Evaluation of Historical and Analytical Data on the TAN TSF-07 Disposal Pond

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ABSTRACT

The Technical Support Facility (TSF)-07 Disposal Pond, located at Test Area North at the Idaho National Engineering Laboratory, has been identified as part of Operable Unit 1-06 under the Comprehensive Environmental Response, Compensation, and Liability Act. The Environmental Restoration and Waste Management Department is conducting an evaluation of existing site characterization data for the TSF-07 Disposal Pond Track 1 investigation. The results from the site characterization data will be used to determine whether the operable unit will undergo a Track 2 investigation, an interim action, a remedial investigation/feasibility study, or result in a no-action decision. This report summarizes activities relevant to wastewaters discharged to the pond and characterization efforts conducted from 1982 through 1991. Plan view and vertical distribution maps of the significant contaminants contained in the pond are included. From this evaluation it was determined that cobalt-60, cesium-137, americium-241, mercury, chromium, and thallium are significant contaminants for soils. This report also evaluates the migration tendencies of the significant contaminants into the perched water zone under the pond and the surrounding terrain to support the investigation.

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ACRONYMS

AA	atomic absorption
CEC	cation exchange capacity
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CH	core hole
CLP	contract laboratory program
COCA	Consent Order and Compliance Agreement
CRQL	contract-required quantitation limit
CTF	Contained Test Facility
DOE	Department of Energy
DOE-HQ	Department of Energy Headquarters
DOE-ID	Department of Energy Idaho Operations Office
EPA	Environmental Protection Agency
EP TOX	extraction procedure for toxicity
FFA/CO	Federal Facility Agreement/Consent Order
FY	fiscal year
GC	gas chromatography
HI	hazard index
ICP	inductively coupled plasma
INEL	Idaho National Engineering Laboratory
IWMIS	Industrial Waste Management Information System
LOFT	Loss-of-Fluid Test (Facility)
MCL	maximum contaminant level
MS	mass spectrometry
NA	not applicable
ND	no data
PCB	polychlorinated biphenyl
RCRA	Resource Conservation and Recovery Act
RFI	RCRA facility investigation
RI/FS	remedial investigation/feasibility study
SE	sampling event
TAN	Test Area North
TCLP	toxicity characteristic leaching procedure
TRA	Test Reactor Area
TSF	Technical Support Facility
VOA	volatile organic analysis
VOC	volatile organic compound

Evaluation of Historical and Analytical Data on the TAN TSF-07 Disposal Pond

1. INTRODUCTION

This report was prepared by the EG&G Idaho, Inc., Environmental Restoration and Waste Management Department for the Test Area North groundwater Administrative Record. The Technical Support Facility (TSF)-07 disposal pond, also referred to as the TSF evaporation pond, is located on the southwest side of Test Area North (TAN) at the Idaho National Engineering Laboratory (INEL).

The TSF-07 disposal pond was constructed to replace the TSF-05 injection well and began to receive wastewater in September 1972. The TSF-07 disposal pond is in an unlined area encompassing approximately 35 acres, surrounded by a 1.5-m (5-ft) berm. The pond received wastewater from a variety of sources. The contaminants included sanitary waste discharges, and hazardous and radiological contaminants that originated from TAN service buildings and processes. Because contaminants were detected in the pond, it was classified as a land disposal unit under the Consent Order Compliance Agreement (COCA) and identified as COCA Unit TSF-07.

On December 9, 1991, a Federal Facility Agreement and Consent Order (FFA/CO) was signed between the Department of Energy (DOE) Idaho Operations Office, the Environmental Protection Agency (EPA), and the State of Idaho Department of Health and Welfare. This superseded the COCA agreement. The FFA/CO dictated that existing COCA units, including the TSF-07 disposal pond, be moved from a Resource Conservation and Recovery Act (RCRA) process to a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process. The pond is part of Operable Unit 1-06 and will be undergoing a Track 1 investigation in fiscal year (FY) 1993. The Track 1 investigation will determine whether the disposal pond is required to undergo a Track 2 investigation, an interim action, a remedial investigation/feasibility study (RI/FS), or result in a no-action decision.

This report summarizes activities relevant to wastewaters discharged to the pond and characterization efforts conducted from 1982 through 1991. The results of sampling and characterization investigations (see Section 3) are evaluated to determine potential migration of significant contaminants into the perched water body under the pond and the surrounding terrain. Plan view and vertical profile maps showing the distribution of major contaminants have been prepared for major sampling events and are included in this report.

1.1 General Site Description

The INEL is a 2,315 km² (894 mi²) government-owned, contractor-operated facility in southeast Idaho that is managed under a Department of Energy Idaho Operations Office (DOE-ID) contract. TAN, located at the northern end of INEL, is managed and operated under the DOE-ID contract by EG&G Idaho, with the exception of the Specific Manufacturing Capability, which is operated by Babcock & Wilcox Idaho, Inc. (Figure 1). TAN was initially built between 1954 and 1961 to support the Aircraft Nuclear Propulsion Program sponsored by the U.S. Air Force and the Atomic Energy Commission. The TAN facilities and the location of the TSF-07 disposal pond are shown in Figure 2.

Figure 1. Location of the INEL site in relation to surrounding areas.

Figure 2. Map of TAN showing the location of the TSF-07 disposal pond.

1.1.1 Geology

The geology at Test Area North is similar to that of other locations on the INEL, and generally consists of basalt flows intercalated with sedimentary interbeds. The surficial deposits at TAN are composed of playa and lacustrine sediments derived from Birch Creek and the ancient Lake Terreton. Loess, a wind blow sediment, is also prevalent. This report is constrained to the TSF-07 disposal pond; therefore, only the surficial sediments are pertinent to the discussion. A detailed discussion of the geology of the INEL and TAN can be found in the 1992 RI/FS work plan (EG&G Idaho 1992) and the draft 1993 remedial investigation final report.^a

Based on auger holes drilled in the TSF-07 disposal pond during the TAN subsurface investigation (sampling event 4 as described in Section 3), the surficial sediments underlying the pond are 14.6–19.5 m (48–64 ft) thick (see Table 1). Figure 3, an isopatch map of sediment thickness at TAN, illustrates the depth to basalt.

Mineralogy of Soils at Depth. The Birch Creek playa deposits that cover approximately 13 km² (5 mi²) to the west and northwest of TAN (Nace et al. 1956) are representative of surficial deposits near the TSF-07 disposal pond. These playa deposits consist of poorly sorted, fine-grained, light gray to light tan sand, silt, and clay that are typically reworked Terreton Lake sediments. The playa deposits are classified generally as clayey, sandy silt with 14% clay, 5–20% sand, and 50–70% silt (Nace et al. 1956.)

The Terreton Lake bed sediments generally underlie the playa deposits and are exposed at the surface in the southern and eastern portions of TAN. These deposits are typically sandy and clayey silt, with lesser amounts of relatively pure clay, silt, and fine gravel (Nace et al. 1956). Table 2 summarizes the percentage of clay, silt, sand, and gravel from the samples collected. Sample numbers 1–5 were collected from the Terreton Lake bed sediments, and sample numbers 6–9 were collected from the beach and bar deposits associated with the Terreton Lake beds. Sample numbers 1–3 are similar in clay and silt composition, and samples 3, 4, 8, and 9 are less abundant in terms of the pure clay and silt fraction. Sample 5 contains a high percentage of silt compared to the other samples. Samples 1, 5, 6, 7, and 8 exhibited a minimum amount of 50% of silts, with sample 4 and 9 exhibiting a much smaller percentage of this size fraction. The distribution of sample six is closest to the mean distribution of the materials.

Properties of Surface Materials. The geology of the INEL Site has been studied extensively since the early 1950s. The geological properties that have been measured include mineralogy, cation exchange capacity, and sorption coefficients. Information presented below provides an idea of the normal values expected at the INEL, and where available, for Test Area North.

Mineralogy. The mineralogy of the silt and clay size fractions has been determined for the surficial sediments at 29 locations in the northern part of the INEL. The clay size fraction is relatively impure mineralogically, containing an average of only 68% clay minerals (presented in Table 3). The common clay minerals are montmorillonite, hydrous mica (illite), and kaolinite. The silt and sand size

a. EG&G Idaho, Inc., TAN Groundwater Remedial Investigation Report (Draft), EGG-ER-10643, February 1993.

Table 1. Thickness of the surficial sediments near the TSF-07 disposal pond.

Well number	Location	Thickness of surficial sediments (ft)
TSF Inj	TSF	37.5
TSFAG-03 ^a	TSF	53.0
TSFAG-04 ^a	TSF	48.0
TSFAG-05	TSF	53.5
TSFAG-07	TSF	64.0
TAN 9	TSF	24.5
TAN 10	TSF	58.0
TAN 10A	TSF	38.0
TAN 11	TSF	48.0
TAN 12	TSF	56.4
TAN 13	TSF	41.4
TAN 13A	TSF	39.0
TAN 14	TSF	40.5
TAN 20	TSF	45.0
FET-1	East of CTF	38.0
FET-2	East of CTF	39.0
TAN Disp2	TSF	37.0
TAN Disp3	NW of TSF	48.0
TAN-CH1	NE of TSF	46.3

a. Borehole locations.

particles are composed of quartz, calcite, feldspar, and dolomite. This mineralogic difference between the two size fractions suggests that little of the clay has formed in situ by the devitrification of feldspars but has been transported to the area by wind and water (Nace et al. 1956). One sample taken nearest the TSF-07 disposal pond had a clay fraction dominated by hydrous mica and kaolinite, with montmorillonite and quartz as subordinate minerals.

Cation Exchange Capacity and Sorption Coefficients. Cation exchange capacity (CEC) is a measure of the ability of a material to remove cations from solution by exchanging them for cations held loosely within the structure of the material (Rightmire 1984). CEC is an important parameter in controlling the migration of contaminants. CECs have been determined for a large number of surface materials throughout the INEL and are presented in Table 4. The CECs are generally low, reflecting the coarse-grained nature of most alluvial material at the INEL. CECs for surficial materials near the TSF-07 disposal pond are probably in the range of 10 to 40 meq/100 g, assuming those materials have the particle size distribution typical of the lacustrine deposits previously described.

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Figure 3. Isopach map of sediment thickness at TAN.

Table 2. Total percentage of clay and silt composition of representative samples collected from the Terreton Lake beds and the associated area.^a

Sample number	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Depth below land surface (ft)
1	27	50	23	0	3.8–4.3
2	45	48	7	0	5.4–5.8
3	21	27	52	0	0.0–0.5
4	12	19	69	0	0.4–0.8
5	0	94	6	0	6.5–6.9
6	12	58	30	0	1.0
7	8	72	20	0	10.0
8	0	58	42	0	15.0
9	6	14	92	0	2.4–2.9

a. Reference Nace et al. (1956) for exact sample coordinate location.

Because no studies have been performed on the ability of soils near TAN to retain radionuclides, the results from a study by Schmalz (1977) at the Test Reactor Area (TRA) of the INEL are presented. Sorption coefficients are determined as

$$K_d = C_s/C_w$$

where

K_d = sorption coefficient, mL/g

C_s = concentration of radionuclide on soil, mCi/g

C_w = concentration of radionuclide in water, mCi/mL.

The sorption coefficients were measured in batch experiments, measured in laboratory column experiments, and calculated from soil and water samples collected in the field. Values (K_d) for cesium ranged from a low of 285 mL/g for batch experiments to a range of 450 to 900 mL/g calculated from field data. Values (K_d) for strontium ranged from a low of 7.2 mL/g for batch experiments to 40 mL/g calculated from field data. Because the field data reflect the most realistic conditions for sorption, these values would be most indicative of the sorptive properties of the Big Lost River alluvium (although the soil properties discussed here are not part of the TAN area, it is the only sorption data currently available at the INEL).

Table 3. Average mineral composition of the silt and clay size fractions from samples collected at the northern part of the INEL.

	Clay (%)	Silt (%)
Clay minerals		
Montmorillonite	34	8
Hydrous mica	21	7
Kaolinite	13	—
Quartz	14	48
Calcite	13	20
Feldspar	<5	8
Dolomite	—	9
Total	100	100

Note: Twenty-nine samples were used in this analysis.
(Reference: Nace, et al. 1956)

In a study of sorption of plutonium on INEL soils (Hardy 1991), values (K_d) were measured for plutonium by using batch experiments and a range of initial plutonium concentrations from 10^{-8} to 10^{-6} mole/L. The sorption coefficients ranged from 140 to 5,000 mL/g, with a geometric mean of 1,160 mL/g. The ability to reverse the sorption process was also evaluated by running elution experiments on soil columns. In no case was more than 2% of the total sorbed plutonium removed from the soil by leaching of the column.

1.1.2 Hydrology

Surface water at the INEL comes from streams draining through intermountain valleys to the west and north, localized snowmelt, and rain. Streams entering the INEL include the Big Lost River, Little Lost River, and Birch Creek. Water from these streams does not reach the TSF-07 disposal pond. The RI/FS work plan (EG&G Idaho 1992) describes the surface and groundwater hydrology of the TAN area in detail, so it is not discussed here.

Perched Water Zone. Perched water was encountered beneath the TSF-07 disposal pond during the 1989 TAN RCRA Facility Investigation (RFI) characterization effort (EG&G Idaho 1988). The primary layer responsible for creating the perched water beneath the pond is a clay layer at the basalt/surficial sediment interface. The perching results from fractures in the basalt being filled by the

Table 4. Summary of cation exchange capacity of sediments and basalt.

Type of sample	Number of samples	Average range	CEC (meq/100g)
<u>Surface sediments</u>			
Gravel			
Coarse, clean	2	1.0–2.9	2.0
Sandy	52	1.4–15.6	4.1
Sand			
Clean	19	1.6–18.0	7.6
Silty	24	1.8–23.6	8.5
Silty and clayey	21	3.3–20.0	10.3
Silty, windblown	5	3.0–7.5	5.2
Silt			
Clean	4	6.2–34.8	20.4
Sandy	9	5.3–38.0	21.9
Sandy and clayey	17	7.1–30.4	13.5
Clayey	3	7.5–42.0	20.3
Clay, silty	1	—	13.7
Soil over silicic rock	1	—	4.4
<u>Basalt</u>			
Sieve fraction			
0.5 mm	6	0.4–1.4	0.8
0.5–0.62 mm	8	0.6–12.2	3.9
0.62 mm	1	—	2.3

(Reference: Nace et al. 1956)

clay, thereby decreasing the permeability of the area.

The lateral extent of the perched water is not precisely known. However, nine groundwater monitoring wells and one core hole (CH) were installed during this investigation. These are TAN-9, TAN-10, TAN-10A, TAN-11, TAN-12, TAN-13, TAN-13A, TAN-14, TAN-20, and CH-1 (see Figure 4). These wells were drilled outside the pond berm without encountering perched water (see Figure 3 for well locations relative to the pond).

Five auger holes were also drilled. Three of the five holes, TSFAG-03, TSFAG-04, and TSFAG-06, were drilled inside the berm without encountering perched water. The two auger holes where

perched water was encountered were converted to perched water wells (TSFAG-05 and TSFAG-07) (Figure 4). These wells were installed during the RFI characterization activities. Slug tests were conducted on the wells on June 14, 1990, by EG&G Idaho. During this testing, it was determined that the depth to basalt is 15.5 m (51 ft) and the depth to water for TSFAG-05 was 12.7 m (41.75 ft) with a saturated thickness of 2.8 m (9.25 ft.). The depth to water in TSFAG-07 was 5.5 m (18.08 ft) and the saturated thickness was 12.1 m (39.92 ft). Hydraulic conductivity values were calculated from these tests and are presented in Table 5.

The hydraulic conductivity values are quite low, near the range of values for clay liners used in landfills. The low values of hydraulic conductivity suggest the infiltration from the ponds is at a lower rate than previously thought. This implies more evaporation time and possibly more sorption of contaminants.

1.1.3 Ecology

The INEL has been designated as a sagebrush ecosystem (EG&G Idaho 1984). The ecosystem is composed of shrubs primarily belonging to the genus *Artemisia* and an understory of perennial grasses and forbs. The RI/FS work plan (EG&G Idaho 1992) contains specific information concerning the ecology as it pertains to TAN.

1.1.4 Archaeology

An archaeological survey has been conducted in and around the TAN area. The final report was completed in December 5, 1986 (Reed et al. 1986). Although no significant resources were discovered in the immediate vicinity, minor resources were discovered outside the TSF-07 disposal pond.

Table 5. Hydraulic conductivity values.

Well	Hvorslev method (ft/day)	Bouwer & Rice method (ft/day)
TSFAG-07	6.85×10^{-3}	5.80×10^{-3}
TSFAG-05	4.24×10^{-2}	3.36×10^{-2}

Figure 4. Locations of wells and perched water zone at TSMF.

2. EFFLUENT RECEIPT AT TAN/TSF

Construction of the TSF-07 disposal pond and common sump (TAN-655) began in 1971 and was completed in late 1972. The pond was constructed to replace the TSF-05 injection well, which was used until September 1972. Refer to Figure 5 for an aerial view of the pond and its relation to TSF. The TSF-07 disposal pond receives effluent from a variety of sources, which include low-level radioactive waste, cold process water, and treated sewage effluent. This waste is mixed in the common sump at TAN-655 and lifted to the TSF-07 disposal pond. Figure 6 is a diagram illustrating the processes that contributed to the effluent entering the pond.

To track the amount of effluent entering the TSF-07 pond, the Industrial Waste Management Information System (IWMIS), a computerized database in effect since 1971, compiles the volume of waste and the sampling results from the measured pollutants. The IWMIS produces an annual report of the INEL solid and liquid industrial waste summary and record-to-date. According to this database, a total of 14,838 m³ (523,940 ft³) of sanitary waste has been discharged between 1971 and 1980 into the pond. Section 2.2 describes the volume and types of process wastes discharged into the pond.

This section discusses the current effluent monitoring activities and past disposal practices that may have contributed significant contaminants to the pond.

2.1 Municipal/Sewage Effluent

Restroom sewage from TSF flows to the trickling filter sewage treatment plant. The TSF sewage treatment plant provides primary and secondary treatment for all TSF sanitary waste. Aerobic and anaerobic bacteria work on the waste to digest the solids. The plant influent and effluent are routinely monitored for biochemical oxygen demand, dissolved oxygen, and solids that settle in the tank. The EG&G Idaho Environmental Monitoring Unit samples for additional parameters. This monitoring program is commonly referred to as the INEL Nonradiological Liquid-Effluent Monitoring Program, which was instituted by EG&G Idaho in FY 1986. Its purpose is to provide environmental monitoring data results for nonradioactive parameters and pollutants in liquid effluent generated within facilities operated by EG&G Idaho, including waste entering the TSF-07 disposal pond. The effort includes sampling, analysis, and data interpretation carried out under a rigorous quality assurance program. The data validation efforts are in accordance with EG&G Idaho Environmental Monitoring Standard Operating Procedures EM-SR-2.1, "Analytical Data Validation in Support of Special Requests."

Analytical parameters include pH, temperature, conductivity, anions, chloride, fluoride, nitrate, phosphate, metals to contract laboratory program (CLP) detection limits, and total organic carbon using EPA method 415.1. An elevated total organic carbon analysis automatically calls for volatile organic compound (VOC) analysis to be performed. These parameters have been within EPA drinking water standards since the sampling program was initiated. Sampling results from these analyses are kept in a database maintained by the EG&G Idaho Environmental Monitoring Unit and are documented in an annual report. Table 6 provides an average compilation of the analytical data of the parameters measured from 1987 to 1992 for the TSF-07 disposal pond.

Figure 5. Aerial view of the TSF-07 disposal pond relative to TSF.

* Borated water from the LOFT facility was disposed of in Manhole "B"

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Figure 6. Process drain and sanitary sewage sources feeding to the TSF-07 pond.

Table 6. Summary of wastewater parameters analyzed for from FY 1987-FY 1992 for the TSF-07 disposal pond.

Analyte	Mean	Upper 95% confidence level		Regulatory limit
		Level 1	Level 2	
Cond (μ S)	513.1	862.5	1,010	NA
pH	7.67	(l)6.38 (u)8.95	5.97 9.36	NA NA
TOC (mg/L)	7.12	12.66	15.02	NA
Cl (mg/L)	44.92	86.77	104.5	NA
F (mg/L)	0.24	0.39	0.46	NA
NO ³ (mg/L)	14.85	25.51	30.01	NA
PO ⁴ (mg/L)	3.13	6.27	7.59	NA
SO ⁴ (mg/L)	37.59	49.11	53.98	NA
Ag (μ g/L)	13.74	36.42	47.53	5,000
As (μ g/L)	3.60	8.55	10.75	5,000
Ba (μ g/L)	107.3	212.7	257.5	100,000
Ca (μ g/L)	81,740	205,000	267,000	NA
Cd (μ g/L)	6.19	10.42	12.33	1,000
Cr (μ g/L)	11.73	24.74	30.39	5,000
Cu (μ g/L)	32.90	123.0	161.3	NA
Fe (μ g/L)	206.3	362.7	508.1	NA
Hg (μ g/L)	1.35	9.08	12.45	200
Mg (μ g/L)	14,860	19,840	22,310	NA
Mn (μ g/L)	82.80	332.9	457.1	NA
Na (μ g/L)	37,240	84,200	108,000	NA
Ni (μ g/L)	17.47	29.67	35.43	NA
Pb (μ g/L)	15.08	54.70	71.87	5,000
Se (μ g/L)	67.46	295.7	407.5	1,000
Tl (μ g/L)	75.80	185.7	259.2	NA
Zn (μ g/L)	93.21	268.3	342.3	NA

l = lower concentration level

u = upper concentration level

NA = not applicable

Regulatory guideline—RCRA characteristic level

Note: Level 1 is set at the upper 95% confidence level on the individual measurement; thus, a measurement exceeding Level 1 has a one in 20 (5%) chance of being attributed to random fluctuations in actual concentrations. Level 2 is set at the upper 99% confidence limit on the individual measurements and thus has only a one in 100 (1%) chance of being exceeded due to random fluctuations in actual concentrations.

Data Results. Because the TSF-07 disposal pond receives intermittent discharges from a variety of contributing sources, the discharge is nonhomogeneous in nature. This is apparent in the water-quality results for pH and conductivity. The high conductivity level can be attributed to the soluble salts introduced from the boiler blowdown and demineralizer regeneration discharges. The demineralizer wastewater may also contribute to the observed variances in pH.

2.2 Process/Hazardous Effluent

Wastewater has been discharged to the TSF-07 disposal pond since 1972. Some of the processes feeding into the effluent may have contributed contamination to the pond. For example, the TAN-603 facility is the boiler plant that provides steam to the TSF. Phosphate- and sulfate-based chemicals are often added to the boiler makeup water to prevent pipe scaling and corrosion. Approximately 45,700 L per year (12,000 gal) of this blowdown water is currently being discharged into the sanitary sewage system.

The TSF-07 disposal pond also received condensate from the evaporator process in the intermediate-level waste disposal system. There is no specific information on the chemical characteristics of the evaporator condensate, but if it was similar to the condensate produced at the existing evaporator at the Idaho Chemical Processing Plant, then it can be assumed that it was corrosive (low pH). About 24,004 L (6,342 gal) per year of corrosive condensate waste from the evaporator and about 17,002 L (4,492 gal) per year of corrosive waste from the TAN-607 pipe laundry entered the TSF-07 disposal pond.

The specific hazardous waste suspected to have entered the TSF sewer plant also includes corrosive liquids (acidic and basic solutions) from the TAN-607 pipe laundry and photo laboratory and small amounts of ignitable waste from the TAN-607 maintenance shop. The volume and concentrations of these chemicals that were discharged into the sewer plant and ultimately to the TSF-07 disposal pond are unknown. However, sampling of the pond influent has shown the wastewater to be noncorrosive according to the EPA hazardous waste definitions in 40 CFR 261. Other wastewater areas include the actuator building, the Hot Cell Annex, and all the assembly and maintenance shops located in the TAN-607 building. In addition to these areas, lightly radioactive borated wastewater was transported from the Loss-of-Fluid Test (LOFT) Facility to manhole B in the process waste line just upstream of the TAN-655 sump.

Discussions involving various EG&G Idaho personnel who were knowledgeable of the TAN/TSF area are documented in a correspondence letter from W. A. Baxter.^c In this correspondence, processes that may have contributed to the contamination at the TSF-07 disposal pond were identified. The areas include:

- The hot waste lines that are interconnected through a common vent line located below floor grade in the TAN-607 Hot Shop.
- Two floor drains that are located in the TAN-633 (hot cell area) drain to the sewer system.

c. Private communication between W. A. Baxter and H. J. Zeile, EG&G Idaho, Inc., May 10, 1988.

- The floor drain located in the passageway between TAN-607 and TAN-633, which drains to the process water system. Samples collected from the manhole in this line read 8,000 counts per minute and show 800 counts per minute of smearable radioactivity.
- The showers and wash basins, which are used for decontamination of hot shop personnel, drain to the sewer system.

Another area that presumably contributed significant contaminants to the TSF-07 disposal pond includes the TAN-655 area, commonly referred to as the common sump. The sump pump has a capacity of about 3,028 L/min (800 gal/min) and is activated when the sump fills to the float level (refer to Figure 7 for a focused view of the pond). The effluent is then pumped to the pond.

Samples from the sump and the sump margin were collected during a sampling effort in 1989. Tables 7 and 8 summarize the data resulting from this effort. Only two samples were analyzed for inorganic contaminants. An average value of both samples is included in the table. When compared to background levels for TAN, it was found that at least one of the two samples for each contaminant exceeded the level for inorganic contaminants, as presented in Table 9. (Background levels are baseline concentrations derived from the sampling data originating from EGG-ESQ-9225, EG&G Idaho 1990.) Complete sump data analytical results are presented in Appendix B.

Two samples were collected and analyzed for gamma contaminants. Cobalt-60 was found at a maximum concentration of 62.0 pCi/g, compared to the background level of 0.0 pCi/g for Co-60. Cesium-137 was detected at a maximum value of 135.0 pCi/g. The TAN background level for Cs-137 is 1.3 pCi/g.

Only one sample in the sump location was analyzed for inorganic Appendix IX analytes (found in 40 CFR 264, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities"). The data results are presented in Table 9. The background levels for each of these contaminants are presented in the column next to the concentration level determined from the analytical results. As can be noted, all the contaminants listed in this table exceed the background level.

Figure 7. Aerial focused view of the TSF-07 disposal pond.

Table 7. Sump data results.

Analysis	Contaminant	Concentration range (mg/kg)	Number of samples	Average concentration (mg/kg)
Inorganics (CLP and Appendix IX)	Aluminum	6430.0–13,000.0	2	9,715.0
	Antimony	4.6–17.9	2	11.25
	Arsenic	ND(69.9) ^a –8.2	2	4.1
	Barium	224.0–560.0	2	392.0
	Beryllium	1.7–2.1	2	1.90
	Cadmium	2.0–12.4	2	7.20
	Calcium	100,000.0–199,000.0	2	149,500.0
	Chromium	38.4–97.1	2	67.75
	Cobalt	7.6–8.2	2	7.9
	Copper	15.1–1090.0	2	552.55
	Cyanide	ND–2.7	2	1.35
	Iron	19,100.0–40,300.0	2	29,700.0
	Lead	30.3–338.0	2	184.15
	Magnesium	12,200.0–12,500.0	2	12,350.0
	Manganese	424.0–646.0	2	535.0
	Mercury	0.07–153.0	2	76.53
	Nickel	42.0–69.7	2	55.85
	Potassium	1350.0–2110.0	2	1730.0
	Selenium	ND(45.9)–2.2	2	1.1
	Silver	6.3–123.0	2	64.65
	Sodium	56.6–985.0	2	520.8
	Strontium	130.0–597.0	2	363.50
	Thallium	ND(82.5)–25.9	2	12.95
	Tin	17.5–24.6	2	21.05
	Vanadium	37.7–56.4	2	47.05
	Zinc	88.1–1610.0	2	849.05
Organics (Semi-VOAs Appendix IX)	Phenanthrene	0.170	1	0.170
	Fluoranthene	0.340	1	0.340
	Pyrene	0.350	1	0.350
	Benzo(a)anthracene	0.230	1	0.230
	Chrysene	0.240	1	0.240
	bis(2-Ethylhexyl)phthalate	3.90	1	3.90
	Di-n-octylphthalate	0.710	1	0.710
	Benzo(b)fluoranthene	0.300	1	0.300
	Benzo(a)pyrene	0.210	1	0.210
	Indeno(1,2,3-cd)pyrene	0.200	1	0.200
	Benzo(g,h,i)perylene	0.230	1	0.230
Organics (CLP, VOA, and Appendix IX)	Carbon Disulfide	ND(5.0)–0.005	2	0.003
	Toluene	ND(5.0)–0.004	2	0.0027
	Ethylbenzene	ND(5.0)–0.003	2	0.002
	Xylene (total)	ND(5.0)–0.003	2	0.001
Organics (Organochlorine Pesticide Appendix IX)	Aroclor-1254	0.640	1	0.640
	Aroclor-1260	1.60	1	1.60

ND = nondetect

a. The ND values for this table are reported in µg/L. This value is based on the digestate before the conversion calculation is performed. The concentration includes the nondetects (averaged in as a zero value) and therefore may be biased high.

Table 8. Sump radiological data results.

Analysis	Contaminant	Concentration range (pCi/g)	Number of samples	Average concentration (pCi/g)
Radiological	Co-60	ND-62.00	2	31.0
	Cs-137	ND-135.0	2	67.5

Note: The concentration includes the nondetects (averaged in as a zero value) and therefore may be biased high.

Table 9. Sump data evaluation.

Contaminant	Background level (mg/kg) ^a	Concentration
Barium	254.0	560.0
Beryllium	1.5	2.1
Cadmium	4.6	12.4
Chromium	38.9	97.1
Lead	55.6	338.0
Mercury	0.06	153.0
Nickel	42.5	69.7
Silver	3.5	123.0
Strontium	200.0	597.0
Thallium	18.4	25.9
Vanadium	53.7	56.4
Zinc	182.0	1610.0

a. The background levels are specified in DOE/ID-10340 (DOE 1992). The background level for strontium was obtained from Table 4.0.7 of EGG-ES-8204 (DOE 1989c). This level is from Los Alamos National Laboratory soils.

3. SAMPLING HISTORY

This section of the report summarizes the sampling events that were performed at the TSF-07 disposal pond between 1982 and 1992. Table 10 identifies the sampling events by number, year, media type, and performing organization. The following sections address each sampling event, dates, activities, and a summary of final sample results from each investigation. This document does not discuss any deviations specific to sample collection and analysis as specified in the original sampling and analysis plans.

Screening criteria described in Section 4 are applied to sampling events 2 through 5a to determine significant contaminants. Vertical and plan view maps exhibiting the migration tendencies of the significant contaminants are plotted and the data are discussed in Sections 4.4 and Section 5. The screening criteria could not be applied to data obtained from sampling event 1 because the data could not be validated because information was not available (refer to the memorandum in Appendix C).

3.1 Sampling Event 1

3.1.1 Influent and Pond Water Sampling

Sampling of TSF influent and pond water began in 1982. Two sets of water samples were submitted to California Analytical Laboratories, Inc., for analysis by priority pollutant methods 608, 613, 624, and 625, which were originally published in the December 1979 *Federal Register*. The methods measured for VOCs, base neutral acid extractable compounds, metals by inductively coupled plasma (ICP) and atomic absorption (AA) techniques, and pesticides/polychlorinated biphenyls (PCBs). The EPA and the analytical laboratory had agreements that these methods could be substituted for corresponding CLP procedures. A summary of the data results (derived from Hardy and Stanisich 1991) is presented in the following section.

3.1.2 Analytical Results

Organics detected in the influent and pond water include toluene and the pesticide alpha-BHC, which is a phthalate. Phthalates are commonly found in low concentrations in industrial waste streams and in environmental samples. Used as plasticizers and extenders in many forms of plastics, phthalates are considered only slightly toxic and do not present a hazard in the concentrations detected (less than 1 ppm). Toluene was detected in one of nine samples at 20 ppb, and alpha-BHC was detected in four samples at a maximum of 7 ppb. The detection of an alpha-BHC is not surprising because pesticide applications have occurred periodically at TAN/TSF.

Boron was the only metal detected in the pond water above typical concentrations in INEL surface waters and the only metal detected in excess of surface water criteria for public water supplies. Boron concentrations were detected at or near a maximum of 30 ppm in three samples. In comparison, background concentrations are typically less than 1 ppm. Boron was used as a moderator at the LOFT Facility. The water was trucked to a manhole leading to the TSF-07 disposal pond and is probably the source of the boron detected in the pond water.

Table 10. Sampling events performed at the TSF-07 disposal pond.

Sampling event	Sampling effort	Dates	Performing organization	Media sampled
1	Initial sampling effort	1982	EG&G Idaho	Surface water
2	Preliminary assessment of the TSF-07 disposal pond	1988	EG&G Idaho	Soil, sediment
3	DOE environmental survey of surface water and soil samples from the TSF-07 disposal pond	Summer 1988	DOE-HQ Environmental Survey Team from Oak Ridge National Laboratory	Soil, sediment, water
4	Subsurface investigation for the TAN RFI	June and July 1989	EG&G Idaho	Soil
5	Site characterization of the TSF-07 disposal pond (Hardy and Stanisich, 1991)	July 6, 1989	EG&G Idaho	Soil, sediment, water
5a	Subsurface investigation of the TSF-07 disposal pond (perched water sampling activities from TSFAG-05 and TSFAG-07)	July 1990 through May 1991	EG&G Idaho Environmental Technology Unit	Perched water

Analytical results for the set of data obtained from this sampling effort did not indicate quality control sample results. Therefore, the data in the reports are of unknown quality and could not be validated as defined in EG&G Idaho's Environmental Restoration Standard Operating Procedure 12.1.1. Refer to Appendix C for the letter report and analytical results submitted by California Analytical Laboratories to EG&G Idaho.

3.2 Sampling Event 2

3.2.1 Preliminary Soil/Sediment Assessment

Surface soil/sediment samples were collected in 1988 as part of the preliminary assessment of the TSF-07 disposal pond. This section summarizes the sampling effort and validation efforts, derived from Hardy and Stanisich (1991).

In accordance with the sampling and analysis plan, samples were collected by EG&G Idaho personnel and analyzed by Roy Weston Laboratories using EPA SW-846 methods, and a data package of equivalent detail to a CLP data package was provided with the results. Three surface soil/sediment samples were collected as grab samples near the outfall of the TSF sump (the wastewater inlet). The entire pond was dry during sampling, but the soil/sediment collected from the outfall of the sump was saturated. The samples were analyzed for Appendix IX compounds using SW-846 methods and producing a data package with the detail of a CLP package. Samples included one duplicate, one field standard, one rinsate, and one trip blank. Sample locations 1, 2, and 3 were primary locations, while sample 4 was a duplicate of sample 3. Sample locations are shown in Figure 8.

Chain-of-custody procedures were followed, and water samples collected (water samples were the quality assurance samples) for metals analysis were preserved with nitric acid to a pH of less than 2. The samples were shipped in coolers at 4°C to the laboratory via overnight delivery service.

3.2.2 Analytical Results

Appendix D contains the actual data results and data validation efforts for this sampling event. A summary of the data results is presented in Table 11. The table includes contaminants that were detected, concentration range in mg/kg, the number of samples collected, and the average concentration. (This method of summarizing data will be used for the remaining summary data tables for the other sampling events discussed in this section.) In determining the average concentration, all values other than R, NR, and nondetect flags (defined as U flags) were taken into account (Environmental Restoration Program, Sample Management Office Standard Operating Procedures 12.1.3 and 12.1.5) If a contaminant is not detected, then the minimum value was presented as ND when presenting the data range.

Metals detected above background (as referenced in the previous section) are cadmium and mercury. The TAN background level for cadmium is 4.6 mg/kg. As noted in the Table 11, all four of the samples collected were above this range. The background level for mercury is 0.06 mg/kg. The four samples collected were all above this level. One of the samples analyzed for mercury was detected at an elevated concentration of 4040.0 mg/kg at sampling location 2.

Organics detected included dichlorodifluoromethane, methylene chloride, and tetrahydrofuran. The concentration of dichlorodifluoromethane was 12.0 mg/kg. Methylene chloride was detected at concentrations less than the contract-required quantitation limit (CRQL) of 10 ppb and was also detected in method blanks at similar concentrations. Tetrahydrofuran was detected in concentrations less than the CRQL and in the method blanks. Both methylene chloride and tetrahydrofuran most likely result from contamination of the sample by the same source of contamination that caused the results observed in the blanks.

3.3 Sampling Event 3

3.3.1 DOE Headquarters Environmental Survey

The Department of Energy Headquarters (DOE-HQ) environmental survey team from Oak Ridge National Laboratory collected surface water and soil samples from the TSF-07 disposal pond

Q 93 0003

S-1 = actual location of surface sample 1; N795,475.1 E356,745.4 el 4781.4
 S-2 = actual location of surface sample 2; N795,536.6 E356,717.6; el 4781.0
 S-3,4 = actual location of surface samples 3 & 4; N795,585.6 E356,557.3; el 4778.4

Figure 8. Locations of sediment samples collected in May 1988 and locations of the four auger holes (sampling event 2).

Table 11. Summary table for soil samples collected during sampling event 2.

Analysis	Contaminant	Concentration range (mg/kg)	Number of samples	Average concentration (mg/kg)
Inorganic	Antimony	0.7–1.3	4	0.80
	Arsenic	1.7–12.5	4	7.25
	Barium	177.0–193.0	4	186.75
	Beryllium	1.0–1.4	4	1.25
	Cadmium	6.3–7.4	4	6.9
	Chromium	26.9–31.8	4	28.33
	Cobalt	5.2–11.1	4	7.57
	Copper	28.0–54.9	4	37.48
	Lead	19.0–26.1	4	23.50
	Mercury	1.2–4040.0 ^a	4	2.7 (1012.0) ^a
	Nickel	29.4–39.8	4	35.8
	Selenium	1.0	4	1
	Silver	1.8–4.1	4	2.58
	Thallium	0.30	4	0.30
	Tin	883.0–1150.0	4	977.0
	Vanadium	26.0–27.8	4	26.8
	Zinc	190.0–385.0	4	254.75
Organic	Dichlorodifluoro- methane	12.0	1	12.0
	Tetrahydrofuran	0.016–0.022	3	0.018
	Methylene chloride	0.003–0.005	4	0.004

a. Only one sample had a reported result that exceeded 5.5 mg/kg. Two average values are presented. The first value averages the three results that were less than 5.5 mg/kg. The value in parenthesis averages all four results.

Note: The calculation of average concentration includes the nondetects (averaged in as a zero value) and therefore may be biased high.

during the summer of 1988. Results from this sampling effort were reported in ORNL/TM-11236 (DOE 1989b).

Sample collection points were identified by independent sample request number and by the location. The TSF-07 disposal pond collection points were at the TAN/TSF surface water, the reduced flow area (Sampling and Analysis Request 510—water), the TSF-07 disposal pond inlet (Sampling and Analysis Request 511—sediment), and the TAN/TSF-07 disposal pond (Sampling and Analysis Request 512—soil).

Eight surface water samples, four sediment samples, and three subsurface soil samples were collected. A select number from each sample set collected, were analyzed for metals by ICP emission spectrometry (aluminum, barium, calcium, cobalt, copper, iron, magnesium, manganese, nickel, sodium, vanadium, and zinc), graphite furnace AA (antimony, arsenic, beryllium, cadmium, chromium, lead, selenium, and silver), mercury by cold vapor AA, anions by ion chromatography, gross alpha, gross beta, gamma-emitting radionuclides by gamma spectrometry, and americium by alpha spectrometry. Not all the identified samples defined in the sampling and analysis plan were analyzed for each of the above specified contaminants. These samples were collected and shipped using EPA-approved procedures and protocols.

3.3.2 Analytical Results

Appendix E contains data results and analyte tables with the associated concentration range for each contaminant. A summary of the data results is presented in Tables 12 through 15.

The surface water samples were collected near the discharge point as indicated in Figure 9. The water samples were collected at the inlet and the surface of the pond. As seen in Table 12, acetone was detected in surface water at 0.011 mg/L, which is slightly greater than the CRQL for CLP laboratories. One of the two samples was determined to be a nondetect. Mercury was also detected in the surface water in low concentrations (maximum of 0.00042 mg/L). All other analytical parameters were within the expected range for this particular site. A radiological analysis for gross beta, gross alpha, Am-241, Co-60, Cs-137, H-3, and Sr (total) was also performed on three to four of the samples collected (see Table 13). Based on the analytical data results it was determined that the inlet of the pond exhibited the highest concentration for Co-60 (31 pCi/L), Cs-137 (93 pCi/L), and gross alpha (22 pCi/L).

Summary Table 14 presents inorganic and organic data for soil/sediment media for this particular sampling event. The surface sediment samples were collected, at depth, in the same locations as the surface water samples. Subsurface soil samples were collected from auger holes initiated near the perimeter of the pond and angled to collect soils from the area directly beneath the pond at depths to 13.7 m (45 ft). Chlorinated hydrocarbons were detected at concentrations greater than the contract required quantitation limit at all three subsurface locations. Chloroform was detected at all three locations, and trichloroethane was detected at two locations. Again, acetone and mercury were detected in all four samples. The average concentration for mercury is 0.31 mg/kg, compared to the TAN background level of 0.06 mg/kg. The average value for copper, 39.29 mg/kg, is above the background level of 27.4 mg/kg. Silver, with an average value of 6.36 mg/kg, exceeds the background level of 3.5 mg/kg. The average value for acetone was 0.042 mg/kg.

Table 12. Summary data table for the water samples collected during sampling event 3.

Analysis	Contaminant	Concentration range (mg/L)	Number of samples	Average concentration (mg/L)
Inorganic	Aluminum	0.791–15.50	4	5.32
	Barium	0.072–0.241	4	0.13
	Beryllium	0.003–0.004	4	0.003
	Cadmium	0.001–0.0011	2	0.001
	Calcium	51.40–70.6	4	61.38
	Chromium	0.002–0.019	4	0.008
	Cobalt	0.002–0.006	2	0.004
	Copper	0.012–0.102	4	0.015 (0.037) ^a
	Iron	0.616–17.6	4	5.74
	Magnesium	17.0–24.9	4	19.55
	Manganese	0.028–0.217	4	0.093
	Mercury	0.00002–0.00042	4	0.0002
	Nickel	0.006–0.029	4	0.015
	Potassium	5.5–11.00	4	7.20
	Silver	0.006–0.035	2	0.021
	Sodium	46.9–106.0	4	75.7
	Vanadium	0.017–0.048	4	0.027
	Zinc	0.057–0.389	4	0.165
Organic	Acetone	0.01–0.011	2	0.011

a. Only one sample was detected at a value exceeding 0.019 mg/L. The value in the parenthesis averages all four sample points. The other value averages the three samples with results less than 0.102 mg/L.

Note: The calculation of average concentration includes the nondetects (averaged in as a zero value) and therefore may be biased high.

Table 13. Summary data table for the water samples collected during sampling event 3.

Analysis	Contaminant	Concentration range (pCi/L)	Number of samples	Average concentration (pCi/L)
Radiological	Am-241	0.07-0.13	4	0.05
	Co-60	5.9-31.0	4	12.98
	Cs-137	7.2-93.0	4	8.4 (29.5) ^a
	Gross alpha	8.0-22.0	4	15.25
	Gross beta	30.0-85.0	4	57.0
	H-3	ND-100.0	3	100.0
	Strontium (total)	3.5-12.0	3	8.23

a. Only one sample was detected at a value exceeding 10 pCi/L. The value in the parenthesis averages all four sample points. The other value averages the three samples with results less than 93.0 pCi/L.

Note: The concentration includes the nondetects (averaged in as a zero value) and therefore may be biased high.

Table 14. Summary data table for the soil/sediment samples collected during sampling event 3.

Analysis	Contaminant	Concentration range (mg/kg)	Number of samples	Average concentration (mg/kg)
Inorganic	Aluminum	14,500.0-24,500.0	7	19,085.71
	Antimony	4.9-5.5	3	5.1
	Arsenic	9.8-11.0	3	10.6
	Barium	212.0-272.0	7	236.43
	Beryllium	1.8-2.4	7	2.13
	Cadmium	0.5-1.7	7	1.13
	Calcium	38,200.0-76,700.0	7	60,900
	Chromium	22.0-39.0	7	30.86
	Cobalt	7.9-11.0	7	9.7
	Copper	20.0-78.0	7	39.29
	Iron	19,000.0-29,000.0	7	24,928.6
	Lead	12.0-22.0	7	17.0
	Magnesium	12,200.0-15,500.0	7	13,928.6
	Manganese	202.0-695.0	7	462.86
	Mercury	0.04-1.7	7	0.31
	Nickel	31.0-45.0	7	38.43
	Potassium	2500.0-5000.0	7	3785.71
	Silver	0.84-26.0	7	6.36
	Sodium	591.0-849.0	7	720.57
	Vanadium	40.0-52.0	7	46.14
	Zinc	85.0-293.0	7	204.0
Organic	Acetone	0.018-0.060	4	0.042
	1,1,1-Trichloroethane	0.012-0.043	3	0.024
	1,1,2-Trichl-1,2,2-Trifl	0.008-0.010	3	0.009
	Chloroform	0.013-0.018	3	0.016
	Methylene Chloride	0.002-0.011	7	0.008
	Toluene	0.005-0.013	3	0.010
	Thiobismethane	0.029	1	0.029

Note: The calculation of average concentration includes the (averaged in as a zero value) nondetects and therefore may be biased high.

Table 15. Summary data table for the soil sediment samples collected during sampling event 3.

Analysis	Contaminant	Concentration range (pCi/g)	Number of samples	Average concentration (pCi/g)
Radiological	Am-241	0.009–0.021	7	0.13
	Co-60	0.57–42.0	4	20.39
	Cs-137	4.4–59.0	4	23.6
	Eu-155	0.13	1	0.13
	Gross alpha	3.9–9.1	7	5.9
	Gross beta	4.9–34.0	7	16.1
	H-3	0.2–1.2	6	0.58
	K-40	14.0–19.0	7	17.5
	Mn-40	0.18–0.28	2	0.23
	Sr (total)	0.26–3.0	7	0.94

Note: The calculation of average concentration includes the nondetects (averaged in as a zero value) and therefore may be biased high.

Radiological data results for soil media are summarized in Table 15. Cobalt-60 was found at a maximum concentration of 42.0 pCi/g in the reduced flow area of the pond. Gross alpha ranged from 3.9 pCi/g to 9.1 pCi/g. Cesium-137 was also found at levels ranging from 4.4 to 59.0 pCi/g.

The data for this particular site were qualified as defined in DOE/EH-0053 (DOE 1989a). Independent EG&G Idaho data verification of the data results has been performed. A review of the data by the Environmental Restoration Sample Management Office does not indicate any problems; therefore, the analytical results from this sampling event were used to determine whether contaminant migration is occurring from the pond. Section 4 includes an evaluation of the data results compared to screening levels. This information is then used to determine the significant contaminants at the TSF-07 disposal pond.

3.4 Sampling Event 4

3.4.1 Subsurface Investigation for the TAN RCRA Facility Investigation

The subsurface investigation was part of the TAN RFI. The information in this section is a summary of the information presented in the RFI, drilling logbooks, and the sampling and analysis plan for the TSF-07 disposal pond and waste sump (Hardy and Stanisich 1991). The investigation consisted of drilling and sampling seven auger holes from the TSF-07 disposal pond area to the top

TAN/TSF Disposal Pond

Figure 9. Sample locations for sampling event 3.

Figure 10. Sample locations for sampling event 4.

the location of auger hole 7 (TSFAG-07); it is located approximately 15.24 m (50 ft) north of TSFAG-06. The locations of these boreholes were based on the results of a soil gas survey conducted at TAN that identified areas where elevated readings of volatile organics were detected. Field work for this investigation was performed during July and August 1989. The auger holes were drilled with a 10.2-cm (4-in.) inner-diameter hollow-stem auger through the surficial sediment to the basalt interface. The auger holes were identified as auger holes 3-7. Auger hole 5 and 7 were developed into perched water monitoring wells.

Split spoon samples were collected, beginning at the ground surface, over a 0.6-m (2-ft) interval and continuing throughout the boreholes at 1.5-m (5-ft) intervals until basalt was reached, except for the 0-1.5 m (0-5 ft) interval, which had two samples removed. The top of the basalt was encountered at 14.6 m (48 ft) in auger hole 4 and at greater than 19.5 m (64 ft) in auger hole 7, located 15.24 m (50 ft) north of TSFAG-06. Five samples from each borehole were collected and analyzed for metals by EPA methods 7191 and 7091, gamma-emitting radionuclides by gamma spectrometry, and volatile organic compounds by method 8240. Extraction procedure for toxicity (EP TOX) was performed on samples if metals concentrations were greatly elevated. To determine if EP TOX was required, a dilution factor was applied to convert the proposed EP TOX regulatory limits (mg/L) to comparable units (mg/kg). For metals, the regulatory limits were adjusted to account for sample weights and volumes used in the toxicity characterization leaching procedure (TCLP) (multiplied by 2.0 L and divided by 0.1 kg) to give a conversion factor of 20. Subsurface soil samples were collected at the basalt sediment interface where perched water was found. Each of the samples removed from the borehole was screened with portable instruments to determine radioactivity above background or the presence of organic vapors.

Where perched water was encountered, 5.08 cm (2-in.) monitoring wells were completed at the basalt sediment interface. These wells were not scheduled for water sampling at that time.

Upon completion of the drilling and sampling activities, the holes were backfilled with the cuttings, and grout was added to fill the hole to ground surface. This was done to avoid creating a conduit for water to enter the subsurface and possibly transport contaminants in the vadose zone. Cuttings from the first 3 m (10 ft) were containerized and were not returned to the hole.

3.4.2 Analytical Results

Appendix F contains data results and analyte tables with the associated concentration range for each contaminant. All data in the appendix have been validated to level B. Table 16 presents a summary of the data results obtained during the sampling effort. All the samples collected during this effort were from a soil media. However, some samples were subsequently leached with a weak acid using the TCLP method and the resulting liquid was analyzed using the SW-846 methods for the TCLP-regulated analytes. These results are reported in aqueous units ($\mu\text{g/L}$). Eight of these samples were collected from auger holes 3, 4, 5, and 6. All the samples analyzed were less than the associated TCLP value for hazardous waste as defined in 40 CFR 261 and as presented in Table 17. Therefore, the TCLP analytical results from sampling event 4 indicate that these contaminants are not considered to be leaching from the surrounding soil in the locations from which these samples were collected, although the contaminants have been detected.

Table 16. Summary data table for the soil sediment samples collected during sampling event 4.

Analysis	Contaminant	Concentration range (mg/kg)	Number of samples	Average concentration (mg/kg)
Inorganic	Aluminum	1400-31,400	28	15,868.93
	Antimony	ND(.0975)-1.1	28	0.24
	Arsenic	4.8-18.20	28	10.56
	Barium	199.0-1900.0	28	326.05
	Beryllium	0.81-8.6	28	2.75
	Cadmium	0.69-6.2	28	1.21
	Calcium	6720.0-213,000	28	62,302.14
	Chromium	21.3-257.0	28	47.69
	Cobalt	6.8-69.1	28	13.74
	Copper	15.8-148.0	28	29.99
	Iron	13,700.0-36,800.0	28	22,189.29
	Lead	12.0-30.5	28	21.83
	Magnesium	7,850.0-16,900.0	28	11,988.21
	Manganese	345.0-1110.0	28	577.25
	Mercury	0.05-0.32	28	0.09
	Nickel	25.6-240.0	28	47.27
	Potassium	1510.0-6010.0	28	3,016.79
	Selenium	0.22-0.63	28	0.18
	Silver	0.26-0.82	28	0.15
	Sodium	340.0-757.0	28	499.68
	Thallium	0.17-1.1	28	0.18
	Vanadium	30.4-333.0	28	64.4
	Zinc	20.0-892.0	28	157.17
Organic	Toluene	0.001-0.017	28	2.43
	Acetone	0.006-0.12	28	0.009
	Methylene Chloride	0.001-0.004	28	0.0004

Note: The calculation of average concentration includes the (averaged in as a zero value) nondetects and therefore may be biased high.

Table 17. Summary data table for sampling event 4 (CLP and TCLP results).

Contaminant	Range of total metals via CLP (mg/kg)	Concentration of metals via TCLP (µg/L)	Regulatory TCLP value (µg/L)	Number of samples
Arsenic	4.8–18.2	4.1–8.2	5000	5
Barium	199–1900	983–1520	100,000	5
Cadmium	0.69–6.2	3–5	1000	5
Chromium	21.3–257	ND(0.250) ^a	5000	5
Lead	12.0–30.5	ND(0.250)–2.0	5000	5
Mercury	0.05–0.32	ND(0.002)–0.24	200	5
Silver	0.26–0.82	ND(0.250)	5000	5
1,1 Dichloroethene	—	5.0	700	8
Chloroform	—	5.0	6000	8
1,2 Dichloroethane	—	5.0	500	8
2-Butanone	—	10.0	200,000	8
Carbon Tetrachloride	—	5.0	500	8
Trichloroethene	—	5.0	500	8
Benzene	—	5.0	500	8
Tetrachloroethene	—	5.0	700	8

ND = nondetect

a. The value in parentheses after each ND is the detection limit for this constituent.

Note: The concentration includes the nondetects (averaged in as a zero value) and therefore may be biased high.

The samples defined in the Appendix F, Table F-6, were collected in accordance with the sampling and analysis plan. As presented in the summary table (Table 16), 28 soil samples were collected from the five auger holes. Beryllium, chromium, and mercury were found in elevated concentrations in a majority of the samples. The average concentrations for barium, beryllium, copper, and mercury all exceeded the average inorganic background level for each constituent in the TAN area. The maximum concentrations for beryllium and chromium were found in auger hole 6 at a depth of 3 m (10 ft). Beryllium was detected at 8.6 mg/kg and chromium was detected at 257 mg/kg. The maximum mercury concentration of 0.32 mg/kg was found in auger hole 5 at a 4.5 m (15 ft) depth.

Acetone, methylene chloride, and toluene were all detected in the organic CLP VOC analysis as noted in Table 16. Acetone concentrations ranged between 0.006 and 0.12 mg/kg. Methylene chloride was detected between 0.001 and 0.004 mg/kg. Toluene was detected between 0.001 and 0.017 mg/kg.

Seven soil samples were analyzed by the Radiation Measurements Laboratory for gamma-emitting radionuclides. A radiological analysis was not performed for this particular sampling event. The radiological analysis performed was a short-counting-time gamma screening analysis rather than a full 16-hour count. Only a screening survey was conducted; hence, these data were not used. Section 4 includes an evaluation of the data results compared to screening levels. This information is then used to determine the significant contaminants at the TSF-07 disposal pond.

3.5 Sampling Event 5

3.5.1 Site Characterization of the TSF-07 Disposal Pond

The site characterization of the TSF-07 disposal pond was conducted in 1989. It consisted of collecting samples from along the length of the inlet pipe, at the point of effluent discharge to the main pond, from the ditch connecting the outlet pipe and the main pond, from the diversion ditch between the main pond and overflow pond, and from the two depressions. A combination of biased and systematic random sampling was employed in this effort. Samples were collected mainly from surface areas, 3-m (10-ft) and 0.6-m (2-ft) depths (refer to Table G-1 in Appendix G). Figure 11 depicts the sample locations and associated sample identification numbers.

A large number of samples were collected during this sampling event. The samples collected were analyzed for:

- Metals by ICP (EPA Method 6010)
- Mercury by cold vapor (EPA Method 7471)
- Volatile organics by gas chromatography/mass spectrometry (GC/MS) (EPA method 8240)
- Gamma radionuclides by gamma spectrometry.

Additional analysis included SW-846 methods for all Appendix IX analytes for nine selected samples, two of which were collected from the same location (these are considered to be replicate samples).

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Legend

- Pond bottom biased samples
- Ditch biased samples
- △ Inlet pipe biased samples
- Sump and outlet biased samples
- Sump margin samples
- Depressional area biased samples
- - - Systematic random sample grid
- Auger holes

Figure 11. Sample locations for sampling event 5 and 5a.

These analyses provided information for additional contaminants not otherwise analyzed for in the other sampling events. The analyses performed to determine the Appendix IX analytes include methods for semivolatiles, organochlorine pesticides, organophosphorus pesticides, organochlorine, and herbicide contaminants. Quality control samples, rinsates, field blanks, trip blanks, and field replicates were also collected (these data are not included in the appendix).

3.5.2 Analytical Results

Table 18 presents a summary of the concentration ranges and average values of the radionuclides analyzed for this sampling event. The only significant radiological contaminants detected in this sampling event were Co-60 and Cs-137. Cobalt-60 activity ranged from 0.113 pCi/g to 87.7 pCi/g. Cesium-137 activity was detected from 0.051 pCi/g to 127.0 pCi/g.

Beryllium, chromium, mercury and thallium were detected in a majority of the samples, as presented in Tables 19 and 20. The maximum concentration for chromium and mercury were both found in the pond discharge area (refer to Table 20). Mercury was detected at 206.0 mg/kg, and chromium was detected at 150.0 mg/kg.

High levels of thallium were found in the ditch, inlet pipe, depression area, and overflow area. Thallium was detected in the soil samples at a maximum concentration of 48.2 mg/kg in the ditch area. Concentrations of beryllium were within 1.0 mg/kg of the TAN background level. Beryllium was detected at a maximum concentration of 2.2 mg/kg.

3.6 Sampling Event 5a

3.6.1 Perched Water Sampling Activities

Sampling for the perched water zones beneath the TSF-07 disposal pond was performed between July 1990 and May 1991. A summary of the sampling effort, analysis, and data was compiled from the logbooks, sampling and analysis plan, and validated data tables. The two perched water wells, TSFAG-05 and TSFAG-07 (depicted in Figure 11), were the sampling locations used to obtain samples. This sampling effort was conducted to obtain data to define the nature and extent of contamination in the perched water zone.

Sampling was performed by the Environmental Technology Unit, with field measurements performed using a HydroLab.^d Sampling was conducted in accordance with Hardy and Stanisich (1991). Groundwater samples were collected for analysis using the collection methods described in Section E.4.4.4.4 of the DOE Environmental Survey Manual (DOE 1989a). Water samples for chemical and gamma-emitting radiological analyses were collected directly into laboratory-certified clean sample bottles. Samples from each well were collected and submitted for analysis for volatile organics (EPA Method 8240), metals by ICP (EPA Method 6010), mercury (EPA Method 7471), strontium-90, gross alpha and beta emitters, and gamma-emitting radionuclides by gamma

d. Mention of specific products or manufacturers in this document implies neither endorsement or preference, nor disapproval by the U.S. Government, any of its agencies, or EG&G Idaho, Inc., of the use of a specific product for any purpose.

Table 18. Summary data table for the soil samples collected during sampling event 5.

Analysis	Contaminant	Concentration range (pCi/g)	Number of samples	Average concentration (pCi/g)
Radiological	Co-60	0.113-87.7	37	9.40
	Cs-134	0.013	1	0.013
	Cs-137	0.051-127.0	53	10.2

Note: The calculation of average concentration includes the nondetects (averaged in as a zero value) and therefore may be biased high.

spectrometry. The chemical analyses were performed by Argonne Laboratories-East and Analytical Technologies Inc. The radiological analysis was performed by the Radiation Measurements Laboratory at TRA.

3.6.2 Analytical Results

Tables H-1 and H-2 in Appendix H identify the number of samples, depths, and analysis for each well. The appendix also contains the complete analytical results affiliated with this sampling effort.

Data from this particular sampling event were collected between July 1990 and May 1991. No gamma-emitting radionuclides were determined to be true positive by the INEL Radiation Measurements Laboratory. Several samples were determined to be false positive. In addition, a total alpha and total beta analysis was conducted on samples obtained from both wells. Table 21 summarizes the average values of the contaminants analyzed, number of samples, and associated concentration range. Gross alpha ranged from 3.2 to 120.0 pCi/L. Gross beta ranged from 3.0 to 120.0 pCi/L. Strontium-90 was detected between 1.0 and 136.0 pCi/L.

Table 22 summarizes the results for inorganic and organic contaminants. Antimony was detected at concentrations ranging from 0.036 to 0.142 mg/L. Thallium was also detected between the 0.001 and 0.101 mg/L range in three of the 12 samples. Section 4 includes an evaluation of the data results compared to screening levels. This information is then used to determine the significant contaminants at the TSF-07 disposal pond. Organic contaminants were not detected or were below the detection limit.

Table 19. Summary data table for the soil samples collected during sampling event 5 (for CLP analytes).

Analysis	Contaminant	Concentration range (mg/kg)	Number of samples	Average concentration ^a (mg/kg)
Inorganic	Aluminum	8500.0-30,000.0	82	19,900
	Antimony	15.20-27.4	47	19.6
	Arsenic	3.9-49.2	82	17.6
	Barium	152.0-579.0	82	262.0
	Beryllium	0.99-2.2	82	1.72
	Cadmium	1.10-5.9	82	2.84
	Calcium	36,600-82,300	82	58,000
	Chromium	26.2-74.5	82	47.7
	Cobalt	4.6-17.2	82	12.6
	Copper	12.7-217.0	82	37.8
	Cyanide	0.26-0.34	10	0.28
	Iron	14,800-34,600	82	25,700
	Lead	22.7-78.8	82	41.5
	Magnesium	8,720-16,500	82	13,400
	Manganese	222-606	82	425
	Mercury	0.04-4.30	83	0.23
	Nickel	22.6-57.5	82	44.2
	Potassium	1,510-7590.0	82	4330.0
	Selenium	0.18-42.2	82	10.9
	Silver	4.5-77.2	82	9.77
	Sodium	25.1-412.0	82	176
	Strontium	75.8-172	82	108.0
	Thallium	0.80-48.2	82	20.6
	Tin	14.8-19.6	72	18.1
	Vanadium	43.8-83.1	82	66.1
	Zinc	60.8-609	82	169
Organic	2-Butanone	0.01-0.099	22	0.015
	2-Hexanone	0.006-0.029	22	0.011
	Acetone	0.004-0.079	18	0.026
	Methylene Chloride	0.005-0.006	71	0.005
	Toluene	0.003-0.052	72	0.006
	Xylene (total)	0.003-0.012	72	0.005

a. Two samples (replicates) are included in the average concentration value.

Note: The calculation of average concentration includes the required detection limits reported for the nondetects and therefore may be biased high.

Table 20. Summary data table for the soil samples collected and analyzed for Appendix IX analytes during sampling event 5.

Analysis	Contaminant	Concentration range (mg/kg)	Number of samples	Average concentration (mg/kg)
Inorganic Appendix IX	Aluminum	9740-23,100	9	18,500
	Antimony	0.62-5.00	7	1.79
	Arsenic	5.3-19.6	9	11.6
	Barium	226.0-9740.0	9	1310.0
	Beryllium	1.50-2.10	9	1.79
	Cadmium	2.00-14.9	9	40.1
	Chromium	40.8-150.0	9	60.1
	Cobalt	11.0-17.7	9	14.9
	Copper	22.1-936.0	9	149.0
	Lead	26.4-210.0	9	51.7
	Mercury	0.06-206.0	10	21.1
	Nickel	37.01-78.2	9	46.8
	Selenium	0.31-4.60	9	1.10
	Silver	5.6-166.0	9	29.8
	Thallium	0.83-1.40	9	1.05
	Vanadium	53.4-74.2	9	64.3
	Zinc	115.0-2400.0	9	438.0
Organic	Acetone	0.049-0.150	2	0.099
	Toluene	0.005-0.063	9	0.014
	bis(2-ethylhexyl) phthalate	0.26-2.90	9	0.657

Note: The concentration includes the nondetects (averaged in as a zero value) and therefore may be biased high.

Table 21. Summary data table for the perched water samples collected during sampling event 5a.

Analysis	Contaminant	Concentration range (pCi/L)	Number of samples	Average concentration (pCi/L)
Radiological	Gross alpha	3.2-120.0	12	18.40
	Gross beta	3.0-120.0	12	21.67
	Strontium-90	1.0-136.0	16	12.97

Note: The calculation of average concentration includes nondetects (averaged in as a zero value) and therefore may be biased high.

Table 22. Summary data table for the perched water samples collected during sampling event 5a.

Analysis	Contaminant	Concentration range (mg/L)	Number of samples	Average concentration (mg/L)
Inorganic	Aluminum	0.0395-7.25	14	1.12
	Antimony	0.036-0.142	14	0.019
	Arsenic	0.001-0.0042	14	0.002
	Barium	0.09-0.266	14	0.183
	Beryllium	ND(0.00031)	14	0.0003
	Cadmium	ND(0.00047)-0.002	14	0.00014
	Calcium	30.6-148.0	14	73.47
	Chromium	0.0096-0.0187	14	0.0041
	Cobalt	ND(0.006)	14	0.006
	Copper	0.005-0.018	14	0.008
	Iron	0.004-7.99	14	0.345
	Lead	0.001-0.0033	14	0.0008
	Magnesium	6.7-32.80	14	19.70
	Manganese	0.002-0.111	14	0.022
	Mercury	0.0001-0.0002	14	0.00002
	Nickel	0.016-0.064	14	0.007
	Potassium	1.59-9.50	14	2.99
	Selenium	ND(0.002)	14	0.002
	Silver	0.002-0.006	14	0.0009
	Sodium	9.65-127.0	14	54.63
	Strontium	0.307-0.710	14	0.073
	Thallium	0.001-0.101	14	0.009
	Vanadium	0.0054-0.04	14	0.008
	Zinc	0.008-0.07	14	0.019

Organics = All data reported are reported as a UJ, U, or R flag. Therefore, it is not reported here.

ND = not detected

Note: The concentration includes the nondetects (averaged in as a zero value) and therefore may be biased high.

4. DATA EVALUATION AND APPLICATION OF SCREENING CRITERIA

Data evaluation and screening were performed on samples originating from sampling events 2 through 5a. Data from sampling event 1 were not used because of factors that included lack of information for proper data validation.

4.1 Screening Levels for Soils

The concentrations of many of the contaminants detected have been analyzed and are less than risk-based values. Many common laboratory contaminants, natural background elements, and chemicals detected in the analysis can be eliminated as significant contaminants when screened by this process. The application of screening for both soil and water samples followed the logic as described below.

Initially the original data results were reviewed to confirm data usability. Soil samples analyzed for inorganic contaminants were then scrutinized by following a hierarchical screening process, as described below:

1. Eliminate aluminum, calcium, magnesium, potassium, iron, and sodium from the list of contaminants. These metals are not associated with human toxicity; therefore, they should not be considered as major risks to the site.
2. Compare the maximum concentration value of each contaminant to a derived concentration value for soils posing a cancer risk of 10^{-7} and to a 0.1 hazard quotient screening value. The risk-based values are derived from *EPA Region X Supplemental Risk Assessment Guidance for Superfund* (EPA 1991a).
3. Eliminate inorganic chemicals at naturally occurring levels (this is site specific). For instance, if values defined in following the second criterion are less than natural background levels, the screening process should default to application of the background level for a comparison. Background levels for this report originate from the DOE/ID-10340 (DOE 1992).

The same strategy is applied for soil samples analyzed for organic contaminants. However, because organics are not found naturally in the environment, the third criterion is not used in assigning a risk factor.

Samples analyzed for radiological contaminants are evaluated against background levels to screen the data. The background values for screening of radiological contaminants for the soil samples are derived from the Track 1 Guidance Document (DOE 1992). Note that cobalt-60 is given a background value of zero based on its short half-life of approximately five years.

4.2 Screening Values for Water Samples

Screening levels for water samples analyzed for inorganics are based on the same screening process as defined for soils. Comparison to background levels is omitted as a screening factor because

background inorganic levels for water do not exist. The screening levels for organic contaminants are based on the same process for soil samples, as follows:

1. Maximum contaminant levels (MCLs), as referenced in 40 CFR 141, "National Primary Drinking Water Regulations."
2. A maximum concentration in water poses less than or equal to 10^{-6} cancer risk screening value and to a 0.1 hazard quotient screening value. The risk-based values are derived from *EPA Region X Supplemental Risk Assessment Guidance for Superfund* (EPA 1991a).

Water samples analyzed for radiological contaminants must also comply with the hierarchical screening process identified in the above two steps. If MCLs or risk-based levels were not available then the maximum concentration of the contaminant was compared to derived concentration guides as referenced in DOE Order 5400.5, "Radiation Protection of the Public and the Environment."

4.3 Significant Contaminants

Analytical results acquired from sampling events 2, 3, 4, 5, and 5a provided the basis for evaluating sample contaminant concentrations against the identified screening levels. Results of data evaluation for these sampling events are presented in Tables 23 through 30. Each of these tables includes:

- Contaminant
- Weight of evidence for each contaminant; this value defines the level of carcinogenicity as it correlates to each contaminant—a value of A and B (B1 or B2) designates that the contaminant is carcinogenic to humans and is a probable human carcinogen (EPA 1991b)
- Range of the contaminant concentration
- Number of sample collected from each event
- Screening value (e.g., risk-based level, background level, MCL)
- Number and percentage of samples that exceeded the defined screening value.

A significant contaminant is defined as a contaminant in which more than 25% of the samples analyzed report a concentration above the defined screening levels. In some instances, one or two samples will exceed the defined risk-based value. Each of these cases is discussed independently. The significant contaminants screened through this process for sampling events 2 through 5a have been summarized and are presented in the following sections.

Table 23. Screening application for soil inorganic analysis (sampling events 2–5).

Contaminant soil/ sediment media for all SE (2-5)	Weight of evidence	Risk-based Screening Concentration 10 ⁻⁷ (mg/kg)	Concentrations giving a HQ = .1 (mg/kg)	Background levels (mg/kg)	Range of contaminant concentration (mg/kg)	Number of samples	Number of samples exceeding risk or background levels		Significant contaminant	
							Number	Percent	Yes	No
Antimony	No data	NA	10	24.7 ^a	0.62–27.4	87	4/87	5		✓
Arsenic	A	.04	8	38.4 ^a	1.7–49.20	126	5/126	4		✓
Barium	No data	NA	2000 ^a	254	152–9740	127	1/127	1		✓
Beryllium	B2	.01	100	1.5 ^a	0.81–8.6	128	104/128	81		✓ ^b
Cadmium	B1	NA	NA	4.6 ^a	0.50–14.90	128	12/128	9		✓
Chromium	No data	NA	NA	38.9 ^a	21.3–257.0	128	91/128	71	✓	
Copper	D	NA	2000 ^a	27.4	12.7–936	128	0/128	0		✓
Lead	B2	NA	NA	55.6 ^a	12.0–210.0	128	9/128	7		✓
Mercury	D	NA	NA	0.06 ^a	0.04–4040	129	99/129	77	✓	
Nickel	No data	NA	500 ^a	42.5	22.6–240.0	128	0/128	0		✓
Selenium	D	NA	100 ^a	17.0	0.18–42.20	128	0/128	0		✓
Silver	D	NA	80 ^a	3.5	0.26–166.0	128	1/128	1		✓
Strontium ^c	No data	NA	NA	200 ^a	75.8–172.0	89	1/89	1		
Thallium	NA	NA	2	18.4 ^a	0.17–48.2	121	41/121	34	✓	
Vanadium	NA	NA	200 ^a	53.7	26.0–333.0	128	0/128	0		✓
Zinc	NA	NA	5000 ^a	182.0	20.0–2400	128	0/128	0		✓

SE = sampling event

a. Selected screening level.

b. Beryllium is not considered to be a significant contaminant since only 13 of the 133 samples were not within 1.0 mg/kg of the background level.

c. The background level used was obtained from Table 4.0.7 of the EGG–ES–8204 (DOE 1989), derived originally from the EPA Office of Solid Waste and Emergency Response, *Hazardous Waste Land Treatment*, SW-874 (April 1983).

Table 24. Screening application for surface water inorganic analysis (sampling event 3).

Analyte water media SE 3	Concentration range and number of samples		MCL (µg/L)	HI=.1 (µg/L)	Risk at 10 ⁻⁶	Weight of evidence	Number of samples exceeding defined screening limit		Significant contaminant	
	Concentration range (µg/L)	Number of samples					Number	Percent	Yes	No
Barium	72.0–241.0	4	2,000 ^a	300	NA	No data	0/4	0		✓
Beryllium	2.5–4.4	4	4 ^a	20	0.02	B2	1/4	25	✓	
Cadmium	1.0–1.1	2	5 ^a	2.0	NA	B1	0/2	0		✓
Chromium	2.0–19.0	4	100 ^a	20	NA	No data	0/4	0		✓
Copper	12.0–102.0	4	1,300 ^a	300	NA	D	0/4	0		✓
Mercury	0.02–0.42	4	2 ^a	1.0	NA	D	0/4	0		✓
Nickel	6.0–29.0	4	100 ^a	70.0	NA	No data	0/4	0		✓
Silver	6.0–35.0	2	NA	10.0 ^a	NA	D	1/2	50	✓	
Vanadium	17.0–48.0	4	NA	30.0 ^a	NA	—	1/4	25	✓	
Zinc	57.0–389.0	4	NA	700.0 ^a	NA	—	0/4	0		✓

SE = sampling event

a. Selected screening level.

Table 25. Screening application for perched water inorganic analysis (sampling event 5a).

Analyte water media SE 5a	Concentration range and number of samples		MCL (µg/L)	HI=.1 (µg/L)	Risk at 10 ⁻⁶	Weight of evidence	Number of samples exceeding lowest limit		Significant contaminant	
	Concentration range (µg/L)	Number of samples					Number	Percent	Yes	No
Antimony	36.4–142.0	14	6 ^a	1.0	NA	No data	4/14	29	✓	
Arsenic	1.1–4.2	14	50 ^a	1.0	0.05	A	0/14	0		✓
Barium	90.4–266.0	14	2,000 ^a	300	NA	No data	0/14	0		✓
Beryllium	ND(0.31)	14	4 ^a	20	0.02	B2	0/14	0		✓
Cadmium	ND(0.47)–2.0	14	5 ^a	2.0	NA	B1	0/14	0		✓
Chromium	9.6–18.7	14	100 ^a	20	NA	No data	0/14	0		✓
Copper	4.8–17.9	14	1,300 ^a	300	NA	D	0/14	0		✓
Lead	1.0–3.3	14	50 ^a	NA	NA	B2	0/14	0		✓
Mercury	0.10–0.17	14	2 ^a	1.0	NA	D	0/14	0		✓
Nickel	15.9–64.0	14	100 ^a	70.0	NA	No data	0/14	0		✓
Selenium	2.0	14	50 ^a	10.0	NA	D	0/14	0		✓
Silver	2.4–5.6	14	NA	10.0 ^a	NA	D	0/14	0		✓
Thallium	1.0–101.0	14	5 ^a	0.30	NA	—	4/14	33	✓	
Vanadium	5.4–40.1	14	NA	30.0 ^a	NA	—	0/14	0		✓
Zinc	7.8–70.1	14	NA	700.0 ^a	NA	—	0/14	0		✓

SE = sampling event

a. Selected screening level.

Note: The concentration includes the nondetects (averaged in as a zero value) and therefore may be biased high.

Organic contaminants were not detected in the perched water zone; therefore, a table was not prepared for perched water organic analysis.

Table 26. Screening application for soil organic analysis (sampling events 2-5).

Contaminant soil/sediment media for all SEs (2-5)	Weight of evidence	Risk-based Screening Concentration 10^{-7} (mg/kg)	Concentrations giving a HQ = .1 (mg/kg)	Range of contaminant concentration (mg/kg)	Number of samples	Number of samples exceeding risk or background levels		Significant Contaminant	
						Number	Percent	Yes	No
1,1,1-trichloroethane	D (14)	NA	2,000 ^a	0.012-0.043	82	0/82	0		✓
2-butanone	D (13)	NA	1,000 ^a	0.010-0.099	22	0/22	0		✓
2-hexanone	NA	NA	NA	0.006-0.029	22	0/22	0		✓
4-methyl-2-pentanone	NA	NA	NA	0.01-0.020	75	0/75	0		✓
Acetone	D (6)	NA	3,000 ^a	0.004-0.15	51	0/51	0		✓
Bromomethane	D (2)	NA	40 ^a	0.01	79	0/79	0		✓
Chloroethane	(4)	NA	NA	0.01	76	0/76	0		✓
Chloroform	B2 (11)	10 ^a	300	0.013-0.018	82	0/82	0		✓
Chloromethane	C (1)	5 ^a	NA	0.01	76	0/76	0		✓
Dichlorodifluoro-methane	ND	NA	NA	ND(0.05)-12.0	8	0/8	0		✓
Ethylbenzene	D (32)	NA	3,000 ^a	0.002-0.012	79	0/79	0		✓
Methylene chloride (dichloromethane)	B2 (5)	9 ^a	2,000	0.001-0.011	117	0/117	0		✓
Toluene	D (29)	NA	5,000 ^a	0.001-0.063	110	0/110	0		✓
Thiobismethane	NA	NA	NA	0.029	1	0/1	0		✓
Vinyl acetate	(16)	NA	30,000 ^a	0.003-0.063	79	0/79	0		✓
Vinyl chloride	A (3)	.03 ^a	NA	0.01	76	0/76	0		✓
Xylene (total)	D (34)	NA	50,000 ^a	0.003-0.012	79	0/79	0		✓
Fluoranthene (semi-app IX)	D (86)	NA	1,000 ^a	0.27-0.33	9	0/9	0		✓
Pyrene (semi-app IX)	D (87)	NA	800 ^a	0.230-0.33	9	0/9	0		✓
bis(2-ethylhexyl)phthalate (Semi-app IX)	B2 (92)	5 ^a	500	0.26-2.9	9	0/9	0		✓
Aroclor-1254 (OC pest) ^b	NA	NA	NA	0.035-0.55	9	0/9	0		✓
Aroclor-1260 ^b (OC pest)	NA	NA	NA	0.220-0.781	9	0/9	0		✓

SE = sampling event

a. Selected screening level.

b. 40 CFR 761.125 (b) defines clean soil at 1 ppm. Therefore this was used as the screening level.

Note: Includes data from both CLP and Appendix IX.

Table 27. Screening application for surface water organic analysis (sampling event 3).

Contaminant water media for all sampling events (SE 3) (VOAs)	MCL (µg/L)	Risk-based concentrations		Weight of evidence	Contaminant concentration range (µg/L)	Number of samples	Percent	Significant contaminant	
		Risk=10 ⁻⁶ (µg/L)	HI = .1 (µg/L) ^a					Yes	No
Acetone	NA	NA	400	D (6)	ND(0.01)–11.0	2	0		✓

SE = sampling event

a. Selected screening level.

Note: Organics were not detected in this sampling event (other than acetone).

Table 28. Screening application for soil radiological analysis (sampling events 3 and 5).

Analyte soil/sediment media for all SEs (3,5)	Background level (pCi/g) ^a	Concentration range (pCi/g)	Number of samples	Number of samples exceeding background level		Significant Contaminant	
				Number	Percent	Yes	No
Cobalt-60	0	0.113-87.7	41	41/41	100	/	
Cesium-137	1.3	0.051-127	57	26/57	46	/	
Cesium-134	No data	0.013	1	No data	—		NR
Strontium (total)	0.53	0.26-3.0	7	3/7	43	/	
Am-241	0.008	0.009-0.021	7	6/7	86	/	
Gross Alpha	19.4	3.9-9.1	7	0/7	0		/
Gross Beta	31.5	4.9-34.0	7	0/7	0		/
H-3	no data	0.2-1.2	6	No data	—		NR
Eu-155	no data	0.13	1	No data	—		NR

SE = sampling event

a. Selected screening level.

b. Given the low concentration levels compared to Co-60 and Cs-137, this contaminant is not considered to be significant.

Table 29. Screening application for surface water radiological analysis (sampling event 3).

Analytic water media SE 3	Range of contaminant (pCi/L)	MCL (pCi/L) ^a	Risk-based level (pCi/L) ^a	Derived concentration levels (pCi/L) ^a	Number of samples	Number of samples exceeding levels		Significant Contaminant	
						Number	Percent	Yes	No
Co-60	5.9-31.0		1.3		4	4/4	100	/	
Cs-137	7.2-93.0		0.7		4	4/4	100	/	
Strontium (total)	3.5-12.0			1000	3	0/3	0		/
Am-241	0.07-0.13			30	4	0/4	0		/
Gross alpha	8.0-22.0	15			4	2/4	50	/	
Gross beta	30.0-85.0			100	4	0/4	0		/
H-3	ND-100.0	20,000			3	0/3	0		/

SE = sampling event

a. Selected screening level

Table 30. Screening application for perched water radiological analysis (sampling event 5a)

Analytic water media SE 5a	Range of concentration (pCi/L)	MCL (pCi/L)	Detected concentration level (pCi/L)	Number of samples	Number of samples exceeding level		Significant Concentration
					Percent	Percent	
Selenium (total)	1.0-136.0	g/L ^b	1000	16	376	19	/
Cross alpha	3.2-130.0	15 ^a	30	12	312	25	/
Cross beta	3.0-130.0	0	100 ^c	12	112	8	/

SE = sampling event

a. Selected screening level

b. SR-90 MCL is used as a conservative assumption

4.4 Screening Results for Sample Data

Data from sampling events 2 through 5a were evaluated and screened according to the above criteria to determine the significant contaminants. Vertical distribution and plan view maps, exhibiting the contaminant concentrations, were prepared for the analytes detected in concentrations 25% above the screening level.

Soil, sediment, surface water, and perched water media types were analyzed for inorganics, organics, Appendix IX analytes, TCLP, and radiological contaminants by the method specified in the preceding sections.

Inorganics. Interpretation of the inorganic data results for soil media indicates that beryllium, mercury, chromium, and thallium are considered to be significant contaminants. Table 23 exhibits the screening level used (as denoted by footnote a), the range of contaminants, number of total samples from all the sampling events, and the total percentage of samples exceeding the defined screening level. Seventy-one percent of the samples exceeded the screening level of 38.9 mg/kg for chromium. Seventy-seven percent of the samples exceeded the 0.06 mg/kg screening level for mercury. Thirty-four percent of the samples exceeded the 18.4 mg/kg level for thallium. As noted in the table, 81% of the samples analyzed for beryllium exceeded the 1.5 mg/kg screening level. Although a large percentage of samples exceeded the defined screening level for beryllium, approximately 90% of the samples are within the 1.0 mg/kg TAN background level. Because a majority of the samples are within the background level of TAN, beryllium is not being considered a significant contaminant.

A TCLP analysis was performed on five to eight samples collected during sampling event 4. All the data results were below the defined TCLP value for hazardous waste (refer to Table 17). These data indicate that the metal and organic contaminants in the pond soil are not likely to be significantly leaching into the surrounding soil.

Surface water samples were collected from sampling event 3, (Table 24), and perched water samples were collected from sampling event 5a (Table 25). These tables summarize the screening level for determining the significant contaminant for the sampling events. Sample results from sampling event 3 indicate that 25% of surface water samples analyzed for beryllium exceed the 4 µg/L screening level. Fifty percent of the samples analyzed for silver exceed the 10 µg/L MCL, and 25% of the samples analyzed for vanadium exceed 30.0 µg/L, which is the hazard index.

Perched water sample results presented in Table 25 indicate that 29% of the samples exceed the defined screening level of 6 µg/L for antimony, and 33% of the samples exceed the 5 µg/L MCL for thallium. These data indicate that both of these contaminants are found in the perched water zone.

Organics. Table 26 presents the screening data evaluation for soil media. One-hundred percent of the soil samples analyzed for aroclor-1254 and aroclor-1260 exceed the defined risk-based screening level of 0.008 mg/kg. Although this value was used as the screening level, 40 CFR 761.125(b) defines clean soil levels as less than 1 ppm. The maximum value for aroclor-1254 is 0.55 ppm while the maximum concentration for aroclor-1260 is 0.781 ppm. Both of these values are less

than 1 ppm; therefore, these contaminants are not considered to be significant contaminants. No other organic compounds detected in the soil exceed the screening level.

Organic analyses for surface water samples did not detect any contaminants other than acetone, which was measured at 11 µg/L (see Table 27). This value is well below the 400 µg/L screening level. No other organics were detected in the surface or perched water.

Radiological. Soil samples from sampling events 3 and 5 were analyzed for Co-60, Cs-134, Cs-137, Am-241, Sr (total), gross alpha, gross beta, H-3, and Eu-155 (refer to Table 28). It was determined through the screening criteria that the following radiological contaminants are significant:

- Cobalt-60, ranging from 0.113 to 87.7 pCi/g (41 of 41 samples)
- Cesium-137, ranging from 0.051 to 127.0 pCi/g (26 of 57 samples)
- Strontium (total), ranging from 0.26 to 3.0 pCi/g (3 of 7 samples)
- Americium-241, ranging from 0.009 to 0.021 pCi/g (6 of 7 samples).

Vertical distribution and plan view maps were not prepared for strontium (total) and americium 241 because only seven samples were collected and analyzed for these contaminants.

Surface and perched water samples from sampling events 3 and 5a, respectively, were analyzed for radiological contaminants. Only three to four samples were collected from the pond's surface water in sampling event 3. Tables 29 and 30 contain a summary of radiological contaminants that were detected and the significant contaminants. Data from sampling event 3 (Table 29) show that four of four surface water samples analyzed for Co-60 exceed the risk-based level of 1.3 pCi/L. Four of four samples analyzed for Cs-137 exceed the 0.7 pCi/L screening level. Two of four of the samples analyzed for gross alpha exceed the 15 pCi/L MCL value.

Data results presented in Table 30 from the perched water sampling effort indicate that 25% of samples analyzed for gross alpha exceed the 15 pCi/L MCL value. Of the 12 samples collected, one of the samples was detected at the activity level of 120 pCi/L.

Strontium (total) was detected between 1.0–136.0 pCi/L, and gross beta was detected between 3–120 pCi/L. Three of 16 samples analyzed for strontium (total) exceed the MCL value of 8 pCi/L, and one of 12 samples analyzed for gross beta exceeds the derived concentration level of 100 pCi/L.

5. MAJOR CONTAMINANT MIGRATION EVALUATION

Plan view and vertical profile maps exhibiting the major contaminants are presented in this section. The lower right-hand corner of the vertical profile maps identifies the location of the well or borehole at the TSF-07 area. The plan view maps did not include data results from sampling event 5a (perched water sampling) because only two monitoring wells are located in the perched water zone (TSFAG-05 and TSFAG-07). All sample results were not plotted on these maps because some sample coordinates were unavailable.

TSFAG-03 and TSFAG-04 are auger holes drilled for the TAN RFI. As mentioned earlier, seven wells surrounding the TSF-07 disposal pond and three auger holes inside the area were drilled without encountering perched water. This information provides a constraint on the extent of perched water around the pond. Figure 4 portrays the approximate location of the perched water zone under the TSF-07 disposal pond, the approximate depth of surface to basalt, and the well/auger hole locations. The vertical distribution map defines the depth of the perched water zone.

The profile maps exhibit vertical migration of chromium, thallium, and mercury in the pond soils. Only three sample locations, at depth, were available to plot radiological data. These points are all located within 15.24 m (50 ft) of each other at the northeast end of the pond; therefore, these contaminants were not plotted vertically. Plan view maps were prepared for chromium, thallium, mercury, Co-60, and Cs-137. Vertical distribution and plan view maps were not prepared for Sr (total), Co-60, Cs-137 and Am-241 (significant contaminants) because only seven samples were collected and analyzed for the contaminants.

The following sections discuss whether contaminants are migrating outside the TSF-07 berm area, as portrayed in the plan view maps at the end of the section, and if contaminants have permeated the perched water zone, as illustrated in the vertical profile at the end of the section.

Mercury. Mercury was detected at a maximum depth of 3 m (10 ft) in TSFAG-06, indicating limited migration (Figure 12). The TSFAG-04 location exhibits contamination at a depth of 13.7 m (45 ft) beneath the land surface. The TSFAG-05 monitoring well exhibits mercury at approximately 15.24 m (50 ft). This indicates that mercury has permeated the perched water zone.

The plan view map (Figure 13) shows that the maximum concentration of mercury ranges between 0.05 and 3.9 mg/kg in the inlet basin area. One hot spot of 53.1 mg/kg is located in the overflow pond. Another hot spot of 4,040.0 mg/kg was detected in the inlet pipe area. This plan view shows that mercury is decreasing in concentration with increased distance from the inlet pipe area.

Thallium. TSFAG-06 and TSFAG-05, as illustrated in Figure 14, exhibit very little migration of thallium beneath the land surface. A value of 0.31 mg/kg of thallium was detected in TSFAG-04 at a depth of 15.24 m (50 ft). Thallium was detected in the TSFAG-03 borehole at 0.21 mg/kg at a maximum depth of approximately 7.6 m (25 ft). Based on these data, thallium migration is limited.

The plan view map, Figure 15, shows thallium ranging from 1.0 mg/kg at the inlet area to 31.5 mg/kg at the perimeter of the overflow pond. Thallium contamination appears to be within this concentration range throughout the pond. Horizontal migration outside of the bermed area is presumably not occurring, as illustrated in this plan view.

Figure 12. Vertical distribution of mercury in the TSF-07 disposal pond.

Figure 13. TAN TSF-07 pond mercury contaminant in surface soils (mg/kg).

Figure 14. Vertical distribution of thallium in the TSF-07 disposal pond.

Figure 15. TAN TSE-07 pond thallium contaminant in surface soils (mg/kg).

Chromium. Chromium contamination, ranging from 36.9 to 49.2 mg/kg, has been detected at a maximum depth of 15.24 m (50 ft) beneath the land surface in boreholes TSFAG-06, TSFAG-03, and TSFAG-04 (see Figure 16). Monitoring well TSFAG-05 exhibits the presence of chromium in the soil at a depth of approximately 15.24 m (50 ft), thus indicating that chromium has reached the perched water zone.

The plan view (Figure 17) shows chromium concentrations ranging from 39.0 mg/kg to 74.5 mg/kg. Based on the plan view map, chromium does not appear to be migrating outside of the bermed area of the pond, but concentrations of chromium above background levels are present throughout the area.

Cobalt-60. As illustrated in Figure 18, cobalt-60 contamination ranges from 0.139 to 87.7 pCi/g. High concentration values are detected mainly in the inlet basin location. High levels of cobalt-60 were also detected in the ditch and inlet area between the disposal and overflow pond. Note that all sample points were not plotted therefore the entire range of this contaminant is not illustrated here. The plan view shows that cobalt-60 is not migrating outside of the bermed area.

Cesium-137. Cesium-137 contamination ranges from 0.347 pCi/g to 46.3 pCi/g around the perimeter of the TSF-07 disposal pond, as depicted in Figure 19. From the data illustrated in the plan view, cesium-137 does not appear to be migrating outside of the bermed area.

5.1 Evaluation of Significant Contaminants

Data collected from sampling events 2 through 5a, dating from 1982 through 1991, were used to determine significant contaminants through application of screening levels. Soil, sediment, and perched water media were sampled at surface locations and differing depths. Analytical data collected included organic, inorganic, and radiological analyses by defined methods as described in Section 3 for each sampling event.

5.1.1 Soils

Screening the data for samples collected in sampling events 2 through 5 indicates that chromium, mercury, and thallium are present above the defined screening levels for soils and are therefore considered significant contaminants. Chromium was detected above the background level of 38.9 mg/kg in 71% of the samples. Mercury was found in 77% of the samples above the background level of 0.06 mg/kg. One sample out of 129 samples analyzed for mercury shows an elevated concentration of 4040.0 mg/kg. This sample was collected at the discharge to the pond. Thirty-four percent of the samples analyzed for thallium exceed the background level of 18.4 mg/kg.

Co-60, Cs-137, strontium (total), and americium-241 are also considered to be significant contaminants. Three of seven samples analyzed for strontium (total) and six of seven samples analyzed for Am-241 exceed the radiological screening level for soil samples. One hundred percent of the samples analyzed for Co-60 exceed the screening level for this contaminant, and 46% exceed the background level for Cs-137.

No organic contaminants were detected above the defined screening levels.

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Figure 16. Vertical distribution of chromium in the TSF-07 disposal pond.

Figure 17. TAN TSF-07 pond chromium contaminant in surface soils (mg/kg).

Figure 18. TAN TSF-07 pond cobalt-60 contaminant in surface soils (pCi/g).

Figure 19. TAN TSF-07 pond cesium contaminant in surface soils (pCi/g).

5.1.2 Surface Water

Beryllium, silver, and vanadium are considered to be significant inorganic contaminants for the surface water. One of four samples analyzed for beryllium exceeds the MCL screening level of 4 µg/L. One of two samples analyzed for silver exceeds the hazard index (HI) value of 10.0 µg/L. One of four samples analyzed for vanadium also exceeds the HI of 30.0 µg/L.

Co-60, Cs-137, and gross alpha are considered to be a significant radiological contaminants in the surface water samples. Co-60 ranged from 5.9 to 31.0 pCi/L in the water. Four of four samples exceed the risk-based levels of 1.3 pCi/L. Cs-137 ranged between 7.2 and 93.0 pCi/L. Four of four samples exceed the risk-based level of 0.7 pCi/L for this contaminant. The data results for the gross alpha analysis indicate that two of four of the samples exceeded the risk-based MCL of 15.0 pCi/L.

No organic contaminants were detected in concentrations that exceed the screening levels.

5.1.3 Perched Water

The perched water data for inorganic contaminants indicates that antimony and thallium are significant contaminants. Twenty-nine percent of the samples analyzed for antimony exceed the MCL value of 6 µg/L, and 33% of the samples analyzed for thallium exceed the 5 µg/L MCL value.

The perched water data results indicate that gross alpha, gross beta, and strontium (total) have entered the perched water zone. Gross alpha is considered a significant radiological contaminant in the perched water. This contaminant was detected in three of 12 perched water samples. Of these three samples, one sample was found at an elevated concentration of 120.0 pCi/L. Strontium (total) was found ranging between 1.0 and 136.0 pCi/L. Three of 16 samples (19%) analyzed for strontium (total) exceed the 8.0 pCi/L MCL value. Gross beta ranged from 3.0 to 120.0 pCi/L. One of 12 samples analyzed for this contaminant exceeds the screening level.

No organic contaminants were detected in concentrations that exceed the screening levels.

5.2 Contaminant Migration to the Perched Water Zone

It appears from the maps that mercury is migrating into the perched water zone. This contaminant, however, has not been found in minimal concentrations in the perched water itself. The TSFAG-05 monitoring well shows that mercury has infiltrated past the perched water zone and into the underlying sediment, at a slightly elevated concentration of approximately 0.02 mg/kg above the TAN background level.

Chromium has also infiltrated past the perched water zone and into the underlying sediment. The value detected is at 21.3 mg/kg which is well below the background level of 38.9 mg/kg.

Co-60 and Cs-137 have not been found in the perched water zone, so gamma migration is limited. The perched water data results indicate that gross alpha, gross beta, and strontium (total) have entered the perched water zone. Gross alpha in the perched water ranges from 3.2 to 120.0 pCi/L, gross beta ranges from 3.0 to 120.0 pCi/L, and strontium (total) was detected from 1.0 to 136.0 pCi/L.

Organic contaminants were not detected in the perched water zone.

6. CONCLUSIONS

The plan view maps and the vertical distribution maps illustrate the horizontal migration occurring within the TSF-07 berm and the minimal migration of the contaminants into the perched water zone. Much of the contamination for the significant contaminants appears to be higher within the TSF-07 disposal pond and the ditch location between the disposal and overflow pond. From all the data compiled to date, it appears that no significant migration of any of the major contaminants is occurring outside the established diked area for the TSF-07 disposal pond.

The only contaminant that is consistently spread horizontally and vertically in the TSF-07 pond is chromium, which has been found above background levels at the perimeter of the pond areas and in the soils near or within the perched water zone.

In conclusion, contaminants appear to have migrated in a limited way both horizontally and vertically within the pond and are not known to have migrated outside of the berm area. With the exception of gross alpha, gross beta, strontium (total), thallium, and antimony, no surface contaminants in concentrations above the screening level are migrating into the perched water zone.

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APPENDIX A

NONRADIOLOGICAL LIQUID EFFLUENT
MONITORING PROGRAM RESULTS

APPENDIX A

NONRADIOLOGICAL LIQUID EFFLUENT MONITORING PROGRAM RESULTS

Table A-1. Second-quarter FY 1989 effluent-monitoring data for Stream 9.

-- STREAM=9 (TAN TSF effluent to drainage pond) QUARTER=89q2 ---

MONTH	REP	Cond (μ S)	pH	TOC (mg/l)	Cl (mg/l)	F (mg/l)	NO3 (mg/l)	PO4 (mg/l)
Jan	1	1000	6.31	11.0	251	X	14.0	3.00
Jan	2	1100	7.06	.	251	X	14.3	2.90
Feb	1	601	8.02	13.5	48.8	X	14.0	6.60
Feb	2	599	8.04	.	48.8	0.90	13.9	7.70
Mar	1	638	8.38	4.50	89.0	0.26	5.80	2.50
Mar	2	630	8.32	.	88.6	0.41	5.90	2.50

MONTH	REP	SO4 (mg/l)	Ag (μ g/l)	As (μ g/l)	Ba (μ g/l)	Cd (μ g/l)	Cr (μ g/l)	Cu (μ g/l)
Jan	1	54.3	X	X	113	8.50	18.1	30.8
Jan	2	54.4	X	X	3.00	9.40	19.1	30.1
Feb	1	57.2	X	205	104	4.90	X	23.4
Feb	2	55.0	X	69.5	94.5	4.40	2.10	20.0
Mar	1	35.2	4.40	129	338	4.40	13.4	25.0
Mar	2	35.1	5.00	X	258	3.80	5.40	29.4

MONTH	REP	Hg (μ g/l)	Ni (μ g/l)	Pb (μ g/l)	Se (μ g/l)	Tl (μ g/l)	Zn (μ g/l)
Jan	1	0.24	8.90	X	X	111	99.5
Jan	2	0.23	5.80	X	X	111	108
Feb	1	0.51	X	X	203	X	90.8
Feb	2	0.51	X	X	83.0	22.5	88.0
Mar	1	0.16	16.0	130	374	94.0	81.3
Mar	2	0.15	11.0	X	317	115	74.4

'.' - missing

'X' - below practical quantitation level

Table A-2. Third-quarter FY-1989 effluent-monitoring data for Stream 9.

-- STREAM=9 (TAN TSF effluent to drainage pond) QUARTER=89q3 ---

MONTH	REP	Cond (μ S)	pH	TOC (mg/l)	Cl (mg/l)	F (mg/l)	NO3 (mg/l)	PO4 (mg/l)
Apr	1	669	7.60	4.50	43.0	2.70	15.2	2.40
Apr	2	688	7.71	.	43.3	2.80	14.6	2.40
May	1	461	7.41	7.30	27.3	X	12.4	1.80
May	2	465	7.37	.	27.4	X	12.5	1.80
Jun	1	480	7.06	126	27.7	0.50	18.1	3.10
Jun	2	482	6.95	.	27.9	0.51	17.9	3.50

MONTH	REP	SO4 (mg/l)	Ag (μ g/l)	As (μ g/l)	Ba (μ g/l)	Cd (μ g/l)	Cr (μ g/l)	Cu (μ g/l)
Apr	1	57.5	X	X	X	11.9	18.4	210
Apr	2	57.5	X	X	X	10.5	18.5	219
May	1	33.8	X	X	X	X	X	153
May	2	33.8	X	X	X	X	X	94.9
Jun	1	36.4	X	X	X	X	X	72.8
Jun	2	36.4	X	X	X	X	X	41.6

MONTH	REP	Hg (μ g/l)	Ni (μ g/l)	Pb (μ g/l)	Se (μ g/l)	Tl (μ g/l)	Zn (μ g/l)
Apr	1	X	X	X	X	X	394
Apr	2	X	X	X	X	X	360
May	1	X	X	X	X	X	149
May	2	X	X	X	X	X	115
Jun	1	X	X	X	X	X	111
Jun	2	X	X	X	X	X	97.8

'.' - missing

'X' - below practical quantitation level

Table A-3. Fourth-quarter FY-1989 effluent-monitoring data for Stream 9.

-- STREAM=9 (TAN TSF effluent to drainage pond) QUARTER=89q4 ---

MONTH	REP	Cond (μ S)	pH	TOC (mg/l)	Cl (mg/l)	F (mg/l)	NO3 (mg/l)	PO4 (mg/l)
Jul	1	494	7.14	15.2	29.4	X	23.3	2.10
Jul	2	493	7.15	.	29.2	X	23.3	2.20
Aug	1	447	7.03	13.8	26.5	X	18.5	1.70
Aug	2	452	7.16	.	26.4	X	18.7	1.70
Sep	1	455	7.36	127	22.5	X	15.8	1.40
Sep	2	457	7.42	.	22.8	X	15.9	1.50

MONTH	REP	SO4 (mg/l)	Ag (μ g/l)	As (μ g/l)	Ba (μ g/l)	Cd (μ g/l)	Cr (μ g/l)	Cu (μ g/l)
Jul	1	38.7	X	X	X	X	X	X
Jul	2	38.7	X	X	X	X	X	X
Aug	1	32.8	X	X	X	X	X	X
Aug	2	32.8	X	X	X	X	X	X
Sep	1	31.9	X	X	X	X	X	X
Sep	2	31.7	X	X	X	X	X	X

MONTH	REP	Hg (μ g/l)	Ni (μ g/l)	Pb (μ g/l)	Se (μ g/l)	Tl (μ g/l)	Zn (μ g/l)
Jul	1	X	X	X	X	X	X
Jul	2	X	X	X	X	X	X
Aug	1	X	X	X	X	X	46.0
Aug	2	X	X	X	X	X	35.0
Sep	1	X	X	X	X	X	51.0
Sep	2	X	X	X	X	X	48.7

'.' - missing

'X' - below practical quantitation level

Table A-4. Quarterly means and variance components for Stream 9.

-----STREAM=9 (TAN TSF effluent to drainage pond) -----											
ANALYTE	QTR	MEAN	STD MEAN	STD DAY	STD REP	N	MISS	N	BPQL	N	
PH	89q1	7.40	0.12	0.20	0.07	6	0	0	0	0	
	89q2	7.69	0.51	0.86	0.31	6	0	0	0	0	
	89q3	7.35	0.19	0.32	0.07	6	0	0	0	0	
	89q4	7.21	0.09	0.15	0.06	6	0	0	0	0	
Cond (µS)	89q1	614	54.8	94.9	3.70	6	0	0	0	0	
	89q2	769	141	242	42.8	6	0	0	0	0	
	89q3	541	69.0	119	7.97	6	0	0	0	0	
	89q4	466	13.7	23.7	2.24	6	0	0	0	0	
TOC (mg/l)	89q1	5.75	.	.	.	2	0	0	0	0	
	89q2	9.67	.	.	.	3	3	3	0	0	
	89q3	45.9	.	.	.	3	3	3	0	0	
	89q4	52.0	.	.	.	3	3	3	0	0	
Cl (mg/l)	89q1	67.6	16.2	28.0	3.27	6	0	0	0	0	
	89q2	130	61.8	107	0.16	6	0	0	0	0	
	89q3	32.8	5.19	8.99	0.15	6	0	0	0	0	
	89q4	26.1	1.93	3.33	0.15	6	0	0	0	0	
F (mg/l)	89q1	X	.	.	.	0	0	0	6	6	
	89q2	0.52	.	.	.	3	0	0	3	3	
	89q3	1.63	1.12	1.59	0.05	4	0	0	2	2	
	89q4	X	.	.	.	0	0	0	6	6	
NO3 (mg/l)	89q1	22.3	3.16	5.34	1.72	6	0	0	0	0	
	89q2	11.3	2.73	4.73	0.14	6	0	0	0	0	
	89q3	15.1	1.61	2.78	0.26	6	0	0	0	0	
	89q4	19.3	2.18	3.77	0.09	6	0	0	0	0	
PO4 (mg/l)	89q1	2.35	0.28	0.49	0.04	6	0	0	0	0	
	89q2	4.20	1.48	2.54	0.45	6	0	0	0	0	
	89q3	2.50	0.44	0.75	0.16	6	0	0	0	0	
	89q4	1.77	0.20	0.35	0.06	6	0	0	0	0	
SO4 (mg/l)	89q1	32.8	0.41	0.00	2.82	6	0	0	0	0	
	89q2	48.5	6.71	11.6	0.90	6	0	0	0	0	
	89q3	42.6	7.50	13.0	0.00	6	0	0	0	0	
	89q4	34.4	2.15	3.73	0.08	6	0	0	0	0	
Ag (µg/l)	89q1	X	.	.	.	0	0	0	6	6	
	89q2	4.70	.	.	.	2	0	0	4	4	
	89q3	X	.	.	.	0	0	0	6	6	
	89q4	X	.	.	.	0	0	0	6	6	

Table A-4. (continued).

----- STREAM=9 (TAN TSF effluent to drainage pond) -----
 (continued)

ANALYTE	QTR	MEAN	STD MEAN	STD DAY	STD REP	N	N MISS	N BPQL
As (µg/l)	89q1	8.15	.	.	.	2	0	4
	89q2	135	.	.	.	3	0	3
	89q3	X	.	.	.	0	0	6
	89q4	X	.	.	.	0	0	6
Ba (µg/l)	89q1	119	.	.	.	2	0	4
	89q2	152	74.1	122	55.7	6	0	0
	89q3	X	.	.	.	0	0	6
	89q4	X	.	.	.	0	0	6
Cd (µg/l)	89q1	X	.	.	.	0	0	6
	89q2	5.90	1.53	2.63	0.49	6	0	0
	89q3	11.2	.	.	.	2	0	4
	89q4	X	.	.	.	0	0	6
Cr (µg/l)	89q1	50.0	.	.	.	1	0	5
	89q2	11.6	4.68	7.19	4.03	5	0	1
	89q3	18.5	.	.	.	2	0	4
	89q4	X	.	.	.	0	0	6
Cu (µg/l)	89q1	39.8	15.2	24.8	6.10	5	0	1
	89q2	26.5	2.55	4.12	2.29	6	0	0
	89q3	132	45.6	76.6	27.2	6	0	0
	89q4	X	.	.	.	0	0	6
Hg (µg/l)	89q1	0.97	.	.	.	3	0	3
	89q2	0.30	0.11	0.19	0.01	6	0	0
	89q3	X	.	.	.	0	0	6
	89q4	X	.	.	.	0	0	6
Ni (µg/l)	89q1	X	.	.	.	0	0	6
	89q2	10.4	3.08	3.82	2.94	4	0	2
	89q3	X	.	.	.	0	0	6
	89q4	X	.	.	.	0	0	6
Pb (µg/l)	89q1	35.0	.	.	.	2	0	4
	89q2	130	.	.	.	1	0	5
	89q3	X	.	.	.	0	0	6
	89q4	X	.	.	.	0	0	6
Se (µg/l)	89q1	X	.	.	.	0	0	6
	89q2	244	101	135	66.4	4	0	2
	89q3	X	.	.	.	0	0	6
	89q4	X	.	.	.	0	0	6

Table A-4. (continued).

----- STREAM=9 (TAN TSF effluent to drainage pond) ----- (continued)									
ANALYTE	QTR	MEAN	STD MEAN	STD DAY	STD REP	N	MISS	N	BPQL
T1 ($\mu\text{g/l}$)	89q1	X	.	.	.	0	0	6	
	89q2	90.7	25.6	42.0	10.5	5	0	1	
	89q3	X	.	.	.	0	0	6	
	89q4	X	.	.	.	0	0	6	
Zn ($\mu\text{g/l}$)	89q1	150	78.4	136	4.10	6	0	0	
	89q2	90.3	7.49	12.6	4.61	6	0	0	
	89q3	204	86.6	149	20.4	6	0	0	
	89q4	45.2	4.67	5.28	5.62	4	0	2	

' ' - missing, too little data to calculate value
 'X' - below practical quantitation level (BPQL)

Table A-5. Control limits for Stream 9.

STREAM=9 (TAN TSF effluent to drainage pond)						Regulatory Compliance Guideline (RCG)
ANALYTE	FY87/FY88 MEAN	STD	N	LEVEL1	LEVEL2	
Cond (μ S)	593	140	48	829	932	N/A
pH	7.99	0.54	48	1 6.88 u 9.09	1 6.51 u 9.46	1 6.5 u 8.5
TOC (mg/l)	7.45	4.10	23	14.6	18.0	N/A
Cl (mg/l)	62.3	41.7	46	133	164	250
F (mg/l)	0.34	0.29	26	0.84	1.07	4
NO3 (mg/l)	<u>17.9</u>	7.14	47	30.0	35.3	<u>10</u>
PO4 (mg/l)	2.57	1.67	47	5.40	6.64	N/A
SO4 (mg/l)	38.7	10.1	48	55.8	63.3	250
Ag (μ g/l)	17.1	14.6	9	45.7	61.7	50
As (μ g/l)						50
Ba (μ g/l)	104	25.9	43	148	167	1000
Cd (μ g/l)	5.44	1.86	16	8.80	10.4	10
Cr (μ g/l)	11.9	7.92	27	25.7	31.9	50
Cu (μ g/l)	52.6	123	42	262	354	1000
Hg (μ g/l)	0.72	0.66	23	1.88	2.41	2
Ni (μ g/l)						N/A
Pb (μ g/l)	32.2	42.0	15	109	146	50
Se (μ g/l)						10
Tl (μ g/l)						N/A
Zn (μ g/l)	165	136	48	396	497	5000

APPENDIX B

ANALYTICAL RESULTS FOR SUMP (TAN 655)

TABLE B-1. TSF EVAPORATION POND - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF WASTE SUMP BIASED TSF0401G SEDIMENT D A pCi/g D S STCS01090 F L	TSF SUMP MARGINS BIASED TSF0501G SOIL D A pCi/g D S STCS01090 F L
FIELD MEASUREMENTS		
Depth (ft)	0-0.3	18-19
Alpha Emitters		
Radium - 226		1.60E+00 ± .37 E+00 4
Gamma Emitters		
Actinium - 228 (Thorium Decay)		1.01E+00 ± .11 E+00 4
Bismuth - 214 (Radium Decay)		9.15E-01 ± .90 E-01 4
Bismuth - 212 (Thorium Decay)		
Cesium - 134		
Cesium - 137	1.35E+02 ± .10 E+02 4	
Cobalt - 60	6.20E+01 ± .44 E+01 4	
Lead - 214 (Radium Decay)		1.05E+00 ± .09 E+00 4
Lead - 212 (Thorium Decay)		1.14E+00 ± .12 E+00 4
Potassium - 40		1.50E+01 ± .13 E+01 4
Protactinium - 234 (Metastable)		
Radium - 224 (Thorium Decay)		
Thallium - 208 (Thorium Decay)		9.55E-01 ± 1.1 E-01 4
Thorium - 234		

- a. The DOF column contains any data qualifier flags.
b. The ASL column contains the analytical support level.

2-15-93

TABLE B-2. TSF EVAPORATION POND - INORGANIC DATA

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF WASTE SUMP BIASED TSF0401A SEDIMENT mg/kg TSF0101A	TSF SUMP MARGINS BIASED TSF0501M SOIL mg/kg TSF0101M
FIELD MEASUREMENTS		
Depth (ft)	0-0.3	17.5-18.5
ANALYTES		
Aluminum	6430	13000
Antimony	4.6 BMJ	17.9 UM
Arsenic	8.2 S	---
Barium	560	224
Beryllium	2.1	1.7
Cadmium	12.4	2.0 B
Calcium	199000	100000
Chromium	97.1	38.4
Cobalt	7.6 B	8.2 B
Copper	1090 E	15.1
Cyanide	2.7 NJ	
Iron	40300 J	19100
Lead	338	30.3 B
Magnesium	12500 J	12200
Manganese	424	646
Mercury	153	0.07 B
Nickel	69.7	42.0
Potassium	1350	2110
Selenium	2.2 NSJ	---
Silver	123	6.3
Sodium	985 BEJ	56.6 B
Strontium	597	130
Thallium	---	25.9 B
Tin	24.6 MR	17.5 UM
Vanadium	37.7	56.4
Zinc	1610	88.1
% Solids	30.2	85.7
Total (Allowed) Hold Time ^a	18(180)d	54(180)d
Total (Allowed) Hold Time ^b	13(26)d	24(26)d
Total (Allowed) Hold Time ^c		
Total (Allowed) Hold Time ^d	12(14)d	

- a. ICP
b. CVAAS
c. GFAAS
d. Cyanide

TABLE B-3. TSF EVAPORATION POND - ORGANOCHLORINE HERBICIDE DATA

AREA	TSF
LOCATION	WASTE SUMP
TYPE OF LOCATION	BIASED
SAMPLE NUMBER	TSF0401A
MEDIA	SEDIMENT
UNITS	ug/kg
SDG NUMBER	TSF0401A

FIELD MEASUREMENTS

Depth (ft)	0-0.3
------------	-------

TARGET COMPOUNDS

2,4-D	400 UJ
Silvex	80 UJ
2,4,5-T	80 UJ

Dilution Factor	1.0
Extraction (Allowed) Hold Time	NP
Analytical (Allowed) Hold Time	NP

NP - Extraction Date Not Provided by Laboratory

2-16-93

TABLE B-4. TSF EVAPORATION POND - ORGANOCHLORINE PESTICIDE DATA

AREA	TSF
LOCATION	WASTE SUMP
TYPE OF LOCATION	BIASED
SAMPLE NUMBER	TSF0401A
MEDIA	SEDIMENT
UNITS	ug/kg
SDG NUMBER	TSF0401A

FIELD MEASUREMENTS

Depth (ft)	0-0.3
------------	-------

TARGET COMPOUNDS

Aroclor-1221	80 R
Aroclor-1232	80 R
Aroclor-1254	640 J
Aroclor-1260	1600 J

Dilution Factor	1.0
Extraction (Allowed) Hold Time	12(14)d
Analytical (Allowed) Hold Time	29(40)d

2-16-93

TABLE B-5. TSF EVAPORATION POND - SEMIVOLATILE APPENDIX IX ORGANIC DATA

AREA	TSF
LOCATION	WASTE SUMP
TYPE OF LOCATION	BIASED
SAMPLE NUMBER	TSF0401A
MEDIA	SEDIMENT
UNITS	ug/kg
SDG NUMBER	TSF0401A
<u>FIELD MEASUREMENTS</u>	
Depth (ft)	0-0.3
<u>TARGET COMPOUNDS</u>	
Phenanthrene	170 J
Fluoranthene	340 J
Pyrene	350 J
Benzo(a)anthracene	230 J
Chrysene	240 J
bis(2-Ethylhexyl)phthalate	3900
Di-n-octylphthalate	710 J
Benzo(b)fluoranthene	300 J
Benzo(a)pyrene	210 J
Indeno(1,2,3-cd)pyrene	200 J
Benzo(g,h,i)perylene	230 J
Methyl methacrylate	1700 R
a,a-Dimethylphenethylamine	1700 R
4-Nitroquinoline-1-oxide	1700 R
Famphur	1700 R
Hexachlorophene	1700 R
Dilution Factor	5.000
Extraction (Allowed) Hold Time	12(14)d
Analytical (Allowed) Hold Time	24(40)d

2-13-93

TABLE B-6. TSF EVAPORATION POND - SULFIDE DATA

AREA	TSF
LOCATION	WASTE SUMP
TYPE OF LOCATION	BIASED
SAMPLE NUMBER	TSF0401A
MEDIA	SEDIMENT
UNITS	mg/kg
SDG NUMBER	TSF0401A

FIELD MEASUREMENTS

Depth (ft)	0-0.3
------------	-------

ANALYTES

Sulfide	4270 N*J
---------	----------

% Solids	30.2
----------	------

Total (Allowed) Hold Time ^a	9(7)d*
--	--------

a. Method 9030

2-15-93

TABLE B-7. TSF EVAPORATION POND - VOLATILE APPENDIX IX ORGANIC DATA

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF WASTE SUMP BIASED TSF0401ARE SEDIMENT ug/kg TSF0401A
<u>FIELD MEASUREMENTS</u>	
Depth (ft)	0-0.3
<u>TARGET COMPOUNDS</u>	
Chloromethane	10 UJ
Acetone	91 UJ
Carbon Disulfide	5
2-Butanone	10 R
4-Methyl-2-Pentanone	10 R
2-Hexanone	10 R
Tetrachloroethene	5 UJ
1,1,2,2-Tetrachloroethane	5 UJ
Toluene	4 J
Chlorobenzene	5 UJ
Ethylbenzene	3 J
Styrene	5 UJ
Xylene (total)	3 J
Trichlorofluoromethane	5 R
Acrolein	50 R
Isobutyl alcohol	100 R
Trans-1,4-Dichloro-2-butene	10 R
1,2-Dibromo-3-chloropropane	10 UJ
Dilution Factor	1.000
Total (Allowed) Hold Time	23(14)d*
2-12-93	

TABLE B-8. TSF EVAPORATION POND - VOLATILE ORGANIC DATA

AREA	TSF
LOCATION	SUMP MARGINS
TYPE OF LOCATION	BIASED
SAMPLE NUMBER	TSF0501V
MEDIA	SOIL
UNITS	ug/kg
SDG NUMBER	TSF0401A
<hr/>	
<u>FIELD MEASUREMENTS</u>	
Depth (ft)	17.5-18.5
<u>TARGET COMPOUNDS</u>	
Chloromethane	---
Acetone	10 R
Carbon Disulfide	---
2-Butanone	10 R
4-Methyl-2-Pentanone	10 R
2-Hexanone	10 R
Tetrachloroethene	---
1,1,2,2-Tetrachloroethane	---
Toluene	---
Chlorobenzene	---
Ethylbenzene	---
Styrene	---
Xylene (total)	---
Dilution Factor	1.000
Total (Allowed) Hold Time	21(14)d*
2-12-93	

APPENDIX C

ANALYTICAL RESULTS FOR SAMPLING
EVENT 1—INITIAL SAMPLING EFFORT

APPENDIX C

ANALYTICAL RESULTS FOR SAMPLING
EVENT 1—INITIAL SAMPLING EFFORT

"Providing research and development services to the government"

INTEROFFICE CORRESPONDENCE

Date: July 23, 1992
To: J. R. Zimmerle, MS 1545
From: R. D. Grant, MS 3904 RDG
Subject: VALIDATION OF ANALYTICAL DATA FROM THE 1991 SAMPLING EFFORT AT
THE TECHNICAL SUPPORT FACILITY (TSF); ANALYSES PERFORMED BY
CALIFORNIA ANALYTICAL LABORATORIES, INC. - RG-71-92

The data in the attached reports were produced in 1982. No statement of work is available for evaluation and the analytical methods used are referred to in the attached reports only as "current Environmental Protection Agency (EPA) methods". The attached reports include no raw data or quality control sample data. These data can not be validated with out some knowledge of the analytical methods used and Quality Control (QC) sample results. The data in the attached reports are therefore of unknown quality.

ts

Attachments:
As Stated

cc: D. Jones, MS 3514
D. R. Kirchner, MS 3904
ARDC Files, MS 3904
Central Files, MS 1651
R. D. Grant File

CHARLES H. SODERQUIST, Ph.D.
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California Analytical Laboratories, Inc.

5695 POWER INN ROAD
SACRAMENTO, CALIFORNIA 95824
(916) 381-5108

Cal Lab 14743
Received June 10, 1982
PO K-7036

August 23, 1982

Ms. Donna LaCombe
EG&G Idaho
PO Box 1625
Idaho Falls, Idaho 83415

Dear Ms. LaCombe:

Enclosed are data summary sheets for 17 water samples submitted for priority pollutant organics and metals as well as chloride, nitrate and sulfate. These samples were received June 10, 1982 and logged under Cal Lab number 14743.

Cal Lab Number	Sample Identification
14743-1	120310 6-8-82
14743-2	150217 6-8-82 - <i>ADF pond</i>
14743-3	190324 6-8-82 - <i>ARA III well</i>
14743-4	100303 6-8-82 - <i>LOFT Prod well</i>
14743-5	180323 6-8-82 - <i>ARA II Prod well</i>
14743-6	150318 6-8-82 - <i>ADF Prod well</i>
14743-7	131325 6-8-82
14743-8	111105 6-8-82 - <i>TSP INJ #2</i>
14743-9	130311 6-8-82 - <i>CFA Prod well</i>
14743-10	110307 6-8-82 - <i>TSP Prod Prod well</i>
	110307 6-8-82 - <i>ADF Pond</i>
14743-12	100202 6-8-82 - <i>LOFT Pond</i>
14743-13	110105 6-8-82 - <i>TSP INJ #1</i>
14743-14	140213 6-8-82 - <i>TRA Pond</i>
14743-15	140314 6-8-82 - <i>TRA Prod well</i>
14743-16	141216 6-8-82
14743-17	100101 6-8-82

These samples were analyzed according to current EPA methods for priority pollutants and according to Standard Methods (15th Edition, 1980) for chloride, nitrate and sulfate.

Several samples were unusual. Sample 14743-11 (110206) yielded a bright yellow extract. We examined this sample very carefully and even added additional internal standards since we anticipated that this sample would have extractable priority pollutants. However, we did not detect extractable priority pollutants at or above the 10 ug/L method detection limit. It is possible that extractable priority pollutants are present, but are present below 5 ug/L. We were unable to ascertain why this sample extract is yellow.

We are reasonably certain that the purgeable fraction of 14743-7 (131325) was spiked. We suspect that the methylene chloride reported was introduced as a contaminant in the spiking solution. We have repeatedly observed this in spiking solutions from some sources. We would be most interested in any feedback on comparisons between our results and the "true values".

The pesticide results require special comment. The pesticide fractions were first analyzed with a 1.5% SP-2250 + 1.95% SP2401 column, then positive findings were confirmed with 3% SP-2100 column. Most samples were very clean. The few positives which passed the second column confirmation were at very low levels. We selected the several of the fractions with the highest levels and attempted GCMS confirmation after concentration of the fraction to 0.2ml. We were not able to confirm either Aroclor 1260 or any BHC by GCMS. Therefore we feel that the results must be used with great care. It may be that reextraction of a much larger sample volume and reanalysis of a much larger injection volume would result in successful GCMS confirmation.

When we report results on single phase aqueous samples to EPA on our enforcement contracts, it is customary to use an asterisk to indicate positive pesticide and PCB results below 0.1 ug/L. In this case we have reported actual numbers on the data sheets. Again these data should be used only with the realization that the GC results could not be confirmed by GCMS.

Several samples had unusual values for metals or anions. Sample 131325 had detectable amounts of a number of metals, including beryllium. In this respect the sample was unique in this set. Sample 110206 had 28 milligram/liter of boron. We hope this is a spike since this water would be toxic to most crop plants. Sample 150217 had unusual levels of chromium and zinc. Several samples had detectable arsenic and selenium values. Two samples had unusually high values for sulfate.

We would be most interested to learn if the inorganic results make sense to you.

If you have any questions about this data, please do not hesitate to call us.

Sincerely yours,

Paul A. Taylor, PhD
President

Mark Masino
Director of Inorganic
Services

Michael Mittle, PhD
Director of GCMS Services

EG & G
Lab No. 14743

RESULTS:

	14743-1 <u>120310</u>	14743-2 <u>150217</u>	14743-3 <u>190324</u>	14743-4 <u>100303</u>	14743-5 <u>180323</u>	14743-6 <u>150318</u>
Arsenic	25	29	<20	<20	<20	<20
Antimony	<20	<20	<20	<20	<20	<20
Beryllium	<5	<5	<5	<5	<5	<5
Cadmium	<25	<25	<25	50	<25	<25
Chromium	<10	640	<10	<10	<10	<10
Cobalt	<50	<50	<50	<50	<50	<50
Lead	<50	<50	<50	<50	<50	<50
Mercury	<1	<1	<1	<1	<1	<1
Nickel	<40	<40	<40	<40	<40	<40
Selenium	<5	<5	<5	<5	<5	<5
Silver	<10	<10	<10	24	<10	<10
Thallium	<20	<20	<20	<20	<20	<20
Zinc	<10	2025	<10	<10	<10	<10
Boron	390	500	480	440	470	130
mg/L						
Sulfate	93	4725	280	250	68	81
Nitrate	0.85	0.13	0.96	0.75	0.78	1.6
Chlorides	20.2	128	17	17	17	26

EG & G
Lab. No. 14743

RESULTS:

	<i>spbl</i> 14743-7 131325	<i>TSF INF #2</i> 14743-8 111105	<i>CFA PROD. well</i> 14743-9 130311	<i>TSF PROD. well</i> 14743-10 110307	14743-11 110206	<i>Left Pond</i> 14743-12 100202
Arsenic	34	34	<20	<20	<20	<20
Antimony	<20	<20	<20	<20	<20	<20
Beryllium	69	<5	<5	<5	<5	<5
Cadmium	<25	<25	<25	<25	<25	<25
Chromium	44	<10	<10	<10	<10	<10
Cobalt	54	<50	<50	<50	<50	<50
Lead	66	<50	<50	<50	<50	<50
Mercury	2	<1	<1	<1	<1	<1
Nickel	31	<40	<40	<40	<40	<40
Selenium	9.6	7.2	<5	5.3	<5	<5
Silver	12	<10	<10	<10	<10	<10
Thallium	<20	<20	<20	<20	<20	<20
Zinc	24	<10	<10	<10	<10	<10
Boron	460	470	440	400	28,000	760
	mg/L					
Sulfate	1	2400	250	95	225	200
Nitrate	0.01	2.2	1.2	0.85	0.19	0.297
Chlorides	19	89	61	8.5	114	17

EG & G
Lab No. 14743

RESULTS:

	<i>TSC INF #1</i> 14743-13 110105	<i>TEA Pond</i> 14743-14 140213	<i>TEA Pond 2004</i> 14743-15 14314	14743-16 141216	14743-17 100101
Arsenic	36	<20	<20	<20	<20
Antimony	<20	<20	<20	<20	<20
Beryllium	<5	<5	<5	<5	<5
Cadmium	<25	<25	<25	<25	<25
Chromium	<10	27	<10	18	<10
-Cobalt	<50	<50	<50	<50	<50
Lead	<50	<50	<50	<50	<50
Mercury	<1	1.8	<1	<1	<1
Nickel	<40	<40	<40	<40	<40
Selenium	<5	<5	12	12	<5
Silver	<10	<10	<10	<10	<10
Thallium	<20	<20	<20	<20	<20
Zinc	<10	<10	<10	<10	<10
Boron	710	400	560	610	510

	mg/L				
Sulfate	950	4700	140	92	94
Nitrate	2.3	2.4	0.809	0.852	0.719
Chlorides	76	45	9	8.5	20

Sediment/soil mg/l (ppm)

Element	LCFT	TSF 1	TSF 2	TPA	TPF (mg/l)	TPF (ppm)	TPF (mg/l)	TPF (ppm)
Iron	0.24	<0.10	<0.10	34	<0.10	<0.10	74	0.14
Copper	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Zinc	0.34	<0.10	<0.10	1.9	<0.10	<0.10	110	0.12
Lead	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Chromium	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	19	0.08
Nickel	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Cobalt	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Barium	5.2	7.0	4.6	0.66	5.3	5.6	0.64	5.5
Arsenic	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60
Selenium	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Beryllium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Antimony	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Vanadium	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Molybdenum	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Boron	<0.20	6.6	5.2	<0.20	<0.20	<0.20	<0.20	<0.20
Mercury	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sulfate	8.1	23	7.9	830	1550	0.51	1900	9.6
Chloride	5.8	46	35	42	19	<3.8	130	3.9
Nitrate	<0.1	0.11	<0.1	0.40	<0.1	<0.1	<0.1	<0.1

California Analytical Laboratories, Inc.

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PRIORITY POLLUTANT DATA SHEET--page 2

CLIENT EG & G

CAL LAB NO. 14743-7

CLIENT I.D. 131325

<u>VOLATILES</u>		<u>µg/L</u>	
2V	acrolein	ND	<i>Spiked with</i>
3V	acrylonitrile	ND	
4V	benzene	30	
5V	carbon tetrachloride	27	
7V	chlorobenzene	25	
10V	1,2-dichloroethane	40	
11V	1,1,1-trichloroethane	38	
13V	1,1-dichloroethane	25	
14V	1,1,2-trichloroethane	33	
15V	1,1,2,2-tetrachloroethane	*	
16V	chloroethane	ND	
19V	2-chloroethylvinyl ether	ND	
23V	chloroform	24	50
29V	1,1-dichloroethylene	30	50
30V	1,2-trans-dichloroethylene	37	50
32V	1,2-dichloropropane	25	50
33V	1,3-dichloropropylene	25	50
38V	ethylbenzene	30	50
44V	methylene chloride	200	only 50
45V	methyl chloride	ND	
46V	methyl bromide	ND	
47V	bromoform	50	50
48V	dichlorobromomethane	40	50
49V	trichlorofluoromethane	*	
50V	dichlorodifluoromethane	ND	
51V	chlorodibromomethane	40	50
55V	tetrachloroethylene	20	50
56V	toluene	(30)	50
57V	trichloroethylene	46	50
58V	vinyl chloride	ND	50

<u>PESTICIDES</u>		<u>µg/L</u>
89P	aldrin	ND
90P	dieldrin	ND
91P	chlordane	ND
92P	4,4'-DDT	ND
93P	4,4'-DDE	ND
94P	4,4'-DDD	ND
95P	α-endosulfan	ND
96P	β-endosulfan	ND
97P	endosulfan sulfate	ND
98P	endrin	ND
99P	endrin aldehyde	ND
100P	heptachlor	ND
101P	heptachlor epoxide	ND
102P	α-BHC	ND
103P	β-BHC	ND
104P	γ-BHC	ND
105P	δ-BHC	ND
106P	PCB-1242	ND
107P	PCB-1254	ND
108P	PCB-1221	ND
109P	PCB-1232	ND
110P	PCB-1248	ND
111P	PCB-1260	ND
112P	PCB-1016	ND
113P	toxaphene	ND

DIOXINS

129B 2,3,7,8-tetrachlorodibenzo-
p-dioxin ND

* Less than 10 µg/L (pesticides less
than 5 µg/L)

ND = not detected

California Analytical Laboratories, Inc.

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SACRAMENTO, CALIFORNIA 95824
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PRIORITY POLLUTANT DATA SHEET

CLIENT EG & E CAL LAB NO. 14743-7
CLIENT I.D. 131325 SPIKE

ACID COMPOUNDS	µg/L
21A 2,4,6-trichlorophenol	ND
22A p-chloro-m-cresol	ND
24A 2-chlorophenol	ND
31A 2,4-dichlorophenol	ND
34A 2,4-dimethylphenol	ND
57A 2-nitrophenol	ND
58A 4-nitrophenol	ND
59A 2,4-dinitrophenol	ND
60A 4,6-dinitro-o-cresol	ND
64A pentachlorophenol	ND
65A phenol	ND

BASE/NEUTRAL COMPOUNDS	µg/L
41B 4-bromophenyl phenyl ether	ND
42B bis(2-chloroisopropyl)ether	ND
43B bis(2-chloroethoxy)methane	ND
52B hexachlorobutadiene	ND
53B hexachlorocyclopentadiene	ND
54B isophorone	ND
55B naphthalene	ND
56B nitrobenzene	ND
61B N-nitrosodimethylamine	ND
62B N-nitrosodiphenylamine	ND
63B N-nitrosodi-n-propylamine	ND
66B bis(2-ethylhexyl)phthalate	ND
67B butyl benzyl phthalate	ND
68B di-n-butyl phthalate	ND
69B di-n-octyl phthalate	ND
70B diethyl phthalate	ND
71B dimethyl phthalate	ND
72B benzo(a)anthracene	ND
73B benzo(a)pyrene	ND
74B 3,4-benzofluoranthene	ND
75B benzo(k)fluoranthene	ND
76B chrysene	ND
77B acenaphthylene	ND
78B anthracene	ND
79B benzo(ghi)perylene	ND
80B fluorene	NC
81B phenanthrene	ND
82B dibenzo(a,h)anthracene	ND
83B indeno(1,2,3-cd)pyrene	ND
84B pyrene	ND

BASE/NEUTRAL COMPOUNDS	µg/L
18 acenaphthene	ND
58 benzidine	ND
88 1,2,4-trichlorobenzene	ND
98 hexachlorobenzene	ND
128 hexachloroethane	ND
188 bis(2-chloroethyl)ether	ND
208 2-chloronaphthalene	ND
258 1,2-dichlorobenzene	ND
268 1,3-dichlorobenzene	ND
278 1,4-dichlorobenzene	ND
288 3,3'-dichlorobenzidine	ND
358 2,4-dinitrotoluene	ND
368 2,6-dinitrotoluene	ND
378 1,2-diphenylhydrazine (as azobenzene)	ND
398 fluoranthene	ND
408 4-chlorophenyl phenyl ether	ND

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PRIORITY POLLUTANT DATA SHEET--page 2

CLIENT EG & G

CAL LAB NO. 14743-8

CLIENT I.D. 111105

<u>VOLATILES</u>		<u>µg/L</u>
2V	acrolein	ND
3V	acrylonitrile	ND
4V	benzene	ND
6V	carbon tetrachloride	ND
7V	chlorobenzene	ND
10V	1,2-dichloroethane	ND
11V	1,1,1-trichloroethane	ND
13V	1,1-dichloroethane	ND
14V	1,1,2-trichloroethane	ND
15V	1,1,2,2-tetrachloroethane	ND
16V	chloroethane	ND
19V	2-chloroethylvinyl ether	ND
23V	chloroform	ND
29V	1,1-dichloroethylene	ND
30V	1,2-trans-dichloroethylene	ND
32V	1,2-dichloropropane	ND
33V	1,3-dichloropropylene	ND
38V	ethylbenzene	ND
44V	methylene chloride	ND
45V	methyl chloride	ND
46V	methyl bromide	ND
47V	bromoform	ND
48V	dichlorobromomethane	ND
49V	trichlorofluoromethane	ND
50V	dichlorodifluoromethane	ND
51V	chlorodibromomethane	ND
85V	tetrachloroethylene	ND
86V	toluene	ND
87V	trichloroethylene	ND
88V	vinyl chloride	ND

PESTICIDES

89P	aldrin	ND
90P	dieldrin	ND
91P	chlordane	ND
92P	4,4'-DDT	ND
93P	4,4'-DDE	ND
94P	4,4'-DDD	ND
95P	α -endosulfan	ND
96P	β -endosulfan	ND
97P	endosulfan sulfate	ND
98P	endrin	ND
99P	endrin aldehyde	ND
100P	heptachlor	ND
101P	heptachlor epoxide	ND
102P	α -BHC	(0.06) *
103P	β -BHC	ND
104P	γ -BHC	ND
105P	δ -BHC	ND
106P	PCB-1242	ND
107P	PCB-1254	ND
108P	PCB-1221	ND
109P	PCB-1232	ND
110P	PCB-1248	ND
111P	PCB-1260	ND
112P	PCB-1016	ND
113P	toxaphene	ND

DIOXINS

129B	2,3,7,8-tetrachlorodibenzo-p-dioxin	ND
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* Less than 10 µg/L (pesticides less than 5 µg/L)

ND = not detected

California Analytical Laboratories, Inc.

5805 POWER INN ROAD
SACRAMENTO, CALIFORNIA 95824
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PRIORITY POLLUTANT DATA SHEET

CLIENT EG & G

CAL LAB NO. 14743-8

CLIENT I.D. 111105TSF Inf # 2

ACID COMPOUNDS

µg/L

21A	2,4,6-trichlorophenol	ND
22A	p-chloro-m-cresol	ND
24A	2-chlorophenol	ND
31A	2,4-dichlorophenol	ND
34A	2,4-dimethylphenol	ND
57A	2-nitrophenol	ND
58A	4-nitrophenol	ND
59A	2,4-dinitrophenol	ND
60A	4,6-dinitro-o-cresol	ND
64A	pentachlorophenol	ND
65A	phenol	ND

BASE/NEUTRAL COMPOUNDS

1B	acenaphthene	ND
5B	benzidine	ND
8B	1,2,4-trichlorobenzene	ND
9B	hexachlorobenzene	ND
12B	hexachloroethane	ND
18B	bis(2-chloroethyl)ether	ND
20B	2-chloronaphthalene	ND
25B	1,2-dichlorobenzene	ND
26B	1,3-dichlorobenzene	ND
27B	1,4-dichlorobenzene	ND
28B	3,3'-dichlorobenzidine	ND
35B	2,4-dinitrotoluene	ND
36B	2,6-dinitrotoluene	ND
37B	1,2-diphenylhydrazine (as azobenzene)	ND
39B	fluoranthene	ND
40B	4-chlorophenyl phenyl ether	ND

BASE/NEUTRAL COMPOUNDS

µg/L

4.3	4-bromophenyl phenyl ether	ND
42B	bis(2-chloroisopropyl)ether	ND
43B	bis(2-chloroethoxy)methane	ND
52B	hexachlorobutadiene	ND
53B	hexachlorocyclopentadiene	ND
54B	isophorone	ND
55B	naphthalene	ND
56B	nitrobenzene	ND
61B	N-nitrosodimethylamine	ND
62B	N-nitrosodiphenylamine	ND
63B	N-nitrosodi-n-propylamine	ND
66B	bis(2-ethylhexyl)phthalate	ND
67B	butyl benzyl phthalate	ND
68B	di-n-butyl phthalate	ND
69B	di-n-octyl phthalate	ND
70B	diethyl phthalate	ND
71B	dimethyl phthalate	ND
72B	benzo(a)anthracene	ND
73B	benzo(a)pyrene	ND
74B	3,4-benzofluoranthene	ND
75B	benzo(k)fluoranthene	ND
76B	chrysene	ND
77B	acenaphthylene	ND
78B	anthracene	ND
79B	benzo(ghi)perylene	ND
80B	fluorene	ND
81B	phenanthrene	ND
82B	dibenzo(a,h)anthracene	ND
83B	indeno(1,2,3-cd)pyrene	ND
84B	pyrene	ND

California Analytical Laboratories, Inc.

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PRIORITY POLLUTANT DATA SHEET--page 2

CLIENT EG & G

CAL LAB NO. 14743-11

CLIENT I.D. 110206

<u>VOLATILES</u>		<u>µg/L</u>
2V	acrolein	ND
3V	acrylonitrile	ND
4V	benzene	ND
6V	carbon tetrachloride	ND
7V	chlorobenzene	ND
10V	1,2-dichloroethane	ND
11V	1,1,1-trichloroethane	ND
13V	1,1-dichloroethane	
14V	1,1,2-trichloroethane	
15V	1,1,2,2-tetrachloroethane	
16V	chloroethane	
19V	2-chloroethylvinyl ether	
23V	chloroform	
29V	1,1-dichloroethylene	
30V	1,2-trans-dichloroethylene	
32V	1,2-dichloropropane	
33V	1,3-dichloropropylene	
38V	ethylbenzene	
44V	methylene chloride	
45V	methyl chloride	
46V	methyl bromide	
47V	bromoform	
48V	dichlorobromomethane	
49V	trichlorofluoromethane	
50V	dichlorodifluoromethane	
51V	chlorodibromomethane	
85V	tetrachloroethylene	
86V	toluene	
87V	trichloroethylene	
88V	vinyl chloride	

PESTICIDES µg/L

89P	aldrin	*
90P	dieldrin	ND
91P	chlordane	ND
92P	4,4'-DDT	ND
93P	4,4'-DDE	ND
94P	4,4'-DDD	ND
95P	α -endosulfan	ND
96P	β -endosulfan	ND
97P	endosulfan sulfate	ND
98P	endrin	ND
99P	endrin aldehyde	ND
100P	heptachlor	ND
101P	heptachlor epoxide	ND
102P	α -BHC	(0.02) *
103P	β -BHC	ND
104P	γ -BHC	ND
105P	δ -BHC	ND
106P	PCB-1242	ND
107P	PCB-1254	ND
108P	PCB-1221	ND
109P	PCB-1232	ND
110P	PCB-1248	ND
111P	PCB-1260	ND
112P	PCB-1016	ND
113P	toxaphene	ND

DIOXINS

129B 2,3,7,8-tetrachlorodibenzo-
p-dioxin ND

* Less than 10 µg/L (pesticides less than 5 µg/L)

ND = not detected

California Analytical Laboratories, Inc.

5886 POWER INN ROAD
SACRAMENTO, CALIFORNIA 95824
(916) 381-8108

PRIORITY POLLUTANT DATA SHEET

CLIENT EG & G

CAL LAB NO. 14743-11

CLIENT I.D. 110206 TSF Pond

ACID COMPOUNDS

ug/L

21A	2,4,6-trichlorophenol	ND
22A	p-chloro-m-cresol	ND
24A	2-chlorophenol	ND
31A	2,4-dichlorophenol	ND
34A	2,4-dimethylphenol	ND
57A	2-nitrophenol	ND
58A	4-nitrophenol	ND
59A	2,4-dinitrophenol	ND
60A	4,6-dinitro-o-cresol	ND
64A	pentachlorophenol	ND
65A	phenol	ND

BASE/NEUTRAL COMPOUNDS

18	acenaphthene	ND
58	benzidine	ND
88	1,2,4-trichlorobenzene	ND
98	hexachlorobenzene	ND
128	hexachloroethane	ND
188	bis(2-chloroethyl)ether	ND
208	2-chloronaphthalene	ND
258	1,2-dichlorobenzene	ND
268	1,3-dichlorobenzene	ND
278	1,4-dichlorobenzene	ND
288	3,3'-dichlorobenzidine	ND
358	2,4-dinitrotoluene	ND
368	2,6-dinitrotoluene	ND
378	1,2-diphenylhydrazine (as azobenzene)	ND
398	fluoranthene	ND
408	4-chlorophenyl phenyl ether	ND

BASE/NEUTRAL COMPOUNDS

ug/L

418	4-bromophenyl phenyl ether	ND
428	bis(2-chloroisopropyl)ether	ND
438	bis(2-chloroethoxy)methane	ND
528	hexachlorobutadiene	ND
538	hexachlorocyclopentadiene	ND
548	isophorone	ND
558	naphthalene	ND
568	nitrobenzene	ND
618	N-nitrosodimethylamine	ND
628	N-nitrosodiphenylamine	ND
638	N-nitrosodi-n-propylamine	ND
668	bis(2-ethylhexyl)phthalate	ND
678	butyl benzyl phthalate	ND
688	di-n-butyl phthalate	ND
698	di-n-octyl phthalate	ND
708	diethyl phthalate	ND
718	dimethyl phthalate	ND
728	benzo(a)anthracene	ND
738	benzo(a)pyrene	ND
748	3,4-benzofluoranthene	ND
758	benzo(k)fluoranthene	ND
768	chrysene	ND
778	acenaphthylene	ND
788	anthracene	ND
798	benzo(ghi)perylene	ND
808	fluorene	ND
818	phenanthrene	ND
828	dibenzo(a,h)anthracene	ND
838	indeno(1,2,3-cd)pyrene	ND
848	pyrene	ND

California Analytical Laboratories, Inc.

5885 POWER INN ROAD
SACRAMENTO, CALIFORNIA 95824
(916) 381-8106

PRIORITY POLLUTANT DATA SHEET

CLIENT EG & G

CAL LAB NO. 14743-13

CLIENT I.D. 110105 TSF Inf #1

ACID COMPOUNDS

µg/L

21A	2,4,6-trichlorophenol	ND
22A	p-chloro-m-cresol	ND
24A	2-chlorophenol	ND
31A	2,4-dichlorophenol	ND
34A	2,4-dimethylphenol	ND
57A	2-nitrophenol	ND
58A	4-nitrophenol	ND
59A	2,4-dinitrophenol	ND
60A	4,6-dinitro-o-cresol	ND
64A	pentachlorophenol	ND
7A	phenol	ND

BASE/NEUTRAL COMPOUNDS

18	acenaphthene	ND
58	benzidine	ND
88	1,2,4-trichlorobenzene	ND
98	hexachlorobenzene	ND
128	hexachloroethane	ND
188	bis(2-chloroethyl)ether	ND
208	2-chloronaphthalene	ND
258	1,2-dichlorobenzene	ND
268	1,3-dichlorobenzene	ND
278	1,4-dichlorobenzene	ND
288	3,3'-dichlorobenzidine	ND
358	2,4-dinitrotoluene	ND
368	2,6-dinitrotoluene	ND
378	1,2-diphenylhydrazine (as azobenzene)	ND
398	fluoranthene	ND
408	4-chlorophenyl phenyl ether	ND

BASE/NEUTRAL COMPOUNDS

µg/L

418	4-bromophenyl phenyl ether	ND
428	bis(2-chloroisopropyl)ether	ND
438	bis(2-chloroethoxy)methane	ND
528	bexachlorobutadiene	ND
538	hexachlorocyclopentadiene	ND
548	isophorone	ND
558	naphthalene	ND
568	nitrobenzene	ND
618	N-nitrosodimethylamine	ND
628	N-nitrosodiphenylamine	ND
638	N-nitrosodi-n-propylamine	ND
668	bis(2-ethylhexyl)phthalate	ND
678	butyl benzyl phthalate	ND
688	di-n-butyl phthalate	ND
698	di-n-octyl phthalate	ND
708	diethyl phthalate	ND
718	dimethyl phthalate	ND
728	benzo(a)anthracene	ND
738	benzo(a)pyrene	ND
748	3,4-benzofluoranthene	ND
758	benzo(k)fluoranthene	ND
768	chrysene	ND
778	acenaphthylene	ND
788	anthracene	ND
798	benzo(ghi)perylene	ND
808	fluorene	ND
818	phenanthrene	ND
828	dibenzo(a,h)anthracene	ND
838	indeno(1,2,3-cd)pyrene	ND
848	pyrene	ND

California Analytical Laboratories, Inc.

5895 Power Inn Road
Sacramento, California 95824
(916) 381-5105

PRIORITY POLLUTANT DATA SHEET--page 2

CLIENT <u>EG & G</u>		CAL LAB NO. <u>14743-13</u>	
		CLIENT I.D. <u>110105</u>	
VOLATILES		PESTICIDES	
	µg/L		µg/L
2V acrolein	ND	89P aldrin	ND
3V acrylonitrile	ND	90P dieldrin	ND
4V benzene	ND	91P chlordane	ND
6V carbon tetrachloride	ND	92P 4,4'-DDT	ND
7V chlorobenzene	ND	93P 4,4'-DDE	ND
10V 1,2-dichloroethane	ND	94P 4,4'-DDD	ND
11V 1,1,1-trichloroethane	ND	95P α -endosulfan	ND
13V 1,1-dichloroethane	ND	96P β -endosulfan	ND
14V 1,1,2-trichloroethane	ND	97P endosulfan sulfate	ND
15V 1,1,2,2-tetrachloroethane	ND	98P endrin	ND
16V chloroethane	ND	99P endrin aldehyde	ND
19V 2-chloroethylvinyl ether	ND	100P heptachlor	ND
23V chloroform	ND	101P heptachlor epoxide	ND
29V 1,1-dichloroethylene	ND	102P α -BHC	(0.09) *
30V 1,2-trans-dichloroethylene	ND	103P β -BHC	ND
32V 1,2-dichloropropane	ND	104P γ -BHC	ND
33V 1,3-dichloropropylene	ND	105P δ -BHC	ND
38V ethylbenzene	ND	106P PCB-1242	ND
44V methylene chloride	ND	107P PCB-1254	ND
45V methyl chloride	ND	108P PCB-1221	ND
46V methyl bromide	ND	109P PCB-1232	ND
47V bromoform	ND	110P PCB-1248	ND
48V dichlorobromomethane	ND	111P PCB-1260	ND
49V trichlorofluoromethane	ND	112P PCB-1016	ND
50V dichlorodifluoromethane	ND	113P toxaphene	ND
51V chlorodibromomethane	ND		
85V tetrachloroethylene	ND		
86V toluene	ND		
87V trichloroethylene	ND		
88V vinyl chloride	ND		

DIOXINS

129B 2,3,7,8-tetrachlorodibenzo-
p-dioxin ND

* Less than 10 µg/L (pesticides less
than 5 µg/L)

ND = not detected

L. A. TAYLOR, Ph.D.
PRESIDENT

CHARLES J. SODERQUIST, Ph.D.
VICE PRESIDENT

Water 2nd Sampling
ANTHONY S. WONG, Ph.D.
VICE PRESIDENT
RUBY A. ULRICH,
SECRETARY/TREASURER

California Analytical Laboratories, Inc.

5895 POWER INN ROAD
SACRAMENTO, CALIFORNIA 95824
(916) 381-5105

November 5, 1982
Lab No. 15131
Received: 9/3/82
PO #K-7036

Donna LaCombe
EG&G Idaho
P.O. Box 1625
Idaho Falls, Idaho 83415

Dear Donna:

Enclosed please find results on the sixteen water samples submitted on September 3, 1982 for priority organic pollutants and metals as well as chloride, nitrate and sulfate.

<u>CAL I.D.</u>	<u>SAMPLE I.D.</u>
15131-1	101 LOFT INEL
-2	102 LOFT POND
-3	103 LOFT PROD. WELL
-4	104 T&F INEL
-5	105 T&F POND-1
-6	106 T&F POND-2
-7	107 T&F PROD. WELL
-8	108 W&RTIF. PROD WELL
-9	109 CFA PROD. WELL
-10	110 TRA DENIM POND
-11	111 TRA NEW POND
-12	112 TRA PROD WELL
-13	113 PBF POND
-14	114 PBF PROD PROD WELL
-15	115 ARA-2 PROD WELL
-16	116 CFA Motor Pool Pond

Donna LaCombe
EG&E Idaho
Lab No. 15131
Page 2

The priority pollutants and metals were analyzed according to current EPA methods; chloride, nitrate and sulfate analyses were performed according to Standard Methods For The Examination Of Water And Wastewater (15th Edition).

Although we found aldrin in sample 113 (CAL I.D. 15131-13P), the level was too low for GC/MS confirmation.

If you have any questions, please feel free to contact us.

Sincerely,

Anthony S. Wong, PhD
Vice President
Research and Analytical Services

Mark Masino
Inorganics Division
Supervisor

Michael J. Mittle, PhD
Director of GC/MS
Services

ASW:nc

PAUL A. TAYLOR, Ph.D.
PRESIDENT

CHARLES J. SOOERQUIST, Ph.D.
VICE PRESIDENT

ANTHONY S. WONG, Ph.D.
VICE PRESIDENT

RUBY A. ULRICH
SECRETARY/TREASURER

California Analytical Laboratories, Inc.

5886 POWER INN ROAD
SACRAMENTO, CALIFORNIA 95824
(916) 381-5105

CLIENT: E.G. & G.

CAL LAB NO: 15131-4

CLIENT I.D.: 104

PP#	CAS #	<u>VOLATILES</u>	ug/L
2V	107-02-8	acrolein	ND
3V	107-13-1	acrylonitrile	ND
4V	71-43-2	benzene	ND
6V	56-23-5	carbon tetrachloride	ND
7V	108-90-7	chlorobenzene	ND
10V	107-06-2	1,2-dichloroethane	ND
11V	71-55-6	1,1,1-trichloroethane	ND
13V	75-34-3	1,1-dichloroethane	ND
14V	79-60-5	1,1,2-trichloroethane	ND
15V	79-34-5	1,1,2,2-tetrachloroethane	ND
16V	75-00-3	chloroethane	ND
19V	110-75-8	2-chloroethylvinyl ether	ND
23V	67-66-3	chloroform	ND
29V	75-35-4	1,1-dichloroethene	ND
30V	156-60-5	trans-1,2-dichloroethene	ND
32V	78-87-5	1,2-dichloropropane	ND
33V	10061-02-6	trans-1,3-dichloropropene	ND
	10061-01-5	cis-1,3-dichloropropene	ND
38V	100-41-4	ethylbenzene	ND
44V	75-09-2	methylene chloride	ND
45V	74-87-3	chloromethane	ND
46V	74-83-9	bromomethane	ND
47V	75-25-2	bromoform	ND
48V	75-27-4	bromodichloromethane	ND
49V	75-69-4	fluorotrichloromethane	ND
50V	75-71-8	dichlorodifluoromethane	ND
51V	124-48-1	chlorodibromomethane	ND
85V	127-18-4	tetrachloroethene	ND
86V	108-88-3	toluene	ND
87V	79-01-6	trichloroethene	ND
88V	75-01-4	vinyl chloride	ND

PP#	CAS #	<u>PESTICIDES</u>	ug/L
89P	309-00-2	aldrin	ND
90P	60-57-1	dieldrin	ND
91P	57-74-9	chlordane	ND
92P	50-29-3	4,4'-DDT	ND
93P	72-55-9	4,4'-DDE	ND
94P	72-54-8	4,4'-DDD	ND
95P	115-29-7	a-endosulfan	ND
96P	115-29-7	b-endosulfan	ND
97P	1031-07-8	endosulfan sulfate	ND
98P	72-20-8	endrin	ND
99P	7421-93-4	endrin aldehyde	ND
100P	76-44-8	heptachlor	ND
101P	1024-57-3	heptachlor epoxide	ND
102P	319-84-6	a-BHC	ND
103P	319-85-7	b-BHC	ND
104P	319-86-8	d-BHC	ND
105P	58-89-9	g-BHC (lindane)	ND
106P	53469-21-9	PCB-1242	ND
107P	11097-69-1	PCB-1254	ND
108P	11104-28-2	PCB-1221	ND
109P	11141-16-5	PCB-1232	ND
110P	12672-29-6	PCB-1248	ND
111P	11096-82-5	PCB-1260	ND
112P	12674-11-2	PCB-1016	ND
113P	8001-35-2	toxaphene	ND

DIOXINS

129B	1746-01-6	2,3,7,8-tetrachloro- dibenzo-p-dioxin	ND
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ND-Not detected, *- detected below a detection limit of 10ug/L (volatiles) and 0.1-1.0ug/L (pesticides)

CHARLES J. SODERQUIST, Ph.D.
VICE PRESIDENT

ANTHONY S. WONG, Ph D
VICE PRESIDENT

RUBY A. ULRICH
SECRETARY/TREASURER

California Analytical Laboratories, Inc.

5806 POWER INN ROAD
SACRAMENTO, CALIFORNIA 95824
(916) 381-6106

CLIENT: E.G.& G.

CAL LAB NO: 15131-4

CLIENT I.D.: 104

PPH	CAS #	ACID COMPOUNDS	ug/L
21A	88-06-2	2,4,6-trichlorophenol	ND
22A	59-50-7	p-chloro-m-cresol	ND
24A	95-57-8	2-chlorophenol	ND
31A	120-83-2	2,4-dichlorophenol	ND
34A	105-67-9	2,4-dimethylphenol	ND
57A	88-75-5	2-nitrophenol	ND
58A	100-02-7	4-nitrophenol	ND
59A	51-28-5	2,4-dinitrophenol	ND
60A	534-52-1	4,6-dinitrophenol	ND
64A	87-86-5	pentachlorophenol	ND
65A	108-95-2	phenol	ND

BASE/NEUTRAL COMPOUNDS

1B	83-32-9	acenaphthene	_____	ND
5B	92-87-5	benzidine	_____	ND
8B	120-82-1	1,2,4-trichlorobenzene	_____	ND
9B	118-74-1	hexachlorobenzene	_____	ND
12B	67-72-1	hexachloroethane	_____	ND
18B	111-44-4	bis(2-chloroethyl)ether	_____	ND
20B	91-58-7	2-chloronaphthalene	_____	ND
25B	95-50-1	1,2-dichlorobenzene	_____	ND
26B	541-73-1	1,3-dichlorobenzene	_____	ND
27B	106-46-7	1,4-dichlorobenzene	_____	ND
28B	91-94-1	3,3'-dichlorobenzidine	_____	ND
35B	121-14-2	2,4-dinitrotoluene	_____	ND
36B	606-20-2	2,6-dinitrotoluene	_____	ND
37B	122-66-7	1,2-diphenylhydrazine	_____	ND
39B	206-44-0	fluoranthene	_____	ND
40B	7005-72-3	4-chlorophenyl phenyl ether	_____	ND

PP#	CAS #	BASE/NEUTRAL COMPOUNDS	ug/L
41B	101-55-3	4-bromophenyl phenyl ether	ND
42B	39638-32-9	bis(2-chloroisopropyl)ether	ND
43B	111-91-1	bis(2-chloroethoxy)methane	ND
52B	87-68-3	hexachlorobutadiene	ND
53B	77-47-4	hexachlorocyclopentadiene	ND
54B	78-59-1	isophorone	ND
55B	91-28-5	naphthalene	ND
56B	98-95-3	nitrobenzene	ND
61B	62-75-9	N-nitrosodimethylamine	ND
62B	86-30-6	N-nitrosodiphenylamine	ND
63B	621-64-7	N-nitrosodipropylamine	ND
66B	117-81-7	bis(2-ethylhexyl)phthalate	ND
67B	85-68-7	benzyl butyl phthalate	ND
68B	84-74-2	di-n-butyl phthalate	ND
69B	117-84-0	di-n-octyl phthalate	ND
70B	84-66-2	diethyl phthalate	ND
71B	131-11-3	dimethyl phthalate	ND
72B	56-55-3	benzo(a)anthracene	ND
73B	50-32-8	benzo(a)pyrene	ND
74B	205-99-2	benzo(b)fluoranthene	ND
75B	207-08-9	benzo(k)fluoranthene	ND
76B	218-01-9	chrysene	ND
77B	208-96-8	acenaphthylene	ND
78B	120-12-7	anthracene	ND
79B	191-24-2	benzo(ghi)perylene	ND
80B	86-73-7	fluorene	ND
81B	85-01-8	phenanthrene	ND
82B	53-70-3	dibenzo(a,h)anthracene	ND
83B	193-39-5	indeno(1,2,3-cd)pyrene	ND
84B	129-00-0	pyrene	ND

ND-Not detected * -detected below a detection limit of 10 ug/L

Water µg/L (ppb)																
Element	Spike	TSF Inf	TSF P?	TSF	LOFT	TSF Inf1	TRACP	TRA PAC	TRA P.W.	TRA R.W.	LOFT INF	WRTF P.W.	PRF	ARA3 P.W.	LOFT R.W.	ARA2
Arsenic	34	34	<20	<20	<20	<20	36	<20	<20	<20	<20	25	29	<20	<20	<20
Antimony	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Beryllium	69	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Cadmium	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	50	<25
Chromium	44	<10	<10	<10	<10	<10	<10	27	<10	18	<10	<10	640	<10	<10	<10
Cobalt	54	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Lead	66	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Mercury	2	<1	<1	<1	<1	<1	<1	1.8	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	31	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40
Selenium	9.6	7.2	<5	5.3	<5	<5	<5	<5	12	12	<5	<5	<5	<5	<5	<5
Silver	12	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	24	<10
Tallium	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Zinc	24	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	2025	<10	<10	<10
Iron	460	470	440	400	28,000	760	710	400	560	610	510	390	500	480	440	470
mg/L																
Nitrate	1	2400	250	95	225	200	950	4700	140	9.	91	93	4725	280	250	68
Nitrate	.01	2.2	1.2	0.85	0.19	0.297	2.3	2.4	0.809	0.852	0.719	0.85	0.13	0.94	0.75	0.0
Fluoride	19	89	01	8.5	114	17	76	45	9	8.5	20	20.7	128	17	17	17

INORGANIC ANALYSES IN WATER

CAL ID: 15131-4
EGG ID: 104 *TSF INFLUENT*

<u>ELEMENT</u>	<u>ug/L, ppb</u>
Aluminium	<200
Chromium	< 10
Barium	<100
Beryllium	< 5
Cadmium	< 5
Cobalt	< 50
Copper	< 50
Iron	< 50
Lead	< 50
Nickel	< 40
Manganese	< 15
Zinc	< 10
Boron	<100
Vanadium	<200
Mercury	< 1
Thallium	< 10
Arsenic	< 10
Selenium	< 2
Antimony	< 20

mg/L, ppm

Chlorides	3.0
Nitrate-N	0.31
Sulfate	32

PAUL A. TAYLOR, Ph.D.
PRESIDENT

CHARLES J. SOGERQUIST, Ph.D.
VICE PRESIDENT

ANTHONY S. WONG, Ph.D.
VICE PRESIDENT

RUBY A. ULRICH
SECRETARY/TREASURER

California Analytical Laboratories, Inc.

5885 POWER INN ROAD
SACRAMENTO, CALIFORNIA 95824
(916) 381-5105

CLIENT: E.G. & G.

CAL LAB NO: 15131-5

CLIENT I.D.: 105

Tsf Pond #1

PP#	CAS #	<u>VOLATILES</u>	ug/L
2V	107-02-8	acrolein	ND
3V	107-13-1	acrylonitrile	ND
4V	71-43-2	benzene	ND
6V	56-23-5	carbon tetrachloride	ND
7V	108-90-7	chlorobenzene	ND
10V	107-06-2	1,2-dichloroethane	ND
11V	71-55-6	1,1,1-trichloroethane	ND
13V	75-34-3	1,1-dichloroethane	ND
14V	79-00-5	1,1,2-trichloroethane	ND
15V	79-34-5	1,1,2,2-tetrachloroethane	ND
25V	75-00-3	chloroethane	ND
28V	110-75-8	2-chloroethylvinyl ether	ND
29V	67-66-3	chloroform	ND
30V	75-35-4	1,1-dichloroethene	ND
32V	156-60-5	trans-1,2-dichloroethene	ND
33V	78-87-5	1,2-dichloropropane	ND
	10061-02-6	trans-1,3-dichloropropene	ND
	10061-01-5	cis-1,3-dichloropropene	ND
38V	100-41-4	ethylbenzene	ND
44V	75-09-2	methylene chloride	ND
45V	74-87-3	chloromethane	ND
46V	74-83-9	bromomethane	ND
47V	75-25-2	bromoform	ND
48V	75-27-4	bromodichloromethane	ND
49V	75-69-4	fluorotrichloromethane	ND
50V	75-71-8	dichlorodifluoromethane	ND
51V	124-48-1	chlorodibromomethane	ND
85V	127-18-4	tetrachloroethene	ND
86V	108-88-3	toluene	ND
87V	79-01-6	trichloroethene	ND
88V	75-01-4	vinyl chloride	ND

PP#	CAS #	<u>PESTICIDES</u>	ug/L
89P	309-00-2	aldrin	ND
90P	60-57-1	dieldrin	ND
91P	57-74-9	chlordan	ND
92P	50-29-3	4,4'-DDT	ND
93P	72-55-9	4,4'-DDE	ND
94P	72-54-8	4,4'-DDD	ND
95P	115-29-7	a-endosulfan	ND
96P	115-29-7	b-endosulfan	ND
97P	1031-07-8	endosulfan sulfate	ND
98P	72-20-8	endrin	ND
99P	7421-93-4	endrin aldehyde	ND
100P	76-44-8	heptachlor	ND
101P	1024-57-3	heptachlor epoxide	ND
102P	319-84-6	a-BHC	ND
103P	319-85-7	b-BHC	ND
104P	319-86-8	d-BHC	ND
105P	58-89-9	g-BHC (lindane)	ND
106P	53469-21-9	PCB-1242	ND
107P	11097-69-1	PCB-1254	ND
108P	11104-28-2	PCB-1221	ND
109P	11141-16-5	PCB-1232	ND
110P	12672-29-6	PCB-1248	ND
111P	11096-82-5	PCB-1260	ND
112P	12674-11-2	PCB-1016	ND
113P	8001-35-2	toxaphene	ND

DIOXINS

129B	1746-01-6	2,3,7,8-tetrachloro-dibenzo-p-dioxin	ND
------	-----------	--------------------------------------	----

ND-Not detected, *-detected below a detection limit of 10ug/L (volatiles) and 0.1-1.0ug/L (pesticides)

PRESIDENT

CHARLES J. SODERQUIST, Ph.D.
VICE PRESIDENTANTHONY S. WONG, Ph.D.
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SECRETARY/TREASURER

California Analytical Laboratories, Inc.

5885 POWER INN ROAD
SACRAMENTO, CALIFORNIA 95824
(916) 381-5105

CLIENT: E.G. & G.

CAL LAB NO: 15131-6

CLIENT I.D.: 106 TSE Pond #2

PP#	CAS #	<u>VOLATILES</u>	ug/L
2V	107-02-8	acrolein	ND
3V	107-13-1	acrylonitrile	ND
4V	71-43-2	benzene	ND
6V	56-23-5	carbon tetrachloride	ND
7V	108-90-7	chlorobenzene	ND
10V	107-06-2	1,2-dichloroethane	ND
11V	71-55-6	1,1,1-trichloroethane	ND
13V	75-34-3	1,1-dichloroethane	ND
14V	79-00-5	1,1,2-trichloroethane	ND
15V	79-34-5	1,1,2,2-tetrachloroethane	ND
16V	75-00-3	chloroethane	ND
19V	110-75-8	2-chloroethylvinyl ether	ND
23V	67-66-3	chloroform	ND
29V	75-35-4	1,1-dichloroethene	ND
30V	156-60-5	trans-1,2-dichloroethene	ND
32V	78-87-5	1,2-dichloropropane	ND
33V	10061-02-6	trans-1,3-dichloropropene	ND
	10061-01-5	cis-1,3-dichloropropene	ND
38V	100-41-4	ethylbenzene	ND
44V	75-09-2	methylene chloride	ND
45V	74-87-3	chloromethane	ND
46V	74-83-9	bromomethane	ND
47V	75-25-2	bromoform	ND
48V	75-27-4	bromodichloromethane	ND
49V	75-69-4	fluorotrichloromethane	ND
50V	75-71-8	dichlorodifluoromethane	ND
51V	124-48-1	chlorodibromomethane	ND
85V	127-18-4	tetrachloroethene	ND
86V	108-88-3	toluene	ND
87V	79-01-6	trichloroethene	ND
88V	75-01-4	vinyl chloride	ND

PP#	CAS #	<u>PESTICIDES</u>	ug/L
89P	309-00-2	aldrin	ND
90P	60-57-1	dieldrin	ND
91P	57-74-9	chlordan	ND
92P	50-29-3	4,4'-DDT	ND
93P	72-55-9	4,4'-DDE	ND
94P	72-54-8	4,4'-DDD	ND
95P	115-29-7	a-endosulfan	ND
96P	115-29-7	b-endosulfan	ND
97P	1031-07-8	endosulfan sulfate	ND
98P	72-20-8	endrin	ND
99P	7421-93-4	endrin aldehyde	ND
100P	76-44-8	heptachlor	ND
101P	1024-57-3	heptachlor epoxide	ND
102P	319-84-6	a-BHC	ND
103P	319-85-7	b-BHC	ND
104P	319-86-8	d-BHC	ND
105P	58-89-9	g-BHC (Lindane)	ND
106P	53469-21-9	PCB-1242	ND
107P	11097-69-1	PCB-1254	ND
108P	11104-28-2	PCB-1221	ND
109P	11141-16-5	PCB-1232	ND
110P	12672-29-6	PCB-1248	ND
111P	11096-82-5	PCB-1260	ND
112P	12674-11-2	PCB-1016	ND
113P	8001-35-2	toxaphene	ND

DIOXINS

129B	1746-01-6	2,3,7,8-tetrachloro-dibenzo-p-dioxin	ND
------	-----------	--------------------------------------	----

ND-Not detected, *-detected below a detection limit of 10ug/L (volatiles) and 0.1-1.0ug/L (pesticides)

INORGANIC ANALYSES IN WATER

CAL ID: 15131-5
EGG ID: 105 TSF POND

<u>ELEMENT</u>	<u>ug/L, ppb</u>
Aluminium	<200
Chromium	< 10
Barium	<100
Beryllium	< 5
Cadmium	< 5
Cobalt	< 50
Copper	< 50
Iron	240
Lead	< 50
Nickel	< 40
Manganese	16
Zinc	< 10
Boron	30000
Vanadium	<200
Mercury	< 1
Thallium	< 10
Arsenic	< 10
Selenium	< 2
Antimony	< 20

mg/L, ppm

Chlorides	29
Nitrate-N	0.15
Sulfate	63

INORGANIC ANALYSES IN WATER

CAL ID: 15131-6
EGG ID: 106 TSF POND

<u>ELEMENT</u>	<u>ug/L, ppb</u>
Aluminium	<200
Chromium	< 10
Barium	<100
Beryllium	< 5
Cadmium	< 5
Cobalt	< 50
Copper	< 50
Iron	110
Lead	< 50
Nickel	< 40
Manganese	< 15
Zinc	< 10
Boron	30000
Vanadium	<200
Mercury	< 1
Thallium	< 10
Arsenic	< 10
Selenium	< 2
Antimony	< 20

mg/L, ppm

Chlorides	42
Nitrate-N	0.17
Sulfate	61

APPENDIX D

ANALYTICAL RESULTS FOR SAMPLING
EVENT 2-PRELIMINARY ASSESSMENT

APPENDIX D

ANALYTICAL RESULTS FOR SAMPLING EVENT 2--PRELIMINARY ASSESSMENT

ANALYTICAL DATA

This appendix contains the analytical data for the TSF Disposal Pond soil samples, as reported in September of 1988.

SUMMARY OF INORGANICS ABOVE DETECTION FOR TSF DISPOSAL POND
VOLATILE ORGANICS GREATER THAN BACKGROUND FOR TSF DISPOSAL POND
TIC VOLATILES--TSF DISPOSAL POND
INORGANICS

<u>Sample No.</u>	<u>Location</u>
TSF078801	S1
TSF078802	S2
TSF078803	S3
TSF078804	S4

SUMMARY OF INORGANICS ABOVE DETECTION
FOR TSF DISPOSAL POND

<u>Analyte</u>	<u>Mean Concen- tration (ppm)</u>	<u>Qualifier</u>
Antimony	1.30	B
Antimony	0.95	BW
Arsenic	8.30	
Barium	186.75	
Beryllium	1.25	B
Cadmium	6.90	
Chromium	28.33	
Cobalt	7.57	B
Copper	37.48	
Lead	21.45	
Mercury	1012.02	N
Nickel	35.80	
Silver	3.30	
Thallium	0.30	
Tin	977.00	
Vanadium	26.80	
Zinc	254.75	

- B - This qualifier indicates the reported value is less than the contract required detection limit (CRDL) or DOE method detection limit (MDL), but greater than the instrument detection limit (IDL). Equivalent concentrations are allowable in method blanks, so data flagged with a "B" must be interpreted with caution.
- N - Matrix (predigestion) Spike recovery not within control limits.
- W - Postdigestion spike for Furnace Atomic Absorption analysis is out of control limits (85 to 115%), where sample absorbance is less than 50% of spike absorbance.

VOLATILE ORGANICS GREATER THAN BACKGROUND FOR TSF DISPOSAL POND

<u>Analyte</u>	<u>Sample ID</u>	<u>Concen- tration (ppb)</u>	<u>Qualifier</u>
Dichlorodifluoromethane	TSF0788001	12	
Methylene Chloride	TSF0788001	4	BJ
Methylene Chloride	TSF0788002	3	BJ
Methylene Chloride	TSF0788003	3	BJ
Methylene Chloride	TSF0788004	5	BJ

- J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds (an assumed relative response factor (RRF) rather than an actual one is used), or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit (CROL). For example, if the sample quantitation limit is 10 µg/L, but a concentration of 3 µg/L is calculated, it is reported as 3 J. The sample quantitation limit is adjusted for both dilution and percent moisture as discussed for the U flag.
- B - This flag is used when the analyte is found in the associated analytical blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user that high bias is possible. This flag is used for a Tentatively Identified Compound (TIC) as well as for a positively identified Target Compound List (TCL) compound.
- E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
- D - This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is reanalyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the result for the diluted sample, and all concentration values reported for this analysis are flagged with the "D" flag.

TIC VOLATILES--TSF DISPOSAL POND

<u>Analyte</u>	<u>Sample ID</u>	<u>Concen- Tration (ppb)</u>	<u>Qualifier</u>
Furan, tetrahydro-	TSF0788001	17	BJ
Furan, tetrahydro-	TSF0788002	16	BJ
Furan, tetrahydro-	TSF07880032	22	BJ

- J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds (an assumed relative response factor (RRF) rather than an actual one is used), or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit (CRQL). For example, if the sample quantitation limit is 10 µg/L, but a concentration of 3 µg/L is calculated, it is reported as 3 J. The sample quantitation limit is adjusted for both dilution and percent moisture as discussed for the U flag.
- B - This flag is used when the analyte is found in the associated analytical blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user that high bias is possible. This flag is used for a tentatively identified compound (TIC) as well as for a positively identified Target Compound List (TCL) compound.

INORGANICS

<u>Analyte</u>	<u>Sample ID</u>	<u>Concentration (ppm)</u>	<u>Qualifier</u>
Antimony	TSF0788001	1.2	BW
Antimony	TSF0788002	0.6	U
Antimony	TSF0788003	0.7	BW
Antimony	TSF0788004	1.3	B
Arsenic	TSF0788001	1.7	
Arsenic	TSF0788002	6.5	
Arsenic	TSF0788003	12.5	
Arsenic	TSF0788004	8.3	W
Barium	TSF0788001	191.0	
Barium	TSF0788002	193.0	
Barium	TSF0788003	177.0	
Barium	TSF0788004	186.0	
Beryllium	TSF0788001	1.0	B
Beryllium	TSF0788002	1.4	B
Beryllium	TSF0788003	1.2	B
Beryllium	TSF0788004	1.4	B
Cadmium	TSF0788001	7.2	
Cadmium	TSF0788002	7.4	
Cadmium	TSF0788003	6.3	
Cadmium	TSF0788004	6.7	
Chromium	TSF0788001	31.8	
Chromium	TSF0788002	27.6	
Chromium	TSF0788003	26.9	
Chromium	TSF0788004	27.0	
Cobalt	TSF0788001	6.6	B
Cobalt	TSF0788002	7.4	B
Cobalt	TSF0788003	5.2	B
Cobalt	TSF0788004	11.1	B
Copper	TSF0788001	31.5	
Copper	TSF0788002	28.0	
Copper	TSF0788003	54.9	
Copper	TSF0788004	35.5	
Lead	TSF0788001	26.1	S
Lead	TSF0788002	23.9	
Lead	TSF0788003	19.0	
Lead	TSF0788004	25.0	+
Mercury	TSF0788001	1.2	N
Mercury	TSF0788002	4040.0	N
Mercury	TSF0788003	5.5	N
Mercury	TSF0788004	1.4	N
Nickel	TSF0788001	39.8	
Nickel	TSF0788002	38.9	
Nickel	TSF0788003	35.1	
Nickel	TSF0788004	29.4	
Selenium	TSF0788001	1.0	U
Selenium	TSF0788002	1.0	UN
Selenium	TSF0788003	1.0	U

INORGANICS (continued)

<u>Analyte</u>	<u>Sample ID</u>	<u>Concen- tration (ppm)</u>	<u>Qualifier</u>
Selenium	TSF0788004	1.0	U
Silver	TSF0788001	1.9	U
Silver	TSF0788002	1.8	U
Silver	TSF0788003	2.5	
Silver	TSF0788004	4.1	
Thallium	TSF0788001	0.3	W
Thallium	TSF0788002	0.3	UW
Thallium	TSF0788003	0.3	UW
Thallium	TSF0788004	0.3	UW
Tin	TSF0788001	886.0	
Tin	TSF0788002	1150.0	
Tin	TSF0788003	883.0	
Tin	TSF0788004	989.0	
Vanadium	TSF0788001	27.8	
Vanadium	TSF0788002	26.3	
Vanadium	TSF0788003	26.0	
Vanadium	TSF0788004	27.1	
Zinc	TSF0788001	241.0	
Zinc	TSF0788002	203.0	
Zinc	TSF0788003	385.0	
Zinc	TSF0788004	190.0	

- B - This qualifier indicates the reported value is less than the contract required detection limit (CRDL) or DOE method detection limit (MDL), but greater than the instrument detection limit (IDL). Equivalent concentrations are allowable in method blanks, so data flagged with a "B" must be interpreted with caution.
- U - This qualifier indicates the analyte was analyzed for, but not detected at or above the IDL (e.g., a value of 15U indicates that the analyte was not present in concentrations equal to or greater than 15 µg/L or 15 mg/kg). A dashed line, "---," is substituted for U-qualified data in the Section 4 results tables.
- N - Matrix (predigestion) Spike recovery not within control limits.
- S - The reported value was determined by the Method of Standard Additions (MSA).
- W - Postdigestion spike for Furnace Atomic Absorption analysis is out of control limits (85 to 115%), while sample absorbance is less than 50% of spike absorbance.
- + - Correlation coefficient for the MSA is less than 0.995.

APPENDIX E

ANALYTICAL RESULTS FOR SAMPLING
EVENT 3-DOE-HQ INVESTIGATION

Table E-1. Analytical data summary by medium for Environmental Problem 3 leaching ponds.

AREA	TSF	TSF	TSF	TSF	TSF
LOCATION	TAN/TSF-07	TAN/TSF-07	TAN/TSF-07	TAN/TSF-07	TAN/TSF-07
TYPE OF LOCATION	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND
SAMPLE NUMBER	IN510015A	IN510015A	IN510015B	IN510015B	IN510026A
MEDIA	WATER	WATER	WATER	WATER	WATER
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L
SDG NUMBER	IN513018D	IN510015A	IN401013I	IN401013K	IN513018D
FIELD MEASUREMENTS					
pH	9.3	9.3	9.3	9.3	8.7
Conductivity (mS/cm)	0.76	0.76	0.76	0.76	0.58
Temperature (C)	18.0	18.0	18.0	18.0	18.0
Depth (ft)	1-5	1-5	1-5	1-5	1-5
ANALYTES					
Aluminum			3850		
Antimony			---		
Arsenic			---		
Barium			72.0 B		
Beryllium			3.3 B		
Cadmium			---		
Calcium			51400		
Chromium			9.1 B		
Chromium+6	5.8 BJ				2.0 BJ
Cobalt			---		
Copper			12.0 B		
Iron			3720		
Lead			---		
Magnesium			19100		
Manganese			72.0		
Mercury		0.02 B			
Nickel			11.0 B		
Potassium				6790	
Selenium			---		
Silver			---		
Sodium			99500		
Vanadium			22.0 B		
Zinc			57.0		
% Solids					
5-18-93					

Table E-1. (continued).

AREA	TSF	TSF	TSF	TSF	TSF
LOCATION	TAN/TSF-07	TAN/TSF-07	TAN/TSF-07	TAN/TSF-07	TAN/TSF-07
TYPE OF LOCATION	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND
SAMPLE NUMBER	IN510026A	IN510026B	IN510026B	IN510048A	IN510048A
MEDIA	WATER	WATER	WATER	WATER	WATER
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L
SDG NUMBER	IN510015A	IN401013I	IN401013K	IN513018D	IN510015A
FIELD MEASUREMENTS					
pH	8.7	8.7	8.7	9.5	9.5
Conductivity (mS/cm)	0.58	0.58	0.58	0.76	0.76
Temperature (C)	18.0	18.0	18.0	18.0	18.0
Depth (ft)	1-5	1-5	1-5	1-5	1-5
ANALYTES					
Aluminum		791			
Antimony		---			
Arsenic		---			
Barium		90.0 B			
Beryllium		2.5 B			
Cadmium		---			
Calcium		56700			
Chromium		28.0			
Chromium+6				18.6 J	
Cobalt		---			
Copper		13.0 B			
Iron		616			
Lead		---			
Magnesium		17200			
Manganese		28.0			
Mercury	0.42				0.04 B
Nickel		15.0 B			
Potassium			5600		
Selenium		---			
Silver		---			
Sodium		50600			
Vanadium		17.0 B			
Zinc		124			
% Solids					
5-18-93					

Table E-1. (continued).

AREA	TSF	TSF	TSF	TSF	TSF
LOCATION	TAN/TSF-07	TAN/TSF-07	TAN/TSF-07	TAN/TSF-07	TAN/TSF-07
TYPE OF LOCATION	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND
SAMPLE NUMBER	IN510048B	IN510048B	IN510059A	IN510059A	IN510059B
MEDIA	WATER	WATER	WATER	WATER	WATER
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L
SDG NUMBER	IN401013I	IN401013K	IN513018D	IN510015A	IN401013I
<u>FIELD MEASUREMENTS</u>					
pH	9.5	9.5	8.7	8.7	8.7
Conductivity (mS/cm)	0.76	0.76	0.58	0.58	0.58
Temperature (C)	18.0	18.0	18.0	18.0	18.0
Depth (ft)	1-5	1-5	1-5	1-5	1-5
<u>ANALYTES</u>					
Aluminum	15500				1140
Antimony	---				---
Arsenic	---				---
Barium	241				114 B
Beryllium	4.4 B				2.8 B
Cadmium	1.1 B				---
Calcium	70600				66800
Chromium	42.0				6.8 B
Chromium+6			3.4 BJ		
Cobalt	6.0 B				---
Copper	102				19.0 B
Iron	17600				1010
Lead	---				---
Magnesium	24900				17000
Manganese	217				53.0
Mercury				0.14 B	
Nickel	29.0 B				---
Potassium		11000			---
Selenium	---				---
Silver	35.0				---
Sodium	106000				46900
Vanadium	48.0 B				21.0 B
Zinc	389				90.0
<u>% Solids</u>					
5-18-93					

Table E-1. (continued).

AREA	TSF	TSF	TSF	TSF	TSF
LOCATION	TAN/TSF-07	TAN/TSF-07	TAN/TSF-07	TAN/TSF-07	TAN/TSF-07
TYPE OF LOCATION	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND
SAMPLE NUMBER	IN510059B	IN510253A	IN510253A	IN510253B	IN510253B
MEDIA	WATER	WATER	WATER	WATER	WATER
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L
SDG NUMBER	IN401013K	IN513018D	IN510015A	IN401013I	IN401013K
FIELD MEASUREMENTS					
pH	8.7				
Conductivity (mS/cm)	0.58				
Temperature (C)	18.0				
Depth (ft)	1-5	1-5	1-5	1-5	1-5
ANALYTES					
Aluminum				304	
Antimony				---	
Arsenic				---	
Barium				12.0 B	
Beryllium				---	
Cadmium				---	
Calcium				1330 B	
Chromium				20.0	
Chromium+6		31.0 J			
Cobalt				---	
Copper				78.0	
Iron				300	
Lead				---	
Magnesium				208 B	
Manganese				9.7 B	
Mercury			0.08 B		
Nickel				14.0 B	
Potassium	5500				400 B
Selenium				---	
Silver				---	
Sodium				---	
Vanadium				---	
Zinc				358	
% Solids					
5-18-93					

Table E-1. (continued).

AREA	TSF	TSF	TSF	TSF	TSF
LOCATION	TAN/TSF-07	TAN/TSF-07	TAN/TSF-07	TAN/TSF-07	TAN/TSF-07
TYPE OF LOCATION	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND
SAMPLE NUMBER	IN511016B	IN511016B	IN511016C	IN511016C	IN511027B
MEDIA	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SDG NUMBER	IN511016B	IN514053C	IN301045D	IN511016K	IN511016B
FIELD MEASUREMENTS					
pH	7.1	7.1	7.1	7.1	7.8
Conductivity (mS/cm)	0.92	0.92	0.92	0.92	0.89
Temperature (C)					
Depth (ft)	1	1	1	1	1
ANALYTES					
Aluminum			24500 J		
Antimony			9.8 UN		
Arsenic			---		
Barium			248 J		
Beryllium			2.4 E		
Cadmium			1.7		
Calcium			50100		
Chromium			43.0		
Chromium+6		35.0 J			
Cobalt			11.0		
Copper			37.0		
Iron			29000		
Lead			19.0 B		
Magnesium			15100 E		
Manganese			319		
Mercury	0.08				0.13
Nickel			45.0		
Potassium				5300 J	
Selenium			---		
Silver			3.3 J		
Sodium			849 BJ		
Vanadium			48.0 E		
Zinc			196		
% Solids	72.9	72.9	69.7	69.7	67.6
5-18-93					

Table E-1. (continued).

AREA	TSF	TSF	TSF	TSF	TSF
LOCATION	TAN/TSF-07	TAN/TSF-07	TAN/TSF-07	TAN/TSF-07	TAN/TSF-07
TYPE OF LOCATION	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND
SAMPLE NUMBER	IN511027B	IN511027C	IN511027C	IN511049B	IN511049B
MEDIA	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SDG NUMBER	IN514053C	IN301045D	IN511016K	IN511016B	IN514053C
FIELD MEASUREMENTS					
pH	7.8	7.8	7.8	7.9	7.9
Conductivity (mS/cm)	0.89	0.89	0.89	0.81	0.81
Temperature (C)					
Depth (ft)	1	1	1	1	1
ANALYTES					
Aluminum		17100 J			
Antimony		9.0 UN			
Arsenic		---			
Barium		222 J			
Beryllium		2.1 E			
Cadmium		1.3			
Calcium		76700			
Chromium		33.0			
Chromium+6	29.1 J				39.4 J
Cobalt		9.8			
Copper		37.0			
Iron		24700			
Lead		19.0 B			
Magnesium		14400 E			
Manganese		480			
Mercury				1.7	
Nickel		36.0			
Potassium			3500 J		
Selenium		---			
Silver		3.5 J			
Sodium		599 BJ			
Vanadium		48.0 E			
Zinc		137			
% Solids	67.6	76.0	76.0	46.4	46.4
5-18-93					

Table E-1. (continued).

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF TAM/TSF-07 DISPOSAL POND IN511049C SEDIMENT mg/kg IN301045D	TSF TAM/TSF-07 DISPOSAL POND IN511049C SEDIMENT mg/kg IN511016K	TSF TAM/TSF-07 DISPOSAL POND IN511050B SEDIMENT mg/kg IN511016B	TSF TAM/TSF-07 DISPOSAL POND IN511050B SEDIMENT mg/kg IN514053C	TSF TAM/TSF-07 DISPOSAL POND IN511050C SEDIMENT mg/kg IN301045D
FIELD MEASUREMENTS					
pH	7.9	7.9	7.1	7.1	7.1
Conductivity (mS/cm)	0.81	0.81	0.68	0.68	0.68
Temperature (C)					
Depth (ft)	1	1	1	1	1
ANALYTES					
Aluminum	21300 J				15400 J
Antimony	11.0 UM				11.0 UM
Arsenic	---				---
Barium	226 J				212 J
Beryllium	2.3 E				2.1 E
Cadmium	1.6				1.4
Calcium	38200				69200
Chromium	42.0				32.0
Chromium+6				29.5 J	
Cobalt	10.0 B				9.1 B
Copper	78.0				50.0
Iron	28200				23700
Lead	21.0 B				16.0 B
Magnesium	15500 E				14400 E
Manganese	202				341
Mercury			0.13		
Nickel	44.0				36.0
Potassium		5000 J			
Selenium	---				---
Silver	26.0 J				9.0 J
Sodium	838 BJ				591 BJ
Vanadium	42.0 E				40.0 E
Zinc	293				202
Z Solids	54.8	54.8	70.3	70.3	64.0
5-18-93					

Table E-1. (continued).

AREA	TSF	TSF	TSF	TSF	TSF
LOCATION	TAM/TSF-07	TAM/TSF-07	TAM/TSF-07	TAM/TSF-07	TAM/TSF-07
TYPE OF LOCATION	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND
SAMPLE NUMBER	IMS11050C	IMS12017B	IMS12017B	IMS12017C	IMS12017C
MEDIA	SEDIMENT	SOIL	SOIL	SOIL	SOIL
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SDC NUMBER	IMS11010K	IMS12017B	IMS12017C	IMS12017C	IMS12017C
FIELD MEASUREMENTS					
pH	7.1	7.7	7.7	7.7	7.7
Conductivity (mS/cm)	0.68				
Temperature (C)					
Depth (ft)	1	45	45	45	45
ANALYTES					
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Cadmium					
Calcium					
Chromium					
Chromium-6					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Mercury					
Nickel					
Potassium					
Selenium					
Silver					
Sodium					
Titanium					
Zinc					
% Solids					
5-10-93					

Table E-1. (continued).

AREA	TSF	TSF	TSF	TSF	TSF
LOCATION	TAN/TSF-07	TAN/TSF-07	TAN/TSF-07	TAN/TSF-07	TAN/TSF-07
TYPE OF LOCATION	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND
SAMPLE NUMBER	INS120200	INS120200	INS12020C	INS12020C	INS120390
MEDIA	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SDG NUMBER	INS120170	INS15010C	INS030160	INS03016C	INS03016C
FIELD MEASUREMENTS					
pH					8.0
Conductivity (mS/cm)					
Temperature (C)					
Depth (ft)	5	5	5	5	30
ANALYTES					
Aluminum			14500 J		
Antimony			5.5 B0		
Arsenic			11.0 B		
Barium			214 J		
Beryllium			1.0 E		
Cadmium			0.50 B		
Calcium			75500		
Chromium			30.0 E		
Chromium-6		20.6 J			
Cobalt			7.9 B		
Copper			20.0		
Iron			10000		
Lead			12.0 B		
Magnesium			13000 E		
Manganese			650 E		
Mercury	0.04 B				0.06
Nickel			31.0		
Potassium				2500 J	
Selenium			---		
Silver			0.85 B		
Sodium			654 B1		
Vanadium			42.0 E		
Zinc			85.0		
% Solids	82.7	82.7	82.8	82.8	83.5
S 18-93					

Table E-1. (continued).

AREA		TSF		TSF		TSF	
LOCATION		TAM/TSF-07		TAM/TSF-07		TAM/TSF-07	
TYPE OF LOCATION		DISPOSAL POND		DISPOSAL POND		DISPOSAL POND	
SAMPLE NUMBER		1M5120308		1M5120308		1M5120308	
MEDIA		SOIL		SOIL		SOIL	
UNITS		mg/kg		mg/kg		mg/kg	
SDG NUMBER		1M500034C		1M500014B		1M500014A	
FIELD MEASUREMENTS							
pH		8.0		8.0		8.0	
Conductivity (mS/cm)		30		30		30	
Temperature (C)							
Depth (ft)							
ANALYTES							
Aluminum		19900 J		19900 J		19900 J	
Antimony		4.9 0M		4.9 0M		4.9 0M	
Arsenic		11.0 0		11.0 0		11.0 0	
Barium		201 J		201 J		201 J	
Beryllium		2.0 E		2.0 E		2.0 E	
Cadmium		0.78 0		0.78 0		0.78 0	
Calcium		66000		66000		66000	
Chromium		37.0 E		37.0 E		37.0 E	
Chromium-6		9.1		9.1		9.1	
Cobalt		31.6 J		31.6 J		31.6 J	
Copper		24.0		24.0		24.0	
Iron		25300		25300		25300	
Lead		13.0 0		13.0 0		13.0 0	
Magnesium		12900 E		12900 E		12900 E	
Manganese		695 E		695 E		695 E	
Mercury		37.0		37.0		37.0	
Nickel		---		---		---	
Potassium		0.92 0		0.92 0		0.92 0	
Selenium		700 0J		700 0J		700 0J	
Silver		51.0 E		51.0 E		51.0 E	
Sodium		703		703		703	
Vanadium		83.5		83.5		83.5	
Zinc		84.1		84.1		84.1	
Z. Solids		3400 J		3400 J		3400 J	
S-10-95		84.1		84.1		84.1	

Table E-1. (continued).

AREA	TSF	TSF	TSF	TSF	TSF	TSF
LOCATION	TAM/TSF-07	TAM/TSF-07	TAM/TSF-07	TAM/TSF-07	TAM/TSF-07	TAM/TSF-07
TYPE OF LOCATION	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND
SAMPLE NUMBER	IMS10015 D /	IMS10026 D A	IMS10026 D A	IMS10026 D A	IMS10026 D A	IMS10026 D A
MEDIA	WATER Q S	WATER Q S	WATER Q S	WATER Q S	WATER Q S	WATER Q S
UNITS	PC/L F L	PC/L F L	PC/L F L	PC/L F L	PC/L F L	PC/L F L
FIELD MEASUREMENTS						
pH	9.3	8.7	9.5	8.7	8.7	8.7
Conductivity (mS/cm)	0.76	0.58	0.76	0.58	0.58	0.58
Temperature (C)	18.0	18.0	18.0	18.0	18.0	18.0
Depth (ft)	1-5	1-5	1-5	1-5	1-5	1-5
Gross Alpha	2.20E+01	J 2 8.00E+00	J 2 1.30E+01	J 2 1.00E+01	J 2 3.30E+01	J 2
Gross Beta	3.40E+01	J 2 7.00E+01	J 2 8.50E+01	J 2 3.40E+01	J 2 3.90E+01	J 2
Alpha Emitters	-2.00E-02	U 2 -5.00E-02	U 2 1.30E-01	J 2 7.00E-02	J 2 -3.00E-02	U 2
Beta Emitters						
Strontium - Total	3.50E+00	J 2 1.20E+01	J 2 9.30E+00	J 2 9.20E+00	J 2 4.20E+00	J 2
Iridium	1.00E+02	U 2 -1.60E+02	U 2 -1.20E+02	U 2 -9.00E+01	U 2 2.10E+04	J 2
Gamma Emitters						
Cesium - 137	7.20E+00	J 2 1.00E+01	J 2 9.30E+01	J 2 8.00E+00	J 2	J 2
Cobalt - 60	8.00E+00	J 2 7.00E+00	J 2 3.10E+01	J 2 5.90E+00	J 2	J 2
Europium - 155						
Manganese - 54						
Potassium - 40						

a. The DOE column contains any data qualifier flags.

b. The ASI column contains the analytical support level.

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Table E-1. (continued).

AREA	TSF		TSF		TSF		TSF		TSF		
LOCATION	TAN/TSF-07		TAN/TSF-07		TAN/TSF-07		TAN/TSF-07		TAN/TSF-07		
TYPE OF LOCATION	DISPOSAL POND		DISPOSAL POND		DISPOSAL POND		DISPOSAL POND		DISPOSAL POND		
SAMPLE NUMBER	INS11016 D A		INS11027 D A		INS11049 D A		INS11050 D A		INS12017 D A		
MEDIA	SEDIMENT O S		SEDIMENT O S		SEDIMENT O S		SEDIMENT O S		SOIL O S		
UNITS	pCi/g F L		pCi/g F L		pCi/g F L		pCi/g F L		pCi/g F L		
FIELD MEASUREMENTS											
pH	7.1		7.8		7.9		7.1		7.7		
Conductivity (mS/cm)	0.92		0.89		0.81		0.68				
Temperature (C)											
Depth (ft)	1		1		1		1		45		
Gross Alpha	5.30E+00	J 2	7.40E+00	J 2	9.10E+00	J 2	3.90E+00	J 2	6.70E+00	J 2	
Gross Beta	1.30E+01	J 2	1.80E+01	J 2	2.90E+01	J 2	3.40E+01	J 2	7.90E+00	J 2	
Alpha Emitters											
Americium - 241	1.10E-02	J 2	1.50E-02	J 2	1.70E-02	J 2	9.10E-03	J 2	4.00E-03	J 2	
Beta Emitters											
Strontium - Total	5.20E-01	J 2	5.20E-01	J 2	3.00E+00	J 2	5.90E-01	J 2	2.60E-01	J 2	
Tritium	-3.00E-02	U 2	3.00E-01	J 2	7.80E-01	U 2	2.00E-01	U 2	1.20E+00	J 2	
Gamma Emitters											
Cesium - 137	4.40E+00	J 2	1.70E+01	J 2	5.90E+01	J 2	1.40E+01	J 2			
Cobalt - 60	5.70E-01	J 2	2.10E+01	J 2	1.80E+01	J 2	4.20E+01	J 2			
Europium - 155	1.30E-01	J 2									
Manganese - 54			1.80E-01	J 2			2.80E-01	J 2			
Potassium - 40	1.90E+01	2	1.80E+01	2	2.10E+01	2	1.80E+01	2	1.80E+01	2	

- a. The DOF column contains any data qualifier flags.
b. The ASL column contains the analytical support level.

Table E-1. (continued).

AREA	TSF			TSF		
LOCATION	TAM/TSF-07			TAM/TSF-07		
TYPE OF LOCATION	DISPOSAL POND			DISPOSAL POND		
SAMPLE NUMBER	IN512028 D A			IN512039 D A		
MEDIA	SOIL Q S			SOIL Q S		
UNITS	pCi/g F L			pCi/g F L		
<u>FIELD MEASUREMENTS</u>						
pH						8.0
Conductivity (mS/cm)						
Temperature (C)						
Depth (ft)		5				30
<u>Gross Alpha</u>	5.10E+00		J 2	4.10E+00		J 2
<u>Gross Beta</u>	4.90E+00		J 2	6.40E+00		J 2
<u>Alpha Emitters</u>						
Americium - 241	1.50E-02		J 2	2.10E-02		J 2
<u>Beta Emitters</u>						
Strontium - Total	-----			7.60E-01		J 2
Tritium	8.00E-01		J 2	2.00E-01		J 2
<u>Gamma Emitters</u>						
Cesium - 137						
Cobalt - 60						
Europium - 155						
Manganese - 54						
Potassium - 40	1.40E+01		2	1.50E+01		2

a. The DOF column contains any data qualifier flags.

b. The ASL column contains the analytical support level.

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Table E-1. (continued).

AREA	TSF	TSF	TSF	TSF	TSF	TSF	TSF
LOCATION	TAM/TSF-07	TAM/TSF-07	TAM/TSF-07	TAM/TSF-07	TAM/TSF-07	TAM/TSF-07	TAM/TSF-07
TYPE OF LOCATION	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND
S&A REQUEST NUMBER	510	510	510	510	511	511	511
SAMPLE NUMBER	INS100718	INS100828	INS10093A	INS10106A	INS11016A	INS11049A	INS11050A
MEDIA	WATER	WATER	WATER	WATER	SEDIMENT	SEDIMENT	SEDIMENT
UNITS	ug/L	ug/L	ug/L	ug/L	ug/kg	ug/kg	ug/kg
SDG NUMBER	IN401013A	IN401013A	IN401013A	IN401013A	IN505052A	IN505052A	IN505052A
FIELD MEASUREMENTS							
pH	9.3	9.5	8.7	8.7	7.1	7.9	7.1
Conductivity (mS/cm)	0.76	0.76	0.58	0.58	0.92	0.81	0.68
Temperature (C)	18.0	18.0	18.0	18.0			
Depth (ft)	1-5	1-5	1-5	1-5	1	1	1
TARGET COMPOUNDS							
Chloromethane	---	---	---	---	---	---	---
Bromomethane	---	---	---	---	---	---	---
Vinyl Chloride	---	---	---	---	---	---	---
Chloroethane	---	---	---	---	---	---	---
Methylene Chloride	---	---	---	---	---	---	---
Acetone	---	---	---	11	---	---	---
Carbon Disulfide	---	---	---	---	---	---	---
1,1-Dichloroethene	---	---	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---	---	---
1,2-Dichloroethene (total)	---	---	---	---	---	---	---
Chloroform	---	---	---	---	---	---	---
1,2-Dichloroethane	---	---	---	---	---	---	---
2-Butanone	10 R	10 R	10 R	10 R	15 R	19 R	15 R
1,1,1-Trichloroethane	---	---	---	---	---	---	---
Carbon Tetrachloride	---	---	---	---	---	---	---
Vinyl Acetate	10 R	10 R	10 R	10 R	---	---	---
Bromodichloromethane	---	---	---	---	---	---	---
1,2-Dichloropropane	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	---	---	---	---	---	---	---
Trichloroethene	---	---	---	---	---	---	---
Dibromochloromethane	---	---	---	---	---	---	---
1,1,2-Trichloroethane	---	---	---	---	---	---	---
Benzene	---	---	---	---	---	---	---
Trans-1,3-Dichloropropene	---	---	---	---	---	---	---
Bromoform	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	---	---	---	---	---	---	---
2-Hexanone	---	---	---	---	---	---	---
Tetrachloroethene	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	---	---	---	---	---	---	---
Toluene	---	---	---	---	---	---	---
Chlorobenzene	---	---	---	---	---	---	---
Ethylbenzene	---	---	---	---	---	---	---
Styrene	---	---	---	---	---	---	---
Xylene (total)	---	---	---	---	---	---	---
Dilution Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	7(14)d	8(14)d	8(14)d	8(14)d	7(14)d	7(14)d	7(14)d

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Table E-1. (continued).

AREA	TSF	TSF	TSF	TSF
LOCATION	TAM/TSF-07	TAM/TSF-07	TAM/TSF-07	TAM/TSF-07
TYPE OF LOCATION	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND
S&A REQUEST NUMBER	511	511	512	512
SAMPLE NUMBER	IN511050A	IN512017A	IN512028A	IN512039A
MEDIA	SEDIMENT	SOIL	SOIL	SOIL
UNITS	ug/kg	ug/kg	ug/kg	ug/kg
SDG NUMBER	IN511050A	IN503027A	IN503027A	IN503027A
FIELD MEASUREMENTS				
pH	7.1	7.7		8.0
Conductivity (mS/cm)	0.68			
Temperature (C)				
Depth (ft)	1	45	5	30
TARGET COMPOUNDS				
Chloromethane	---	25 UJ	24 UJ	29 UJ
Bromomethane	---	25 UJ	24 UJ	29 UJ
Vinyl Chloride	---	25 UJ	24 UJ	29 UJ
Chloroethane	---	25 UJ	24 UJ	29 UJ
Methylene Chloride	---	9 J	11 J	8 J
Acetone	18	25 UJ	24 UJ	29 UJ
Carbon Disulfide	---	13 UJ	12 UJ	15 UJ
1,1-Dichloroethene	---	13 UJ	12 UJ	15 UJ
1,1-Dichloroethane	---	13 UJ	12 UJ	15 UJ
1,2-Dichloroethene (total)	---	13 UJ	12 UJ	15 UJ
Chloroform	---	18 J	13 J	17 J
1,2-Dichloroethane	---	13 UJ	12 UJ	15 UJ
2-Butanone	16 R	25 R	24 R	29 R
1,1,1-Trichloroethane	---	43 J	12 J	18 J
Carbon Tetrachloride	---	13 UJ	12 UJ	15 UJ
Vinyl Acetate	---	25 UJ	24 UJ	29 UJ
Bromodichloromethane	---	13 UJ	12 UJ	15 UJ
1,2-Dichloropropane	---	13 UJ	12 UJ	15 UJ
cis-1,3-Dichloropropene	---	13 UJ	12 UJ	15 UJ
Trichloroethene	---	13 UJ	12 UJ	15 UJ
Dibromochloromethane	---	13 UJ	12 UJ	15 UJ
1,1,2-Trichloroethane	---	13 UJ	12 UJ	15 UJ
Benzene	---	13 UJ	12 UJ	15 UJ
Trans-1,3-Dichloropropene	---	13 UJ	12 UJ	15 UJ
Bromoform	---	13 UJ	12 UJ	15 UJ
4-Methyl-2-Pentanone	---	25 UJ	24 UJ	29 UJ
2-Mexanone	---	25 UJ	24 UJ	29 UJ
Tetrachloroethene	---	13 UJ	12 UJ	15 UJ
1,1,2,2-Tetrachloroethane	---	13 UJ	12 UJ	15 UJ
Toluene	---	13 UJ	12 UJ	5 J
Chlorobenzene	---	13 UJ	12 UJ	15 UJ
Ethylbenzene	---	13 UJ	12 UJ	15 UJ
Styrene	---	13 UJ	12 UJ	15 UJ
Xylene (total)	---	13 UJ	12 UJ	15 UJ
Dilution Factor	1.000	1.000	0.998	1.000
Total (Allowed) Hold time	8(14)d	22(14)d*	Not Available	17(14)d*

APPENDIX F

ANALYTICAL RESULTS FOR SAMPLING EVENT 4—SUBSURFACE INVESTIGATION

Table F-1. 1989 TAN hydrogeologic investigation-volatile organic data.

AREA	TSF	TSF	TSF	TSF	TSF	TSF	TSF
LOCATION	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND
TYPE OF LOCATION	AUGER HOLE #3	AUGER HOLE #3	AUGER HOLE #3	AUGER HOLE #3	AUGER HOLE #3	AUGER HOLE #3	AUGER HOLE #3
SAMPLE NUMBER	TAG0389A01A	TAG0389B01A	TAG0389B01B ¹	TAG0389B02A	TAG0389B02ADL	TAG0389B02B ¹	TAG0389C01A
MEDIA	SOIL	WATER/TCLP	WATER/TCLP	WATER/TCLP	WATER/TCLP	WATER/TCLP	SOIL
UNITS	ug/kg	ug/L	ug/L	ug/L	ug/L	ug/L	ug/kg
SDG NUMBER	TAGEQ89001	TAGEQ89001	TAGEQ89001	TAGEQ89001	TAGEQ89001	TAGEQ89001	TAGEQ89001
FIELD MEASUREMENTS							
Depth (ft)	0-2	5-7	5-7	5-7	5-7	5-7	10-12
TARGET COMPOUNDS							
Methylene Chloride	---	6 J	5 J	5 J	5 JD	5 J	---
Acetone	---	42 J	120 J	210 J	190 DJ	27 J	---
Carbon Disulfide	---	---	---	---	---	---	---
1,1-Dichloroethene	---	---	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---	---	---
1,2-Dichloroethene_(total)	---	---	---	---	---	---	---
Chloroform	---	---	---	---	---	---	---
1,2-Dichloroethane	---	---	---	---	---	---	---
2-Butanone	---	---	---	---	---	---	---
1,1,1-Trichloroethane	---	---	---	---	---	---	---
Carbon Tetrachloride	---	---	---	---	---	---	---
Vinyl Acetate	---	---	---	---	---	---	---
Bromodichloromethane	---	---	---	---	---	---	---
1,2-Dichloropropane	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	---	---	---	---	---	---	---
Trichloroethene	---	---	---	---	---	---	---
Dibromochloromethane	---	---	---	---	---	---	---
1,1,2-Trichloroethane	---	---	---	---	---	---	---
Benzene	---	---	---	---	---	---	---
Trans-1,3-Dichloropropene	---	---	---	---	---	---	---
Bromoform	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	---	---	---	---	---	---	---
2-Hexanone	---	---	---	---	---	---	---
Tetrachloroethene	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	---	---	---	---	---	---	---
Toluene	15	3 J	2 J	2 J	2 JD	2 J	5
Isobutanol							
Total (Allowed) Hold Time	11(14)d	22(14)d*	22(14)d*	22(14)d*	23(14)d*	23(14)d*	11(14)d
Dilution Factor	1.000	1.000	1.000	1.000	2.000	1.000	1.000

¹ Sample was designated for metals analysis, but laboratory ran TCLP volatile organic analysis as well.
10-3-92

NOTE: Table F-6, page F-19, summarizes all analytical results for sampling event 4-subsurface investigation.

Table F-1. (continued).

AREA	TSF	TSF	TSF	TSF	TSF	TSF	TSF
LOCATION	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND
TYPE OF LOCATION	AUGER HOLE #3	AUGER HOLE #3	AUGER HOLE #3	AUGER HOLE #3	AUGER HOLE #4	AUGER HOLE #4	AUGER HOLE #4
SAMPLE NUMBER	TAG0389C02A	TAG0389D01A	TAG0389E01A	TAG0389F01A	TAG0489A01A	TAG0489B01A	TAG0489B02A
MEDIA	SOIL	SOIL	SOIL	SOIL	SOIL	WATER/TCLP	SOIL
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L	ug/kg
SDG NUMBER	TAGEQ89001	TAGEQ89001	TAGEQ89001	TAGEQ89001	TAGEQ89002	TAGEQ89002	TAGEQ89002
FIELD MEASUREMENTS							
Depth (ft)	10-12	15-17	20-22	25-27	0-2	5-7	5-7
TARGET COMPOUNDS							
Methylene Chloride	---	---	---	---	---	57 J	---
Acetone	27	10 J	6 J	---	---	95	---
Carbon Disulfide	---	---	---	---	---	---	---
1,1-Dichloroethene	---	---	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---	---	---
1,2-Dichloroethene (total)	---	---	---	---	---	---	---
Chloroform	---	---	---	---	---	---	---
1,2-Dichloroethane	---	---	---	---	---	---	---
2-Butanone	---	---	---	---	---	---	---
1,1,1-Trichloroethane	---	---	---	---	---	---	---
Carbon Tetrachloride	---	---	---	---	---	---	---
Vinyl Acetate	---	---	---	---	---	---	---
Bromodichloromethane	---	---	---	---	---	---	---
1,2-Dichloropropane	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	---	---	---	---	---	---	---
Trichloroethene	---	---	---	---	---	---	---
Dibromochloromethane	---	---	---	---	---	---	---
1,1,2-Trichloroethane	---	---	---	---	---	---	---
Benzene	---	---	---	---	---	---	---
Trans-1,3-Dichloropropene	---	---	---	---	---	---	---
Bromoform	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	---	---	---	---	---	---	---
2-Hexanone	---	---	---	---	---	---	---
Tetrachloroethene	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	---	---	---	---	---	---	---
Toluene	---	1 J	---	2 J	13	24	3 J
Isobutanol	---	---	---	---	---	---	---
Total (Allowed) Hold Time	11(14)d	11(14)d	11(14)d	11(14)d	7(14)d	11(14)d	7(14)d
Dilution Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000

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Table F-1. (continued).

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DISPOSAL POND AUGER HOLE #4 TAG0489C01A SOIL ug/kg TAGEQ89002	TSF DISPOSAL POND AUGER HOLE #4 TAG0489D01A SOIL ug/kg TAGEQ89002	TSF DISPOSAL POND AUGER HOLE #4 TAG0489D02A SOIL ug/kg TAGEQ89002	TSF DISPOSAL POND AUGER HOLE #4 TAG0489E01A SOIL ug/kg TAGEQ89002	TSF DISPOSAL POND AUGER HOLE #4 TAG0489F01A SOIL ug/kg TAGEQ89002	TSF DISPOSAL POND AUGER HOLE #4 TAG0489J01A SOIL ug/kg TAGEQ89002	TSF DISPOSAL POND AUGER HOLE #5 TAG0589A01A SOIL ug/kg TAGEQ89001
FIELD MEASUREMENTS							
Depth (ft)	10-12	15-17	15-17	20-22	25-27	45-47	0-2
TARGET COMPOUNDS							
Methylene Chloride	---	---	---	2 J	---	---	1 J
Acetone	---	---	---	---	8 J	---	---
Carbon Disulfide	---	---	---	---	---	---	---
1,1-Dichloroethene	---	---	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---	---	---
1,2-Dichloroethene_(total)	---	---	---	---	---	---	---
Chloroform	---	---	---	---	---	---	---
1,2-Dichloroethane	---	---	---	---	---	---	---
2-Butanone	---	---	---	---	---	---	---
1,1,1-Trichloroethane	---	---	---	---	---	---	---
Carbon Tetrachloride	---	---	---	---	---	---	---
Vinyl Acetate	---	---	---	---	---	---	---
Bromodichloromethane	---	---	---	---	---	---	---
1,2-Dichloropropane	---	---	---	---	---	---	---
cis-1,3-Dichloropropene	---	---	---	---	---	---	---
Trichloroethene	---	---	---	---	---	---	---
Dibromochloromethane	---	---	---	---	---	---	---
1,1,2-Trichloroethane	---	---	---	---	---	---	---
Benzene	---	---	---	---	---	---	---
Trans-1,3-Dichloropropene	---	---	---	---	---	---	---
Bromoform	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	---	---	---	---	---	---	---
2-Hexanone	---	---	---	---	---	---	---
Tetrachloroethene	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	---	---	---	---	---	---	---
Toluene	2 J	3 J	---	---	---	---	17
Isobutanol							
Total (Allowed) Hold Time	2(14)d	6(14)d	6(14)d	6(14)d	7(14)d	6(14)d	9(14)d
Dilution Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000

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Table F-1. (continued).

AREA	TSF	TSF	TSF	TSF	TSF	TSF	TSF
LOCATION	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND
TYPE OF LOCATION	AUGER HOLE #5	AUGER HOLE #5	AUGER HOLE #5	AUGER HOLE #5	AUGER HOLE #5	AUGER HOLE #5	AUGER HOLE #5
SAMPLE NUMBER	TAG0589B01A	TAG0589B01ADL	TAG0589C01A	TAG0589C02A	TAG0589D01A	TAG0589E01A	TAG0589K01A
MEDIA	WATER/TCLP	WATER/TCLP	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS	ug/L	ug/L	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
SDG NUMBER	TAGEQ89001	TAGEQ89001	TAGEQ89001	TAGEQ89001	TAGEQ89001	TAGEQ89001	TAGEQ89001
FIELD MEASUREMENTS							
Depth (ft)	5-7	5-7	10-12	10-12	15-17	20-22	50-52
TARGET COMPOUNDS							
Methylene Chloride	78 J	41 DJ	4 J	1 J	2 J	2 J	---
Acetone	280 J	180 DJ	---	---	---	---	---
Carbon Disulfide	5 J	---	---	---	---	---	---
1,1-Dichloroethene	5 J	---	---	---	---	---	---
1,1-Dichloroethane	5 J	---	---	---	---	---	---
1,2-Dichloroethene (total)	5 J	---	---	---	---	---	---
Chloroform	5 J	---	---	---	---	---	---
1,2-Dichloroethane	5 J	---	---	---	---	---	---
2-Butanone	10 J	---	---	---	---	---	---
1,1,1-Trichloroethane	5 J	---	---	---	---	---	---
Carbon Tetrachloride	5 J	---	---	---	---	---	---
Vinyl Acetate	10 J	---	---	---	---	---	---
Bromodichloromethane	5 J	---	---	---	---	---	---
1,2-Dichloropropane	5 J	---	---	---	---	---	---
cis-1,3-Dichloropropene	5 J	---	---	---	---	---	---
Trichloroethene	5 J	---	---	---	---	---	---
Dibromochloromethane	5 J	---	---	---	---	---	---
1,1,2-Trichloroethane	5 J	---	---	---	---	---	---
Benzene	5 J	---	---	---	---	---	---
Trans-1,3-Dichloropropene	5 J	---	---	---	---	---	---
Bromoform	5 J	---	---	---	---	---	---
4-Methyl-2-Pentanone	10 J	---	---	---	---	---	---
2-Hexanone	10 J	---	---	---	---	---	---
Tetrachloroethene	5 J	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	5 J	---	---	---	---	---	---
Toluene	33 J	27 DJ	---	2 J	---	3 J	---
Isobutanol							
Total (Allowed) Hold Time	18(14)d*	18(14)d*	10(14)d	9(14)d	10(14)d	9(14)d	8(14)d
Dilution Factor	1.000	2.000	1.000	1.000	1.000	1.000	1.000

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Table F-1. (continued).

AREA	TSF	TSF	TSF	TSF	TSF	TSF	TSF
LOCATION	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND	DISPOSAL POND
TYPE OF LOCATION	AUGER HOLE #6	AUGER HOLE #6	AUGER HOLE #6	AUGER HOLE #6	AUGER HOLE #6	AUGER HOLE #6	AUGER HOLE #6
SAMPLE NUMBER	TAG0689A01A	TAG0689B01A	TAG0689B02A	TAG0689C01A	TAG0689D01A	TAG0689D02A	TAG0689E01A
MEDIA	SOIL	WATER/TCLP	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS	ug/kg	ug/L	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
SDG NUMBER	TAGE089001	TAGE089001	TAGE089001	TAGE089001	TAGE089001	TAGE089001	TAGE089001
FIELD MEASUREMENTS							
Depth (ft)	0-2	5-7	5-7	10-12	15-17	15-17	20-22
TARGET COMPOUNDS							
Methylene Chloride	---	19 J	---	---	---	---	---
Acetone	---	33 J	---	---	---	74 J	120 J
Carbon Disulfide	---	---	---	---	---	---	---
1,1-Dichloroethene	---	---	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---	---	---
1,2-Dichloroethene (total)	---	---	---	---	---	---	---
Chloroform	---	---	---	---	---	---	---
1,2-Dichloroethane	---	---	---	---	---	---	---
2-Butanone	---	---	---	---	---	---	---
1,1,1-Trichloroethane	---	---	---	---	---	---	---
Carbon Tetrachloride	---	---	---	---	---	---	---
Vinyl Acetate	---	---	---	---	---	---	---
Bromodichloromethane	---	---	---	---	---	---	---
1,2-Dichloropropane	---	---	---	6 R	---	---	---
cis-1,3-Dichloropropene	---	---	---	---	---	---	---
Trichloroethene	---	---	---	---	---	---	---
Dibromochloromethane	---	---	---	---	---	---	---
1,1,2-Trichloroethane	---	---	---	---	---	---	---
Benzene	---	---	---	---	---	---	---
Trans-1,3-Dichloropropene	---	---	---	---	---	---	---
Bromoform	---	---	---	---	---	---	---
4-Methyl-2-Pentanone	---	---	---	---	---	---	---
2-Hexanone	---	---	---	---	---	---	---
Tetrachloroethene	---	---	---	---	---	---	---
1,1,2,2-Tetrachloroethane	---	---	---	---	---	---	---
Toluene	---	4 J	---	---	---	---	---
Isobutanol	---	---	---	620 R	---	---	---
Total (Allowed) Hold Time	9(14)d	18(14)d*	9(14)d	10(14)d	9(14)d	9(14)d	9(14)d
Dilution Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000
10-3-92							

Table F-1. (continued).

AREA	TSF	TSF
LOCATION	DISPOSAL POND	DISPOSAL POND
TYPE OF LOCATION	AUGER HOLE #6	AUGER HOLE #7
SAMPLE NUMBER	TAG0689F01A	TAG0789M01A
MEDIA	SOIL	SOIL
UNITS	ug/kg	ug/kg
SDG NUMBER	TAGE089001	TAGE089001
<u>FIELD MEASUREMENTS</u>		
Depth (ft)	25-27	63-64
<u>TARGET COMPOUNDS</u>		
Methylene Chloride	---	---
Acetone	---	---
Carbon Disulfide	---	---
1,1-Dichloroethene	---	---
1,1-Dichloroethane	---	---
1,2-Dichloroethene (total)	---	---
Chloroform	---	---
1,2-Dichloroethane	---	---
2-Butanone	---	---
1,1,1-Trichloroethane	---	---
Carbon Tetrachloride	---	---
Vinyl Acetate	---	---
Bromodichloromethane	---	---
1,2-Dichloropropane	---	---
cis-1,3-Dichloropropene	---	---
Trichloroethene	---	---
Dibromochloromethane	---	---
1,1,2-Trichloroethane	---	---
Benzene	---	---
Trans-1,3-Dichloropropene	---	---
Bromoform	---	---
4-Methyl-2-Pentanone	---	---
2-Hexanone	---	---
Tetrachloroethene	---	---
1,1,2,2-Tetrachloroethane	---	---
Toluene	---	2
Isobutanol	---	---
Total (Allowed) Hold Time	11(14)d	10(14)d
Dilution Factor	1.000	1.000
10-3-92		

Table F-2. 1989 TAN hydrogeologic investigation-semivolatile organic data.

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUM	TSF DISPOSAL POND AUGER HOLE #3 TAG0309001CRE WATER/TCLP ug/L TAG0309001	TSF DISPOSAL POND AUGER HOLE #3 TAG0309002CRE WATER/TCLP ug/L TAG0309002	TSF DISPOSAL POND AUGER HOLE #4 TAG0409001C WATER/TCLP ug/L TAG0409002	TSF DISPOSAL POND AUGER HOLE #4 TAG0409001C SOIL ug/kg TAG0409002	TSF DISPOSAL POND AUGER HOLE #4 TAG0409001CRE SOIL ug/kg TAG0409002	TSF DISPOSAL POND AUGER HOLE #5 TAG0509001C WATER/TCLP ug/L TAG0509001	TSF DISPOSAL POND AUGER HOLE #6 TAG0609001CRE WATER/TCLP ug/L TAG0609001
FIELD MEASUREMENTS							
Depth (ft)	5-7	5-7	5-7	10-12	10-12	5-7	5-7
TARGET COMPOUNDS							
Phenol	---	---	10 R	---	---	---	---
2-Chlorophenol	---	---	10 R	---	---	---	---
Benzyl alcohol	---	---	10 R	---	---	---	---
2-Methylphenol	---	---	10 R	---	---	---	---
4-Methylphenol	---	---	10 R	---	---	---	---
2-Nitrophenol	---	---	10 R	---	---	---	---
2,4-Dimethylphenol	---	---	10 R	---	---	---	---
Benzoic acid	---	---	50 R	---	2000 R	---	---
2,4-Dichlorophenol	---	---	10 R	---	---	---	---
4-Chloro-3-methylphenol	---	---	10 R	---	---	---	---
2,4,6-Trichlorophenol	---	---	10 R	---	---	---	---
2,4,5-Trichlorophenol	---	---	50 R	---	---	---	---
2,4-Dinitrophenol	---	---	50 R	---	---	---	---
4-Nitrophenol	---	---	50 R	---	---	---	---
4,6-Dinitro-2-methylphenol	---	---	50 R	---	---	---	---
Di-n-butylphthalate	2 J	2 J	---	---	---	---	---
bis(2-Ethylhexyl)phthalate	---	---	3 J	---	---	---	---
4-Nitroquinoline-1-oxide	---	---	---	1600 R	---	---	---
Kepone	---	---	---	400 R	---	---	---
Total (Allowed) Hold Time	27(7)dp	27(7)dp	12(7)dp	4(14)d	4(14)d	10(7)dp	22(7)dp
Dilution Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000
10-3-92							

Table F-2. (continued).

AREA	TSF	TSF
LOCATION	DISPOSAL POND	DISPOSAL POND
TYPE OF LOCATION	AUGER HOLE NO.	AUGER HOLE NO.
SAMPLE NUMBER	TAG/DEPTH	TAG/DEPTH
MEDIA	SOIL	SOIL
UNITS	lb/yd	lb/yd
SNG NUMBER	TAG/DEPTH	TAG/DEPTH
	10-12	10-12
FIELD MEASUREMENTS		
Depth (ft)	10-12	10-12
TARGET COMPOUNDS		
Phenol	---	---
2-Chlorophenol	---	---
Benzyl alcohol	---	---
2-Methylphenol	---	---
4-Methylphenol	---	---
2-Nitrophenol	---	---
2,4-Dimethylphenol	---	---
Benzoic acid	---	---
2,4-Dichlorophenol	---	---
4-Chloro-3-methylphenol	---	---
2,4,6-Trichlorophenol	---	---
2,4,5-Trichlorophenol	---	---
2,4-Dinitrophenol	---	---
4-Nitrophenol	---	---
4,6-Dinitro-2-methylphenol	---	---
Di-n-butylphthalate	---	---
bis(2-Ethylhexyl)phthalate	---	---
4-Nitroquinoline 1-oxide	1600 R	30 R
Hexane	400 R	20 R
Total (Allowed) Hold Time	12(14)hd	12(14)hd
Dilution factor	1,000	1,000
10-3-92		

Table F-3. 1989 TAN hydrogeologic investigation-volatile organics supplemental data.

AREA	TSF	TSF
LOCATION	DISPOSAL POND	DISPOSAL POND
TYPE OF LOCATION	AUGER HOLE #6	AUGER HOLE #6
SAMPLE NUMBER	TAG0489C01A	TAG0689C01A
MEDIA	SOIL	SOIL
UNITS	ug/kg	ug/kg
SDG NUMBER	TAGE089002	TAGE089001
Acetonitrile	10.0 U	9.5 U
Acrolein	7.0 U	7.0 U
Acrylonitrile	5.0 U	5.0 U
1,4 Dioxane	36.0 U	36.0 U
Dilution Factor	1.000	1.000
Percent Moisture	18.3	19.0
Field/Shipping Time	1d	2d
Anal (Allowed) Hold Time	5(10)d	10(10)d
Total (Allowed) Hold Time	6(14)d	12(14)d

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Table F-4. 1989 TAN hydrogeologic investigation-volatile organics supplemental QC data-SDG TAG689001.

AREA	QC	TSF	QC	QC	QC	QC
LOCATION	METHOD	DISPOSAL POND	DISPOSAL POND	MATRIX	MATRIX	RELATIVE
TYPE OF LOCATION	BLANK	RIGER HOLE #6	SPIKE	SPIKE	SPIKE DUP	% DIFFER
SAMPLE NUMBER	VBLK1	TAG689001A	TAG689001A	TAG689001AMS	TAG689001AMS	TAG689001ARPD
MEDIA	WATER	SOIL	WATER	WATER	WATER	
UNITS	ug/L	ug/kg	ug/L	ug/L	ug/L	
Acetonitrile	8.0 U	9.5 U	8.0 U	82(92%)	88(99%)	7.3%
Acrolein	6.0 U	7.0 U	6.0 U	75(95%)	79(100%)	5.1%
Acrylonitrile	4.0 U	5.0 U	4.0 U	59(99%)	61(101%)	2.0%
1,4 Dioxane	30.0 U	36.0 U	30.0 U	425(142%)	440(146%)	2.8%
Dilution Factor	1.000	1.000	1.000	1.000	1.000	
Percent Moisture		19.0				
Field/Shipping Time		2d	1d			
Anal (Allowed) Hold Time		10(10)d	10(10)d			
Total (Allowed) Hold Time		12(14)d	11(14)d			

10-5-92

Table F-5. 1989 TAN hydrogeologic investigation—inorganic data.

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DISPOSAL POND AUGER HOLE #3 TAG0389A018 SOIL mg/kg TAGE089001	TSF DISPOSAL POND AUGER HOLE #3 TAG0389B018 TCLP/WATER ug/L TAGE089001	TSF DISPOSAL POND AUGER HOLE #3 TAG0389B028 TCLP/WATER ug/L TAGE089001	TSF DISPOSAL POND AUGER HOLE #3 TAG0389C018 SOIL mg/kg TAGE089001	TSF DISPOSAL POND AUGER HOLE #3 TAG0389C028 SOIL mg/kg TAGE089001	TSF DISPOSAL POND AUGER HOLE #3 TAG0389D018 SOIL mg/kg TAGE089001
FIELD MEASUREMENTS						
Depth (ft)	0-2	5-7	5-7	10-12	10-12	15-17
TARGET COMPOUNDS						
Aluminum	21000	211	---	18500	16200	17500
Antimony	---	24.0 B	24.0 B	---	---	---
Arsenic	8.7 S	6.3 B	6.7 B	14.2 S	14.3 +	17.4 S
Barium	291	1350	1470	249	254	306
Beryllium	3.0	---	---	3.4	3.1	3.2
Cadmium	1.8	3.0 B	5.0	1.0	1.0	1.1
Calcium	59300 E	1020000	1090000	62000 E	61000 E	72900 E
Chromium	45.7	---	---	41.1	35.3	37.3
Cobalt	13.2	---	---	12.0	11.1	11.5
Copper	29.0	27.0	---	26.3	25.4	24.5
Iron	28000	134	68.0 B	24900	23300	24300
Lead	30.5 S	---	---	26.4 S	26.7 S	26.0 S
Magnesium	14500	22000	24800 B	13600	13200	14500
Manganese	445	369	433	457	426	473
Mercury	0.09 B	0.24	---	---	0.05 B	0.11 B
Nickel	49.7	20.0 B	---	40.7	39.3	40.3
Potassium	4810 B	---	---	3430 B	2880 B	2860 B
Selenium	---	---	---	---	---	0.26 BW
Silver	---	---	---	---	---	---
Sodium	516 B	3980 B	4290 B	453 B	504 B	603 B
Thallium	1.1 BM	---	---	0.36 BM	0.22 BM	0.30 BM
Vanadium	50.3	15.0 B	17.0 B	59.0	50.4	56.2
Zinc	892	51.0	49.0	138	126	123
Z Solids	91.9	---	---	93.2	93.6	87.0
Total (Allowed) Hold Time ^a	25(180)d	28(180)d	28(180)d	25(180)d	25(180)d	25(180)d
Total (Allowed) Hold Time ^b	25(180)d	40(180)d	40(180)d	25(180)d	25(180)d	25(180)d
Total (Allowed) Hold Time ^c	11(26)d	20(26)d	20(26)d	11(26)d	11(26)d	11(26)d
Total (Allowed) Hold Time ^d	25(180)d	28(180)d	28(180)d	25(180)d	25(180)d	25(180)d
Total (Allowed) Hold Time ^e	---	---	---	---	---	---

- a. ICP
b. FAAS
c. CVAAS
d. GFAAS
e. AS

Table F-5. (continued).

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DISPOSAL POND AUGER HOLE #3 TAG0389E01B SOIL mg/kg TAGE089001	TSF DISPOSAL POND AUGER HOLE #3 TAG0389F01B SOIL mg/kg TAGE089001	TSF DISPOSAL POND AUGER HOLE #4 TAG0489A01B SOIL mg/kg TAGE089002	TSF DISPOSAL POND AUGER HOLE #4 TAG0489B01B TCLP/WATER ug/L TAGE089002	TSF DISPOSAL POND AUGER HOLE #4 TAG0489B02B SOIL mg/kg TAGE089002	TSF DISPOSAL POND AUGER HOLE #4 TAG0489C01B SOIL mg/kg TAGE089002
FIELD MEASUREMENTS						
Depth (ft)	20-22	25-27	0-2	5-7	5-7	10-12
TARGET COMPOUNDS						
Aluminum	1400	16700	23400	954	16100	
Antimony	---	---	---	---	---	---
Arsenic	13.7 S	11.4 +	5.1 +	4.1 B	17.3 S	18.2
Barium	253	283	293	983	260	356
Beryllium	2.8	3.6	4.6	---	3.6	---
Cadmium	1.2	0.69 B	1.7	3.0 B	1.0 B	0.97 B
Calcium	70700 E	19600 E	50500	725000	83200	
Chromium	33.4	36.9	45.6	---	33.8	44.4
Cobalt	10.8	11.7	12.4	---	11.7	13.8
Copper	21.9	22.3	27.3	---	26.2	39.5
Iron	20700	25200	28400	685	24000	
Lead	21.4 S	26.2 S	30.4 S	2.3 S	29.2 S	23.6
Magnesium	13000	9230	14400	25800 B	14600	
Manganese	495	482	345	129	501	
Mercury	0.08 B	0.21	0.05 B	---	---	0.10 B
Nickel	34.7	36.9	48.8	---	39.1	44.6
Potassium	3010 B	2660 B	6010	1820 B	3160 B	
Selenium	---	---	0.26 BW	---	0.63 BW	---
Silver	---	---	---	---	---	---
Sodium	500 B	412 B	723 B	4030 B	570 B	
Thallium	0.21 BW	0.21 BW	0.21 BW	---	---	---
Vanadium	49.3	44.9	54.7	15.0 B	56.8	51.9
Zinc	96.0	105	201	49.0	118	126
% Solids	88.2	85.1	90.6		90.3	81.7
Total (Allowed) Hold Time ^a	25(180)d	25(180)d	13(180)d	16(180)d	13(180)d	38(180)d
Total (Allowed) Hold Time ^b	25(180)d	25(180)d	13(180)d	16(180)d	13(180)d	
Total (Allowed) Hold Time ^c	11(26)d	11(26)d	27(26)d	28(26)d	27(26)d	36(26)d*
Total (Allowed) Hold Time ^d	25(180)d	25(180)d	13(180)d	16(180)d	13(180)d	38(180)d
Total (Allowed) Hold Time ^e						26(12)d*

- a. ICP
b. FAAS
c. CVAAS
d. GFAAS
e. AS

Table F-5. (continued).

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DISPOSAL POND AUGER HOLE #4 TAG04890018 SOIL mg/kg TAG089002	TSF DISPOSAL POND AUGER HOLE #4 TAG04890028 SOIL mg/kg TAG089002	TSF DISPOSAL POND AUGER HOLE #4 TAG04890018 SOIL mg/kg TAG089002	TSF DISPOSAL POND AUGER HOLE #4 TAG04890018 SOIL mg/kg TAG089002	TSF DISPOSAL POND AUGER HOLE #4 TAG04890018 SOIL mg/kg TAG089002	TSF DISPOSAL POND AUGER HOLE #5 TAG0589A018 SOIL mg/kg TAG089001
FIELD MEASUREMENTS						
Depth (ft)	15-17	15-17	20-22	25-27	45-47	0-2
TARGET COMPOUNDS						
Aluminum	15900	19500	25700	31400	20700	16000
Antimony	---	---	---	---	---	0.89 BW
Arsenic	13.4 S	16.4 S	11.6 S	6.6 S	8.8 +	8.5
Barium	256	241	275	338	370	230
Beryllium	3.2	4.5	5.4	6.2	4.9	1.4
Cadmium	1.1 B	0.93	1.5	0.86 B	0.94 B	0.82 B
Calcium	72000	61800	88900	9440 B	6720 B	64200 E
Chromium	32.6	38.2	53.2	63.0	41.2	39.0
Cobalt	10.2 B	13.2	15.5	16.6	14.3	10.5
Copper	19.6	26.5	30.9	29.7	45.0	23.4
Iron	23700	27500	34000	36800	28800	21300
Lead	21.9 S	28.8 S	18.5	25.9 S	18.0 S	20.2 N
Magnesium	15400	15300	16900	11800	8990 B	12500
Manganese	488	620	776	620	696	388
Mercury	0.09 B	0.11	---	0.05 B	0.14	0.14
Nickel	35.6	43.1	53.4	47.5	56.5	37.5
Potassium	3870	3280	4140	3080 B	2710	3510
Selenium	0.35 BW	0.36	0.22	---	---	---
Silver	---	---	---	---	---	---
Sodium	597 B	562 B	545 B	611 B	340 B	0.48 B
Thallium	0.17 BW	0.56 BW	0.37 BW	0.40 BW	0.31 BW	0.42 BW
Vanadium	52.6	58.1	76.7	70.8	56.7	55.6
Zinc	100	112	145	139	87.4	114
% Solids	86.9	84.2	85.0	83.0	82.1	92.0
Total (Allowed) Hold Time ^a	12(180)d	12(180)d	12(180)d	12(180)d	12(180)d	8(180)d
Total (Allowed) Hold Time ^b	12(180)d	12(180)d	12(180)d	12(180)d	12(180)d	8(180)d
Total (Allowed) Hold Time ^c	26(26)d	26(26)d	26(26)d	26(26)d	26(26)d	7(26)d
Total (Allowed) Hold Time ^d	12(180)d	12(180)d	12(180)d	12(180)d	12(180)d	8(180)d
Total (Allowed) Hold Time ^e	12(180)d	12(180)d	12(180)d	12(180)d	12(180)d	8(180)d

a. ICP
b. FAAS
c. CVAAS
d. GFAAS
e. AS

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Table F-5. (continued).

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DISPOSAL POND AUGER HOLE #5 TAG0589B01B TCLP/WATER ug/L TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #5 TAG0589C01B SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #5 TAG0589C02B SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #5 TAG0589D01B SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #5 TAG0589E01B SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #5 TAG0589K01B SOIL mg/kg TAGEQ89001
FIELD MEASUREMENTS						
Depth (ft)	5-7	10-12	10-12	15-17	20-22	50-52
TARGET COMPOUNDS						
Aluminum	265	13900	9980	14200	12700	8530
Antimony	---	1.1 BN	0.60 BN	---	---	0.33 UN
Arsenic	8.2 B	11.5	10.2	8.5	7.2	4.8 +
Barium	1480	259	220	243	218	231
Beryllium	---	1.2	0.90 B	1.4	1.0	1.8
Cadmium	4.0 B	0.78 B	---	0.93 B	0.83 B	0.91 B
Calcium	1110000	51100 E	46400 E	75800 E	66200 E	213000 E
Chromium	---	33.9	27.8	38.5	35.4	21.3
Cobalt	---	10.1	8.7 B	10.5 B	8.7 B	6.8 B
Copper	---	21.3	16.4	19.8	15.8	21.6
Iron	180	20700	16800	20400	18200	13700
Lead	---	17.6	13.8 N	16.6 N	14.0 N	11.1
Magnesium	24700 B	11600	10600 B	14100	10600	7850 B
Manganese	455	411	352	457	451	1060
Mercury	---	0.14	0.12	0.32	0.11	0.08 B
Nickel	---	30.6	27.1	36.6	31.6	25.6
Potassium	---	2880	2190	3150	2450	1510
Selenium	---	0.43 BNW	0.56 BNW	0.43 BNW	---	---
Silver	---	---	0.26 B	0.33 B	0.34 B	---
Sodium	4590 B	469 B	446 B	594 B	443 B	624 B
Thallium	---	---	---	---	---	---
Vanadium	17.0 B	50.9	42.4	55.0	47.2	30.4
Zinc	53.0	83.1	70.2	99.4	75.7	20.0
% Solids		83.4	86.6	84.9	88.2	78.7
Total (Allowed) Hold Time ^a	24(180)d	8(180)d	7(180)d	8(180)d	8(180)d	14(180)d
Total (Allowed) Hold Time ^b	36(180)d	8(180)d	7(180)d	8(180)d	8(180)d	14(180)d
Total (Allowed) Hold Time ^c	16(26)d	7(26)d	6(26)d	7(26)d	7(26)d	28(26)d*
Total (Allowed) Hold Time ^d	24(180)d	8(180)d	7(180)d	8(180)d	8(180)d	14(180)d
Total (Allowed) Hold Time ^e						

a. ICP
b. FAAS
c. CVAAS
d. GFAAS
e. AS

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Table F-5. (continued).

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DISPOSAL POND AUGER HOLE #6 TAG0689A01B SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #6 TAG0689B01B TCLP/WATER ug/L TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #6 TAG0689B02B SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #6 TAG0689C01B SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #6 TAG0689D01B SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #6 TAG0689D02B SOIL mg/kg TAGEQ89001
FIELD MEASUREMENTS Depth (ft)	0-2	5-7	5-7	10-12	15-17	15-17
TARGET COMPOUNDS						
Aluminum	22200	---	22800	---	15300	14000
Antimony	0.49 BN	---	1.1 BNW	---	0.48 BNW	---
Arsenic	8.5	4.1 B	6.7	7.2	11.6	10.5
Barium	278	1520	318	1900	278	242
Beryllium	1.6	---	1.7	8.6	1.4	1.1 B
Cadmium	1.3	4.0 B	1.5	6.2 B	0.97	0.91 B
Calcium	66000 E	1180000	61300 E	---	56700 E	71800 E
Chromium	51.9	---	51.0	257	41.4	37.5
Cobalt	12.1	---	12.8	69.1	10.1	11.7
Copper	27.6	---	27.5	148	25.3	23.3
Iron	26900	58.0 B	27500	---	21700	21100
Lead	25.5	---	22.2 N	21.0	19.5 N	20.8 N
Magnesium	15100	27800 B	14100	---	11800	13600
Manganese	2260	567	660	---	472	546
Mercury	0.11	---	0.08 B	0.12 B	---	---
Nickel	46.7	---	47.2	240	37.5	39.5
Potassium	3790 B	---	3780 B	---	3360	2870
Selenium	0.60 BNW	---	---	---	0.36 BNW	0.39 BNW
Silver	0.53 B	---	0.38 BW	---	0.37 B	0.82 B
Sodium	668 B	11100	757 B	---	493 B	482 B
Thallium	0.19 BW	---	---	---	---	---
Vanadium	64.2	15.0 B	63.6	333	59.6	56.0
Zinc	158	65.0	151	649	103	104
% Solids	88.2	---	83.1	81.0	80.8	81.8
Total (Allowed) Hold Time ^a	7(180)d	23(180)d	7(180)d	7(180)d	7(180)d	7(180)d
Total (Allowed) Hold Time ^b	7(180)d	35(180)d	7(180)d	7(180)d	7(180)d	7(180)d
Total (Allowed) Hold Time ^c	6(26)d	15(26)d	6(26)d	7(26)d	6(26)d	6(26)d
Total (Allowed) Hold Time ^d	7(180)d	23(180)d	7(180)d	7(180)d	7(180)d	7(180)d
Total (Allowed) Hold Time ^e	---	---	---	40(12)d*	---	---

a. ICP
b. FAAS
c. CVAAS
d. GFAAS
e. AS

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Table F-5. (continued).

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DISPOSAL POND AUGER HOLE #6 TAG0689E01B SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #6 TAG0689F01B SOIL mg/kg TAGEQ89001	TSF DISPOSAL POND AUGER HOLE #7 TAG0789N01B SOIL mg/kg TAGEQ89001
<u>FIELD MEASUREMENTS</u>			
Depth (ft)	20-22	25-27	63-64
<u>TARGET COMPOUNDS</u>			
Aluminum	14600	21600	14000
Antimony	0.68 BN	0.50 BN	0.51 BN
Arsenic	8.3	9.4	5.6
Barium	216	272	199
Beryllium	1.0	1.6	0.81 B
Cadmium	1.0	1.0	1.0
Calcium	78200 E	56700 E	119000 E
Chromium	39.7	49.2	29.8
Cobalt	11.5	14.7	9.3 B
Copper	21.1	29.7	24.7
Iron	19800	27000	16600
Lead	20.2 N	22.0 N	13.2 N
Magnesium	14400	13800	10200 B
Manganese	447	725	1110
Mercury	---	---	0.09 B
Nickel	36.6	47.8	29.1
Potassium	3070	3660	2350
Selenium	---	0.31 BN	---
Silver	0.30 B	0.40 B	---
Sodium	493 B	543 B	523 B
Thallium	---	---	---
Vanadium	55.0	65.4	36.4
Zinc	97.1	120	47.8
% Solids	85.1	81.9	77.8
Total (Allowed) Hold Time ^a	7(180)d	7(180)d	6(180)d
Total (Allowed) Hold Time ^b	7(180)d	7(180)d	6(180)d
Total (Allowed) Hold Time ^c	6(26)d	6(26)d	5(26)d
Total (Allowed) Hold Time ^d	7(180)d	7(180)d	6(180)d
Total (Allowed) Hold Time ^e			

- a. ICP
b. FAAS
c. CVAAS
d. GFAAS
e. AS

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Table F-6. Summary of analyses.

		Analytical Methods											
	Sample Identification	Appendix IX	6010	8240	7470	7191	7421	7091	Gamma Spectroscopy	Gross Alpha/Beta	AH-24	Co-90	H-3
<u>Subsurface Investigation</u>	Borehole 1	2 ^a											
	5 samples		5	5	5	5	5	5	5	0	0		
	Borehole 2												
	4 samples (8-10 ft interval)		4	4	4	4	4	4	5	0			
	Borehole 3	1											
5 samples	5		5	5	5	5	5	5	0				
	Borehole 4												
	4 samples (8-10 ft interval)		4	4	4	4	4	4	5	0	0	0	0
<u>DOE Environmental Survey</u>	Surface water												
	6 samples		6	6	6	6	0	6	6	6	6	6	6
	Sediment												
	6 samples subsurface		6	6	6	6	0	6	6	6	6	6	6
	3 samples		3	3	3	3	0	3	3	3	3	3	3
<u>Surface Sampling for Closure</u>	Surface soils	2											
	3 samples		1	1	1	1	1	1	3	0	0	0	0
<u>Background Samples</u>	5 samples		5	0	5	5	5	5	0	0	0	0	0
<u>QA samples</u>	Trip blanks		0	2	0	0	0	0	0	0	0	0	0
	Rinsate		2	0	2	2	2	2	0	0	0	0	0

a. Methods for Appendix IX constituents are presented in the analytical methods section of EPA's *Test Methods for Evaluating Solid Waste, Physical Chemical Methods*, 3rd Ed. SW-846, 1986.

APPENDIX G

ANALYTICAL RESULTS FOR SAMPLING EVENT 5

TABLE G-1. TSF EVAPORATION POND - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF POND BOTTOM SURFACE TSF0101G SEDIMENT D A pci/g Q S STCS01090 F L	TSF POND BOTTOM SURFACE TSF0102G SEDIMENT D A pci/g Q S STCS01090 F L	TSF POND BOTTOM SURFACE TSF0103G SEDIMENT D A pci/g Q S STCS01090 F L	TSF POND BOTTOM SURFACE TSF0104G SEDIMENT D A pci/g Q S STCS01090 F L	TSF POND BOTTOM SURFACE TSF0105G SEDIMENT D A pci/g Q S STCS01090 F L
<u>FIELD MEASUREMENTS</u>					
Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
<u>Alpha Emitters</u>					
Radium - 226	3.68E+00 ± 1.2 E+00 4		1.96E+00 ± .74 E+00 4	2.18E+00 ± .71 E+00 4	2.62E+00 ± .52 E+00 4
<u>Gamma Emitters</u>					
Actinium - 228 (Thorium Decay)		1.37E+00 ± .16 E+00 4	9.29E-01 ± 1.5 E-01 4	1.16E+00 ± .21 E+00 4	1.03E+00 ± .14 E+00 4
Bismuth - 214 (Radium Decay)	1.01E+00 ± .19 E+00 4	1.21E+00 ± .11 E+00 4	1.15E+00 ± .13 E+00 4	9.81E-01 ± 1.3 E-01 4	1.00E+00 ± .13 E+00 4
Bismuth - 212 (Thorium Decay)		1.66E+00 ± .37 E+00 4			
Cesium - 134	4.63E+01 ± .33 E+01 4	1.40E+01 ± .10 E+01 4	1.55E+01 ± .11 E+01 4	2.34E+01 ± .17 E+01 4	9.46E+00 ± .69 E+00 4
Cesium - 137	8.77E+01 ± .62 E+01 4	1.17E+01 ± .08 E+01 4	1.44E+01 ± .10 E+01 4	1.72E+01 ± .12 E+01 4	7.75E+00 ± .56 E+00 4
Cobalt - 60					
Lead - 214 (Radium Decay)	5.97E-01 ± 1.5 E-01 4	1.28E+00 ± .11 E+00 4	1.19E+00 ± .11 E+00 4	1.02E+00 ± .12 E+00 4	1.12E+00 ± .11 E+00 4
Lead - 212 (Thorium Decay)	9.44E-01 ± 1.3 E-01 4	1.36E+00 ± .11 E+00 4	1.15E+00 ± .10 E+00 4	1.12E+00 ± .11 E+00 4	1.24E+00 ± .11 E+00 4
Potassium - 40	1.26E+01 ± .13 E+01 4	1.84E+01 ± .15 E+01 4	1.54E+01 ± .17 E+01 4	1.37E+01 ± .15 E+01 4	1.76E+01 ± .15 E+01 4
Protactinium - 234 (Metastable)					
Radium - 224 (Thorium Decay)					
Thallium - 208 (Thorium Decay)	9.87E-01 ± 1.7 E-01 4	1.24E+00 ± .13 E+00 4	1.09E+00 ± .13 E+00 4	1.01E+00 ± .14 E+00 4	1.06E+00 ± .12 E+00 4
Thorium - 234					

- a. The DQF column contains any data qualifier flags.
b. The ASL column contains the analytical support level.

2-15-93

NOTE: Table G-10, page G-78, summarizes all analytical results for sampling event 5.

TABLE G-1. TSF EVAPORATION POND - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF POND BOTTOM SURFACE TSF0106G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF POND BOTTOM SURFACE TSF0107G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF POND BOTTOM SURFACE TSF0108G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF POND BOTTOM SURFACE TSF0109G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF POND BOTTOM SURFACE TSF0110G SEDIMENT D A pCi/g Q S STCS01090 F L
FIELD MEASUREMENTS					
Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Alpha Emitters					
Radium - 226	2.78E+00 ± .24 E+00 4	2.17E+00 ± .31 E+00 4	2.04E+00 ± .45 E+00 4	1.46E+00 ± .43 E+00 4	2.32E+00 ± .22 E+00 4
Gamma Emitters					
Actinium - 228 (Thorium Decay)	1.21E+00 ± .09 E+00 4	9.99E-01 ± 1.1 E-01 4	9.06E-01 ± 1.3 E-01 4	1.11E+00 ± .14 E+00 4	1.18E+00 ± .09 E+00 4
Bismuth - 214 (Radium Decay)	9.66E-01 ± .71 E-01 4	8.98E-01 ± .80 E-01 4	8.30E-01 ± .91 E-01 4	9.68E-01 ± 1.1 E-01 4	1.00E+00 ± .07 E+00 4
Bismuth - 212 (Thorium Decay)	1.44E+00 ± .15 E+00 4	1.10E+00 ± .22 E+00 4		8.42E-01 ± 3.3 E-01 4	1.46E+00 ± .15 E+00 4
Cesium - 134					
Cesium - 137	4.17E+00 ± .30 E+00 4	9.96E-01 ± .88 E-01 4	4.94E+00 ± .37 E+00 4	3.07E+00 ± .23 E+00 4	5.96E-01 ± .45 E-01 4
Cobalt - 60	8.88E+00 ± .63 E+00 4	2.44E+00 ± .18 E+00 4	7.67E+00 ± .56 E+00 4	1.08E+01 ± .08 E+01 4	1.05E+00 ± .08 E+00 4
Lead - 214 (Radium Decay)	1.08E+00 ± .08 E+00 4	9.38E-01 ± .81 E-01 4	9.41E-01 ± .86 E-01 4	9.13E-01 ± .91 E-01 4	1.11E+00 ± .08 E+00 4
Lead - 212 (Thorium Decay)	1.21E+00 ± .09 E+00 4	1.05E+00 ± .09 E+00 4	9.95E-01 ± 1.0 E-01 4	1.04E+00 ± .11 E+00 4	1.09E+00 ± .08 E+00 4
Potassium - 40	1.69E+01 ± .12 E+01 4	1.39E+01 ± .13 E+01 4	1.58E+01 ± .14 E+01 4	1.23E+01 ± .11 E+01 4	1.60E+01 ± .12 E+01 4
Protactinium - 234 (Metastable)					
Radium - 224 (Thorium Decay)					
Thallium - 208 (Thorium Decay)	1.11E+00 ± .08 E+00 4	9.77E-01 ± .94 E-01 4	9.12E-01 ± 1.0 E-01 4	1.01E+00 ± .11 E+00 4	1.12E+00 ± .09 E+00 4
Thorium - 234					1.80E+00 ± .34 E+00 4

- a. The DQF column contains any data qualifier flags.
b. The ASL column contains the analytical support level.

TABLE G-1. TSF EVAPORATION POND - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF POND BOTTOM SURFACE TSF0111G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF POND BOTTOM SURFACE TSF0112G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF POND BOTTOM SURFACE TSF0115G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF POND BOTTOM SURFACE TSF0116G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF DEPRESSION AREA SURFACE TSF0201G SOIL D A pCi/g Q S STCS01090 F L
FIELD MEASUREMENTS					
Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.3
Alpha Emitters					
Radium - 226	1.96E+00 ± .19 E+00 4	2.53E+00 ± .34 E+00 4	2.79E+00 ± .40 E+00 4	2.02E+00 ± .71 E+00 4	2.61E+00 ± .22 E+00 4
Gamma Emitters					
Actinium - 228 (Thorium Decay)	9.66E-01 ± .73 E-01 4	1.19E+00 ± .11 E+00 4	1.08E+00 ± .11 E+00 4	1.13E+00 ± .16 E+00 4	1.23E+00 ± .09 E+00 4
Bismuth - 214 (Radium Decay)	8.70E-01 ± .65 E-01 4	9.49E-01 ± .82 E-01 4	9.16E-01 ± .84 E-01 4	1.02E+00 ± .12 E+00 4	1.05E+00 ± .08 E+00 4
Bismuth - 212 (Thorium Decay)	1.26E+00 ± .13 E+00 4	9.90E-01 ± 1.8 E-01 4	1.34E+00 ± .32 E+00 4		1.44E+00 ± .13 E+00 4
Cesium - 134	6.33E-01 ± .46 E-01 4	1.14E+00 ± .10 E+00 4	1.23E+01 ± .09 E+01 4	3.42E+01 ± .25 E+01 4	2.81E-01 ± .22 E-01 4
Cesium - 137	9.82E-01 ± .71 E-01 4	1.14E+00 ± .09 E+00 4	9.86E+00 ± .70 E+00 4	6.38E+00 ± .47 E+00 4	
Cobalt - 60					
Lead - 214 (Radium Decay)	8.56E-01 ± .65 E-01 4	9.88E-01 ± .84 E-01 4	9.67E-01 ± .82 E-01 4	1.02E+00 ± .13 E+00 4	1.18E+00 ± .09 E+00 4
Lead - 212 (Thorium Decay)	1.01E+00 ± .08 E+00 4	1.05E+00 ± .08 E+00 4	1.09E+00 ± .08 E+00 4	1.24E+00 ± .12 E+00 4	1.20E+00 ± .09 E+00 4
Potassium - 40	1.34E+01 ± .10 E+01 4	1.64E+01 ± .13 E+01 4	1.44E+01 ± .12 E+01 4	1.32E+01 ± .12 E+01 4	1.53E+01 ± .11 E+01 4
Protactinium - 234 (Metastable)					
Radium - 224 (Thorium Decay)	1.90E+00 ± .28 E+00 4				
Thallium - 208 (Thorium Decay)	9.06E-01 ± .69 E-01 4	1.06E+00 ± .10 E+00 4	1.07E+00 ± .10 E+00 4	9.47E-01 ± 1.2 E-01 4	1.08E+00 ± .08 E+00 4
Thorium - 234	9.18E-01 ± 1.8 E-01 4				

- a. The DOF column contains any data qualifier flags.
b. The ASL column contains the analytical support level.

TABLE G-1. TSF EVAPORATION POND - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DEPRESSION AREA SURFACE TSF0202G SOIL D A pCi/g O S STCS01090 F L	TSF DEPRESSION AREA SURFACE TSF0203G SOIL D A pCi/g O S STCS01090 F L	TSF DEPRESSION AREA SURFACE TSF0204G SOIL D A pCi/g O S STCS01090 F L	TSF DEPRESSION AREA BIASED TSF0301G SEDIMENT D A pCi/g O S STCS01090 F L	TSF DEPRESSION AREA BIASED TSF0302G SEDIMENT D A pCi/g O S STCS01090 F L
<u>FIELD MEASUREMENTS</u>					
Depth (ft)	0-0.3	0-0.3	0-0.3	0-9	0-9
<u>Alpha Emitters</u>					
Radium - 226	2.61E+00 ± .23 E+00 4	2.47E+00 ± .30 E+00 4	2.79E+00 ± .27 E+00 4	1.78E+00 ± .22 E+00 4	1.56E+00 ± .16 E+00 4
<u>Gamma Emitters</u>					
Actinium - 228 (Thorium Decay)	1.39E+00 ± .10 E+00 4	1.24E+00 ± .11 E+00 4	1.28E+00 ± .09 E+00 4	9.88E-01 ± .72 E-01 4	8.78E-01 ± .67 E-01 4
Bismuth - 214 (Radium Decay)	1.22E+00 ± .09 E+00 4	1.10E+00 ± .09 E+00 4	1.45E+00 ± .10 E+00 4	7.48E-01 ± .55 E-01 4	6.94E-01 ± .53 E-01 4
Bismuth - 212 (Thorium Decay)	1.47E+00 ± .13 E+00 4	1.09E+00 ± .24 E+00 4	1.53E+00 ± .14 E+00 4	1.14E+00 ± .10 E+00 4	9.49E-01 ± 1.2 E-01 4
Cesium - 134	1.31E-02 ± .37 E-02 4				
Cesium - 137	3.63E-01 ± .28 E-01 4	2.68E+00 ± .19 E+00 4	5.14E-01 ± .39 E-01 4		
Cobalt - 60		3.84E-01 ± .34 E-01 4			
Lead - 214 (Radium Decay)	1.38E+00 ± .10 E+00 4	1.23E+00 ± .09 E+00 4	1.55E+00 ± .11 E+00 4	7.76E-01 ± .57 E-01 4	7.46E-01 ± .56 E-01 4
Lead - 212 (Thorium Decay)	1.38E+00 ± .10 E+00 4	1.34E+00 ± .10 E+00 4	1.32E+00 ± .10 E+00 4	9.87E-01 ± .71 E-01 4	8.39E-01 ± .64 E-01 4
Potassium - 40	1.86E+01 ± .14 E+01 4	1.63E+01 ± .13 E+01 4	1.81E+01 ± .13 E+01 4	1.44E+01 ± .11 E+01 4	1.21E+01 ± .10 E+01 4
Protactinium - 234 (Metastable)					
Radium - 224 (Thorium Decay)					1.13E+00 ± .19 E+00 4
Thallium - 208 (Thorium Decay)	1.26E+00 ± .09 E+00 4	1.17E+00 ± .10 E+00 4	1.22E+00 ± .09 E+00 4	9.85E-01 ± .72 E-01 4	7.79E-01 ± .64 E-01 4
Thorium - 234					5.35E-01 ± 1.9 E-01 4

- a. The DOF column contains any data qualifier flags.
b. The ASL column contains the analytical support level.

TABLE G-1. TSF EVAPORATION POND - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DEPRESSION AREA BIASED TSF0303G SEDIMENT D A pCi/g D S STCS01090 F L	TSF DEPRESSION AREA BIASED TSF0304G SEDIMENT D A pCi/g D S STCS01090 F L	TSF INLET PIPE BIASED TSF0601G SOIL D A pCi/g D S STCS01090 F L	TSF INLET PIPE BIASED TSF0602G SOIL D A pCi/g D S STCS01090 F L	TSF INLET PIPE BIASED TSF0603G SOIL D A pCi/g D S STCS01090 F L
FIELD MEASUREMENTS					
Depth (ft)	10-11	10-11	6-6.8	7.5-8.5	5-6
Alpha Emitters					
Radium - 226	1.66E+00 ± .33 E+00 4	2.60E+00 ± .25 E+00 4	2.57E+00 ± .26 E+00 4	1.27E+00 ± .61 E+00 4	2.14E+00 ± .25 E+00 4
Gamma Emitters					
Actinium - 228 (Thorium Decay)	9.97E-01 ± .76 E-01 4	1.16E+00 ± .09 E+00 4	1.24E+00 ± .10 E+00 4	1.16E+00 ± .14 E+00 4	1.17E+00 ± .10 E+00 4
Bismuth - 214 (Radium Decay)	8.51E-01 ± .66 E-01 4	9.94E-01 ± .73 E-01 4	9.52E-01 ± .74 E-01 4	1.12E+00 ± .13 E+00 4	1.05E+00 ± .09 E+00 4
Bismuth - 212 (Thorium Decay)	1.02E+00 ± .14 E+00 4	1.20E+00 ± .12 E+00 4	1.18E+00 ± .18 E+00 4	1.07E+00 ± .39 E+00 4	1.11E+00 ± .19 E+00 4
Cesium - 134	5.16E-02 ± 1.1 E-02 4				
Cesium - 137					
Cobalt - 60					
Lead - 214 (Radium Decay)	9.30E-01 ± .69 E-01 4	1.06E+00 ± .08 E+00 4	1.08E+00 ± .08 E+00 4	1.06E+00 ± .10 E+00 4	1.13E+00 ± .09 E+00 4
Lead - 212 (Thorium Decay)	9.64E-01 ± .73 E-01 4	1.26E+00 ± .09 E+00 4	1.15E+00 ± .09 E+00 4	1.25E+00 ± .11 E+00 4	1.14E+00 ± .09 E+00 4
Potassium - 40	1.29E+01 ± .10 E+01 4	1.64E+01 ± .12 E+01 4	1.66E+01 ± .12 E+01 4	1.51E+01 ± .16 E+01 4	1.32E+01 ± .10 E+01 4
Protactinium - 234 (Metastable)					
Radium - 224 (Thorium Decay)					
Thallium - 208 (Thorium Decay)	9.05E-01 ± .71 E-01 4	1.16E+00 ± .09 E+00 4	1.22E+00 ± .10 E+00 4	1.04E+00 ± .15 E+00 4	1.10E+00 ± .10 E+00 4
Thorium - 234					

- a. The DQF column contains any data qualifier flags.
b. The ASL column contains the analytical support level.

TABLE G-1. TSF EVAPORATION POND - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF INLET PIPE BIASED TSF0604G SOIL D A pCi/g Q S STCS01090 F L	TSF POND DISCHARGE BIASED TSF0701G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1301G SOIL D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1302G SOIL D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1303G SOIL D A pCi/g Q S STCS01090 F L
FIELD MEASUREMENTS					
Depth (ft)	5-6	0-2	0-0.5	0-0.5	0-0.5
Alpha Emitters					
Radium - 226	2.12E+00 ± .21 E+00 4		2.36E+00 ± .23 E+00 4	2.43E+00 ± .20 E+00 4	2.59E+00 ± .26 E+00 4
Gamma Emitters					
Actinium - 228 (Thorium Decay)	1.05E+00 ± .08 E+00 4		1.10E+00 ± .09 E+00 4	1.24E+00 ± .09 E+00 4	1.13E+00 ± .08 E+00 4
Bismuth - 214 (Radium Decay)	1.07E+00 ± .08 E+00 4		1.04E+00 ± .08 E+00 4	1.11E+00 ± .08 E+00 4	9.36E-01 ± .69 E-01 4
Bismuth - 212 (Thorium Decay)	1.11E+00 ± .15 E+00 4		1.31E+00 ± .15 E+00 4	1.39E+00 ± .13 E+00 4	1.40E+00 ± .16 E+00 4
Cesium - 134		1.27E+02 ± .09 E+02 4	6.46E-01 ± .49 E-01 4	6.05E-01 ± .44 E-01 4	2.40E+00 ± .18 E+00 4
Cesium - 137		7.67E+01 ± .55 E+01 4		1.35E-01 ± .14 E-01 4	5.53E-01 ± .41 E-01 4
Cobalt - 60					
Lead - 214 (Radium Decay)	1.13E+00 ± .08 E+00 4		1.08E+00 ± .08 E+00 4	1.16E+00 ± .08 E+00 4	9.82E-01 ± .74 E-01 4
Lead - 212 (Thorium Decay)	1.04E+00 ± .08 E+00 4		1.09E+00 ± .09 E+00 4	1.27E+00 ± .09 E+00 4	1.21E+00 ± .09 E+00 4
Potassium - 40	1.49E+01 ± .11 E+01 4	3.07E+00 ± 1.0 E+00 4	1.50E+01 ± .11 E+01 4	1.76E+01 ± .13 E+01 4	1.61E+01 ± .12 E+01 4
Protactinium - 234 (Metastable)					
Radium - 224 (Thorium Decay)					
Thallium - 208 (Thorium Decay)	1.05E+00 ± .08 E+00 4		1.03E+00 ± .08 E+00 4	1.19E+00 ± .09 E+00 4	1.11E+00 ± .08 E+00 4
Thorium - 234			9.98E-01 ± 2.0 E-01 4		

a. The DQF column contains any data qualifier flags.

b. The ASL column contains the analytical support level.

TABLE G-1. TSF EVAPORATION POND - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1304G SOIL D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1305G SOIL D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1306G SOIL D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1307G SOIL D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1308G SOIL D A pCi/g Q S STCS01090 F L
FIELD MEASUREMENTS					
Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Alpha Emitters					
Radium - 226	2.62E+00 ± .26 E+00 4	2.20E+00 ± .24 E+00 4	2.17E+00 ± .30 E+00 4	2.00E+00 ± .28 E+00 4	3.48E+00 ± .34 E+00 4
Gamma Emitters					
Actinium - 228 (Thorium Decay)	1.17E+00 ± .09 E+00 4	1.27E+00 ± .10 E+00 4	1.05E+00 ± .09 E+00 4	1.09E+00 ± .09 E+00 4	1.29E+00 ± .10 E+00 4
Bismuth - 214 (Radium Decay)	9.14E-01 ± .72 E-01 4	9.72E-01 ± .80 E-01 4	9.92E-01 ± .81 E-01 4	9.94E-01 ± .82 E-01 4	1.06E+00 ± .08 E+00 4
Bismuth - 212 (Thorium Decay)	1.29E+00 ± .15 E+00 4	1.48E+00 ± .24 E+00 4	1.10E+00 ± .23 E+00 4	1.07E+00 ± .20 E+00 4	1.50E+00 ± .16 E+00 4
Cesium - 134	7.91E+00 ± .56 E+00 4	2.81E-01 ± .27 E-01 4	4.48E-01 ± .39 E-01 4	5.24E-01 ± .44 E-01 4	4.76E+01 ± .34 E+01 4
Cesium - 137	1.44E+00 ± .10 E+00 4		3.55E+00 ± .26 E+00 4	3.11E-01 ± .31 E-01 4	1.42E+00 ± .10 E+00 4
Cobalt - 60					
Lead - 214 (Radium Decay)	9.62E-01 ± .73 E-01 4	9.66E-01 ± .78 E-01 4	1.15E+00 ± .09 E+00 4	1.12E+00 ± .09 E+00 4	1.16E+00 ± .09 E+00 4
Lead - 212 (Thorium Decay)	1.25E+00 ± .10 E+00 4	1.26E+00 ± .10 E+00 4	1.14E+00 ± .09 E+00 4	1.19E+00 ± .09 E+00 4	1.31E+00 ± .10 E+00 4
Potassium - 40	1.63E+01 ± .12 E+01 4	1.66E+01 ± .13 E+01 4	1.38E+01 ± .11 E+01 4	1.63E+01 ± .13 E+01 4	1.74E+01 ± .13 E+01 4
Protactinium - 234 (Metastable)					
Radium - 224 (Thorium Decay)	2.28E+00 ± .32 E+00 4			2.50E+00 ± .28 E+00 4	
Thallium - 208 (Thorium Decay)	1.08E+00 ± .09 E+00 4	1.19E+00 ± .10 E+00 4	1.03E+00 ± .09 E+00 4	1.07E+00 ± .10 E+00 4	1.32E+00 ± .10 E+00 4
Thorium - 234	1.16E+00 ± .26 E+00 4				

- a. The DQF column contains any data qualifier flags.
b. The ASL column contains the analytical support level.

TABLE G-1. TSF EVAPORATION POND - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1309G SOIL D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1310G SOIL D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1311G SOIL D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1312G SOIL D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1313G SOIL D A pCi/g Q S STCS01090 F L
<u>FIELD MEASUREMENTS</u>					
Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
<u>Alpha Emitters</u>					
Radium - 226	2.20E+00 ± .30 E+00 4	2.51E+00 ± .26 E+00 4	3.36E+00 ± .50 E+00 4	2.98E+00 ± .58 E+00 4	2.48E+00 ± .23 E+00 4
<u>Gamma Emitters</u>					
Actinium - 228 (Thorium Decay)	1.09E+00 ± .08 E+00 4	1.14E+00 ± .09 E+00 4	1.45E+00 ± .15 E+00 4	1.12E+00 ± .11 E+00 4	1.18E+00 ± .09 E+00 4
Bismuth - 214 (Radium Decay)	1.08E+00 ± .09 E+00 4	1.23E+00 ± .09 E+00 4	1.25E+00 ± .13 E+00 4	8.78E-01 ± .79 E-01 4	1.00E+00 ± .08 E+00 4
Bismuth - 212 (Thorium Decay)	1.21E+00 ± .15 E+00 4	1.28E+00 ± .17 E+00 4			1.34E+00 ± .16 E+00 4
Cesium - 134					
Cesium - 137	2.72E-01 ± .23 E-01 4	4.29E-01 ± .36 E-01 4	4.04E-01 ± .48 E-01 4	2.25E+01 ± .16 E+01 4	5.74E-01 ± .44 E-01 4
Cobalt - 60		1.96E+00 ± .14 E+00 4		6.90E+00 ± .49 E+00 4	
Lead - 214 (Radium Decay)	1.10E+00 ± .08 E+00 4	1.34E+00 ± .10 E+00 4	1.44E+00 ± .14 E+00 4	1.06E+00 ± .09 E+00 4	1.03E+00 ± .08 E+00 4
Lead - 212 (Thorium Decay)	1.14E+00 ± .09 E+00 4	1.19E+00 ± .10 E+00 4	1.55E+00 ± .13 E+00 4	1.06E+00 ± .09 E+00 4	1.17E+00 ± .09 E+00 4
Potassium - 40	1.50E+01 ± .11 E+01 4	1.54E+01 ± .12 E+01 4	1.70E+01 ± .17 E+01 4	1.38E+01 ± .11 E+01 4	1.69E+01 ± .13 E+01 4
Protactinium - 234 (Metastable)					3.89E+00 ± 1.4 E+00 4
Radium - 224 (Thorium Decay)					
Thallium - 208 (Thorium Decay)	1.09E+00 ± .08 E+00 4	1.10E+00 ± .08 E+00 4	1.18E+00 ± .13 E+00 4	1.17E+00 ± .11 E+00 4	1.03E+00 ± .08 E+00 4
Thorium - 234	1.32E+00 ± .27 E+00 4	6.41E-01 ± 1.8 E-01 4			1.22E+00 ± .29 E+00 4

- a. The DQF column contains any data qualifier flags.
b. The ASL column contains the analytical support level.

TABLE G-1. TSF EVAPORATION POND - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1314G SOIL D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1315G SOIL D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1316G SOIL D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1317G SOIL D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1318G SOIL D A pCi/g Q S STCS01090 F L
FIELD MEASUREMENTS					
Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Alpha Emitters					
Radium - 226	2.27E+00 ± .22 E+00 4	2.42E+00 ± .24 E+00 4	4.54E+00 ± .53 E+00 4	2.67E+00 ± .39 E+00 4	2.15E+00 ± .20 E+00 4
Gamma Emitters					
Actinium - 228 (Thorium Decay)	1.11E+00 ± .08 E+00 4	1.24E+00 ± .09 E+00 4	1.15E+00 ± .13 E+00 4	1.23E+00 ± .10 E+00 4	1.05E+00 ± .08 E+00 4
Bismuth - 214 (Radium Decay)	1.20E+00 ± .09 E+00 4	1.07E+00 ± .08 E+00 4	1.12E+00 ± .10 E+00 4	1.15E+00 ± .10 E+00 4	9.16E-01 ± .70 E-01 4
Bismuth - 212 (Thorium Decay)	1.25E+00 ± .15 E+00 4	1.29E+00 ± .14 E+00 4		1.43E+00 ± .23 E+00 4	1.49E+00 ± .17 E+00 4
Cesium - 134					
Cesium - 137	7.55E-01 ± .57 E-01 4	2.96E+00 ± .21 E+00 4	4.11E+01 ± .29 E+01 4	5.57E-01 ± .46 E-01 4	9.37E-01 ± .69 E-01 4
Cobalt - 60		2.19E-01 ± .20 E-01 4	1.21E+01 ± .09 E+01 4	1.39E-01 ± .20 E-01 4	1.35E-01 ± .15 E-01 4
Lead - 214 (Radium Decay)	1.25E+00 ± .09 E+00 4	1.13E+00 ± .08 E+00 4	1.07E+00 ± .11 E+00 4	1.24E+00 ± .10 E+00 4	1.02E+00 ± .08 E+00 4
Lead - 212 (Thorium Decay)	1.08E+00 ± .08 E+00 4	1.32E+00 ± .11 E+00 4	1.18E+00 ± .09 E+00 4	1.16E+00 ± .09 E+00 4	1.07E+00 ± .08 E+00 4
Potassium - 40	1.57E+01 ± .12 E+01 4	1.65E+01 ± .13 E+01 4	1.58E+01 ± .12 E+01 4	1.64E+01 ± .13 E+01 4	1.45E+01 ± .11 E+01 4
Protactinium - 234 (Metastable)					
Radium - 224 (Thorium Decay)		2.69E+00 ± .39 E+00 4			
Thallium - 208 (Thorium Decay)	1.04E+00 ± .08 E+00 4	1.15E+00 ± .09 E+00 4	1.07E+00 ± .11 E+00 4	1.08E+00 ± .09 E+00 4	1.00E+00 ± .08 E+00 4
Thorium - 234		8.41E-01 ± 1.9 E-01 4			

- a. The DQF column contains any data qualifier flags.
b. The ASL column contains the analytical support level.

TABLE G-1. TSF EVAPORATION POND - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1319G SOIL D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1320G SOIL D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1321G SOIL D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1322G SOIL D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1323G SOIL D A pCi/g Q S STCS01090 F L
FIELD MEASUREMENTS Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Alpha Emitters					
Radium - 226	2.98E+00 ± .27 E+00 4	3.56E+00 ± .39 E+00 4	2.62E+00 ± .24 E+00 4	2.29E+00 ± .22 E+00 4	3.44E+00 ± .36 E+00 4
Gamma Emitters					
Actinium - 228 (Thorium Decay)	1.26E+00 ± .10 E+00 4	1.65E+00 ± .13 E+00 4	1.28E+00 ± .09 E+00 4	1.26E+00 ± .09 E+00 4	1.01E+00 ± .09 E+00 4
Bismuth - 214 (Radium Decay)	1.06E+00 ± .08 E+00 4	1.32E+00 ± .11 E+00 4	1.27E+00 ± .09 E+00 4	1.14E+00 ± .08 E+00 4	9.73E-01 ± .76 E-01 4
Bismuth - 212 (Thorium Decay)	1.21E+00 ± .15 E+00 4	1.41E+00 ± .22 E+00 4	1.42E+00 ± .13 E+00 4	1.26E+00 ± .12 E+00 4	1.15E+00 ± .18 E+00 4
Cesium - 134	7.52E-01 ± .58 E-01 4	3.50E-01 ± .39 E-01 4	2.80E-01 ± .22 E-01 4	3.47E-01 ± .26 E-01 4	2.31E+01 ± .16 E+01 4
Cesium - 137	1.18E+00 ± .09 E+00 4		7.91E-01 ± .58 E-01 4		2.03E+01 ± .14 E+01 4
Cobalt - 60					
Lead - 214 (Radium Decay)	1.18E+00 ± .09 E+00 4	1.44E+00 ± .11 E+00 4	1.33E+00 ± .10 E+00 4	1.25E+00 ± .09 E+00 4	1.02E+00 ± .08 E+00 4
Lead - 212 (Thorium Decay)	1.17E+00 ± .09 E+00 4	1.57E+00 ± .13 E+00 4	1.30E+00 ± .09 E+00 4	1.27E+00 ± .10 E+00 4	1.05E+00 ± .08 E+00 4
Potassium - 40	1.64E+01 ± .13 E+01 4	2.11E+01 ± .17 E+01 4	1.75E+01 ± .13 E+01 4	1.76E+01 ± .13 E+01 4	1.40E+01 ± .10 E+01 4
Protactinium - 234 (Metastable)					
Radium - 224 (Thorium Decay)					
Thallium - 208 (Thorium Decay)	1.11E+00 ± .09 E+00 4	1.52E+00 ± .13 E+00 4	1.18E+00 ± .09 E+00 4	1.18E+00 ± .09 E+00 4	1.07E+00 ± .09 E+00 4
Thorium - 234	1.01E+00 ± .34 E+00 4	9.41E-01 ± 4.4 E-01 4			1.35E+00 ± .27 E+00 4

- a. The DQF column contains any data qualifier flags.
b. The ASL column contains the analytical support level.

TABLE G-1. TSF EVAPORATION POND - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1324G SOIL D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1325G SOIL D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1401G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1402G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1403G SEDIMENT D A pCi/g Q S STCS01090 F L
FIELD MEASUREMENTS Depth (ft)	0-0.5	0-0.5	10-11	10-11	10-11
Alpha Emitters Radium - 226	2.40E+00 ± .23 E+00 4	2.55E+00 ± .25 E+00 4	1.86E+00 ± .17 E+00 4	1.70E+00 ± .25 E+00 4	1.39E+00 ± .20 E+00 4
Gamma Emitters Actinium - 228 (Thorium Decay)	1.24E+00 ± .09 E+00 4	1.22E+00 ± .09 E+00 4	8.93E-01 ± .67 E-01 4	9.73E-01 ± .77 E-01 4	9.47E-01 ± .77 E-01 4
Bismuth - 214 (Radium Decay)	1.25E+00 ± .09 E+00 4	1.00E+00 ± .08 E+00 4	7.71E-01 ± .58 E-01 4	7.95E-01 ± .63 E-01 4	8.55E-01 ± .69 E-01 4
Bismuth - 212 (Thorium Decay)	1.35E+00 ± .18 E+00 4	1.32E+00 ± .17 E+00 4	9.27E-01 ± 1.3 E-01 4	9.01E-01 ± 1.6 E-01 4	8.69E-01 ± 1.5 E-01 4
Cesium - 134	4.75E-01 ± .37 E-01 4	2.26E-01 ± .21 E-01 4			
Cesium - 137		8.08E-01 ± .61 E-01 4			
Cobalt - 60					
Lead - 214 (Radium Decay)	1.23E+00 ± .09 E+00 4	1.10E+00 ± .08 E+00 4	7.78E-01 ± .57 E-01 4	8.26E-01 ± .63 E-01 4	8.88E-01 ± .67 E-01 4
Lead - 212 (Thorium Decay)	1.26E+00 ± .10 E+00 4	1.19E+00 ± .09 E+00 4	8.50E-01 ± .65 E-01 4	8.94E-01 ± .66 E-01 4	9.55E-01 ± .73 E-01 4
Potassium - 40	1.73E+01 ± .13 E+01 4	1.68E+01 ± .13 E+01 4	1.28E+01 ± .09 E+01 4	1.27E+01 ± .10 E+01 4	1.29E+01 ± .10 E+01 4
Protactinium - 234 (Metastable)					
Radium - 224 (Thorium Decay)	2.77E+00 ± .34 E+00 4				
Thallium - 208 (Thorium Decay)	1.19E+00 ± .09 E+00 4	1.16E+00 ± .09 E+00 4	8.84E-01 ± .67 E-01 4	9.74E-01 ± .78 E-01 4	1.01E+00 ± .08 E+00 4
Thorium - 234	9.20E-01 ± 1.9 E-01 4				

- a. The DQF column contains any data qualifier flags.
b. The ASL column contains the analytical support level.

TABLE G-1. TSF EVAPORATION POND - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1404G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1405G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1406G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1407G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1408G SEDIMENT D A pCi/g Q S STCS01090 F L
<u>FIELD MEASUREMENTS</u>					
Depth (ft)	10-11	10-11	10-11	10-11	10-11
<u>Alpha Emitters</u>					
Radium - 226	1.66E+00 ± .16 E+00 4	2.17E+00 ± .18 E+00 4	1.73E+00 ± .16 E+00 4	2.00E+00 ± .17 E+00 4	1.98E+00 ± .19 E+00 4
<u>Gamma Emitters</u>					
Actinium - 228 (Thorium Decay)	9.00E-01 ± .68 E-01 4	1.23E+00 ± .09 E+00 4	8.28E-01 ± .62 E-01 4	1.09E+00 ± .08 E+00 4	1.01E+00 ± .08 E+00 4
Bismuth - 214 (Radium Decay)	7.66E-01 ± .59 E-01 4	1.00E+00 ± .07 E+00 4	7.25E-01 ± .55 E-01 4	9.88E-01 ± .72 E-01 4	7.84E-01 ± .62 E-01 4
Bismuth - 212 (Thorium Decay)	9.90E-01 ± 1.3 E-01 4	1.34E+00 ± .12 E+00 4	1.03E+00 ± .10 E+00 4	1.14E+00 ± .11 E+00 4	9.46E-01 ± 1.3 E-01 4
Cesium - 134					
Cesium - 137	1.30E-01 ± .14 E-01 4				2.89E-01 ± .25 E-01 4
Cobalt - 60					
Lead - 214 (Radium Decay)	8.89E-01 ± .66 E-01 4	1.06E+00 ± .08 E+00 4	7.53E-01 ± .57 E-01 4	1.10E+00 ± .08 E+00 4	8.23E-01 ± .62 E-01 4
Lead - 212 (Thorium Decay)	9.34E-01 ± .70 E-01 4	1.30E+00 ± .09 E+00 4	8.61E-01 ± .73 E-01 4	1.12E+00 ± .08 E+00 4	9.87E-01 ± .73 E-01 4
Potassium - 40	1.27E+01 ± .10 E+01 4	1.65E+01 ± .12 E+01 4	1.20E+01 ± .09 E+01 4	1.44E+01 ± .10 E+01 4	1.35E+01 ± .10 E+01 4
Protactinium - 234 (Metastable)					
Radium - 224 (Thorium Decay)			1.80E+00 ± .28 E+00 4		
Thallium - 208 (Thorium Decay)	9.37E-01 ± .72 E-01 4	1.23E+00 ± .09 E+00 4	8.46E-01 ± .64 E-01 4	1.04E+00 ± .08 E+00 4	9.55E-01 ± .74 E-01 4
Thorium - 234			7.39E-01 ± 1.7 E-01 4		

- a. The DQF column contains any data qualifier flags.
b. The ASL column contains the analytical support level.

TABLE G-1. TSF EVAPORATION POND - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTMATIC RANDM TSF1409G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTMATIC RANDM TSF1410G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTMATIC RANDM TSF1411G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTMATIC RANDM TSF1412G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTMATIC RANDM TSF1413G SEDIMENT D A pCi/g Q S STCS01090 F L
<u>FIELD MEASUREMENTS</u>					
Depth (ft)	10-11	10-11	10-11	10-11	10-10.5
<u>Alpha Emitters</u>					
Radium - 226	1.80E+00 ± .15 E+00 4	1.38E+00 ± .14 E+00 4	1.83E+00 ± .31 E+00 4	2.10E+00 ± .23 E+00 4	1.81E+00 ± .21 E+00 4
<u>Gamma Emitters</u>					
Actinium - 228 (Thorium Decay)	9.03E-01 ± .65 E-01 4	9.30E-01 ± .71 E-01 4	1.10E+00 ± .09 E+00 4	9.59E-01 ± .81 E-01 4	1.12E+00 ± .09 E+00 4
Bismuth - 214 (Radium Decay)	7.74E-01 ± .57 E-01 4	8.53E-01 ± .64 E-01 4	8.82E-01 ± .73 E-01 4	8.53E-01 ± .70 E-01 4	9.72E-01 ± .79 E-01 4
Bismuth - 212 (Thorium Decay)	9.88E-01 ± .87 E-01 4	9.82E-01 ± 1.2 E-01 4	9.85E-01 ± 1.6 E-01 4	1.13E+00 ± .21 E+00 4	1.43E+00 ± .19 E+00 4
Cesium - 134				4.38E-01 ± .36 E-01 4	
Cesium - 137					
Cobalt - 60					
Lead - 214 (Radium Decay)	8.10E-01 ± .59 E-01 4	8.23E-01 ± .61 E-01 4	9.92E-01 ± .78 E-01 4	9.21E-01 ± .70 E-01 4	1.00E+00 ± .08 E+00 4
Lead - 212 (Thorium Decay)	8.87E-01 ± .65 E-01 4	8.65E-01 ± .65 E-01 4	1.18E+00 ± .09 E+00 4	9.70E-01 ± .74 E-01 4	1.16E+00 ± .09 E+00 4
Potassium - 40	1.30E+01 ± .09 E+01 4	1.15E+01 ± .09 E+01 4	1.47E+01 ± .11 E+01 4	1.18E+01 ± .10 E+01 4	1.46E+01 ± .11 E+01 4
Protactinium - 234 (Metastable)					
Radium - 224 (Thorium Decay)					
Thallium - 208 (Thorium Decay)	8.93E-01 ± .66 E-01 4	8.20E-01 ± .63 E-01 4	1.12E+00 ± .09 E+00 4	9.13E-01 ± .77 E-01 4	1.05E+00 ± .10 E+00 4
Thorium - 234					

a. The DQF column contains any data qualifier flags.

b. The ASL column contains the analytical support level.

TABLE G-1. TSF EVAPORATION POND - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1414G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1415G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1416G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1417G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1418G SEDIMENT D A pCi/g Q S STCS01090 F L
<u>FIELD MEASUREMENTS</u>					
Depth (ft)	10-11	10-11	10-11	10-11	10-11
<u>Alpha Emitters</u>					
Radium - 226	1.55E+00 ± .18 E+00 4	2.31E+00 ± .23 E+00 4	1.48E+00 ± .14 E+00 4	1.70E+00 ± .16 E+00 4	2.29E+00 ± .21 E+00 4
<u>Gamma Emitters</u>					
Actinium - 228 (Thorium Decay)	9.65E-01 ± .74 E-01 4	1.11E+00 ± .08 E+00 4	7.88E-01 ± .59 E-01 4	9.79E-01 ± .72 E-01 4	1.01E+00 ± .08 E+00 4
Bismuth - 214 (Radium Decay)	9.03E-01 ± .68 E-01 4	9.61E-01 ± .70 E-01 4	7.31E-01 ± .55 E-01 4	7.79E-01 ± .58 E-01 4	9.01E-01 ± .69 E-01 4
Bismuth - 212 (Thorium Decay)	1.10E+00 ± .14 E+00 4	1.05E+00 ± .11 E+00 4	6.90E-01 ± .90 E-01 4	9.48E-01 ± 1.0 E-01 4	1.01E+00 ± .13 E+00 4
Cesium - 134					
Cesium - 137					
Cobalt - 60					
Lead - 214 (Radium Decay)	9.09E-01 ± .70 E-01 4	1.03E+00 ± .08 E+00 4	7.68E-01 ± .56 E-01 4	8.68E-01 ± .64 E-01 4	8.80E-01 ± .66 E-01 4
Lead - 212 (Thorium Decay)	8.87E-01 ± .69 E-01 4	1.15E+00 ± .08 E+00 4	7.29E-01 ± .57 E-01 4	9.24E-01 ± .74 E-01 4	1.11E+00 ± .09 E+00 4
Potassium - 40	1.37E+01 ± .10 E+01 4	1.51E+01 ± .11 E+01 4	1.14E+01 ± .08 E+01 4	1.31E+01 ± .10 E+01 4	1.38E+01 ± .10 E+01 4
Protactinium - 234 (Metastable)					
Radium - 224 (Thorium Decay)					2.05E+00 ± .31 E+00 4
Thallium - 208 (Thorium Decay)	9.35E-01 ± .71 E-01 4	1.09E+00 ± .08 E+00 4	7.97E-01 ± .61 E-01 4	8.84E-01 ± .65 E-01 4	9.89E-01 ± .77 E-01 4
Thorium - 234				6.96E-01 ± 1.3 E-01 4	1.01E+00 ± .20 E+00 4

a. The DQF column contains any data qualifier flags.

b. The ASL column contains the analytical support level.

TABLE G-1. TSF EVAPORATION POND - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1419G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1420G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1421G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1422G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1423G SEDIMENT D A pCi/g Q S STCS01090 F L
FIELD MEASUREMENTS Depth (ft)	10-11	10-11	10-11	10-11	10-11
Alpha Emitters					
Radium - 226	1.80E+00 ± .15 E+00 4	2.24E+00 ± .25 E+00 4	1.66E+00 ± .21 E+00 4	2.09E+00 ± .22 E+00 4	1.79E+00 ± .15 E+00 4
Gamma Emitters					
Actinium - 228 (Thorium Decay)	9.40E-01 ± .68 E-01 4	1.10E+00 ± .10 E+00 4	8.59E-01 ± .71 E-01 4	1.04E+00 ± .08 E+00 4	9.46E-01 ± .69 E-01 4
Bismuth - 214 (Radium Decay)	7.04E-01 ± .51 E-01 4	9.12E-01 ± .79 E-01 4	7.77E-01 ± .62 E-01 4	8.47E-01 ± .64 E-01 4	9.38E-01 ± .68 E-01 4
Bismuth - 212 (Thorium Decay)	1.19E+00 ± .10 E+00 4	9.45E-01 ± 2.0 E-01 4	9.95E-01 ± 1.5 E-01 4	1.07E+00 ± .12 E+00 4	1.13E+00 ± .10 E+00 4
Cesium - 134					9.63E-02 ± .89 E-02 4
Cesium - 137					1.13E-01 ± .10 E-01 4
Cobalt - 60					
Lead - 214 (Radium Decay)	7.31E-01 ± .53 E-01 4	1.02E+00 ± .08 E+00 4	7.56E-01 ± .60 E-01 4	8.70E-01 ± .63 E-01 4	9.95E-01 ± .72 E-01 4
Lead - 212 (Thorium Decay)	9.38E-01 ± .68 E-01 4	1.29E+00 ± .10 E+00 4	8.16E-01 ± .61 E-01 4	1.02E+00 ± .08 E+00 4	9.44E-01 ± .69 E-01 4
Potassium - 40	1.28E+01 ± .09 E+01 4	1.62E+01 ± .13 E+01 4	1.23E+01 ± .10 E+01 4	1.46E+01 ± .10 E+01 4	1.29E+01 ± .09 E+01 4
Protactinium - 234 (Metastable)					
Radium - 224 (Thorium Decay)					
Thallium - 208 (Thorium Decay)	9.33E-01 ± .68 E-01 4	1.15E+00 ± .10 E+00 4	9.40E-01 ± .76 E-01 4	1.00E+00 ± .07 E+00 4	9.33E-01 ± .68 E-01 4
Thorium - 234					

- a. The DQF column contains any data qualifier flags.
b. The ASL column contains the analytical support level.

TABLE G-1. TSF EVAPORATION POND - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1424G SEDIMENT D A pCi/g Q S STCS01050 F L	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1425G SEDIMENT D A pCi/g Q S STCS01090 F L	TSF DITCH BIASED TSF2101G SOIL/SEDIMENT D A pCi/g Q S STCS01090 F L	TSF DITCH BIASED TSF2102G SOIL/SEDIMENT D A pCi/g Q S STCS01090 F L	TSF DITCH BIASED TSF2103G SOIL/SEDIMENT D A pCi/g Q S STCS01090 F L
FIELD MEASUREMENTS					
Depth (ft)	10-11	10-11	0-0.3	0-0.3	0-0.5
Alpha Emitters					
Radium - 226	1.72E+00 ± .16 E+00 4	2.12E+00 ± .27 E+00 4	1.50E+00 ± .35 E+00 4	2.23E+00 ± .33 E+00 4	1.57E+00 ± .41 E+00 4
Gamma Emitters					
Actinium - 228 (Thorium Decay)	8.53E-01 ± .67 E-01 4	9.50E+01 ± .69 E+01 4	8.76E-01 ± .95 E-01 4	7.44E-01 ± .85 E-01 4	6.94E-01 ± 1.0 E-01 4
Bismuth - 214 (Radium Decay)	7.19E-01 ± .55 E-01 4	7.82E-01 ± .57 E-01 4	7.57E-01 ± .68 E-01 4	6.64E-01 ± .61 E-01 4	5.86E-01 ± .60 E-01 4
Bismuth - 212 (Thorium Decay)	1.08E+00 ± .13 E+00 4	1.12E+00 ± .10 E+00 4	9.70E-01 ± 2.4 E-01 4	1.11E+00 ± .27 E+00 4	1.06E+00 ± .27 E+00 4
Cesium - 134			1.57E+01 ± .11 E+01 4	1.74E+01 ± .13 E+01 4	3.83E+01 ± .27 E+01 4
Cesium - 137			8.27E+00 ± .59 E+00 4	7.76E+00 ± .56 E+00 4	5.15E+00 ± .37 E+00 4
Cobalt - 60					
Lead - 214 (Radium Decay)	7.54E-01 ± .56 E-01 4	8.36E-01 ± .62 E-01 4	7.72E-01 ± .64 E-01 4	7.03E-01 ± .60 E-01 4	7.02E-01 ± .66 E-01 4
Lead - 212 (Thorium Decay)	8.26E-01 ± .63 E-01 4	9.60E-01 ± .69 E-01 4	9.09E-01 ± .73 E-01 4	7.99E-01 ± .64 E-01 4	7.81E-01 ± .66 E-01 4
Potassium - 40	1.17E+01 ± .09 E+01 4	1.31E+01 ± .09 E+01 4	1.20E+01 ± .09 E+01 4	1.15E+01 ± .09 E+01 4	1.08E+01 ± .09 E+01 4
Protactinium - 234 (Metastable)					
Radium - 224 (Thorium Decay)					
Thallium - 208 (Thorium Decay)	8.37E-01 ± .65 E-01 4	9.36E-01 ± .69 E-01 4	1.01E+00 ± .10 E+00 4	8.11E-01 ± .77 E-01 4	7.25E-01 ± .77 E-01 4
Thorium - 234					

- a. The DQF column contains any data qualifier flags.
b. The ASL column contains the analytical support level.

TABLE G-1. TSF EVAPORATION POND - ANALYSIS RESULTS FOR GAMMA-EMITTING RADIONUCLIDES (Continued)

AREA	TSF
LOCATION	DITCH
TYPE OF LOCATION	BIASED
SAMPLE NUMBER	TSF2104G
MEDIA	SOIL/SEDIMENT
UNITS	pCi/g
SDG NUMBER	STCS01090

FIELD MEASUREMENTS

Depth (ft)

0-0.5

Alpha Emitters

Radium - 226 1.21E+00 ± .29 E+00 4

Gamma Emitters

Actinium - 228 9.25E-01 ± .92 E-01 4

(Thorium Decay)

Bismuth - 214 5.96E-01 ± .57 E-01 4

(Radium Decay)

Bismuth - 212 6.87E-01 ± 1.9 E-01 4

(Thorium Decay)

Cesium - 134 8.19E+00 ± .58 E+00 4

Cesium - 137 9.51E+00 ± .68 E+00 4

Cobalt - 60 7.50E-01 ± .62 E-01 4

Lead - 214 (Radium Decay)

Lead - 212 8.21E-01 ± .64 E-01 4

(Thorium Decay)

Potassium - 40 1.12E+01 ± .09 E+01 4

Protactinium - 234 (Metastable)

Radium - 224 (Thorium Decay)

Thallium - 208 7.84E-01 ± .76 E-01 4

(Thorium Decay)

Thorium - 234

a. The DOF column contains any data qualifier flags.

b. The ASL column contains the analytical support level.

2-15-93

TABLE G-2. TSF EVAPORATION POND - INORGANIC DATA

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF POND BOTTOM SURFACE TSF0101A SEDIMENT mg/kg TSF0101A	TSF POND BOTTOM SURFACE TSF0101M SEDIMENT mg/kg TSF0101M	TSF POND BOTTOM SURFACE TSF0102A SEDIMENT mg/kg TSF0101A	TSF POND BOTTOM SURFACE TSF0102M SEDIMENT mg/kg TSF0101M	TSF POND BOTTOM SURFACE TSF0103M SEDIMENT mg/kg TSF0101M	TSF POND BOTTOM SURFACE TSF0104M SEDIMENT mg/kg TSF0101M
FIELD MEASUREMENTS						
Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
ANALYTES						
Aluminum	22100	22300	19000	22900	21500	22900
Antimony	0.68 NR	18.4 UN	0.57 NR	18.6 UN	15.5 UN	16.7 UN
Arsenic	14.6 S	---	10.9 S	15.4 B	---	---
Barium	293	338	237	301	262	298
Beryllium	1.9	2.1	1.5	2.1	1.9	2.1
Cadmium	3.3	4.4	2.8	2.9 B	2.4 B	2.3 B
Calcium	88900	77500	65800	80500	73800	82300
Chromium	58.4	74.5	47.8	69.2	55.4	61.1
Cobalt	12.8	15.0	11.6	13.3	11.8	13.1
Copper	83.4 E	180	74.8 E	62.0	43.6	46.0
Cyanide	---	---	0.15 B	---	---	---
Iron	29100 J	27200	25200 J	28600	25400	28800
Lead	34.8 S	64.8	32.8 S	45.8	38.7	45.0
Magnesium	17800 J	15600	14200 J	16500	14500	16400
Manganese	492	389	454	425	310	395
Mercury	0.45	4.3	0.23	0.28	0.16	0.28
Nickel	46.3	49.3	38.9	47.8	42.0	45.4
Potassium	4560	4720	3900	4770	4560	4550
Selenium	1.2 BNSJ	---	0.31 BMSJ	---	---	---
Silver	22.1	28.5	5.6 J	30.9	22.1	13.1
Sodium	390 BEJ	363 B	259 BEJ	236 B	224 B	193 B
Strontium	167	160	122	172	144	154
Thallium	---	33.3 B	---	33.6 B	15.7 B	22.9 B
Tin	19.1 NR	18.0 UN	15.9 NR	18.1 UN	15.1 UN	16.3 UN
Vanadium	74.2	77.3	62.5	83.1	74.1	78.7
Zinc	257	609	204	187	164	190
% Solids	54.3	49.2	63.7	61.2	65.3	56.4
Total (Allowed) Hold Time ^a	32(180)d	55(180)d	31(180)d	55(180)d	55(180)d	55(180)d
Total (Allowed) Hold Time ^b	2 ^c (26)d	20(26)d	24(26)d	20(26)d	20(26)d	20(26)d
Total (Allowed) Hold Time ^c	47(180)d	---	46(180)d	---	---	---
Total (Allowed) Hold Time ^d	13(14)d	---	12(14)d	---	---	---

- a. ICP
b. CVAAS
c. GFAAS
d. Cyanide

TABLE G-2. TSF EVAPORATION POND - INORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF POND BOTTOM SURFACE TSF0105M SEDIMENT mg/kg TSF0101M	TSF POND BOTTOM SURFACE TSF0106M SEDIMENT mg/kg TSF0101M	TSF POND BOTTOM SURFACE TSF0107M SEDIMENT mg/kg TSF0101M	TSF POND BOTTOM SURFACE TSF0108M SEDIMENT mg/kg TSF0101M	TSF POND BOTTOM SURFACE TSF0109M SEDIMENT mg/kg TSF0101M	TSF POND BOTTOM SURFACE TSF0110M SEDIMENT mg/kg TSF0101M
FIELD MEASUREMENTS						
Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
ANALYTES						
Aluminum	20900	17200	17400	16900	19300	16200
Antimony	15.7 UN	15.2 UN	16.3 UN	17.9 UN	16.2 UN	15.8 UN
Arsenic	---	---	---	16.0 B	---	17.5 B
Barium	266	232	242	388	233	256
Beryllium	1.9	1.6	1.7	1.7	1.8	1.6
Cadmium	2.4 B	2.0 B	1.7 B	2.6 B	2.0 B	2.0 B
Calcium	79400	67200	71600	73900	76800	73700
Chromium	57.5	43.8	42.5	43.2	46.5	40.9
Cobalt	12.0	10.0	10.4	11.2	13.2	11.5
Copper	41.5	25.6	24.8	44.1	30.0	23.9
Cyanide						
Iron	26900	24400	23200	23000	26200	23900
Lead	49.0	42.1	35.6	39.7	44.3	43.5
Magnesium	15700	13900	13900	14300	14800	13800
Manganese	398	358	440	515	296	534
Mercury	0.24	0.11	0.07 B	0.12	0.07 B	0.09 B
Nickel	44.6	37.6	45.2	46.9	45.5	37.5
Potassium	4440	3490	3520	3560	4060	3230
Selenium	---	---	---	---	---	---
Silver	20.0	8.1	6.6	10.0	8.9	6.7
Sodium	238 B	151 B	150 B	140 B	240 B	179 B
Strontium	153	122	127	123	133	123
Thallium	23.8 B	30.8 B	16.6 B	37.2 B	24.6 B	18.3 B
Tin	15.3 UN	14.8 UN	15.9 UN	17.5 UN	15.8 UN	15.4 UN
Vanadium	77.3	68.9	66.1	68.8	71.6	65.8
Zinc	174	121	120	159	140	118
% Solids	63.4	71.0	76.5	77.0	73.3	78.7
Total (Allowed) Hold Time ^a	55(180)d	55(180)d	54(180)d	54(180)d	54(180)d	54(180)d
Total (Allowed) Hold Time ^b	20(26)d	20(26)d	19(26)d	19(26)d	24(26)d	24(26)d
Total (Allowed) Hold Time ^c						
Total (Allowed) Hold Time ^d						

- a. ICP
b. CVAAS
c. GFAAS
d. Cyanide

TABLE G-2. TSF EVAPORATION POND - INORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS METHOD VALIDATION LEVEL SDG NUMBER	TSF POND BOTTOM SURFACE TSF0111M SEDIMENT mg/kg	TSF POND BOTTOM SURFACE TSF0112M SEDIMENT mg/kg	TSF DEPRESSION AREA SURFACE TSF0201M SOIL mg/kg	TSF DEPRESSION AREA SURFACE TSF0202M SOIL mg/kg	TSF DEPRESSION AREA SURFACE TSF0203M SOIL mg/kg	TSF DEPRESSION AREA SURFACE TSF0204M SOIL mg/kg
	TSF0101M	TSF0101M	TSF0201M	TSF0201M	TSF0201M	TSF0201M
FIELD MEASUREMENTS						
Depth (ft)	0-0.5	0-0.5	0-0.3	0-0.3	0-0.3	0-0.3
ANALYTES						
Aluminum	18000	21700	20300	19600	22200	23800
Antimony	15.6 UN	16.1 UN	18.7 NR	18.9 NR	18.6 NR	18.7 NR
Arsenic	16.0 B	---	---	16.8 B	---	---
Barium	284	271	280	279	267	259
Beryllium	1.8	2.0	2.0	1.8	1.9	1.9
Cadmium	2.0 B	2.3 B	3.0 B	2.9 B	3.9	3.2 B
Calcium	77800	60700	63700	65800	46300	46000
Chromium	43.0	48.1	47.2	46.3	50.7	52.9
Cobalt	12.8	11.6	13.9	14.7	15.1	15.0
Copper	23.2	27.4	31.1	29.2	48.0	28.6
Cyanide						
Iron	23900	28100	29400	27300	28700	29100
Lead	42.5	40.0	48.3	56.9	53.0	51.2
Magnesium	14300	15000	12600	12500	13400	13700
Manganese	510	518	501	521	421	366
Mercury	0.07 B	0.08 B	0.19	0.08 BU	0.09 BU	0.09 BU
Nickel	41.4	53.8	48.9	43.2	52.2	52.5
Potassium	3460	4890	3980	3710	5580	5640
Selenium	---	---	8.8 UJ	8.9 UJ	8.8 UJ	8.8 UJ
Silver	6.6	6.1	6.6 NJ	6.7 NJ	7.0 NJ	7.5 NJ
Sodium	215 B	397 B	366 BJ	412 BJ	208 BJ	228 BJ
Strontium	134	110	126	128	91.6	94.5
Thallium	15.7 B	---	30.3 BJ	---	30.6 BJ	---
Tin	15.2 UN	15.7 UN	18.2 MUJ	18.4 MUJ	18.2 MUJ	18.2 MUJ
Vanadium	70.1	57.7	72.7	72.0	57.7	64.6
Zinc	114	180	153	139	214	189
% Solids	75.9	69.7	90.5	93.0	90.1	90.6
Total (Allowed) Hold Time ^a	54(180)d	54(180)d	21(180)d	21(180)d	21(180)d	21(180)d
Total (Allowed) Hold Time ^b	24(26)d	24(26)d	23(26)d	23(26)d	23(26)d	23(26)d
Total (Allowed) Hold Time ^c						
Total (Allowed) Hold Time ^d						

- a. ICP
b. CVAAS
c. GFAAS
d. Cyanide

TABLE G-2. TSF EVAPORATION POND - INORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DEPRESSION AREA BIASED TSF0301M SEDIMENT mg/kg TSF0201M	TSF DEPRESSION AREA BIASED TSF0302M SEDIMENT mg/kg TSF0201M	TSF DEPRESSION AREA BIASED TSF0303M SEDIMENT mg/kg TSF0201M	TSF DEPRESSION AREA BIASED TSF0304M SEDIMENT mg/kg TSF0201M	TSF INLET PIPE BIASED TSF0601M SOIL mg/kg TSF0101M	TSF INLET PIPE BIASED TSF0602M SOIL mg/kg TSF0101M
FIELD MEASUREMENTS						
Depth (ft)					6-6.8	7.5-8.5
ANALYTES						
Aluminum	16600	11200	15900	13600	10100	18800
Antimony	18.7 NR	18.2 NR	19.8 NR	19.8 NR	17.4 UN	17.6 UN
Arsenic	---	---	---	17.2 B	---	38.6 B
Barium	231	212	256	207	155	262
Beryllium	1.7	1.6	1.4	1.5	1.0	1.6
Cadmium	1.8 B	1.6 B	1.7 B	2.3 B	1.4 B	1.9 B
Calcium	61500	79000	50000	66800	45400	67000
Chromium	39.8	34.3	39.2	35.1	30.4	44.9
Cobalt	14.7	12.0	12.5	14.1	8.8 B	12.4
Copper	19.6	13.8	22.6	17.6	15.5	27.7
Cyanide						
Iron	23400	19100	22800	19900	17100	25300
Lead	36.1 B	27.3 B	29.5 B	38.0 B	27.5 B	41.3
Magnesium	10500	13000	11200	12700	9940	13200
Manganese	482	569	414	412	331	507
Mercury	0.08 BU	0.07 BU	0.07 BU	0.06 BU	0.07 B	0.08 B
Nickel	40.9	36.0	37.0	33.7	27.5	52.3
Potassium	2550	1700	2860	2410	1890	3700
Selenium	8.8 UJ	8.6 UJ	9.3 UJ	9.3 UJ	---	---
Silver	6.3 NJ	5.5 BNJ	7.1 NJ	6.6 NJ	6.3	7.6
Sodium	100 BJ	123 BJ	284 BJ	231 BJ	186 B	47.6 B
Strontium	102	114	94.3	104	86.1	119
Thallium	---	36.3 BJ	29.3 BJ	35.1 BJ	23.0 B	16.3 B
Tin	18.3 MUJ	17.8 MUJ	19.3 MUJ	19.3 MUJ	17.0 UN	17.2 UN
Vanadium	56.5	50.4	61.6	57.2	51.6	74.4
Zinc	106	83.7	98.4	91.5	71.5	124
% Solids	82.9	85.3	81.0	84.0	88.6	91.9
Total (Allowed) Mold Time ^a	21(180)d	21(180)d	21(180)d	21(180)d	41(180)d	41(180)d
Total (Allowed) Mold Time ^b	23(26)d	23(26)d	23(26)d	23(26)d	11(26)d	11(26)d
Total (Allowed) Mold Time ^c						
Total (Allowed) Mold Time ^d						

- a. ICP
b. CVAAS
c. GFAAS
d. Cyanide

TABLE G-2. TSF EVAPORATION POND - INORGANIC DATA (Continued)

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AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF INLET PIPE BIASED TSF0603M SOIL mg/kg TSF0101M	TSF INLET PIPE BIASED TSF0604M SOIL mg/kg TSF0101M	TSF INLET PIPE BIASED TSF0604M SOIL mg/kg TSF0101A	TSF POND DISCHARGE BIASED TSF0701A SEDIMENT mg/kg TSF0101A	TSF BACKGROUND BIASED TSF1201M SOIL mg/kg TSF0101A	TSF BACKGROUND BIASED TSF1201M SOIL mg/kg TSF0101A
FIELD MEASUREMENTS						
Depth (ft)	5-6	5-6	5-6	0-2	0-0.4	0-0.4
ANALYTES						
Aluminum	16900	17600		9740	30000	
Antimony	17.6 UN	18.1 UN		5.0 BNLJ	0.68 MR	
Arsenic	22.4 B	32.0 B		10.1 S	6.1 S	
Barium	235	241		9740	304	
Beryllium	1.6	1.7		2.1	1.8	
Cadmium	1.6 B	1.7 B		14.9	3.7	
Calcium	72000	71100		179000	37200	
Chromium	41.8	43.0		150	63.4	
Cobalt	11.7	11.3		11.0 B	15.7	
Copper	21.7	22.8		936 E	32.6 E	
Cyanide				2.9 MJ	---	
Iron	23200	23500		38400 J	33600 J	
Lead	38.5	33.0 B		210	30.0 S	55.4
Magnesium	13700	13800		13500 J	15000 J	
Manganese	463	493		490	384	
Mercury	0.11	0.10	0.10	206	0.05 B	
Nickel	38.2	39.3		78.2	54.0	
Potassium	3310	3490		2150	7590	
Selenium	---	---		4.6 MSJ	0.62 BMSJ	
Silver	7.3	7.4		166	7.2 J	
Sodium	49.9 B	---		1110 BEJ	273 BEJ	
Strontium	118	119		58.5	82.6	
Thallium	25.3 B	37.6 B		---	---	
Tin	17.2 UN	17.6 UN		28.1 MR	19.0 MR	
Vanadium	69.3	72.4		53.4	77.4	
Zinc	116	113		2400	212	
% Solids	88.5	87.7	87.7	31.3	92.2	92.2
Total (Allowed) Hold Time ^a	36(180)d	36(180)d		18(180)d	32(180)d	
Total (Allowed) Hold Time ^b	8(26)d	8(26)d	8(26)d	13(26)d	25(26)d	
Total (Allowed) Hold Time ^c				33(180)d	47(180)d	
Total (Allowed) Hold Time ^d				12(14)d	13(14)d	

- a. ICP
b. CVAAS
c. GFAAS
d. Cyanide

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TABLE G-2. TSF EVAPORATION POND - INORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF BACKGROUND BIASED TSF1202M SOIL mg/kg TSF0101A	TSF BACKGROUND BIASED TSF1203M SOIL mg/kg TSF0101A	TSF BACKGROUND BIASED TSF1204M SOIL mg/kg TSF0101A	TSF BACKGROUND BIASED TSF1205M SOIL mg/kg TSF0101A	TSF BACKGROUND BIASED TSF1206M SOIL mg/kg TSF0101A	TSF BACKGROUND BIASED TSF1207M SOIL mg/kg TSF0101A
FIELD MEASUREMENTS						
Depth (ft)	0-0.4	0-0.4	0-0.4	0-0.4	0-0.4	0-0.4
ANALYTES						
Aluminum	26600	26000	28100	29100	29700	29700
Antimony	0.58 NR	0.56 NR	0.62 NR	0.63 NR	0.66 NR	0.67 NR
Arsenic	6.4 S	5.3 S	6.2 S	7.0 +	3.9 S	7.3 S
Barium	285	270	292	293	303	313
Beryllium	1.8	1.7	1.8	1.7	1.8	1.8
Cadmium	3.0	2.8	2.7	2.9	2.8	3.1
Calcium	43600	38300	37400	36600	37600	32300
Chromium	55.5	54.2	58.2	60.1	61.1	61.5
Cobalt	13.6	13.7	15.0	14.8	12.9	17.2
Copper	29.9 E	30.7 E	32.3 E	32.7 E	34.0 E	33.6 E
Cyanide	---	---	---	---	0.26 B	0.27
Iron	31200 J	33000 J	33900 J	34500 J	34400 J	34600 J
Lead	28.1 +J	31.9 S	29.7 S	27.7 S	26.0 S	26.1 S
Magnesium	14400 J	14400 J	14800 J	15100 J	15300 J	15200 J
Manganese	413	416	343	343	270	352
Mercury	0.05 B	0.05 B	0.06 B	0.05 B	0.04 B	0.04 B
Nickel	50.2	54.4	54.9	56.4	57.5	56.4
Potassium	6030	6370	6280	7290	7210	7160
Selenium	0.22 BMSJ	0.19 NSUJ	0.39 BMSJ	0.35 BMSJ	0.21 BMSJ	0.64 BMSJ
Silver	6.0 J	5.8 J	6.0 J	7.1 J	5.4 J	5.5 J
Sodium	234 BEJ	223 BEJ	244 BEJ	257 BEJ	281 BJ	269 BEJ
Strontium	91.4	83.8	86.1	81.8	87.5	88.7
Thallium	---	---	---	---	---	---
Tin	16.2 NR	15.6 NR	17.3 NR	17.8 NR	18.6 NR	18.7 NR
Vanadium	67.1	61.2	68.4	71.5	76.3	74.4
Zinc	191	202	208	213	207	214
% Solids	92.2	92.3	92.1	92.6	92.4	92.3
Total (Allowed) Mold Time ^a	32(180)d	32(180)d	32(180)d	32(180)d	32(180)d	32(180)d
Total (Allowed) Mold Time ^b	25(26)d	25(26)d	25(26)d	25(26)d	25(26)d	25(26)d
Total (Allowed) Mold Time ^c	47(180)d	47(180)d	47(180)d	47(180)d	47(180)d	47(180)d
Total (Allowed) Mold Time ^d	13(14)d	13(14)d	13(14)d	13(14)d	13(14)d	13(14)d

- a. ICP
b. CVAAS
c. GFAAS
d. Cyanide

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TABLE G-2. TSF EVAPORATION POND - INORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF BACKGROUND BIASED TSF1208M SOIL mg/kg TSF0101A	TSF BACKGROUND BIASED TSF1209M SOIL mg/kg TSF0101A	TSF BACKGROUND BIASED TSF1210M SOIL mg/kg TSF0101A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1301M SOIL mg/kg TSF1301M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1302M SOIL mg/kg TSF1301M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1303M SOIL mg/kg TSF1303M
FIELD MEASUREMENTS						
Depth (ft)	0-0.4	0-0.4	0-0.4	0-0.5	0-0.5	0-0.5
ANALYTES						
Aluminum	28400	27700	26600	24200	23100	21900
Antimony	0.66 NR	0.64 NR	0.66 NR	24.2 BNJ	23.7 BNJ	18.8 MUJ
Arsenic	5.6 S	7.2 S	8.4 S	32.6 B	27.9 B	22.5 B
Barium	295	294	292	276	265	248
Beryllium	1.8	1.8	1.9	1.8	1.7	1.9
Cadmium	2.9	3.2	3.1	2.5 B	2.3 B	4.6
Calcium	41000	43300	45500	56600	56800	50200
Chromium	59.3	59.6	55.8	53.4	50.4	49.2
Cobalt	15.0	14.9	15.9	14.6	14.1	4.6 B
Copper	32.6 E	32.1 E	31.7 E	29.2	26.9	36.9
Cyanide	---	---	---			
Iron	33800 J	33400 J	33200 J	28000	26300	27700
Lead	26.4 S	28.6 S	30.5 S	43.9	43.0	53.3
Magnesium	15000 J	14800 J	14500 J	15200	14500	13100
Manganese	342	444	431	492	496	506
Mercury	0.06 B	0.07 B	0.07 B	0.06 BU	0.06 BU	0.10 B
Nickel	52.3	55.6	51.9	52.4	49.0	49.4
Potassium	6780	6220	5810	6610	6050	5140
Selenium	0.20 UN+J	0.18 NSUJ	0.20 NSUJ	---	---	14.9 BJ
Silver	5.3 J	5.2 J	4.5 J	8.3	8.3	8.2 NJ
Sodium	302 BEJ	340 BEJ	283 BEJ	340 BJ	27.0 UJ	80.6 BJ
Strontium	91.2	93.9	96.4	108	105	101
Thallium	1.0 UW	---	---	---	---	---
Tin	18.5 NR	18.1 NR	15.5 NR	18.9 MUJ	19.0 MUJ	18.3 MUJ
Vanadium	71.9	69.3	69.8	68.3	67.9	63.9 EJ
Zinc	208	205	196	177	161	191
% Solids	92.3	92.2	91.8	83.5	89.3	86.5
Total (Allowed) Hold Time ^a	32(180)d	32(180)d	32(180)d	57(180)d	57(180)d	25(180)d
Total (Allowed) Hold Time ^b	25(26)d	25(26)d	25(26)d	20(26)d	20(26)d	18(26)d
Total (Allowed) Hold Time ^c	47(180)d	47(180)d	47(180)d			
Total (Allowed) Hold Time ^d	13(14)d	13(14)d	13(14)d			

- a. ICP
b. CVAAS
c. GFAAS
d. Cyanide

TABLE G-2. TSF EVAPORATION POND - INORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1304M SOIL mg/kg TSF1303M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1305M SOIL mg/kg TSF1303M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1306M SOIL mg/kg TSF1301M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1307M SOIL mg/kg TSF1301M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1308M SOIL mg/kg TSF1303M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1309M SOIL mg/kg TSF1303M
FIELD MEASUREMENTS						
Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
ANALYTES						
Aluminum	22200	22400	25100	25200	20300	20300
Antimony	20.2 BNJ	19.5 NUJ	24.9 BNJ	21.0 BNJ	19.4 NUJ	18.7 NUJ
Arsenic	---	17.5 B	49.2	22.8 B	---	---
Barium	236	252	278	262	219	234
Beryllium	2.0	2.0	1.8	1.7	1.9	2.0
Cadmium	4.2	4.8	2.1 B	2.4 B	4.0	4.0
Calcium	44600	40700	63000	49600	49600	45600
Chromium	51.0	48.5	54.2	53.4	48.8	44.7
Cobalt	12.0	15.1	14.5	14.5	15.5	7.2 B
Copper	30.0	28.8	27.4	28.6	40.6	27.6
Cyanide						
Iron	27000	29000	25800	27600	26100	26800
Lead	56.6	41.7	43.0	46.8	44.0	45.4
Magnesium	13200	12500	15000	14700	13000	12700
Manganese	290	395	490	442	309	359
Mercury	0.12	0.05 B	0.06 BU	0.07 BU	0.29	0.05 B
Nickel	45.0	50.1	44.7	48.8	44.2	46.6
Potassium	5410	5360	5920	6890	4370	4740
Selenium	42.2 BJ	32.8 BJ	---	---	20.3 BJ	25.1 BJ
Silver	12.1 NJ	6.9 NJ	9.0	8.4	24.1 NJ	5.8 NJ
Sodium	181 BJ	27.1 UJ	26.4 UJ	35.5 BJ	160 BJ	66.7 BJ
Strontium	90.9	82.3	120	97.4	97.5	86.7
Thallium	16.7 BJ	---	24.1 BJ	24.6 BJ	---	---
Tin	19.0 NUJ	19.0 NUJ	18.5 NUJ	18.9 NUJ	19.0 NUJ	18.2 NUJ
Vanadium	64.0 EJ	60.5 EJ	76.2	70.0	61.6 EJ	55.6 EJ
Zinc	184	193	154	175	190	174
% Solids	87.0	87.6	90.0	90.8	89.6	88.3
Total (Allowed) Hold Time ^a	25(180)d	26(180)d	57(180)d	58(180)d	26(180)d	25(180)d
Total (Allowed) Hold Time ^b	18(26)d	19(26)d	20(26)d	21(26)d	19(26)d	18(26)d
Total (Allowed) Hold Time ^c						
Total (Allowed) Hold Time ^d						

a. ICP
b. CVAAS
c. GFAAS
d. Cyanide

TABLE G-2. TSF EVAPORATION POND - INORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1310M SOIL mg/kg TSF1301M	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1311M SOIL mg/kg TSF1303M	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1312M SOIL mg/kg TSF1303M	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1313M SOIL mg/kg TSF1303M	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1314M SOIL mg/kg TSF1301M	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1315M SOIL mg/kg TSF1303M
FIELD MEASUREMENTS						
Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	J-0.5	0-0.5
ANALYTES						
Aluminum	23600	19200	19800	21000	25400	18200
Antimony	19.5 NR	19.5 NUJ	19.1 NUJ	18.3 NUJ	27.0 BNJ	19.9 BNJ
Arsenic	14.2 B	15.8 B	---	---	29.4 B	18.4 B
Barium	301	248	214	236	284	207
Beryllium	1.8	2.2	1.9	2.0	1.8	1.8
Cadmium	1.9 B	4.3	4.0	4.5	2.2 B	3.5 B
Calcium	66100	56100	55000	39600	55800	49100
Chromium	53.1	43.1	52.6	45.9	55.6	42.0
Cobalt	13.7	13.4	9.4 B	16.0	13.8	8.0 B
Copper	26.8	25.8	82.3	29.2	28.0	25.6
Cyanide						
Iron	26400	25800	24700	27800	27800	24800
Lead	39.7 B	37.1 B	44.8	45.6	52.0	35.6 B
Magnesium	15300	12800	12000	12600	15100	12400
Manganese	515	539	222	371	492	317
Mercury	---	0.05 B	1.3	0.05 B	0.06 BU	0.08 B
Nickel	48.5	46.1	44.8	49.9	51.4	43.0
Potassium	5600	4410	4690	5810	7210	4070
Selenium	---	19.0 BJ	9.0 UJ	38.6 BJ	---	30.3 BJ
Silver	8.6	5.6 BNJ	31.8 NJ	5.9 NJ	8.7	8.9 NJ
Sodium	331 BJ	140 BJ	26.6 UJ	107 BJ	113 BJ	114 BJ
Strontium	121	105	111	79.3	103	92.9
Thallium	31.5 BJ	24.4 BJ	16.6 BJ	18.9 BJ	---	21.5 BJ
Tin	19.0 NUJ	19.0 NUJ	18.7 NUJ	17.8 NUJ	19.0 NUJ	18.6 NUJ
Vanadium	77.1	58.7 EJ	57.9 EJ	56.1 EJ	73.4	55.1 EJ
Zinc	155	160	302	185	174	159
% Solids	88.8	90.3	86.4	88.0	89.6	90.7
Total (Allowed) Hold Time ^a	57(180)d	26(180)d	26(180)d	26(180)d	57(180)d	26(180)d
Total (Allowed) Hold Time ^b	20(26)d	19(26)d	19(26)d	19(26)d	20(26)d	19(26)d
Total (Allowed) Hold Time ^c						
Total (Allowed) Hold Time ^d						

a. ICP
b. CVAAS
c. GFAAS
d. Cyanide

TABLE G-2. TSF EVAPORATION POND - INORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1316M SOIL mg/kg TSF1303M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1317M SOIL mg/kg TSF1301M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1318M SOIL mg/kg TSF1303M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1319M SOIL mg/kg TSF1301M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1320M SOIL mg/kg TSF1303M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1321M SOIL mg/kg TSF1301M
FIELD MEASUREMENTS						
Depth (ft)	0-0.5	0-0.5		0-0.5	0-0.5	0-0.5
ANALYTES						
Aluminum	19900	24500	19100	23800	23200	23800
Antimony	27.4 BNJ	21.4 BNJ	18.6 NUJ	23.8 BNJ	19.3 NUJ	22.2 BNJ
Arsenic	---	30.6 B	---	33.8 B	---	39.0 B
Barium	250	276	228	281	253	274
Beryllium	1.8	1.9	1.9	1.9	2.0	1.9
Cadmium	5.2	2.6 B	4.0	2.7 B	4.6	2.3 B
Calcium	42700	55800	57200	62300	41900	55500
Chromium	59.7	53.1	43.0	53.7	50.0	53.0
Cobalt	11.6	14.5	11.3	14.0	11.4	14.5
Copper	197	28.0	25.0	27.1	27.1	28.0
Cyanide						
Iron	25200	27800	24700	27300	28500	27800
Lead	69.9	50.8	42.8	41.3	56.8	42.5
Magnesium	12600	14900	13000	15000	12800	14900
Manganese	240	450	428	539	423	502
Mercury	2.0	0.05 BU	0.05 B	0.06 BU	0.10	0.06 BU
Nickel	46.9	50.4	40.5	49.6	50.0	49.8
Potassium	4350	6300	4210	5390	5400	5880
Selenium	15.6 BJ	---	20.8 BJ	---	32.2 BJ	---
Silver	77.2 NJ	8.0	6.9 NJ	8.3	6.7 NJ	8.0
Sodium	26.7 UJ	374 BJ	25.9 UJ	150 BJ	113 BJ	152 BJ
Strontium	112	104	106	113	84.7	103
Thallium	23.6 BJ	---	17.0 BJ	35.2 BJ	---	16.5 BJ
Tin	18.7 NUJ	18.5 NUJ	18.2 NUJ	18.7 NUJ	18.8 NUJ	18.7 NUJ
Vanadium	61.2 EJ	68.3	59.6 EJ	71.8	62.9 EJ	68.9
Zinc	410	179	145	165	188	172
% Solids	83.5	84.8	91.2	88.2	88.9	90.9
Total (Allowed) Hold Time ^a	25(180)d	57(180)d	25(180)d	57(180)d	26(180)d	57(180)d
Total (Allowed) Hold Time ^b	18(26)d	20(26)d	18(26)d	20(26)d	19(26)d	20(26)d
Total (Allowed) Hold Time ^c						
Total (Allowed) Hold Time ^d						

- a. ICP
b. CVAAS
c. GFAAS
d. Cyanide

TABLE G-2. TSF EVAPORATION POND - INORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1322M SOIL mg/kg TSF1303M	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1323A SOIL mg/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1324A SOIL mg/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1325A SOIL mg/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1401M SEDIMENT mg/kg TSF1301M	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1402M SEDIMENT mg/kg TSF1301M
FIELD MEASUREMENTS						
Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	10-11	10-11
ANALYTES						
Aluminum	23300	19200	22900	23100	19600	18000
Antimony	24.5 BNJ	1.7 BNJ	2.0 BNJ	1.5 BNJ	18.6 NR	19.0 NR
Arsenic	---	7.5 S	5.4 S	5.3 S	24.4 B	46.8 B
Barium	257	246	264	263	293	277
Beryllium	1.9	1.7	2.0	1.9	1.5	1.2
Cadmium	5.7	3.1	3.0	2.7	2.1 B	1.5 B
Calcium	46200	60200	53500	51000	63700	50700
Chromium	51.5	60.5 EJ	49.7 J	50.4 J	47.2	41.8
Cobalt	11.8	16.4	17.7	16.4	13.8	12.5
Copper	27.5	123	27.6	29.0	25.7	22.8
Cyanide		0.62 BJ	0.10 BJ	0.21 BJ		
Iron	28600	25100	27700	27500	24900	22200
Lead	45.2	43.3 S	30.1 S	29.6 S	33.7 B	34.1 B
Magnesium	13000	13500	14500	14200	13300	12000
Manganese	460	237	477	486	451	420
Mercury	0.08 B	3.9	0.06 B	0.08 B	---	0.07 BU
Nickel	47.2	42.7	48.3	46.4	39.4	34.3
Potassium	5920	3990	6180	5690	4180	3530
Selenium	16.2 BJ	1.0 BN*SJ	0.39 BN*SJ	0.39 BN*SJ	---	---
Silver	7.4 NJ	37.6	7.7	7.0	9.0	8.6
Sodium	201 BJ	274 B	263 B	340 B	232 BJ	48.0 BJ
Strontium	92.7	118	100	98.7	121	100
Thallium	---	1.0 USN	0.94 USN	0.94 USN	22.4 BJ	19.0 BJ
Tin	18.9 NUJ	15.1 NR	18.6 NR	18.9 NR	18.1 NUJ	18.6 NUJ
Vanadium	67.8 EJ	65.1 EJ	60.8 J	64.7 J	81.2	69.1
Zinc	180	381	175	169	112	91.7
% Solids	86.2	88.0	89.7	91.1	79.2	78.3
Total (Allowed) Hold Time ^a	26(180)d	38(180)d	34(180)d	34(180)d	57(180)d	57(180)d
Total (Allowed) Hold Time ^b	19(26)d	27(26)d*	23(26)d	23(26)d	20(26)d	20(26)d
Total (Allowed) Hold Time ^c		41(180)d	37(180)d	37(180)d		
Total (Allowed) Hold Time ^d		24(14)d*	20(14)d*	20(14)d*		

a. ICP
b. CVAAS
c. GFAAS
d. Cyanide

TABLE G-2. TSF EVAPORATION POND - INORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1403M SEDIMENT mg/kg TSF1301M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1404M SEDIMENT mg/kg TSF1303M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1405M SEDIMENT mg/kg TSF1303M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1406M SEDIMENT mg/kg TSF1301M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1407M SEDIMENT mg/kg TSF1301M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1408M SEDIMENT mg/kg TSF1303M
FIELD MEASUREMENTS						
Depth (ft)	10-11	10-11	10-11	10-11	10-11	10-11
ANALYTES						
Aluminum	11200	13500	8800	18400	18000	16800
Antimony	19.2 NR	19.3 NUJ	17.6 NUJ	19.6 NR	19.1 NR	19.5 NUJ
Arsenic	17.9 B	---	---	34.9 B	29.2 B	20.4 B
Barium	197	202	165	275	276	241
Beryllium	1.0	1.8	1.0	1.5	1.4	1.5
Cadmium	1.1 B	3.6 B	2.2 B	1.7 B	1.9 B	3.4 B
Calcium	53600	72700	39000	76700	56500	51100
Chromium	33.9	34.1	26.2	44.2	42.4	38.7
Cobalt	10.7	9.4 B	6.5 F	11.8	10.9	13.1
Copper	16.6	19.1	12.7	23.3	24.3	24.7
Cyanide						
Iron	17700	20800	14800	23100	22800	23600
Lead	29.8 B	32.9 B	22.7 B	33.9 B	37.5 B	37.9 B
Magnesium	10900	13200	8720	15100	12800	11000
Manganese	343	468	287	476	459	495
Mercury	0.07 BU	0.08 B	0.05 B	0.05 BU	0.06 BU	0.09 B
Nickel	32.0	35.1	22.6	42.4	36.3	35.5
Potassium	2300	2190	1610	3820	3570	2690
Selenium	---	35.7 BJ	8.3 UJ	---	---	29.7 BJ
Silver	6.2	5.8 BNJ	4.5 BNJ	8.7	8.3	7.0 J
Sodium	42.0 BJ	159 BJ	168 BJ	52.8 BJ	123 BJ	218 BJ
Strontium	98.4	109	75.8	126	107	96.7
Thallium	---	34.3 BJ	17.4 BJ	18.9 BJ	---	21.6 BJ
Tin	18.8 NUJ	18.8 NUJ	17.2 NUJ	19.1 NUJ	18.6 NUJ	19.1 NUJ
Vanadium	58.2	54.9 EJ	43.8 EJ	74.9	71.6	62.8 EJ
Zinc	75.5	104	60.8	117	99.4	102
% Solids	86.0	86.4	85.0	78.9	81.5	80.9
Total (Allowed) Hold Time ^a	58(180)d	25(180)d	25(180)d	58(180)d	58(180)d	25(180)d
Total (Allowed) Hold Time ^b	21(26)d	18(26)d	18(26)d	21(26)d	21(26)d	18(26)d
Total (Allowed) Hold Time ^c						
Total (Allowed) Hold Time ^d						

a. ICP
b. CVAAS
c. GFAAS
d. Cyanide

TABLE G-2. TSF EVAPORATION POND - INORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1409M SEDIMENT mg/kg TSF1301M	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1410M SEDIMENT mg/kg TSF1301M	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1411M SEDIMENT mg/kg TSF0201M	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1412M SEDIMENT mg/kg TSF1303M	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1413M SEDIMENT mg/kg TSF0201M	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1414M SEDIMENT mg/kg TSF1301M
FIELD MEASUREMENTS						
Depth (ft)	10-11	10-11	10-11	10-11	10-10.5	10-11
ANALYTES						
Aluminum	19700	19000	15000	13700	8500	19300
Antimony	25.0 BNJ	18.9 BNJ	18.2 NR	19.3 MUJ	19.6 NR	24.1 BNJ
Arsenic	19.3 B	42.6 B	---	18.0 B	---	24.5 B
Barium	579	272	247	230	152	292
Beryllium	1.7	1.7	1.3	1.9	0.99 B	1.6
Cadmium	2.3 B	2.3 B	2.3 B	3.3 B	2.0 B	1.7 B
Calcium	76300	81400	52800	77200	47200	66900
Chromium	47.8	47.9	37.8	34.6	26.7	45.8
Cobalt	13.6	12.4	11.7	14.5	7.8 B	13.3
Copper	26.2	24.7	25.3	18.9	14.2	27.2
Cyanide						
Iron	25200	24200	22400	20400	15400	24900
Lead	42.6	44.1	35.9 B	35.6 B	30.1 B	45.2
Magnesium	15200	16000	10900	13800	9540	14200
Manganese	606	523	440	503	325	493
Mercury	0.06 BU	0.07 BU	0.06 BU	0.08 B	0.07 BU	0.09 BU
Nickel	47.8	43.9	34.2	37.2	26.9	47.2
Potassium	3750	3750	2750	2220	1510	3890
Selenium	---	---	8.6 UJ	21.0 BJ	9.2 UJ	---
Silver	8.3	7.6	6.9 NJ	6.3 J	5.5 BNJ	8.2
Sodium	182 BJ	196 BJ	155 BJ	106 BJ	78.2 BJ	205 BJ
Strontium	128	127	99.7	111	85.6	127
Thallium	17.2 BJ	19.6 BJ	21.3 BJ	21.8 BJ	---	33.0 BJ
Tin	18.2 MUJ	18.1 MUJ	17.8 MUJ	18.8 MUJ	19.1 MUJ	18.8 MUJ
Vanadium	75.9	75.1	63.2	56.8 EJ	45.8	75.6
Zinc	126	125	102	108	67.3	118
% Solids	81.6	80.2	81.7	84.0	89.2	80.0
Total (Allowed) Hold Time ^a	58(180)d	57(180)d	31(180)d	25(180)d	32(180)d	57(180)d
Total (Allowed) Hold Time ^b	21(26)d	20(26)d	27(26)d*	18(26)d	28(26)d*	20(26)d
Total (Allowed) Hold Time ^c						
Total (Allowed) Hold Time ^d						

- a. ICP
b. CVAAS
c. GFAAS
d. Cyanide

TABLE G-2. TSF EVAPORATION POND - INORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1415M SEDIMENT mg/kg TSF1303M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1416M SEDIMENT mg/kg TSF1301M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1417M SEDIMENT mg/kg TSF0201M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1418M SEDIMENT mg/kg TSF1303M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1419M SEDIMENT mg/kg TSF0201M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1420M SEDIMENT mg/kg TSF0201M
FIELD MEASUREMENTS						
Depth (ft)	10-11	10-11		10-11	10-11	10-11
ANALYTES						
Aluminum	12900	16000	17100	13700	17000	19900
Antimony	19.0 MUJ	18.9 NR	19.6 NR	19.3 MUJ	18.4 NR	17.9 NR
Arsenic	---	25.4 B	17.6 B	---	---	---
Barium	213	248	280	230	282	290
Beryllium	1.5	1.2	1.3	1.8	1.5	1.6
Cadmium	2.8 B	1.6 B	2.4 B	3.0 B	2.2 B	2.4 B
Calcium	59900	53900	52200	72600	54600	56600
Chromium	33.6	39.8	40.1	33.6	41.1	44.0
Cobalt	8.2 B	10.4	14.3	9.1 B	10.8	13.9
Copper	18.6	23.3	24.4	17.7	25.0	31.3
Cyanide						
Iron	19900	21000	24000	20200	23900	27000
Lead	27.1 B	34.3 B	49.8	32.1 B	44.1	36.8
Magnesium	12200	11800	11200	13400	11600	11300
Manganese	406	409	461	427	490	522
Mercury	0.06 B	0.07 BU	---	0.08 B	0.09 BU	0.06 BU
Nickel	33.2	34.3	37.3	35.6	42.9	43.0
Potassium	2230	3210	3000	2280	3130	3520
Selenium	9.0 UJ	---	9.2 UJ	9.1 UJ	8.6 UJ	8.4 UJ
Silver	6.3 NJ	8.4	8.1 NJ	5.6 BNJ	7.1 NJ	7.5 NJ
Sodium	164 BJ	121 BJ	240 BJ	119 BJ	148 BJ	165 BJ
Strontium	98.4	104	102	110	105	114
Thallium	29.6 BJ	---	19.0 BJ	---	31.8 BJ	33.3 BJ
Tin	18.6 MUJ	18.4 MUJ	19.2 MUJ	18.8 MUJ	17.9 MUJ	17.5 MUJ
Vanadium	56.0 EJ	66.2	67.7	54.6 EJ	70.3	73.4
Zinc	93.6	93.7	101	98.8	114	123
% Solids	84.1	80.6	77.8	79.2	78.3	79.5
Total (Allowed) Hold Time ^a	25(180)d	58(180)d	27(180)d	25(180)d	28(180)d	31(180)d
Total (Allowed) Hold Time ^b	18(26)d	21(26)d	23(26)d	18(26)d	24(26)d	27(26)d*
Total (Allowed) Hold Time ^c						
Total (Allowed) Hold Time ^d						

- a. ICP
b. CVAAS
c. GFAAS
d. Cyanide

TABLE G-2. TSF EVAPORATION POND - INORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1421M SEDIMENT mg/kg TSF0201M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1422M SEDIMENT mg/kg TSF1303M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1423A SEDIMENT mg/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1424A SEDIMENT mg/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1424A SEDIMENT mg/kg TSF0201M	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1425A SEDIMENT mg/kg TSF1323A
FIELD MEASUREMENTS						
Depth (ft)	10-11	10-11	10-11	10-11	10-11	10-11
ANALYTES						
Aluminum	17000	14700	17000	16700		17200
Antimony	19.3 NR	19.5 MUJ	0.62 MUJ	0.75 MUJ		0.97 BNJ
Arsenic	---	21.8 B	18.7S	19.6S		12.5 +J
Barium	345	250	256	275		226
Beryllium	1.6	1.6	1.6	1.8		1.6
Cadmium	2.3 B	3.4 B	2.1	2.2		2.0
Calcium	70500	53300	77700	80600		74300
Chromium	42.0	35.1	40.8 J	42.1 J		40.8 J
Cobalt	12.3	11.3	15.6	16.6		15.7
Copper	24.4	24.6	22.1	23.1		22.6
Cyanide			0.20 BJ	0.17 BJ		0.10 BJ
Iron	24400	23200	22700	24400		23800
Lead	52.1	43.9	27.4S	30.5S		26.4
Magnesium	13600	10700	14800	15500		14500
Manganese	507	495	539	535		489
Mercury	0.07 BU	0.09 B	0.12	0.09 B	0.09 B	0.13
Nickel	42.8	34.9	37.0	43.4		40.1
Potassium	3130	2460	3140	3080		3390
Selenium	9.1 UJ	9.2 UJ	0.85 B	0.59 BN*SJ		0.53 BN*SJ
Silver	7.2 NJ	6.2 NJ	7.5	7.2		7.4
Sodium	115 BJ	103 BJ	328 BN*SJ	307 B		408 B
Strontium	118	102	121	128		117
Thallium	47.5 BJ	---	1.0 USN	1.1 USN		0.91 USN
Tin	18.8 MUJ	19.1 MUJ	17.3 NR	21.0 NR		17.2 NR
Vanadium	70.7	59.9 EJ	64.0	67.4 J		66.8 J
Zinc	126	105	115	122		119
% Solids	80.7	79.5	80.8	80.9	80.9	83.9
Total (Allowed) Hold Time ^a	28(180)d	26(180)d	34(180)d	34(180)d	27(180)d	34(180)d
Total (Allowed) Hold Time ^b	24(26)d	19(26)d	23(26)d	23(26)d	23(26)d	23(26)d
Total (Allowed) Hold Time ^c			37(180)d	37(180)d		37(180)d
Total (Allowed) Hold Time ^d			20(14)d*	20(14)d*		20(14)d*

a. ICP
b. CVAAS
c. GFAAS
d. Cyanide

TABLE G-2. TSF EVAPORATION POND - INORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DITCH BIASED TSF2101M SOIL/SEDIMEN mg/kg TSF0201M	TSF DITCH BIASED TSF2102M SOIL/SEDIMEN mg/kg TSF0201M	TSF DITCH BIASED TSF2103M SOIL/SEDIMEN mg/kg TSF0201M	TSF DITCH BIASED TSF2104M SOIL/SEDIMEN mg/kg TSF0201M
FIELD MEASUREMENTS				
Depth (ft)	0-0.3	0-0.3	0-0.5	0-0.5
ANALYTES				
Aluminum	16400	16200	17200	21000
Antimony	19.8 NR	20.1 NR	18.4 NR	19.3 NR
Arsenic	---	---	15.2 B	---
Barium	220	218	236	258
Beryllium	1.9	1.8	1.7	1.9
Cadmium	2.8 B	3.5 B	5.9	4.3
Calcium	69400	67000	57700	54100
Chromium	53.5	47.0	60.9	58.8
Cobalt	12.8	12.6	15.0	16.2
Copper	102	95.4	217	144
Cyanide				
Iron	22800	23500	23400	28300
Lead	58.2	55.4	77.5	78.8
Magnesium	11800	12400	12700	13400
Manganese	258	313	289	410
Mercury	3.5	0.24	---	0.49
Nickel	42.7	39.8	43.1	52.5
Potassium	2840	2890	3450	4440
Selenium	9.3 UJ	9.5 UJ	8.7 UJ	9.1 UJ
Silver	16.2 NJ	11.1 NJ	14.4 NJ	11.9 NJ
Sodium	141 BJ	156 BJ	214 BJ	238 BJ
Strontium	127	124	113	109
Thallium	48.2 BJ	36.7 BJ	22.3 BJ	38.0 BJ
Tin	19.3 MUJ	19.6 MUJ	18.0 MUJ	18.8 MUJ
Vanadium	60.6	61.0	53.9	60.8
Zinc	295	470	439	370
% Solids	63.1	64.5	50.8	56.0
Total (Allowed) Hold Time ^a	20(180)d	20(180)d	20(180)d	20(180)d
Total (Allowed) Hold Time ^b	22(26)d	22(26)d	22(26)d	22(26)d
Total (Allowed) Hold Time ^c				
Total (Allowed) Hold Time ^d				

- a. ICP
b. CVAAS
c. GFAAS
d. Cyanide

TABLE G-3. TSF EVAPORATION POND - ORGANOCHLORINE HERBICIDE DATA

AREA	TSF	TSF	TSF	TSF	TSF	TSF
LOCATION	POND BOTTOM	POND BOTTOM	POND DISCHARGE	OVERFLOW AREA	OVERFLOW AREA	OVERFLOW AREA
TYPE OF LOCATION	SURFACE	SURFACE	BIASED	SYSTMATIC RANDM	SYSTMATIC RANDM	SYSTMATIC RANDM
SAMPLE NUMBER	TSF0101A	TSF0102A	TSF0701A	TSF1323A	TSF1324A	TSF1325A
MEDIA	SEDIMENT	SEDIMENT	SEDIMENT	SOIL	SOIL	SOIL
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
SDG NUMBER	TSF0101A	TSF0101A	TSF0701A	TSF1323A	TSF1323A	TSF1323A
FIELD MEASUREMENTS						
Depth (ft)	0-0.5	0-0.5	0-2	0-0.5	0-0.5	0-0.5
TARGET COMPOUNDS						
2,4-D	---	---	---	400 R	---	---
Silvex	---	---	---	80 R	---	---
2,4,5-T	---	---	---	80 R	---	---
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0
Extraction (Allowed) Hold time	10(14)d	9(14)d	14(14)d	17(14)d*	13(14)d	14(14)d
Analytical (Allowed) Hold Time	14(40)d	14(40)d	44(40)d*	22(40)d	22(40)d	22(40)d
2-16-93						

TABLE G-3. TSF EVAPORATION POND - OXAMONCHLORINE HERBICIDE DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1423A SEDIMENT ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1424A SEDIMENT ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1425A SEDIMENT ug/kg TSF1323A
<u>FIELD MEASUREMENTS</u>			
Depth (ft)	10-11	10-11	10-11
<u>TARGET COMPOUNDS</u>			
2,4-D	---	---	---
Silvex	---	---	---
2,4,5-T	---	---	---
Dilution Factor	1.0	1.0	1.0
Extraction (Allowed) Hold Time	14(14)d	13(14)d	14(14)d
Analytical (Allowed) Hold Time	22(40)d	22(40)d	22(40)d
11-5-92			

TABLE G-4. TSF EVAPORATION POND - ORGANOCHLORINE PESTICIDE DATA

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF POND BOTTOM SURFACE TSF0101A SEDIMENT ug/kg TSF0101A	TSF POND BOTTOM SURFACE TSF0102A SEDIMENT ug/kg TSF0101A	TSF POND DISCHARGE BIASED TSF0701A SEDIMENT ug/kg TSF0401A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1323A SOIL ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1324A SOIL ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1325A SOIL ug/kg TSF1323A
FIELD MEASUREMENTS						
Depth (ft)	0-0.5	0-0.5	0-2	0-0.5	0-0.5	0-0.5
TARGET COMPOUNDS						
alpha-BHC	8 UJ	8 UJ	---	---	---	---
beta-BHC	8 UJ	8 UJ	---	---	---	---
delta-BHC	8 UJ	8 UJ	---	---	---	---
gamma-BHC (Lindane)	8 R	8 UJ	---	8 UJ	---	---
Heptachlor	8 R	8 UJ	---	---	---	---
Aldrin	8 R	8 UJ	---	---	---	---
Heptachlor epoxide	8 UJ	8 UJ	---	---	---	---
Endosulfan I	8 UJ	8 UJ	---	---	---	---
Dieldrin	16 R	16 UJ	---	---	---	---
4,4'-DDE	16 UJ	16 UJ	---	---	---	---
Endrin	16 R	16 UJ	---	---	---	---
Endosulfan II	16 UJ	16 UJ	---	---	---	---
4,4'DDD	16 UJ	16 UJ	---	---	---	---
Endosulfan sulfate	16 UJ	16 UJ	---	---	---	---
4,4'-DDT	16 R	16 UJ	---	---	---	---
Methoxychlor	80 UJ	80 UJ	---	---	---	---
Endrin ketone	16 UJ	16 UJ	---	---	---	---
alpha-Chlordane	80 UJ	80 UJ	---	---	---	---
gamma-Chlordane	80 UJ	80 UJ	---	---	---	---
Toxaphene	160 UJ	160 UJ	---	---	---	---
Aroclor-1016	80 UJ	80 UJ	---	---	---	---
Aroclor-1221	80 R	80 R	80 R	---	---	---
Aroclor-1232	80 R	80 R	80 R	---	---	---
Aroclor-1242	80 UJ	80 UJ	---	---	---	---
Aroclor-1248	80 UJ	80 UJ	---	---	---	---
Aroclor-1254	35 J	220 UJ	550 J	220	---	---
Aroclor-1260	220 UJ	220 UJ	780 J	220	---	---
Isodrin	8 UJ	8 UJ	---	---	---	---
Kepone	16 UJ	16 UJ	---	---	---	---
Endrin Aldehyde	16 UJ	16 UJ	---	---	---	---
Di-allate	80 UJ	80 UJ	---	---	---	---
Chlordane (Technical)	80 UJ	80 UJ	---	---	---	---
Chlorobenzilate	80 UJ	80 UJ	---	---	---	---
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0
Extraction (Allowed) Hold Time	19(14)d*	18(14)d*	14(14)d	17(14)d*	13(14)d	14(14)d
Analytical (Allowed) Hold Time	37(40)d	37(40)d	29(40)d	27(40)d	27(40)d	27(40)d

TABLE G-4. TSF EVAPORATION POND - ORGANOCHLORINE PESTICIDE DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1423A SEDIMENT ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1424A SEDIMENT ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1425A SEDIMENT ug/kg TSF1323A
<u>FIELD MEASUREMENTS</u>			
Depth (ft)	10-11	10-11	10-11
<u>TARGET COMPOUNDS</u>			
alpha-BHC	---	---	8 UJ
beta-BHC	---	---	8 UJ
delta-BHC	---	---	8 UJ
gamma-BHC (Lindane)	---	---	8 UJ
Heptachlor	---	---	8 UJ
Aldrin	---	---	8 UJ
Heptachlor epoxide	---	---	8 UJ
Endosulfan I	---	---	8 UJ
Dieldrin	---	---	16 UJ
4,4'-DDE	---	---	16 UJ
Endrin	---	---	16 UJ
Endosulfan II	---	---	16 UJ
4,4'-DDD	---	---	16 UJ
Endosulfan sulfate	---	---	16 UJ
4,4'-DDT	---	---	16 UJ
Methoxychlor	---	---	80 UJ
Endrin ketone	---	---	16 UJ
alpha-Chlordane	---	---	80 UJ
gamma-Chlordane	---	---	80 UJ
Toxaphene	---	---	160 UJ
Aroclor-1016	---	---	80 UJ
Aroclor-1221	---	---	80 UJ
Aroclor-1232	---	---	80 UJ
Aroclor-1242	---	---	80 UJ
Aroclor-1248	---	---	80 UJ
Aroclor-1254	---	---	160 UJ
Aroclor-1260	---	---	160 UJ
Isodrin	---	---	8 UJ
Kepone	---	---	16 UJ
Endrin Aldehyde	---	---	16 UJ
Di-allyl	---	---	80 UJ
Chlordane (Technical)	---	---	80 UJ
Chlorobenzilate	---	---	80 UJ
Dilution Factor	1.0	1.0	1.0
Extraction (Allowed) Hold Time	14(14)d	13(14)d	14(14)d
Analytical (Allowed) Hold Time	27(14)d	27(14)d	27(14)d

TABLE G-5. TSF EVAPORATION POND - ORGANOPHOSPHORUS PESTICIDE DATA

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF POND BOTTOM SURFACE TSF0101A SEDIMENT ug/kg TSF0101A	TSF POND BOTTOM SURFACE TSF0102A SEDIMENT ug/kg TSF0101A	TSF POND DISCHARGE BIASED TSF0701A SEDIMENT ug/kg TSF0701A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1323A SOIL ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1324A SOIL ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1325A SOIL ug/kg TSF1323A
<u>FIELD MEASUREMENTS</u>						
Depth (ft)	0-0.5	0-0.5	0-2	0-0.5	0-0.5	0-0.5
<u>TARGET COMPOUNDS</u>						
Phorate	---	10 UJ	---	---	---	--
Sulfotepp	---	7 UJ	---	---	---	---
Dilsulfoton	---	9 UJ	---	---	---	---
Dimethoate	---	20 UJ	---	---	---	---
Methyl Paration	---	13 UJ	---	---	---	---
Parathion	---	14 UJ	---	---	---	---
Dilution Factor	1.7	1.5	3.5	1.1	1.1	1.1
Extraction (Allowed) Hold Time	11(14)d	10(14)d	9(14)d	14(14)d	10(14)d	11(14)d
Analytical (Allowed) Hold Time	14(40)d	14(40)d	4(40)d	3(40)d	3(40)d	3(40)d

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TABLE G-5. TSF EVAPORATION POND - ORGANOPHOSPHORUS PESTICIDE DATA (Continued)

AREA	TSF	TSF	TSF			
LOCATION	OVERFLOW AREA	OVERFLOW AREA	OVERFLOW AREA			
TYPE OF LOCATION	SYSTEMATIC RANDM	SYSTEMATIC RANDM	SYSTEMATIC RANDM			
SAMPLE NUMBER	TSF1423A	TSF1424A	TSF1425A			
MEDIA	SEDIMENT	SEDIMENT	SEDIMENT			
UNITS	ug/kg	ug/kg	ug/kg			
SDG NUMBER	TSF1323A	TSF1323A	TSF1323A			
<hr/>						
<u>FIELD MEASUREMENTS</u>						
Depth (ft)	10-11	10-11	10-11			
<u>TARGET COMPOUNDS</u>						
Phorate	---	---	---	---	---	--
Sulfotepp	---	---	---	---	---	---
Dilsulfoton	---	---	---	---	---	---
Dimethoate	---	---	---	---	---	---
Methyl Paration	---	---	---	---	---	---
Parathion	---	---	---	---	---	---
Dilution Factor	1.2	1.2	1.2			
Extraction (Allowed) Hold Time	11(14)d	10(14)d	11(14)d			
Analytical (Allowed) Hold Time	3(40)d	3(40)d	3(40)d			
2-16-93						

TABLE G-6. TSF EVAPORATION POND - SEMIVOLATILE APPENDIX IX ORGANIC DATA

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF POND BOTTOM SURFACE TSF0101A SEDIMENT ug/kg TSF0101A	TSF POND BOTTOM SURFACE TSF0102A SEDIMENT ug/kg TSF0101A	TSF POND DISCHARGE BIASED TSF0701A SEDIMENT ug/kg TSF0401A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1323A SOIL ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1324A SOIL ug/kg TSF1323A
FIELD MEASUREMENTS					
Depth (ft)	0-0.5	0-0.5	0-2	0-0.5	0-0.5
TARGET COMPOUNDS					
Phenol	330 UJ	330 UJ	---	330 UJ	---
bis(2-Chloroethyl)ether	330 UJ	330 UJ	---	330 UJ	---
2-Chlorophenol	330 UJ	330 UJ	---	330 UJ	---
1,3-Dichlorobenzene	330 UJ	330 UJ	---	330 UJ	---
1,4-Dichlorobenzene	330 UJ	330 UJ	---	330 UJ	---
Benzyl alcohol	330 UJ	330 UJ	---	330 UJ	---
1,2-Dichlorobenzene	330 UJ	330 UJ	---	330 UJ	---
2-Methylphenol	330 UJ	330 UJ	---	330 UJ	---
bis(2-Chloroisopropyl)ether	330 UJ	330 UJ	---	330 UJ	---
4-Methylphenol	330 UJ	330 UJ	---	330 UJ	---
N-Nitroso-di-n-propylamine	330 UJ	330 UJ	---	330 UJ	---
Hexachloroethane	330 UJ	330 UJ	---	330 UJ	---
Nitrobenzene	330 UJ	330 UJ	---	330 UJ	---
Isophorone	330 UJ	330 UJ	---	330 UJ	---
2-Nitrophenol	330 UJ	330 UJ	---	330 UJ	---
2,4-Dimethylphenol	330 UJ	330 UJ	---	330 UJ	---
Benzoic acid	1600 UJ	1600 UJ	---	1600 UJ	---
bis(2-Chloroethoxy)methane	330 UJ	330 UJ	---	330 UJ	---
2,4-Dichlorophenol	330 UJ	330 UJ	---	330 UJ	---
1,2,4-Trichlorobenzene	330 UJ	330 UJ	---	330 UJ	---
Naphthalene	330 UJ	330 UJ	---	330 UJ	---
4-Chloroaniline	330 UJ	330 UJ	---	330 UJ	---
Hexachlorobutadiene	330 UJ	330 UJ	---	330 UJ	---
4-Chloro-3-methylphenol	330 UJ	330 UJ	---	330 UJ	---
2-Methylnaphthalene	330 UJ	330 UJ	---	330 UJ	---
Hexachlorocyclopentadiene	330 UJ	330 UJ	---	330 UJ	---
2,4,6-Trichlorophenol	330 UJ	330 UJ	---	330 UJ	---
2,4,5-Trichlorophenol	1600 UJ	1600 UJ	---	1600 UJ	---
2-Chloronaphthalene	330 UJ	330 UJ	---	330 UJ	---
2-Nitroaniline	1600 UJ	1600 UJ	---	1600 UJ	---
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TABLE G-6. TSF EVAPORATION POND - SEMIVOLATILE APPENDIX IX ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF POND BOTTOM SURFACE TSF0101A SEDIMENT ug/kg TSF0101A	TSF POND BOTTOM SURFACE TSF0102A SEDIMENT ug/kg TSF0101A	TSF POND DISCHARGE BIASED TSF0701A SEDIMENT ug/kg TSF0401A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1323A SOIL ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1324A SOIL ug/kg TSF1323A
Dimethylphthalate	330 UJ	330 UJ	---	330 UJ	---
Acenaphthylene	330 UJ	330 UJ	---	330 UJ	---
2,6-Dinitrotoluene	330 UJ	330 UJ	---	330 UJ	---
3-Nitroaniline	1600 UJ	1600 UJ	---	1600 UJ	---
Acenaphthene	330 UJ	330 UJ	---	330 UJ	---
2,4-Dinitrophenol	1600 UJ	1600 UJ	---	1600 UJ	---
4-Nitrophenol	1600 UJ	1600 UJ	---	1600 UJ	---
Dibenzofuran	330 UJ	330 UJ	---	330 UJ	---
2,4-Dinitrotoluene	330 UJ	330 UJ	---	330 UJ	---
Diethylphthalate	330 UJ	330 UJ	---	330 UJ	---
4-Chlorophenyl-phenylether	330 UJ	330 UJ	---	330 UJ	---
Fluorene	330 UJ	330 UJ	---	330 UJ	---
4-Nitroaniline	1600 UJ	1600 UJ	---	1600 UJ	---
4,6-Dinitro-2-methylphenol	1600 UJ	1600 UJ	---	1600 UJ	---
N-Nitrosodiphenylamine (1)	330 UJ	330 UJ	---	330 UJ	---
4-Bromophenyl-phenylether	330 UJ	330 UJ	---	330 UJ	---
Hexachlorobenzene	330 UJ	330 UJ	---	330 UJ	---
Pentachlorophenol	1600 UJ	1600 UJ	---	1600 UJ	---
Phenanthrene	330 UJ	330 UJ	---	330 UJ	---
Anthracene	330 UJ	330 UJ	---	330 UJ	---
Di-n-butylphthalate	330 UJ	330 UJ	---	330 UJ	---
Fluoranthene	330 UJ	330 UJ	270 J	330 UJ	---
Pyrene	330 UJ	330 UJ	230 J	330 UJ	---
Butylbenzylphthalate	330 UJ	330 UJ	---	330 UJ	---
3,3'-Dichlorobenzidine	660 UJ	660 UJ	---	660 UJ	---
Benzo(a)anthracene	330 UJ	330 UJ	---	330 UJ	---
Chrysene	330 UJ	330 UJ	---	330 UJ	---
bis(2-Ethylhexyl)phthalate	260 UJ	380 UJ	2900 J	---	---
Di-n-octylphthalate	330 UJ	62 J	---	330 UJ	---
Benzo(b)fluoranthene	330 UJ	330 UJ	---	330 UJ	---

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TABLE G-6. TSF EVAPORATION POND - SEMIVOLATILE APPENDIX IX ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF POND BOTTOM SURFACE TSF0101A SEDIMENT ug/kg TSF0101A	TSF POND BOTTOM SURFACE TSF0102A SEDIMENT ug/kg TSF0101A	TSF POND DISCHARGE BIASED TSF0701A SEDIMENT ug/kg TSF0401A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1323A SOIL ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1324A SOIL ug/kg TSF1323A
Benzo(k)fluoranthene	330 UJ	330 UJ	---	330 UJ	---
Benzo(a)pyrene	330 UJ	330 UJ	---	330 UJ	---
Indeno(1,2,3-cd)pyrene	330 UJ	330 UJ	---	330 UJ	---
Dibenz(a,h)anthracene	330 UJ	330 UJ	---	330 UJ	---
Benzo(g,h,i)perylene	330 UJ	330 UJ	---	330 UJ	---
Pyridine	330 UJ	330 UJ	---	10 UJ	---
N-Nitrosodimethylamine	330 UJ	330 UJ	---	10 UJ	---
Ethyl methacrylate	330 UJ	330 UJ	---	10 UJ	---
Methyl methacrylate	330 R	330 R	660 R	10 R	10 R
2-Picoline	330 UJ	330 UJ	---	10 UJ	---
N-Nitrosomethylethylamine	330 UJ	330 UJ	---	10 UJ	---
Methylmethanesulfonate	330 UJ	330 UJ	---	10 UJ	---
N-Nitrosodiethylamine	330 UJ	330 UJ	---	10 UJ	---
Ethyl methanesulfonate	330 UJ	330 UJ	---	10 UJ	---
Pentachloroethane	330 UJ	330 UJ	---	10 UJ	---
Aniline	330 UJ	330 UJ	---	10 UJ	---
N-Nitrosopyrrolidine	330 UJ	330 UJ	---	10 UJ	---
Acetophenone	330 UJ	330 UJ	---	10 UJ	---
N-Nitrosomorpholine	330 UJ	330 UJ	---	10 UJ	---
O-Toluidine	330 UJ	330 UJ	---	10 UJ	---
3-Methylphenol	330 UJ	330 UJ	---	10 UJ	---
N-Nitrosopiperidine	330 UJ	330 UJ	---	10 UJ	---
O,O,O-Triethylphosphorothioate	330 UJ	330 UJ	---	10 UJ	---
a,a-Dimethylphenethylamine	330 R	330 R	660 R	10 R	10 R
2,6-Dichlorophenol	330 UJ	330 UJ	---	10 UJ	---
Hexachloropropene	330 UJ	330 UJ	---	10 UJ	---
1,4-Phenylenediamine	330 UJ	330 UJ	---	10 UJ	---
N-Nitroso-di-n-butylamine	330 UJ	330 UJ	---	10 UJ	---
Safrole	330 UJ	330 UJ	---	10 UJ	---
1,2,4,5-Tetrachlorobenzene	330 UJ	330 UJ	---	10 UJ	---

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TABLE G-6. TSF EVAPORATION POND - SEMIVOLATILE APPENDIX IX ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF POND BOTTOM SURFACE TSF0101A SEDIMENT ug/kg TSF0101A	TSF POND BOTTOM SURFACE TSF0102A SEDIMENT ug/kg TSF0101A	TSF POND DISCHARGE BIASED TSF0701A SEDIMENT ug/kg TSF0401A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1323A SOIL ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1324A SOIL ug/kg TSF1323A
Isosafrole	330 UJ	330 UJ	---	10 UJ	---
1,4-Naphthoquinone	330 UJ	330 UJ	---	10 UJ	---
1,3-Dinitrobenzene	330 UJ	330 UJ	---	10 UJ	---
Pentachlorobenzene	330 UJ	330 UJ	---	10 UJ	---
1-Naphthylamine	330 UJ	330 UJ	---	10 UJ	---
2-Naphthylamine	330 UJ	330 UJ	---	10 UJ	---
2,3,4,6-Tetrachlorophenol	330 UJ	330 UJ	600 R	10 UJ	---
5-Nitro-o-toluidine	330 UJ	330 UJ	---	10 UJ	---
Diphenylamine	330 UJ	330 UJ	---	10 UJ	---
1,3,5-Trinitrobenzene	330 UJ	330 UJ	---	10 UJ	---
Phenacetin	330 UJ	330 UJ	---	10 UJ	---
Thionazin	330 UJ	330 UJ	---	10 UJ	---
4-Aminobiphenyl	330 UJ	330 UJ	---	10 UJ	---
Pentachloronitrobenzene	330 UJ	330 UJ	---	10 UJ	---
Pronamide	330 UJ	330 UJ	---	10 UJ	---
Dinoseb	330 UJ	330 UJ	---	10 UJ	---
4-Nitroquinoline-1-oxide	330 R	330 R	660 R	10 R	10 R
Methapyrilene	330 UJ	330 UJ	---	10 UJ	---
Aramite	330 UJ	330 UJ	---	10 UJ	---
p-(Dimethylamino)azobenzene	330 UJ	330 UJ	---	10 UJ	---
3,3'-Dimethylbenzidine	330 UJ	330 UJ	---	10 UJ	---
Famphur	330 R	330 R	660 R	10 R	10 R
2-Acetylaminofluorene	330 UJ	330 UJ	---	10 UJ	---
7,12-Dimethylbenz(a)anthracene	330 UJ	330 UJ	---	10 UJ	---
3-Methylcholanthrene	330 UJ	330 UJ	---	10 UJ	---
Hexachlorophene	330 R	330 R	660 R	10 R	10 R
Dilution Factor	1.000	1.000	2.000	1.000	1.000
Extraction (Allowed) Hold Time	19(14)d*	18(14)d*	14(14)d	17(14)d*	13(14)d
Analytical (Allowed) Hold Time	3(40)d	4(40)d	18(40)d	17(40)d	18(40)d

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TABLE G-6. TSF EVAPORATION POND - SEMIVOLATILE APPENDIX IX ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1323A SOIL ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1423A SEDIMENT ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1424A SEDIMENT ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1425A SEDIMENT ug/kg TSF1323A
FIELD MEASUREMENTS				
Depth (ft)	0-0.5	10-11	10-11	10-11
TARGET COMPOUNDS				
Phenol	---	---	---	330 UJ
bis(2-Chloroethyl)ether	---	---	---	330 UJ
2-Chlorophenol	---	---	---	330 UJ
1,3-Dichlorobenzene	---	---	---	330 UJ
1,4-Dichlorobenzene	---	---	---	330 UJ
Benzyl alcohol	---	---	---	330 UJ
1,2-Dichlorobenzene	---	---	---	330 UJ
2-Methylphenol	---	---	---	330 UJ
bis(2-Chloroisopropyl)ether	---	---	---	330 UJ
4-Methylphenol	---	---	---	330 UJ
N-Nitroso-di-n-propylamine	---	---	---	330 UJ
Hexachloroethane	---	---	---	330 UJ
Nitrobenzene	---	---	---	330 UJ
Isophorone	---	---	---	330 UJ
2-Nitrophenol	---	---	---	330 UJ
2,4-Dimethylphenol	---	---	---	330 UJ
Benzoic acid	---	---	---	1600 UJ
bis(2-Chloroethoxy)methane	---	---	---	330 UJ
2,4-Dichlorophenol	---	---	---	330 UJ
1,2,4-Trichlorobenzene	---	---	---	330 UJ
Naphthalene	---	---	---	330 UJ
4-Chloroaniline	---	---	---	330 UJ
Hexachlorobutadiene	---	---	---	330 UJ
4-Chloro-3-methylphenol	---	---	---	330 UJ
2-Methylnaphthalene	---	---	---	330 UJ
Hexachlorocyclopentadiene	---	---	---	330 UJ
2,4,6-Trichlorophenol	---	---	---	330 UJ
2,4,5-Trichlorophenol	---	---	---	1600 UJ
2-Chloronaphthalene	---	---	---	330 UJ
2-Nitroaniline	---	---	---	1600 UJ
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TABLE G-6. TSF EVAPORATION POND - SEMIVOLATILE APPENDIX IX ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTMATIC RANDM TSF1325A SOIL ug/kg TSF1323A	TSF OVERFLOW AREA SYSTMATIC RANDM TSF1423A SEDIMENT ug/kg TSF1323A	TSF OVERFLOW AREA SYSTMATIC RANDM TSF1424A SEDIMENT ug/kg TSF1323A	TSF OVERFLOW AREA SYSTMATIC RANDM TSF1425A SEDIMENT ug/kg TSF1323A
Dimethylphthalate	---	---	---	330 UJ
Acenaphthylene	---	---	---	330 UJ
2,6-Dinitrotoluene	---	---	---	330 UJ
3-Nitroaniline	---	---	---	1600 UJ
Acenaphthene	---	---	---	330 UJ
2,4-Dinitrophenol	---	---	---	1600 UJ
4-Nitrophenol	---	---	---	1600 UJ
Dibenzofuran	---	---	---	330 UJ
2,4-Dinitrotoluene	---	---	---	330 UJ
Diethylphthalate	---	---	---	330 UJ
4-Chlorophenyl-phenylether	---	---	---	330 UJ
Fluorene	---	---	---	330 UJ
4-Nitroaniline	---	---	---	1600 UJ
4,6-Dinitro-2-methylphenol	---	---	---	1600 UJ
N-Nitrosodiphenylamine (1)	---	---	---	330 UJ
4-Bromophenyl-phenylether	---	---	---	330 UJ
Hexachlorobenzene	---	---	---	330 UJ
Pentachlorophenol	---	---	---	1600 UJ
Phenanthrene	---	---	---	330 UJ
Anthracene	---	---	---	330 UJ
Di-n-butylphthalate	---	---	---	330 UJ
Fluoranthene	---	---	---	330 UJ
Pyrene	---	---	---	330 UJ
Butylbenzylphthalate	---	---	---	330 UJ
3,3'-Dichlorobenzidine	---	---	---	660 UJ
Benzo(a)anthracene	---	---	---	330 UJ
Chrysene	---	---	---	330 UJ
bis(2-Ethylhexyl)phthalate	---	---	---	---
Di-n-octylphthalate	---	---	---	330 UJ
Benzo(b)fluoranthene	---	---	---	330 UJ

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TABLE G-6. TSF EVAPORATION POND - SEMIVOLATILE APPENDIX IX ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1325A SOIL ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1423A SEDIMENT ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1424A SEDIMENT ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1425A SEDIMENT ug/kg TSF1323A
Benzo(k)fluoranthene	---	---	---	330 UJ
Benzo(a)pyrene	---	---	---	330 UJ
Indeno(1,2,3-cd)pyrene	---	---	---	330 UJ
Dibenz(a,h)anthracene	---	---	---	330 UJ
Benzo(g,h,i)perylene	---	---	---	330 UJ
Pyridine	---	---	---	10 UJ
N-Nitrosodimethylamine	---	---	---	10 UJ
Ethyl methacrylate	---	---	---	10 UJ
Methyl methacrylate	10 R	10 R	10 R	10 R
2-Picoline	---	---	---	10 UJ
N-Nitrosomethylethylamine	---	---	---	10 UJ
Methylmethanesulfonate	---	---	---	10 UJ
N-Nitrosodiethylamine	---	---	---	10 UJ
Ethyl methanesulfonate	---	---	---	10 UJ
Pentachloroethane	---	---	---	10 UJ
Aniline	---	---	---	10 UJ
N-Nitrosopyrrolidine	---	---	---	10 UJ
Acetophenone	---	---	---	10 UJ
N-Nitrosomorpholine	---	---	---	10 UJ
O-Toluidine	---	---	---	10 UJ
3-Methylphenol	---	---	---	10 UJ
N-Nitrosopiperidine	---	---	---	10 UJ
O,O,O-Triethylphosphorothioate	---	---	---	10 UJ
a,a-Dimethylphenethylamine	10 R	10 R	10 R	10 R
2,6-Dichlorophenol	---	---	---	10 UJ
Hexachloropropene	---	---	---	10 UJ
1,4-Phenylenediamine	---	---	---	10 UJ
N-Nitroso-di-n-butylamine	---	---	---	10 UJ
Safrole	---	---	---	10 UJ
1,2,4,5-Tetrachlorobenzene	---	---	---	10 UJ

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TABLE G-6. TSF EVAPORATION POND - SEMIVOLATILE APPENDIX IX ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1325A SOIL ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1423A SEDIMENT ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1424A SEDIMENT ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1425A SEDIMENT ug/kg TSF1323A
Isosafrole	---	---	---	10 UJ
1,4-Naphthoquinone	---	---	---	10 UJ
1,3-Dinitrobenzene	---	---	---	10 UJ
Pentachlorobenzene	---	---	---	10 UJ
1-Naphthylamine	---	---	---	10 UJ
2-Naphthylamine	---	---	---	10 UJ
2,3,4,6-Tetrachlorophenol	---	---	---	10 UJ
5-Nitro-o-toluidine	---	---	---	10 UJ
Diphenylamine	---	---	---	10 UJ
1,3,5-Trinitrobenzene	---	---	---	10 UJ
Phenacetin	---	---	---	10 UJ
Thionazin	---	---	---	10 UJ
4-Aminobiphenyl	---	---	---	10 UJ
Pentachloronitrobenzene	---	---	---	10 UJ
Pronamide	---	---	---	10 UJ
Dinoseb	---	---	---	10 UJ
4-Nitroquinoline-1-oxide	10 R	10 R	10 R	10 R
Methapyrilene	---	---	---	10 UJ
Aramite	---	---	---	10 UJ
p-(Dimethylamino)azobenzene	---	---	---	10 UJ
3,3'-Dimethylbenzidine	---	---	---	10 UJ
Famphur	10 R	10 R	10 R	10 R
2-Acetylaminofluorene	---	---	---	10 UJ
7,12-Dimethylbenz(a)anthracene	---	---	---	10 UJ
3-Methylcholanthrene	---	---	---	10 UJ
Hexachlorophene	10 R	10 R	10 R	10 R
Dilution Factor	1.000	1.000	1.000	1.000
Extraction (Allowed) Hold Time	14(14)d	14(14)d	13(14)d	25(14)d*
Analytical (Allowed) Hold Time	17(40)d	17(40)d	17(40)d	10(40)d

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TABLE G-7. TSF EVAPORATION POND - SULFIDE DATA

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF POND BOTTOM SURFACE TSF0101A SEDIMENT mg/kg TSF0101A	TSF POND BOTTOM SURFACE TSF0102A SEDIMENT mg/kg TSF0101A	TSF POND DISCHARGE BIASED TSF0701A SEDIMENT mg/kg TSF0401A	TSF BACKGROUND BIASED TSF1201M SOIL mg/kg TSF0101A	TSF BACKGROUND BIASED TSF1202M SOIL mg/kg TSF0101A
<u>FIELD MEASUREMENTS</u>					
Depth (ft)	0-0.5	0-0.5	0-2	0-0.4	0-0.4
<u>ANALYTES</u>					
Sulfide	1120 J	208 J	3560 W*J	10.7 UJ	9.9 UJ
% Solids	54.3	63.7	31.3	92.2	92.2
Total (Allowed) Hold Time ^a	5(7)d	6(7)d	9(7)d*	5(7)d	5(7)d

a. Method 9030

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TABLE G-7. TSF EVAPORATION POND - SULFIDE DATA (Continued)

AREA	TSF	TSF	TSF	TSF	TSF
LOCATION	BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND
TYPE OF LOCATION	BIASED	BIASED	BIASED	BIASED	BIASED
SAMPLE NUMBER	TSF1203M	TSF1204M	TSF1205M	TSF1206M	TSF1207M
MEDIA	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SDG NUMBER	TSF0101A	TSF0101A	TSF0101A	TSF0101A	TSF0101A
<hr/>					
<u>FIELD MEASUREMENTS</u>					
Depth (ft)	0-0.4	0-0.4	0-0.4	0-0.4	0-0.4
<hr/>					
<u>ANALYTES</u>					
Sulfide	14.4 J	10.9 WJ	22.6 J	11.2 WJ	10.8 WJ
% Solids	92.3	92.1	92.6	92.4	92.3
Total (Allowed) Hold Time ^a	5(7)d	5(7)d	5(7)d	6(7)d	6(7)d

a. Method 9030

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TABLE G-7. TSF EVAPORATION POND - SULFIDE DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF BACKGROUND BIASED TSF1208M SOIL mg/kg TSF0101A	TSF BACKGROUND BIASED TSF1209M SOIL mg/kg TSF0101A	TSF BACKGROUND BIASED TSF1210M SOIL mg/kg TSF0101A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1323A SOIL mg/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1324A SOIL mg/kg TSF1323A
<u>FIELD MEASUREMENTS</u>					
Depth (ft)	0-0.4	0-0.4	0-0.4	0-0.5	0-0.5
<u>ANALYTES</u>					
Sulfide	11.0 UJ	10.9 UJ	10.6 UJ	27.2 UJ	26.4 UJ
% Solids	92.3	92.2	91.8	87.1	89.7
Total (Allowed) Hold Time ^a	6(7)d	6(7)d	6(7)d	11(7)d*	7(7)d

a. Method 9030

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TABLE G-7. TSF EVAPORATION POND - SULFIDE DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1325A SOIL mg/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1423A SEDIMENT mg/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1424A SEDIMENT mg/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1425A SEDIMENT mg/kg TSF1323A
<u>FIELD MEASUREMENTS</u>				
Depth (ft)	0-0.5	10-11	10-11	10-11
<u>ANALYTES</u>				
Sulfide	25.8 UJ	29.1 UJ	28.6 UJ	28.3 UJ
% Solids	91.1	80.8	80.9	83.9
Total (Allowed) Hold Time ^a	9(7)d*	8(7)d*	11(7)d*	8(7)d*

a. Method 9030

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TABLE G-8. TSF EVAPORATION POND - VOLATILE APPENDIX IX ORGANIC DATA

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF POND BOTTOM SURFACE TSF0101A SEDIMENT ug/kg TSF0101A	TSF POND BOTTOM SURFACE TSF0102A SEDIMENT ug/kg TSF0101A	TSF POND DISCHARGE BIASED TSF0701A SEDIMENT ug/kg TSF0401A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1323A SOIL ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1324A SOIL ug/kg TSF1323A
FIELD MEASUREMENTS					
Depth (ft)	0-0.5	0-0.5	0-2	0-0.5	0-0.5
TARGET COMPOUNDS					
Chloromethane	10 UJ	10 UJ	---	10 UJ	---
Bromomethane	10 UJ	10 UJ	---	10 UJ	---
Vinyl Chloride	10 UJ	10 UJ	---	10 UJ	---
Chloroethane	10 UJ	10 UJ	---	10 UJ	---
Methylene Chloride	5 UJ	5 UJ	---	5 UJ	---
Acetone	150 J	47 R	49 UJ	10 R	10 R
Carbon Disulfide	5 UJ	5 UJ	---	5 UJ	---
1,1-Dichloroethene	5 UJ	5 UJ	---	5 R	5 R
1,1-Dichloroethane	5 UJ	5 UJ	---	5 UJ	---
1,2-Dichloroethene_(total)	5 UJ	5 UJ	---	5 UJ	---
Chloroform	5 UJ	5 UJ	---	5 UJ	---
1,2-Dichloroethane	5 UJ	5 UJ	---	5 UJ	---
2-Butanone	40 R	7 R	10 R	10 R	10 R
1,1,1-Trichloroethane	5 UJ	5 UJ	---	5 UJ	---
Carbon Tetrachloride	5 UJ	5 UJ	---	5 UJ	---
Vinyl Acetate	10 UJ	10 UJ	---	10 UJ	---
Bromodichloromethane	5 UJ	5 UJ	---	5 UJ	---
1,2-Dichloropropane	5 UJ	5 UJ	---	5 UJ	---
cis-1,3-Dichloropropene	5 UJ	5 UJ	---	5 UJ	---
Trichloroethene	5 UJ	5 UJ	---	5 UJ	---
Dibromochloromethane	5 UJ	5 UJ	---	5 UJ	---
1,1,2-Trichloroethane	5 UJ	5 UJ	---	5 UJ	---
Benzene	5 UJ	5 UJ	---	5 UJ	---
Trans-1,3-Dichloropropene	5 UJ	5 UJ	---	5 UJ	---
Bromoform	5 UJ	5 UJ	---	5 UJ	---
4-Methyl-2-Pentanone	10 UJ	10 UJ	10 R	10 R	10 R
2-Hexanone	10 R	10 R	10 R	10 R	10 R
Tetrachloroethene	5 UJ	5 UJ	---	5 UJ	---
1,1,2,2-Tetrachloroethane	5 UJ	5 UJ	---	5 UJ	---
Toluene	63 J	5 UJ	28	5 UJ	---
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TABLE G-8. TSF EVAPORATION POND - VOLATILE APPENDIX IX ORGANIC DATA

LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	POND BOTTOM SURFACE TSF0101A SEDIMENT ug/kg TSF0101A	POND BOTTOM SURFACE TSF0102A SEDIMENT ug/kg TSF0101A	POND DISCHARGE BIASED TSF0701A SEDIMENT ug/kg TSF0401A	OVERFLOW AREA SYSTEMATIC RANDOM TSF1323A SOIL ug/kg TSF1323A	OVERFLOW AREA SYSTEMATIC RANDOM TSF1324A SOIL ug/kg TSF1323A
Chlorobenzene	5 UJ	5 UJ	---	5 UJ	---
Ethylbenzene	5 UJ	5 UJ	2 J	5 UJ	---
Styrene	5 UJ	5 UJ	---	5 UJ	---
Xylene (total)	5 UJ	5 UJ	---	5 UJ	---
Dichlorodifluoromethane	5 UJ	5 UJ	---	5 UJ	---
Trichlorofluoromethane	5 UJ	5 UJ	5 R	5 UJ	---
trans-1,2-Dichloroethene	5 UJ	5 UJ	---	5 UJ	---
Iodomethane	5 UJ	5 UJ	---	5 UJ	---
Allyl chloride	5 UJ	5 UJ	---	5 UJ	---
cis-1,2-Dichloroethene	5 UJ	5 UJ	---	5 UJ	---
Propionitrile	20 UJ	20 UJ	---	20 UJ	---
Acrolein	50 R	50 R	50 R	50 R	50 R
2-Chloro-1,3-butadiene	5 UJ	5 UJ	---	5 UJ	---
Acrylonitrile	10 UJ	10 UJ	---	10 UJ	---
Methacrylonitrile	5 UJ	5 UJ	---	5 UJ	---
Methyl methacrylate	5 UJ	5 UJ	---	5 UJ	---
Dibromomethane	5 UJ	5 UJ	---	5 UJ	---
Isobutyl alcohol	100 R	100 R	100 R	100 R	100 R
1,2-Dibromoethane	5 UJ	---	---	5 UJ	---
1,1,1,2-Tetrachloroethane	5 UJ	---	---	5 UJ	---
Xylene (total meta & para)	5 UJ	5 R	---	5 UJ	---
Xylene (ortho)	5 UJ	5 R	---	5 UJ	---
1,2,3-Trichloropropane	5 UJ	5 UJ	---	5 UJ	---
Trans-1,4-Dichloro-2-butene	10 R	10 R	10 R	10 R	10 R
1,2-Dibromo-3-chloropropane	10 UJ	10 UJ	10 UJ	10 UJ	---
Dilution Factor	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	18(14)d*	17(14)d*	23(14)d*	15(14)d*	12(14)d

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TABLE G-8. TSF EVAPORATION POND - VOLATILE APPENDIX IX ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1325A SOIL ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1423A SEDIMENT ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1424A SEDIMENT ug/kg TSF1323A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1425A SEDIMENT ug/kg TSF1323A
FIELD MEASUREMENTS				
Depth (ft)	0-0.5	10-11	10-11	10-11
TARGET COMPOUNDS				
Chloromethane	---	---	---	---
Bromomethane	---	---	---	---
Vinyl Chloride	---	---	---	---
Chloroethane	---	---	---	---
Methylene Chloride	---	---	---	---
Acetone	10 R	10 R	10 R	10 R
Carbon Disulfide	---	---	---	---
1,1-Dichloroethene	5 R	5 R	5 R	5 R
1,1-Dichloroethane	---	---	---	---
1,2-Dichloroethene_(total)	---	---	---	---
Chloroform	---	---	---	---
1,2-Dichloroethane	---	---	---	---
2-Butanone	10 R	10 R	10 R	10 R
1,1,1-Trichloroethane	---	---	---	---
Carbon Tetrachloride	---	---	---	---
Vinyl Acetate	---	---	---	---
Bromodichloromethane	---	---	---	---
1,2-Dichloropropane	---	---	---	---
cis-1,3-Dichloropropene	---	---	---	---
Trichloroethene	---	---	---	---
Dibromochloromethane	---	---	---	---
1,1,2-Trichloroethane	---	---	---	---
Benzene	---	---	---	---
Trans-1,3-Dichloropropene	---	---	---	---
Bromoform	---	---	---	---
4-Methyl-2-Pentanone	10 R	10 R	10 R	10 R
2-Hexanone	10 R	10 R	10 R	10 R
Tetrachloroethene	5 UJ	---	---	---
1,1,2,2-Tetrachloroethane	5 UJ	---	---	---
Toluene	5 UJ	---	---	---
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TABLE G-8. TSF EVAPORATION POND - VOLATILE APPENDIX IX ORGANIC DATA (Continued)

LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	OVERFLOW AREA SYSTNATIC RANDOM TSF1325A SOIL ug/kg TSF1323A	OVERFLOW AREA SYSTNATIC RANDOM TSF1423A SEDIMENT ug/kg TSF1323A	OVERFLOW AREA SYSTNATIC RANDOM TSF1424A SEDIMENT ug/kg TSF1323A	OVERFLOW AREA SYSTNATIC RANDOM TSF1425A SEDIMENT ug/kg TSF1323A
Chlorobenzene	5 UJ	---	---	---
Ethylbenzene	5 UJ	---	---	---
Styrene	5 UJ	---	---	---
Xylene (total)	5 UJ	---	---	---
Dichlorodifluoromethane	---	---	---	---
Trichlorofluoromethane	---	---	---	---
trans-1,2-Dichloroethene	---	---	---	---
Iodomethane	---	---	---	---
Allyl chloride	---	---	---	---
cis-1,2-Dichloroethene	---	---	---	---
Propionitrile	---	---	20	---
Acrolein	50 R	50 R	50 R	50 R
2-Chloro-1,3-butadiene	---	---	---	---
Acrylonitrile	---	---	---	---
Methacrylonitrile	---	---	---	---
Methyl methacrylate	---	---	---	---
Dibromomethane	---	---	---	---
Isobutyl alcohol	100 R	100 R	100 R	100 R
1,2-Dibromoethane	---	---	---	---
1,1,1,2-Tetrachloroethane	---	---	---	---
Xylene (total meta & para)	---	---	---	---
Xylene (ortho)	---	---	---	---
1,2,3-Trichloropropane	---	---	---	---
Trans-1,4-Dichloro-2-butene	10 R	10 R	10 R	10 R
1,2-Dibromo-3-chloropropane	---	---	---	---
Dilution Factor	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	13(14)d	13(14)d	13(14)d	13(14)d

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TABLE G-9. TSF EVAPORATION POND - VOLATILE ORGANIC DATA

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF POND BOTTOM SURFACE TSF0101VRE SEDIMENT ug/kg TSF0101A	TSF POND BOTTOM SURFACE TSF0102VRE SEDIMENT ug/kg TSF0101A	TSF POND BOTTOM SURFACE TSF0103VRE SEDIMENT ug/kg TSF0101A	TSF POND BOTTOM SURFACE TSF0104V SEDIMENT ug/kg TSF0101A	TSF POND BOTTOM SURFACE TSF0105V SEDIMENT ug/kg TSF0101A
FIELD MEASUREMENTS					
Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
TARGET COMPOUNDS					
Chloromethane	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Bromomethane	---	---	---	---	---
Vinyl Chloride	---	---	---	---	---
Chloroethane	---	---	---	---	---
Methylene Chloride	---	---	---	---	---
Acetone	49 R	29 R	79 J	28 R	21 R
Carbon Disulfide	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---
1,1-Dichloroethane	---	---	---	---	---
1,2-Dichloroethane_(total)	---	---	---	---	---
Chloroform	---	---	---	---	---
1,2-Dichloroethane	---	---	---	---	---
2-Butanone	10 R	10 R	6 R	10 R	10 R
1,1,1-Trichloroethane	---	---	---	---	---
Carbon Tetrachloride	---	---	---	---	---
Vinyl Acetate	---	---	---	---	---
Bromodichloromethane	---	---	---	---	---
1,2-Dichloropropane	---	---	---	---	---
cis-1,3-Dichloropropene	---	---	---	---	---
Trichloroethene	---	---	---	---	---
Dibromochloromethane	---	---	---	---	---
1,1,2-Trichloroethane	---	---	---	---	---
Benzene	---	---	---	---	---
Trans-1,3-Dichloropropene	---	---	---	---	---
Bromoform	---	---	---	---	---
4-Methyl-2-Pentanone	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
2-Hexanone	10 R	10 R	10 R	10 R	10 R
Tetrachloroethene	---	---	---	---	---
1,1,2,2-Tetrachloroethane	---	---	---	---	---
Toluene	---	---	---	---	---
Chlorobenzene	---	---	---	---	---
Ethylbenzene	---	---	---	---	---
Styrene	---	---	---	---	---
Xylene (total)	---	---	---	---	---
Dilution Factor	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	13(14)d	12(14)d	13(14)d	12(14)d	13(14)d
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TABLE 6-9. 1ST EVAPORATION POND - VOLATILE ORGANIC DATA (Continued)

AREA	LOCATION	TYPE OF LOCATION	SAMPLE NUMBER	MEDIA	UNITS	SOC NUMBER			
FIELD MEASUREMENTS									
Depth (ft)									
0-0.5									
1SF	POND BOTTOM	SURFACE	TSF0106V	SEDIMENT	ug/kg	TSF0101A			
							10 u	Chloromethane	10 u
							10 u	Bromomethane	10 u
							10 u	Vinyl Chloride	10 u
							10 u	Chloroethane	10 u
							10 u	Methylene Chloride	10 u
							10 u	Acetone	10 u
							10 u	Carbon Disulfide	11 u
							19 u	1,1-Dichloroethene	5 u
							5 u	1,1-Dichloroethene (total)	5 u
							5 u	1,2-Dichloroethane	5 u
							5 u	Chloroform	5 u
							5 u	1,2-Dichloroethane	5 u
							10 u	2-Buranone	10 u
							5 u	1,1,1-Trichloroethane	5 u
							5 u	Carbon Tetrachloride	5 u
							5 u	Vinyl Acetate	10 u
							5 u	Bromodichloromethane	5 u
							5 u	cis-1,3-Dichloropropene	5 u
5 u	Trichloroethene	5 u							
5 u	Dibromochloromethane	5 u							
10 u	4-Methyl-2-Pentanone	10 u							
10 u	2-Methanone	10 u							
10 u	1,1,2,2-Tetrachloroethane	10 u							
5 u	Toluene	5 u							
5 u	Chlorobenzene	5 u							
5 u	Ethylbenzene	5 u							
5 u	Styrene	5 u							
5 u	Eylene (total)	5 u							
10 u	Total (Allowed) Hold Time								
1.000	Dilution Factor								
13(14)D									
0-0.5									
10 u									
10 u									
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TABLE G-9. TSF EVAPORATION POND - VOLATILE ORGANIC DATA (Continued)

AREA	LOCATION	TYPE OF LOCATION	SAMPLE NUMBER	MEDIA	UNITS	SDC NUMBER	FIELD MEASUREMENTS		TARGET COMPOUNDS					DILUTION FACTOR					2-12-93
							Depth (ft)												
TSF	POND BOTTOM	SURFACE	TSF011V	SEDIMENT	ug/kg	TSF010A	0-0.5	10 R	Chloroethane	---	10 U	---	---	1.000	---	---	---	---	13(14)d
									Chloroethane	---	10 U	---	---	---	---	---	---	---	
									Bromoethane	---	10 U	---	---	---	---	---	---	---	
									Vinyl Chloride	---	10 U	---	---	---	---	---	---	---	
									Chloroethane	---	10 R	---	---	---	---	---	---	---	
									1,2-Dichloroethane	---	10 R	---	---	---	---	---	---	---	
									2-Butanol	---	10 R	---	---	---	---	---	---	---	
									1,1,1-Trichloroethane	---	10 R	---	---	---	---	---	---	---	
									Carbon Tetrachloride	---	---	---	---	---	---	---	---	---	
									Vinyl Acetate	---	---	---	---	---	---	---	---	---	
									Bromodichloromethane	---	10 U	---	---	---	---	---	---	---	
									1,2-Dichloroethane	---	10 U	---	---	---	---	---	---	---	
									cis-1,3-Dichloropropene	---	---	---	---	---	---	---	---	---	
									Trichloroethene	---	---	---	---	---	---	---	---	---	
TSF	DEPRESSION AREA	SURFACE	TSF020V	SOIL	ug/kg	TSF010A	0.3-0.5	10 R	Carbon Disulfide	---	10 R	---	---	1.000	---	---	---	---	14(14)d
									Acetone	---	---	---	---	---	---	---	---	---	
									1,1-Dichloroethane	---	---	---	---	---	---	---	---	---	
									1,2-Dichloroethane (total)	---	---	---	---	---	---	---	---	---	
									Chloroform	---	---	---	---	---	---	---	---	---	
									1,2-Dichloroethane	---	---	---	---	---	---	---	---	---	
									2-Butanol	---	---	---	---	---	---	---	---	---	
									1,1,1-Trichloroethane	---	---	---	---	---	---	---	---	---	
									Carbon Tetrachloride	---	---	---	---	---	---	---	---	---	
									Vinyl Chloride	---	---	---	---	---	---	---	---	---	
									Chloroethane	---	---	---	---	---	---	---	---	---	
									Chloroethane	---	---	---	---	---	---	---	---	---	
									1,1-Dichloroethane	---	---	---	---	---	---	---	---	---	
									1,2-Dichloroethane	---	---	---	---	---	---	---	---	---	
TSF	DEPRESSION AREA	SURFACE	TSF020V	SOIL	ug/kg	TSF010A	0-0.3	10 R	Carbon Disulfide	---	10 R	---	---	1.000	---	---	---	---	15(14)d
									Acetone	---	---	---	---	---	---	---	---	---	
									1,1-Dichloroethane	---	---	---	---	---	---	---	---	---	
									1,2-Dichloroethane (total)	---	---	---	---	---	---	---	---	---	
									Chloroform	---	---	---	---	---	---	---	---	---	
									1,2-Dichloroethane	---	---	---	---	---	---	---	---	---	
									2-Butanol	---	---	---	---	---	---	---	---	---	
									1,1,1-Trichloroethane	---	---	---	---	---	---	---	---	---	
									Carbon Tetrachloride	---	---	---	---	---	---	---	---	---	
									Vinyl Chloride	---	---	---	---	---	---	---	---	---	
									Chloroethane	---	---	---	---	---	---	---	---	---	
									Chloroethane	---	---	---	---	---	---	---	---	---	
									1,1-Dichloroethane	---	---	---	---	---	---	---	---	---	
									1,2-Dichloroethane	---	---	---	---	---	---	---	---	---	
TSF	DEPRESSION AREA	SURFACE	TSF020V	SOIL	ug/kg	TSF010A	0.3-0.5	10 R	Carbon Disulfide	---	10 R	---	---	1.000	---	---	---	---	16(14)d
									Acetone	---	---	---	---	---	---	---	---	---	
									1,1-Dichloroethane	---	---	---	---	---	---	---	---	---	
									1,2-Dichloroethane (total)	---	---	---	---	---	---	---	---	---	
									Chloroform	---	---	---	---	---	---	---	---	---	
									1,2-Dichloroethane	---	---	---	---	---	---	---	---	---	
									2-Butanol	---	---	---	---	---	---	---	---	---	
									1,1,1-Trichloroethane	---	---	---	---	---	---	---	---	---	
									Carbon Tetrachloride	---	---	---	---	---	---	---	---	---	
									Vinyl Chloride	---	---	---	---	---	---	---	---	---	
									Chloroethane	---	---	---	---	---	---	---	---	---	
									Chloroethane	---	---	---	---	---	---	---	---	---	
									1,1-Dichloroethane	---	---	---	---	---	---	---	---	---	
									1,2-Dichloroethane	---	---	---	---	---	---	---	---	---	
									2-Methyl-2-Pentanol	---	---	---	---	---	---	---	---	---	

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TABLE G-9. TSF EVAPORATION POND - VOLATILE ORGANIC DATA (Continued)

AREA	LOCATION	TYPE OF LOCATION	SAMPLE NUMBER	MEDIA	UNITS	SDG NUMBER	FIELD MEASUREMENTS		TARGET COMPOUNDS	Dilution Factor	Total (Allowed) Hold Time	2-12-93
							Depth (ft)	0.3-0.5				
TSF	DEPRESSION AREA	TSF0204V	BIASED	SOIL	ug/kg	TSF0101A			Chloroethane	10 u	5 u	Chlorobenzene
TSF	DEPRESSION AREA	TSF0301V	BIASED	SEDIMENT	ug/kg	TSF0101A			Bromoethane	10 u	5 u	Ethylbenzene
TSF	DEPRESSION AREA	TSF0302V	BIASED	SEDIMENT	ug/kg	TSF0101A			Vinyl Chloride	10 u	5 u	Styrene
TSF	DEPRESSION AREA	TSF0303V	BIASED	SEDIMENT	ug/kg	TSF0101A			Chloroethane	10 u	5 u	Xylene (total)
TSF	DEPRESSION AREA	TSF0304V	BIASED	SEDIMENT	ug/kg	TSF0101A			1,1-Dichloroethane	10 u	5 u	
TSF	DEPRESSION AREA	TSF0305V	BIASED	SEDIMENT	ug/kg	TSF0101A			1,2-Dichloroethane	10 u	5 u	
TSF	DEPRESSION AREA	TSF0306V	BIASED	SEDIMENT	ug/kg	TSF0101A			1,1,1-Trichloroethane	10 u	5 u	
TSF	DEPRESSION AREA	TSF0307V	BIASED	SEDIMENT	ug/kg	TSF0101A			2-Butanone	10 u	5 u	
TSF	DEPRESSION AREA	TSF0308V	BIASED	SEDIMENT	ug/kg	TSF0101A			1,2-Dichloroethane	10 u	5 u	
TSF	DEPRESSION AREA	TSF0309V	BIASED	SEDIMENT	ug/kg	TSF0101A			Carbon Disulfide	10 u	5 u	
TSF	DEPRESSION AREA	TSF0310V	BIASED	SEDIMENT	ug/kg	TSF0101A			1,1-Dichloroethane	10 u	5 u	
TSF	DEPRESSION AREA	TSF0311V	BIASED	SEDIMENT	ug/kg	TSF0101A			1,2-Dichloroethane (total)	10 u	5 u	
TSF	DEPRESSION AREA	TSF0312V	BIASED	SEDIMENT	ug/kg	TSF0101A			Chloroform	10 u	5 u	
TSF	DEPRESSION AREA	TSF0313V	BIASED	SEDIMENT	ug/kg	TSF0101A			Carbon Tetrachloride	10 u	5 u	
TSF	DEPRESSION AREA	TSF0314V	BIASED	SEDIMENT	ug/kg	TSF0101A			Vinyl Acetate	10 u	5 u	
TSF	DEPRESSION AREA	TSF0315V	BIASED	SEDIMENT	ug/kg	TSF0101A			Bromodichloromethane	10 u	5 u	
TSF	DEPRESSION AREA	TSF0316V	BIASED	SEDIMENT	ug/kg	TSF0101A			cis-1,3-Dichloropropene	10 u	5 u	
TSF	DEPRESSION AREA	TSF0317V	BIASED	SEDIMENT	ug/kg	TSF0101A			Trichloroethene	10 u	5 u	
TSF	DEPRESSION AREA	TSF0318V	BIASED	SEDIMENT	ug/kg	TSF0101A			Dibromochloromethane	10 u	5 u	
TSF	DEPRESSION AREA	TSF0319V	BIASED	SEDIMENT	ug/kg	TSF0101A			1,1,2-Trichloroethane	10 u	5 u	
TSF	DEPRESSION AREA	TSF0320V	BIASED	SEDIMENT	ug/kg	TSF0101A			Benzene	10 u	5 u	
TSF	DEPRESSION AREA	TSF0321V	BIASED	SEDIMENT	ug/kg	TSF0101A			trans-1,3-Dichloropropene	10 u	5 u	
TSF	DEPRESSION AREA	TSF0322V	BIASED	SEDIMENT	ug/kg	TSF0101A			Bromoforn	10 u	5 u	
TSF	DEPRESSION AREA	TSF0323V	BIASED	SEDIMENT	ug/kg	TSF0101A			4-Methyl-2-Pentanone	10 u	5 u	
TSF	DEPRESSION AREA	TSF0324V	BIASED	SEDIMENT	ug/kg	TSF0101A			2-Mexanone	10 u	5 u	
TSF	DEPRESSION AREA	TSF0325V	BIASED	SEDIMENT	ug/kg	TSF0101A			Tetrachloroethene	10 u	5 u	
TSF	DEPRESSION AREA	TSF0326V	BIASED	SEDIMENT	ug/kg	TSF0101A			1,1,2,2-Tetrachloroethane	10 u	5 u	
TSF	DEPRESSION AREA	TSF0327V	BIASED	SEDIMENT	ug/kg	TSF0101A			Toluene	10 u	5 u	
TSF	DEPRESSION AREA	TSF0328V	BIASED	SEDIMENT	ug/kg	TSF0101A			Chlorobenzene	10 u	5 u	
TSF	DEPRESSION AREA	TSF0329V	BIASED	SEDIMENT	ug/kg	TSF0101A			Ethylbenzene	10 u	5 u	
TSF	DEPRESSION AREA	TSF0330V	BIASED	SEDIMENT	ug/kg	TSF0101A			Styrene	10 u	5 u	
TSF	DEPRESSION AREA	TSF0331V	BIASED	SEDIMENT	ug/kg	TSF0101A			Xylene (total)	10 u	5 u	
TSF	DEPRESSION AREA	TSF0332V	BIASED	SEDIMENT	ug/kg	TSF0101A			Dilution Factor	1.000	1.000	
TSF	DEPRESSION AREA	TSF0333V	BIASED	SEDIMENT	ug/kg	TSF0101A			Total (Allowed) Hold Time	1.000	1.000	

TABLE G-9. TSF EVAPORATION POND - VOLATILE ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF INLET PIPE BIASED TSF0601V SOIL ug/kg TSF0601A	TSF INLET PIPE BIASED TSF0602V SOIL ug/kg TSF0601A	TSF INLET PIPE BIASED TSF0603V SOIL ug/kg TSF0601A	TSF INLET PIPE BIASED TSF0604V SOIL ug/kg TSF0601A	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1301V SOIL ug/kg TSF1301V
FIELD MEASUREMENTS					
Depth (ft)	6-6.8	7.5-8.5	5-6	5-6	0-0.5
TARGET COMPOUNDS					
Chloromethane	---	---	---	---	10 UJ
Bromomethane	---	---	---	---	10 UJ
Vinyl Chloride	---	---	---	---	10 UJ
Chloroethane	---	---	---	---	10 UJ
Methylene Chloride	---	---	---	---	5 UJ
Acetone	77 UJ	10 R	58 UJ	10 R	10 R
Carbon Disulfide	---	---	---	---	5 UJ
1,1-Dichloroethene	---	---	---	---	5 UJ
1,1-Dichloroethane	---	---	---	---	5 UJ
1,2-Dichloroethene_(total)	---	---	---	---	5 UJ
Chloroform	---	---	---	---	5 UJ
1,2-Dichloroethane	---	---	---	---	5 UJ
2-Butanone	99 J	10 R	10 R	10 R	10 R
1,1,1-Trichloroethane	---	---	---	---	5 UJ
Carbon Tetrachloride	---	---	---	---	5 UJ
Vinyl Acetate	---	---	---	---	10 UJ
Bromodichloromethane	---	---	---	---	5 UJ
1,2-Dichloropropane	---	---	---	---	5 UJ
cis-1,3-Dichloropropene	---	---	---	---	5 UJ
Trichloroethene	---	---	---	---	5 UJ
Dibromochloromethane	---	---	---	---	5 UJ
1,1,2-Trichloroethane	---	---	---	---	5 UJ
Benzene	---	---	---	---	5 UJ
Trans-1,3-Dichloropropene	---	---	---	---	5 UJ
Bromoform	---	---	---	---	5 UJ
4-Methyl-2-Pentanone	10 R	10 R	10 R	10 R	10 UJ
2-Hexanone	10 R	10 R	10 R	10 R	10 UJ
Tetrachloroethene	---	---	---	---	5 UJ
1,1,2,2-Tetrachloroethane	---	---	---	---	5 UJ
Toluene	---	---	---	---	5 UJ
Chlorobenzene	---	---	---	---	5 UJ
Ethylbenzene	---	---	---	---	5 UJ
Styrene	---	---	---	---	5 UJ
Xylene (total)	---	3 J	---	---	5 UJ
Dilution Factor	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	21(14)d*	21(14)d*	16(14)d*	16(14)d*	11(14)d

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TABLE G-9. TSF EVAPORATION POND - VOLATILE ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1301VRE SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1301VRE SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1302V SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1303V SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1303VRE SOIL ug/kg TSF1301V
FIELD MEASUREMENTS					
Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
TARGET COMPOUNDS					
Chloromethane	10 R	10 R	---	10 WJ	10 R
Bromomethane	10 R	10 R	---	10 WJ	10 R
Vinyl Chloride	10 R	10 R	---	10 WJ	10 R
Chloroethane	10 R	10 R	---	10 WJ	10 R
Methylene Chloride	4 J	5 R	---	5 WJ	5 R
Acetone	10 R	22 J	10 R	10 R	10 R
Carbon Disulfide	5 R	5 R	---	5 WJ	5 R
1,1-Dichloroethene	5 R	5 R	---	5 WJ	5 R
1,1-Dichloroethane	5 R	5 R	---	5 WJ	5 R
1,2-Dichloroethene_(total)	5 R	5 R	---	5 WJ	5 R
Chloroform	5 R	5 R	---	5 WJ	5 R
1,2-Dichloroethane	5 R	5 R	---	5 WJ	5 R
2-Butanone	10 R	10 R	10 R	10 R	10 R
1,1,1-Trichloroethane	5 R	5 R	---	5 WJ	5 R
Carbon Tetrachloride	5 R	5 R	---	5 WJ	5 R
Vinyl Acetate	10 R	10 R	---	10 WJ	10 R
Bromodichloromethane	5 R	5 R	---	5 WJ	5 R
1,2-Dichloropropane	5 R	5 R	---	5 WJ	5 R
cis-1,3-Dichloropropene	5 R	5 R	---	5 WJ	5 R
Trichloroethene	5 R	5 R	---	5 WJ	5 R
Dibromochloromethane	5 R	5 R	---	5 WJ	5 R
1,1,2-Trichloroethane	5 R	5 R	---	5 WJ	5 R
Benzene	5 R	5 R	---	5 WJ	5 R
Trans-1,3-Dichloropropene	5 R	5 R	---	5 WJ	5 R
Bromoform	5 R	5 R	---	5 WJ	5 R
4-Methyl-2-Pentanone	10 R	10 R	---	10 WJ	10 R
2-Hexanone	10 R	10 R	10 WJ	10 R	10 R
Tetrachloroethene	5 R	5 R	---	5 WJ	5 R
1,1,2,2-Tetrachloroethane	5 R	5 R	---	5 WJ	5 R
Toluene	5 R	5 R	---	5 WJ	3 J
Chlorobenzene	5 R	5 R	---	5 WJ	5 R
Ethylbenzene	5 R	5 R	---	5 WJ	2 J
Styrene	5 R	5 R	---	5 WJ	5 R
Xylene (total)	5 R	5 R	---	5 WJ	8 J
Dilution Factor	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	29(14)d*	30(14)d*	12(14)d	14(14)d	33(14)d*

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TABLE G-9. TSF EVAPORATION POND - VOLATILE ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1304V SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1305V SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1305VRE SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1306V SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1306VRE SOIL ug/kg TSF1301V
FIELD MEASUREMENTS					
Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
TARGET COMPOUNDS					
Chloromethane	10 UJ	10 UJ	10 R	10 UJ	10 R
Bromomethane	10 UJ	10 UJ	10 R	10 UJ	10 R
Vinyl Chloride	10 UJ	10 UJ	10 R	10 UJ	10 R
Chloroethane	10 UJ	10 UJ	10 R	10 UJ	10 R
Methylene Chloride	5 UJ	5 UJ	5 R	5 UJ	3 J
Acetone	10 R	18 J	10 R	10 R	10 R
Carbon Disulfide	5 UJ	5 UJ	5 R	5 UJ	5 R
1,1-Dichloroethane	5 UJ	5 UJ	5 R	5 UJ	5 R
1,1-Dichloroethane	5 UJ	5 UJ	5 R	5 UJ	5 R
1,2-Dichloroethene_(total)	5 UJ	5 UJ	5 R	5 UJ	5 R
Chloroform	5 UJ	5 UJ	5 R	5 UJ	5 R
1,2-Dichloroethane	5 UJ	5 UJ	5 R	5 UJ	5 R
2-Butanone	10 R	10 R	10 R	10 R	10 R
1,1,1-Trichloroethane	5 UJ	5 UJ	5 R	5 UJ	5 R
Carbon Tetrachloride	5 UJ	5 R	5 R	5 UJ	5 R
Vinyl Acetate	10 UJ	10 UJ	10 R	10 UJ	10 R
Bromodichloromethane	5 UJ	5 UJ	5 R	5 UJ	5 R
1,2-Dichloropropane	5 UJ	5 UJ	5 R	5 UJ	5 R
cis-1,3-Dichloropropene	5 UJ	5 UJ	5 R	5 UJ	5 R
Trichloroethene	5 UJ	5 UJ	5 R	5 UJ	5 R
Dibromochloromethane	5 UJ	5 UJ	5 R	5 UJ	5 R
1,1,2-Trichloroethane	5 UJ	5 UJ	5 R	5 UJ	5 R
Benzene	5 UJ	5 UJ	5 R	5 UJ	5 R
Trans-1,3-Dichloropropene	5 UJ	5 UJ	5 R	5 UJ	5 R
Bromoform	5 UJ	5 UJ	5 R	5 UJ	5 R
4-Methyl-2-Pentanone	10 UJ	10 UJ	10 R	10 UJ	10 R
2-Hexanone	10 R	10 R	10 R	10 UJ	10 R
Tetrachloroethene	5 UJ	5 UJ	5 R	5 UJ	5 R
1,1,2,2-Tetrachloroethane	5 UJ	5 UJ	5 R	5 UJ	5 R
Toluene	5 UJ	5 UJ	3 J	5 UJ	5 R
Chlorobenzene	5 UJ	5 UJ	5 R	5 UJ	5 R
Ethylbenzene	5 UJ	5 UJ	5 R	5 UJ	5 R
Styrene	5 UJ	5 UJ	5 R	5 UJ	5 R
Xylene (total)	5 UJ	5 UJ	7 J	5 UJ	5 R
Dilution Factor	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	14(14)d	21(14)d*	35(14)d*	12(14)d	30(14)d*

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TABLE G-9. TSF EVAPORATION POND - VOLATILE ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1307V SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1308V SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1309VRE SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1309V SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1309VRE SOIL ug/kg TSF1301V
FIELD MEASUREMENTS					
Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
TARGET COMPOUNDS					
Chloromethane	10 UJ	10 UJ	10 UJ	10 UJ	10 R
Bromomethane	10 UJ	10 UJ	10 UJ	10 UJ	10 R
Vinyl Chloride	10 UJ	10 UJ	10 UJ	10 UJ	10 R
Chloroethane	10 UJ	10 UJ	10 UJ	10 UJ	10 R
Methylene Chloride	5 UJ	5 UJ	5 UJ	5 UJ	4 J
Acetone	10 R	10 UJ	10 R	10 R	10 R
Carbon Disulfide	5 UJ	5 UJ	5 UJ	5 UJ	5 R
1,1-Dichloroethene	5 UJ	5 UJ	5 UJ	5 UJ	5 R
1,1-Dichloroethane	5 UJ	5 UJ	5 UJ	5 UJ	5 R
1,2-Dichloroethene_(total)	5 UJ	5 UJ	5 UJ	5 UJ	5 R
Chloroform	5 UJ	5 UJ	5 UJ	5 UJ	5 R
1,2-Dichloroethane	5 UJ	5 UJ	5 UJ	5 UJ	5 R
2-Butanone	10 R	10 UJ	10 R	10 R	10 R
1,1,1-Trichloroethane	5 UJ	5 UJ	5 UJ	5 UJ	5 R
Carbon Tetrachloride	5 R	5 UJ	5 R	5 R	5 R
Vinyl Acetate	10 UJ	10 UJ	10 UJ	10 UJ	10 R
Bromodichloromethane	5 UJ	5 UJ	5 UJ	5 UJ	5 R
1,2-Dichloropropane	5 UJ	5 UJ	5 UJ	5 UJ	5 R
cis-1,3-Dichloropropene	5 UJ	5 UJ	5 UJ	5 UJ	5 R
Trichloroethene	5 UJ	5 UJ	5 UJ	5 UJ	5 R
Dibromochloromethane	5 UJ	5 UJ	5 UJ	5 UJ	5 R
1,1,2-Trichloroethane	5 UJ	5 UJ	5 UJ	5 UJ	5 R
Benzene	5 UJ	5 UJ	5 UJ	5 UJ	5 R
Trans-1,3-Dichloropropene	5 UJ	5 UJ	5 UJ	5 UJ	5 R
Bromoform	5 UJ	5 UJ	5 UJ	5 UJ	5 R
4-Methyl-2-Pentanone	10 UJ	10 UJ	10 UJ	10 UJ	10 R
2-Hexanone	10 R	10 UJ	10 R	10 R	10 R
Tetrachloroethene	5 UJ	5 UJ	5 UJ	5 UJ	5 R
1,1,2,2-Tetrachloroethane	5 UJ	5 UJ	5 UJ	5 UJ	5 R
Toluene	3 J	5 UJ	6 J	5 UJ	5 R
Chlorobenzene	5 UJ	5 UJ	5 UJ	5 UJ	5 R
Ethylbenzene	5 UJ	5 UJ	5 UJ	5 UJ	5 R
Styrene	5 UJ	5 UJ	5 UJ	5 UJ	5 R
Xylene (total)	5 J	5 UJ	8 J	5 UJ	7 J
Dilution Factor	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	16(14)d ^a	14(14)d	21(14)d ^a	19(14)d ^a	34(14)d ^a

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TABLE G-9. TSF EVAPORATION POND - VOLATILE ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1310V SOIL ug/kg TSF0101A	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1310V SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1310VRE SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1310VRE SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1310VRE SOIL ug/kg TSF1301V
<u>FIELD MEASUREMENTS</u>					
Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
<u>TARGET COMPOUNDS</u>					
Chloromethane	10 UJ	10 UJ	10 UJ	10 R	10 R
Bromomethane	10 UJ	10 UJ	10 UJ	10 R	10 R
Vinyl Chloride	10 UJ	10 UJ	10 UJ	10 R	10 R
Chloroethane	10 UJ	10 UJ	10 UJ	10 R	10 R
Methylene Chloride	5 UJ	5 UJ	5 UJ	5 R	5 R
Acetone	10 R	10 R	10 R	10 R	3 J
Carbon Disulfide	5 UJ	5 UJ	5 UJ	5 R	5 R
1,1-Dichloroethene	5 UJ	5 UJ	5 UJ	5 R	5 R
1,1-Dichloroethane	5 UJ	5 UJ	5 UJ	5 R	5 R
1,2-Dichloroethene_(total)	5 UJ	5 UJ	5 UJ	5 R	5 R
Chloroform	5 UJ	5 UJ	5 UJ	5 R	5 R
1,2-Dichloroethane	5 UJ	5 UJ	5 UJ	5 R	5 R
2-Butanone	10 UJ	10 UJ	10 UJ	10 R	10 R
1,1,1-Trichloroethane	5 UJ	5 UJ	5 UJ	5 R	5 R
Carbon Tetrachloride	5 UJ	5 UJ	5 UJ	5 R	5 R
Vinyl Acetate	10 UJ	10 UJ	10 UJ	10 R	10 R
Bromodichloromethane	5 UJ	5 UJ	5 UJ	5 R	5 R
1,2-Dichloropropane	5 UJ	5 UJ	5 UJ	5 R	5 R
cis-1,3-Dichloropropene	5 UJ	5 UJ	5 UJ	5 R	5 R
Trichloroethene	5 UJ	5 UJ	5 UJ	5 R	5 R
Dibromochloromethane	5 UJ	5 UJ	5 UJ	5 R	5 R
1,1,2-Trichloroethane	5 UJ	5 UJ	5 UJ	5 R	5 R
Benzene	5 UJ	5 UJ	5 UJ	5 R	5 R
Trans-1,3-Dichloropropene	5 UJ	5 UJ	5 UJ	5 R	5 R
Bromoform	5 UJ	5 UJ	5 UJ	5 R	5 R
4-Methyl-2-Pentanone	10 UJ	10 UJ	10 UJ	10 R	10 R
2-Hexanone	10 R	10 UJ	10 R	10 R	10 R
Tetrachloroethene	5 UJ	5 UJ	5 UJ	5 R	5 R
1,1,2,2-Tetrachloroethane	5 UJ	5 UJ	5 UJ	5 R	5 R
Toluene	5 UJ	5 UJ	5 UJ	5 R	5 R
Chlorobenzene	5 UJ	5 UJ	5 UJ	5 R	5 R
Ethylbenzene	5 UJ	5 UJ	5 UJ	5 R	5 R
Styrene	5 UJ	5 UJ	5 UJ	5 R	5 R
Xylene (total)	4 UJ	5 UJ	4 J	5 J	4 J
Dilution Factor	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	25(14)d*	13(14)d	25(14)d*	30(14)d*	30(14)d*

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TABLE G-9. TSF EVAPORATION POND - VOLATILE ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1311V SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1311VRE SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1312V SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1312VRE SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1313V SOIL ug/kg TSF1301V
<u>FIELD MEASUREMENTS</u>					
Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
<u>TARGET COMPOUNDS</u>					
Chloromethane	10 UJ	10 R	10 UJ	10 R	10 UJ
Bromomethane	10 UJ	10 R	10 UJ	10 R	10 UJ
Vinyl Chloride	10 UJ	10 R	10 UJ	10 R	10 UJ
Chloroethane	10 UJ	10 R	10 UJ	10 R	10 UJ
Methylene Chloride	5 UJ	5 R	5 UJ	8 J	5 UJ
Acetone	10 R	10 R	10 R	10 R	10 R
Carbon Disulfide	5 UJ	5 R	5 UJ	5 R	5 UJ
1,1-Dichloroethene	5 UJ	5 R	5 UJ	5 R	5 UJ
1,1-Dichloroethane	5 UJ	5 R	5 UJ	5 R	5 UJ
1,2-Dichloroethene_(total)	5 UJ	5 R	5 UJ	5 R	5 UJ
Chloroform	5 UJ	5 R	5 UJ	5 R	5 UJ
1,2-Dichloroethane	5 UJ	5 R	5 UJ	5 R	5 UJ
2-Butanone	10 R	10 R	10 R	10 R	10 R
1,1,1-Trichloroethane	5 UJ	5 R	5 UJ	5 R	5 UJ
Carbon Tetrachloride	5 UJ	5 RR	5 UJ	5 R	5 UJ
Vinyl Acetate	10 UJ	10 R	10 UJ	10 R	10 UJ
Bromodichloromethane	5 UJ	5 R	5 UJ	5 R	5 UJ
1,2-Dichloropropane	5 UJ	5 R	5 UJ	5 R	5 UJ
cis-1,3-Dichloropropene	5 UJ	5 R	5 UJ	5 R	5 UJ
Trichloroethene	5 UJ	5 R	5 UJ	5 R	5 UJ
Dibromochloromethane	5 UJ	5 R	5 UJ	5 R	5 UJ
1,1,2-Trichloroethane	5 UJ	5 R	5 UJ	5 R	5 UJ
Benzene	5 UJ	5 R	5 UJ	5 R	5 UJ
Trans-1,3-Dichloropropene	5 UJ	5 R	5 UJ	5 R	5 UJ
Bromoform	5 UJ	5 R	5 UJ	5 R	5 UJ
4-Methyl-2-Pentanone	10 UJ	10 R	10 UJ	10 R	10 UJ
2-Hexanone	10 R	10 R	10 R	10 R	10 R
Tetrachloroethene	5 UJ	5 R	5 UJ	5 R	5 UJ
1,1,2,2-Tetrachloroethane	5 UJ	5 R	5 UJ	5 R	5 UJ
Toluene	5 UJ	3 J	5 UJ	5 R	5 UJ
Chlorobenzene	5 UJ	5 R	5 UJ	5 R	5 UJ
Ethylbenzene	5 UJ	5 R	5 UJ	5 R	5 UJ
Styrene	5 UJ	5 R	5 UJ	5 R	5 UJ
Xylene (total)	5 UJ	9 J	5 UJ	4 J	5 UJ
Dilution Factor	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	15(14)d*	35(14)d*	15(14)d*	35(14)d*	15(14)d*

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TABLE G-9. TSF EVAPORATION POND - VOLATILE ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1314V SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1314VRE SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1314VRE SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1314VRE SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDM TSF1315V SOIL ug/kg TSF1301V
FIELD MEASUREMENTS					
Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
TARGET COMPOUNDS					
Chloromethane	10 UJ	10 UJ	10 R	10 R	10 UJ
Bromomethane	10 UJ	10 UJ	10 R	10 R	10 UJ
Vinyl Chloride	10 UJ	10 UJ	10 R	10 R	10 UJ
Chloroethane	10 UJ	10 UJ	10 R	10 R	10 UJ
Methylene Chloride	5 UJ	5 UJ	5 R	5 R	5 UJ
Acetone	4 J	10 R	10 R	10 R	10 R
Carbon Disulfide	5 UJ	5 UJ	5 R	5 R	5 UJ
1,1-Dichloroethene	5 UJ	5 UJ	5 R	5 R	5 UJ
1,1-Dichloroethane	5 UJ	5 UJ	5 R	5 R	5 UJ
1,2-Dichloroethene_(total)	5 UJ	5 UJ	5 R	5 R	5 UJ
Chloroform	5 UJ	5 UJ	5 R	5 R	5 UJ
1,2-Dichloroethane	5 UJ	5 UJ	5 R	5 R	5 UJ
2-Butanone	10 UJ	10 UJ	10 R	10 R	10 R
1,1,1-Trichloroethane	5 UJ	5 UJ	5 R	5 R	5 UJ
Carbon Tetrachloride	5 UJ	5 R	5 R	5 R	5 UJ
Vinyl Acetate	10 UJ	10 UJ	10 R	10 R	10 UJ
Bromodichloromethane	5 UJ	5 UJ	5 R	5 R	5 UJ
1,2-Dichloropropane	5 UJ	5 UJ	5 R	5 R	5 UJ
cis-1,3-Dichloropropene	5 UJ	5 UJ	5 R	5 R	5 UJ
Trichloroethene	5 UJ	5 UJ	5 R	5 R	5 UJ
Dibromochloromethane	5 UJ	5 UJ	5 R	5 R	5 UJ
1,1,2-Trichloroethane	5 UJ	5 UJ	5 R	5 R	5 UJ
Benzene	5 UJ	5 UJ	5 R	5 R	5 UJ
Trans-1,3-Dichloropropene	5 UJ	5 UJ	5 R	5 R	5 UJ
Bromoform	5 UJ	5 UJ	5 R	5 R	5 UJ
4-Methyl-2-Pentanone	10 UJ	10 UJ	10 R	10 R	10 UJ
2-Hexanone	10 UJ	10 UJ	10 R	10 R	10 R
Tetrachloroethene	5 UJ	5 UJ	5 R	5 R	5 UJ
1,1,2,2-Tetrachloroethane	5 UJ	5 UJ	5 R	5 R	5 UJ
Toluene	5 UJ	5 UJ	5 J	4 J	5 UJ
Chlorobenzene	5 UJ	5 UJ	5 R	5 R	5 UJ
Ethylbenzene	5 UJ	5 UJ	7 J	5 J	5 UJ
Styrene	5 UJ	5 UJ	5 R	5 R	5 UJ
Xylene (total)	5 UJ	4 J	12 J	9 J	5 UJ
Dilution Factor	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	13(14)d	16(14)d*	30(14)d*	30(14)d*	15(14)d*

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TABLE G-9. TSF EVAPORATION POND - VOLATILE ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTMATIC RANDM TSF1316V SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTMATIC RANDM TSF1316VRE SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTMATIC RANDM TSF1317V SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTMATIC RANDM TSF1317VRE SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTMATIC RANDM TSF1318V SOIL ug/kg TSF1301V
FIELD MEASUREMENTS					
Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
TARGET COMPOUNDS					
Chloromethane	10 UJ	10 R	10 UJ	10 UJ	---
Bromomethane	10 UJ	10 R	10 UJ	10 UJ	---
Vinyl Chloride	10 UJ	10 R	10 UJ	10 UJ	---
Chloroethane	10 UJ	10 R	10 UJ	10 UJ	---
Methylene Chloride	5 UJ	5 J	5 UJ	5 UJ	---
Acetone	10 UJ	10 R	10 R	10 R	10 R
Carbon Disulfide	5 UJ	5 R	5 UJ	5 UJ	---
1,1-Dichloroethene	5 UJ	5 R	5 UJ	5 UJ	---
1,1-Dichloroethane	5 UJ	5 R	5 UJ	5 UJ	---
1,2-Dichloroethene_(total)	5 UJ	5 R	5 UJ	5 UJ	---
Chloroform	5 UJ	5 R	5 UJ	5 UJ	---
1,2-Dichloroethane	5 UJ	5 R	5 UJ	5 UJ	---
2-Butanone	10 UJ	10 R	10 UJ	10 R	10 R
1,1,1-Trichloroethane	5 UJ	5 R	5 UJ	5 UJ	---
Carbon Tetrachloride	5 UJ	5 R	5 UJ	5 R	---
Vinyl Acetate	10 UJ	10 R	10 UJ	10 UJ	---
Bromodichloromethane	5 UJ	5 R	5 UJ	5 UJ	---
1,2-Dichloropropane	5 UJ	5 R	5 UJ	5 UJ	---
cis-1,3-Dichloropropene	5 UJ	5 R	5 UJ	5 UJ	---
Trichloroethene	5 UJ	5 R	5 UJ	5 UJ	---
Dibromochloromethane	5 UJ	5 R	5 UJ	5 UJ	---
1,1,2-Trichloroethane	5 UJ	5 R	5 UJ	5 UJ	---
Benzene	5 UJ	5 R	5 UJ	5 UJ	---
Trans-1,3-Dichloropropene	5 UJ	5 R	5 UJ	5 UJ	---
Bromoform	5 UJ	5 R	5 UJ	5 UJ	---
4-Methyl-2-Pentanone	10 UJ	10 R	10 UJ	10 UJ	---
2-Hexanone	10 UJ	10 R	10 UJ	10 R	10 R
Tetrachloroethene	5 UJ	5 R	5 UJ	5 UJ	5 UJ
1,1,2,2-Tetrachloroethane	5 UJ	5 R	5 UJ	5 UJ	5 UJ
Toluene	5 UJ	4 J	5 UJ	1 J	5 UJ
Chlorobenzene	5 UJ	5 R	5 UJ	5 UJ	5 UJ
Ethylbenzene	5 UJ	2 J	5 UJ	5 UJ	5 UJ
Styrene	5 UJ	5 R	5 UJ	5 UJ	5 UJ
Xylene (total)	5 UJ	10 J	5 UJ	5 UJ	5 UJ
Dilution Factor	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	13(14)d	33(14)d*	13(14)d	16(14)d*	14(14)d

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TABLE G-9. TSF EVAPORATION POND - VOLATILE ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1318VRE SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1319V SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1319VRE SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1320V SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1320VRE SOIL ug/kg TSF1301V
FIELD MEASUREMENTS					
Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
TARGET COMPOUNDS					
Chloromethane	10 R	10 UJ	10 UJ	10 UJ	10 R
Bromomethane	10 R	10 UJ	10 UJ	10 UJ	10 R
Vinyl Chloride	10 R	10 UJ	10 UJ	10 UJ	10 R
Chloroethane	10 R	10 UJ	10 UJ	10 UJ	10 R
Methylene Chloride	5 R	5 UJ	5 UJ	5 UJ	6 J
Acetone	6 J	10 R	10 R	10 R	5 J
Carbon Disulfide	5 R	5 UJ	5 UJ	5 UJ	5 R
1,1-Dichloroethene	5 R	5 UJ	5 UJ	5 UJ	5 R
1,1-Dichloroethane	5 R	5 UJ	5 UJ	5 UJ	5 R
1,2-Dichloroethene (total)	5 R	5 UJ	5 UJ	5 UJ	5 R
Chloroform	5 R	5 UJ	5 UJ	5 UJ	5 R
1,2-Dichloroethane	5 R	5 UJ	5 UJ	5 UJ	5 R
2-Butanone	10 R	10 UJ	10 R	10 R	10 R
1,1,1-Trichloroethane	5 R	5 UJ	5 UJ	5 UJ	5 R
Carbon Tetrachloride	5 R	5 UJ	5 R	5 UJ	5 R
Vinyl Acetate	10 R	10 UJ	10 UJ	10 UJ	10 R
Bromodichloromethane	5 R	5 UJ	5 UJ	5 UJ	5 R
1,2-Dichloropropane	5 R	5 UJ	5 UJ	5 UJ	5 R
cis-1,3-Dichloropropene	5 R	5 UJ	5 UJ	5 UJ	5 R
Trichloroethene	5 R	5 UJ	5 UJ	5 UJ	5 R
Dibromochloromethane	5 R	5 UJ	5 UJ	5 UJ	5 R
1,1,2-Trichloroethane	5 R	5 UJ	5 UJ	5 UJ	5 R
Benzene	5 R	5 UJ	5 UJ	5 UJ	5 R
Trans-1,3-Dichloropropene	5 R	5 UJ	5 UJ	5 UJ	5 R
Bromoform	5 R	5 UJ	5 UJ	5 UJ	5 R
4-Methyl-2-Pentanone	10 R	10 UJ	10 UJ	10 UJ	10 R
2-Hexanone	10 R	10 UJ	10 R	10 R	10 R
Tetrachloroethene	5 R	5 UJ	5 UJ	5 UJ	5 R
1,1,2,2-Tetrachloroethane	5 R	5 UJ	5 UJ	5 UJ	5 R
Toluene	2 J	5 UJ	5 UJ	5 UJ	4 J
Chlorobenzene	5 R	5 UJ	5 UJ	5 UJ	5 R
Ethylbenzene	4 J	5 UJ	5 UJ	5 UJ	2 J
Styrene	5 R	5 UJ	5 UJ	5 UJ	5 R
Xylene (total)	7 J	5 UJ	5 UJ	5 UJ	12 J
Dilution Factor	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Mold Time	33(14) d ^a	15(14) d ^a	17(14) d ^a	15(14) d ^a	34(14) d ^a

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TABLE G-9. TSF EVAPORATION POND - VOLATILE ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTRATIC RANDOM TSF1321V SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTRATIC RANDOM TSF1321WE SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTRATIC RANDOM TSF1322V SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTRATIC RANDOM TSF1322WE SOIL ug/kg TSF1301V	TSF OVERFLOW AREA SYSTRATIC RANDOM TSF1401V SEDIMENT ug/kg TSF1301V
FIELD MEASUREMENTS					
Depth (ft)	0-0.5	0-0.5	0-0.5	0-0.5	10-11
TARGET COMPOUNDS					
Chloromethane	10 W	10 R	---	10 R	10 W
Bromomethane	10 W	10 R	---	10 R	10 W
Vinyl Chloride	10 W	10 R	---	10 R	10 W
Chloroethane	10 W	10 R	---	10 R	10 W
Methylene Chloride	5 W	5 R	---	5 J	5 W
Acetone	50 J	10 R	10 R	10 R	9 J
Carbon Disulfide	5 W	5 R	---	5 R	5 W
1,1-Dichloroethene	5 W	5 R	---	5 R	5 W
1,1-Dichloroethane	5 W	5 R	---	5 R	5 W
1,2-Dichloroethene (total)	5 W	5 R	---	5 R	5 W
Chloroform	5 W	5 R	---	5 R	5 W
1,2-Dichloroethane	5 W	5 R	---	5 R	5 W
2-Butanone	10 R	10 R	10 R	10 R	10 R
1,1,1-Trichloroethane	5 W	5 R	---	5 R	5 W
Carbon Tetrachloride	5 R	5 R	---	5 R	5 R
Vinyl Acetate	10 W	10 R	---	10 R	10 W
Bromodichloromethane	5 W	5 R	---	5 R	5 W
1,2-Dichloropropane	5 W	5 R	---	5 R	5 W
cis-1,3-Dichloropropene	5 W	5 R	---	5 R	5 W
Trichloroethene	5 W	5 R	---	5 R	5 W
Dibromochloromethane	5 W	5 R	---	5 R	5 W
1,1,2-Trichloroethane	5 W	5 R	---	5 R	5 W
Benzene	5 W	5 R	---	5 R	5 W
Trans-1,3-Dichloropropene	5 W	5 R	---	5 R	5 W
Bromoform	5 W	5 R	---	5 R	5 W
4-Methyl-2-Pentanone	10 W	10 R	10 W	10 R	10 W
2-Hexanone	95 R	10 R	10 R	10 R	46 R
Tetrachloroethene	5 W	5 R	5 W	5 R	5 W
1,1,2,2-Tetrachloroethane	5 W	5 R	5 W	5 R	5 W
Toluene	5 W	5 R	5 W	5 R	5 W
Chlorobenzene	5 W	5 R	5 W	5 R	5 W
Ethylbenzene	5 W	5 R	5 W	5 R	5 W
Styrene	5 W	5 R	5 W	5 R	5 W
Xylene (total)	3 J	7 J	5 W	5 R	5 W
Dilution Factor	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	16(14)hr	31(14)hr	15(14)hr	34(14)hr	16(14)hr

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TABLE G-9. TSF EVAPORATION POND - VOLATILE ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1402V SEDIMENT up/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1403V SEDIMENT up/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1404V SEDIMENT up/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1405V SEDIMENT up/kg TSF1301V	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1405V SEDIMENT up/kg TSF0101A
FIELD MEASUREMENTS					
Depth (ft)	10-11	10-11	10-11	10-11	10-11
TARGET COMPOUNDS					
Chloromethane	10 UJ	---	10 UJ	10 R	10 UJ
Bromomethane	10 UJ	---	10 UJ	10 R	10 UJ
Vinyl Chloride	10 UJ	---	10 UJ	10 R	10 UJ
Chloroethane	10 UJ	---	10 UJ	10 R	10 UJ
Methylene Chloride	5 UJ	---	5 UJ	3 J	5 UJ
Acetone	25 J	10 R	10 R	10 R	10 R
Carbon Disulfide	5 UJ	---	5 UJ	5 R	5 UJ
1,1-Dichloroethene	5 UJ	---	5 UJ	5 R	5 UJ
1,1-Dichloroethane	5 UJ	---	5 UJ	5 R	5 UJ
1,2-Dichloroethene (total)	5 UJ	---	5 UJ	5 R	5 UJ
Chloroform	5 UJ	---	5 UJ	5 R	5 UJ
1,2-Dichloroethane	5 UJ	---	5 UJ	5 R	5 UJ
2-Butanone	10 R	---	10 R	10 R	10 UJ
1,1,1-Trichloroethane	5 UJ	---	5 UJ	5 R	5 UJ
Carbon Tetrachloride	5 R	---	5 R	5 R	5 UJ
Vinyl Acetate	10 UJ	---	10 UJ	10 R	10 UJ
Bromodichloromethane	5 UJ	---	5 UJ	5 R	5 UJ
1,2-Dichloropropane	5 UJ	---	5 UJ	5 R	5 UJ
cis-1,3-Dichloropropene	5 UJ	---	5 UJ	5 R	5 UJ
Trichloroethene	5 UJ	---	5 UJ	5 R	5 UJ
Dibromochloromethane	5 UJ	---	5 UJ	5 R	5 UJ
1,1,2-Trichloroethane	5 UJ	---	5 UJ	5 R	5 UJ
Benzene	5 UJ	---	5 UJ	5 R	5 UJ
Trans-1,3-Dichloropropene	5 UJ	---	5 UJ	5 R	5 UJ
Bromoform	5 UJ	5 UJ	5 UJ	5 R	5 UJ
4-Methyl-2-Pentanone	10 UJ	20 UJ	10 UJ	10 R	10 UJ
2-Hexanone	10 R	20 UJ	250 R	10 R	10 R
Tetrachloroethene	5 UJ	---	5 UJ	5 R	5 UJ
1,1,2,2-Tetrachloroethane	5 UJ	---	5 UJ	5 R	5 UJ
Toluene	5 UJ	---	5 UJ	5 R	5 UJ
Chlorobenzene	5 UJ	---	5 UJ	5 R	5 UJ
Ethylbenzene	5 UJ	---	5 UJ	5 R	5 UJ
Styrene	5 UJ	---	5 UJ	5 R	5 UJ
Xylene (total)	5 UJ	---	5 UJ	5 R	5 UJ
Dilution Factor	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	16(14)hr	13(14)hr	19(14)hr	34(14)hr	29(14)hr

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TABLE G-9. TSF EVAPORATION POND - VOLATILE ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1405W SEDIMENT up/kg TSF130TV	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1406W SEDIMENT up/kg TSF130TV	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1407V SEDIMENT up/kg TSF130TV	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1408V SEDIMENT up/kg TSF130TV	TSF OVERFLOW AREA SYSTEMATIC RANDOM TSF1409V SEDIMENT up/kg TSF130TV
FIELD MEASUREMENTS					
Depth (ft)	10-11	10-11	10-11	10-11	10-11
TARGET COMPOUNDS					
Chloromethane	10 R	---	---	10 UJ	---
Bromomethane	10 R	---	---	10 UJ	---
Vinyl Chloride	10 R	---	---	10 UJ	---
Chloroethane	10 R	---	---	10 UJ	---
Methylene Chloride	5 R	---	---	5 UJ	---
Acetone	10 R	10 R	10 R	10 UJ	10 R
Carbon Disulfide	5 R	---	---	5 UJ	---
1,1-Dichloroethane	5 R	---	---	5 UJ	---
1,1-Dichloroethane	5 R	---	---	5 UJ	---
1,2-Dichloroethane (total)	5 R	---	---	5 UJ	---
Chloroform	5 R	---	---	5 UJ	---
1,2-Dichloroethane	5 R	---	---	5 UJ	---
2-Butanone	10 R	---	---	10 UJ	---
1,1,1-Trichloroethane	5 R	---	---	5 UJ	---
Carbon Tetrachloride	5 R	---	---	5 UJ	---
Vinyl Acetate	10 R	---	---	10 UJ	---
Bromodichloromethane	5 R	---	---	5 UJ	---
1,2-Dichloropropane	5 R	---	---	5 UJ	---
cis-1,3-Dichloropropane	5 R	---	---	5 UJ	---
Trichloroethene	5 R	---	---	5 UJ	---
Dibromochloromethane	5 R	---	---	5 UJ	---
1,1,2-Trichloroethane	5 R	---	---	5 UJ	---
Benzene	5 R	---	---	5 UJ	---
Trans-1,3-Dichloropropane	5 R	---	---	5 UJ	---
Bromoform	5 R	5 UJ	5 UJ	5 UJ	5 UJ
4-Methyl-2-Pentanone	10 R	10 UJ	10 UJ	10 UJ	10 UJ
2-Hexanone	10 R	17 UJ	6 UJ	10 UJ	10 UJ
Tetrachloroethene	5 R	---	---	5 UJ	---
1,1,2,2-Tetrachloroethane	5 R	---	---	5 UJ	---
Toluene	5 R	---	---	5 UJ	---
Chlorobenzene	5 R	---	---	5 UJ	---
Ethylbenzene	5 R	---	---	5 UJ	---
Styrene	5 R	---	---	5 UJ	---
Xylene (total)	5 R	---	---	5 UJ	---
Dilution Factor	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	29(14)hr	12(14)hr	13(14)hr	14(14)hr	13(14)hr

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TABLE G-9. T5F EVAPORATION POND - VOLATILE ORGANIC DATA (Continued)

T5F Evaporation Pond SDA Data Document - November 1999 - Method Validation Level A									
TABLE 6-9. T5F Evaporation Pond - VOLATILE ORGANIC DATA (Continued)									
AREA	LOCATION	TYPE OF LOCATION	SAMPLE NUMBER	MEDIA	UNITS	SDC NUMBER	FIELD MEASUREMENTS	Depth (ft)	TARGET COMPOUNDS
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-10.5	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane
									Bromochlorane
									Vinyl Chloride
									Chloroethane
									Methylene Chloride
									Acetone
									Carbon Disulfide
									1,1-Dichloroethane
									1,1-Dichloroethane
									1,2-Dichloroethane (total)
									Chloroethane
									2-Butanone
									1,2-Dichloroethane
									1,1,1-Trichloroethane
									Carbon Tetrachloride
									Vinyl Acetate
T5F	OVERFLOW AREA	SYSTEMATIC NUMBER	T5F7410V	SEDIMENT	ug/kg	T5F1301V		10-11	Chloroethane

T5F Evaporation Pond SEA Data Document - Boulder 1989 - Method Validation Level A

TABLE G-9. TSF EVAPORATION POND - VOLATILE ORGANIC DATA (Continued)

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF DITCH BIASED TSF2103V SOIL/SEDIMENT ug/kg TSF0101A	TSF DITCH BIASED TSF2104V SOIL/SEDIMENT ug/kg TSF0101A
FIELD MEASUREMENTS		
Depth (ft)	0-0.5	0-0.5
TARGET COMPOUNDS		
Chloromethane	10 UJ	10 J
Bromomethane	10 UJ	10 UJ
Vinyl Chloride	10 UJ	10 UJ
Chloroethane	10 UJ	10 UJ
Methylene Chloride	5 UJ	5 UJ
Acetone	19 R	10 R
Carbon Disulfide	5 UJ	5 UJ
1,1-Dichloroethene	5 UJ	5 UJ
1,1-Dichloroethane	5 UJ	5 UJ
1,2-Dichloroethene (total)	5 UJ	5 UJ
Chloroform	5 UJ	5 UJ
1,2-Dichloroethane	5 UJ	5 UJ
2-Butanone	10 R	10 UJ
1,1,1-Trichloroethane	5 UJ	5 UJ
Carbon Tetrachloride	5 UJ	5 UJ
Vinyl Acetate	10 UJ	10 UJ
Bromodichloromethane	5 UJ	5 UJ
1,2-Dichloropropane	5 UJ	5 UJ
cis-1,3-Dichloropropene	5 UJ	5 UJ
Trichloroethene	5 UJ	5 UJ
Dibromochloromethane	5 UJ	5 UJ
1,1,2-Trichloroethane	5 UJ	5 UJ
Benzene	5 UJ	5 UJ
Trans-1,3-Dichloropropene	5 UJ	5 UJ
Bromoform	5 UJ	5 UJ
4-Methyl-2-Pentanone	10 UJ	10 UJ
2-Hexanone	10 R	10 R
Tetrachloroethene	5 UJ	5 UJ
1,1,2,2-Tetrachloroethane	5 UJ	5 UJ
Toluene	5 UJ	52 J
Chlorobenzene	5 UJ	5 UJ
Ethylbenzene	5 UJ	5 UJ
Styrene	5 UJ	5 UJ
Xylene (total)	5 UJ	5 UJ
Dilution Factor	1.000	1.000
Total (Allowed) Hold Time	15(14) d ^a	15(14) d ^a

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Table G-10. Sample numbers for the TSF disposal ponds and sump.

Location	Depth	Type	Analyses by EPA methods number			Appendix IX	Gamma spectrometry
			6010	7471	8240		
			Metals		VOAs		
Pond bottom	Surface	Biased	TSF0101M - TSF0114M		TSF0101V - TSF0114V	TSF0101A, TSF0102A	TSF0101G - TSF0116G
Depression areas	Surface ± 0 m	Biased	TSF0201M - TSF0204M		TSF0201V - TSF0204V	--	TSF0201G - TSF0204G
			TSF0301M - TSF0304M		TSF0301V - TSF0304V	--	TSF0301G - TSF0304G
Waste sump	Interior	Biased			--	TSF0401A	TSF0401G
Sump margins	0.6 m below sump bottom	Biased	TSF0501M, TSF0502M		TSF0501V, TSF0502V	--	TSF0501G, TSF0502G
Inlet pipe	0.6 m below pipe	Biased	TSF0601M - TSF0604M		TSF0601V - TSF0604V	--	TSF0601G, TSF0604G
Pond discharge	Surface	Biased	--		--	TSF0701A	TSF0701G
Bore hole	1.5 m	Biased	TSF0801M		TSF0801V	--	TSF0801G
	3.0 m		TSF0901M		TSF0901V	--	TSF0901G
	4.6 m		TSF1001M		TSF1001V	--	TSF1001G
	15.2 m		TSF1101M		TSF1101V	--	TSF1101G
Background ^a	Surface	Biased	TSF1201M - TSF1205M		--	--	--
Overflow area	Surface 3.0 m	Systematic	TSF1301M - TSF1322M		TSF1301V - TSF1322V	TSF1301A - TSF1303A	TSF1301G - TSF1322G
		Random	TSF1401M - TSF1422M		TSF1401V - TSF1422V	TSF1401A - TSF1403A	TSF1401G - TSF1422G
Waste sump	Interior	QA, repl.	--		--	TSF1501A	TSF1501G
Pond discharge	Surface	QC, repl.	--		--	TSF1601A	TSF1601G
Replicates	--	QC, soil	TSF1701M - TSF1706M		TSF1701V - TSF1706V	--	TSF1701G - TSF1706G
Rinsates	--	QC, water	TSF1801M - TSF1806M		TSF1801C,D,E - TSF1806C,D,E	--	--
Trip blanks ^b	--	QC, water	--		TSF1901C,D,E - TSF1906C,D,E	--	--
Field blanks	--	QC, water	TSF2001M - TSF2006M		--	--	--

a. Background samples analyzed for ICP metals/CN/As/Se/Pb/Hg/Tl/Sn/Sulfide

b. Three sample vials are required for each aqueous VOA sample, these samples are designated C, D, and E.

APPENDIX H

ANALYTICAL RESULTS FOR SAMPLING EVENT 5a

Table H-1. TSF monitoring well sample analysis summary.

				Analyses by EPA Methods Number					
Location	Depth	Number	Type	6010 ICP	8240 VOAs	7471/7470 Mercury	Gamma Spectroscopy ^a	Gross Alpha/Beta	Sr-90
I-Chem Jar Size				250ml	250 ml	250 ml	500 ml squats	125 ml	1000 ml
Existing wells	≈ 15.2 m	20	Biased, water grabs	20 ^b	20 ^c	20 ^b	20 ^d	20	20
Totals		20		20	20	20	20	20	20

a. Gamma spectroscopy will adhere to the procedures detailed in the SOPs prepared for the Radiation Measurements Laboratory.

b. Analytical parameters: Metals ICP/As/Se/Pb/Hg/Tl/Sn (1 L HDPE)

c. Analytical parameters: Volatile organics (3-40 ml).

d. Analytical parameters: Gamma Spectroscopy (540 ml HDPE)

Table H-2. TSF monitoring well quality control sample analysis summary.

Location	Depth	Number	Type	Analyses by EPA Methods Number					
				6010 ICP	8240 VOAs	7471/7470 Mercury	Gamma Spectroscopy ^a	Gross Alpha/Beta	Sr-90
1-Chem jar size				250 ml	250 ml	250 ml	500 ml squats	125 ml	1000 ml
Existing wells		2	QC replicate water	1	1	1	1	1	1
Rinsates		1	QC, water	1 ^c	1	1 ^c	1 ^b	1	1
Trip blanks		10	QC, water		10 ^d				
Totals		13		2	12	2	2	2	2

a. Gamma spectroscopy analysis will adhere to SOPs prepared for the Radiation Measurements Laboratory.

b. Aqueous gamma spectroscopy samples are placed in 540-ml bottles.

c. EPA method 7470 applies to aqueous Hg samples, 1000 ml HDPE bottles used to containerize these samples.

d. Trip blanks and rinsates are placed in 40-ml glass vials with no head space. Trip blanks are laboratory blank water supplied by the analytical laboratory. Field blanks consist of the HPLC grade water used for final rinsing when collecting rinsates.

Table H-3. TSF-07 perched water wells—inorganic data.

AREA	TSF	TSF	TSF	TSF	TSF
LOCATION	TSFAG 7	TSFAG 7	TSFAG 7	TSFAG 7	TSFAG 7
TYPE OF LOCATION	EXISTING WELL	EXISTING WELL	EXISTING WELL	EXISTING WELL	EXISTING WELL
SAMPLE NUMBER	TSF2502M	TSF2503M	TSF2504M	TSF2505M	TSF2506M
MEDIA	WATER	WATER	WATER	WATER	WATER
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L
SDG NUMBER	12926	13124	13238	13292	13403
<hr/>					
ANALYTES					
Aluminium	39.5 BU	3070	62.9 BU	257	---
Antimony	---	---	43.1 B	36.4 B	---
Arsenic	3.8 B	3.7 B	3.4 B	2.0 UN	---
Barium	229	263	212	266	208
Beryllium	---	---	---	---	---
Cadmium	---	---	---	---	---
Calcium	118000	129000	112000	148000	103000
Chromium	---	13.1	---	---	---
Cobalt	---	6.0 B	---	---	---
Copper	4.9 B	17.4 B	---	7.1 B	---
Iron	4.4 BU	3780	34.1 B	104	11.8 BU
Lead	1.0 UN	3.3	1.0 UN	1.0 UN	1.0 WNUJ
Magnesium	31400	32800	28100	31000	29600
Manganese	2.1 B	65.8	---	25.9	---
Mercury	---	---	---	---	---
Nickel	---	21.5 B	---	---	---
Potassium	6160	5620	3970 B	3920 B	4110 B
Selenium	2.0 WUJ	2.0 WNUJ	2.0 WNUJ	2.0 WUJ	2.0 UN
Silver	---	---	---	---	---
Sodium	11700	12600	12900	9650	11200
Thallium	5.0 WNUJ	1.0 WNUJ	2.0 WNUJ	5.0 WNUJ	1.0 WNUJ
Vanadium	---	11.2 B	---	---	---
Zinc	---	57.6	13.2 BU	14.0 BU	12.6 B
Total (Allowed) Hold Time ^a	27(182)d	17(180)d	21(180)d	6(180)d	7(180)d
Total (Allowed) Hold Time ^b	27(28)d	19(26)d	15(26)d	9(26)d	7(26)d
Total (Allowed) Hold Time ^c	27(182)d	17(180)d	15(180)d	6(180)d	7(180)d

a. ICP
b. CVAAS
c. GFAAS

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Table H-3. (continued).

AREA	TSF	TSF	TSF	TSF	TSF
LOCATION	TSFAG 7	TSFAG 5	TSFAG 5	TSFAG 5	TSFAG 5
TYPE OF LOCATION	EXISTING WELL	EXISTING WELL	EXISTING WELL	EXISTING WELL	EXISTING WELL
SAMPLE NUMBER	TSF2507M	TSF2602M	TSF2603M	TSF2604M	TSF2605M
MEDIA	WATER	WATER	WATER	WATER	WATER
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L
SDG NUMBER	05054	12926	13124	13238	13292
<hr/>					
ANALYTES					
Aluminium	108 B	110 BU	162 B	483	62.3 B
Antimony	---	---	---	---	48.4 B
Arsenic	---	3.3 B	2.6 B	3.5 B	2.0 UN
Barium	214	116 B	128 B	121 B	111 B
Beryllium	---	---	---	---	---
Cadmium	---	---	---	---	---
Calcium	111000	44800	46200	41000	39500
Chromium	9.6 BU	---	---	---	---
Cobalt	---	---	---	---	---
Copper	7.3 B	8.6 B	11.2 B	9.1 B	4.8 B
Iron	23.1 B	93.8 B	226	437	72.8 B
Lead	---	---	1.0 UN	1.0 UN	1.0 UN
Magnesium	31700	9550	9530	8630	8400
Manganese	---	6.2 B	9.2 BU	11.0 B	5.6 B
Mercury	---	---	---	---	---
Nickel	---	64.0	15.9 B	---	---
Potassium	4610 B	2740 B	2100 B	2190 B	2070 B
Selenium	2.0 WNUJ	2.0 WNUJ	2.0 WNUJ	2.0 WNUJ	---
Silver	---	---	4.1 BU	---	---
Sodium	---	127000	119000	115000	112000
Thallium	2.3 BWNJ	1.0 WNUJ	1.0 WNUJ	1.0 WNUJ	5.0 WNUJ
Vanadium	9.0 B	---	5.4 B	5.4 B	---
Zinc	---	9.4 B	12.6 BU	8.9 BU	7.8 BU
Total (Allowed) Hold Time ^a	No Prep	27(182)d	17(180)d	21(180)d	6(180)d
Total (Allowed) Hold Time ^b	12(26)d	27(28)d	19(26)d	15(26)d	9(26)d
Total (Allowed) Hold Time ^c	No Prep	27(182)d	17(180)d	15(180)d	6(180)d

a. ICP
b. CVAAS
c. GFAAS

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Table H-3. (continued).

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF TSFAG 5 EXISTING WELL TSF2606M WATER ug/L 13403	TSF TSFAG 5 EXISTING WELL TSF2607M WATER ug/L 05054
<u>ANALYTES</u>		
Aluminium	---	86.0 B
Antimony	---	---
Arsenic	4.2 B	1.1 B
Barium	90.4 B	131 B
Beryllium	---	---
Cadmium	---	---
Calcium	30600	44800
Chromium	---	---
Cobalt	---	---
Copper	7.7 B	8.0 B
Iron	45.2 BU	---
Lead	1.0 UNUJ	---
Magnesium	6700	10200
Manganese	7.2 B	3.5 B
Mercury	---	---
Nickel	---	---
Potassium	1590 B	2740 BU
Selenium	2.0 UW	2.0 UNUJ
Silver	---	---
Sodium	109000	12800
Thallium	1.0 UNUJ	1.0 UNUJ
Vanadium	---	7.3 B
Zinc	70.1	---
Total (Allowed) Hold Time ^a	7(180)d	No Prep
Total (Allowed) Hold Time ^b	7(26)d	12(26)d
Total (Allowed) Hold Time ^c	7(180)d	No Prep

- a. ICP
b. CVAAS
c. GFAAS

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Table H-4. TSF-07 perched water wells-inorganic Appendix IX data.

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF TSFAG 7 EXISTING WELL TSF2501M WATER ug/L TSF2501M	TSF TSFAG 5 EXISTING WELL TSF2601M WATER ug/L TSF2501M
ANALYTES		
Aluminium	4000 MJ	7250 MJ
Antimony	---	142 B
Arsenic	---	---
Barium	245	224
Beryllium	2.2 BU	1.6 BU
Cadmium	---	2.0 B
Calcium	96400	70500
Chromium	18.7	16.0
Cobalt	---	---
Copper	5.9 BU	17.9 BU
Iron	4590	7990
Lead	---	---
Magnesium	24100	13900
Manganese	62.3	111
Mercury	0.17 BJ	0.10 UJ
Nickel	---	---
Potassium	9500	3210 B
Selenium	---	---
Silver	5.6 B	2.4 B
Sodium	14800	97300
Strontium	710	307
Thallium	---	101 BU
Tin	---	---
Vanadium	40.1 BEJ	39.6 BEJ
Zinc	---	56.0
Total (Allowed) Hold Time ^a	53(180)d	53(180)d
Total (Allowed) Hold Time ^b	29(26)d ^a	29(26)d ^a

a. ICPS

b. CVAAS

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Table H-5. TSF-07 perched water wells—analysis results for radionuclides.

AREA	TSF		TSF		TSF		TSF		TSF	
LOCATION	TSFAG 7		TSFAG 7		TSFAG 7		TSFAG 7		TSFAG 7	
TYPE OF LOCATION	EXISTING WELL		EXISTING WELL		EXISTING WELL		EXISTING WELL		EXISTING WELL	
SAMPLE NUMBER	TSF2501 D A		TSF2501 D A		TSF2502 D A		TSF2503 D A		TSF2504 D A	
MEDIA	WATER Q S		SLUDGE Q S		WATER Q S		WATER Q S		WATER Q S	
UNITS	pCi/L F L		pCi/g F L		pCi/L F L		pCi/L F L		pCi/L F L	
<u>Gross Alpha</u>							4 E+00 ± 3	E+00 U 4		
<u>Gross Beta</u>							-10 E+00 ± 5	E+00 U 4		
<u>Beta Emitters</u>										
Strontium - 90	2.9 E+01 ± 0.6 E+01	4	4.4 E+00 ± 0.5 E+00	4	-2.2E+00 ± 0.5 E+00	U 4			1 E+00 ± 2	E+00 U 4
<u>Gamma Emitters</u>	ND	U 4			ND	U 4	ND	U 4	ND	U 4

- a. The DOF column contains any data qualifier flags.
b. The ASL column contains the analytical support level.

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Table H-5. (continued).

AREA	TSF	TSF	TSF	TSF	TSF
LOCATION	TSFAG 7	TSFAG 7	TSFAG 7	TSFAG 7	TSFAG 7
TYPE OF LOCATION	EXISTING WELL	EXISTING WELL	EXISTING WELL	EXISTING WELL	EXISTING WELL
SAMPLE NUMBER	TSF2505 D A	TSF2506 D A	TSF2507 D A	TSF2508 D A	TSF2509A D A
MEDIA	WATER Q S	WATER Q S	WATER Q S	WATER Q S	WATER Q S
UNITS	pCi/L F L	pCi/L F L	pCi/L F L	pCi/L F L	pCi/L F L
Gross Alpha	2.3 E+01 ± 0.7 E+01 4		2 E+02 ± 2 E+02 U 4		7 E+00 ± 2 E+00 4
Gross Beta	2.6 E+01 ± 0.8 E+01 4		7 E+01 ± 4 E+01 U 4		3.5 E+01 ± 0.7 E+01 4
Beta Emitters					
Strontium - 90		6.4 E+00 ± 0.7 E+00 4		2.1 E+00 ± 0.3 E+00 4	
Gamma Emitters	ND U 4	ND U 4			

a. The DOF column contains any data qualifier flags.

b. The ASL column contains the analytical support level.

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Table H-5. (continued).

AREA	TSF	TSF	TSF	TSF	TSF
LOCATION	TSFAG 7	TSFAG 7	TSFAG 7	TSFAG 7	TSFAG 5
TYPE OF LOCATION	EXISTING WELL	EXISTING WELL	EXISTING WELL	EXISTING WELL	EXISTING WELL
SAMPLE NUMBER	TSF2510 D A	TSF2511 D A	TSF2512 D A	TSF2513 D A	TSF2601 D A
MEDIA	WATER Q S	WATER Q S	WATER Q S	WATER Q S	WATER Q S
UNITS	pCi/L F L	pCi/L F L	pCi/L F L	pCi/L F L	pCi/L F L
<u>Gross Alpha</u>		1.0 E+01 ± 0.3 E+01 4		4 E+00 ± 2 E+00 U 4	
<u>Gross Beta</u>		5 E+00 ± 5 E+00 U 4		1.2 E+01 ± 0.3 E+01 4	
<u>Beta Emitters</u>					
Strontium - 90	-3.1E+00 ± 0.6 E+00 U 4		4.1 E+00 ± 0.5 E+00 4		1.36E+02 ± 0.13E+02 4
<u>Gamma Emitters</u>					ND U 4

- a. The DOF column contains any data qualifier flags.
b. The ASL column contains the analytical support level.

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Table H-5. (continued).

AREA	TSF	TSF	TSF	TSF	TSF
LOCATION	TSFAG 5	TSFAG 5	TSFAG 5	TSFAG 5	TSFAG 5
TYPE OF LOCATION	EXISTING WELL	EXISTING WELL	EXISTING WELL	EXISTING WELL	EXISTING WELL
SAMPLE NUMBER	TSF2601 D A	TSF2602 D A	TSF2603 D A	TSF2604 D A	TSF2605 D A
MEDIA	SLUDGE Q S	WATER Q S	WATER Q S	WATER Q S	WATER Q S
UNITS	pCi/g F L	pCi/L F L	pCi/L F L	pCi/L F L	pCi/L F L
<u>Gross Alpha</u>			7 E+00 ± 3 E+00 4		1.7 E+01 ± 0.4 E+01 4
<u>Gross Beta</u>			0 E+00 ± 5 E+00 U 4		9 E+00 ± 6 E+00 U 4
<u>Beta Emitters</u>					
Strontium - 90	1.0E+01 ± 0.1E+01 4	-2.5E+00 ± 1.4 E+00 U 4		-6.6E+00 ± 1.0 E+00 U 4	
<u>Gamma Emitters</u>		ND U 4	ND U 4	ND U 4	ND U 4

- a. The DOF column contains any data qualifier flags.
b. The ASL column contains the analytical support level.

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Table H-5. (continued).

AREA	TSF	TSF	TSF	TSF	TSF
LOCATION	TSFAG 5	TSFAG 5	TSFAG 5	TSFAG 5	TSFAG 7
TYPE OF LOCATION	EXISTING WELL	EXISTING WELL	EXISTING WELL	EXISTING WELL	EXISTING WELL
SAMPLE NUMBER	TSF2606 D A	TSF2607 D A	TSF2608 D A	TSF2609 D A	TSF2610 D A
MEDIA	WATER Q S	WATER Q S	WATER Q S	WATER Q S	WATER Q S
UNITS	pCi/L F L	pCi/L F L	pCi/L F L	pCi/L F L	pCi/L F L
<u>Gross Alpha</u>		1.2 E+02 ± 0.4 E+02 4		1.9 E+01 ± 0.5 E+01 4	
<u>Gross Beta</u>		3.8 E+01 ± 1.0 E+01 4		1.2 E+02 ± 0.2 E+02 4	
<u>Beta Emitters</u>					
Strontium - 90	6.5 E+00 ± 0.7 E+00 4		2.0 E+00 ± 0.3 E+00 4		5.2 E+00 ± 0.7 E+00 4
<u>Gamma Emitters</u>	ND U 4				

a. The DQF column contains any data qualifier flags.

b. The ASL column contains the analytical support level.

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Table H-5. (continued).

AREA	TSF	TSF	TSF	TSF	TSF
LOCATION	TSFAG 7	TSFAG 7	TSFAG 7	TSFAG 7	TSFAG 5
TYPE OF LOCATION	EXISTING WELL	EXISTING WELL	EXISTING WELL	REPLICATE	REPLICATE
SAMPLE NUMBER	TSF2611 D A	TSF2612 D A	TSF2613 D A	TSF2701 D A	TSF2801 D A
MEDIA	WATER Q S	WATER Q S	WATER Q S	WATER Q S	WATER Q S
UNITS	pCi/L F L	pCi/L F L	pCi/L F L	pCi/L F L	pCi/L F L
<u>Gross Alpha</u>	1.3 E+01 ± 0.4 E+01 4		3.2 E+00 ± 1.9 E+00 U 4	2.2 E+01 ± 0.5 E+01 4 4	E+00 ± 2 E+00 U 4
<u>Gross Beta</u>	3 E+00 ± 5 E+00 U 4		1.2 E+01 ± 0.3 E+01 4	8 E+00 ± 5 E+00 U 4	5 E+00 ± 5 E+00 U 4
<u>Beta Emitters</u>					
Strontium - 90		-3 E-01 ± 4 E-01 U 4		-6.2E+00 ± 0.7 E+00 U 4	-2.5E+00 ± 0.5 E+00 U 4
<u>Gamma Emitters</u>				ND U 4	ND U 4

- a. The DOF column contains any data qualifier flags.
b. The ASL column contains the analytical support level.

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Table H-5. (continued).

AREA	TSF
LOCATION	QC
TYPE OF LOCATION	RINSATE
SAMPLE NUMBER	TSF2901 D A
MEDIA	WATER Q S
UNITS	pCi/L F L
<u>Gross Alpha</u>	1.2 E+00 ± 1.6 E+00 U 4
<u>Gross Beta</u>	2 E+00 ± 4 E+00 U 4
<u>Beta Emitters</u>	
Strontium - 90	-1.2E+00 ± 0.6 E+00 U 4
<u>Gamma Emitters</u>	ND U 4

- a. The DQF column contains any data qualifier flags.
b. The ASL column contains the analytical support level.

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Table H-6. TSF-07 perched water wells-volatile organic data.

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF TSFAG 7 EXISTING WELL TSF2502C WATER ug/L 926	TSF TSFAG 7 EXISTING WELL TSF2503C WATER ug/L 124	TSF TSFAG 7 EXISTING WELL TSF2504C WATER ug/L 238	TSF TSFAG 7 EXISTING WELL TSF2505C WATER ug/L 292	TSF TSFAG 7 EXISTING WELL TSF2506C WATER ug/L 403	TSF TSFAG 7 EXISTING WELL TSF2507C WATER ug/L 05054	TSF TSFAG 5 EXISTING WELL TSF2602C WATER ug/L 926
TARGET COMPOUNDS							
Chloromethane	---	10 UJ	---	---	---	---	---
Bromomethane	---	10 UJ	---	---	---	---	---
Vinyl Chloride	---	10 UJ	---	---	---	---	---
Chloroethane	---	10 UJ	---	---	---	---	---
Methylene Chloride	7 UJ	5 UJ	---	---	---	---	---
Acetone	10 R	10 UJ	10 UJ	---	---	---	10 U
Carbon Disulfide	---	5 UJ	---	---	---	---	---
1,1-Dichloroethene	---	5 UJ	---	---	---	---	---
1,1-Dichloroethane	---	5 UJ	---	---	---	---	---
1,2-Dichloroethene (total)	---	5 UJ	---	---	---	---	---
cis-1,2-Dichloroethene	---	5 UJ	---	---	---	---	---
Chloroform	---	5 UJ	---	---	---	---	---
1,2-Dichloroethane	---	5 UJ	5 UJ	---	---	---	---
2-Butanone	10 R	10 R	10 R	10 R	10 R	10 R	10 R
1,1,1-Trichloroethane	---	5 UJ	5 R	---	---	---	---
Carbon Tetrachloride	---	5 UJ	5 R	---	---	---	---
Vinyl Acetate	---	10 R	10 R	10 R	0 R	0 R	---
Bromodichloromethane	---	5 UJ	---	---	---	---	---
1,2-Dichloropropane	---	5 UJ	---	---	---	---	---
cis-1,3-Dichloropropene	---	5 UJ	---	---	---	---	---
Trichloroethene	---	5 UJ	---	---	---	---	---
Dibromochloromethane	---	5 UJ	---	---	---	---	---
1,1,2-Trichloroethane	---	5 UJ	---	---	---	---	---
Benzene	---	5 UJ	5 UJ	5 UJ	---	---	---
Trans-1,3-Dichloropropene	---	5 UJ	---	---	---	---	---
Bromoform	5 UJ	5 UJ	---	---	---	---	5 UJ
4-Methyl-2-Pentanone	---	10 UJ	10 UJ	10 UJ	---	---	---
2-Hexanone	10 R	10 R	10 R	10 R	---	---	10 R
Tetrachloroethene	---	5 UJ	---	---	---	---	---
1,1,2,2-Tetrachloroethane	---	5 UJ	---	---	---	---	---
Toluene	---	5 UJ	---	---	---	---	---
Chlorobenzene	---	5 UJ	---	---	---	---	---
Ethylbenzene	---	5 UJ	---	---	---	---	---
Styrene	---	5 UJ	---	---	---	---	---
m+p-Xylene	5 UJ	5 UJ	---	---	---	---	5 UJ
o-Xylene	---	---	---	---	---	---	---
Dilution Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	8(14)d	22(14)d*	12(14)d	5(14)d	5(14)d	8(14)d	8(14)d
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Table H-6. (continued).

AREA LOCATION TYPE OF LOCATION SAMPLE NUMBER MEDIA UNITS SDG NUMBER	TSF TSFAG 5 EXISTING WELL TSF2603C WATER ug/L 124	TSF TSFAG 5 EXISTING WELL TSF2604C WATER ug/L 238	TSF TSFAG 5 EXISTING WELL TSF2605C WATER ug/L 292	TSF TSFAG 5 EXISTING WELL TSF2606C WATER ug/L 403	TSF TSFAG 5 EXISTING WELL TSF2607C WATER ug/L 05054
TARGET COMPOUNDS					
Chloromethane	10 UJ	---	---	---	---
Bromomethane	10 UJ	---	---	---	---
Vinyl Chloride	10 UJ	---	---	---	---
Chloroethane	10 UJ	---	---	---	---
Methylene Chloride	5 UJ	---	---	---	---
Acetone	10 UJ	10 UJ	---	---	---
Carbon Disulfide	5 UJ	---	---	---	---
1,1-Dichloroethene	5 UJ	---	---	---	---
1,1-Dichloroethane	5 UJ	---	---	---	---
1,2-Dichloroethene_(total)	5 UJ	---	---	---	---
cis,1,2-Dichloroethene	---	---	---	---	---
Chloroform	5 UJ	---	---	---	---
1,2-Dichloroethane	5 UJ	5 UJ	---	---	---
2-Butanone	10 R	10 R	10 R	10 R	10 R
1,1,1-Trichloroethane	5 UJ	5 R	---	---	---
Carbon Tetrachloride	5 UJ	5 R	---	---	---
Vinyl Acetate	10 R	10 R	10 R	0 R	0 R
Bromodichloromethane	5 UJ	---	---	---	---
1,2-Dichloropropane	5 UJ	---	---	---	---
cis-1,3-Dichloropropene	5 UJ	---	---	---	---
Trichloroethene	5 UJ	---	---	---	---
Dibromochloromethane	5 UJ	---	---	---	---
1,1,2-Trichloroethane	5 UJ	---	---	---	---
Benzene	5 UJ	5 UJ	5 UJ	---	---
Trans-1,3-Dichloropropene	5 UJ	---	---	---	---
Bromoform	5 UJ	---	---	---	---
4-Methyl-2-Pentanone	10 UJ	10 UJ	10 UJ	---	---
2-Hexanone	10 R	10 R	10 R	---	---
Tetrachloroethene	5 UJ	---	---	---	---
1,1,2,2-Tetrachloroethane	5 UJ	---	---	---	---
Toluene	5 UJ	---	---	---	---
Chlorobenzene	5 UJ	---	---	---	---
Ethylbenzene	5 UJ	---	---	---	---
Styrene	5 UJ	---	---	---	---
m+p-Xylene	5 UJ	---	---	---	---
o-Xylene	---	---	---	---	---
Dilution Factor	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	22(14)d*	12(14)d	5(14)d	5(14)d	8(14)d

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Table H-7. TSF-07 perched water wells-volatile organic replicate data.

AREA	TSF	TSF
LOCATION	TSFAG 7	TSFAG 5
TYPE OF LOCATION	REPLICATE	REPLICATE
SAMPLE NUMBER	TSF2701C	TSF2801C
MEDIA	WATER	WATER
UNITS	ug/L	ug/L
SDG NUMBER	403	403
<u>TARGET COMPOUNDS</u>		
2-Butanone	10 R	10 R
Vinyl Acetate	0 R	0 R
Dilution Factor	1.000	1.000
Total (Allowed) Hold Time	5(14)d	5(14)d
10-19-92		

Table H-8. TSF-07 perched water wells-volatile organic rinsate data.

AREA	TSF
LOCATION	QC
TYPE OF LOCATION	RINSATE
SAMPLE NUMBER	TSF2901C
MEDIA	WATER
UNITS	ug/L
SDG NUMBER	403
TARGET COMPOUNDS	
2-Butanone	10 R
Vinyl Acetate	0 R
Toluene	0.4 J
Dilution Factor	1.000
Total (Allowed) Hold Time	5(14)d
10-19-92	

Table H-9. TSF-07 perched water wells-volatile organic trip blank data.

AREA	TSF	TSF	TSF	TSF	TSF	TSF
LOCATION	QC	QC	QC	QC	QC	QC
TYPE OF LOCATION	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK
SAMPLE NUMBER	TSF3002C	TSF3003C	TSF3004C	TSF3006C	TSF3007C	TSF3008C
MEDIA	WATER	WATER	WATER	WATER	WATER	WATER
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
SDG NUMBER	926	124	238	292	403	05054
TARGET COMPOUNDS						
Chloromethane	---	10 UJ	---	---	---	---
Bromomethane	---	10 UJ	---	---	---	---
Vinyl Chloride	---	10 UJ	---	---	---	---
Chloroethane	---	10 UJ	---	---	---	---
Methylene Chloride	---	5 UJ	---	---	---	---
Acetone	10 R	4 J	---	---	---	---
Carbon Disulfide	---	5 UJ	---	---	---	---
1,1-Dichloroethene	---	5 UJ	---	---	---	---
1,1-Dichloroethane	---	5 UJ	---	---	---	---
1,2-Dichloroethene_(total)	---	5 UJ	---	---	---	---
cis-1,2-Dichloroethene	---	5 UJ	---	---	---	---
Chloroform	---	6 J	---	4 J	4 J	11
1,2-Dichloroethane	---	5 UJ	5 UJ	---	---	---
2-Butanone	10 R	3 J	10 R	10 R	10 R	10 R
1,1,1-Trichloroethane	---	5 UJ	5 R	---	---	---
Carbon Tetrachloride	---	5 UJ	5 R	---	---	---
Vinyl Acetate	---	10 R	10 R	10 R	0	0
Bromodichloromethane	---	5 UJ	---	---	---	---
1,2-Dichloropropane	---	5 UJ	---	---	---	---
cis-1,3-Dichloropropene	---	5 UJ	---	---	---	---
Trichloroethene	---	5 UJ	---	---	---	---
Dibromochloromethane	---	5 UJ	---	---	---	---
1,1,2-Trichloroethane	---	5 UJ	---	---	---	---
Benzene	---	5 UJ	5 R	5 UJ	---	---
Trans-1,3-Dichloropropene	---	5 UJ	5 UJ	---	---	---
Bromoform	5 UJ	5 UJ	---	---	---	---
4-Methyl-2-Pentanone	---	10 UJ	10 UJ	10 UJ	---	---
2-Hexanone	10 R	10 R	10 R	10 UR	---	---
Tetrachloroethene	---	5 UJ	---	---	---	---
1,1,2,2-Tetrachloroethane	---	5 UJ	---	---	---	---
Toluene	---	5 UJ	---	---	---	---
Chlorobenzene	---	5 UJ	---	---	---	---
Ethylbenzene	---	5 UJ	---	---	---	---
Styrene	---	5 UJ	---	---	---	---
m+p-Xylenes	5 UJ	5 UJ	---	---	---	---
o-Xylene	---	5 UJ	---	---	---	---
Dilution Factor	1.000	1.000	1.000	1.000	1.000	1.000
Total (Allowed) Hold Time	8(14)d	22(14)d*	12(14)d	5(14)d	5(14)d	8(14)d
10-19-92						

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Table H-10. TSF-07 perched water wells-volatile Appendix IX organic data.

AREA	TSF	TSF
LOCATION	TSFAG 7	TSFAG 5
TYPE OF LOCATION	EXISTING WELL	EXISTING WELL
SAMPLE NUMBER	TSF2501C	TSF2601C
MEDIA	WATER	WATER
UNITS	ug/L	ug/L
SDG NUMBER	TSF2501C	TSF2501C
<u>TARGET COMPOUNDS</u>		
Dichlorodifluoromethane	5 R	5 R
Iodomethane	5 R	5 R
Acrolein	5 R	5 R
Acrylonitrile	5 R	5 R
Trichlorofluoromethane	5 R	5 R
Propionitrile	5 R	5 R
Allyl chloride	5 R	5 R
Diethyl ether	5 R	5 R
Methacrylonitrile	5 R	5 R
Dibromomethane	5 R	5 R
Isobutyl alcohol	10 R	10 R
1,2-Dibromoethane	5 R	5 R
1,1,1,2-Tetrachloroethane	5 R	5 R
trans-1,4-Dichloro-2-butene	5 R	5 R
1,3-Dichlorobenzene	10 R	10 R
1,2,3-Trichloropropane	5 R	5 R
Ethyl methacrylate	5 R	5 R
1,4-Dichlorobenzene	10 R	10 R
1,2-Dichlorobenzene	10 R	10 R
1,2-Dibromo-3-chloropropane	5 R	5 R
Acetonitrile	10 R	10 R
Acrylamide	10 R	10 R
1,4-Dioxane	10 R	10 R
Methyl methacrylate	5 R	5 R
Dilution Factor	1.000	1.000
Total (Allowed) Hold Time	4(14)d	4(14)d

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Table H-11. TSF-07 perched water wells-volatile Appendix IX organic trip blank data.

AREA	TSF
LOCATION	QC
TYPE OF LOCATION	TRIP BLANK
SAMPLE NUMBER	TSF3001C
MEDIA	WATER
UNITS	ug/L
SDG NUMBER	TSF2501C
TARGET COMPOUNDS	
Methylene Chloride	1 J
Chloroform	2 J
Dichlorodifluoromethane	5 R
Iodomethane	5 R
Acrolein	5 R
Acrylonitrile	5 R
Trichlorofluoromethane	5 R
Propionitrile	5 R
Allyl chloride	5 R
Diethyl ether	5 R
Methacrylonitrile	5 R
Dibromomethane	5 R
Isobutyl alcohol	10 R
1,2-Dibromoethane	5 R
1,1,1,2-Tetrachloroethane	5 R
trans-1,4-Dichloro-2-butene	5 R
1,3-Dichlorobenzene	10 R
1,2,3-Trichloropropane	5 R
Ethyl methacrylate	5 R
1,4-Dichlorobenzene	10 R
1,2-Dichlorobenzene	10 R
1,2-Dibromo-3-chloropropane	5 R
Acetonitrile	10 R
Acrylamide	10 R
1,4-Dioxane	10 R
Methyl methacrylate	5 R
Dilution Factor	1.000
Total (Allowed) Hold Time	3(14)d
10-19-92	

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