</i>	<i>Vanadium</i>	<i>7440-62-2</i>	<i>4.2</i>	<i>ug/L</i>	<i>50</i>	<i>4.6</i>	<i>23</i>	<i>50</i>	<i>U</i>				
<i>Metals</i>	<i>96-108</i>	<i>Zinc</i>	<i>7440-66-6</i>	<i>171</i>	<i>ug/L</i>	<i>20</i>	<i>8.9</i>	<i>44.5</i>	<i>171</i>					
Metals	97-200	Aluminum	7429-90-5	61.3	ug/L	200	122	610	200	U			200	U
Metals	97-200	Arsenic	7440-38-2	18.8	ug/L	10			18.8				18.8	
Metals	97-200	Barium	7440-39-3	47.4	ug/L	200			47.4	J	2	10	47.4	J
Metals	97-200	Beryllium	7440-41-7	0.42	ug/L	5			0.42	J			0.42	J
Metals	97-200	Calcium	7440-70-2	151000	ug/L	5000	114	570	151000				151000	
Metals	97-200	Chromium	7440-47-3	4.2	ug/L	10			4.2	J			4.2	J
Metals	97-200	Copper	7440-50-8	23.3	ug/L	25	90.7	453.5	25	U	10.5	52.5	25	U
Metals	97-200	Iron	7439-89-6	102	ug/L	100			102				102	
Metals	97-200	Magnesium	7439-95-4	42600	ug/L	5000			42600		193	965	42600	
Metals	97-200	Manganese	7439-96-5	9	ug/L	15			9	J	1	5	9	J
Metals	97-200	Mercury	7439-97-6	0.16	ug/L	0.2			0.16	J			0.16	J
Metals	97-200	Potassium	7440-09-7	13900	ug/L	5000			13900				13900	
Metals	97-200	Sodium	7440-23-5	249000	ug/L	5000			249000		687	3435	249000	
Metals	97-200	Vanadium	7440-62-2	39.9	ug/L	50	4.4	22	39.9	J			39.9	J
Metals	97-200	Zinc	7440-66-6	18.2	ug/L	20	12.3	61.5	20	U			20	U
<i>Metals</i>	<i>97-201</i>	<i>Barium</i>	<i>7440-39-3</i>	<i>2</i>	<i>ug/L</i>	<i>200</i>			<i>2</i>	<i>J</i>				
<i>Metals</i>	<i>97-201</i>	<i>Calcium</i>	<i>7440-70-2</i>	<i>345</i>	<i>ug/L</i>	<i>5000</i>	<i>114</i>	<i>570</i>	<i>5000</i>	<i>U</i>				
<i>Metals</i>	<i>97-201</i>	<i>Copper</i>	<i>7440-50-8</i>	<i>10.5</i>	<i>ug/L</i>	<i>25</i>			<i>10.5</i>	<i>J</i>				
<i>Metals</i>	<i>97-201</i>	<i>Iron</i>	<i>7439-89-6</i>	<i>43.3</i>	<i>ug/L</i>	<i>100</i>	<i>90.7</i>	<i>453.5</i>	<i>100</i>	<i>U</i>				
<i>Metals</i>	<i>97-201</i>	<i>Magnesium</i>	<i>7439-95-4</i>	<i>193</i>	<i>ug/L</i>	<i>5000</i>			<i>193</i>	<i>J</i>				
<i>Metals</i>	<i>97-201</i>	<i>Manganese</i>	<i>7439-96-5</i>	<i>1</i>	<i>ug/L</i>	<i>15</i>			<i>1</i>	<i>J</i>				
<i>Metals</i>	<i>97-201</i>	<i>Sodium</i>	<i>7440-23-5</i>	<i>687</i>	<i>ug/L</i>	<i>5000</i>			<i>687</i>	<i>J</i>				
<i>Metals</i>	<i>97-201</i>	<i>Vanadium</i>	<i>7440-62-2</i>	<i>7.4</i>	<i>ug/L</i>	<i>50</i>	<i>4.4</i>	<i>22</i>	<i>50</i>	<i>U</i>				
<i>Metals</i>	<i>97-201</i>	<i>Zinc</i>	<i>7440-66-6</i>	<i>15</i>	<i>ug/L</i>	<i>20</i>	<i>12.3</i>	<i>61.5</i>	<i>20</i>	<i>U</i>				
Metals	97-210	Aluminum	7429-90-5	47.1	ug/L	200	126	630	200	U			200	U
Metals	97-210	Arsenic	7440-38-2	13.6	ug/L	10			13.6				13.6	
Metals	97-210	Barium	7440-39-3	63.3	ug/L	200			63.3	J	0.9	4.5	63.3	J
Metals	97-210	Beryllium	7440-41-7	0.71	ug/L	5			0.71	J			0.71	J

Field Blank data are presented in *italic* font.

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(1) No values presented for field blanks

U = undetected at CRDL or CRQL  
J = estimated value, below CRDL or CRQL

Table B4-1. ERDF Leachate Data, Validation Process. (10 Sheets)

Class	Sample ID	Constituent	CAS#	Lab Sample Result	Unit	Detection Limit	Lab Blank Result	Lab Blank Validation Limit	Validated Result Based on Lab Blank	Validation Qualifier	Field Blank Result	Field Blank Validation Limit	Final Validated Result <sup>(1)</sup>	Final Data Qualifier
Metals	97-210	Calcium	7440-70-2	227000	ug/L	5000	124	620	227000				227000	
Metals	97-210	Copper	7440-50-8	10.2	ug/L	25			10.2	J			10.2	J
Metals	97-210	Iron	7439-89-6	61.6	ug/L	100	61.8	309	100	U			100	U
Metals	97-210	Magnesium	7439-95-4	65300	ug/L	5000	76.2	381	65300				65300	
Metals	97-210	Manganese	7439-96-5	6.2	ug/L	15			6.2	J			6.2	J
Metals	97-210	Potassium	7440-09-7	17000	ug/L	5000			17000				17000	
Metals	97-210	Sodium	7440-23-5	247000	ug/L	5000			247000		465	2325	247000	
Metals	97-210	Vanadium	7440-62-2	27.9	ug/L	50			27.9	J			27.9	J
Metals	97-210	Zinc	7440-66-6	19.5	ug/L	20	2.9	14.5	19.5	J			19.5	J
Metals	97-211	Aluminum	7429-90-5	33.7	ug/L	200	126	630	200	U				
Metals	97-211	Barium	7440-39-3	0.9	ug/L	200			0.9	J				
Metals	97-211	Calcium	7440-70-2	258	ug/L	5000	124	620	5000	U				
Metals	97-211	Iron	7439-89-6	18.9	ug/L	100	61.8	309	100	U				
Metals	97-211	Lead	7439-92-1	2	ug/L	3			2	J				
Metals	97-211	Sodium	7440-23-5	465	ug/L	5000			465	J				
Metals	97-211	Zinc	7440-66-6	10.9	ug/L	20	2.9	14.5	20	U				
Metals	97-220	Arsenic	7440-38-2	17.2	ug/L	10			17.2				17.2	
Metals	97-220	Barium	7440-39-3	39.3	ug/L	200			39.3	J	1.1	5.5	39.3	J
Metals	97-220	Beryllium	7440-41-7	0.33	ug/L	5			0.33	J			0.33	J
Metals	97-220	Calcium	7440-70-2	143000	ug/L	5000	110	550	143000				143000	
Metals	97-220	Copper	7440-50-8	10.9	ug/L	25			10.9	J	21.4	107	25	U
Metals	97-220	Iron	7439-89-6	57.1	ug/L	100	53.9	269.5	100	U			100	U
Metals	97-220	Magnesium	7439-95-4	43000	ug/L	5000			43000				43000	
Metals	97-220	Manganese	7439-96-5	4.4	ug/L	15			4.4	J			4.4	J
Metals	97-220	Potassium	7440-09-7	14000	ug/L	5000			14000				14000	
Metals	97-220	Sodium	7440-23-5	248000	ug/L	5000			248000		491	2455	248000	
Metals	97-220	Vanadium	7440-62-2	27.3	ug/L	50			27.3	J			27.3	J
Metals	97-220	Zinc	7440-66-6	28.1	ug/L	20	3.6	18	28.1		29.6	148	20	U
Metals	97-221	Barium	7440-39-3	1.1	ug/L	200			1.1	J				
Metals	97-221	Calcium	7440-70-2	311	ug/L	5000	110	550	5000	U				
Metals	97-221	Copper	7440-50-8	21.4	ug/L	25			21.4	J				
Metals	97-221	Iron	7439-89-6	26.8	ug/L	100	53.9	269.5	100	U				
Metals	97-221	Lead	7439-92-1	1.2	ug/L	3			1.2	J				

Field Blank data are presented in *italic font*.

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(1) No values presented for field blanks  
U = undetected at CRDL or CRQL  
J = estimated value, below CRDL or CRQL

Table B4-1. ERDF Leachate Data, Validation Process. (10 Sheets)

Class	Sample ID	Constituent	CAS#	Lab Sample Result	Unit	Detection Limit	Lab Blank Result	Lab Blank Validation Limit	Validated Result Based on Lab Blank	Validation Qualifier	Field Blank Result	Field Blank Validation Limit	Final Validated Result <sup>(1)</sup>	Final Data Qualifier
<i>Metals</i>	97-221	<i>Sodium</i>	7440-23-5	491	ug/L	5000			491	J				
<i>Metals</i>	97-221	<i>Zinc</i>	7440-66-6	29.6	ug/L	20	3.6	18	29.6					
Metals	97-230	Aluminum	7429-90-5	213	ug/L	200			213				213	
Metals	97-230	Arsenic	7440-38-2	32.6	ug/L	10			32.6				32.6	
Metals	97-230	Barium	7440-39-3	53.6	ug/L	200	0.67	3.35	53.6	J			53.6	J
Metals	97-230	Beryllium	7440-41-7	0.62	ug/L	5			0.62	J			0.62	J
Metals	97-230	Calcium	7440-70-2	110000	ug/L	5000	28.8	144	110000		297	1485	110000	
Metals	97-230	Copper	7440-50-8	14	ug/L	25			14	J	7.9	39.5	25	U
Metals	97-230	Iron	7439-89-6	353	ug/L	100	19.3	96.5	353				353	
Metals	97-230	Magnesium	7439-95-4	33500	ug/L	5000			33500				33500	
Metals	97-230	Manganese	7439-96-5	11.6	ug/L	15	1.7	8.5	11.6	J			11.6	J
Metals	97-230	Potassium	7440-09-7	10600	ug/L	5000			10600				10600	
Metals	97-230	Sodium	7440-23-5	179000	ug/L	5000			179000		495	2475	179000	
Metals	97-230	Vanadium	7440-62-2	34	ug/L	50			34	J			34	J
Metals	97-230	Zinc	7440-66-6	13.2	ug/L	20	6.8	34	20	U			20	U
<i>Metals</i>	97-231	<i>Barium</i>	7440-39-3	1.5	ug/L	200	0.67	3.35	200	U				
<i>Metals</i>	97-231	<i>Calcium</i>	7440-70-2	297	ug/L	5000	28.8	144	297	J				
<i>Metals</i>	97-231	<i>Copper</i>	7440-50-8	7.9	ug/L	25			7.9	J				
<i>Metals</i>	97-231	<i>Iron</i>	7439-89-6	47.9	ug/L	100	19.3	96.5	100	U				
<i>Metals</i>	97-231	<i>Manganese</i>	7439-96-5	1.5	ug/L	15	1.7	8.5	15	U				
<i>Metals</i>	97-231	<i>Sodium</i>	7440-23-5	495	ug/L	5000			495	J				
<i>Metals</i>	97-231	<i>Zinc</i>	7440-66-6	15.9	ug/L	20	6.8	34	20	U				
Metals	97-240	Arsenic	7440-38-2	22.5	ug/L	10			22.5				22.5	
Metals	97-240	Barium	7440-39-3	29.4	ug/L	200			29.4	J			29.4	J
Metals	97-240	Beryllium	7440-41-7	0.73	ug/L	5			0.73	J			0.73	J
Metals	97-240	Calcium	7440-70-2	107000	ug/L	5000	111	555	107000				107000	
Metals	97-240	Chromium	7440-47-3	3.8	ug/L	10			3.8	J			3.8	J
Metals	97-240	Copper	7440-50-8	17.7	ug/L	25	8.7	43.5	25	U			25	U
Metals	97-240	Iron	7439-89-6	56.9	ug/L	100	52.4	262	100	U			100	U
Metals	97-240	Magnesium	7439-95-4	32000	ug/L	5000			32000				32000	
Metals	97-240	Manganese	7439-96-5	4.6	ug/L	15			4.6	J			4.6	J
Metals	97-240	Potassium	7440-09-7	11300	ug/L	5000			11300				11300	
Metals	97-240	Sodium	7440-23-5	226000	ug/L	5000			226000		485	2425	226000	

Field Blank data are presented in *italic font*.

B-9

(1) No values presented for field blanks

U = undetected at CRDL or CROL

J = estimated value, below CRDL or CROL

Table B4-1. ERDF Leachate Data, Validation Process. (10 Sheets)

Class	Sample ID	Constituent	CAS#	Lab Sample Result	Unit	Detection Limit	Lab Blank Result	Lab Blank Validation Limit	Validated Result Based on Lab Blank	Validation Qualifier	Field Blank Result	Field Blank Validation Limit	Final Validated Result <sup>(1)</sup>	Final Data Qualifier
Metals	97-240	Vanadium	7440-62-2	31.9	ug/L	50			31.9	J			31.9	J
Metals	97-240	Zinc	7440-66-6	26	ug/L	20	8.1	40.5	20	U			20	U
Metals	97-241	Calcium	7440-70-2	290	ug/L	5000	111	555	5000	U				
Metals	97-241	Copper	7440-50-8	10.2	ug/L	25	8.7	43.5	25	U				
Metals	97-241	Iron	7439-89-6	11.1	ug/L	100	52.4	262	100	U				
Metals	97-241	Sodium	7440-23-5	485	ug/L	5000			485	J				
Metals	97-241	Zinc	7440-66-6	14.7	ug/L	20	8.1	40.5	20	U				
Metals	97-250	Arsenic	7440-38-2	22.8	ug/L	10			22.8				22.8	
Metals	97-250	Barium	7440-39-3	31.7	ug/L	200			31.7	J	1.9	9.5	31.7	J
Metals	97-250	Beryllium	7440-41-7	0.77	ug/L	5			0.77	J			0.77	J
Metals	97-250	Calcium	7440-70-2	113000	ug/L	5000	94.1	470.5	113000				113000	
Metals	97-250	Chromium	7440-47-3	7.9	ug/L	10	4	20	10	U			10	U
Metals	97-250	Copper	7440-50-8	6.9	ug/L	25	9.5	47.5	25	U			25	U
Metals	97-250	Iron	7439-89-6	58.5	ug/L	100	41.5	207.5	100	U			100	U
Metals	97-250	Magnesium	7439-95-4	32900	ug/L	5000	80	400	32900				32900	
Metals	97-250	Manganese	7439-96-5	6	ug/L	15			6	J	2.2	11	15	U
Metals	97-250	Potassium	7440-09-7	12700	ug/L	5000			12700				12700	
Metals	97-250	Sodium	7440-23-5	228000	ug/L	5000			228000		838	4190	228000	
Metals	97-250	Vanadium	7440-62-2	49.9	ug/L	50			49.9	J	13.8	69	50	U
Metals	97-250	Zinc	7440-66-6	8.9	ug/L	20	7	35	20	U			20	U
Metals	97-251	Barium	7440-39-3	1.9	ug/L	200			1.9	J				
Metals	97-251	Calcium	7440-70-2	328	ug/L	5000	94.1	470.5	5000	U				
Metals	97-251	Copper	7440-50-8	9.8	ug/L	25	9.5	47.5	25	U				
Metals	97-251	Iron	7439-89-6	30.3	ug/L	100	41.5	207.5	100	U				
Metals	97-251	Lead	7439-92-1	1	ug/L	3			1	J				
Metals	97-251	Magnesium	7439-95-4	285	ug/L	5000	80	400	5000	U				
Metals	97-251	Manganese	7439-96-5	2.2	ug/L	15			2.2	J				
Metals	97-251	Sodium	7440-23-5	838	ug/L	5000			838	J				
Metals	97-251	Vanadium	7440-62-2	13.8	ug/L	50			13.8	J				
Metals	97-251	Zinc	7440-66-6	17.1	ug/L	20	7	35	20	U				
Metals	97-260	Aluminum	7429-90-5	494	ug/L	200	131	655	200	U			200	U
Metals	97-260	Arsenic	7440-38-2	20.4	ug/L	10			20.4				20.4	
Metals	97-260	Barium	7440-39-3	35.9	ug/L	200			35.9	J	1.5	7.5	35.9	J

Field Blank data are presented in *italic font*.

B-10

(1) No values presented for field blanks

U = undetected at CRDL or CRQL

J = estimated value, below CRDL or CRQL

Table B4-1. ERDF Leachate Data, Validation Process. (10 Sheets)

Class	Sample ID	Constituent	CAS#	Lab Sample Result	Unit	Detection Limit	Lab Blank Result	Lab Blank Validation Limit	Validated Result Based on Lab Blank	Validation Qualifier	Field Blank Result	Field Blank Validation Limit	Final Validated Result <sup>(1)</sup>	Final Data Qualifier
Metals	97-260	Calcium	7440-70-2	106000	ug/L	5000	111	555	106000		648	3240	106000	
Metals	97-260	Chromium	7440-47-3	12	ug/L	10			12				12	
Metals	97-260	Copper	7440-50-8	6.4	ug/L	25			6.4	J	12.5	62.5	25	U
Metals	97-260	Iron	7439-89-6	798	ug/L	100	66.4	332	798				798	
Metals	97-260	Lead	7439-92-1	1.8	ug/L	3	2.9	14.5	3	U			3	U
Metals	97-260	Magnesium	7439-95-4	32200	ug/L	5000			32200				32200	
Metals	97-260	Manganese	7439-96-5	17.7	ug/L	15			17.7				17.7	
Metals	97-260	Potassium	7440-09-7	12800	ug/L	5000			12800				12800	
Metals	97-260	Sodium	7440-23-5	191000	ug/L	5000			191000		641	3205	191000	
Metals	97-260	Vanadium	7440-62-2	28.9	ug/L	50			28.9	J			28.9	J
Metals	97-260	Zinc	7440-66-6	49.7	ug/L	20	5	25	49.7				49.7	
Metals	97-261	Barium	7440-39-3	1.5	ug/L	200			1.5	J				
Metals	97-261	Calcium	7440-70-2	648	ug/L	5000	111	555	648	J				
Metals	97-261	Copper	7440-50-8	12.5	ug/L	25			12.5	J				
Metals	97-261	Iron	7439-89-6	50.6	ug/L	100	66.4	332	100	U				
Metals	97-261	Lead	7439-92-1	1.7	ug/L	3	2.9	14.5	3	U				
Metals	97-261	Sodium	7440-23-5	641	ug/L	5000			641	J				
Metals	97-261	Zinc	7440-66-6	22.9	ug/L	20	5	25	20	U				
Metals	97-270	Aluminum	7429-90-5	422	ug/L	200	56.6	283	422	J			422	J
Metals	97-270	Arsenic	7440-38-2	22.1	ug/L	10			22.1				22.1	
Metals	97-270	Barium	7440-39-3	39.6	ug/L	200			39.6	J	4.2	21	39.6	J
Metals	97-270	Beryllium	7440-41-7	0.76	ug/L	5			0.76	J			0.76	J
Metals	97-270	Calcium	7440-70-2	110000	ug/L	5000	43.8	219	110000		1600	8000	110000	
Metals	97-270	Chromium	7440-47-3	13.9	ug/L	10			13.9				13.9	
Metals	97-270	Copper	7440-50-8	14.4	ug/L	25			14.4	J	12.2	61	25	U
Metals	97-270	Iron	7439-89-6	666	ug/L	100	33.6	168	666				666	
Metals	97-270	Magnesium	7439-95-4	32700	ug/L	5000	52.9	264.5	32700		321	1605	32700	
Metals	97-270	Manganese	7439-96-5	17.5	ug/L	15	0.61	3.05	17.5				17.5	
Metals	97-270	Potassium	7440-09-7	12600	ug/L	5000			12600				12600	
Metals	97-270	Sodium	7440-23-5	191000	ug/L	5000	90.5	452.5	191000		2270	11350	191000	
Metals	97-270	Vanadium	7440-62-2	34.9	ug/L	50			34.9	J			34.9	J
Metals	97-270	Zinc	7440-66-6	104	ug/L	20	6.1	30.5	104		36.5	182.5	20	U
Metals	97-271	Aluminum	7429-90-5	56	ug/L	200	56.6	283	200	U				

Field Blank data are presented in *italic font*.

B-11

(1) No values presented for field blanks

U = undetected at CRDL or CRQL

J = estimated value, below CRDL or CRQL

Table B4-1. ERDF Leachate Data, Validation Process. (10 Sheets)

Class	Sample ID	Constituent	CAS#	Lab Sample Result	Unit	Detection Limit	Lab Blank Result	Lab Blank Validation Limit	Validated Result Based on Lab Blank	Validation Qualifier	Field Blank Result	Field Blank Validation Limit	Final Validated Result <sup>(1)</sup>	Final Data Qualifier
<i>Metals</i>	97-271	<i>Barium</i>	7440-39-3	4.2	ug/L	200			4.2	J				
<i>Metals</i>	97-271	<i>Calcium</i>	7440-70-2	1600	ug/L	5000	43.8	219	1600	J				
<i>Metals</i>	97-271	<i>Cobalt</i>	7440-48-4	2.9	ug/L	50	3.2	16	50	U				
<i>Metals</i>	97-271	<i>Copper</i>	7440-50-8	12.2	ug/L	25			12.2	J				
<i>Metals</i>	97-271	<i>Iron</i>	7439-89-6	63.3	ug/L	100	33.6	168	100	U				
<i>Metals</i>	97-271	<i>Lead</i>	7439-92-1	2.1	ug/L	3	3	15	3	U				
<i>Metals</i>	97-271	<i>Magnesium</i>	7439-95-4	321	ug/L	5000	52.9	264.5	321	J				
<i>Metals</i>	97-271	<i>Manganese</i>	7439-96-5	1.6	ug/L	15	0.61	3.05	15	U				
<i>Metals</i>	97-271	<i>Sodium</i>	7440-23-5	2270	ug/L	5000	90.5	452.5	2270	J				
<i>Metals</i>	97-271	<i>Zinc</i>	7440-66-6	36.5	ug/L	20	6.1	30.5	36.5					
Metals	97-280	Arsenic	7440-38-2	18.8	ug/L	10	2.2	11	18.8				18.8	
Metals	97-280	Barium	7440-39-3	34.4	ug/L	200	0.88	4.4	34.4	J			34.4	J
Metals	97-280	Beryllium	7440-41-7	1.5	ug/L	5	0.68	3.4	5	U			5	U
Metals	97-280	Calcium	7440-70-2	113000	ug/L	5000	306	1530	113000				113000	
Metals	97-280	Chromium	7440-47-3	13.5	ug/L	10			13.5				13.5	
Metals	97-280	Copper	7440-50-8	17.4	ug/L	25			17.4	J	7.3	36.5	25	U
Metals	97-280	Iron	7439-89-6	71.3	ug/L	100	138	690	100	U			100	U
Metals	97-280	Magnesium	7439-95-4	34100	ug/L	5000	323	1615	34100				34100	
Metals	97-280	Manganese	7439-96-5	4.8	ug/L	15	1.2	6	15	U			15	U
Metals	97-280	Potassium	7440-09-7	14200	ug/L	5000			14200				14200	
Metals	97-280	Selenium	7782-49-2	3.1	ug/L	5			3.1	J	2.7	13.5	5	U
Metals	97-280	Sodium	7440-23-5	191000	ug/L	5000	128	640	191000				191000	
Metals	97-280	Vanadium	7440-62-2	38.4	ug/L	50	3.8	19	38.4	J			38.4	J
Metals	97-280	Zinc	7440-66-6	15.6	ug/L	20			15.6	J	12.4	62	20	U
<i>Metals</i>	97-281	<i>Barium</i>	7440-39-3	1.1	ug/L	200	0.88	4.4	200	U				
<i>Metals</i>	97-281	<i>Beryllium</i>	7440-41-7	0.45	ug/L	5	0.68	3.4	5	U				
<i>Metals</i>	97-281	<i>Calcium</i>	7440-70-2	354	ug/L	5000	306	1530	5000	U				
<i>Metals</i>	97-281	<i>Copper</i>	7440-50-8	7.3	ug/L	25			7.3	J				
<i>Metals</i>	97-281	<i>Iron</i>	7439-89-6	29.7	ug/L	100	138	690	100	U				
<i>Metals</i>	97-281	<i>Lead</i>	7439-92-1	1.7	ug/L	3			1.7	J				
<i>Metals</i>	97-281	<i>Magnesium</i>	7439-95-4	112	ug/L	5000	323	1615	5000	U				
<i>Metals</i>	97-281	<i>Manganese</i>	7439-96-5	1.2	ug/L	15	1.2	6	15	U				
<i>Metals</i>	97-281	<i>Selenium</i>	7782-49-2	2.7	ug/L	5			2.7	J				

Field Blank data are presented in *italic font*.

B-12

(1) No values presented for field blanks

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Table B4-1. ERDF Leachate Data, Validation Process. (10 Sheets)

Class	Sample ID	Constituent	CAS#	Lab Sample Result	Unit	Detection Limit	Lab Blank Result	Lab Blank Validation Limit	Validated Result Based on Lab Blank	Validation Qualifier	Field Blank Result	Field Blank Validation Limit	Final Validated Result <sup>(1)</sup>	Final Data Qualifier
<i>Metals</i>	<i>97-281</i>	<i>Sodium</i>	<i>7440-23-5</i>	<i>636</i>	<i>ug/L</i>	<i>5000</i>	<i>128</i>	<i>640</i>	<i>5000</i>	<i>U</i>				
<i>Metals</i>	<i>97-281</i>	<i>Vanadium</i>	<i>7440-62-2</i>	<i>5.2</i>	<i>ug/L</i>	<i>50</i>	<i>3.8</i>	<i>19</i>	<i>50</i>	<i>U</i>				
<i>Metals</i>	<i>97-281</i>	<i>Zinc</i>	<i>7440-66-6</i>	<i>12.4</i>	<i>ug/L</i>	<i>20</i>			<i>12.4</i>	<i>J</i>				
Metals	97-290	Arsenic	7440-38-2	25.2	ug/L	10			25.2				25.2	
Metals	97-290	Barium	7440-39-3	44.3	ug/L	200	0.44	2.2	44.3	J			44.3	J
Metals	97-290	Beryllium	7440-41-7	0.084	ug/L	5	0.45	2.25	5	U			5	U
Metals	97-290	Calcium	7440-70-2	119000	ug/L	5000	58.6	293	119000				119000	
Metals	97-290	Chromium	7440-47-3	7.2	ug/L	10			7.2	J			7.2	J
Metals	97-290	Copper	7440-50-8	27.4	ug/L	25	7	35	25	U			25	U
Metals	97-290	Iron	7439-89-6	122	ug/L	100	46.1	230.5	100	U			100	U
Metals	97-290	Magnesium	7439-95-4	36100	ug/L	5000	161	805	36100				36100	
Metals	97-290	Manganese	7439-96-5	12.2	ug/L	15	1.5	7.5	12.2	J			12.2	J
Metals	97-290	Potassium	7440-09-7	14100	ug/L	5000			14100				14100	
Metals	97-290	Sodium	7440-23-5	219000	ug/L	5000	111	555	219000		827	4135	219000	
Metals	97-290	Vanadium	7440-62-2	51.6	ug/L	50	9.3	46.5	51.6				51.6	
Metals	97-290	Zinc	7440-66-6	13.9	ug/L	20			13.9	J	8.7	43.5	20	U
<i>Metals</i>	<i>97-291</i>	<i>Barium</i>	<i>7440-39-3</i>	<i>1.3</i>	<i>ug/L</i>	<i>200</i>	<i>0.44</i>	<i>2.2</i>	<i>200</i>	<i>U</i>				
<i>Metals</i>	<i>97-291</i>	<i>Cadmium</i>	<i>7440-43-9</i>	<i>4.2</i>	<i>ug/L</i>	<i>5</i>			<i>4.2</i>	<i>J</i>				
<i>Metals</i>	<i>97-291</i>	<i>Calcium</i>	<i>7440-70-2</i>	<i>291</i>	<i>ug/L</i>	<i>5000</i>	<i>58.6</i>	<i>293</i>	<i>5000</i>	<i>U</i>				
<i>Metals</i>	<i>97-291</i>	<i>Copper</i>	<i>7440-50-8</i>	<i>12.9</i>	<i>ug/L</i>	<i>25</i>	<i>7</i>	<i>35</i>	<i>25</i>	<i>U</i>				
<i>Metals</i>	<i>97-291</i>	<i>Iron</i>	<i>7439-89-6</i>	<i>28.2</i>	<i>ug/L</i>	<i>100</i>	<i>46.1</i>	<i>230.5</i>	<i>100</i>	<i>U</i>				
<i>Metals</i>	<i>97-291</i>	<i>Magnesium</i>	<i>7439-95-4</i>	<i>180</i>	<i>ug/L</i>	<i>5000</i>	<i>161</i>	<i>805</i>	<i>5000</i>	<i>U</i>				
<i>Metals</i>	<i>97-291</i>	<i>Manganese</i>	<i>7439-96-5</i>	<i>2</i>	<i>ug/L</i>	<i>15</i>	<i>1.5</i>	<i>7.5</i>	<i>15</i>	<i>U</i>				
<i>Metals</i>	<i>97-291</i>	<i>Sodium</i>	<i>7440-23-5</i>	<i>827</i>	<i>ug/L</i>	<i>5000</i>	<i>111</i>	<i>555</i>	<i>827</i>	<i>J</i>				
<i>Metals</i>	<i>97-291</i>	<i>Vanadium</i>	<i>7440-62-2</i>	<i>10.9</i>	<i>ug/L</i>	<i>50</i>	<i>9.3</i>	<i>46.5</i>	<i>50</i>	<i>U</i>				
<i>Metals</i>	<i>97-291</i>	<i>Zinc</i>	<i>7440-66-6</i>	<i>8.7</i>	<i>ug/L</i>	<i>20</i>			<i>8.7</i>	<i>J</i>				
Metals	97-292	Aluminum	7429-90-5	45.6	ug/L	200	68.8	344	200	U			200	U
Metals	97-292	Arsenic	7440-38-2	25.9	ug/L	10			25.9				25.9	
Metals	97-292	Barium	7440-39-3	40.2	ug/L	200	0.44	2.2	40.2	J			40.2	J
Metals	97-292	Beryllium	7440-41-7	0.78	ug/L	5	0.45	2.25	5	U			5	U
Metals	97-292	Calcium	7440-70-2	108000	ug/L	5000	58.6	293	108000				108000	
Metals	97-292	Chromium	7440-47-3	6.1	ug/L	10			6.1	J			6.1	J
Metals	97-292	Copper	7440-50-8	25.9	ug/L	25	7	35	25	U			25	U

Field Blank data are presented in *italic font*.

B-13

(1) No values presented for field blanks

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J = estimated value, below CRDL or CRQL

Table B4-1. ERDF Leachate Data, Validation Process. (10 Sheets)

Class	Sample ID	Constituent	CAS#	Lab Sample Result	Unit	Detection Limit	Lab Blank Result	Lab Blank Validation Limit	Validated Result Based on Lab Blank	Validation Qualifier	Field Blank Result	Field Blank Validation Limit	Final Validated Result <sup>(1)</sup>	Final Data Qualifier
Metals	97-292	Iron	7439-89-6	123	ug/L	100	46.1	230.5	100	U			100	U
Metals	97-292	Magnesium	7439-95-4	32900	ug/L	5000	161	805	32900				32900	
Metals	97-292	Manganese	7439-96-5	11.2	ug/L	15	1.5	7.5	11.2	J			11.2	J
Metals	97-292	Potassium	7440-09-7	14600	ug/L	5000			14600				14600	
Metals	97-292	Sodium	7440-23-5	199000	ug/L	5000	111	555	199000		827	4135	199000	
Metals	97-292	Vanadium	7440-62-2	49	ug/L	50	9.3	46.5	49	J			49	J
Metals	97-292	Zinc	7440-66-6	15.2	ug/L	20			15.2	J	8.7	43.5	20	U
SVOA	96-103	Bis(2-ethylhexyl) phthalate	117-81-7	8	ug/L	10	3	30	10	U			10	U
SVOA	96-104	Bis(2-ethylhexyl) phthalate	117-81-7	14	ug/L	10	3	30	10	U			10	U
SVOA	96-104	Butylbenzylphthalate	85-68-7	8	ug/L	10			8	J			8	J
SVOA	96-104	Di-n-octylphthalate	117-84-0	5	ug/L	10			5	J			5	J
SVOA	97-201	Diethyl phthalate	84-66-2	7	ug/L	10			7	J				
SVOA	97-201	Dimethyl phthalate	131-11-3	6	ug/L	10			6	J				
SVOA	97-211	Diethyl phthalate	84-66-2	20	ug/L	10			20					
SVOA	97-211	Dimethyl phthalate	131-11-3	11	ug/L	10			11					
SVOA	97-220	Bis(2-ethylhexyl) phthalate	117-81-7	1	ug/L	10			1	J			1	J
SVOA	97-240	Bis(2-ethylhexyl) phthalate	117-81-7	2	ug/L	10	15	150	10	U			10	U
SVOA	97-241	Diethyl phthalate	84-66-2	1	ug/L	10			1	J				
SVOA	97-250	Bis(2-ethylhexyl) phthalate	117-81-7	6	ug/L	10			6	J			6	J
SVOA	97-251	Diethyl phthalate	84-66-2	10	ug/L	10			10					
SVOA	97-260	Bis(2-ethylhexyl) phthalate	117-81-7	1	ug/L	10			1	J			1	J
SVOA	97-270	Bis(2-ethylhexyl) phthalate	117-81-7	6	ug/L	10			6	J			6	J
SVOA	97-271	Bis(2-ethylhexyl) phthalate	117-81-7	6	ug/L	10	5	50	10	U				
SVOA	97-271	Diethyl phthalate	84-66-2	18	ug/L	10			18					
SVOA	97-271	Dimethyl phthalate	131-11-3	6	ug/L	10			6	J				

Field Blank data are presented in *italic font*.

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(1) No values presented for field blanks

U = undetected at CRDL or CROL

J = estimated value, below CRDL or CROL

Table B4-1. ERDF Leachate Data, Validation Process. (10 Sheets)

Class	Sample ID	Constituent	CAS#	Lab Sample Result	Unit	Detection Limit	Lab Blank Result	Lab Blank Validation Limit	Validated Result Based on Lab Blank	Validation Qualifier	Field Blank Result	Field Blank Validation Limit	Final Validated Result <sup>(1)</sup>	Final Data Qualifier
SVOA	97-280	Bis(2-ethylhexyl) phthalate	117-81-7	8	ug/L	10	8	80	10	U			10	U
SVOA	97-290	Bis(2-ethylhexyl) phthalate	117-81-7	14	ug/L	10			14				14	
SVOA	97-290	Butylbenzylphthalate	85-68-7	9	ug/L	10			9	J			9	J
SVOA	97-292	Bis(2-ethylhexyl) phthalate	117-81-7	8	ug/L	10			8	J			8	J
SVOA	97-292	Butylbenzylphthalate	85-68-7	9	ug/L	10			9	J			9	J
VOA	96-102B	<i>Chloroform</i>	67-66-3	1	ug/L	10			1	J				
VOA	97-221	<i>Chloroform</i>	67-66-3	4	ug/L	10			4	J				
VOA	97-230	Dichloromethane (Methylene Chloride)	75-09-2	1	ug/L	10	6	60	10	U			10	U
VOA	97-250	2-Propanone (Acetone)	67-64-1	14	ug/L	10	35	350	14	U			14	U
VOA	97-250	Dichloromethane (Methylene Chloride)	75-09-2	2	ug/L	10	6	60	10	U			10	U
VOA	97-251	2-Propanone (Acetone)	67-64-1	12	ug/L	10	35	350	12	U				
VOA	97-251	<i>Chloroform</i>	67-66-3	2	ug/L	10			2	J				
VOA	97-251	Dichloromethane (Methylene Chloride)	75-09-2	1	ug/L	10	6	60	10	U				
VOA	97-270	Toluene	108-88-3	2	ug/L	10			2	J			2	J
VOA	97-281	<i>Chloroform</i>	67-66-3	2	ug/L	10			2	J				
VOA	97-281	<i>Toluene</i>	108-88-3	4	ug/L	5			4	J				
VOA	97-290	2-Propanone (Acetone)	67-64-1	17	ug/L	20			17	J			17	J
VOA	97-291	2-Propanone (Acetone)	67-64-1	8	ug/L	20	10	100	20	U				
VOA	97-292	2-Propanone (Acetone)	67-64-1	9	ug/L	20	10	100	20	U			20	U

Field Blank data are presented in *italic font*.

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(1) No values presented for field blanks

U = undetected at CRDL or CRQL

J = estimated value, below CRDL or CRQL

