FOCUSED SITE INSPECTION PRIORITIZATION
SITE EVALUATION REPORT

7.2
9/28/95

MACON COUNTY LANDFILL #2
HILL ROAD, RURAL ROUTE #8, BOX 115
DECATUR, ILLINOIS

CERCLIS ID NO.: ILD980498125

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
SITE ASSESSMENT SECTION
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1. INTRODUCTION

The Ecology and Environment, Inc., (E & E) Technical Assistance Team (TAT) was assigned by the United States Environmental Protection Agency (U.S. EPA) under Contract No. 68-W0-0037, Technical Direction Document (TDD) T05-9503-202, to evaluate the Macon County Landfill #2 site located in Decatur, Macon County, Illinois. The Macon County Landfill #2 site is part of the Macon County Landfill. E & E performed Focused Site Inspection Prioritization (FSIP) activities for the site to determine whether or to what extent they pose a threat to human health and the environment. This FSIP report presents the results of E & E's evaluation and summarizes site conditions and targets pertinent to the migration and exposure pathways associated with the site. Information was obtained from a telephone interview with the site president, Glen Lynch, a Site Inspection (SI) report (Illinois Environmental Protection Agency [IEPA] 1990), a Screening Site Inspection (SSI) report (E & E 1990), personal communications, and the U.S. EPA site files.

This report is organized into seven sections, including this introduction. Section 2 describes the site and provides a brief site history. Section 3 provides information about previous investigations conducted at the site. Section 4 provides a summary of the FSIP site reconnaissance and field sampling. Section 5 provides information about the four migration and exposure pathways (groundwater migration, surface water migration, soil exposure, and air migration). Section 6 is a summary of the FSIP. References used in the preparation of this report are listed in Section 7.

2. SITE DESCRIPTION AND HISTORY

The Macon County Landfill (MCL) is located on Hill Road, Rural Route No. 8, Box 115, southwest of Decatur, Macon County, Illinois (SW1/4 sec. 24, T.16 N., R.1 E.). The coordinates for the site are latitude 39°49'50" North and longitude 39°03'00" West (IEPA 1985). The Macon County Landfill #2 (MCL #2) site, the area being investigated in this FSIP report, is one section of the MCL. The site is currently inactive. The eastern side of the MCL site is bordered by U.S. Highway Route 51. The northern side of the site is bordered by Hill Road, which runs east-west. Approximately 6 acres of agricultural land lie north of the landfill. The Sangamon River lies approximately 0.25 mile south of the site. Two other sections of the MCL border the site to the east and west. The west side of the MCL is bordered by residences. The MCL #2 site is located approximately 1.25 miles southwest of Decatur, which has a population of approximately 98,081 persons (E & E 1990). Land use in the vicinity of the site is rural and agricultural. The site location is shown on Figure 2-1.

The MCL property, including the MCL #2 site, was originally privately owned. The site and adjoining sections of the Macon County Landfill property were purchased by a group of approximately 36 shareholders for the MCL. The MCL property encompasses over 200 acres of land, 100 acres of which have been used for landfilling operations. The MCL property has been divided into four 25-acre landfill sections designated as MCL #1, MCL #2, MCL #3, and MCL #4. Currently, landfill sections MCL #1, MCL #2, MCL #3 are inactive, and MCL #4 is active. Approximately 25 of the remaining 100 acres may potentially become a landfill area; the other 75 acres currently provide a buffer zone between the landfill and the Sangamon River and residents to the west of the MCL.

Site features are shown in Figure 2-2. The Sangamon River is the closest water body and is located approximately 0.25 mile south of the site (E & E 1990). The MCL lies on a 100-year floodplain of the Sangamon River (IEPA 1985; Lynch 1995).

In 1977, MCL was issued a permit to develop and operate the MCL #2 site, as an extension to the original MCL #1 section. A supplemental permit was issued by IEPA in 1984 to operate the MCL #2 site. The landfill operates by pit fill methods, using natural and engineered clay liners; however, it is unclear if this method was used and a clay liner exists at all landfill sections (including the MCL #2 site). Clay-rich soil is excavated from areas south of the landfills and used as cover material. Due to previous leachate problems at the MCL facility, a leachate collection and containment system was completed by 1989 at the site consisting of large plastic pipes set in a gravel base covered with clay. The pipes extends up out of the surface of the landfill approximately 5 to 6 feet. Leachate is collected in this pipe, and is occasionally pumped out and disposed of back into the landfill. Four of these leachate pipes are located on the MCL #2 site (E & E 1990).

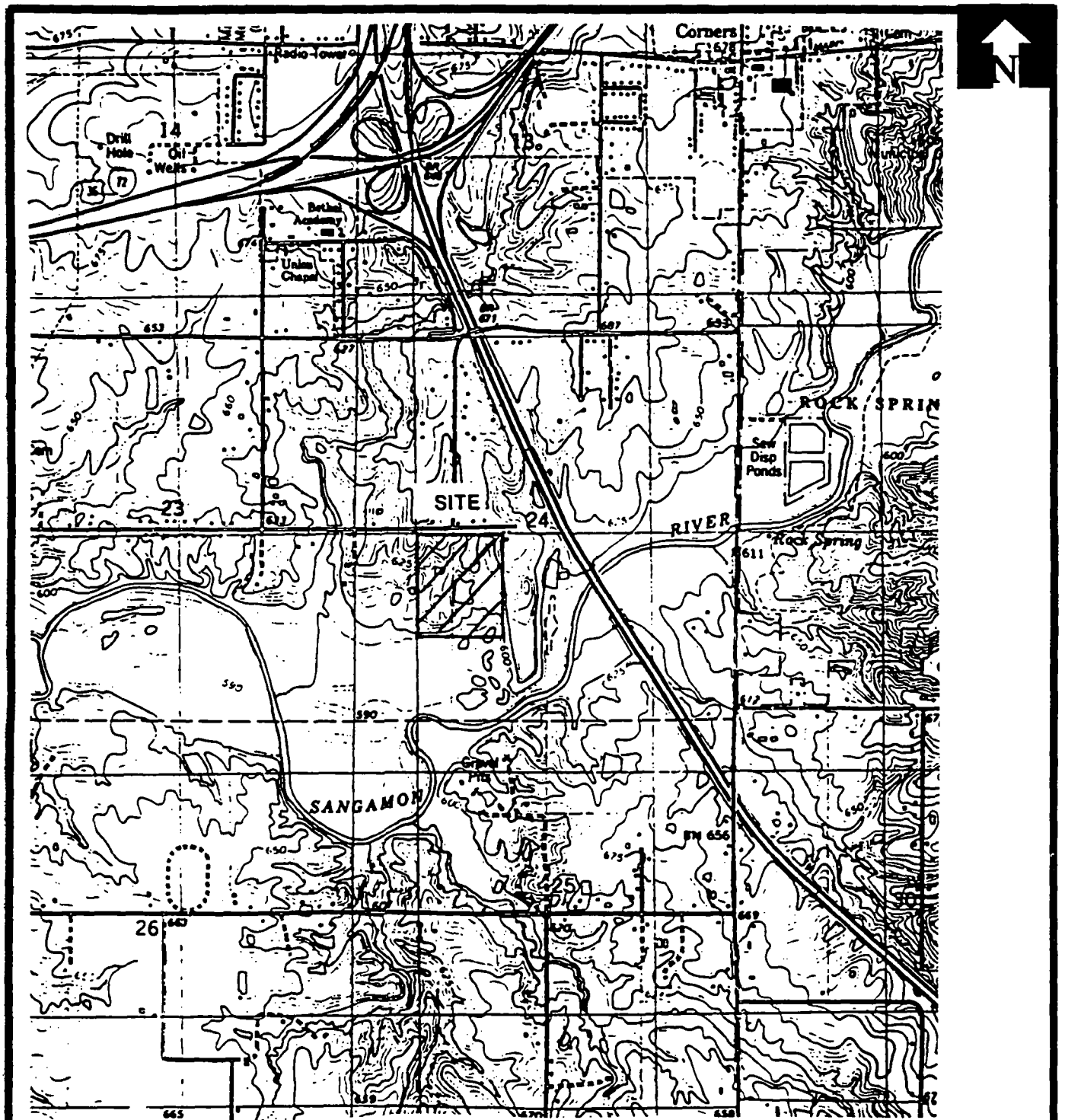
In the past, the MCL facility has accepted the following special wastes: aluminum, publicly owned treatment wastes (POTW) wastes; oily wastes; acids, caustics, metals, polychlorinated biphenyls (PCBs), and municipal and industrial wastes such as wash ink, solvent wastes, waste core sand, used paint filters, solid paint wastes, and foundry sand (E & E 1990; IEPA 1990).

In approximately 1983, owners of MCL began installation of a series of monitoring wells as part of a groundwater monitoring program to comply with development permits requirements. Approximately 25 monitoring wells have been installed around the perimeter of the MCL property. Three monitoring wells are located on the MCL #2 site. On-going quarterly groundwater monitoring is performed by Andrews Environmental Engineering, Inc., of Springfield, Illinois (E & E 1990).

A storm sewer discharge pipe, located at the southwest corner of the MCL #2 site, was installed by the site owners to drain the area north of the site under the landfill as an alternative to an open drainageway through the landfill (E & E 1990).

The MCL #2 site is located on property that was originally owned by Lewis Shall Construction and was purchased on February 24, 1970 by MCL. Shall used his property mainly for storage of his trucks. Only 25 acres of this 40-acre property were used because 15 acres lie upon the Sangamon River floodplain. MCL #2 began operation in 1979. The MCL

#2 area is now closed and covered with 3 feet of topsoil. The date of closure is unknown, but occurred sometime after the early 1980s (Lynch 1995; IEPA 1985).



Quadrangle Location

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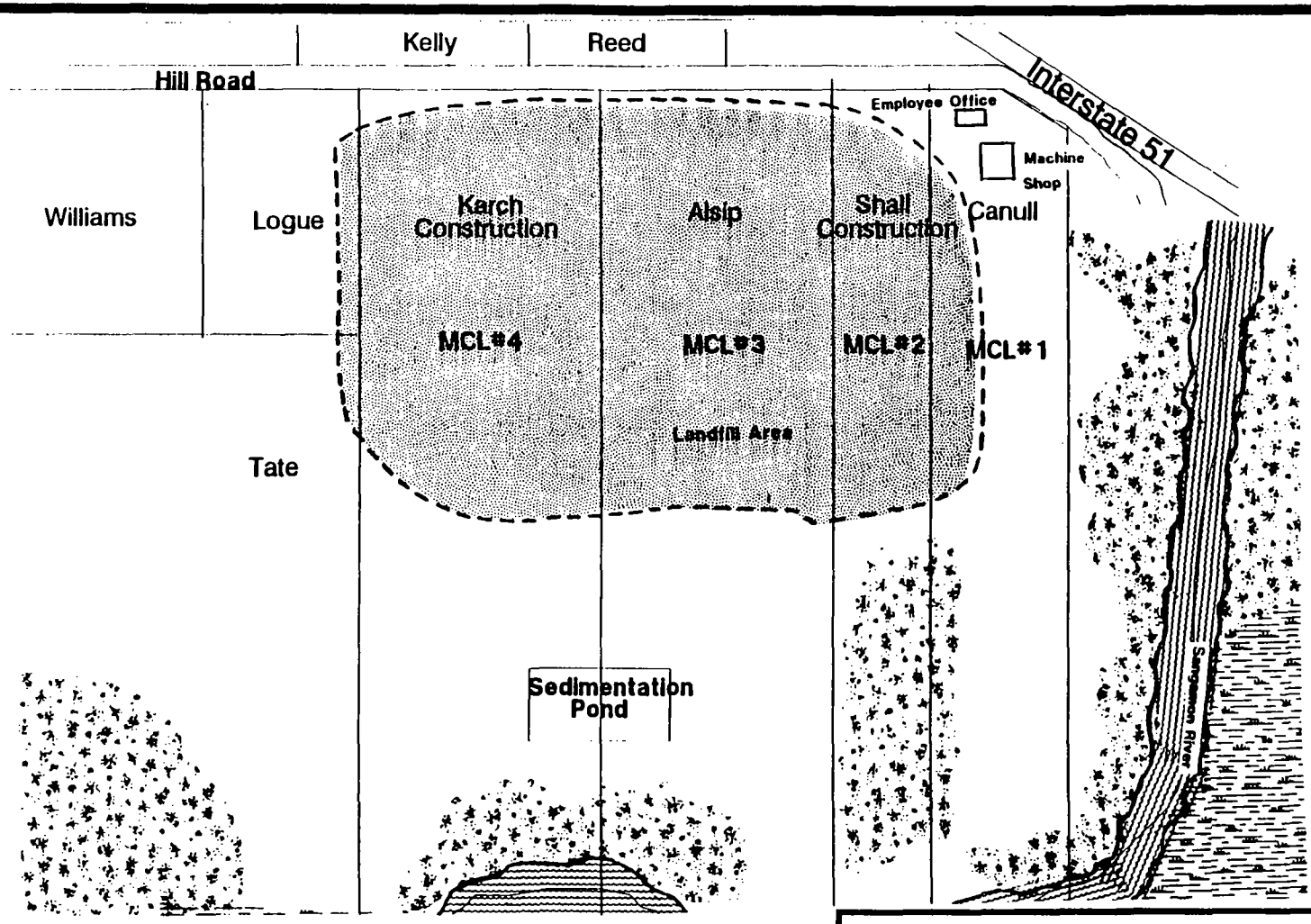
TITLE	Site Location Map	FIGURE #	2-1
SITE	Macon County Landfill #2 site	TDD#	T05-9501-202
CITY Decatur	STATE Illinois	SCALE	1:24,000
SOURCE	USGS Maps, 7.5 Minute Series - Decatur, Il Quadrangle	DATE	1972
		REVISED	1995



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TITLE: Site Features Map	FIGURE #: 2-2
SITE: Macon County Landfill #2 site	TDD#: T05-9503-202
CITY: Decatur / STATE: Illinois	SCALE: Not to Scale
SOURCE: Ecology and Environment, Inc.	DATE: 1995 / REVISED: ----

3. PREVIOUS INVESTIGATIONS

According to the E & E FIT SSI, the circumstances of site discovery are unknown. State file information indicates that inspections of the MCL #2 site began on April 18, 1979, with an investigation performed by IEPA (Taylor 1979). The purpose of the investigation was to determine the site's suitability for the continued acceptance of special wastes. The MCL #2 site was observed to be in violation of RCRA permit conditions at the time of the investigation. A Preliminary Assessment (PA) report completed on August 8, 1980 by IEPA suggested that since the 1979 inspection, the MCL#2 site had been in compliance with its general refuse and special waste permits (IEPA 1985). The site had been accepting aluminum and POTW wastes; oily wastes; acids, caustics, metals, PCBs, flash, municipal, and industrial wastes (E & E 1990).

IEPA files reference at least 33 site investigations that were conducted by IEPA at the MCL #2 site between 1978 and 1983 (E & E 1995). The site was placed on the U.S. EPA Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) list in December 1983. Inspections in 1980 included observations of leachate seeps and ponded areas and uncovered refuse (Sause 1980). An IEPA inspection on January 19, 1984, indicated the approval of an on-site groundwater monitoring program. The site was further evaluated by IEPA in the form of a PA report that was dated November 21, 1985. The report was submitted to U.S. EPA.

On September 19, 1989, IEPA inspected the MCL #2 site. The inspection noted violations for leachate problems, litter, and inadequate cover depth. A berm was constructed at the south boundary to keep flood waters from the Sangamon River from inundating the MCL#2 site. A trench was dug on the west boundary of the MCL #2 site to collect runoff and leachate (IEPA 1989). Four wells were to be sampled: one north of the site (upgradient

sample), one west of the site, and two south along the south border of the site. Sampling locations, analytical data, or dates of sampling for this sampling effort were not provided in the IEPA site file.

From December 4 through 6, 1989, the E & E FIT conducted an SSI of the MCL #2 site. Because the laboratory that performed the inorganic analysis of the samples was dropped from the U.S. EPA Contract Laboratory Program (CLP) for invalid analysis of sample, an additional visit to the site for resampling was conducted on April 24, 1990 (E & E 1990). The eight soil/sediment samples designated S1 through S8 were collected during E & E FIT's original site inspection of the MCL #2 site. The eight soil/sediment samples designated S1-A through S8-A were collected during E & E FIT's resampling visit to the site. Sediment sample S1 was collected off site from a location where stained sediment was observed near the exit of the storm sewer drain discharge pipe at the southwest corner of the MCL #2 site. Sediment sample S1-A was collected near this location during the resampling visit, approximately 6 feet north of the original location.

Soil sample S2 was collected off site from a low-lying area near the southeast corner of the site. Surface water runoff and possible leachate seepage could be expected to drain away from the site through this low-lying area. Soil sample S2-A was also collected in this low-lying area, approximately 15 feet west of the original sampling location, because of evidence that heavy machinery had traveled over the original location and disturbed the ground surface during the time between the two sampling dates.

Soil sample S3 and S3-A were collected as composite samples from several locations where leachate seepage had been observed on the southeast side of the site.

Soil samples S4 and S4-A were collected from an overgrown grassy area north of the MCL office. The samples were collected as potential background soil samples to determine the representative chemical content of the soil in the vicinity of the site.

Soil sample S5 was collected alongside the storm sewer drain cover at the northwest corner of the site. A portion of the surface water runoff from the north end of the site is drained through this pipe. Sample S5-A was also collected at this location as a sediment sample because at the time of the resampling visit, water was pooled in the area.

Soil sample S6 was collected off site from a low-lying area overgrown with a small patch of cattails, near the south-central boundary of the site. A portion of the surface water runoff from the MCL#2 site drains through this area. Sediment sample S6-A was collected

approximately 4 to 6 feet south of the original sampling location because of water that had pooled over the original location at the time of resampling.

Soil sample S7 was collected off site from a ditch east of the former office and machine shop. This ditch drains surface water runoff from the eastern boundary of the MCL#2 site and from the western boundary of MCL#1. At the time of the resampling visit, the ditch east of the buildings had been filled in. Therefore, the corresponding soil sample S7-A was collected from a location approximately 10 to 15 feet southwest of the original location, alongside the ditch fill material.

Soil sample S8 and S8-A were collected on the east side of the MCL #2 site along a drive and drainageway for surface water runoff at the base of the landfill.

Monitoring well samples were analyzed for TCL compounds and TAL analytes, and concentrations detected above background included 1,2-dichloroethene at 200 μg/L, vinyl chloride at 10 μg/L, tetrachloroethene (PCE) at 3 μg/L, trichloroethene (TCE) at 14 μg/L, 1,4-dichlorobenzene at 1.1 μg/L, phenol at 63 μg/L, 4-methylphenol at 180 μg/L, mercury at 0.2J μg/L, acetone at 1,600 μg/L, 2-butanone (MEK) at 8,500 μg/L, and toluene at 2,000 μg/L.

TCL compounds and TAL analytes detected in on-site soil samples were phenanthrene at 1,300 milligrams per kilogram (μg/kg), fluoranthene at 2,100 μg/kg, pyrene at 1,400 μg/kg, benzo(b)fluoranthene at 1,000 μg/kg, acetone at 130 μg/kg, 2-butanone at 120 mg/kg, and antimony at 21 mg/kg. Mercury was detected at 0.16 μg/kg in sample S6-A at a concentration greater than three times the background concentration. Silver was detected in samples S5-A and S6-A at concentrations of 1.5 μg/kg and 1.6 μg/kg, respectively. These concentrations were greater than three times the background sample (E & E 1990).

E & E FIT collected four on-site groundwater monitoring well samples designated MW1 through MW4, collected during E & E FIT 1990 site inspection on April 24, 1990. Two monitoring well samples designated MW2-A and MW4-A were collected during FIT's resampling visit on December 4 through 6, 1990 (E & E 1990). Analytical results of the soil and groundwater sample analyses and the figures showing the sampling locations at the MCL #2 site are provided in Appendix B of this report.

On August 1, 1995, E & E TAT collected three sediment samples and two surface water samples at locations designated in the sampling work plan as part of a FSIP site sampling visit. One set of samples, sediment sample S1 and surface water sample SW1, were

collected approximately 1 mile upstream of the site and were designated as background samples. A complete summary of analytical results is provided in Section 4.3 of this report.

4. SITE RECONNAISSANCE AND SAMPLING

4.1 RECONNAISSANCE OBSERVATIONS

On August 1, 1995, Alix Rauschman and Linda Knorz of E & E TAT conducted FSIP sampling visit of the MCL #2 site and its surroundings. The focus of the site reconnaissance and sampling was to determine whether a release of TAL/TCL chemicals, including mercury and polynuclear aromatic hydrocarbons (PAHs) from the site to the Sangamon River and the wetlands adjacent to the site has occurred. Site observations included the following:

- The landfill areas (MCL#1 through MCL#4) are part of one large landfill (MCL). This can be observed in the photographs presented in Appendix A.

- MCL#1 extends onto the floodplain of the Sangamon River. On top of MCL #1 is a recycling area for general household appliances and tires. The refuse is stockpiled and sent back to manufacturers. MCL #1 is fully covered with vegetation except for an access road that was constructed so wastes and refuse could be transported into other landfill areas. This access road extends onto MCL #3 since MCL #4 is being used for dumping.

- An erosion gully was observed leading from the base of MCL #1 to the Sangamon River. This was the only erosion gully observed.

- MCL#2 and MCL#3 are both covered with vegetation except for the access road from MCL#1. These two areas do not extend to the river floodplain. A stand of trees approximately 100 feet wide is located at the base of these two areas.

- MCL #4 is being used for dumping. A new area, located west of MCL #4, is under construction.

- Offices are located on MCL#1. A gate is located at the main entrance, which is located at MCL#1. A fence is present along Hill Road.

- A driveway that extends down to the Sangamon River is located approximately 0.25 mile west of the main entrance. This road is approximately 0.5 mile long and most likely was the driveway to one of the properties that the MCL owns.

- The Sangamon River is the south border of the property. The river is approximately 50 feet across. The depth could not be determined.

- No runoff streams (except for the one on MCL #1) were observed. No odors, stained soils, or exposed waste (except in the recycling area) were observed.

4.2 SAMPLE COLLECTION AND DESCRIPTION

On August 2, 1995, three sediment samples and two surface water samples from three discrete locations were collected by E & E TAT. The upstream sediment and surface water samples were collected approximately 0.25 mile downstream from the Wyckles Road bridge, which crosses the Sangamon River approximately 1 mile upstream from the MCL. One sediment sample and surface water sample were collected at the confluence of the intermittent stream which drains into the Sangamon River at the MCL#2 site. One sediment sample was collected downgradient at one of the wetlands adjacent to MCL#4. One sediment sample designated as a matrix spike/matrix spike duplicate (MS/MSD) sample and one surface water sample designated as a MS/MSD sample were collected upstream of the site to serve as background samples. Sample duplicates and field blanks were collected approximately 1 to 2 miles downstream of the site.

Samples were analyzed for the full TAL/TCL chemicals under the CLP. A trip blank was prepared and analyzed for volatile organic compounds (VOCs) under the CLP. E & E Standard Operating Procedures for sediment and surface water sampling and other applicable activities were followed. CLP guidance was strictly followed by the sample custodian and the field sampling team.

The samples were collected using a dedicated stainless steel trowel or spoon and stainless steel mixing bowl for each discrete location. The sampling method for collecting the surface water sample can be described as follows: the samples were collected by inserting the sample container into the Sangamon River with the mouth of the container facing upstream.

The surface water sample was collected first because the collection of the sediment sample may change the water chemistry of the samples. Surface water samples were collected first into containers for VOC analyses which were preserved with hydrochloric acid (HCL). Samples were then collected into containers for the BNAs, pesticide/PCB, and metals and cyanide analysis. A trip blank was also collected from this location using a preserved VOC container.

The sampling method for collecting the sediment samples can be described as follows: A stainless steel trowel was used to collect sediment from a depth of 0 to 6 inches below ground surface (BGS) and placed in the stainless steel mixing bowl. Sediment was collected and placed into containers for VOC analysis first, using a stainless steel spoon. Then, using the same spoon, the sediment was homogenized. Sediment samples collected into containers for BNA, pesticide/PCB, and metals and cyanide analysis in that order.

4.3 ANALYTICAL RESULTS

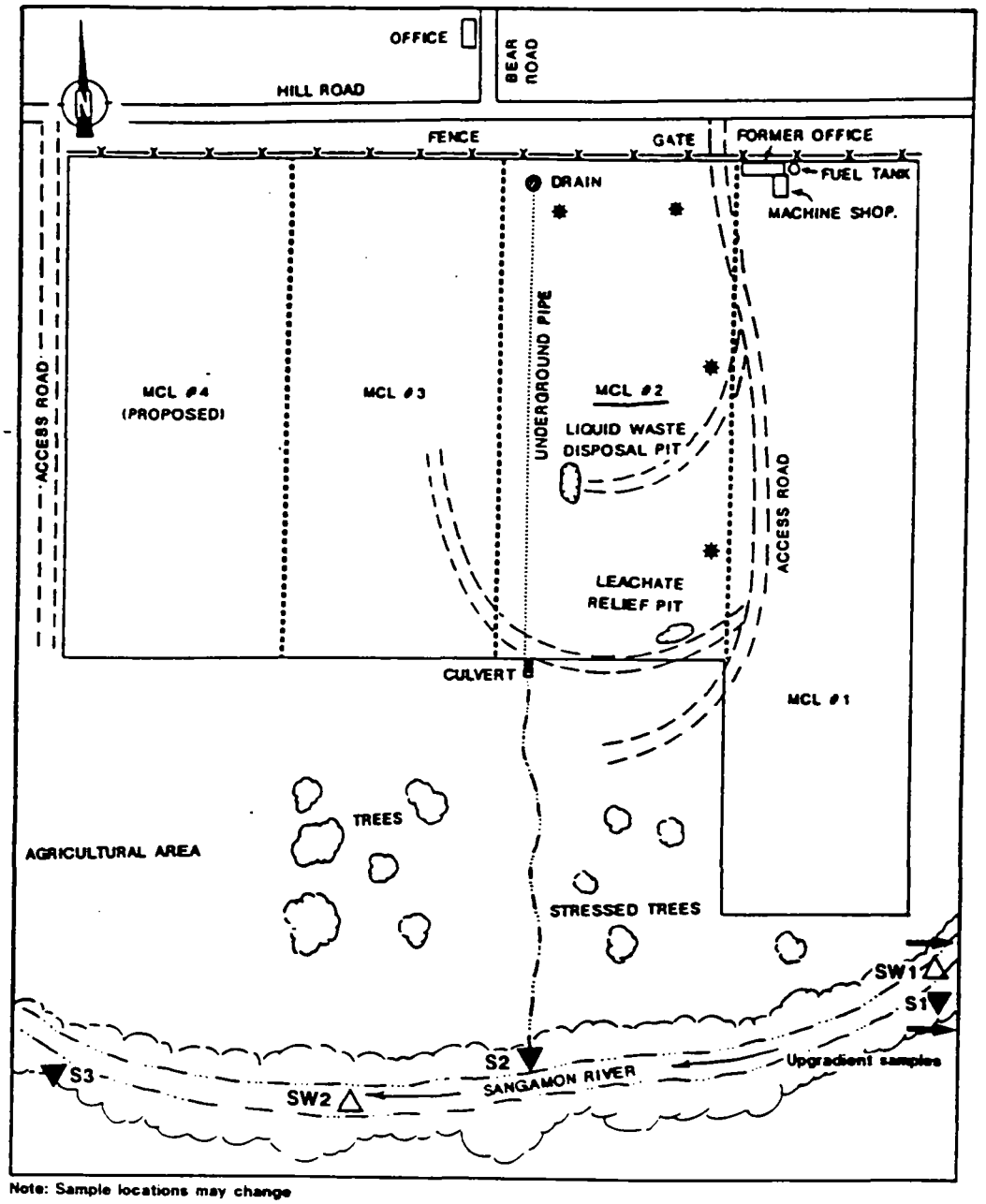
Chemical analysis of the downstream sediment samples MCLS2 and MCLS3 revealed the following TCL chemicals at concentrations greater than three times the background (upstream) sample MCLS1: 2-chlorophenol at 37 μg/kg in MCLS2; 4-methylphenol at 330 μg/kg in MCLS2; 4-chloro-3-methylphenol at 45 μg/kg in MCLS2; acenaphthene at 29 μg/kg in MCLS2; phenanthrene at 43 μg/kg in MCLS2 and 28 μg/kg in MCLS3; di-n-butylphthalate at 240 μg/kg in MCLS2 and 130 μg/kg in MCLS3; fluoranthene at 96 μg/kg in MCLS2 and 60 μg/kg in MCLS3; pyrene at 120 μg/kg in MCLS2, benzo(a)anthracene at 65 μg/kg in MCLS2 and 37 μg/kg in MCLS3; chrysene at 62 μg/kg in MCLS2 and 40 μg/kg in MCLS3; benzo(b)fluoranthene at 58 μg/kg in MCLS2 and 42 μg/kg in MCLS3; benzo(k)fluoranthene at 64 μg/kg in MCLS2 and 41 μg/kg in MCLS3; benzo(a)pyrene at 80 μg/kg in MCLS2 and 46 μg/kg in MCLS3; indeno(1,2,3-cd)pyrene at 59 μg/kg in MCLS2 and 38 μg/kg in MCLS3; and benzo(g,h,i)perylene at 62 μg/kg in MCLS2 and 33 μg/kg in MCLS3. None of the TAL inorganics were present in MCLS2 and MCLS3 at levels greater than three times the background (upstream) sample.

Chemical analysis of the downstream surface water sample MCLSW2 revealed the following TCL contaminants at concentrations greater than three times the background (upstream) sample MCLSW1: total xylenes at 2 μg/L and bis(2-ethylhexyl)phthalate at 0.5 μg/L. The following TAL inorganics were also detected in the downstream surface water

sample at concentrations greater than three times the background concentrations: aluminum at 2,840 μg/L, arsenic at 3.6 μg/L, cobalt at 3.3 μg/L, iron at 4,370 μg/L, and manganese at 216 μg/L. All TAL inorganics, except arsenic, were detected in the upstream sample.

Chemical analysis of the surface water blank sample MCLW1 revealed the following TCL contaminants: acetone at 12 μg/L, toluene at 1 μg/L, and total xylenes at 2 μg/L.

The E & E TAT 1995 FSIP sample locations are shown in Figure 4-1. A summary of analytical results from the FSIP sampling event are provided in Table 4-1.



Note: Sample locations may change

SCALE

0 250 500 750 1,000 1,250 1,500 FEET

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TITLE FSIP Sampling Locations	FIGURE # 4-1
SITE MACON COUNTY LANDFILL #2	TDD# TO5-9503-202
CITY Decatur STATE Illinois	SCALE Not to Scale
SOURCE USGS, Harristown, IL Quadrangle, 7.5 Minute Series, 1982	DATE 1974 REVISED 1982

TABLE 1

Macon County Landfill Analytical Data

SURFACE SEDIMENT SAMPLES
Volatile Organic Compounds (UG/KG)

	Sample Number	MCLS1		MCLS2		MCLS3	
	Date Collected	8/1/95	Q	8/1/95	Q	8/1/95	Q
	CLP OTR #	EAFK4	U	EAFK5	U	EAFK6	U
			A		A		A
			L		L		L
QL	VOC						
10	Chloromethane		U		U		U
10	Bromomethane		U		U		U
10	Vinyl chloride		U		U		U
10	Chloroethane		U		U		U
10	Methylene chloride	16		19		17	
10	Acetone	42		36		16	
10	Carbon disulfide		U		U		U
10	1,1-Dichloroethene		U		U		U
10	1,1-Dichloroethane		U		U		U
10	1,2-Dichloroethene (total)		U		U		U
10	Chloroform		U		U		U
10	1,2-Dichloroethane		U		U		U
10	2-Butanone		U		U		U
10	1,1,1-Trichloroethane		U		U		U
10	Carbon Tetrachloride		U		U		U
10	Bromodichloromethane		U		U		U
10	1,2-Dichloropropane		U		U		U
10	cis-1,3-dichloropropene		U		U		U
10	Trichloroethene		U		U		U
10	Dibromochloromethane		U		U		U
10	1,1,2-Trichloroethane		U		U		U
10	Benzene		U		U		U
10	trans-1,3-dichloropropene		U		U		U
10	Bromoform		U		U		U
10	4-Methyl-2-pentanone		U		U		U
10	2-Hexanone		U		U		U
10	Tetrachloroethene		U		U		U
10	Toluene	7	J		U		U
10	1,1,2,2-Tetrachloroethane		U		U		U
10	Chlorobenzene		U		U		U
10	Ethylbenzene		U		U		U
10	Styrene		U		U		U
10	Total xylenes		U		U		U

QL - Quantitation Limits are base values, see complete data package for sample specific quantitation limits

U - Not Detected
J - Estimated Value

Macon County Landfill Analytical Data

SURFACE SEDIMENT SAMPLES
Semivolatiles (UG/KG)

	Sample Number	MCLS1		MCLS2		MCLS3															
	Date Collected	8/1/95	Q	8/1/95	Q	8/1/95	Q		Q		Q		Q		Q		Q		Q		Q
	CLP OTR#	EAFK4	U	EAFK5	U	EAFK6	U		U		U		U		U		U		U		U
			A		A		A		A		A		A		A		A		A		A
			L		L		L		L		L		L		L		L		L		L
QL	BNAs																				
330	Phenol		U		U		U														
330	Bis(2-Chloroethyl)ether		U		U		U														
330	2-Chlorophenol		U	37	J		U														
330	1,3-Dichlorobenzene		U		U		U														
330	1,4-Dichlorobenzene		U		U		U														
330	1,2-Dichlorobenzene		U		U		U														
330	2-Methylphenol		U		U		U														
330	2,2'-oxybis(1-Chloropropane)		U		U		U														
330	4-Methylphenol		U	330	J		U														
330	N-Nitroso-di-n-propylamine		U		U		U														
330	Hexachloroethane		U		U		U														
330	Nitrobenzene		U		U		U														
330	Isophorone		U		U		U														
330	2-Nitrophenol		U		U		U														
330	2,4-Diemethylphenol		U		U		U														
330	Bis(2-Chloroethoxy)methane		U		U		U														
330	2,4-Dichlorophenol		U		U		U														
330	1,2,4-Trichlorobenzene		U		U		U														
330	Naphthalene		U		U		U														
330	4-Chloroaniline		U		U		U														
330	Hexachlorobutadiene		U		U		U														
330	4-Chloro-3-methylphenol		U	45	J		U														
330	2-Methylnaphthalene		U		U		U														
330	Hexachlorocyclopentadiene		U		U		U														
330	2,4,6-Trichlorophenol		U		U		U														
1700	2,4,5-Trichlorophenol		U		U		U														
330	2-Chloronaphthalene		U		U		U														
1700	2-Nitroaniline		U		U		U														
330	Diemethylphthalate		U		U		U														
330	Acenaphthylene		U		U		U														
330	2,6-Dinitrotoluene		U		U		U														
1700	3-Nitroaniline		U		U		U														
330	Acenaphthene		U	29	J		U														
1700	2,4-Dinitrophenol		U		U		U														

Macon County Landfill Analytical Data

SURFACE SEDIMENT SAMPLES
Semivolatiles (UG/KG)

	Sample Number	MCLS1		MCLS2		MCLS3	
	Date Collected	8/1/95	Q	8/1/95	Q	8/1/95	Q
	CLP OTR#	EAFK4	U	EAFK5	U	EAFK6	U
			A		A		A
			L		L		L
QL	BNAs						
1700	4-Nitrophenol		U		U		U
330	Dibenzofuran		U		U		U
330	2,4-Dinitrotoluene		U		U		U
330	Diethylphthalate		U		U		U
330	4-Chlorophenyl-phenyl ether		U		U		U
330	Fluorene		U		U		U
1700	4-Nitroaniline		U		U		U
1700	4,6-Dinitro-2-methylphenol		U		U		U
330	N-Nitrosodiphenylamine		U		U		U
330	4-Bromophenyl-phenyl ether		U		U		U
330	Hexachlorobenzene		U		U		U
1700	Pentachlorophenol		U		U		U
330	Phenanthrene		U	43	J	28	J
330	Anthracene		U		U		U
330	Carbazole		U		U		U
330	Di-n-butylphthalate		U	240	J	130	J
330	Fluoranthene		U	96	J	60	J
330	Pyrene	22	J	120	J	53	J
330	Butylbenzylphthalate		U		U		U
330	3,3'Dichlorobenzidine		U		U		U
330	Benzo(a)anthracene		U	65	J	37	J
330	Chrysene		U	62	J	40	J
330	Bis(2-ethylhexyl)phthalate		U		U		U
330	Di-n-octylphthalate		U		U		U
330	Benzo(b)fluoranthene		U	58	J	42	J
330	Benzo(k)fluoranthene		U	64	J	41	J
330	Benzo(a)pyrene		U	80	J	46	J
330	Indeno(1,2,3-cd)pyrene		U	59	J	38	J
330	Dibenzo(a,h)anthracene		U		U		U
330	Benzo(ghi)perylene		U	62	J	33	J

QL - Quantitation Limits are base values; see complete data package for sample specific quantitation limits

U - Not Detected
J - Estimated Value

Macon County Landfill Analytical Data

SURFACE SEDIMENT SAMPLES
Pesticides/PCBs (UG/KG)

	Sample Number	MCLS1		MCLS2		MCLS3															
	Date Collected	8/1/95	Q	8/1/95	Q	8/1/95	Q		Q		Q		Q		Q		Q		Q		Q
	CLP QTR #	EAFK4	U	EAFK5	U	EAFK6	U		U		U		U		U		U		U		U
			A		A		A		A		A		A		A		A		A		A
			L		L		L		L		L		L		L		L		L		L
QL	Pesticides/PCBs																				
1.7	alpha-BHC		U		U		U														
1.7	beta-BHC		U		U		U														
1.7	delta-BHC		U		U		U														
1.7	gamma-BHC (Lindane)		U		U		U														
1.7	Heptachlor		U		U		U														
1.7	Aldrin		U		U		U														
1.7	Heptachlor epoxide		U		U		U														
1.7	Endosulfan I		U		U		U														
3.3	Dieldrin		U		U		U														
3.3	4,4'-DDE		U		U		U														
3.3	Endrin		U		U		U														
3.3	Endosulfan II		U		U		U														
3.3	4,4'-DDD		U		U		U														
3.3	Endosulfan sulfate		U		U		U														
3.3	4,4'-DDT		U		U		U														
17	Methoxychlor		U		U		U														
3.3	Endrin Ketone		U		U		U														
3.3	Endrin Aldehyde		U		U		U														
1.7	Alpha-Chlordane		U		U		U														
1.7	Gamma-Chlordane		U		U		U														
170	Toxaphene		U		U		U														
33	Aroclor-1016		U		U		U														
67	Aroclor-1221		U		U		U														
33	Aroclor-1232		U		U		U														
33	Aroclor-1242		U		U		U														
33	Aroclor-1248		U		U		U														
33	Aroclor-1254		U		U		U														
33	Aroclor-1260		U		U		U														

QL - Quantitation Limits are base values, see complete data package for sample specific quantitation limits

U - Not Detected

Macon County Landfill Analytical Data

SURFACE SEDIMENT SAMPLES
Total Metals (MG/KG)

	Sample Number	MCLS1		MCLS2		MCLS3	
	Date Collected	8/1/95	Q	8/1/95	Q	8/1/95	Q
	CRL ITR#	MEWH63	U	MEWH64	U	MEWH65	U
			A		A		A
			L		L		L
QL	Metals						
200	Aluminum	2530	J*	5680	J*	1400	J*
60	Antimony	1.2	B		U		U
10	Arsenic	12.7	J*	3.3	J*	0.91	BJ*
200	Barium	98.5	J*	66.5	J*	19.2	BJ*
5	Beryllium	0.44	B	0.5	B		U
5	Cadmium	0.62	B		U		U
5000	Calcium	9920	J*	6630	J*	5270	J*
10	Chromium	9.4	J	12.1		5	
50	Cobalt	13.1	JE	5.5	BJE	1.8	BJE
25	Copper	19.6	J*	14.1	J*	32.7	J*
100	Iron	26900	J*	13000	J*	3480	J*
3	Lead	21.9	J*	16.4	J*	8.6	J*
5000	Magnesium	4960	J*	3330	J*	2190	J*
15	Manganese	1020	J*	335	J	110	J*
0 2	Mercury		U		U		U
40	Nickel	24.2		12.5		5.1	B
5000	Potassium	413	BJE	972	BJE	234	BJE
5	Selenium		U		U		U
10	Silver		U		U		U
5000	Sodium	301	B	685	B	261	B
10	Thallium		U		U		U
50	Vanadium	28.5		13.8	B	5.8	B
20	Zinc	121	JN*	53.8	JN*	23.7	JN*
10	Cyanide		U		U		U

QL - Quantitation Limits are base values, see complete data package for sample quantitation limits

U - Not Detected
J - Estimated Value
* - Duplicate Not Within Control Limits.
B - Value is less than the CRDL but greater than the IDL
E - Value is estimated due to interferences.
N - Spike Recovery is not within the Control Limits

TABLE ^·1

Macon County Landfill Analytical Data

SURFACE WATER SAMPLES
Volatile Organic Compounds (UG/L)

	Sample Number	MCLSW1		MCLSW2		MCLW1															
	Date Collected	8/1/95	Q	8/1/95	Q	8/1/95	Q		Q		Q		Q		Q		Q		Q		Q
	CLP OTR #	EAFK7	U	EPK45	U	EAFK8	U		U		U		U		U		U		U		U
			A		A		A		A		A		A		A		A		A		A
			L		L		L		L		L		L		L		L		L		L
QL	VOC																				
10	Chloromethane		U		U		U														
10	Bromomethane		U		U		U														
10	Vinyl chloride		U		U		U														
10	Chloroethane		U		U		U														
10	Methylene chloride		U		U		U														
10	Acetone	10			U	12															
10	Carbon disulfide		U		U		U														
10	1,1-Dichloroethene		U		U		U														
10	1,1-Dichloroethane		U		U		U														
10	1,2-Dichloroethene (total)		U		U		U														
10	Chloroform	20	B	16	B		U														
10	1,2-Dichloroethane		U		U		U														
10	2-Butanone		U		U		U														
10	1,1,1-Trichloroethane		U		U		U														
10	Carbon Tetrachloride		U		U		U														
10	Bromodichloromethane	14		14			U														
10	1,2-Dichloropropane		U		U		U														
10	cis-1,3-dichloropropene		U		U		U														
10	Trichloroethene		U		U		U														
10	Dibromochloromethane	8	J	10	J		U														
10	1,1,2-Trichloroethane		U		U		U														
10	Benzene		U		U		U														
10	trans-1,3-dichloropropene		U		U		U														
10	Bromoform		U		U		U														
10	4-Methyl-2-pentanone		U		U		U														
10	2-Hexanone		U		U		U														
10	Tetrachloroethene		U		U		U														
10	Toluene		U		U	1	J														
10	1,1,2,2-Tetrachloroethane		U		U		U														
10	Chlorobenzene		U		U		U														
10	Ethylbenzene		U		U		U														
10	Styrene		U		U		U														
10	Total xylenes		U	2	J	2	J														

QL - Quantitation Limits are base values, see complete data package for sample specific quantitation limits.

U - Not Detected
J - Estimated Value
B - Also Detected in the Associated Laboratory Blank

Macon County Landfill Analytical Data

SURFACE WATER SAMPLES
Semivolatiles (UG/L)

	Sample Number	MCLSW1		MCLSW2																	
	Date Collected	8/1/95	Q	8/1/95	Q		Q		Q		Q		Q		Q		Q		Q		Q
	CLP OTR#	EAFK7	U	EPK45	U		U		U		U		U		U		U		U		U
			A		A		A		A		A		A		A		A		A		A
			L		L		L		L		L		L		L		L		L		L
QL	BNAs																				
10	Phenol		U		U																
10	Bis(2-Chloroethyl)ether		U		U																
10	2-Chlorophenol		U		U																
10	1,3-Dichlorobenzene		U		U																
10	1,4-Dichlorobenzene		U		U																
10	1,2-Dichlorobenzene		U		U																
10	2-Methylphenol		U		U																
10	2,2'-oxybis(1-Chloropropane)		U		U																
10	4-Methylphenol		U		U																
10	N-Nitroso-di-n-propylamine		U		U																
10	Hexachloroethane		U		U																
10	Nitrobenzene		U		U																
10	Isophorone		U		U																
10	2-Nitrophenol		U		U																
10	2,4-Diemethylphenol		U		U																
10	Bis(2-Chloroethoxy)methane		U		U																
10	2,4-Dichlorophenol		U		U																
10	1,2,4-Trichlorobenzene		U		U																
10	Naphthalene		U		U																
10	4-Chloroaniline		U		U																
10	Hexachlorobutadiene		U		U																
10	4-Chloro-3-methylphenol		U		U																
10	2-Methylnaphthalene		U		U																
10	Hexachlorocyclopentadiene		U		U																
10	2,4,6-Trichlorophenol		U		U																
50	2,4,5-Trichlorophenol		U		U																
10	2-Chloronaphthalene		U		U																
50	2-Nitroaniline		U		U																
10	Diemethylphthalate		U		U																
10	Acenaphthylene		U		U																
10	2,6-Dinitrotoluene		U		U																
50	3-Nitroaniline		U		U																
10	Acenaphthene		U		U																
50	2,4-Dinitrophenol		U		U																

Macon County Landfill Analytical Data

SURFACE WATER SAMPLES
Semivolatiles (UG/L)

	Sample Number	MCLSW1		MCLSW2																	
	Date Collected	8/1/95	Q	8/1/95	Q		Q		Q		Q		Q		Q		Q		Q		Q
	CLP OTR#	EAFK7	U	EPK45	U		U		U		U		U		U		U		U		U
			A		A		A		A		A		A		A		A		A		A
			L		L		L		L		L		L		L		L		L		L
QL	BNAs																				
50	4-Nitrophenol		U		U																
10	Dibenzofuran		U		U																
10	2,4-Dinitrotoluene		U		U																
10	Diethylphthalate		U		U																
10	4-Chlorophenyl-phenyl ether		U		U																
10	Fluorene		U		U																
25	4-Nitroaniline		U		U																
25	4,6-Dinitro-2-methylphenol		U		U																
10	N-Nitrosodiphenylamine		U		U																
10	4-Bromophenyl-phenyl ether		U		U																
10	Hexachlorobenzene		U		U																
25	Pentachlorophenol		U		U																
10	Phenanthrene		U		U																
10	Anthracene		U		U																
10	Carbazole		U		U																
10	Di-n-butylphthalate		U		U																
10	Fluoranthene		U		U																
10	Pyrene		U		U																
10	Butylbenzylphthalate		U		U																
10	3,3'Dichlorobenzidine		U		U																
10	Benzo(a)anthracene		U		U																
10	Chrysene		U		U																
10	Bis(2-ethylhexyl)phthalate		U	0.5	J																
10	Di-n-octylphthalate		U		U																
10	Benzo(b)fluoranthene		U		U																
10	Benzo(k)fluoranthene		U		U																
10	Benzo(a)pyrene		U		U																
10	Indeno(1,2,3-cd)pyrene		U		U																
10	Dibenzo(a,h)anthracene		U		U																
10	Benzo(ghi)perylene		U		U																

QL - Quantitation Limits are base values, see complete data package for sample specific quantitation limits

U - Not Detected
J - Estimated Value

Macon County Landfill Analytical Data

SURFACE WATER SAMPLES
Pesticides/PCBs (UG/L)

	Sample Number	MCLSW1		MCLSW2																	
	Date Collected	8/1/95	Q	8/1/95	Q		Q		Q		Q		Q		Q		Q		Q		Q
	CLP OTR #	EAFK7	U	EPK45	U		U		U		U		U		U		U		U		U
			A		A		A		A		A		A		A		A		A		A
			L		L		L		L		L		L		L		L		L		L
QL	Pesticides/PCBs																				
0 05	alpha-BHC		U		U																
0 05	beta-BHC		U		U																
0 05	delta-BHC		U		U																
0 05	gamma-BHC (Lindane)		U		U																
0 05	Heptachlor		U		U																
0 05	Aldrin		U		U																
0 05	Heptachlor epoxide		U		U																
0 05	Endosulfan I		U		U																
0 1	Dieldrin		U		U																
0 1	4,4'-DDE		U		U																
0 1	Endrin		U		U																
0 1	Endosulfan II		U		U																
0.1	4,4'-DDD		U		U																
0 1	Endosulfan sulfate		U		U																
0 1	4,4'-DDT		U		U																
0 5	Methoxychlor		U		U																
0 1	Endrin Ketone		U		U																
0.1	Endrin Aldehyde		U		U																
0.05	Alpha-Chlordane		U		U																
0 05	Gamma-Chlordane		U		U																
5	Toxaphene		U		U																
1	Aroclor-1016		U		U																
1	Aroclor-1221		U		U																
2	Aroclor-1232		U		U																
1	Aroclor-1242		U		U																
1	Aroclor-1248		U		U																
1	Aroclor-1254		U		U																
1	Aroclor-1260		U		U																

QL - Quantitation Limits are base values, see complete data package for sample specific quantitation limits

U - Not Detected

Macon County Landfill Analytical Data

SURFACE WATER SAMPLES
Total Metals (UG/L)

QL	Metals	Sample Number	MCLSW1	QUAL	MCLSW2	QUAL
		Date Collected	8/1/95		8/1/95	
		CRL ITR#	MEWH66		MEPF25	
200	Aluminum		279	J	2840	J
60	Antimony			U		U
10	Arsenic			U	3.6	B
200	Barium		26.6	B	77.4	B
5	Beryllium			U		U
5	Cadmium			U		U
5000	Calcium		47000		50500	
10	Chromium		2.3	B	4.8	B
50	Cobalt		1	B	3.3	B
25	Copper		8.5	B	12.9	B
100	Iron		425	J	4370	J
3	Lead		3.2		9.2	
5000	Magnesium		31400		32600	
15	Manganese		61.1		216	
0.2	Mercury			U		U
40	Nickel		49.9		56.1	
5000	Potassium		50400		51300	
5	Selenium			U		U
10	Silver			U		U
5000	Sodium		420000	JE	453000	JE
10	Thallium			U		U
50	Vanadium		3.7	B	9.9	B
20	Zinc		49.2		64.5	
10	Cyanide			U		U

QL - Quantitation Limits are base values, see complete data package for sample quantitation limits

U - Not Detected
J - Estimated Value
B - Value is less than the CRDL but greater than the IDL
E - Value is estimated due to Interferences.

5. MIGRATION AND EXPOSURE PATHWAYS

This section describes the migration and exposure pathways evaluated for the MCL#2 site. Section 5.1 discusses the groundwater migration pathway; Section 5.2 discusses the surface water migration pathway; Section 5.3 discusses the soil exposure pathway; and Section 5.4 discusses the air migration pathway.

5.1 GROUNDWATER MIGRATION PATHWAY

This section discusses regional geology and soils, groundwater releases, and targets associated with the groundwater migration pathway at the site.

5.1.1 Geology and Soils

The surrounding area is located on top of unconsolidated Pleistocene-age glacial deposits, which overlie Pennsylvanian-age bedrock consisting of limestone, shale, and sandstone (Student *et al.* 1981). The Pleistocene-age deposits consist of stratified clay, gravel, and sand varying in depth from 100 to 200 feet below ground surface (BGS) (Student *et al.* 1981; Kempton, Morse, and Visocky 1982).

The MCL#2 site is bordered to the south by the Sangamon River; soils in this vicinity consist of Cahokia alluvium (Lineback 1979). The Cahokia alluvium is composed of deposits in the floodplains and channels of rivers and streams, and consists mostly of poorly sorted sand, silt, or clay containing local deposits of sandy gravel.

The Pleistocene-age glacial deposits underlying the surrounding area may be part of the Piatt till member of the Wedron formation. The Piatt till is a sandy and silty gray till that oxidizes to an olive brown. Well logs from the area suggest that the overburden in the area consists of a thin layer (1 to 3 feet) of topsoil overlying a glacial till layer composed of clayey

silts with some sand and gravel, which, in turn, may further overlie a blue clay down to bedrock. These strata are discontinuous within the soil profile and range in thicknesses from 3 feet to over 50 feet. The lateral extent of these clay layers is unknown, and it is believed that the strata are hydraulically interconnected.

Most of the private wells in the area of the site are finished at depths ranging from 23 to 187 feet BGS (E & E 1990), apparently in the glacial deposits, which consist of silt, sand, and gravel. The glacial deposits, therefore, constitute the aquifer being evaluated at depths that vary within the soil profile.

The regional groundwater flow in the area of the site appears to follow the topography of the site, i.e., to the south toward the Sangamon River. Approximately 1,730 persons within 4 miles of the site obtain drinking water from private wells (E & E 1990). The City of Decatur obtains water primarily from Lake Decatur, located approximately 5 miles upstream (northeast) of the site, and serves a population of approximately 98,081 persons. Two glacial drift wells are used to supplement the water supply; these wells are drilled to depths of 244 to 255 feet BGS and are located approximately 18 miles northeast of the site (E & E 1990b). The town of Harristown, Illinois, which is located 4 miles west of Decatur, relies on the Decatur municipal system for drinking water. Harristown also uses one auxiliary well, which is located 4 miles northwest of the landfill, to supplement drinking water supplies. The depth of the auxiliary well is unknown (Tucker 1995).

5.1.2 Groundwater Releases

Currently, three monitoring wells are located on the MCL #2 site. Chemical analysis of samples collected from on-site monitoring wells during the E & E 1990 SSI revealed several TCL chemicals including vinyl chloride, TCE, and PCE in the groundwater at concentrations that exceeded U.S. EPA Maximum Contaminant Levels (MCLs) for Drinking Water (U.S. EPA 1994). These contaminants were attributable to the MCL#2 site because these analytes were detected in downgradient groundwater samples at concentrations that exceeded three times the background sample concentrations in the upgradient well, where none of these TCL contaminants were detected. As a result of the E & E 1989 sample visit, an observed release of TCL contaminants to on-site monitoring wells has been observed. There has been no documentation of an observed release to surrounding residential wells since

none were sampled. There has been no evidence of hazardous waste dumping at the MCL#2 site.

The MCL #2 site accepted aluminum, POTW wastes, oily wastes, acids, caustics, metals, PCBs, flash, and municipal and industrial wastes (E &E 1990). Groundwater contamination was present in two of the on-site monitoring well samples. The MCL #2 site is underlain by permeable sands, gravels, and till soils that allow for contaminant infiltration into the groundwater because the presence of confining clay layers may be limited. A leachate/runoff collection trench exists along the west border of the site. This containment mechanism could aid in reducing the downward leaching of contaminants to groundwater.

5.1.3 Targets

Approximately 1,730 persons within 4 miles of the MCL #2 site obtain drinking water from private wells (E & E 1990). Decatur residents utilize surface water from Lake Decatur located approximately 5 miles northeast of the MCL #2 site. Harristown residents utilize water from the Decatur municipal system and an auxiliary well located approximately 4 miles northwest of the MCL #2 site (Tucker 1995).

5.2 SURFACE WATER MIGRATION PATHWAY

A release of hazardous substances from the MCL#2 site to surface water has been documented based on analytical results from the 1995 FSIP sampling event. Total xylenes and bis(2-ethylhexyl)phthalate were encountered in surface water sample SW2, at 2 μg/L and 0.5 μg/L respectively. These TCL contaminants exceeded three times the background concentrations in sample SW1 collected upstream of the site. Total xylenes were also detected in the field blank at 2 μg/L. Sediment sample S2 contained 2-chlorophenol, 4-methyl-2-phenol, and 4-chloro-3-methylphenol at concentrations that exceeded three times the background concentrations in sample S1. No TAL chemicals were detected in the upstream sediment sample at concentrations greater than three times the background concentrations.

Surface water drains to the south and discharges to the Sangamon River directly south of the MCL#2 site. The Sangamon River flows to the southwest at approximately 683 cubic feet per second. No drinking water intakes are known to exist along the Sangamon River within 15 miles of the site (B & V 1993). The Sangamon River is a state-recognized fishery (Illinois Department of Conservation [IDOC] 1994). The Lincoln Trail Homestead State Park

is located approximately 3 miles southwest of the site along the Sangamon River (B & V 1993), and palustrine, forested wetlands exist south adjacent to and downstream of the site (United States Department of Interior [USDI] 1988). Threatened and endangered species and/or humans that come in contact with the Sangamon River could be exposed to contaminants of concern via dermal contact and/or incidental ingestion. It is unknown what species could come in contact with the site or where their habitats are located. See Appendix D for a listing of threatened and endangered species in Macon County.

It has not been documented as to whether an engineered liner exists underneath the MCL#2 site. The existence of gas and/or leachate containment systems that could potentially exist at the MCL#2 site has not been observed or confirmed.

5.3 SOIL EXPOSURE PATHWAY

A release of hazardous substances from the MCL#2 site to on-site soils has been documented based on analytical results from the 1990 E & E FIT sampling event. Eight soil samples, S1 through S8, were collected at the MCL #2 site during the E & E 1989 SSI. Phenanthrene, fluoranthene, pyrene, benzo(b)fluoranthene, acetone, 2-butanone, antimony, and mercury were the contaminants encountered in samples S3, S7 and S8 at levels that were described as elevated above background. The background sample was not identified in the E & E FIT 1990 SSI report, nor were details on contaminant concentrations (E & E 1990).

The MCL#2 site is fenced on the north side. No other sides of the landfill are fenced. No recreational uses of the site are known. Residences are located to the west, east, and north of the property. Approximately 21 on-site workers are potentially exposed to on-site contaminants via dermal and/or incidental ingestion of on-site soils. Wetlands and forest are adjacent to the south border of the site (USDI 1988; E & E 1995). The MCL site is located within a 100-year floodplain of the Sangamon River (E & E 1990). Potentially threatened and endangered species could be exposed to on-site contaminants that may migrate off-site during flooding events via dermal exposure and/or incidental ingestion.

Residences are located adjacent to the MCL east and west of the MCL property. The MCL#2 site does not border any residential areas directly. No soil samples were collected in residential areas to determine whether contamination was migrating off-site. No schools, daycare centers or nurseries exist within 200 feet of the site. The likelihood of soil contaminant releases from the site to residential areas has not been confirmed.

5.4 AIR MIGRATION PATHWAY

A release of hazardous substances to air is unlikely to have occurred based on past and present site conditions, and no air samples were collected during the 1989 E & E SSI. No observed releases of potential air contamination or complaints of odors by nearby residents have been documented. A population of approximately 1,730 persons lives within 4 miles of the MCL#2 site.

6. SUMMARY

The MCL#2 site is a 25-acre landfill portion of the Macon County Landfill which is made up of four separate fill areas. The MCL #2 site was an active landfill from 1972 until the early 1980s. Since then, the site has been closed and covered. Chemical analysis of on-site soil, groundwater, and sediment samples collected by E & E FIT in 1989 exhibited contamination.

A release to groundwater is likely based on previous sample results from on-site monitoring wells. The monitoring wells contained concentrations of vinyl chloride, TCE and PCE that exceeded U.S. EPA MCLs for drinking water. The population that utilizes private wells is small. Approximately 1,730 persons within 4 miles of the site obtain drinking water from private wells finished in the glacial drift aquifer. Groundwater obtained by residents could potentially be contaminated by on-site contaminants that enter the aquifer being evaluated via infiltration through the permeable sands, clays, and gravels that make up the glacial drift that underlies the site or through stream and river sediments. The City of Decatur obtains drinking water primarily from Lake Decatur which is located approximately 6 miles northeast (upstream) of the MCL. The Town of Harristown utilizes surface water as drinking water from the Decatur municipal system and groundwater from a single well located approximately 4 miles northwest of the site (Tucker 1995).

A release of hazardous substances from the MCL#2 site to surface water has been documented based on analytical results from the 1995 E & E TAT FSIP sampling visit. Surface water and sediment samples collected by E & E TAT in 1995 at the confluence of the intermittent stream and the Sangamon River contained 2-chlorophenol, 4-methylphenol, 4-chloro-3-methyl, phenol, and bis (2-ethylhexyl)phthalate, aluminum, arsenic, cobalt, iron, and manganese at concentrations greater than three times the background sample concentration. The intermittent stream flows south from the MCL#2 site, and could serve as a migration

route into the Sangamon River. Downstream, contaminants encountered in sediment sample MCLS3 were similar to those encountered in sample MCLS2.

The Lincoln Trail Homestead State Park is approximately 6 miles southwest of the site along the Sangamon River (B & V 1993). This terrestrial area is not suspected to be affected by contamination encountered in the Sangamon River. Palustrine wetlands and sensitive environments that exist within 15 miles downstream of the site that may be affected by the migration of on-site contaminants into the Sangamon River (B & V 1993; IEPA 1995). Threatened and endangered species may potentially be exposed to contaminants in surface water.

A release of hazardous substances to on-site soils is likely based on past site conditions. Samples collected in 1990 by E & E FIT contained contamination. On-site soil and sediment samples contained phenanthrene, fluoranthene, pyrene, acetone, 2-butanone, antimony and mercury that were present at concentration three times above background concentration. There are 21 full-time workers that work at the MCL facility, but they are not working on the MCL #2 site. The MCL#2 site is fenced on the north side where the main gate is located. The fence is locked when workers are not at the landfill. Residences border the site to the north, east, and west. On-site workers and trespassers could be exposed to on-site contaminants via dermal soil exposure and incidental soil ingestion. Approximately 1,000 persons live within 1-mile (straight-line-distance) from the site.

This site is located in a remote rural area. No schools, parks, or daycare centers are located within a 4-mile radius of the MCL #2 site (E & E 1990; IEPA 1995). One terrestrial state park exists within 6 miles downstream of the site, and wetland exist south adjacent to the site to at least 6 miles downstream of the site along the Sangamon River (USDI 1988).

A release of hazardous substances to air is unlikely. Approximately 21 workers are currently employed at the MCL facility but they are not working at the MCL#2 site. There are no records of complaints regarding odors or other sources of air contamination in the site file. There is no current documentation of an air release of on-site contaminants into the environment that may potentially affect sensitive environments.

7. REFERENCES

References not included in Appendix E: documents that are currently available within U.S. EPA files; copyrighted documents that are currently available in E & E's library; maps produced by either the United States Geological Survey or the Illinois State Geological Survey; and documents that are created by the various state agencies for public use.

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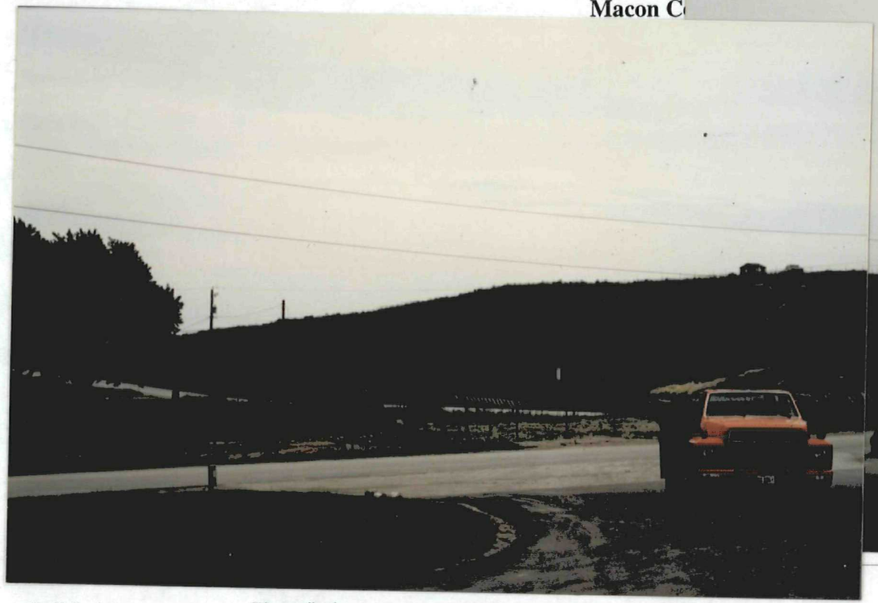
APPENDIX A

SITE PHOTOGRAPHS

PHOTOGRAPHIC RECORD
Macon C

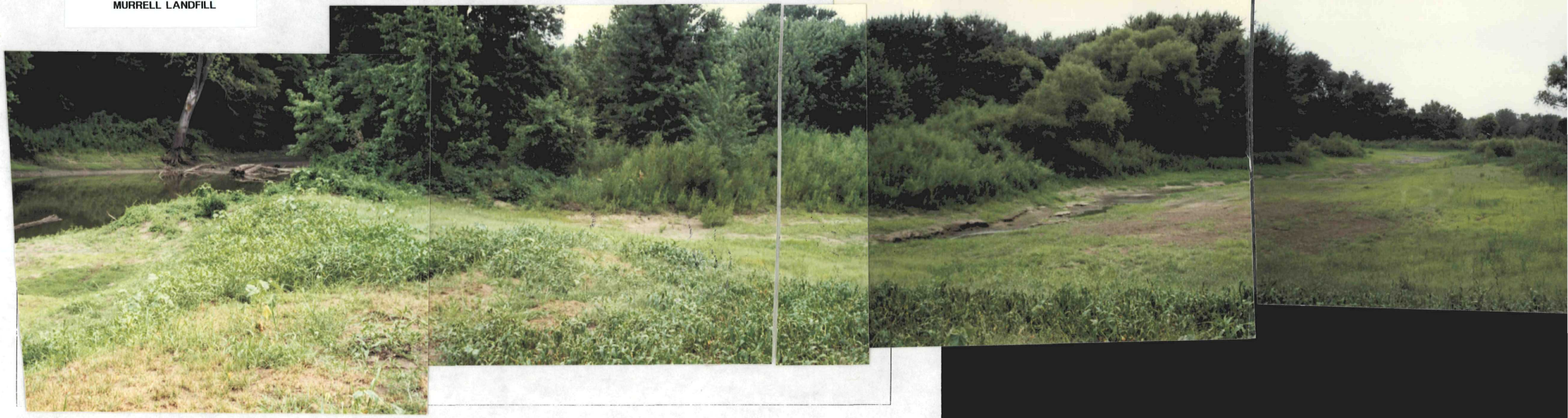


Roll #: 1 **Photo #:** 1

Date: 8/1/95 **Direction:** SE,S,S,SSW

Description:
Front view of landfill along Hill Road. Office parking lot is back to the right where the cars are parked.

MURRELL LANDFILL



Roll #: 1 **Photo #:** 2

Date: 8/1/95 **Direction:** SW, SW, SEE, E

Description:

Rear of MCL # 1 along the Sangamon River flood plain. This flood plain extends beyond MCL #2 to #3.

recycled paper

PHOTOGRAPHIC RECORD

Macon County Landfill #1

Roll #: 1 **Photo #:** 3

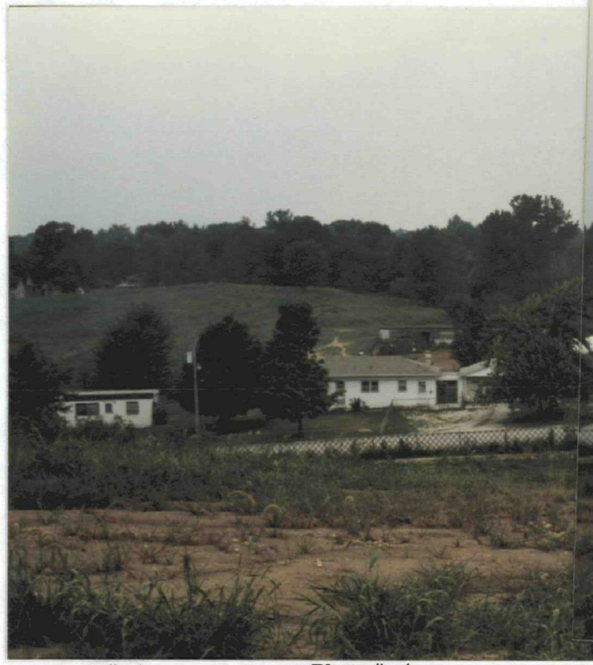
Date: 8/1/95 **Direction:** SE, S, S, SW

Description:

Shows extension of MCL #1 to the Sangamon River and how the other landfill areas (MCL #2 and MCL #3) are not as long, for they do not extend down onto the floodplain of the Sangamon River.

PHOTOGRAPHIC RECORD

Macon County Landfill #1



Roll #: 1 **Photo #:** 4

Date: 8/1/95 **Direction:** N, NE, NE, E

Description:

On-site buildings on top of MCL #1. Brown building across Hill Road is a truck hauling company. Residence west of truck hauling company is unknown.

PHOTOGRAPHIC RECORD

Macon County Landfill #1

Roll #: 1 **Photo #:** 5

Date: 8/1/95 **Direction:** E, NE, NE,NE, N

Description:

MCL #4 under construction. Shot of southwest corner of landfill on open property west of MCL #4. Photo shows flood plain of Sangamon River due east.

PHOTOGRAPHIC RECORD
Macon County Landfill #1

Roll #: 1 **Photo #:** 6

Date: 8/1/95 **Direction:** ESE, SE, SE,S,SE

Description:
Tate Residence property west of MCL #4.

APPENDIX B

1990 E & E FIT SCREENING SITE INSPECTION SAMPLING ANALYTICAL RESULTS

RESULTS OF TCL ANALYSIS OF
FIT-COLLECTED MONITORING WELL SAMPLES,
ORIGINAL INSPECTION

Sample Collection Information and Parameters	Sample Number					
	MW1	MW2	Duplicate	MW3	MW4	Blank
Date	12/6/89	12/6/89	12/6/89	12/6/89	12/6/89	12/6/89
Time	1045	1200	1300	1300	1400	1000
CLP Organic Traffic Report Number	EHE11	EHE12	EHE13	EHE14	EHE15	EHE16
Temperature (°C)	7	10	9	9	8	6
Specific Conductivity (μmhos/cm)	500	1,500	3,400	3,400	400	28
pH	6.65	6.88	6.76	6.76	7.47	8.70
Compound Detected (values in μg/L)						
Volatile Organics						
vinyl chloride	--	10	--	--		--
chloroethane	--	--	7J	6J	--	--
methylene chloride	2J	2J	--	2J	--	--
acetone	--	4J	1,500JD	1,600JD		
1,2-dichloroethene (total)	--	200	--	--	--	--
2-butanone (MEK)	--	--	8,500JD	5,600JD	75J	--
trichloroethene	--	14	--	--	--	--
4-methyl-2-pentanone	--	--	23	--	--	--
tetrachloroethene	--	3J	--	--	--	--
toluene	--	--	1,900JD	2,000JD	1J	--
Semivolatile Organics						
phenol	--	--	63	56	--	--
1,4-dichlorobenzene	--	--	1J	1J		
4-methylphenol	--	--	180	160	--	--
di-n-butylphthalate	--	--	--	--	--	1J

-- Not detected.

COMPOUND QUALIFIERS	DEFINITION	INTERPRETATION
J	Indicates an estimated value.	Compound value may be semiquantitative.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.	Alerts data user to a possible change in CRQL. Data is quantitative.

RESULTS OF TAL ANALYSIS OF
FIT-COLLECTED MONITORING WELL SAMPLES,
RESAMPLING VISIT

Sample Collection Information and Parameters	Sample Number			
	MW2-A	Duplicate A	MW4-A	Blank A
Date	4/24/90	4/24/90	4/24/90	4/24/90
Time	0930	0930	1215	1345
CLP Inorganic Traffic Report Number	MEJW40	MEJW39	MEJW43	MEJW42
Temperature (°C)	25	25	28	30
Specific Conductivity (μmhos/cm)	1,947	845	898	23
pH	6.77	6.93	7.20	7.83
Analyte Detected (values in μg/L)				
antimony	58.7B	54.7B	39.1B	--
arsenic	3.3B	3.5B	15.2B	--
barium	95.5B	92.1B	160B	--
calcium	137,000	132,000	103,000	256JB
iron	3,730	4,030	1,020	90.1JB
lead	1.0JNWB	1.3JNWB	--	--
magnesium	65,300	64,100	43,200	76.2JB
manganese	418	414	71.7	
mercury	--	0.20JN	--	--
potassium	4,060B	3,490B	3,700B	--
sodium	28,000	26,100	22,400	216JB
vanadium	8.6B	6.7B	7.3B	--
zinc	77.8	85.1	34.7	--

-- Not detected.

ANALYTE QUALIFIERS	DEFINITION	INTERPRETATION
N	Spike recoveries outside QC protocols, which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative.	Value may be quantitative or semi-quantitative.
B	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semi-quantitative.
J	Value is above CRDL and is an estimated value because of a QC protocol.	Value may be semiquantitative.
W	Post-digestion spike for furnace AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance.	Value may be semiquantitative.

RESULTS OF TAL ANALYSIS OF
FIN-COLLECTED SOIL/SEDIMENT SAMPLES.
RESAMPLING VISIT

Sample Collection Information and Parameters	Sample Number S1-A	S2-A	S3-A	S4-A	S5-A	S6-A	S7-A	S8-A
Date	4/24/90	4/24/90	4/24/90	4/24/90	4/24/90	4/24/90	4/24/90	4/24/90
Time	0920	1015	0905	1155	1200	0935	1100	1100
CLP Inorganic Traffic Report Number	MEJW30	MEJW31	MEJW32	MEJW33	MEJW34	MEJW35	MEJW36	MEJW37
Analyte Detected (values in µg/kg)								
aluminum	2,400	4,680	12,600	10,900	8,470	7,290	7,320	9,150
antimony	12.4JNB	12.4JNB	10.8JNB	--	12.6JNB	21JN	11.5JNB	12.5JNB
arsenic	2.2B	2.8	3.9	5.5	4.8	4.7	4.0	4.3
barium	12.8JEB	23.6JEB	96.8JE	70.3E	55.4JE	25.2JEB	46.5JE	74.1JE
beryllium	--	0.48B	1.1B	1.1B	0.83B	0.82B	0.75B	1.0B
calcium	35,500	41,400	16,800	1,220	31,800	53,300	38,500	39,800
chromium	4.7	8.3	18.7	12.8	12.5	12.6	11.6	14.8
cobalt	--	4.1B	6.8B	10.1B	5.3B	5.1B	5.7B	7.7B
copper	15.2	11.5	19.2	11.2	41.9	10.1	17.3	27.6
iron	5,580	9,560	19,000	15,600	14,700	13,200	12,700	16,300
lead	3.6JN	5.4JN	21.6JN	31.5JN	87.1JN	7.3JN	19.2JN	22.4JN
magnesium	14,500	17,200	8,680	2,050	12,000	23,300	12,900	15,800
manganese	188	297	574	596	314	325	306	368
mercury	--	--	--	--	--	0.16	--	0.10
nickel	6.8B	11	18.1	15.4	26.8	14.3	46.3	31.7
potassium	453B	996B	3,270	1,210	1,110B	1,670	1,080B	1,390
silver	--	--	--	--	1.5B	1.7B	--	--
sodium	117B	125B	1,460	48.9JB	182B	184B	135B	197B
vanadium	7.2B	11.4	19.6	21.7	19.3	11.4	15.6	18.4
zinc	23.2	35	81	42.2	79.1	40.1	60.3	51.4

-- Not detected.

ANALYTE QUALIFIERS	DEFINITION	INTERPRETATION
E	Estimated or not reported due to interference. See laboratory narrative.	Analyte or element was not detected, or value may be semiquantitative.
N	Spike recoveries outside QC protocols, which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative.	Value may be quantitative or semi-quantitative.
B	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semi-quantitative.
J	Value is above CRDL and is an estimated value because of a QC protocol.	Value may be semiquantitative.

RESULTS OF TCL ANALYSIS OF
FIT-COLLECTED SOIL/SEDIMENT SAMPLES,
ORIGINAL INSPECTION

Sample Collection Information and Parameters	Sample Number S1	S2	S3	S4	S5	S6	S7	S8
Date	12/5/89	12/5/89	12/5/89	12/5/89	12/6/89	12/6/89	12/5/89	12/6/89
Time	1553	1610	1629	1654	1035	1430	1510	1530
CLP Organic Traffic Report Number	EHE03	EHE04	EHE05	EHE06	EHE07	EHE08	EHE09	EHE10
Compound Detected (values in ug/kg)								
Volatile Organics								
chloromethane	--	--	15J	--	7J	--	--	--
acetone	130JB	--	790JXEB	--	150JXB	--	--	--
carbon disulfide	9	--	4J	--	9	--	--	--
chloroform	--	--	--	--	--	1J	2J	--
2-butanone (MEK)	--	--	120JB	--	--	--	--	--
benzene	--	--	3J	--	--	--	--	--
4-methyl-2-pentanone	--	--	2J	--	--	--	--	--
toluene	2J	3J	5J	0.7J	--	2J	3J	3J
chlorobenzene	--	--	8	--	--	--	--	--
ethylbenzene	--	--	31	--	--	--	--	--
xylenes (total)	--	--	120X	--	--	--	--	--
Semivolatile Organics								
acenaphthene	--	27J	--	--	--	--	--	75J
dibenzofuran	--	18J	--	--	--	--	--	41J
fluorene	--	33J	--	--	--	--	--	97J
phenanthrene	--	450	--	--	--	--	--	1,300
anthracene	--	--	--	--	--	--	--	270J
fluoranthene	--	610	48J	--	--	--	45J	2,100
pyrene	--	370J	40J	--	--	--	33J	1,400
benzo[a]anthracene	--	200J	--	--	--	--	--	770
chrysene	--	210J	--	--	--	--	--	700
bis(2-ethylhexyl)phthalate	--	47J	800	--	--	--	44J	--
di-n-octylphthalate	--	--	40J	--	--	--	--	--
benzo[b]fluoranthene	--	-	--	--	--	--	--	1,000
benzo[a]pyrene	--	140J	--	--	--	--	--	520
indeno[1,2,3-cd]pyrene	--	--	--	--	--	--	--	280J
dibenzo[a,h]anthracene	--	--	--	--	--	--	--	65J
benzo[g,h,i]perylene	--	--	--	--	--	--	--	220J

-- Not detected.

APPENDIX C

1995 FSIP DATA PACKAGE

8/25

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 08-23-95

SUBJECT: Review of Region V CLP Data Received for Review on August 16, 1995

FROM: Dennis Wesolowski, Chief (SQC-14J) Contract Analytical Services Section
L. Finkelberg for D. Wesolowski

TO: Data User: E & E

We have reviewed the data for the following case:

SITE NAME: Macon Cty #2 / Murrell / Waste (IL)

CASE NUMBER: 23857 SDG NUMBER: MEPF25

Number and Type of Samples: 13 - Soil / Water

Sample Numbers: MEPF25, MEWH61-72

Laboratory: SWOK Hrs. for Review: 4.8 +0.2 +1.2 T.A.

Following are our findings:

The soil duplicate audits for Al, As, Ba, Ca, Cu, Fe, Pb, Mg and Mn are out of control.
The duplicate audit and matrix spike recovery for Zn (soil) are out of control.
The soil serial dilution audits for Co and K are out of control.
The water serial dilution for Na is out of control.
The CCB contains contamination.

All data (soil and water) are usable with the qualifications described in the attached narrative.

L. Finkelberg
08-23-95

cc: Regional TPO

recycled paper
ecology and environment

NARRATIVE

SITE: Macon City #2/Murrell/Waste CASE: 23857
LABORATORY: SWOK SDG: MEPF25

The laboratory's portion of case 23857 contains 6 water samples and 7 soil samples analyzed for total metals and cyanide. The following narrative lists the out of control audits and their possible effects on the results.

EVIDENTIAL AUDIT: All of the forms are originals. The original ICP raw data (pages 92-128), the mercury raw data (pages 164-169), and the cyanide raw data (pages 173-178) are with case# 23885, SDG# MEAF63. The sample tags, the chain of custody forms, the airbill, and the DC-1 form are originals. All forms are present and in the order indicated on the Form DC-2 [inventory sheet].

SOIL (Samples MEWH61, MEWH63 - 65, MEWH67 - 69)

ICP ANALYSES: The duplicate audits for chromium (65.9%), nickel (108.4%), and vanadium (113.3%) were flagged by the laboratory, but they do not exceed the technical criterion of ± 2X CRDL for soils. All chromium, nickel, and vanadium data are acceptable.

The duplicate audits for aluminum (72.5%), arsenic (151.8%), barium (108.0%), calcium (125.0%), copper (115.9%), iron (133.8%), lead (106.3%), magnesium (130.4%), and manganese (67.9%) are out of control. All aluminum, arsenic, barium, calcium, copper, iron, lead, magnesium, and manganese data are estimated (J) due to poor precision.

The duplicate audit for zinc (153.3%) is out of control. The matrix spike recovery for zinc (21.8%) is out of control. All zinc data are estimated (J) due to poor precision and low bias.

The duplicate RPDs for antimony (200.0%), beryllium (200.0%), cadmium (200.0%), cobalt (99.8%), and potassium (53.9%) were not flagged by the laboratory because the techncial criterion of ± 2X CRDL was not exceeded for soils. All antimony, beryllium, and cadmium data are acceptable. The cobalt and potassium data are not qualifed on this basis, but are qualified in the sixth paragraph of this section.

The matrix spike recovery for manganese (-200.4%) was not flagged by the laboratory because the sample is 4 times the spike concentration. The manganese data are not qualified on this basis, but remain qualified as in the above paragraph.

The serial dilution audits for cobalt (11.8%) and potassium (14.8%) are out of control. All cobalt and potassium data are estimated (J) due to interference.

OTHER ANALYSES: According to the mercury digestion logs submitted by the laboratory, it appears that the soil and water samples were digested together with only one set of calibration standards. After reviewing the SOW, the digestion procedure for soils and water samples for mercury are different. The laboratory should digest soil and water samples according to the SOW with separate calibration curves for each digestion procedure. Mercury data are not qualified on this basis and are acceptable.

All cyanide data are acceptable.

Samples MEWH67/MEWH68 are field duplicates that show good correlation.

WATER (Samples MEPF25, MEWH62, MEWH66, MEWH70 - 72)

ICP ANALYSES: The aluminum and iron results for sample MEWH72 are biased high due to a CCB (25.7 µg/L and 20.1 µg/L, respectively) greater than the IDL (12.0 µg/L and 15.0 µg/L, respectively.) The above sample for aluminum and iron is estimated (J) due to contamination.

The duplicate RPD for cobalt (200.0%) was not flagged by the laboratory because the technical criterion of ± CRDL for waters was not exceeded. All cobalt data are acceptable.

The serial dilution audit for sodium (10.9%) is out of control. All sodium data are estimated (J) due to interference.

The 10X dilution factor necessary to analyze sodium for sample MEWH66 and the serial dilution was not factored into the results reported on Form IX. The form was corrected by the reviewer.

OTHER ANALYSES: According to the mercury digestion logs submitted by the laboratory, it appears that the soil and water samples were digested together with only one set of calibration standards. After reviewing the SOW, the digestion procedure for soils and water samples for mercury are different. The laboratory should digest soil and water samples according to the SOW with separate calibration curves for each digestion procedure. Mercury data are not qualified on this basis and are acceptable.

All cyanide data are acceptable.

Samples MEWH70/MEWH71 are field duplicates with the duplicate audit for aluminum (35.0%) and iron (44.0%) that are out of control. Sample MEWH72 is affected by poor precision, but remains qualified as in the first paragraph of the ICP Analyses section. The remaining water samples for aluminum and iron are estimated (J) due

Reviewed by: Patricia M. McClintock **Patricia M. McClintock**
Lockheed/ESAT

Date: 8/21/95

DATA QUALIFIER DEFINITIONS

For the purpose of defining the flagging nomenclature utinized in this document, the following code letters and associated definitions are provide:

U Indicates the material was analyzed, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

J Indicates the associated value is an estimated quantity.

R Indicates the data are unusable. (Note: The analyte may or may not be present.)

UJ Indicates the material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

E Indicates the reported value is estimated because of the presence of interferences. An explanatory note shall be included under Comments on the Cover Page (if the problem applies to all samples) or on the specific FORM I-IN (if it is an isolated problem).

M Indicates duplicate injection precision is not met.

N Indictaes the spike sample recovery is not within control limits.

S Indicates the reported value was determined by the Method of Standard Addition (MSA).

W Indicates the post-digestion spike for furnace AA analysis is out of control limits (85%-115%), while sample absorbance is less than 50% of the spike absorbance.

+ Indicates the correlation coefficient for the MSA is less than 0.995.

* Indicates the duplicate analysis is not within control limits.

Note: Entering "S", "W" or "+" is mutually exclusive. No combination of these qualifiers can appear in the same field for an analyte.

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857 SAS No.: _____ SDG No.:MEPF25

SOW No.: ILM03

EPA Sample No.	Lab Sample ID
MEPF25	2309701
MEWH61	2309702
MEWH62	2309703
MEWH63	2309704
MEWH63D	2309704D
MEWH63S	2309704S
MEWH64	2309705
MEWH65	2309706
MEWH66	2309707
MEWH66D	2309707D
MEWH66S	2309707S
MEWH67	2309708
MEWH68	2309709
MEWH69	2309710
MEWH70	2309711
MEWH71	2309712
MEWH72	2309713

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Deborah J. Beree for... Name: Jason D. Ruckman

Date: August 14, 1995 Title: Inorganic Program Manager

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MEPF25
MCLSW2

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.: MEPF25

Matrix (soil/water): WATER Lab Sample ID: 2309701___

Level (low/med): LOW__ Date Received: 08/02/95

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	2840	J		P
7440-36-0	Antimony_	3.0	U		P
7440-38-2	Arsenic__	3.6	B		P
7440-39-3	Barium___	77.4	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	1.0	U		P
7440-70-2	Calcium__	50500			P
7440-47-3	Chromium_	4.8	B		P
7440-48-4	Cobalt___	3.3	B		P
7440-50-8	Copper___	12.9	B		P
7439-89-6	Iron_____	4370	J		P
7439-92-1	Lead_____	9.2			P
7439-95-4	Magnesium	32600			P
7439-96-5	Manganese	216			P
7439-97-6	Mercury__	0.20	U		AV
7440-02-0	Nickel___	56.1			P
7440-09-7	Potassium	51300			P
7782-49-2	Selenium_	4.0	U		P
7440-22-4	Silver___	2.0	U		P
7440-23-5	Sodium___	453000	J	E	P
7440-28-0	Thallium_	4.0	U		P
7440-62-2	Vanadium_	9.9	B		P
7440-66-6	Zinc_____	64.5			P
_____	Cyanide__	10.0	U		AS
_____	_____	_____			

Color Before: YELLOW___ Clarity Before: CLOUDY Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

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EPA SAMPLE NO. 004

MEWH61
MLS2

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.: MEPF25

Matrix (soil/water): SOIL_ Lab Sample ID: 2309702___

Level (low/med): LOW__ Date Received: 08/02/95

% Solids: _79.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	996	J	*	P	
7440-36-0	Antimony	0.76	U		P	
7440-38-2	Arsenic	2.4	B	J *	P	
7440-39-3	Barium	13.6	B	J *	P	
7440-41-7	Beryllium	0.25	U		P	
7440-43-9	Cadmium	0.25	U		P	
7440-70-2	Calcium	9820		J *	P	
7440-47-3	Chromium	4.3		✗	P	CS 8/25/95
7440-48-4	Cobalt	2.8	B	J E	P	
7440-50-8	Copper	2.2	B	J *	P	
7439-89-6	Iron	3650		J *	P	
7439-92-1	Lead	4.1		J *	P	
7439-95-4	Magnesium	4090		J *	P	
7439-96-5	Manganese	142		J *	P	
7439-97-6	Mercury	0.13	U		AV	CS 8/25/95
7440-02-0	Nickel	4.8	B	✗	P	
7440-09-7	Potassium	168	B	J E	P	
7782-49-2	Selenium	1.0	U		P	
7440-22-4	Silver	0.51	U		P	
7440-23-5	Sodium	67.4	B		P	
7440-28-0	Thallium	1.0	U		P	
7440-62-2	Vanadium	4.3	B	✗	P	CS 8/25/95
7440-66-6	Zinc	14.5	J	N*	P	
	Cyanide	0.63	U		AS	

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MEWH62
MLSW1

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.: MEPF25

Matrix (soil/water): WATER Lab Sample ID: 2309703___

Level (low/med): LOW__ Date Received: 08/02/95

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	342	J		P
7440-36-0	Antimony_	3.0	U		P
7440-38-2	Arsenic__	3.4	B		P
7440-39-3	Barium___	39.2	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	1.0	U		P
7440-70-2	Calcium__	48000			P
7440-47-3	Chromium_	1.8	B		P
7440-48-4	Cobalt___	1.4	B		P
7440-50-8	Copper___	7.7	B		P
7439-89-6	Iron_____	519	J		P
7439-92-1	Lead_____	3.1			P
7439-95-4	Magnesium	31300			P
7439-96-5	Manganese	76.7			P
7439-97-6	Mercury__	0.20	U		AV
7440-02-0	Nickel___	54.8			P
7440-09-7	Potassium	47200			P
7782-49-2	Selenium_	4.0	U		P
7440-22-4	Silver___	2.0	U		P
7440-23-5	Sodium___	394000	J	E	P
7440-28-0	Thallium_	4.0	U		P
7440-62-2	Vanadium_	4.4	B		P
7440-66-6	Zinc_____	40.5			P
_____	Cyanide__	10.0	U		AS

Color Before: YELLOW___ Clarity Before: CLOUDY Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

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EPA SAMPLE NO.

MEWH63
MCLS1

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.: MEPF25

Matrix (soil/water): SOIL_ Lab Sample ID: 2309704___

Level (low/med): LOW__ Date Received: 08/02/95

% Solids: _82.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	2530		*	P
7440-36-0	Antimony_	1.2	B		P
7440-38-2	Arsenic__	12.7		*	P
7440-39-3	Barium___	98.5		*	P
7440-41-7	Beryllium	0.44	B		P
7440-43-9	Cadmium__	0.62	B		P
7440-70-2	Calcium__	9920		*	P
7440-47-3	Chromium_	9.4		*	P
7440-48-4	Cobalt___	13.1		E	P
7440-50-8	Copper___	19.6		*	P
7439-89-6	Iron_____	26900		*	P
7439-92-1	Lead_____	21.9		*	P
7439-95-4	Magnesium	4960		*	P
7439-96-5	Manganese	1020		*	P
7439-97-6	Mercury__	0.12	U		AV
7440-02-0	Nickel___	24.2		*	P
7440-09-7	Potassium	413	B	E	P
7782-49-2	Selenium_	0.97	U		P
7440-22-4	Silver___	0.48	U		P
7440-23-5	Sodium___	301	B		P
7440-28-0	Thallium_	0.97	U		P
7440-62-2	Vanadium_	28.5		*	P
7440-66-6	Zinc_____	121		N*	P
_____	Cyanide__	0.60	U		AS

CS 8/25/95

CS 8/25/95

CS 8/25/95

Color Before: GREY_____ Clarity Before: _____ Texture: COARSE

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

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EPA SAMPLE NO.

MEWH64
MCLS2

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.: MEPF25

Matrix (soil/water): SOIL_ Lab Sample ID: 2309705___

Level (low/med): LOW__ Date Received: 08/02/95

% Solids: _65.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5680	J	*	P
7440-36-0	Antimony	0.92	U		P
7440-38-2	Arsenic	3.3	J	*	P
7440-39-3	Barium	66.5	J	*	P
7440-41-7	Beryllium	0.50	B		P
7440-43-9	Cadmium	0.31	U		P
7440-70-2	Calcium	6630	J	*	P
7440-47-3	Chromium	12.1		*	P
7440-48-4	Cobalt	5.5	B	J E	P
7440-50-8	Copper	14.1	J	*	P
7439-89-6	Iron	13000	J	*	P
7439-92-1	Lead	16.4	J	*	P
7439-95-4	Magnesium	3330	J	*	P
7439-96-5	Manganese	335	J	*	P
7439-97-6	Mercury	0.15	U		AV
7440-02-0	Nickel	12.5		*	P
7440-09-7	Potassium	972	B	J E	P
7782-49-2	Selenium	1.2	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	685	B		P
7440-28-0	Thallium	1.2	U		P
7440-62-2	Vanadium	13.8	B	*	P
7440-66-6	Zinc	53.8	J	N*	P
	Cyanide	0.77	U		AS

CS 8/25/95

CS 8/25/95

CS 8/25/95

Color Before: GREY_____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

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EPA SAMPLE NO.

MEWH65
MCLS3

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.: MEPF25

Matrix (soil/water): SOIL_ Lab Sample ID: 2309706___

Level (low/med): LOW__ Date Received: 08/02/95

% Solids: _80.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	1400	J	*	P	
7440-36-0	Antimony	0.75	U		P	
7440-38-2	Arsenic	0.91	B	J *	P	
7440-39-3	Barium	19.2	B	J *	P	
7440-41-7	Beryllium	0.25	U		P	
7440-43-9	Cadmium	0.25	U		P	
7440-70-2	Calcium	5270	J	*	P	
7440-47-3	Chromium	5.0		*	P	CS 8/25/95
7440-48-4	Cobalt	1.8	B	J E	P	
7440-50-8	Copper	32.7	J	*	P	
7439-89-6	Iron	3480	J	*	P	
7439-92-1	Lead	8.6	J	*	P	
7439-95-4	Magnesium	2190	J	*	P	
7439-96-5	Manganese	110	J	*	P	
7439-97-6	Mercury	0.12	U		AV	
7440-02-0	Nickel	5.1	B	*	P	CS 8/25/95
7440-09-7	Potassium	234	B	J E	P	
7782-49-2	Selenium	1.00	U		P	
7440-22-4	Silver	0.50	U		P	
7440-23-5	Sodium	261	B		P	
7440-28-0	Thallium	1.00	U		P	
7440-62-2	Vanadium	5.8	B	*	P	CS 8/25/95
7440-66-6	Zinc	23.7	J	N*	P	
	Cyanide	0.62	U		AS	

Color Before: GREY_____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MEWH66
MCLSW1

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.: MEPF25

Matrix (soil/water): WATER Lab Sample ID: 2309707___

Level (low/med): LOW__ Date Received: 08/02/95

% Solids: ___0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	279	J		P
7440-36-0	Antimony_	3.0	U		P
7440-38-2	Arsenic__	3.0	U		P
7440-39-3	Barium___	26.6	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	1.0	U		P
7440-70-2	Calcium__	47000			P
7440-47-3	Chromium_	2.3	B		P
7440-48-4	Cobalt___	1.0	B		P
7440-50-8	Copper___	8.5	B		P
7439-89-6	Iron_____	425	J		P
7439-92-1	Lead_____	3.2			P
7439-95-4	Magnesium	31400			P
7439-96-5	Manganese	61.1			P
7439-97-6	Mercury__	0.20	U		AV
7440-02-0	Nickel___	49.9			P
7440-09-7	Potassium	50400			P
7782-49-2	Selenium_	4.0	U		P
7440-22-4	Silver___	2.0	U		P
7440-23-5	Sodium___	420000	J	E	P
7440-28-0	Thallium_	4.0	U		P
7440-62-2	Vanadium_	3.7	B		P
7440-66-6	Zinc_____	49.2			P
_____	Cyanide__	10.0	U		AS
_____	_____	_____			

Color Before: YELLOW___ Clarity Before: CLOUDY Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

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EPA SAMPLE NO.

MEWH67
WHS1

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.: MEPF25

Matrix (soil/water): SOIL_ Lab Sample ID: 2309708___

Level (low/med): LOW__ Date Received: 08/02/95

% Solids: _78.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1550	J	*	P
7440-36-0	Antimony	0.77	U		P
7440-38-2	Arsenic	1.1	B	J *	P
7440-39-3	Barium	15.9	B	J *	P
7440-41-7	Beryllium	0.26	U		P
7440-43-9	Cadmium	0.26	U		P
7440-70-2	Calcium	7510	J	*	P
7440-47-3	Chromium	4.8		*	P
7440-48-4	Cobalt	2.4	B	J E	P
7440-50-8	Copper	4.5	B	J *	P
7439-89-6	Iron	4410	J	*	P
7439-92-1	Lead	6.5	J	*	P
7439-95-4	Magnesium	3750	J	*	P
7439-96-5	Manganese	125	J	*	P
7439-97-6	Mercury	0.13	U		AV
7440-02-0	Nickel	4.8	B	*	P
7440-09-7	Potassium	239	B	J E	P
7782-49-2	Selenium	1.0	U		P
7440-22-4	Silver	0.51	U		P
7440-23-5	Sodium	74.6	B		P
7440-28-0	Thallium	1.0	U		P
7440-62-2	Vanadium	6.7	B	*	P
7440-66-6	Zinc	24.2	J	N*	P
	Cyanide	0.64	U		AS

CS 8/25/95

CS 8/25/95

CS 8/25/95

Color Before: GREY_____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

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EPA SAMPLE NO. 01

MEWH68
WHSID

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.: MEPF25

Matrix (soil/water): SOIL_ Lab Sample ID: 2309709___

Level (low/med): LOW__ Date Received: 08/02/95

% Solids: _72.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	1670	J	*	P	
7440-36-0	Antimony	0.83	U		P	
7440-38-2	Arsenic	0.91	B	*	P	
7440-39-3	Barium	19.5	B	*	P	
7440-41-7	Beryllium	0.28	U		P	
7440-43-9	Cadmium	0.28	U		P	
7440-70-2	Calcium	7670	J	*	P	
7440-47-3	Chromium	4.8		*	P	CS 8/25/95
7440-48-4	Cobalt	2.5	B	J E	P	
7440-50-8	Copper	6.6	B	J *	P	
7439-89-6	Iron	4340	J	*	P	
7439-92-1	Lead	7.6	J	*	P	
7439-95-4	Magnesium	3780	J	*	P	
7439-96-5	Manganese	145	J	*	P	
7439-97-6	Mercury	0.14	U		AV	
7440-02-0	Nickel	5.3	B	*	P	8/25/95
7440-09-7	Potassium	257	B	J E	P	
7782-49-2	Selenium	1.1	U		P	
7440-22-4	Silver	0.55	U		P	
7440-23-5	Sodium	81.2	B		P	
7440-28-0	Thallium	1.1	U		P	
7440-62-2	Vanadium	6.0	B	*	P	8/25/95
7440-66-6	Zinc	25.4	J	N*	P	
	Cyanide	0.69	U		AS	

Color Before: GREY_____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MEWH69
WHS2

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.: MEPF25

Matrix (soil/water): SOIL_ Lab Sample ID: 2309710___

Level (low/med): LOW__ Date Received: 08/02/95

% Solids: _76.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	687		*	P_
7440-36-0	Antimony_	0.79	U		P_
7440-38-2	Arsenic__	0.79	U	*	P_
7440-39-3	Barium___	6.8	B	*	P_
7440-41-7	Beryllium	0.26	U		P_
7440-43-9	Cadmium__	0.26	U		P_
7440-70-2	Calcium__	5170		*	P_
7440-47-3	Chromium_	2.7		*	P_
7440-48-4	Cobalt___	1.5	B	E	P_
7440-50-8	Copper___	1.3	B	*	P_
7439-89-6	Iron____	2110		*	P_
7439-92-1	Lead____	2.6		*	P_
7439-95-4	Magnesium	2330		*	P_
7439-96-5	Manganese	55.7		*	P_
7439-97-6	Mercury__	0.13	U		AV
7440-02-0	Nickel___	2.6	B	*	P_
7440-09-7	Potassium	114	B	E	P_
7782-49-2	Selenium_	1.1	U		P_
7440-22-4	Silver___	0.53	U		P_
7440-23-5	Sodium___	79.8	B		P_
7440-28-0	Thallium_	1.1	U		P_
7440-62-2	Vanadium_	3.5	B	*	P_
7440-66-6	Zinc____	8.6		N*	P_
_____	Cyanide__	0.66	U		AS

CS 8/25/95

CS 8/25/95

CS 8/25/95

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:

FORM I - IN

ILMO2.1

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO. 017 3 006 8-14-95

MEWH70
WHSW1

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.: MEPF25

Matrix (soil/water): WATER Lab Sample ID: 2309711___

Level (low/med): LOW__ Date Received: 08/02/95

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	672	J		P
7440-36-0	Antimony_	3.0	U		P
7440-38-2	Arsenic__	3.3	B		P
7440-39-3	Barium___	68.3	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	1.0	U		P
7440-70-2	Calcium__	68800			P
7440-47-3	Chromium_	1.4	B		P
7440-48-4	Cobalt___	1.5	B		P
7440-50-8	Copper___	6.2	B		P
7439-89-6	Iron_____	1150	J		P
7439-92-1	Lead_____	4.0			P
7439-95-4	Magnesium	32700			P
7439-96-5	Manganese	491			P
7439-97-6	Mercury__	0.20	U		AV
7440-02-0	Nickel___	12.2	B		P
7440-09-7	Potassium	8690			P
7782-49-2	Selenium_	4.0	U		P
7440-22-4	Silver___	2.0	U		P
7440-23-5	Sodium___	61300	J	E	P
7440-28-0	Thallium_	4.0	U		P
7440-62-2	Vanadium_	2.9	B		P
7440-66-6	Zinc_____	17.1	B		P
_____	Cyanide__	10.0	U		AS

Color Before: YELLOW___ Clarity Before: CLOUDY Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

FORM I - IN

ILMO2.1

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MEWH71

WHSWID

Lab Name: SOUTHWEST_LAB_OF_OK Contract: 68-D3-0040

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: MEPF25

Matrix (soil/water): WATER Lab Sample ID: 2309712

Level (low/med): LOW Date Received: 08/02/95

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	472	J		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.4	B		P
7440-39-3	Barium	65.0	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	69500			P
7440-47-3	Chromium	1.4	B		P
7440-48-4	Cobalt	1.1	B		P
7440-50-8	Copper	7.9	B		P
7439-89-6	Iron	735	J		P
7439-92-1	Lead	2.9	B		P
7439-95-4	Magnesium	33100			P
7439-96-5	Manganese	441			P
7439-97-6	Mercury	0.20	U		AV
7440-02-0	Nickel	12.0	B		P
7440-09-7	Potassium	8570			P
7782-49-2	Selenium	4.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	61900	J	E	P
7440-28-0	Thallium	4.0	U		P
7440-62-2	Vanadium	2.8	B		P
7440-66-6	Zinc	16.0	B		P
	Cyanide	10.0	U		AS

Color Before: YELLOW Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

ILMO2.1

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MEWH72

MLF1

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.: MEPF25

Matrix (soil/water): WATER Lab Sample ID: 2309713___

Level (low/med): LOW__ Date Received: 08/02/95

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	42.1	B	J	P_
7440-36-0	Antimony_	3.0	U		P_
7440-38-2	Arsenic__	3.0	U		P_
7440-39-3	Barium___	1.2	B		P_
7440-41-7	Beryllium	1.0	U		P_
7440-43-9	Cadmium__	1.0	U		P_
7440-70-2	Calcium__	462	B		P_
7440-47-3	Chromium_	1.0	U		P_
7440-48-4	Cobalt___	1.0	U		P_
7440-50-8	Copper___	9.6	B		P_
7439-89-6	Iron_____	36.5	B	J	P_
7439-92-1	Lead_____	2.0	B		P_
7439-95-4	Magnesium	62.0	B		P_
7439-96-5	Manganese	1.0	U		P_
7439-97-6	Mercury__	0.20	U		AV
7440-02-0	Nickel___	2.0	U		P_
7440-09-7	Potassium	89.6	B		P_
7782-49-2	Selenium_	4.0	U		P_
7440-22-4	Silver___	2.0	U		P_
7440-23-5	Sodium___	1770	B	J E	P_
7440-28-0	Thallium_	4.0	U		P_
7440-62-2	Vanadium_	1.0	U		P_
7440-66-6	Zinc_____	4.6	B		P_
_____	Cyanide__	10.0	U		AS

Color Before: YELLOW___ Clarity Before: CLOUDY Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

FORM I - IN

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Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.: MEPF25

Preparation Blank Matrix (soil/water): SOIL_

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	12.7	B	12.0	B	16.7	B	22.4	B	6.382	B	P
Antimony	3.0	U	3.0	U	3.0	U	3.0	U	0.600	U	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	0.600	U	P
Barium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Cadmium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Calcium	13.0	U	13.0	U	13.0	U	13.0	U	4.805	B	P
Chromium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Cobalt	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Copper	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	P
Iron	17.8	B	20.1	B	15.0	U	15.0	U	3.672	B	P
Lead	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Magnesium	11.0	U	11.0	U	11.0	U	11.0	U	2.200	U	P
Manganese	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Mercury	0.2	U	0.2	U	0.2	U	0.2	U	0.100	U	AV
Nickel	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	P
Potassium	32.0	U	32.0	U	32.0	U	32.0	U	6.400	U	P
Selenium	4.0	U	4.0	U	4.0	U	4.0	U	0.800	U	P
Silver	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	P
Sodium	21.0	U	21.0	U	26.4	B	21.0	U	5.559	B	P
Thallium	4.0	U	4.0	U	4.0	U	4.0	U	0.800	U	P
Vanadium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Zinc	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	P
Cyanide	10.0	U	10.0	U	10.0	U	10.0	U	0.500	U	AS

3
BLANKS

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.: MEPF25

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L_

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	14.0	B	25.9	B	24.4	B	27.8	B	12.000	U	P
Antimony	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Barium	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Cadmium	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Calcium	13.0	U	13.0	U	13.0	U	13.0	U	13.000	U	P
Chromium	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Cobalt	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Copper	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	P
Iron	15.0	U	15.0	U	15.0	U	15.2	B	15.000	U	P
Lead	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Magnesium	11.0	U	11.0	U	11.0	U	11.0	U	11.000	U	P
Manganese	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Mercury			0.2	U					0.200	U	AV
Nickel	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	P
Potassium	32.0	U	32.0	U	32.0	U	32.0	U	32.000	U	P
Selenium	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Silver	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	P
Sodium	21.0	U	21.0	U	21.0	U	21.0	U	21.000	U	P
Thallium	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Vanadium	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Zinc	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	P
Cyanide			10.0	U	10.0	U			10.000	U	AS

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3
BLANKS

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.: MEPF25

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic											N
Barium											
Beryllium											
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead											NR
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium											NR
Silver											NR
Sodium			21.0	U							P
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide											NR

FORM III - IN

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U.S. EPA - CLP

3
BLANKS

027

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.: MEPF25

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic											NR
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead											NR
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium											NR
Silver											NR
Sodium	21.0	U	21.0	U	21.0	U	21.0	U			P
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide											NR

FORM III - IN

ILMO2.1

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MEWH63S

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857 SAS No.: _____ SDG No.: MEPF25

Matrix (soil/water): SOIL__ Level (low/med): LOW___

% Solids for Sample: _82.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	115.9228		1.2331	B	120.63	95.1		P
Arsenic	75-125	492.8970		12.7457		482.51	99.5		P
Barium	75-125	502.9879		98.4948		482.51	83.8		P
Beryllium	75-125	11.6707		0.4403	B	12.06	93.1		P
Cadmium	75-125	12.0367		0.6217	B	12.06	94.7		P
Calcium									NR
Chromium	75-125	53.6403		9.3836		48.25	91.7		[illegible]
Cobalt	75-125	121.3805		13.1081		120.63	89.8		P
Copper	75-125	67.5411		19.5957		60.31	79.5		P
Iron									NR
Lead	75-125	128.8193		21.8914		120.63	88.6		P
Magnesium									NR
Manganese		776.1708		1017.8779		120.63	-200.4		P
Mercury	75-125	0.4747		0.1206	U	0.60	79.1		AV
Nickel	75-125	128.7385		24.1942		120.63	86.7		P
Potassium									NR
Selenium	75-125	477.9242		0.9650	U	482.51	99.0		P
Silver	75-125	11.4135		0.4825	U	12.06	94.6		P
Sodium									NR
Thallium	75-125	462.5363		0.9650	U	482.51	95.9		P
Vanadium	75-125	126.1269		28.5255		120.63	80.9		P
Zinc	75-125	146.8714		120.6333		120.63	21.8	N	P
Cyanide	75-125	4.6603		0.6031	U	6.03	77.3		AS

Comments:

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MEWH66S

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857 SAS No.: _____ SDG No.: MEPF25

Matrix (soil/water): WATER_ Level (low/med): LOW___

% Solids for Sample: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75-125	2348.4200		278.8050		2000.00	103.5		P
Antimony	75-125	497.3660		3.0000	U	500.00	99.5		P
Arsenic	75-125	2035.2590		3.0000	U	2000.00	101.8		P
Barium	75-125	1883.4980		26.5550	B	2000.00	92.8		P
Beryllium	75-125	48.3420		1.0000	U	50.00	96.7		P
Cadmium	75-125	47.4450		1.0000	U	50.00	94.9		P
Calcium									NR
Chromium	75-125	192.7680		2.2560	B	200.00	95.3		P
Cobalt	75-125	485.3160		1.0080	B	500.00	96.9		P
Copper	75-125	256.8350		8.5120	B	250.00	99.3		P
Iron	75-125	1409.2500		424.8670		1000.00	98.4		P
Lead	75-125	481.5520		3.2460		500.00	95.7		P
Magnesium									NR
Manganese	75-125	549.5120		61.1100		500.00	97.7		P
Mercury	75-125	0.9100		0.2000	U	1.00	91.0		AV
Nickel	75-125	523.1560		49.8590		500.00	94.7		P
Potassium									NR
Selenium	75-125	2044.3140		4.0000	U	2000.00	102.2		P
Silver	75-125	50.6460		2.0000	U	50.00	101.3		P
Sodium									NR
Thallium	75-125	1878.4840		4.0000	U	2000.00	93.9		P
Vanadium	75-125	477.4740		3.7200	B	500.00	94.8		P
Zinc	75-125	546.1690		49.2270		500.00	99.4		P
Cyanide	75-125	93.0820		10.0000	U	100.00	93.1		AS

Comments:

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5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO. 03

MEWH63A

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.: MEPF25

Matrix (soil/water) : SOIL__ Level (low/med): LOW___

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									[illegible]
Copper									[illegible]
[illegible]on									[illegible]
[illegible]ad									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc		1460.06		500.02		1000.0	96.0		P
Cyanide									NR

Comments:

FORM V (Part 2) - IN ILMO2

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6
DUPLICATES

EPA SAMPLE NO.

MEWH63D

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.: MEPF2

Matrix (soil/water): SOIL_ Level (low/med): _LOW

% Solids for Sample: _82.9 % Solids for Duplicate: __81

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		2531.6280		1184.4367		72.5	*	P
Antimony		1.2331	B	0.7238	U	200.0		P
Arsenic	2.4	12.7457		1.7460	B	151.8	*	P
Barium	48.3	98.4948		29.4019	B	108.0	*	P
Beryllium		0.4403	B	0.2413	U	200.0		P
Cadmium		0.6217	B	0.2413	U	200.0		P
Calcium		9918.9657		43000.0791		125.0	*	P
Chromium	2.4	9.3836		4.7344		65.9	*	P
Cobalt	12.1	13.1081		4.3834	B	99.8		P
Copper	6.0	19.5957		5.2154	B	115.9	*	P
Iron		26878.2323		5335.0473		133.8	*	P
Lead		21.8914		6.6938		106.3	*	P
Magnesium	1206.3	4964.3592		23555.4827		130.4	*	P
Manganese		1017.8779		501.6912		67.9	*	P
Mercury		0.1206	U	0.1206	U			AV
Nickel	9.7	24.1942		7.1846	B	108.4	*	P
Potassium		412.5961	B	237.5303	B	53.9		P
Selenium		0.9650	U	0.9650	U			P
Silver		0.4825	U	0.4825	U			P
Sodium		300.8280	B	228.2309	B	27.4		P
Thallium		0.9650	U	0.9650	U			P
Vanadium	12.1	28.5255		7.8936	B	113.3	*	P
Zinc	4.8	120.6333		15.9467		153.3	*	P
Cyanide		0.6031	U	0.6031	U			AS

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6
DUPLICATES

EPA SAMPLE NO.

MEWH66D

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.: MEPF25

Matrix (soil/water): WATER Level (low/med): _LOW__

% Solids for Sample: __0.0 % Solids for Duplicate: ___0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum	200.0	278.8050		262.1170		6.2		P
Antimony		3.0000	U	3.0000	U			P
Arsenic		3.0000	U	3.0000	U			P
Barium		26.5550	B	27.1630	B	2.3		P
Beryllium		1.0000	U	1.0000	U			P
Cadmium		1.0000	U	1.0000	U			P
Calcium		46962.2260		47790.6760		1.7		P
Chromium		2.2560	B	1.9000	B	17.1		P
Cobalt		1.0080	B	1.0000	U	200.0		P
Copper		8.5120	B	8.4910	B	0.2		P
Iron	100.0	424.8670		404.7140		4.9		P
Lead	3.0	3.2460		2.8100	B	14.4		P
Magnesium		31376.5680		31877.0060		1.6		P
Manganese	15.0	61.1100		62.2570		1.9		P
Mercury		0.2000	U	0.2000	U			AV
Nickel	40.0	49.8590		50.4190		1.1		P
Potassium		50436.4370		51940.8750		2.9		P
Selenium		4.0000	U	4.0000	U			P
Silver		2.0000	U	2.0000	U			P
Sodium		420443.5900		419728.4400		0.2		P
Thallium		4.0000	U	4.0000	U			P
Vanadium		3.7200	B	3.2970	B	12.1		P
Zinc	20.0	49.2270		49.7880		1.1		P
Cyanide		10.0000	U	10.0000	U			AS

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Instrument Detection Limits (Quarterly)

Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.: MEPF25

ICP ID Number: TJA#2_____ Date: 07/04/95

Flame AA ID Number : _____

Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.22		200	12.0	P
Antimony	206.83		60	3.0	P
Arsenic	189.04		10	3.0	P
Barium	493.41		200	1.0	P
Beryllium	313.04		5	1.0	P
Cadmium	226.50		5	1.0	P
Calcium	317.93		5000	13.0	P
Chromium	267.72		10	1.0	P
Cobalt	228.61		50	1.0	P
Copper	324.70		25	2.0	P
Iron	271.44		100	15.0	P
Lead	220.35		3	1.0	P
Magnesium	279.08		5000	11.0	P
Manganese	257.61		15	1.0	P
Mercury			0.2		NR
Nickel	231.60		40	2.0	P
Potassium	766.49		5000	32.0	P
Selenium	203.99		5	4.0	P
Silver	328.07		10	2.0	P
Sodium	588.99		5000	21.0	P
Thallium	190.86		10	4.0	P
Vanadium	292.40		50	1.0	P
Zinc	213.86		20	2.0	P

Comments:

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Instrument Detection Limits (Quarterly)

L Name: SOUTHWEST_LAB_OF_OK Contract: 68-D3-0040

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: MEPF25

ICP ID Number: Date: 07/10/95

Flame AA ID Number : PS200A

Furnace AA ID Number :

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury	253.30		0.2	0.2	AV
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR

Comments:

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ANALYSIS RUN LOG

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.:MEP

Instrument ID Number: TJA#2_____ Method: P_

Start Date: 08/09/95 End Date: 08/09/95

EPA Sample No.	D/F	Time	% R	Analytes																				
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL
S0	1.00	1046																					X	
S	1.00	1052																					X	
ICV	1.00	1057																					X	
ICB	1.00	1102																					X	
ICSA	1.00	1121																					X	
ICSAB	1.00	1126																					X	
CRI	1.00	1141																						
CCV	1.00	1147																					X	
CCB	1.00	1152																					X	
ZZZZZ	1.00	1157																						
ZZZZZ	1.00	1203																						
ZZZZZ	1.00	1208																						
ZZZZZZ	1.00	1213																						
ZZZZZZ	1.00	1219																						
ZZZZZZ	1.00	1224																						
ZZZZZZ	1.00	1229																						
ZZZZZZ	1.00	1235																						
ZZZZZZ	1.00	1240																						
ZZZZZZ	1.00	1245																						
CCV	1.00	1251																					X	
CCB	1.00	1256																					X	
ZZZZZZ	1.00	1301																						
MEPF25	10.00	1307																					X	
MEWH62	10.00	1312																					X	
MEWH66	10.00	1318																					X	
MEWH66L	10.00	1323																					X	
MEWH66D	10.00	1328																					X	
ZZZZZZ	1.00	1334																						
ZZZZZZ	1.00	1339																						
ZZZZZZ	1.00	1345																						
CCV	1.00	1350																					X	
CCB	1.00	1356																					X	

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ANALYSIS RUN LOG

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.:MEPF:

Instrument ID Number: TJA#2_____ Method: P_

Start Date: 08/09/95 End Date: 08/09/95

EPA Sample No.	D/F	Time	% R	Analytes																					
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	
ICSA	1.00	1401																					X		
ICSAB	1.00	1407																					X		
CRI	1.00	1415																							
CCV	1.00	1421																					X		
CCB	1.00	1426																					X		

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ANALYSIS RUN LOG

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.:MEPF25

Instrument ID Number: TJA#2_____ Method: P_

Start Date: 08/08/95 End Date: 08/09/95

EPA Sample No.	D/F	Time	% R	Analytes																						
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN
S0	1.00	2215		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X
S	1.00	2220		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X
ICV	1.00	2226		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X
ICB	1.00	2231		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X
ICSA	1.00	2237		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X
ICSAB	1.00	2242		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X
CRI	1.00	2251		_	X	X	_	X	X	_	X	X	X	_	X	_	X	_	X	_	X	X	_	X	X	X
CCV	1.00	2256		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X
CCB	1.00	2302		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X
BW	1.00	2307		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X
SW	1.00	2313		X	X	_	X	X	_	X	X	X	X	X	_	X	X	_	X	X	_	_	X	_	X	X
SW	1.00	2318		_	_	X	_	_	X	_	_	_	_	_	X	_	_	_	_	_	X	X	_	X	_	_
MEPF25	1.00	2324		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	_	X	X	X
MEWH62	1.00	2329		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	_	X	X	X
MEWH66	1.00	2334		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	_	X	X	X
MEWH66L	5.00	2340		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	_	X	X	X
MEWH66D	1.00	2345		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	_	X	X	X
MEWH66S	1.00	2351		X	X	X	X	X	X	_	X	X	X	X	X	_	X	_	X	_	X	X	_	X	X	X
ZZZZZZ	1.00	2356																								
CCV	1.00	0002		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X
CCB	1.00	0007		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X
MEWH70	1.00	0013		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X
MEWH71	1.00	0018		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X
MEWH72	1.00	0024		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X
ICSA	1.00	0031		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X
ICSAB	1.00	0036		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X
CRI	1.00	0045		_	X	X	_	X	X	_	X	X	X	_	X	_	X	_	X	_	X	X	_	X	X	X
CCV	1.00	0050		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X
CCB	1.00	0056		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X

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ANALYSIS RUN LOG

054

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.:MEPF25

Instrument ID Number: TJA#2_____ Method: P_

Start Date: 08/10/95 End Date: 08/10/95

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1017		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
S	1.00	1022		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
ICV	1.00	1027		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
ICB	1.00	1033		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
ICSA	1.00	1044		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
ICSAB	1.00	1049		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
CRI	1.00	1057		_	X	X	_	X	X	_	X	X	X	_	X	_	X	_	X	_	X	X	_	X	X	X	_
CCV	1.00	1103		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X			
CCB	1.00	1108		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X			
PBS	1.00	1114		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	
[illegible]S	1.00	1119		X	X	X	X	X	X	_	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
[illegible]SS	5.00	1124								X																	
MEWH61	1.00	1130		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
MEWH63	1.00	1135		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
MEWH63L	5.00	1141		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
MEWH63D	1.00	1146		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
MEWH63S	1.00	1151		_	X	X	X	X	X	_	X	X	X	_	X	_	X	_	X	_	X	X	_	X	X	X	_
MEWH64	1.00	1157		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
ZZZZZZ	1.00	1202																									
CCV	1.00	1207		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
CCB	1.00	1213		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
MEWH65	1.00	1218		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
MEWH67	1.00	1223		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
MEWH68	1.00	1229		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
MEWH69	1.00	1234		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
MEWH63A	1.00	1240																								X	_
ICSA	1.00	1246		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
ICSAB	1.00	1251		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
CRI	1.00	1300		_	X	X	_	X	X	_	X	X	X	_	X	_	X	_	X	_	X	X	_	X	X	X	_
CCV	1.00	1306		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
CCB	1.00	1312		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_

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ANALYSIS RUN LOG

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Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.:MEPF25

Instrument ID Number: PS200A_____ Method: AV

Start Date: 08/07/95 End Date: 08/07/95

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	C N
S0	1.00	1113																X									
S0.2	1.00	1116																X									
S1	1.00	1118																X									
S5	1.00	1121																X									
S10	1.00	1124																X									
ICV	1.00	1127																X									
ICB	1.00	1129																X									
CRA	1.00	1132																X									
CCV	1.00	1135																X									
CCB	1.00	1137																X									
[illegible]	1.00	1233																X									
LCSS	10.00	1235																X									
MEWH61	1.00	1238																X									
MEWH63	1.00	1241																X									
MEWH63D	1.00	1243																X									
MEWH63S	1.00	1246																X									
MEWH64	1.00	1249																X									
MEWH65	1.00	1251																X									
MEWH67	1.00	1254																X									
MEWH68	1.00	1256																X									
CCV	1.00	1259																X									
CCB	1.00	1302																X									
MEWH69	1.00	1304																X									
ZZZZZZ	1.00	1307																									
ZZZZZZ	1.00	1310																									
ZZZZZZ	1.00	1312																									
ZZZZZZ	1.00	1315																									
ZZZZZZ	1.00	1318																									
ZZZZZZ	1.00	1320																									
ZZZZZZ	1.00	1323																									
ZZZZZZ	1.00	1325																									
PBW	1.00	1328																X									

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ANALYSIS RUN LOG

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.:MEPF25

Instrument ID Number: PS200A_____ Method: AV

Start Date: 08/07/95 End Date: 08/07/95

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
CCV	1.00	1331																X									
CCB	1.00	1333																X									
MEPF25	1.00	1336																X									
MEWH62	1.00	1339																X									
MEWH66	1.00	1341																X									
MEWH66D	1.00	1344																X									
MEWH66S	1.00	1347																X									
MEWH70	1.00	1349																X									
MEWH71	1.00	1352																X									
EWH72	1.00	1355																X									
[illegible]	1.00	1357																X									
CCB	1.00	1400																X									

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ANALYSIS RUN LOG

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.:MEPF25

Instrument ID Number: LACHAT_____ Method: AS

Start Date: 08/04/95 End Date: 08/04/95

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S200	1.00	1442																									X
S100	1.00	1443																									X
S50	1.00	1444																									X
S10	1.00	1445																									X
S0	1.00	1446																									X
ICV	1.00	1449																									X
ICB	1.00	1449																									X
CCV	1.00	1450																									X
CCB	1.00	1451																									X
BW	1.00	1452																									X
PF25	1.00	1452																									X
WH62	1.00	1453																									X
MEWH66	1.00	1454																									X
MEWH66D	1.00	1455																									X
MEWH66S	1.00	1455																									X
CCV	1.00	1456																									X
CCB	1.00	1457																									X
MEWH70	1.00	1459																									X
MEWH71	1.00	1500																									X
MEWH72	1.00	1500																									X
ZZZZZZ	1.00	1501																									X
ZZZZZZ	1.00	1502																									X
ZZZZZZ	1.00	1503																									X
ZZZZZZ	1.00	1503																									X
ZZZZZZ	1.00	1504																									X
ZZZZZZ	1.00	1505																									X
ZZZZZZ	1.00	1505																									X
CCV	1.00	1506																									X
CCB	1.00	1507																									X
ZZZZZZ	1.00	1509																									X
PBS	1.00	1510																									X
LCSS	1.00	1510																									X

FORM XIV - IN ILMO2.

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U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: 68-D3-0040

Lab Code: SWOK__ Case No.: 23857_ SAS No.: _____ SDG No.:MEPF25

Instrument ID Number: LACHAT_____ Method: AS

Start Date: 08/04/95 End Date: 08/04/95

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
MEWH61	1.00	1511																									X
MEWH63	1.00	1512																									X
MEWH63D	1.00	1513																									X
MEWH63S	1.00	1513																									X
MEWH64	1.00	1514																									X
MEWH65	1.00	1515																									X
MEWH67	1.00	1516																									X
CCV	1.00	1516																									
CCB	1.00	1517																									
MEWH68	1.00	1519																									
VH69	1.00	1520																									X
CCV	1.00	1521																									X
CCB	1.00	1521																									X

QC EXCEPTION SUMMARY REPORT

CASE\SAS#: 23857 SITE: Macon City #2/Murrell/Waste MATRIX: Soil/Water WATER SAMPLE SPK: MEWH66

DATA SET: MEPF25 LAB: SWOK CONC: Low WATER SAMPLE DUP: MEWH66

LAB QC # REVIEWED BY: Patricia M. McCluskey SOIL SAMPLE SPK: MEWH63

DATE: August 21, 1995 SOIL SAMPLE DUP: MEWH63

FORM #		FORM 2	FORM 2	FORM 3	FORM 3	FORM 3	FORM 4	FORM 5	FORM 6	FORM 7	FORM 7	FORM 8	FORM 9	FORM 8	FORM 8	FIELD	FIELD	FIELD	FIELD		
ELEMENT	HOLD TIME	INITIAL CALIB	CONTIN CALIB	CALIB BLANK	PREP WATER BLANK	PREP SOIL BLANK	ICS %R	SOIL SPIKE %R	SOIL DUP RPD	LCS AQ	LCS SOIL	SERIAL DILUTION AQUEOUS	SERIAL DILUTION SOIL	AQ DUP RPD	AQ SPIKE %R	BLANK	DUP RPD H2O	BLANK	DUP RPD	GFAA DUP	GFAA ANALYT SPIKE
ALUMINUM				167					72.5								35.0				
ANTIMONY																					
ARSENIC																					
BARIUM									108.0												
BERYLLIUM																					
CADMIUM																					
CALCIUM									125.0												
CHROMIUM																					
COBALT													11.8								
COPPER									115.9												
[illegible]				20.1					133.8								44.0				
LEAD									106.3												
MAGNESIUM									130.4												
MANGANESE									67.9												
MERCURY																					
NICKEL																					
POTASSIUM													14.8								
SELENIUM																					
SILVER									151.8												
SODIUM												10.9									
THALLIUM																					
[illegible]N																					
[illegible]ANADIUM																					
[illegible]NC								21.8	153.3												
[illegible]ANIDE																					

EPA United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analyis)

SAS No. (if applicable): N/A
Case No.: 22057

1. Matrix (Enter in Column A)
   1. Surface Water
   2. Ground Water
   3. Leachate
   4. Field QC
   5. Soil/Sediment
   6. Oil (High only)
   7. Waste (High only)
   8. Other (specify in Column A)

2. Preservative (Enter in Column D)
   1. HCl
   2. HNO3
   3. NaOH
   4. H_2SO_4
   5. $K_2CR_2O_7$
   6. Ice only
   7. Other (specify in Column D)
   N. Not preserved

2. Region No.: V
Sampling Co.: E2E TAT
Sampler (Name): Linda Knorr
Sampler Signature: Linda Knorr

3. Purpose*
Lead: [X] SF [ ] PRP [ ] ST [ ] FED
Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [ ] SI [X] ESI
Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

4. Date Shipped: 8/1/95
Carrier: Fed Ex
Airbill Number: 4805095352

5. Ship To: SWOK
1700 ~~Broken~~ Elm West Albany, Suite C
Broken Arrow, OK 74012
ATTN: Robert Harris

6. Date Received -- Received by: [signature] 8-2-95
Laboratory Contract Number: 68-D3-0040
Unit Price: ~~$226.00~~ 175.00
7. Transfer to:
Date Received: SAG 8-11-95
Received by:
Contract Number:
Price:

CLP Sample Numbers (from labels)	A Matrix (from Box 1) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 2) Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Fluoride	High only: pH	Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K High Phases: Solids	Water-Miscible Liq.	Water-Immis. Liq.
MEWH63	5	L	G	6		X	X					073492	MCLS1	8/1/95 1630	EAFK 4	LK			
MEWH64	5	L	G	6		X	X					073496	MCLS2	8/1/95 1540	EAFK 5	LK			
MEWH65	5	L	G	6		X	X					073500	MCLS3	8/1/95 1515	EAFK 6	LK			
MEWH66	1	L	G	2,3		X	X					073511-12	MCLSW1	8/1/95 1615	EAFK 7	LK			
MEPF25	1	L	G	2,3		X	X					073587-88	MCLSW2	8/1/95 1535	EPK 45	LK			

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
Y	1 of 1	MEWH63, MEWH66		34788-89

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	8/1/95 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	
		[signature]	8/2/95 1000	All samples intact	

A21-012-6 REV. 3/93

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - SMO Copy; Yellow - Lab Copy for Return to SMO

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

EPA United States Environmental Protection Agency Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record

(For Inorganic CLP Analysis)

SAS No. (if applicable): N/A

Case No.: 72957

1. Matrix (Enter in Column A)
   1. Surface Water
   2. Ground Water
   3. Leachate
   4. Field QC
   5. Soil/Sediment
   6. Oil (High only)
   7. Waste (High only)
   8. Other (specify in Column A)

2. Preservative (Enter in Column D)
   1. HCl
   2. HNO3
   3. NaOH
   4. H_2SO_4
   5. $K_2CR_2O_7$
   6. Ice only
   7. Other (specify in Column D)
   N. Not preserved

2 Region No.: V

Sampling Co.: SETAT

Sampler (Name): [illegible]

Sampler Signature: [illegible]

3. Purpose*
   Lead: SF, PRP, ST, FED
   Early Action: CLEM, PA, REM, RI, SI, ESI
   Long-Term Action: FS, RD, RA, O&M, NPLD

4. Date Shipped: 8/1/95

Carrier: Fed Ex

Airbill Number: 4805095352

5. Ship To: SWOK
1700 West Albany, Suite C
Broken Arrow, OK 74012
ATTN: Robert Harris

6. Date Received -- Received by: [illegible] 8-2-95

Laboratory Contract Number: 68-D3-0040

Unit Price: ~~$226.00~~ 175.00

7. Transfer to:

Date Received: 8-11-95

Received by:

Contract Number:

Price:

CLP Sample Numbers (from labels)	A Matrix (from Box 1) / Other:	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 2) / Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Fluoride	High only: pH	Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K High Phases: Solids	Water-Miscible Liq.	Water-Immis. Liq.
MEWH67	5	L	G	6		X	X					073518	WHS1	8/1/95 1030	EAFK9	LK			
MEWH68	5	L	G	6		X	X					073522	WHS1D	8/1/95 1030	ETC02	LK			
MEWH69	5	L	G	6		X	X					073526	WHS2	8/1/95 1040	ETC03	LK			
MEWH70	1	L	G	2,3		X	X					073531-32	WHSW1	8/1/95 1000	ETC04	LK			
MEWH71	1	L	G	2,3		X	X					073537-38	WHSW1D	8/1/95 1000	EAFR1	LK			

Shipment for Case Complete? (Y/N): Y

Page: 1 of 1

Sample(s) to be Used for Laboratory QC:

Additional Sampler Signatures:

Chain of Custody Seal Number(s): 34796-97

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[illegible]	[illegible]				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: is custody seal intact? Y/N/none
		[illegible]	8/2/95 1000	All samples intact.

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - SMO Copy; Yellow - Lab Copy for Return to SMO

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SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS

A21-0112-6 REV. 3/93

EPA United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analysis)

SAS No. (if applicable): N/A
Case No.: 22457

1. Matrix (Enter in Column A)
   1. Surface Water
   2. Ground Water
   3. Leachate
   4. Field QC
   5. Soil/Sediment
   6. Oil (High only)
   7. Waste (High only)
   8. Other (specify in Column A)

2. Preservative (Enter in Column D)
   1. HCl
   2. HNO3
   3. NaOH
   4. H_2SO_4
   5. $K_2CR_2O_7$
   6. Ice only
   7. Other (specify in Column D)
   N. Not preserved

2. Region No: II
Sampling Co.: ESE TAT
Sampler (Name): [illegible]
Sampler Signature: [illegible]
3. Purpose: Lead: [X] SF [ ] PRP [ ] ST [ ] FED
Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [ ] SI [X] ESI
Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

4. Date Shipped: 8/1/95
Carrier: FedEx
Airbill Number: 4805095352
5. Ship To: SWOK
1700 West Albany, Suite C
Broken Arrow, OK 74012
ATTN: Robert Harris

6. Date Received -- Received by: [illegible] 8-2-95
Laboratory Contract Number: 68-D3-0040
Unit Price: ~~$226.00~~ 75.00
7. Transfer to:
Date Received: 8-11-
Received by:
Contract Number:
Price:

CLP Sample Numbers (from labels)	A Matrix (from Box 1) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 2) Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Fluoride	High only: pH	Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K High Phases: Solids	Water-Miscible Liq.	Water-Immis. Liq.
~~MEWH60~~	~~5~~	~~L~~	~~G~~	~~6~~		~~X~~	~~X~~					~~073476~~	~~MLST~~		~~EAFK0~~	~~LK~~			
MEWH61	5	L	G	6		X	X					073480	MLS2	8/1/95 1400	EAFK1	LK			
MEWH62	1	L	G	2,3		X	X					073485-86	MLSW1	8/1/95 1130	EAFK2	LK			
MEWH72	4	L	G	2,3		X	X					~~0734~~ 073543-44	MLF1	8/1/95 1600	EAFR2	LK			

LK 8/11/95

* field sample not in SOG
SAS 08-03-95

Shipment for Case Complete? (Y/N): Y
Page: 1 of 1
Sample(s) to be Used for Laboratory QC:
Additional Sampler Signatures:
Chain of Custody Seal Number(s): 34792-93

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[illegible]	8/1/95 [illegible]				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	
		[illegible]	8/2/95 1000	All samples intact	

A21-012-6 REV. 3/93

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - SMO Copy; Yellow - Lab Copy for Return to ...

EPA Form 9110-1

SEE REVERSE FOR ...

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

ESD Central Regional Laboratory
Data Tracking Form for Contract Samples

Data Set No: _____ CERCLIS No: ILD980498125

Case No: 23857 Site Name Location: Macon Cty #2

Contractor or EPA Lab: SWOK Data User: E & E

No. of Samples: 13 Date Sampled or Data Received: 8-16-95

Have Chain-of-Custody records been received? Yes ✓ No____
Have traffic reports or packing lists been received? Yes ✓ No____
If no, are traffic report or packing list numbers written on the chain-of-custody record? Yes ____ No____
If no, which traffic report or packing list numbers are missing?

_____ _____ _____ _____

_____ _____ _____ _____

Are basic data forms in? Yes ✓ No____
No of samples claimed: 13 No. of samples received: 13

Received by: A. C. Harvey Date: 8-16-95

Received by LSSS: A. C. Harvey Date: 8-16-95

Review started: 8/18/95 Reviewer Signature: Patricia M. McCluntock

Total time spent on review: 4.8+0.2 +1.2 T.M. Date review completed: 8/21/95

Copied by: Lynette Burnett Date: 8-24-95

Mailed to user by: Lynette Burnett Date: 8-24-95

DATA USER:
Please fill in the blanks below and return this form to:
Sylvia Griffen, Data mgmt. Coordinator, Region V, 5SCRL

Data received by: _____ Date: _____

Data review received by: _____ Date: _____

Inorganic Data Complete [ ] Suitable for Intended Purpose [ ] ✓ if OK
Organic Data Complete [ ] Suitable for Intended Purpose [ ] ✓ if OK
Dioxin Data Complete [ ] Suitable for Intended Purpose [ ] ✓ if OK
SAS Data Complete [ ] Suitable for Intended Purpose [ ] ✓ if OK

PROBLEMS: Please indicate reasons why data are not suitable for your uses.

_____

_____

Received by Data Mgmt. Coordinator for Files. Data: _____

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE:

SUBJECT: Review of Region V CLP Data Received for Review on 8-16-95

FROM: Dennis Wesolowski, Chief (SQC-14J)
Contract Analytical Services Section

TO: Data User: E & E Patricia J Scott for D. Wesolowski 08/30/95

We have reviewed the data for the following case:

SITE NAME: Macon Cty #2/Murrell/Waste (IL)

CASE NUMBER: 23857 SDG NUMBER: EAFK1

Number and Type of Samples: 16 - Soil/Water

Sample Numbers: EAFK1-9, EAFR1-3, EPK45, ETC02-01

Laboratory: SWOK Hrs. for Review: 18.5

Following are our findings:

The data are acceptable and usable with the qualifications described in the attached narrative.

Patricia J Scott

cc: Regional TPO

NARRATIVE

LABORATORY:	**SWOK**	**CASE:**	**23857**
SITE:	**MACON CNTY #2/MURRELL/WASTE (IL)**	**SDG:**	**EAFK1**

Below is a summary of the out-of-control audits and the possible effect on the data for this case:

Nine (9) water samples and seven (7) soil samples numbered EAFK1 - 9, EAFR1 - 3, ETC02 - 04 and EPK45 were collected on 08-01-95. Southwest Laboratory of Oklahoma of Broken Arrow, OK received the samples on 08-02-95. All samples, except one SV container for water sample EAFR2, were received intact and in good condition. One SV container for sample EAFR2 was broken on receipt. All samples except EAFK3, EAFK8, and EAFR3 were analyzed for the full list of organic analytes. Water samples EAFK3, EAFK8, and EAFR3 were identified as trip blanks and analyzed for the VOA fraction only. All samples were analyzed according to CLP SOW OLM03.1 8/94.

Water sample EAFK7 and soil sample EAFK4 were used as the low level MS/MSD for all three fractions; VOA, SV and Pest/PCBs.

Water samples EAFK3, EAFK8, and EAFR3 were identified as trip blanks. Soil sample ETC02 was identified as a field duplicate of soil sample EAFK9. Water sample EAFR1 was identified as a field duplicate of water sample ETC04. Water sample EAFR2 was identified as a field blank.

The VOA analyses were performed within the technical holding time of fourteen (14) days after sample collection for preserved water and soil samples; therefore, the results are acceptable. The SV and Pesticide/PCB sample extractions were performed within fourteen (14) days and all analyses were performed within forty (40) days after extraction; therefore, the results are acceptable.

Reviewed by: Allison C. Harvey Lockheed/ESAT
Date: August 25, 1995

NARRATIVE

LABORATORY:	**SWOK**	**CASE:**	**23857**
SITE:	**MACON CNTY #2/MURRELL/WASTE (IL)**	**SDG:**	**EAFK1**

1. HOLDING TIME

Nine (9) water samples and seven (7) soil samples numbered EAFK1 - 9, EAFR1 - 3, ETC02 - 04 and EPK45 were collected on 08-01-95. Southwest Laboratory of Oklahoma of Broken Arrow, OK received the samples on 08-02-95. All samples, except one SV container for water sample EAFR2, were received intact and in good condition. One SV container for sample EAFR2 was broken on receipt. All samples except EAFK3, EAFK8, and EAFR3 were analyzed for the full list of organic analytes. Water samples EAFK3, EAFK8, and EAFR3 were identified as trip blanks and analyzed for the VOA fraction only. All samples were analyzed according to CLP SOW OLM03.1 8/94.

The VOA analyses were performed within the technical holding time of fourteen (14) days after sample collection for preserved water and soil samples; therefore, the results are acceptable. The SV and Pesticide/PCB soil sample extractions were performed within fourteen (14) days and all analyses were performed within forty (40) days after extraction; therefore, the results are acceptable. All SVOA and Pest/PCB water extractions were performed within 7 days, therefore results are acceptable. RJS 08/30/95

2. GC/MS TUNING AND GC PERFORMANCE

All GC/MS tuning complied with the mass list and ion abundance criteria for BFB, and all samples were analyzed within the twelve (12) hour periods for instrument performance checks.

All GC/MS tuning complied with the mass list and ion abundance criteria for DFTPP, and all samples were analyzed within the twelve (12) hour periods for instrument performance checks.

GC Resolution Check Mixtures met the 60% resolution criteria. Endrin and DDT degradation checks using PEM Mix on the DB-17 and DB-1701 columns were <20%; therefore the results are acceptable. The Florisil Cartridge Check and GPC Calibration Check met the QC criteria; therefore, the results are acceptable.

3. CALIBRATION

Initial and continuing calibrations of the Volatile, Semi-Volatile, and Pest/PCB standards were evaluated for the target compounds list and outliers were recorded on the outlier forms included as a part of this narrative.

Reviewed by: Allison C. Harvey Lockheed/ESAT
Date: August 25, 1995

NARRATIVE

LABORATORY:	**SWOK**	**CASE:**	**23857**
SITE:	**MACON CNTY #2/MURRELL/WASTE (IL)**	**SDG:**	**EAFK1**

4. METHOD BLANKS

VOA:

VBLK1 and VBLK3 are the two (2) low level volatile water method blanks. VBLK2 is the low level volatile soil method blank. VBLK1 contained Methylene Chloride at 2 µg/L, Chloroform at 1 µg/L and no TICs. VBLK2 contained no target compounds and no TICs. VBLK3 contained Methylene Chloride at 1 µg/L and no TICs. VHBLK1 is the volatile storage blank. Methylene Chloride is a common laboratory contaminant; its presence in any of the samples associated with the method blanks is flagged as undetected "U", when the sample result is less than ten (10) times the blank result. The presence of Chloroform in the samples associated with the method blanks is flagged as undetected "U", when the sample result is less than five (5) times the blank result. The volatile method blank summaries (FORM IV VOA) list the samples associated with each blank.

SV:

SBLK1 is the low level semi-volatile soil method blank. SBLK2 and SBLK3 are the low level semi-volatile water method blanks. SBLK1 contained bis(2-Ethylhexyl)phthalate at 63 µg/Kg and nine (9) TICs. SBLK2 contained bis(2-Ethylhexyl)phthalate at 1 µg/L and two (2) TICs. SBLK3 contained no target compounds and two (2) TICs. Bis(2-Ethylhexyl)phthalate is a common laboratory contaminant; its presence in any of the samples associated with the method blanks is flagged as undetected "U", when the sample result is less than ten (10) times the blank result. The presence of any of the TICs in the samples associated with the method blanks is flagged as undetected "U", when the sample result is less than five (5) times the blank result. The semi-volatile method blank summaries (FORM IV SV) list the samples associated with each blank.

Pesticide\PCB:

PBLKSD and PBLKSN are the two (2) pesticide soil method blanks and PBLKWA and PBLKWB are the two (2) pesticide water method blanks. No target compounds were detected in any of the four (4) method blanks; therefore, the results are acceptable. The pesticide method blank summaries (FORM IV PEST) list the samples associated with each blank.

Reviewed by: Allison C. Harvey Lockheed/ESAT
Date: August 25, 1995

NARRATIVE

LABORATORY:	**SWOK**	**CASE:**	**23857**
SITE:	**MACON CNTY #2/MURRELL/WASTE (IL)**	**SDG:**	**EAFK1**

There were eight (8) pesticide instrument method blanks. No samples were associated with the instrument blanks.

5. SYSTEM MONITORING COMPOUND RECOVERY

VOA:

The volatile system monitoring compounds were within the QC limits for all samples; therefore, the results are acceptable.

SV:

S2 - 2-Fluorobiphenyl (FBP) of the base/neutral fraction reported recovery low outside the QC limits for water samples EAFK7MSD. S3 - Terphenyl-d14 (TPH) of the base/neutral fraction reported recoveries low outside the QC limits for water samples EAFK7, EAFK7MS, EAFK7MSD and EPK45. Water samples EAFK7, EAFK7MS and EPK45 required no qualification as less than 2 surrogates of either the acid or the base/neutral fraction were outside the QC limits. Water sample EAFK7MSD reported two surrogates of the base/neutral fraction low outside of QC limits; therefore detected semivolatile target compounds are qualified as estimated "J" and non-detects "UJ".

Pest/PCB:

This data was qualified using the National Functional Guidelines for Organic Data Review (6/91) QC limits of 60-150 percent. Tetrachloro-m-xylene (TCX) reported recoveries low outside the QC limits for soil sample EAFK9 on both GC columns. TCX reported recoveries low outside the QC limits for soil samples EAFK4, EAFK4MSD and soil method blank PBLKSD on GC column DB-1701. TCX reported recovery high outside the QC limits for water sample EAFK7 on GC column DB-17. The high recovery observed for water sample EAFK7 may be an indication of co-eluting interferences; therefore, detected target compounds should be qualified as estimated, "J". The low recoveries observed for soil samples EAFK4, EAFK4MSD, EAFK9 and soil method blank PBLKSD may be an indication of a low bias; therefore, detected target compounds should be qualified as estimated, "J" and non-detects "UJ".

Reviewed by: Allison C. Harvey Lockheed/ESAT
Date: August 25, 1995

NARRATIVE

LABORATORY:	**SWOK**	**CASE:**	**23857**
SITE:	**MACON CNTY #2/MURRELL/WASTE (IL)**	**SDG:**	**EAFK1**

6. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Water sample EAFK7 and soil sample EAFK4 were used as the low level MS/MSD for all three fractions; VOA, SV and Pest/PCBs.

VOA:

All spike recoveries and RPDs for the low level soil sample, EAFK4 were within the QC limits; therefore, the results are acceptable.

The %RPD of Benzene in the low level spiked water sample EAKF7 was high outside the QC limit. Positive results for benzene in the unspiked soil sample should be considered as estimated "J" and non-detects "UJ".

SV:

All spike recoveries and RPDs for the low level soil sample, EAFK4 were within the QC limits; therefore, the results are acceptable.

The %recoveries of N-Nitroso-di-n-propylamine and 1,2,4-Trichlorobenzene reported low outside the QC limits for low level water samples EAFK7MS and EAFK7MSD. The %recoveries of 1,4-Dichlorobenzene and Acenaphthene reported low outside the QC limits for low level water sample EAFK7MSD. Positive results for these compounds in the unspiked water sample, EAFK7, should be considered as estimated "J" and non-detects "UJ".

Pest/PCB:

The %RPD for Heptachlor reported high outside the QC limit for the spiked soil samples EAFK4MS and EAFK4MSD. Positive results for these compounds in the unspiked soil sample should be considered as estimated "J", and non-positive results estimated, "UJ". AJS 08/30/95

All spike recoveries and RPDs for the low level water sample, EAFK7 were within the QC limits; therefore, the results are acceptable.

7. FIELD BLANK AND FIELD DUPLICATE

Water samples EAFK3, EAFK8, and EAFR3 were identified as trip blanks. Sample EAFK3 reported one (1) target compound and no TICs for the volatile fraction. Sample EAFK8 reported three (3) target compound and six (6) TICs for the volatile fraction.

Reviewed by: Allison C. Harvey Lockheed/ESAT
Date: August 25, 1995

NARRATIVE

LABORATORY:	**SWOK**	**CASE:**	**23857**
SITE:	**MACON CNTY #2/MURRELL/WASTE (IL)**	**SDG:**	**EAFK1**

Sample EAFR3 reported two (2) target compound and one (1) TIC for the volatile fraction.

Soil sample ETC02 was identified as a field duplicate of soil sample EAFK9. Sample ETC02 reported two (2) target compounds and no TICs for the volatile fraction; sample EAFK9 reported two (2) target compounds and no TICs for the volatile fraction. Sample ETC02 reported twelve (12) target compounds and twenty-five (25) TICs for the semi-volatile fraction; sample EAFK9 reported thirteen (13) target compounds and nineteen (19) TICs for the semi-volatile fraction. Sample ETC02 reported no target compounds for the pesticide/PCB fraction; sample EAFK9 reported no target compounds for the pesticide/PCB fraction.

Water sample EAFR1 was identified as a field duplicate of water sample ETC04. Sample ETC04 reported three (3) target compounds and seven (7) TICs for the volatile fraction; sample EAFR1 reported three (3) target compounds and six (6) TICs for the volatile fraction. Sample ETC04 reported no target compounds and no TICs for the semi-volatile fraction; sample EAFR1 reported one (1) target compound and two (2) TICs for the semi-volatile fraction. Sample ETC04 reported no target compounds for the pesticide/PCB fraction; sample EAFR1 reported no target compounds for the pesticide/PCB fraction.

Water sample EAFR2 was identified as a field blank. Sample EAFR2 reported no target compounds and eight (8) TICs for the VOA fraction; one (1) target compound and two (2) TICs for the SV fraction; and no target compounds for the pesticide/PCB fraction.

8. INTERNAL STANDARDS

VOA:

The internal standard retention time and area counts for the VOA fraction were all within the required QC limits; therefore, the results are accepatable.

SV:

IS5 - Chrysene-d12 (CRY) reported area counts low outside the QC limits for water sample EAFK7MSD. Detected target compounds for EAFK7MSD quantitated using IS5 should be qualified as estimated "J" and non-detects "UJ".

See Table 4 for the list of affected target compounds.

Reviewed by: Allison C. Harvey Lockheed/ESAT
Date: August 25, 1995

NARRATIVE

LABORATORY:	**SWOK**	**CASE:**	**23857**
SITE:	**MACON CNTY #2/MURRELL/WASTE (IL)**	**SDG:**	**EAFK1**

9. COMPOUND IDENTIFICATION

After reviewing the mass spectra and chromatograms it appears that all VOA, SV and Pesticide/PCB compounds were correctly identified.

10. COMPOUND QUANTITATION AND REPORTED DETECTION LIMITS

All CRQLs were properly adjusted for percent moisture and dilution; therefore all VOA, SV, and Pest/PCB target were properly reported. All target compound quantitation was properly reported.

11. SYSTEM PERFORMANCE

GC/MS baseline indicated acceptable performance. The GC baseline for the pesticide analysis was acceptable.

12. OVERALL CASE ASSESSMENT

VOA:

The laboratory reported that water samples EAFK7 and EAFR1 had neutral Ph values of 7 indicating that they had not been properly preserved as indicated on the Organic Traffic Report/Chain-of-Custody records. However, since the analyses were conducted within the seven (7) day holding time for unpreserved water samples; therefore, no qualification of the data is required.

Reviewed by: Allison C. Harvey Lockheed/ESAT
Date: August 25, 1995

CALIBRATION OUTLIERS
VOLATILE TCL COMPOUNDS
(Page 1 of 1)

CASE\SAS#: 23857 LABORATORY: SWOK

COLUMN: DB - 624 SITE NAME: Mason Cty #2/Murrell

HEATED PURGE (Y/N): N

Instrument# C		Initial Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.		
Date/Time:		07/26/95 0805			08/07/95 0801			08/09/95 0840								
	#	rf	%rsd	*	rf	%d	*	rf	%d	*	rf	%d	*	rf	%d	*
Chloromethane	0.01															
Bromomethane	0.10															
Vinyl chloride	0.10															
Chloroethane	0.01															
Methylene chloride	0.01															
Acetone	0.01	0.183			0.310	69.4	J	0.228								
Carbon disulfide	0.01															
1,1-Dichloroethene	0.10															
1,1-Dichloroethane	0.20															
1,2-Dichloroethene (total)																
Chloroform	0.20															
1,2-Dichloroethane	0.10															
2-Butanone	0.01															
1,1,1-Trichloroethane	0.10															
Carbon tetrachloride	0.10															
Bromodichloromethane	0.20															
1,2-Dichloropropane																
cis-1,3-Dichloropropene	0.20															
Trichloroethene	0.30															
Dibromochloromethane	0.10															
1,1,2-Trichloroethane	0.10															
Benzene	0.50															
tran-1,3-Dichloropropene	0.10															
Bromoform	0.10															
4-Methyl-2-pentanone	0.01															
2-Hexanone	0.01															
Tetrachloroethene	0.20															
1,1,2,2-Tetrachloroethane	0.50															
Toluene	0.40															
Chlorobenzene	0.50															
Ethylbenzene	0.10															
Styrene	0.30															
Xylene (total)	0.30															
Toluene-d8																
Bromofluorobenzene	0.20															
1,2-Dichloroethane-d4																

Samples affected:

VBLK1	VBLK3		
EAFK2-3	VHBLK1		
EAFK7-8			
EAFR2-3			
EAFK7MS/MSD			
EAFR1			
EPK45			
ETC04			

Reviewer's Init/Date: ACH / 8-22-95

J/R = All positive results are estimated "J" and non-detected results are unusable "R".

* = These flags should be applied to the analytes on the sample data sheets.

= Minimum Relative Response Factor

ESAT-S-055.4 1/95

CALIBRATION OUTLIERS
VOLATILE TCL COMPOUNDS
(Page 1 of 1)

CASE\SAS#: 23857 LABORATORY: SWOK

COLUMN: DB-624 SITE NAME: Mason Cty #2/Murrell

HEATED PURGE (Y/N): Y

Instrument# L		Initial Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.		
Date/Time:		08/02/95 1905			08/07/95 1331											
	#	rf	%rsd	*	rf	%d	*	rf	%d	*	rf	%d	*	rf	%d	*
Chloromethane	0.01															
Bromomethane	0.10	0.907			1.159	27.8	J									
Vinyl chloride	0.10	0.950			1.197	26.0	J									
Chloroethane	0.01	0.584			0.764	30.8	J									
Methylene chloride	0.01	1.200			1.827	52.3	J									
Acetone	0.01	0.118			0.181	53.4	J									
Carbon disulfide	0.01															
1,1-Dichloroethene	0.10															
1,1-Dichloroethane	0.20															
1,2-Dichloroethene (total)																
Chloroform	0.20															
1,2-Dichloroethane	0.10															
2-Butanone	0.01															
1,1,1-Trichloroethane	0.10															
Carbon tetrachloride	0.10															
Bromodichloromethane	0.20															
1,2-Dichloropropane																
cis-1,3-Dichloropropene	0.20															
Trichloroethene	0.30															
Dibromochloromethane	0.10															
1,1,2-Trichloroethane	0.10															
Benzene	0.50															
tran-1,3-Dichloropropene	0.10															
Bromoform	0.10															
4-Methyl-2-pentanone	0.01															
2-Hexanone	0.01	0.120	37.3	J	0.63											
Tetrachloroethene	0.20															
1,1,2,2-Tetrachloroethane	0.50															
Toluene	0.40															
Chlorobenzene	0.50															
Ethylbenzene	0.10															
Styrene	0.30															
Xylene (total)	0.30															
Toluene-d8																
Bromofluorobenzene	0.20															
1,2-Dichloroethane-d4																

Samples affected:
VBLK2.
EAFK1
EAFK4-6
EAFK4MS/MSD
EAFK9
ETCO2-3

Reviewer's Init/Date: ACH / 8-22-95

J/R = All positive results are estimated "J" and non-detected results are unusable "R".

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= Minimum Relative Response Factor

CALIBRATION OUTLIER
SEMIVOLATILE TCL COMPOUNDS
(Page 1 of 2)

CASE\SAS#: 23857 LABORATORY: SWOK

COLUMN: SITE NAME: Macon Cty #2/Murrell

Instrument# V		Initial Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.		
Date/Time:		07/24/95 1218			08/04/95 1057			08/07/95 0831								
	#	rf	%rsd	*	rf	%d	*	rf	%d	*	rf	%d	*	rf	%d	*
Phenol	0.80															
bis(2-chloroethyl) Ether	0.70															
2-Chlorophenol	0.70															
1,3-Dichlorobenzene																
1,4-Dichlorobenzene																
1,2-Dichlorobenzene																
2-Methylphenol	0.70															
2,2'-Oxybis(1-chl-propane)	0.01															
4-Methylphenol	0.60															
N-nitroso-di-n-propylamine	0.50															
Hexachloroethane	0.30															
Nitrobenzene	0.20															
Isophorone	0.40															
2-Nitrophenol	0.10															
2,4-Dimethylphenol	0.20															
bis-(2-chloroethoxyl)methane	0.30															
2,4-Dichlorophenol	0.20															
1,2,4-Trichlorobenzene	0.20															
Naphthalene	0.70															
4-Chloroaniline	0.01															
Hexachlorobutadiene	0.01															
4-Chloro-3-methylphenol	0.20															
2-Methylnaphthalene	0.40															
Hexachlorocyclopentadiene	0.01															
2,4,6-Trichlorophenol	0.20															
2,4,5-Trichlorophenol	0.20															
2-Chloronaphthalene	0.80															
2-Nitroaniline	0.01															
Dimethyl phthlate	0.01															
Acenaphthylene	1.30															
2,6-Dinitrotoluene	0.20															
3-Nitroaniline	0.01															
Acenaphthene	0.30															
2,4-Dinitrophenol	0.01	0.194			0.128	34.0	J	0.125	35.2	J						
4-Nitrophenol	0.01															
Dibenzofuran	0.80															
2,4-Dinitrotoluene	0.20															

Affected samples:

SBLK1	SBLK3
EAFK1	EAFK2
EAFK4-6	EAFK7
EAFK4MS/MSD	EAFKMS/MSD
EAFK9	EAFR1-2
ETCO2-3	EPK45

Reviewer's Init/Date: aoH / 8-22-95

J/R = All positive results are estimated "J" and non-detected results are unusable "R"

* = These flags should be applied to the analytes on the sample data sheets.

= Minimum Relative Response Factor

ESAT-5-023.3 1/95

CALIBRATION OUTLIER
SEMIVOLATILE TCL COMPOUNDS
(Page 2 of 2)

CASE\SAS#: 23857
COLUMN:

LABORATORY: SWOK

SITE NAME: Mason Cty #2/Murrell

Instrument# V		Initial Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.		
Date/Time:		07/24/95 1218			08/04/95 1057			08/07/95 0831								
	#	rf	%rsd	*	rf	%d	*	rf	%d	*	rf	%d	*	rf	%d	*
Diethylphthalate	0.01															
4-Chlorophenyl-phenylether	0.40															
Fluorene	0.90															
4-Nitroaniline	0.01															
4,6-Dinitro-2-methylphenol	0.01															
N-nitrosodiphenylamine	0.01															
4-Bromophenyl-phenylether	0.10															
Hexachlorobenzene	0.10															
Pentachlorophenol	0.05	0.212			0.137	35.5	J	0.141	33.4	J						
Phenanthrene	0.70															
Anthracene	0.70															
Carbazole																
Di-n-butylphthalate	0.01															
Fluoranthene	0.60															
Pyrene	0.60	1.516			2.103	38.7	J	1.965	29.6	J						
Butylbenzylphthalate	0.01	0.851			1.264	48.5	J	1.311	54.0	J						
3,3'-Dichlorobenzidine	0.01															
Benzo(a)anthracene	0.80															
Chrysene	0.70															
bis(2-Ethylhexyl)phthalate	0.01	1.137			1.614	42.0	J	1.728	52.0	J						
Di-n-octyl phthalate	0.01	1.854			2.922	57.6	J	3.195	72.3	J						
Benzo(b)fluoranthene	0.70															
Benzo(k)fluoranthene	0.70															
Benzo(a)pyrene	0.70															
Indeno(1,2,3-cd)pyrene	0.50															
Dibenz(a,h)anthrancene	0.40															
Benzo(g,h,i)perylene	0.50															
Nitrobenzene-d5	0.01															
2-Fluorobiphenyl	0.70															
Terphenyl-d14	0.50															
Phenol-d5	0.80															
2-Fluorophenol	0.60															
2,4,6-Tribromophenol	0.01	0.155			0.112	27.9	J	0.113	27.3	J						
2-Chlorophenol-d4																
1,2-Dichlorobenzene-d4																

Reviewer's Init/Date: ACH/8-22-95

J/R = All positive results are estimated "J" and non-detected results are unusable "R"

* = These flags should be applied to the analytes on the sample data sheets.
\# = Minimum Relative Response Factor

CALIBRATION OUTLIER
SEMIVOLATILE TCL COMPOUNDS
(Page 1 of 2)

CASE\SAS#: 23857 LABORATORY: SWOK

COLUMN: SITE NAME: Macon Cty #2/Murrell

Instrument# T		Initial Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.		
Date/Time:		08/07/95 0828			08/09/95 0838			08/10/95 1043								
	#	rf	%rsd	*	rf	%d	*	rf	%d	*	rf	%d	*	rf	%d	*
Phenol	0.80															
bis(2-chloroethyl) Ether	0.70															
2-Chlorophenol	0.70															
1,3-Dichlorobenzene																
1,4-Dichlorobenzene																
1,2-Dichlorobenzene																
2-Methylphenol	0.70															
2,2'-Oxybis(1-chl-propane)	0.01															
4-Methylphenol	0.60															
N-nitroso-di-n-propylamine	0.50															
Hexachloroethane	0.30															
Nitrobenzene	0.20															
Isophorone	0.40															
2-Nitrophenol	0.10															
2,4-Dimethylphenol	0.20															
bis-(2-chloroethoxyl)methane	0.30															
2,4-Dichlorophenol	0.20															
1,2,4-Trichlorobenzene	0.20															
Naphthalene	0.70															
4-Chloroaniline	0.01															
Hexachlorobutadiene	0.01															
4-Chloro-3-methylphenol	0.20															
2-Methylnaphthalene	0.40															
Hexachlorocyclopentadiene	0.01															
2,4,6-Trichlorophenol	0.20															
2,4,5-Trichlorophenol	0.20															
2-Chloronaphthalene	0.80															
2-Nitroaniline	0.01															
Dimethyl phthlate	0.01															
Acenaphthylene	1.30															
2,6-Dinitrotoluene	0.20															
3-Nitroaniline	0.01															
Acenaphthene	0.30															
2,4-Dinitrophenol	0.01	0.177			0.176			0.127	28.6	J						
4-Nitrophenol	0.01															
Dibenzofuran	0.80															
2,4-Dinitrotoluene	0.20															
Affected samples:					ETCO4			SBLK2								

Reviewer's Init/Date: [illegible] / 8-22-95

J/R = All positive results are estimated "J" and non-detected results are unusable "R"

* = These flags should be applied to the analytes on the sample data sheets.
# = Minimum Relative Response Factor

ESAT-5-023.3 1/95

CALIBRATION OUTLIER
SEMIVOLATILE TCL COMPOUNDS
(Page 2 of 2)

CASE\SAS#: 23857 LABORATORY: SWOK

COLUMN:

SITE NAME: Macon Cty #2/Murrell

Instrument# T		Initial Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.		
Date/Time:		08/07/95 0828			08/09/95 0838			08/10/95 1043								
	#	rf	%rsd	*	rf	%d	*	rf	%d	*	rf	%d	*	rf	%d	*
Diethylphthalate	0.01															
4-Chlorophenyl-phenylether	0.40															
Fluorene	0.90															
4-Nitroaniline	0.01															
4,6-Dinitro-2-methylphenol	0.01															
N-nitrosodiphenylamine	0.01															
4-Bromophenyl-phenylether	0.10															
Hexachlorobenzene	0.10															
Pentachlorophenol	0.05															
Phenanthrene	0.70															
Anthracene	0.70															
Carbazole																
Di-n-butylphthalate	0.01															
Fluoranthene	0.60															
Pyrene	0.60															
Butylbenzylphthalate	0.01															
3,3'-Dichlorobenzidine	0.01															
Benzo(a)anthracene	0.80															
Chrysene	0.70															
bis(2-Ethylhexyl)phthalate	0.01															
Di-n-octyl phthalate	0.01	1.999			2.591	29.6	J	2.587	29.4	J						
Benzo(b)fluoranthene	0.70															
Benzo(k)fluoranthene	0.70															
Benzo(a)pyrene	0.70															
Indeno(1,2,3-cd)pyrene	0.50															
Dibenz(a,h)anthrancene	0.40															
Benzo(g,h,i)perylene	0.50															
Nitrobenzene-d5	0.01															
2-Fluorobiphenyl	0.70															
Terphenyl-d14	0.50															
Phenol-d5	0.80															
2-Fluorophenol	0.60															
2,4,6-Tribromophenol	0.01															
2-Chlorophenol-d4																
1,2-Dichlorobenzene-d4																

Reviewer's Init/Date: ACH / 8-22-95

J/R = All positive results are estimated "J" and non-detected results are unusable "R"

* = These flags should be applied to the analytes on the sample data sheets.

= Minimum Relative Response Factor

CALIBRATION OUTLIER
PESTICIDE/PCB TCL COMPOUNDS
(Page 1 of 1)

CASE\SAS#: 23857 LABORATORY: SWOK

COLUMN: DB-1701 SITE NAME: Macon Cty #2/Murrell

Instrument# HP-01A		Initial Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.		
Date/Time:		08/04/95			08/05/95 0212											
	#	rf	%rsd	*	rf	%d	*	rf	%d	*	rf	%d	*	rf	%d	*
alpha-BHC	0.01															
beta-BHC	0.40															
delta-BHC	0.90															
gamma-BHC	0.01															
Heptachlor	0.01															
Aldrin	0.01															
Heptachlor epoxide	0.10															
Endosulfan I	0.10															
Dieldrin	0.05															
4, 4'-DDE	0.70															
Endrin	0.70															
Endosulfan II	0.01															
4, 4'-DDD	0.60															
Endosulfan sulfate	0.60															
4, 4'-DDT	0.01															
Methoxychlor	0.01															
Endrin ketone	0.80															
Endrin aldehyde	0.70															
alpha chlordane	0.01															
gamma chlordane	0.01															
Arochlor 1016																
Arochlor 1221																
Arochlor 1232																
Arochlor 1242																
Arochlor 1248																
Arochlor 1254																
Arochlor 1260																

Affected samples:

	PBLKWA			
	PBLKWB			
	EAFK2			
	EAFK7			
	EAFK7MS/MSD			
	EAFR1-2			
	EPK45			
	ETC04			

Reviewer's Init/Date: aeH / 8-23-95

* These flags should be applied to the analytes on the sample data sheets.
\# Minimum Relative Response Factor

CALIBRATION OUTLIER
PESTICIDE/PCB TCL COMPOUNDS
(Page 1 of 1)

CASE\SAS#: 23857 LABORATORY: SWOK

COLUMN: DB-17 SITE NAME: Macon Cty #2/Murrell

Instrument# HP-01B		Initial Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.		
Date/Time:		08/04/95			08/05/95 0212											
	#	rf	%rsd	*	rf	%d	*	rf	%d	*	rf	%d	*	rf	%d	*
alpha-BHC	0.01															
beta-BHC	0.40															
delta-BHC	0.90															
gamma-BHC	0.01															
Heptachlor	0.01															
Aldrin	0.01															
Heptachlor epoxide	0.10															
Endosulfan I	0.10															
Dieldrin	0.05															
4, 4'-DDE	0.70															
Endrin	0.70															
Endosulfan II	0.01															
4, 4'-DDD	0.60															
Endosulfan sulfate	0.60															
4, 4'-DDT	0.01															
Methoxychlor	0.01															
Endrin ketone	0.80															
Endrin aldehyde	0.70															
alpha chlordane	0.01															
gamma chlordane	0.01															
Arochlor 1016																
Arochlor 1221																
Arochlor 1232																
Arochlor 1242																
Arochlor 1248																
Arochlor 1254																
Arochlor 1260																

Affected samples:

PBLKWA			
PBLKWB			
EAFK2			
EAFK7			
EAFK7MS/MSD			
EAFR1-2			
EPK45			
ETC04			

Reviewer's Init/Date: aH /8-24-95

* These flags should be applied to the analytes on the sample data sheets.
\# Minimum Relative Response Factor

CALIBRATION OUTLIER
PESTICIDE/PCB TCL COMPOUNDS
(Page 1 of 1)

CASE\SAS#: 23857 LABORATORY: SWOK

COLUMN: DB-17 SITE NAME: Macon Cty #2/Murrell

Instrument# HP-02A		Initial Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.		
Date/Time:		08/07/95			08/08/95 0231			08/09/95 1335								
	#	rf	%rsd	*	rf	%d	*	rf	%d	*	rf	%d	*	rf	%d	*
alpha-BHC	0.01															
beta-BHC	0.40															
delta-BHC	0.90															
gamma-BHC	0.01															
Heptachlor	0.01															
Aldrin	0.01															
Heptachlor epoxide	0.10															
Endosulfan I	0.10															
Dieldrin	0.05															
4, 4'-DDE	0.70															
Endrin	0.70															
Endosulfan II	0.01															
4, 4'-DDD	0.60															
Endosulfan sulfate	0.60															
4, 4'-DDT	0.01															
Methoxychlor	0.01															
Endrin ketone	0.80															
Endrin aldehyde	0.70															
alpha chlordane	0.01															
gamma chlordane	0.01															
Arochlor 1016																
Arochlor 1221																
Arochlor 1232																
Arochlor 1242																
Arochlor 1248																
Arochlor 1254																
Arochlor 1260																

Affected samples:

PBLKSN
EAFK1
EAFK5-6
EAFK9
ETCO2-3

Reviewer's Init/Date: ACH / 8-24-95

* These flags should be applied to the analytes on the sample data sheets.
\# Minimum Relative Response Factor

CALIBRATION OUTLIER
PESTICIDE/PCB TCL COMPOUNDS
(Page 1 of 1)

CASE\SAS#: 23857 LABORATORY: SWOK

COLUMN: DB-1701 SITE NAME: Macon Cty #2/Murrell

Instrument# HP-02B		Initial Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.		
Date/Time:		08/07/95			08/08/95 0231			08/09/95 1335								
	#	rf	%rsd	*	rf	%d	*	rf	%d	*	rf	%d	*	rf	%d	*
alpha-BHC	0.01															
beta-BHC	0.40															
delta-BHC	0.90															
gamma-BHC	0.01															
Heptachlor	0.01															
Aldrin	0.01															
Heptachlor epoxide	0.10															
Endosulfan I	0.10															
Dieldrin	0.05															
4, 4'-DDE	0.70															
Endrin	0.70															
Endosulfan II	0.01															
4, 4'-DDD	0.60															
Endosulfan sulfate	0.60															
4, 4'-DDT	0.01		28.0	J		12.1			3.0							
Methoxychlor	0.01															
Endrin ketone	0.80															
Endrin aldehyde	0.70															
alpha chlordane	0.01															
gamma chlordane	0.01															
Arochlor 1016																
Arochlor 1221																
Arochlor 1232																
Arochlor 1242																
Arochlor 1248																
Arochlor 1254																
Arochlor 1260																

Affected samples:

PBLKSN
EAFK1
EAFK5-6
EAFK9
ETC02-3

Reviewer's Init/Date: 8-24-95

* These flags should be applied to the analytes on the sample data sheets.
\# Minimum Relative Response Factor

CALIBRATION OUTLIER
PESTICIDE/PCB TCL COMPOUNDS
(Page 1 of 1)

CASE\SAS#: 23857 LABORATORY: SWOK

COLUMN: DB-1701 SITE NAME: Macon Cty #2/Murrell

Instrument# HP-01A		Initial Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.		
Date/Time:		08/08/95			08/08/95 2317			08/14/95 1425								
	#	rf	%rsd	*	rf	%d	*	rf	%d	*	rf	%d	*	rf	%d	*
alpha-BHC	0.01															
beta-BHC	0.40															
delta-BHC	0.90															
gamma-BHC	0.01															
Heptachlor	0.01															
Aldrin	0.01															
Heptachlor epoxide	0.10															
Endosulfan I	0.10															
Dieldrin	0.05															
4, 4'-DDE	0.70															
Endrin	0.70															
Endosulfan II	0.01															
4, 4'-DDD	0.60															
Endosulfan sulfate	0.60															
4, 4'-DDT	0.01															
Methoxychlor	0.01															
Endrin ketone	0.80															
Endrin aldehyde	0.70															
alpha chlordane	0.01															
gamma chlordane	0.01															
Arochlor 1016																
Arochlor 1221																
Arochlor 1232																
Arochlor 1242																
Arochlor 1248																
Arochlor 1254																
Arochlor 1260																

Affected samples:

PBLKSD
EAFK4
EAFK4MS/MSD

Reviewer's Init/Date: ACH / 8-24-95

* These flags should be applied to the analytes on the sample data sheets.
\# Minimum Relative Response Factor

CALIBRATION OUTLIER
PESTICIDE/PCB TCL COMPOUNDS
(Page 1 of 1)

CASE\SAS#: 23857 LABORATORY: SWOK

COLUMN: DB-17 SITE NAME: Macon Cty #2/Murrell

Instrument# HP-01B		Initial Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.			Contin. Cal.		
Date/Time:		08/08/95			08/08/95 2317			08/14/95 1425								
	#	rf	%rsd	*	rf	%d	*	rf	%d	*	rf	%d	*	rf	%d	*
alpha-BHC	0.01															
beta-BHC	0.40															
delta-BHC	0.90															
gamma-BHC	0.01															
Heptachlor	0.01															
Aldrin	0.01															
Heptachlor epoxide	0.10															
Endosulfan I	0.10															
Dieldrin	0.05															
4, 4'-DDE	0.70															
Endrin	0.70															
Endosulfan II	0.01															
4, 4'-DDD	0.60															
Endosulfan sulfate	0.60															
4, 4'-DDT	0.01															
Methoxychlor	0.01															
Endrin ketone	0.80															
Endrin aldehyde	0.70															
alpha chlordane	0.01															
gamma chlordane	0.01															
Arochlor 1016																
Arochlor 1221																
Arochlor 1232																
Arochlor 1242																
Arochlor 1248																
Arochlor 1254																
Arochlor 1260																

Affected samples:

PBLKSD
EAFK4
EAFK4MS/MSD

Reviewer's Init/Date: ACH / 8-24-95

* These flags should be applied to the analytes on the sample data sheets.
\# Minimum Relative Response Factor

ORGANIC DATA QUALIFIER DEFINITIONS

For the purpose of defining the flagging nomenclature utinized in this document, the following code letters and associated definitions are provide:

VALUE-if the results is a value greater than or equal to the Contract Required Quantitation Limit (CRQL).

U Indicates that the compound was analyzed for, but not detected. The sample quantitation limit corrected for dilution and percent moisture is reported.

J Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of a compound but the result is less than the sample quantitation limit, but greater than zero. The flag is also used to indicate a reported result having an associated QC problem.

R Indicates the data are unusable. (Note: The analyte may or may not be present.)

N Indicates presumptive evidence of a compound. This flag is only used for a tentatively identified compound, where the identification is based on a mass spectral library search.

P Indicates a pesticide/Aroclor target analyte when there is greater than 25% difference for the detected concentrations between the two GC columns. The lower of the two results is reported.

C Indicates pesticide results that have been confirmed by GC/MS.

B Indicates the analyte is detected in the associated blank as well as the sample.

E Indicates compounds whose concentrations exceed the calibration range of the instrument.

D Indicates an identified compound in an analysis has been diluted. This flag alerts the data user to any differences between the concentrations reported in the two analysis.

A Indicates tentatively identified compounds that are suspected to be aldol condensation products.

G Indicates the TCLP Matrix Spike Recovery was greater than the upper limit of the analytical method.

L Indicates the TCLP Matrix Spike Recovery was less than the lower limit of the analytical method.

T Indicates the analyte is found in the associated TCLP extraction blank as well as in the sample.

X, Y, Z are reserved for laboratory defined flags.

ESAT-5-025.3

TABLE 4

(For Multi-Media, Multi-Concentration Analysis)

VOLATILE INTERNAL STANDARDS WITH CORRESPONDING TCL ANALYTES ASSIGNED FOR QUANTITATION

Bromochloromethane	1,4-Difluorobenzene	Chlorobenzene-d_5
Chloromethane	Bromoform	2-Hexanone
Bromomethane	1,1,1-Trichloroethane	4-Methyl-2-pentanone
Vinyl chloride	Carbon tetrachloride	Tetrachloroethene
Chloroethane	Bromodichloromethane	1,1,2,2-Tetrachloroethane
Methylene chloride	1,2-Dichloropropane	Toluene
Acetone	trans-1,3-Dichloropropene	Chlorobenzene
Carbon disulfide	Trichloroethene	Ethylbenzene
1,1-Dichloroethene	Dibromochloromethane	Styrene
1,1-Dichloroethane	1,1,2-Trichloroethane	Xylene(total)
1,2-Dichloroethene(total)	Benzene	Bromofluorobenzene(surr,smc)
Chloroform	cis-1,3-Dichloropropene	Toluene-d_8(surr,smc)
1,2-Dichloroethane		
1,2-Dichloroethane-d_4(surr,smc)		
2-Butanone		

SEMIVOLATILE INTERNAL STANDARDS WITH CORRESPONDING TCL ANALYTES ASSIGNED FOR QUANTITATION

1,4-Dichlorobenzene-d_4	Naphthalene-d_8	Acenaphthene-d_{10}	Phenanthrene-d_{10}	Chrysene-d_{12}	Perylene-d_{12}
Phenol	Nitrobenzene	Hexachlorocyclopentadiene	4,6-Dinitro-2-methylphenol	Pyrene	Di-n-octyl phthalate
bis(2-chloroethyl)ether	Isophorone	2,4,6-Trichlorophenol	N-nitroso-di-phenylamine	butylbenzyl phthalate	Benzo(b)fluoranthene
2-Chlorophenol	2-Nitrophenol	2,4,5-Trichlorophenol	Carbazole	3,3'-Dichlorobenzidine	Benzo(k)fluoranthene
1,3-Dichlorobenzene	2,4-Dimethylphenol	2-Chloronaphthalene	4-Bromophenyl phenyl ether	Benzo(a)anthracene	Benzo(a)pyrene
1,4-Dichlorobenzene	Naphthalene	2-Nitroaniline	Hexachlorobenzene	bis(2-Ethylhexyl)phthalate	Indeno(1,2,3-cd)pyrene
2,2'-Oxybis-(1-chloropropane)	bis(2-Chloroethoxy)methane	Dimethylphthalate	Pentachlorophenol	Chrysene	Dibenzo(a,h)anthracene
1,2-Dichlorobenzene	2,4-Dichlorophenol	Acenaphthylene	Phenanthrene	Terphenyl-d_{14}(surr)	Benzo(g,h,i)perylene
2-Methylphenol	1,2,4-Trichlorobenzene	3-Nitroaniline	Anthracene		
bis(2-Chloroisopropyl)ether	4-Chloroaniline	Acenaphthene	Di-n-butyl phthalate		
4-Methylphenol	Hexachlorobutadiene	2,4-Dinitrophenol	Fluoranthene		
N-nitroso-di-n-propylamine	4-Chloro-3-methylphenol	4-Nitrophenol			
Hexachloroethane	2-Methylnaphthalene	Dibenzofuran			
2-Fluorophenol(surr)	Nitrobenzene-d_5(surr)	2,4-Dinitrotoluene			
Phenol-d_6(surr)		2,6-Dinitrotoluene			
2-Chlorobenzene-d_4(surr)		Diethyl phthalate			
1,2-Dichlorobenzene-d_4(surr)		4-Chlorophenyl phenyl ether			
		Fluorene			
		4-Nitroaniline			
		2-Fluorobiphenyl(surr)			
		2,4,6-Tribromophenol(surr)			

(surr) - surrogate
(smc) - system monitoring compound

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

SAS No. (if applicable): NA
Case No.: 23857

1. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

2. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

2. Region No.: V
Sampling Co.: E&E TAT
Sampler (Name): Linda Knorr
Sampler Signature: Linda Knorr
3. Purpose*: Lead [X] SF [ ] PRP [ ] ST [ ] FED; Early Action [ ] CLEM [ ] PA [ ] REM [ ] RI [X] ~~SI~~ FSIP [ ] ESI; Long-Term Action [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

4. Date Shipped: 8/1/95
Carrier: Fed Ex
Airbill Number: 4805095352
5. Ship To: SWOK
1700 West Albany, Suite C
Broken Arrow, OK 74012
ATTN: HARRY BORG

6. Date Received -- Received by: [signature] 8-2-95
Laboratory Contract Number:
Unit Price:
7. Transfer to:
Date Received:
Received by:
Contract Number:
Price:

CLP Sample Numbers (from labels)	A Matrix (from Box 1) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 2) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K High Phases Solids	Water-Miscible Liq.	Water-Immis. Liq.
~~EAFK0~~	~~5~~	~~L~~	~~G~~	~~5~~	~~X~~	~~X~~	~~X~~		~~073473-75~~	~~MLS1~~		~~MEWH 60~~	~~LK~~			
EAFK1	5	L	G	5	X	X	X		073477-79	MLS2	8/1/95 1140	MEWH 61	LK			
EAFK2	1	L	G	1,5	X	X	X		073481-84	MLSW1	8/1/95 1130	MEWH 62	LK			
EAFK3	4	L	G	1	X				073487-88	MLW1	8/1/95 0930	—	LK			
EAFR2	4	L	G	1,5	X	X	X		073539-42	MLF1	8/1/95 1600	MEWH 72	LK			

LK 8/1/95

Shipment for Case Complete? (Y)N
Page 1 of 1
Sample(s) to be Used for Laboratory QC:
Additional Sampler Signatures:
Chain of Custody Seal Number(s): 34790-91

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Linda Knorr	8/1/95 1800				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? (Y)N/none	
		[signature] EAFK1	8/2/95 1000	All samples intact.	

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - SMO Copy; Yellow - Lab Copy for Return to SMO
EPA Form 9110-2
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*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

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EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

SAS No. (if applicable): NA
Case No.: 23857

1. Matrix (Enter in Column A)
   1. Surface Water
   2. Ground Water
   3. Leachate
   4. Field QC
   5. Soil/Sediment
   6. Oil (High only)
   7. Waste (High only)
   8. Other (Specify in Column A)

2. Preservative (Enter in Column D)
   1. HCl
   2. HNO3
   3. NaHSO4
   4. H2SO4
   5. Ice only
   6. Other (Specify in Column D)
   N. Not preserved

2. Region No.: V
Sampling Co.: E&E TAT
4. Date Shipped: 8/1/95
Carrier: Fed EX
6. Date Received -- Received by: [signature] 8-2-95
Sampler (Name): Linda Kwong
Airbill Number: 4805095352
Laboratory Contract Number / Unit Price
Sampler Signature: [signature]
5. Ship To: SWOK
1700 West Albany, Suite C
Broken Arrow, OK 74012
ATTN: HARRY BORG
Transfer Bill / Date Received
Received by
Contract Number / Price

3. Purpose*
Lead: [X] SF [ ] PRP [ ] ST [ ] FED
Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI FSIP [ ] ESI
Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

CLP Sample Numbers (from labels)	A Matrix (from Box 1) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 2) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K High Phases Solids	Water-Miscible Liq.	Water-Immis. Liq.
EAFK4	5	L	G	5	X	X	X		073489-91	MCLS1	8/1/95 1030	MEWH63	LK			
EAFK5	5	L	G	5	X	X	X		073493-95	MCLS2	8/1/95 1540	MEWH64	LK			
EAFK6	5	L	G	5	X	X	X		073497-99	MCLS3	8/1/95 1515	MEWH65	LK			
EAFK7	1	L	G	1,5	X	X	X		073501-10	MCLSW1	8/1/95 1615	MEWH66	LK			
EPK45	1	L	G	1,5	X	X	X		073583-86	MCLSW2	8/1/95 1535	MEPF25	LK			
EAFK8	4	L	G	1	X				073513-14	MCLW1	8/1/95 0930	—				

Shipment for Case Complete? (Y/N): Y
Page 1 of 1
Sample(s) to be Used for Laboratory QC: EAFK4, EAFK7
Additional Sampler Signatures:
Chain of Custody Seal Number(s): 34786-87

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	8/1/95 1800				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? (Y/N/none)	
		[signature]	8/2/95 1000	All samples intact	

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - SMO Copy; Yellow - Lab Copy for Return to SMO

EAFK1

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17

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Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

SAS No. (if applicable): NA
Case No.: 23857

1. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

2. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

2. Region No.: V
Sampling Co.: E&ETAT
4. Date Shipped: 8/1/95
Carrier: Fed Ex
6. Date Received -- Received by: [signature] 8-2-95
Laboratory Contract Number:
Unit Price:
Sampler (Name): Linda Vinker
Airbill Number: 4805095352
Sampler Signature: [signature]
7. Transferred:
Date Received:
3. Purpose*
Lead: [X] SF [ ] PRP [ ] ST [ ] FED
Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI FS/P [ ] ESI
Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD
5. Ship To: SWOK
1700 West Albany, Suite C
Broken Arrow, OK 74012
ATTN: Harry Borg
Received by:
Contract Number:
Price:

CLP Sample Numbers (from labels)	A Matrix (from Box 1) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 2) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K High Phases Solids	Water-Miscible Liq.	Water-Immis. Liq.
EAFK9	5	L	G	5	X	X	X		073515-17	WHS1	8/1/95 1[illegible]	MEWH67	LK			
ETC02	5	L	G	5	X	X	X		073519-21	WHS1A	8/1/95 1030	MEWH68	LK			
ETC03	5	L	G	5	X	X	X		073523-25	WHS2	8/1/95 0700	MEWH69	LK			
* ETC04	1	L	G	1,5	X	X	X		073527-30	WHSW1	8/1/95 [illegible]	MEWH70	LK			
EAFR1	1	L	G	1,5	X	X	X		073533-36	WHSW1A	8/1/95 1500	MEWH71	LK			
EAFR3	4	L	G	1	X				073545-46	WHW1	8/1/95 0930	———	LK			

Shipment for Case Complete? (Y/N): Y
Page 1 of 1
Sample(s) to be Used for Laboratory QC:
Additional Sampler Signatures:
Chain of Custody Seal Number(s): 34794-95

* SDG Final Sample

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	8/1/95 1500				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	
		[signature]	8/2/95 1000	All samples intact	

EAFK1

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - SMO Copy; Yellow - Lab Copy for Return to SMO

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SOUTHWEST LABORATORY OF OKLAHOMA
1700 West Albany, Suite A / Broken Arrow, OK 74012
918-251-2858

SDG NARRATIVE
August 15, 1995

RECEIVED
AUG 1 0 1995
US EPA CENTRAL REGIONAL LAB.
536 S. CLARK ST.
CHICAGO, ILLINOIS 60605

CONTRACT NO.: 68-D5-0026

CASE NO.: 23857

SAMPLE NOS.: EAFK1, EAFK2, EAFK3, EAFK4, EAFK4MS, EAFK4MSD, EAFK5, EAFK6, EAFK7, EAFK7MS, EAFK7MSD, EAFK8, EAFK9, EAFR1, EAFR2, EAFR3, EPK45, ETC02, ETC03, ETC04

SDG NO.: EAFK1

VOLATILE FRACTION

Seven soil and nine water samples were submitted for Volatile Organic Analysis. The samples were analyzed by GC/MS following the OLM03.1 CLP Statement of Work.

Alternate columns used for the analysis of volatile compounds by Method OLM03.1 are the Restek XTI-5 (bonded 5% phenyl-95% dimethyl polysiloxane), 30m, 0.25mm ID, 1um film thickness (Restek #12253) and the DB624, 75m, 0.53mmID Megabore, 3um film thickness (J&W 125-1374).

An alternate trap used for the analysis of volatile compounds by method OLM03.1 is the Vocarb 3000 (Carbopack B/Carboxen 1000 & 1001; Tekmar #2-1066).

No major problems occurred during the analyses of these samples. Except for samples EAFK7 and EAFR1, all samples had a neutral pH (7) upon measurement at the laboraotry; these samples were apparently not acidfied.

Blanks: Both VBLk1 and VHBLK1 contained low-level methylene chloride and chloroform contamination less than CRQL; VBLK3 contained methylene chloride less than CRQL.

Surrogates: No problems.

Matrix Spikes: Although benzene's percent recovery in both the matrix spike and matrix spike duplicate of smaple EAFK7 fell within QC limits, the relative percent difference between benzene's recovery in the matrix spike and matrix spike duplicate of this sample exceeded the upper recommended limit. No reanalysis was performed as per contract.

Internal Standards: No problems.

SEMIVOLATILE FRACTION

Seven soil and six water samples were submitted for Semivolatile Organic Analysis. The samples were analyzed by GC/MS following the OLM03.1 CLP Organic Statement of Work.

The following column is used for the semivolatile analysis: Restek XTI-5 (bonded 5% phenyl-95% dimethyl polysiloxane), 30m, 0.25mm ID, 0.25um film thickness (Restek #12223).

No major problems occurred during the analyses of these samples.

The following samples had alkanes reported and the reports are included at the end of this SDG narrative: EAFK4, EAFK5, EAFK6, EAFK9, ETC02, ETC03 and SBLK1.

Blanks: SBLK1 and SBLK2 had low level phthalate contamination below CRQL.

Surrogates: EAFK7, EAFK7MS, EAFK7MSD and EPK45 had low recovery of terphenly-d14 at 32%, 27%, 24% and 29%, respectivley. EAFK7MSD also had low recovery of 2-fluorobiphenyl at 38%.

Matrix Spikes: EAFK7MS/MSD had 6 out of 22 spike recoveries outside of QC limits (low) ranging from (30 to 40) percent.

Internal Standards: Sample EAFK7MSD had low recovery of IS #5.

NOTE: All manual integrations in this data package for GC/MS Volatiles/Semivolatiles have been performed for one of the following reasons:

a. Data system missed peak during acquisition.
b. Data system improperly integrated peak.

If water samples are contained in this case, their pH data is included on the page accompanying this SDG narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager, or his designee, as verified by the following signature.

Harry M. Borg

Harry M. Borg
Organic Program Manager

August 15, 1995

SDG Narrative
August 15, 1995

Case: 23857
SDG: EAFK1
Contract: 68-D5-0026
Samples: EAFK1, EAFK2, EAFK4, EAFK5, EAFK6, EAFK7, EAFK9, EAFR1, EAFR2, EPK45, ETC02, ETC03, ETC04.
Fraction: Pesticide/PCB

SDG EAFK1 consisted of 7 soil samples and 6 water samples which were analyzed for pesticide/PCBs. All samples, blanks and spikes were extracted and analyzed according to EPA SOW OLM03.1. The samples were analyzed on J&W Scientific dual analytical columns (30m x 0.32mm ID, 0.25µm film thickness, DB-17 and DB-1701). The DB-17 phase consists of (50%-Phenyl) Methylpolysiloxane and the DB-1701 phase consists of (14%-Cyanopropylphenyl) Methylpolysiloxane. These columns were specifically designed for pesticide/PCB separation as required by the EPA's SOW. All applicable manufacturer's instructions were followed for the analysis of pesticides/PCBs. Manufacturer provided information concerning the performance characteristics of the column are kept on site.

Surrogate recoveries of all method blanks were within limits. All matrix spike recoveries were within advisory limits. The heptachlor RPD for the MS/MSD of sample EAFK4 was one percent above the advisory limit.

Many samples in this SDG were sulfur cleaned using the copper technique as outlined in D-56/PEST, 10.1.8.3.3.2, in addition to GPC and Florisil cleanups.

The following tables list the total nanograms injected on column for each calibration standard based upon amount injected on column, 1µL or 2µL:

RESOLUTION CHECK

Compounds	Total nanograms (1µL)	Total nanograms (2µL)
gamma-Chlordane	0.01	0.02
Endosulfan I	0.01	0.02
4,4'-DDE	0.02	0.04
Dieldrin	0.02	0.04
Endosulfan Sulfate	0.02	0.04
Endrin Ketone	0.02	0.04
Methoxychlor	0.1	0.2
Tetrachloro-m-xylene	0.02	0.04
Decachlorobiphenyl	0.02	0.04

PERFORMANCE EVALUATION

Compounds	Total nanograms (1µL)	Total nanograms (2µL)
gamma-BHC	0.01	0.02

alpha-BHC	0.01	0.02
4,4'-DDT	0.1	.02
beta-BHC	0.01	0.02
Endrin	0.05	0.1
Methoxychlor	0.25	0.5
Tetrachloro-m-xylene	0.02	0.04
Decachlorobiphenyl	0.02	0.04

INDIVIDUAL STANDARD MIXTURE A -- LOW

Compounds	Total nanograms (1µL)	Total nanograms (2µL)
alpha-BHC	0.005	0.01
Heptachlor	0.005	0.01
gamma-BHC	0.005	0.01
Endosulfan I	0.005	0.01
Dieldrin	0.01	0.02
Endrin	0.01	0.02
4,4'-DDD	0.01	0.02
4,4'-DDT	0.01	0.02
Methoxychlor	0.05	0.1
Tetrachloro-m-xylene	0.005	0.01
Decachlorobiphenyl	0.01	0.02

INDIVIDUAL STANDARD MIXTURE B -- LOW

Compounds	Total nanograms (1µL)	Total nanograms (2µL)
beta-BHC	0.005	0.01
delta-BHC	0.005	0.01
Aldrin	0.005	0.01
Heptachlor epoxide	0.005	0.01
alpha-Chlordane	0.005	0.01
gamma-Chlordane	0.005	0.01
4,4'-DDE	0.01	0.02
Endosulfan sulfate	0.01	0.02
Endrin aldehyde	0.01	0.02
Endrin ketone	0.01	0.02
Endosulfan II	0.01	0.02
Tetrachloro-m-xylene	0.005	0.01
Decachlorobiphenyl	0.01	0.02

INDIVIDUAL STANDARD MIXTURE A -- MEDIUM

Compounds	Total nanograms (1µL)	Total nanograms (2µL)
alpha-BHC	0.02	0.04
Heptachlor	0.02	0.04
gamma-BHC	0.02	0.04

Endosulfan I	0.02	0.04
Dieldrin	0.04	0.08
Endrin	0.04	0.08
4,4'-DDD	0.04	0.08
4,4'-DDT	0.04	0.08
Methoxychlor	0.2	0.4
Tetrachloro-m-xylene	0.02	0.04
Decachlorobiphenyl	0.04	0.08

INDIVIDUAL STANDARD MIXTURE B -- MEDIUM

Compounds	Total nanograms (1µL)	Total nanograms (2µL)
beta-BHC	0.02	0.04
delta-BHC	0.02	0.04
Aldrin	0.02	0.04
Heptachlor epoxide	0.02	0.04
alpha-Chlordane	0.02	0.04
gamma-Chlordane	0.02	0.04
4,4'-DDE	0.04	0.08
Endosulfan sulfate	0.04	0.08
Endrin aldehyde	0.04	0.08
Endrin ketone	0.04	0.08
Endosulfan II	0.04	0.08
Tetrachloro-m-xylene	0.02	0.04
Decachlorobiphenyl	0.04	0.08

INDIVIDUAL STANDARD MIXTURE A -- HIGH

Compounds	Total nanograms (1µL)	Total nanograms (2µL)
alpha-BHC	0.08	0.16
Heptachlor	0.08	0.16
gamma-BHC	0.08	0.16
Endosulfan I	0.08	0.16
Dieldrin	0.16	0.32
Endrin	0.16	0.32
4,4'-DDD	0.16	0.32
4,4'-DDT	0.16	0.32
Methoxychlor	0.8	1.6
Tetrachloro-m-xylene	0.08	0.16
Decachlorobiphenyl	0.16	0.32

INDIVIDUAL STANDARD MIXTURE B -- HIGH

Compounds	Total nanograms (1µL)	Total nanograms (2µL)
beta-BHC	0.08	0.16
delta-BHC	0.08	0.16
Aldrin	0.08	0.16

Heptachlor epoxide	0.08	0.16
alpha-Chlordane	0.08	0.16
gamma-Chlordane	0.08	0.16
4,4'-DDE	0.16	0.32
Endosulfan sulfate	0.16	0.32
Endrin aldehyde	0.16	0.32
Endrin ketone	0.16	0.32
Endosulfan II	0.16	0.32
Tetrachloro-m-xylene	0.08	0.16
Decachlorobiphenyl	0.16	0.32

MULTI-RESPONSE STANDARD MIXTURES

Compounds	Total nanograms (1µL)	Total nanograms (2µL)
Aroclor-1016	0.1	0.2
Aroclor-1221	0.2	0.4
Aroclor-1232	0.1	0.2
Aroclor-1242	0.1	0.2
Aroclor-1248	0.1	0.2
Aroclor-1254	0.1	0.2
Aroclor-1260	0.1	0.2
Toxaphene	0.5	1.0

All manual integrations in this data package for GC/EC have been performed for one of the following reasons:

a. Data system missed a peak during processing.
b. Data system improperly integrated a peak.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Brett R Dees
GC Group Leader

2A
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

	EPA SAMPLE NO.	SMC1 (TOL)#	SMC2 (BFB)#	SMC3 (DCE)#	OTHER	TOT OUT
01	VBLK1	96	107	99		0
02	EAFK2	97	107	102		0
03	EAFK3	97	109	102		0
04	EAFK7	99	112	99		0
05	EAFR2	100	108	104		0
06	EAFK7MS	99	110	103		0
07	EAFK7MSD	103	112	88		0
08	EAFK8	102	113	89		0
09	EAFR1	99	110	84		0
10	EAFR3	99	111	90		0
11	EPK45	95	104	94		0
12	ETC04	95	105	92		0
13	VBLK3	100	104	97		0
14	VHBLK1	98	100	93		0
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	QC LIMITS
SMC1 (TOL) = Toluene-d8	(88-110)
SMC2 (BFB) = Bromofluorobenzene	(86-115)
SMC3 (DCE) = 1,2-Dichloroethane-d4	(76-114)

Column to be used to flag recovery values

* Values outside of contract required QC limits

2B
SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Level:(low/med) LOW

	EPA SAMPLE NO.	SMC1 (TOL)#	SMC2 (BFB)#	SMC3 (DCE)#	OTHER	TOT OUT
01	VBLK2	102	100	98		0
02	EAFK1	100	93	94		0
03	EAFK4	104	97	98		0
04	EAFK4MS	96	94	98		0
05	EAFK4MSD	93	89	93		0
06	EAFK5	102	97	102		0
07	EAFK6	104	91	100		0
08	EAFK9	101	87	94		0
09	ETC02	105	86	96		0
10	ETC03	108	84	90		0
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		QC LIMITS
SMC1 (TOL)	= Toluene-d8	(84-138)
SMC2 (BFB)	= Bromofluorobenzene	(59-113)
SMC3 (DCE)	= 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

3A
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix Spike - EPA Sample No.: EAFK7

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	50	0	52	104	61-145
Trichloroethene	50	0	48	96	71-120
Benzene	50	0	46	92	76-127
Toluene	50	0	50	100	76-125
Chlorobenzene	50	0	52	104	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50	53	106	2	14	61-145
Trichloroethene	50	53	106	10	14	71-120
Benzene	50	40	80	14*	11	76-127
Toluene	50	54	108	8	13	76-125
Chlorobenzene	50	55	110	6	13	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

recycled paper ecology and environment

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix Spike - EPA Sample No.: EAFK4 Level(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	59	0	55	93	59-172
Trichloroethene	59	0	54	92	62-137
Benzene	59	0	56	95	66-142
Toluene	59	7	61	92	59-139
Chlorobenzene	59	0	57	97	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	59	54	92	1	22	59-172
Trichloroethene	59	52	88	4	24	62-137
Benzene	59	54	92	3	21	66-142
Toluene	59	58	86	7	21	59-139
Chlorobenzene	59	55	93	4	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Lab File ID: C17889.D Lab Sample ID: C950807A

Date Analyzed: 08/07/95 Time Analyzed: 0900

GC Column:DB-624 ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: C

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	EAFK2	23089.02	C17892.D	1045
02	EAFK3	23089.03	C17893.D	1110
03	EAFK7	23089.07	C17894.D	1136
04	EAFR2	23089.11	C17897.D	1252
05	EAFK7MS	23089.07MS	C17901.D	1435
06	EAFK7MSD	23089.07MSD	C17902.D	1501
07	EAFK8	23089.08	C17903.D	1528
08	EAFR1	23089.10	C17904.D	1555
09	EAFR3	23089.12	C17906.D	1647
10	EPK45	23089.13	C17907.D	1713
11	ETC04	23089.16	C17908.D	1739
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COMMENTS:

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4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Lab File ID: L17273.D Lab Sample ID: L950807A

Date Analyzed: 08/07/95 Time Analyzed: 1529

GC Column:DB-624 ID: 0.53 (mm) Heated Purge: (Y/N) Y

Instrument ID: L

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	EAFK1	23089.01	L17275.D	1703
02	EAFK4	23089.04	L17276.D	1734
03	EAFK4MS	23089.04MS	L17277.D	1806
04	EAFK4MSD	23089.04MSD	L17278.D	1839
05	EAFK5	23089.05	L17279.D	1910
06	EAFK6	23089.06	L17280.D	1941
07	EAFK9	23089.09	L17281.D	2011
08	ETC02	23089.14	L17282.D	2039
09	ETC03	23089.15	L17283.D	2106
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COMMENTS:

page 01 of 01

4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK3

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Lab File ID: C17931.D Lab Sample ID: C950809A

Date Analyzed: 08/09/95 Time Analyzed: 0946

GC Column:DB-624 ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: C

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VHBLK1	VHBLK	C17932.D	1024
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COMMENTS:

page 01 of 01

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: C950807A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17889.D

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. _____ Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	1	J
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (Total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: C950807A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17889.D

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. _____ Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: L950807A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: L17273.D

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. 0 Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (Total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: L950807A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: L17273.D

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. 0 Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC OLM03.0

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK3

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: C950809A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17931.D

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. _____ Date Analyzed: 08/09/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	1	J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (Total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK3

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: C950809A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17931.D

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. _____ Date Analyzed: 08/09/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK1
ML52

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.01

Sample wt/vol: 5.0 (g/mL) G Lab File ID: L17275.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. 18 Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	16	
67-64-1	Acetone	34	
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (Total)	12	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFK1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.01

Sample wt/vol: 5.0 (g/mL) G Lab File ID: L17275.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. 18 Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK2
MLSW1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.02

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17892.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. _____ Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10 ~~4~~	JB u
67-64-1	Acetone	7	J
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	8	JB
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	8	J
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	8	J
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (Total)	10	U

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFK2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.02

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17892.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. _____ Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK3
MLW1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.03

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17893.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. _____ Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10 ~~3~~	JB u
67-64-1	Acetone	9	J
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (Total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFK3

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.03

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17893.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. _____ Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK4
~~MLF1~~ MCLS1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.04

Sample wt/vol: 5.0 (g/mL) G Lab File ID: L17276.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. 15 Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	16	
67-64-1	Acetone	42	
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	7	J
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (Total)	12	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFK4

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.04

Sample wt/vol: 5.0 (g/mL) G Lab File ID: L17276.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. 15 Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK5
MCLS2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.05

Sample wt/vol: 5.0 (g/mL) G Lab File ID: L17279.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. 28 Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	14	U
74-83-9	Bromomethane	14	U
75-01-4	Vinyl Chloride	14	U
75-00-3	Chloroethane	14	U
75-09-2	Methylene Chloride	19	
67-64-1	Acetone	36	
75-15-0	Carbon Disulfide	14	U
75-35-4	1,1-Dichloroethene	14	U
75-34-3	1,1-Dichloroethane	14	U
540-59-0	1,2-Dichloroethene (total)	14	U
67-66-3	Chloroform	14	U
107-06-2	1,2-Dichloroethane	14	U
78-93-3	2-Butanone	14	U
71-55-6	1,1,1-Trichloroethane	14	U
56-23-5	Carbon Tetrachloride	14	U
75-27-4	Bromodichloromethane	14	U
78-87-5	1,2-Dichloropropane	14	U
10061-01-5	cis-1,3-Dichloropropene	14	U
79-01-6	Trichloroethene	14	U
124-48-1	Dibromochloromethane	14	U
79-00-5	1,1,2-Trichloroethane	14	U
71-43-2	Benzene	14	U
10061-02-6	trans-1,3-Dichloropropene	14	U
75-25-2	Bromoform	14	U
108-10-1	4-Methyl-2-Pentanone	14	U
591-78-6	2-Hexanone	14	U
127-18-4	Tetrachloroethene	14	U
79-34-5	1,1,2,2-Tetrachloroethane	14	U
108-88-3	Toluene	14	U
108-90-7	Chlorobenzene	14	U
100-41-4	Ethylbenzene	14	U
100-42-5	Styrene	14	U
1330-20-7	Xylene (Total)	14	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFK5

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.05

Sample wt/vol: 5.0 (g/mL) G Lab File ID: L17279.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. 28 Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK6
MCLS3

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.06

Sample wt/vol: 5.0 (g/mL) G Lab File ID: L17280.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. 18 Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	17	
67-64-1	Acetone	16	
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (Total)	12	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFK6

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.06

Sample wt/vol: 5.0 (g/mL) G Lab File ID: L17280.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. 18 Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK7
MCLSW1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.07

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17894.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. _____ Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	10 ~~3~~	JB	u
67-64-1	Acetone	10		
75-15-0	Carbon Disulfide	10	U	
75-35-4	1,1-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
540-59-0	1,2-Dichloroethene (total)	10	U	
67-66-3	Chloroform	20	B	
107-06-2	1,2-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon Tetrachloride	10	U	
75-27-4	Bromodichloromethane	14		
78-87-5	1,2-Dichloropropane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
79-01-6	Trichloroethene	10	U	
124-48-1	Dibromochloromethane	8	J	
79-00-5	1,1,2-Trichloroethane	10	U	
71-43-2	Benzene	10	U	J
10061-02-6	trans-1,3-Dichloropropene	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-Pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	
108-88-3	Toluene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
100-42-5	Styrene	10	U	
1330-20-7	Xylene (Total)	10	U	

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFK7

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.07

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17894.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. _____ Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK8
MCLW1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.08

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17903.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. _____ Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	19	B
67-64-1	Acetone	12	
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	1	J
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (Total)	2	J

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFK8

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.08

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17903.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. _____ Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	12.204	9	J
2.		UNKNOWN	12.427	12	J
3.		UNKNOWN	13.269	6	J
4.		UNKNOWN HYDROCARBON	13.995	17	J
5.		UNKNOWN HYDROCARBON	15.614	43	J
6.		UNKNOWN ALKYL BENZENE	18.168	83	J
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FORM I VOA-TIC OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK9
WHS1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.09

Sample wt/vol: 5.0 (g/mL) G Lab File ID: L17281.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. 23 Date Analyzed: 08/07/95

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	18	
67-64-1	Acetone	22	
75-15-0	Carbon Disulfide	13	U
75-35-4	1,1-Dichloroethene	13	U
75-34-3	1,1-Dichloroethane	13	U
540-59-0	1,2-Dichloroethene (total)	13	U
67-66-3	Chloroform	13	U
107-06-2	1,2-Dichloroethane	13	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon Tetrachloride	13	U
75-27-4	Bromodichloromethane	13	U
78-87-5	1,2-Dichloropropane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
79-01-6	Trichloroethene	13	U
124-48-1	Dibromochloromethane	13	U
79-00-5	1,1,2-Trichloroethane	13	U
71-43-2	Benzene	13	U
10061-02-6	trans-1,3-Dichloropropene	13	U
75-25-2	Bromoform	13	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	13	U
79-34-5	1,1,2,2-Tetrachloroethane	13	U
108-88-3	Toluene	13	U
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U
100-42-5	Styrene	13	U
1330-20-7	Xylene (Total)	13	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFK9

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.09

Sample wt/vol: 5.0 (g/mL) G Lab File ID: L17281.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. 23 Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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FORM I VOA-TIC OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFR1
WHSW1D

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.10

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17904.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. _____ Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10 ~~5~~	U JB
67-64-1	Acetone	8	J
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	3	J
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	11	
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (Total)	10	U

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFR1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.10

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17904.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. _____ Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	14.274	9	J
2.	UNKNOWN	15.778	12	J
3.	UNKNOWN HYDROCARBON	16.623	33	J
4.	UNKNOWN CYCLOALKANE	17.381	21	J
5.	UNKNOWN	17.604	24	J
6.	UNKNOWN HYDROCARBON	18.178	61	J
7.				
8.				
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FORM I VOA-TIC OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFR2
MLF1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.11

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17897.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. _____ Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10 ~~4~~	U JB acH 8-22-96
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (Total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFR2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.11

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17897.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. _____ Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	9.304	5	J
2.	UNKNOWN	12.252	24	J
3.	UNKNOWN HYDROCARBON	14.121	22	J
4.	UNKNOWN CYCLOALKANE	15.683	11	J
5.	UNKNOWN HYDROCARBON	16.499	8	J
6.	UNKNOWN CYCLOALKANE	17.480	46	J
7.	UNKNOWN HYDROCARBON	18.103	32	J
8.	UNKNOWN HYDROCARBON	18.862	30	J
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FORM I VOA-TIC OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFR3
WHW1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.12

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17906.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. _____ Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	12	u B
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	1	J
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (Total)	4	J

ACH 8-22-95

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFR3

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.12

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17906.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. _____ Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN HYDROCARBON	18.136	42	J
2.					
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FORM I VOA-TIC OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EPK45
MCLSW2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.13

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17907.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. _____ Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	~~U~~ JB
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	16	B
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	14	
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	J
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (Total)	2	J

ack 8-22-

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EPK45

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.13

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17907.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. _____ Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	14.306	8	J
2.	UNKNOWN HYDROCARBON	16.721	11	J
3.	UNKNOWN	17.391	6	J
4.	UNKNOWN	18.188	16	J
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FORM I VOA-TIC OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ETC02
WHS1D

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.14

Sample wt/vol: 5.0 (g/mL) G Lab File ID: L17282.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. 21 Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	18	
67-64-1	Acetone	19	
75-15-0	Carbon Disulfide	13	U
75-35-4	1,1-Dichloroethene	13	U
75-34-3	1,1-Dichloroethane	13	U
540-59-0	1,2-Dichloroethene (total)	13	U
67-66-3	Chloroform	13	U
107-06-2	1,2-Dichloroethane	13	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon Tetrachloride	13	U
75-27-4	Bromodichloromethane	13	U
78-87-5	1,2-Dichloropropane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
79-01-6	Trichloroethene	13	U
124-48-1	Dibromochloromethane	13	U
79-00-5	1,1,2-Trichloroethane	13	U
71-43-2	Benzene	13	U
10061-02-6	trans-1,3-Dichloropropene	13	U
75-25-2	Bromoform	13	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	13	U
79-34-5	1,1,2,2-Tetrachloroethane	13	U
108-88-3	Toluene	13	U
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U
100-42-5	Styrene	13	U
1330-20-7	Xylene (Total)	13	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ETC02

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.14

Sample wt/vol: 5.0 (g/mL) G Lab File ID: L17282.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. 21 Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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FORM I VOA-TIC OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ETC03
WHS2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.15

Sample wt/vol: 5.0 (g/mL) G Lab File ID: L17283.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. 18 Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	17	
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (Total)	12	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ETC03

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.15

Sample wt/vol: 5.0 (g/mL) G Lab File ID: L17283.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. 18 Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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FORM I VOA-TIC OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ETC04
WHSW1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.16

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17908.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. _____ Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10 ~~6~~	u JB
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	3	J
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	1	J
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (Total)	2	J

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ETC04

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.16

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C17908.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: not dec. _____ Date Analyzed: 08/07/95

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN HYDROCARBON	16.072	10	J
2.		UNKNOWN HYDROCARBON	16.673	10	J
3.		UNKNOWN CYCLOALKANE	17.177	6	J
4.		UNKNOWN	17.439	16	J
5.		UNKNOWN HYDROCARBON	17.643	14	J
6.		UNKNOWN CYCLOALKANE	18.246	31	J
7.		UNKNOWN HYDROCARBON	18.518	10	J
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FORM I VOA-TIC OLM03.0

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	SBLK3	52	52	75	53	46	60	48	52	0
02	EAFK2	52	57	41	56	46	75	48	55	0
03	EAFK7	50	54	32*	54	44	69	48	52	1
04	EAFK7MS	44	53	27*	45	36	59	40	42	1
05	EAFK7MSD	36	38*	24*	36	29	45	34	33	2
06	EAFR1	48	55	51	47	38	77	43	48	0
07	EAFR2	52	56	83	50	42	69	46	49	0
08	EPK45	51	53	29*	52	45	62	50	53	1
09	ETC04	46	44	35	41	40	40	45	46	0
10	SBLK2	56	51	79	50	46	60	58	49	0
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			QC LIMITS	
S1	(NBZ)	= Nitrobenzene-d5	(35-114)	
S2	(FBP)	= 2-Fluorobiphenyl	(43-116)	
S3	(TPH)	= Terphenyl-d14	(33-141)	
S4	(PHL)	= Phenol-d5	(10-110)	
S5	(2FP)	= 2-Fluorophenol	(21-110)	
S6	(TBP)	= 2,4,6-Tribromophenol	(10-123)	
S7	(2CP)	= 2-Chlorophenol-d4	(33-110)	(advisory)
S8	(DCB)	= 1,2-Dichlorobenzene-d4	(16-110)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	S7 (2CP)#	S8 (DCB)#	TOT OUT
01	SBLK1	62	70	91	58	52	78	49	67	0
02	EAFK1	64	68	93	60	54	88	53	67	0
03	EAFK4	58	63	99	61	49	94	53	68	0
04	EAFK4MS	59	69	104	55	54	103	52	64	0
05	EAFK4MSD	64	75	92	58	50	96	52	72	0
06	EAFK5	56	69	90	59	50	100	50	61	0
07	EAFK6	66	72	89	63	50	98	56	70	0
08	EAFK9	64	70	86	62	52	93	52	69	0
09	ETC02	61	68	85	60	47	96	54	66	0
10	ETC03	60	70	89	58	49	87	51	66	0
11										
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29										
30										

			QC LIMITS	
S1	(NBZ)	= Nitrobenzene-d5	(23-120)	
S2	(FBP)	= 2-Fluorobiphenyl	(30-115)	
S3	(TPH)	= Terphenyl-d14	(18-137)	
S4	(PHL)	= Phenol-d5	(24-113)	
S5	(2FP)	= 2-Fluorophenol	(25-121)	
S6	(TBP)	= 2,4,6-Tribromophenol	(19-122)	
S7	(2CP)	= 2-Chlorophenol-d4	(20-130)	(advisory)
S8	(DCB)	= 1,2-Dichlorobenzene-d4	(20-130)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix Spike - EPA Sample No.: EAFK7

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Phenol	75	0	27	36	12-110
2-Chlorophenol	75	0	27	36	27-123
1,4-Dichlorobenzene	50	0	19	38	36- 97
N-Nitroso-di-n-prop.(1)	50	0	20	40*	41-116
1,2,4-Trichlorobenzene	50	0	19	38*	39- 98
4-Chloro-3-Methylphenol	75	0	28	37	23- 97
Acenaphthene	50	0	24	48	46-118
4-Nitrophenol	75	0	35	47	10- 80
2,4-Dinitrotoluene	50	0	22	44	24- 96
Pentachlorophenol	75	0	39	52	9-103
Pyrene	50	0	23	46	26-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	75	23	31	15	42	12-110
2-Chlorophenol	75	23	31	15	40	27-123
1,4-Dichlorobenzene	50	16	32*	17	28	36- 97
N-Nitroso-di-n-prop.(1)	50	15	30*	28	38	41-116
1,2,4-Trichlorobenzene	50	15	30*	24	28	39- 98
4-Chloro-3-Methylphenol	75	22	29	24	42	23- 97
Acenaphthene	50	18	36*	28	31	46-118
4-Nitrophenol	75	27	36	26	50	10- 80
2,4-Dinitrotoluene	50	17	34	26	38	24- 96
Pentachlorophenol	75	31	41	24	50	9-103
Pyrene	50	22	44	4	31	26-127

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 11 outside limits
Spike Recovery: 6 out of 22 outside limits

COMMENTS:

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix Spike - EPA Sample No.: EAFK4 Level(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Phenol	2900	0	1400	48	26- 90
2-Chlorophenol	2900	0	1400	48	25-102
1,4-Dichlorobenzene	2000	0	1000	50	28-104
N-Nitroso-di-n-prop.(1)	2000	0	1200	60	41-126
1,2,4-Trichlorobenzene	2000	0	1100	55	38-107
4-Chloro-3-Methylphenol	2900	0	1900	66	26-103
Acenaphthene	2000	0	1300	65	31-137
4-Nitrophenol	2900	0	2400	83	11-114
2,4-Dinitrotoluene	2000	0	1600	80	28- 89
Pentachlorophenol	2900	0	1900	66	17-109
Pyrene	2000	22	1700	84	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	2900	1500	52	8	35	26- 90
2-Chlorophenol	2900	1300	45	6	50	25-102
1,4-Dichlorobenzene	2000	1000	50	0	27	28-104
N-Nitroso-di-n-prop.(1)	2000	1200	60	0	38	41-126
1,2,4-Trichlorobenzene	2000	1200	60	9	23	38-107
4-Chloro-3-Methylphenol	2900	1900	66	0	33	26-103
Acenaphthene	2000	1400	70	7	19	31-137
4-Nitrophenol	2900	2700	93	11	50	11-114
2,4-Dinitrotoluene	2000	1700	85	6	47	28- 89
Pentachlorophenol	2900	1800	62	6	47	17-109
Pyrene	2000	1600	79	6	36	35-142

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

COMMENTS:

4B
SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLK1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Lab File ID: V9539.D Lab Sample ID: BL0802SB

Instrument ID: V Date Extracted: 08/02/95

Matrix: (soil/water) SOIL Date Analyzed: 08/04/95

Level: (low/med) LOW Time Analyzed: 1400

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	EAFK1	23089.01	V9544.D	08/04/95
02	EAFK4	23089.04	V9545.D	08/04/95
03	EAFK4MS	23089.04MS	V9546.D	08/04/95
04	EAFK4MSD	23089.04MSD	V9547.D	08/04/95
05	EAFK5	23089.05	V9548.D	08/04/95
06	EAFK6	23089.06	V9549.D	08/04/95
07	EAFK9	23089.09	V9550.D	08/04/95
08	ETC02	23089.14	V9551.D	08/04/95
09	ETC03	23089.15	V9552.D	08/04/95
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COMMENTS:

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4B
SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLK2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Lab File ID: T10959.D Lab Sample ID: BB0807WE

Instrument ID: T Date Extracted: 08/07/95

Matrix: (soil/water) WATER Date Analyzed: 08/10/95

Level:(low/med) LOW Time Analyzed: 1326

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	ETC04	23089.16	T10926.D	08/09/95
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COMMENTS:

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4B
SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLK3

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Lab File ID: V9557.D Lab Sample ID: BL0802WF

Instrument ID: V Date Extracted: 08/02/95

Matrix: (soil/water) WATER Date Analyzed: 08/07/95

Level:(low/med) LOW Time Analyzed: 1007

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	EAFK2	23089.02	V9558.D	08/07/95
02	EAFK7	23089.07	V9559.D	08/07/95
03	EAFK7MS	23089.07MS	V9560.D	08/07/95
04	EAFK7MSD	23089.07MSD	V9561.D	08/07/95
05	EAFR1	23089.10	V9562.D	08/07/95
06	EAFR2	23089.11	V9563.D	08/07/95
07	EPK45	23089.13	V9564.D	08/07/95
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COMMENTS:

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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: BL0802SB

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9539.D

Level: (low/med) LOW Date Received: / /

% Moisture: 0 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	830	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	830	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	830	U
83-32-9	Acenaphthene	330	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: BL0802SB

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9539.D

Level: (low/med) LOW Date Received: / /

% Moisture: 0 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	830	U
100-02-7	4-Nitrophenol	830	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	830	U
534-52-1	4,6-Dinitro-2-methylphenol	830	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	830	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	63	J
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenz(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLK1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: BL0802SB

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9539.D

Level: (low/med) LOW Date Received: / /

% Moisture: 0 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	123-42-2	2-Pentanone, 4-hydroxy-4-met	3.232	4300	NJA
2.		UNKNOWN ORGANIC ACID	8.710	87	J
3.		UNKNOWN AMIDE	11.820	100	J
4.		UNKNOWN AMIDE	13.273	210	J
5.		UNKNOWN AMIDE	13.413	340	J
6.		UNKNOWN AMIDE	14.726	4900	J
7.		UNKNOWN AMIDE	14.877	180	J
8.		UNKNOWN AMIDE	16.082	120	J
9.		UNKNOWN AMIDE	17.352	1700	J
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: BB0807WE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: T10959.D

Level: (low/med) LOW Date Received: / /

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/07/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/10/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: BB0807WE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: T10959.D

Level: (low/med) LOW Date Received: / /

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/07/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/10/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	1	J
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLK2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: BB0807WE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: T10959.D

Level: (low/med) LOW Date Received: / /

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/07/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/10/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ORGANIC ACID	8.878	10	J
2.	UNKNOWN	17.744	4	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK3

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: BL0802WF

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V9557.D

Level: (low/med) LOW Date Received: / /

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/02/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/07/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK3

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: BL0802WF

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V9557.D

Level: (low/med) LOW Date Received: / /

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/02/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/07/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLK3

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: BL0802WF

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V9557.D

Level: (low/med) LOW Date Received: / /

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/02/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/07/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 111-76-2	Ethanol, 2-butoxy-	3.640	6	NJ
2. 111-77-3	Ethanol, 2-(2-methoxyethoxy)	3.877	2	NJ
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK1
MLSQ

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.01

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9544.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 18 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-Methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	1000	U
83-32-9	Acenaphthene	400	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK1
MLS2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.01

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9544.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 18 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1000	U
100-02-7	4-Nitrophenol	1000	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine (1)	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	400	U
120-12-7	Anthracene	400	U
86-74-8	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	400	U
129-00-0	Pyrene	400	U
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	U
218-01-9	Chrysene	400	U
117-81-7	bis(2-Ethylhexyl)phthalate	400 ~~57~~	u JB
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	U
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	U
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenz(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

act 8-22-9

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 OLM03.0

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFK1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.01

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9544.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 18 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

Number TICs found: 13

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	123-42-2	2-Pentanone, 4-hydroxy-4-met	3.243	5800	u NJAB
2.		UNKNOWN ORGANIC ACID	11.573	180	J
3.		UNKNOWN ORGANIC ACID	11.713	130	J
4.		UNKNOWN AMIDE	11.842	110	u JB
5.	10544-50-0	Sulfur, mol. (S8)	12.660	320	NJ
6.		UNKNOWN AMIDE	13.285	260	u JB
7.		UNKNOWN AMIDE	13.414	430	u JB
8.		UNKNOWN AMIDE	14.738	4400	u JB
9.		UNKNOWN AMIDE	14.877	200	u JB
10.		UNKNOWN	15.050	150	J
11.		UNKNOWN AMIDE	16.083	86	u JB
12.		UNKNOWN AMIDE	17.364	1800	u JB
13.		UNKNOWN	17.611	130	J
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK2
MLSW1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.02

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V9558.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/02/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/07/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK2
MLSW1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.02

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V9558.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/02/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/07/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 OLM03.0

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFK2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.02

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V9558.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/02/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/07/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.2

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 111-76-2	Ethanol, 2-butoxy-	3.640	6	u NJB
2. 111-77-3	Ethanol, 2-(2-methoxyethoxy)	3.877	2	u NJB
3.	UNKNOWN	8.161	4	J
4.	UNKNOWN ORGANIC ACID	8.656	3	J
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK4
MCLS1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.04

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9545.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 15 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	980	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	980	U
131-11-3	Dimethylphthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	980	U
83-32-9	Acenaphthene	390	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK4
MCLS1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.04

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9545.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 15 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	980	U
100-02-7	4-Nitrophenol	980	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	980	U
534-52-1	4,6-Dinitro-2-methylphenol	980	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	980	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	22	J
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)phthalate	390 ~~54~~	u JB
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenz(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

acH 8-22-9

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 OLM03.0

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFK4

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.04

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9545.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 15 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

Number TICs found: 29

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-Pentanone, 4-hydroxy-4-met	3.264	5400	uNJAB
2. 10544-50-0	Sulfur, mol. (S8)	8.343	160	NJ
3.	UNKNOWN ORGANIC ACID	8.720	86	u JB
4. 10544-50-0	Sulfur, mol. (S8)	10.614	84	NJ
5.	UNKNOWN	10.647	89	J
6. 10544-50-0	Sulfur, mol. (S8)	10.916	110	NJ
7.	UNKNOWN PHTHALATE	11.034	96	J
8. 10544-50-0	Sulfur, mol. (S8)	11.099	110	NJ
9.	UNKNOWN	11.260	120	J
10. 10544-50-0	Sulfur, mol. (S8)	11.422	370	NJ
11. 10544-50-0	Sulfur, mol. (S8)	11.540	370	NJ
12.	UNKNOWN	11.572	210	J
13.	UNKNOWN	11.648	220	J
14.	UNKNOWN ORGANIC ACID	11.712	260	J
15.	UNKNOWN AMIDE	11.766	230	JB
16.	UNKNOWN AMIDE	11.841	430	uJB
17. 10544-50-0	Sulfur, mol. (S8)	12.003	730	NJ
18. 10544-50-0	Sulfur, mol. (S8)	12.164	840	NJ
19. 7704-34-9	Sulfur	12.283	870	NJ
20.	UNKNOWN	12.358	720	J
21.	UNKNOWN AMIDE	12.433	600	J
22. 10544-50-0	Sulfur, mol. (S8)	12.530	430	NJ
23. 10544-50-0	Sulfur, mol. (S8)	12.745	2500	NJ
24.	UNKNOWN AMIDE	13.283	210	u JB
25.	UNKNOWN AMIDE	13.423	310	u JB
26.	UNKNOWN AMIDE	14.736	4100	u JB
27.	UNKNOWN AMIDE	14.887	260	u JB
28.	UNKNOWN AMIDE	16.092	100	u JB
29.	UNKNOWN AMIDE	17.362	1800	u JB
30.				

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK5
MCLS2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.05

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9548.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 28 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	460	U
111-44-4	bis(2-Chloroethyl)Ether	460	U
95-57-8	2-Chlorophenol	37	J
541-73-1	1,3-Dichlorobenzene	460	U
106-46-7	1,4-Dichlorobenzene	460	U
95-50-1	1,2-Dichlorobenzene	460	U
95-48-7	2-Methylphenol	460	U
108-60-1	2,2'-oxybis(1-Chloropropane)	460	U
106-44-5	4-Methylphenol	330	J
621-64-7	N-Nitroso-di-n-propylamine	460	U
67-72-1	Hexachloroethane	460	U
98-95-3	Nitrobenzene	460	U
78-59-1	Isophorone	460	U
88-75-5	2-Nitrophenol	460	U
105-67-9	2,4-Dimethylphenol	460	U
111-91-1	bis(2-Chloroethoxy)methane	460	U
120-83-2	2,4-Dichlorophenol	460	U
120-82-1	1,2,4-Trichlorobenzene	460	U
91-20-3	Naphthalene	460	U
106-47-8	4-Chloroaniline	460	U
87-68-3	Hexachlorobutadiene	460	U
59-50-7	4-Chloro-3-Methylphenol	45	J
91-57-6	2-Methylnaphthalene	460	U
77-47-4	Hexachlorocyclopentadiene	460	U
88-06-2	2,4,6-Trichlorophenol	460	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	460	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	460	U
208-96-8	Acenaphthylene	460	U
606-20-2	2,6-Dinitrotoluene	460	U
99-09-2	3-Nitroaniline	1200	U
83-32-9	Acenaphthene	29	J

recycled paper ecology and environment

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK5
MCLS2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.05

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9548.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 28 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
51-28-5	2,4-Dinitrophenol	1200	U	
100-02-7	4-Nitrophenol	1200	U	
132-64-9	Dibenzofuran	460	U	
121-14-2	2,4-Dinitrotoluene	460	U	
84-66-2	Diethylphthalate	460	U	
7005-72-3	4-Chlorophenyl-phenylether	460	U	
86-73-7	Fluorene	460	U	
100-01-6	4-Nitroaniline	1200	U	
534-52-1	4,6-Dinitro-2-methylphenol	1200	U	
86-30-6	N-Nitrosodiphenylamine (1)	460	U	
101-55-3	4-Bromophenyl-phenylether	460	U	
118-74-1	Hexachlorobenzene	460	U	
87-86-5	Pentachlorophenol	1200	U	
85-01-8	Phenanthrene	43	J	
120-12-7	Anthracene	460	U	
86-74-8	Carbazole	460	U	
84-74-2	Di-n-butylphthalate	240	J	
206-44-0	Fluoranthene	96	J	
129-00-0	Pyrene	120	J	
85-68-7	Butylbenzylphthalate	460	U	
91-94-1	3,3'-Dichlorobenzidine	460	U	
56-55-3	Benzo(a)anthracene	65	J	
218-01-9	Chrysene	62	J	
117-81-7	bis(2-Ethylhexyl)phthalate	460 ~~80~~	μJB	acH 8-2
117-84-0	Di-n-octylphthalate	460	U	
205-99-2	Benzo(b)fluoranthene	58	J	
207-08-9	Benzo(k)fluoranthene	64	J	
50-32-8	Benzo(a)pyrene	80	J	
193-39-5	Indeno(1,2,3-cd)pyrene	59	J	
53-70-3	Dibenz(a,h)anthracene	460	U	
191-24-2	Benzo(g,h,i)perylene	62	J	

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFK5

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.05

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9548.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 28 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7

Number TICs found: 31

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 123-42-2	2-Pentanone, 4-hydroxy-4-met	3.265	7400	uNJAB
2. 111-46-6	Ethanol, 2,2'-oxybis-	4.180	200	NJ
3.	UNKNOWN	8.356	180	J
4.	UNKNOWN ORGANIC ACID	10.078	380	J
5.	UNKNOWN ORGANIC ACID	10.605	250	J
6.	UNKNOWN ORGANIC ACID	10.917	290	J
7.	UNKNOWN ORGANIC ACID	11.606	700	J
8.	UNKNOWN AMIDE	11.907	450	u JB
9. 10544-50-0	Sulfur, mol. (S8)	12.004	580	NJ
10. 10544-50-0	Sulfur, mol. (S8)	12.122	660	NJ
11.	UNKNOWN	12.230	640	J
12. 10544-50-0	Sulfur, mol. (S8)	12.316	600	NJ
13.	UNKNOWN	12.435	1600	J
14.	UNKNOWN ORGNAIC ACID	12.510	680	J
15.	UNKNOWN	12.585	830	J
16. 10544-50-0	Sulfur, mol. (S8)	12.736	3500	NJ
17.	UNKNOWN ORGANIC ACID	13.123	910	J
18.	UNKNOWN ORGNAIC ACID	13.177	1300	J
19.	UNKNOWN ORGANIC ACID	13.274	440	J
20.	UNKNOWN AMIDE	13.317	350	u JB
21.	UNKNOWN	13.446	460	J
22.	UNKNOWN AMIDE	14.748	4200	u JB
23.	UNKNOWN	15.061	480	J
24. 0-00-0	2,4-Bis(dimethylbenzyl)pheno	15.814	320	NJ
25.	UNKNOWN AMIDE	17.375	2500	u JB
26.	UNKNOWN	20.474	840	J
27.	UNKNOWN	20.765	430	J
28. 83-47-6	.gamma.-Sitosterol	21.195	4300	NJ
29.	UNKNOWN	21.346	700	J
30.	UNKNOWN	21.733	780	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFK5

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.05

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9548.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 28 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7

Number TICs found: 31

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	58-22-0	Testosterone	22.476	560	NJ
2.					
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK6
MCLS3

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.06

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9549.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 18 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-Methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	1000	U
83-32-9	Acenaphthene	400	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK6
MCLS3

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.06

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9549.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 18 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1000	U
100-02-7	4-Nitrophenol	1000	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine (1)	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	28	J
120-12-7	Anthracene	400	U
86-74-8	Carbazole	400	U
84-74-2	Di-n-butylphthalate	130	J
206-44-0	Fluoranthene	60	J
129-00-0	Pyrene	53	J
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	37	J
218-01-9	Chrysene	40	J
117-81-7	bis(2-Ethylhexyl)phthalate	400 ~~96~~	u JB
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	42	J
207-08-9	Benzo(k)fluoranthene	41	J
50-32-8	Benzo(a)pyrene	46	J
193-39-5	Indeno(1,2,3-cd)pyrene	38	J
53-70-3	Dibenz(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	33	J

ACH 8-22

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 OLM03.0

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFK6

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.06

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9549.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 18 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

Number TICs found: 18

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 141-79-7	3-Penten-2-one, 4-methyl-	2.846	84	NJA
2. 123-42-2	2-Pentanone, 4-hydroxy-4-met	3.277	7600	μNJAB
3.	UNKNOWN ORGANIC ACID	8.723	88	μ JB
4.	UNKNOWN ORGANIC ACID	10.057	95	J
5.	UNKNOWN ORGANIC ACID	11.586	250	J
6.	UNKNOWN ORGANIC ACID	11.726	330	J
7.	UNKNOWN AMIDE	11.855	140	μ JB
8. 10544-50-0	Sulfur, mol. (S8)	12.673	380	NJ
9.	UNKNOWN AMIDE	13.146	110	J
10.	UNKNOWN AMIDE	13.297	270	μ JB
11.	UNKNOWN AMIDE	13.426	410	μ JB
12.	UNKNOWN AMIDE	14.750	5200	μ JB
13. 0-00-0	2,4-Bis(dimethylbenzyl)pheno	15.815	130	NJ
14. 0-00-0	2,4-Bis(dimethylbenzyl)-6-t-	15.901	140	NJ
15.	UNKNOWN AMIDE	16.095	180	μ JB
16.	UNKNOWN AMIDE	17.376	3100	μ JB
17.	UNKNOWN	20.475	140	J
18.	UNKNOWN	21.110	150	J
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK7
MCLSW1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.07

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V9559.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/02/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/07/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

CS

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK7
MCLSW1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.07

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V9559.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/02/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/07/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFK7

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.07

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V9559.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/02/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/07/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.5

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 111-76-2	Ethanol, 2-butoxy-	3.639	5	u NJB
2.	UNKNOWN	8.159	5	J
3.	UNKNOWN ORGANIC ACID	8.655	3	J
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK9
WHS1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.09

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9550.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 23 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	430	U
111-44-4	bis(2-Chloroethyl)Ether	430	U
95-57-8	2-Chlorophenol	430	U
541-73-1	1,3-Dichlorobenzene	430	U
106-46-7	1,4-Dichlorobenzene	430	U
95-50-1	1,2-Dichlorobenzene	430	U
95-48-7	2-Methylphenol	430	U
108-60-1	2,2'-oxybis(1-Chloropropane)	430	U
106-44-5	4-Methylphenol	430	U
621-64-7	N-Nitroso-di-n-propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
111-91-1	bis(2-Chloroethoxy)methane	430	U
120-83-2	2,4-Dichlorophenol	430	U
120-82-1	1,2,4-Trichlorobenzene	430	U
91-20-3	Naphthalene	430	U
106-47-8	4-Chloroaniline	430	U
87-68-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-Methylphenol	430	U
91-57-6	2-Methylnaphthalene	430	U
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	430	U
208-96-8	Acenaphthylene	430	U
606-20-2	2,6-Dinitrotoluene	430	U
99-09-2	3-Nitroaniline	1100	U
83-32-9	Acenaphthene	430	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK9
WHS1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.09

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9550.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 23 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
51-28-5	2,4-Dinitrophenol	1100	U	
100-02-7	4-Nitrophenol	1100	U	
132-64-9	Dibenzofuran	430	U	
121-14-2	2,4-Dinitrotoluene	430	U	
84-66-2	Diethylphthalate	430	U	
7005-72-3	4-Chlorophenyl-phenylether	430	U	
86-73-7	Fluorene	430	U	
100-01-6	4-Nitroaniline	1100	U	
534-52-1	4,6-Dinitro-2-methylphenol	1100	U	
86-30-6	N-Nitrosodiphenylamine (1)	430	U	
101-55-3	4-Bromophenyl-phenylether	430	U	
118-74-1	Hexachlorobenzene	430	U	
87-86-5	Pentachlorophenol	1100	U	
85-01-8	Phenanthrene	55	J	
120-12-7	Anthracene	50	J	
86-74-8	Carbazole	430	U	
84-74-2	Di-n-butylphthalate	40	J	
206-44-0	Fluoranthene	520		
129-00-0	Pyrene	550		
85-68-7	Butylbenzylphthalate	430	U	
91-94-1	3,3'-Dichlorobenzidine	430	U	
56-55-3	Benzo(a)anthracene	590		
218-01-9	Chrysene	520		
117-81-7	bis(2-Ethylhexyl)phthalate	430 ~~87~~	u JB	acH 8-2
117-84-0	Di-n-octylphthalate	430	U	
205-99-2	Benzo(b)fluoranthene	390	J	
207-08-9	Benzo(k)fluoranthene	570		
50-32-8	Benzo(a)pyrene	650		
193-39-5	Indeno(1,2,3-cd)pyrene	320	J	
53-70-3	Dibenz(a,h)anthracene	83	J	
191-24-2	Benzo(g,h,i)perylene	320	J	

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFK9

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.09

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9550.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 23 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

Number TICs found: 24

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 141-79-7	3-Penten-2-one, 4-methyl-	2.856	91	NJA
2. 123-42-2	2-Pentanone, 4-hydroxy-4-met	3.276	7600	μNJAB
3.	UNKNOWN ORGNAIC ACID	11.573	110	J
4.	Phenanthrene, -methyl-	11.638	89	J
5.	UNKNOWN ORGANIC ACID	11.713	130	J
6.	Phenanthrene, -dimethyl-	12.488	92	J
7.	Anthracene, -ethyl-	12.531	130	J
8.	UNKNOWN AMIDE	12.585	110	J
9. 7704-34-9	Sulfur	12.693	860	NJ
10.	UNKNOWN AMIDE	13.295	130	μ JB
11.	UNKNOWN AMIDE	13.425	250	μ JB
12.	11H-Benzo[]fluorene	13.898	300	J
13.	Pyrene, -methyl-	14.017	150	J
14.	UNKNOWN AMIDE	14.738	2900	μ JB
15.	Benzo[]fluoranthene	15.190	160	J
16.	Benzo[]phenanthrene	15.803	110	J
17.	Chrysene, -methyl-	16.406	130	J
18.	UNKNOWN AMIDE	17.374	2400	μ JB
19.	UNKNOWN AMIDE	17.493	180	J
20. 205-82-3	Benzo[j]fluoranthene	17.773	230	NJ
21. 192-97-2	Benzo[e]pyrene	18.063	400	NJ
22. 198-55-0	Perylene	18.278	200	NJ
23.	UNKNOWN	19.742	160	J
24.	UNKNOWN PAH	20.485	160	J
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFR1
WHSW1D

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.10

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V9562.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/02/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/07/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFR1
WHSW1D

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.10

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V9562.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/02/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/07/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	3	J
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFR1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.10

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V9562.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/02/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/07/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.3

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 111-76-2	Ethanol, 2-butoxy-	3.642	5	u NJB
2. 111-77-3	Ethanol, 2-(2-methoxyethoxy)	3.879	2	u NJB
3.	UNKNOWN	5.977	3	J
4.	UNKNOWN ORGANIC ACID	8.657	4	J
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFR2
MLF1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.11

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V9563.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/02/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/07/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

recycled paper ecology and environment

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFR2
MLF1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.11

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V9563.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/02/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/07/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	1	J
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EAFR2

ab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.11

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V9563.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/02/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/07/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.2

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	111-76-2	Ethanol, 2-butoxy-	3.642	6	u NJB
2.		UNKNOWN	4.923	2	J
3.	119-61-9	Benzophenone	9.067	32	NJ
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act 8-22-96

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EPK45
MCLSW2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.13

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V9564.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/02/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/07/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EPK45
MCLSW2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.13

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V9564.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/02/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/07/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.5	J
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 OLM03.0

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EPK45

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.13

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V9564.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/02/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/07/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.6

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.692	3	J
2.	UNKNOWN	8.160	4	J
3.	UNKNOWN ORGANIC ACID	8.655	4	J
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ETC02
WHSID

ab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.14

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9551.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 21 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	420	U
111-44-4	bis(2-Chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	2-Methylphenol	420	U
108-60-1	2,2'-oxybis(1-Chloropropane)	420	U
106-44-5	4-Methylphenol	420	U
621-64-7	N-Nitroso-di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-Methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	1000	U
83-32-9	Acenaphthene	420	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ETC02
WHSID

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.14

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9551.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 21 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
51-28-5	2,4-Dinitrophenol	1000	U	
100-02-7	4-Nitrophenol	1000	U	
132-64-9	Dibenzofuran	420	U	
121-14-2	2,4-Dinitrotoluene	420	U	
84-66-2	Diethylphthalate	420	U	
7005-72-3	4-Chlorophenyl-phenylether	420	U	
86-73-7	Fluorene	420	U	
100-01-6	4-Nitroaniline	1000	U	
534-52-1	4,6-Dinitro-2-methylphenol	1000	U	
86-30-6	N-Nitrosodiphenylamine (1)	420	U	
101-55-3	4-Bromophenyl-phenylether	420	U	
118-74-1	Hexachlorobenzene	420	U	
87-86-5	Pentachlorophenol	1000	U	
85-01-8	Phenanthrene	160	J	•
120-12-7	Anthracene	30	J	•
86-74-8	Carbazole	420	U	
84-74-2	Di-n-butylphthalate	420	U	
206-44-0	Fluoranthene	320	J	•
129-00-0	Pyrene	280	J	•
85-68-7	Butylbenzylphthalate	420	U	
91-94-1	3,3'-Dichlorobenzidine	420	U	
56-55-3	Benzo(a)anthracene	170	J	•
218-01-9	Chrysene	170	J	•
117-81-7	bis(2-Ethylhexyl)phthalate	420 ~~64~~	u JB	act 8-2
117-84-0	Di-n-octylphthalate	420	U	
205-99-2	Benzo(b)fluoranthene	150	J	•
207-08-9	Benzo(k)fluoranthene	170	J	•
50-32-8	Benzo(a)pyrene	190	J	•
193-39-5	Indeno(1,2,3-cd)pyrene	140	J	•
53-70-3	Dibenz(a,h)anthracene	38	J	•
191-24-2	Benzo(g,h,i)perylene	130	J	•

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ETC02

ıb Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.14

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9551.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 21 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.6

Number TICs found: 27

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 141-79-7	3-Penten-2-one, 4-methyl-	2.846	86	NJA
2. 123-42-2	2-Pentanone, 4-hydroxy-4-met	3.277	7800	u NJA B
3.	Unknown	8.163	180	J
4.	UNKNOWN ORGANIC ACID	8.723	110	J
5.	UNKNOWN ORGANIC ACID	11.585	170	J
6.	UNKNOWN ORGANIC ACID	11.725	100	J
7.	UNKNOWN AMIDE	11.854	120	J
8.	Phenanthrene, -dimethyl-	12.532	130	J
9. 7704-34-9	Sulfur	12.705	1000	NJ
10.	UNKNOWN AMIDE	13.297	160	J
11.	UNKNOWN AMIDE	13.426	230	u J B
12.	UNKNOWN AMIDE	14.750	3300	J B
13.	UNKNOWN AMIDE	14.889	180	J
14.	UNKNOWN AMIDE	16.095	130	J
15.	UNKNOWN	17.042	120	J
16.	UNKNOWN AMIDE	17.376	2400	J
17.	UNKNOWN AMIDE	17.483	110	J
18. 198-55-0	Perylene	17.774	100	NJ
19. 192-97-2	Benzo[e]pyrene	18.054	160	NJ
20.	UNKNOWN	19.550	100	J
21.	UNKNOWN	19.743	190	J
22.	UNKNOWN	21.121	130	J
23.	UNKNOWN	21.272	350	J
24.	UNKNOWN	21.336	150	J
25.	UNKNOWN	21.724	230	J
26.	UNKNOWN	22.477	170	J
27.	UNKNOWN	23.553	1800	J
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RCA 8-2-95

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ETC03
WHS2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.15

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9552.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 18 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-Methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	1000	U
83-32-9	Acenaphthene	400	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ETC03
WHS2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.15

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9552.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 18 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1000	U
100-02-7	4-Nitrophenol	1000	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine (1)	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	400	U
120-12-7	Anthracene	400	U
86-74-8	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	400	U
129-00-0	Pyrene	400	U
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	U
218-01-9	Chrysene	400	U
117-81-7	bis(2-Ethylhexyl)phthalate	400 ~~93~~	u JB
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	U
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	U
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenz(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

ACH 8-22-95

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 OLM03.0

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ETC03

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.15

Sample wt/vol: 30.0 (g/mL) G Lab File ID: V9552.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: 18 decanted: (Y/N) N Date Extracted: 08/02/95

Concentrated Extract Volume: 500(uL) Date Analyzed: 08/04/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7

Number TICs found: 19

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 141-79-7	3-Penten-2-one, 4-methyl-	2.844	84	NJA
2. 123-42-2	2-Pentanone, 4-hydroxy-4-met	3.264	6900	uNJAB
3.	UNKNOWN ORGANIC ACID	8.720	130	u JB
4.	UNKNOWN ORGANIC ACID	10.055	110	J
5.	UNKNOWN ORGANIC ACID	11.583	430	J
6.	UNKNOWN ORGANIC ACID	11.723	250	J
7.	UNKNOWN AMIDE	11.852	120	u JB
8.	UNKNOWN	12.422	94	J
9. 10544-50-0	Sulfur, mol. (S8)	12.681	540	NJ
10.	UNKNOWN	13.079	100	J
11.	UNKNOWN AMIDE	13.294	250	u JB
12.	UNKNOWN AMIDE	13.423	370	u JB
13.	UNKNOWN AMIDE	14.736	5100	u JB
14.	UNKNOWN AMIDE	14.887	220	u JB
15.	UNKNOWN AMIDE	16.092	190	u JB
16.	UNKNOWN	17.266	190	J
17.	UNKNOWN AMIDE	17.362	2400	u JB
18.	UNKNOWN	17.610	160	J
19.	UNKNOWN	21.108	130	J
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act 8-22

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ETC04
WHSW1

ab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.16

Sample wt/vol: 1000 (g/mL) ML Lab File ID: T10926.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/07/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/09/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ETC04
WHSW1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.16

Sample wt/vol: 1000 (g/mL) ML Lab File ID: T10926.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/07/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/09/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10 ~~2~~	u JB
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

ac* 8-22-95

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 OLM03.0

2E
WATER PESTICIDE SURROGATE RECOVERY

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

GC Column(1): DB-1701 ID: 0.32(mm) GC Column(2): DB-17 ID: 0.32(mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	PBLKWA	84	135	116	118			0
02	PBLKWB	81	137	105	106			0
03	EAFK2	85	134	125	126			0
04	EAFK7	82	151*	119	81			1
05	EAFK7MS	64	115	116	114			0
06	EAFK7MSD	73	127	116	120			0
07	EAFR1	78	130	115	118			0
08	EAFR2	76	127	108	111			0
09	EPK45	76	126	112	118			0
10	ETC04	78	138	113	116			0
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29								
30								

QC LIMITS

TCX = Tetrachloro-m-xylene (30-150)
DCB = Decachlorobiphenyl (30-150)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ETC04

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.16

Sample wt/vol: 1000 (g/mL) ML Lab File ID: T10926.D

Level: (low/med) LOW Date Received: 08/02/95

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/07/95

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/09/95

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.1

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN ORGANIC ACID	8.954	8	u JB
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ACH 8-22-95

2F
SOIL PESTICIDE SURROGATE RECOVERY

ıb Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

GC Column(1): DB-17 ID: 0.32(mm) GC Column(2): DB-1701 ID: 0.32(mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	PBLKSN	64	62	78	91			0
02	EAFK1	79	78	102	105			0
03	EAFK5	68	68	90	95			0
04	EAFK6	70	66	106	113			0
05	EAFK9	57*	56*	105	112			0
06	ETC02	69	66	91	114			0
07	ETC03	71	72	102	101			0
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30								

QC LIMITS

TCX = Tetrachloro-m-xylene (30-150)
DCB = Decachlorobiphenyl (30-150)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

recycled paper

ecology and environment

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

GC Column(1): DB-1701 ID: 0.32(mm) GC Column(2): DB-17 ID: 0.32(mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	PBLKSD	38*	69	62	60			0
02	EAFK4	57*	93	96	91			0
03	EAFK4MS	79	131	123	128			0
04	EAFK4MSD	57*	92	83	80			0
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QC LIMITS

TCX = Tetrachloro-m-xylene (30-150)
DCB = Decachlorobiphenyl (30-150)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

3E

WATER PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix Spike - EPA Sample NO.: EAFK7

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
gamma-BHC(Lindane)	0.500	0	0.342	68	56-123
Heptachlor	0.500	0	0.357	71	40-131
Aldrin	0.500	0	0.346	69	40-120
Dieldrin	1.00	0	0.879	88	52-126
Endrin	1.00	0	0.891	89	56-121
4,4'-DDT	1.00	0	0.883	88	38-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC(Lindane)	0.500	0.385	77	12	15	56-123
Heptachlor	0.500	0.393	79	11	20	40-131
Aldrin	0.500	0.383	77	11	22	40-120
Dieldrin	1.00	0.943	94	6	18	52-126
Endrin	1.00	0.953	95	6	21	56-121
4,4'-DDT	1.00	0.953	95	8	27	38-127

Column to be used to flag recovery values

* Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: 0 out of 12 outside limits

Comments: _____

recycled paper ecology and environment

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix Spike - EPA Sample NO.: EAFK4

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
gamma-BHC(Lindane)	19.6	0	21.6	110	46-127
Heptachlor	19.6	0	19.8	101	35-130
Aldrin	19.6	0	18.1	92	34-132
Dieldrin	39.2	0	52.0	132	31-134
Endrin	39.2	0	51.4	131	42-139
4,4'-DDT	39.2	0	49.4	126	23-134

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC(Lindane)	19.6	15.5	79	33	50	46-127
Heptachlor	19.6	14.3	73	32 *	31	35-130
Aldrin	19.6	11.8	60	42	43	34-132
Dieldrin	39.2	35.7	91	37	38	31-134
Endrin	39.2	36.0	92	35	45	42-139
4,4'-DDT	39.2	36.1	92	31	50	23-134

Column to be used to flag recovery values

* Values outside of QC limits

RPD: 1 out of 6 outside limits
Spike Recovery: 0 out of 12 outside limits

Comments: _____

4C
PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PBLKSN

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Lab Sample ID: PBLKSN Lab File ID: 2_002929

Matrix: (soil/water) SOIL Extraction: (SepF/Cont/Sonc) SONC

Sulfur Cleanup: (Y/N) Y Date Extracted: 08/02/95

Date Analyzed (1): 08/09/95 Date Analyzed (2): 08/09/95

Time Analyzed (1): 1407 Time Analyzed (2): 1407

Instrument ID (1): HP_02A Instrument ID (2): HP_02B

GC Column (1): DB-17 ID: 0.32(mm) GC Column (2): DB-1701 ID: 0.32(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	EAFK1	23089.01	08/09/95	08/09/95
02	EAFK5	23089.05	08/09/95	08/09/95
03	EAFK6	23089.06	08/09/95	08/09/95
04	EAFK9	23089.09	08/09/95	08/09/95
05	ETC02	23089.14	08/09/95	08/09/95
06	ETC03	23089.15	08/09/95	08/09/95
07				
08				
09				
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Comments:

4C
PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PBLKSD

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Lab Sample ID: PBLKSD Lab File ID: 1_001779

Matrix: (soil/water) SOIL Extraction: (SepF/Cont/Sonc) SONC

Sulfur Cleanup: (Y/N) Y Date Extracted: 08/10/95

Date Analyzed (1): 08/14/95 Date Analyzed (2): 08/14/95

Time Analyzed (1): 1528 Time Analyzed (2): 1528

Instrument ID (1): HP_01A Instrument ID (2): HP_01B

GC Column (1): DB-1701 ID: 0.32(mm) GC Column (2): DB-17 ID: 0.32(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	EAFK4	23089.04	08/14/95	08/14/95
02	EAFK4MS	23089.04MS	08/14/95	08/14/95
03	EAFK4MSD	23089.04MSD	08/14/95	08/14/95
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06				
07				
08				
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Comments:

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PBLKWB

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Lab Sample ID: PBLKWB Lab File ID: 1_001663

Matrix: (soil/water) WATER Extraction: (SepF/Cont/Sonc) SEPF

Sulfur Cleanup: (Y/N) Y Date Extracted: 08/02/95

Date Analyzed (1): 08/05/95 Date Analyzed (2): 08/05/95

Time Analyzed (1): 0315 Time Analyzed (2): 0315

Instrument ID (1): HP_01A Instrument ID (2): HP_01B

GC Column (1): DB-1701 ID: 0.32(mm) GC Column (2): DB-17 ID: 0.32(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	EPK45	23089.13	08/05/95	08/05/95
02				
03				
04				
05				
06				
07				
08				
09				
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Comments:

4C
PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PBLKWA

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Lab Sample ID: PBLKWA Lab File ID: 1_001662

Matrix: (soil/water) WATER Extraction: (SepF/Cont/Sonc) SEPF

Sulfur Cleanup: (Y/N) N Date Extracted: 08/02/95

Date Analyzed (1): 08/05/95 Date Analyzed (2): 08/05/95

Time Analyzed (1): 0244 Time Analyzed (2): 0244

Instrument ID (1): HP_01A Instrument ID (2): HP_01B

GC Column (1): DB-1701 ID: 0.32(mm) GC Column (2): DB-17 ID: 0.32(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	EAFK2	23089.02	08/05/95	08/05/95
02	EAFK7	23089.07	08/05/95	08/05/95
03	EAFK7MS	23089.07MS	08/05/95	08/05/95
04	EAFK7MSD	23089.07MSD	08/05/95	08/05/95
05	EAFR1	23089.10	08/05/95	08/05/95
06	EAFR2	23089.11	08/05/95	08/05/95
07	ETC04	23089.16	08/05/95	08/05/95
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Comments:

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLKSD

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: PBLKSD

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/10/95

Concentrated Extract Volume: 5000(uL) Date Analyzed: 08/14/95

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.7	U
319-85-7	beta-BHC	1.7	U
319-86-8	delta-BHC	1.7	U
58-89-9	gamma-BHC (Lindane)	1.7	U
76-44-8	Heptachlor	1.7	U
309-00-2	Aldrin	1.7	U
1024-57-3	Heptachlor epoxide	1.7	U
959-98-8	Endosulfan I	1.7	U
60-57-1	Dieldrin	3.3	U
72-55-9	4,4'-DDE	3.3	U
72-20-8	Endrin	3.3	U
33213-65-9	Endosulfan II	3.3	U
72-54-8	4,4'-DDD	3.3	U
1031-07-8	Endosulfan sulfate	3.3	U
50-29-3	4,4'-DDT	3.3	U
72-43-5	Methoxychlor	17	U
53494-70-5	Endrin ketone	3.3	U
7421-93-4	Endrin aldehyde	3.3	U
5103-71-9	alpha-Chlordane	1.7	U
5103-74-2	gamma-Chlordane	1.7	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	67	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLKSN

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: PBLKSN

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/02/95

Concentrated Extract Volume: 5000(uL) Date Analyzed: 08/09/95

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.7	U
319-85-7	beta-BHC	1.7	U
319-86-8	delta-BHC	1.7	U
58-89-9	gamma-BHC (Lindane)	1.7	U
76-44-8	Heptachlor	1.7	U
309-00-2	Aldrin	1.7	U
1024-57-3	Heptachlor epoxide	1.7	U
959-98-8	Endosulfan I	1.7	U
60-57-1	Dieldrin	3.3	U
72-55-9	4,4'-DDE	3.3	U
72-20-8	Endrin	3.3	U
33213-65-9	Endosulfan II	3.3	U
72-54-8	4,4'-DDD	3.3	U
1031-07-8	Endosulfan sulfate	3.3	U
50-29-3	4,4'-DDT	3.3	U
72-43-5	Methoxychlor	17	U
53494-70-5	Endrin ketone	3.3	U
7421-93-4	Endrin aldehyde	3.3	U
5103-71-9	alpha-Chlordane	1.7	U
5103-74-2	gamma-Chlordane	1.7	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	67	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLKWA

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: PBLKWA

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:08/02/95

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/05/95

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLKWB

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: PBLKWB

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:08/02/95

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/05/95

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK1
MLS2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.01

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 18 decanted: (Y/N) N Date Received: 08/02/95

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/02/95

Concentrated Extract Volume: 5000(uL) Date Analyzed: 08/09/95

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.1	U
319-85-7	beta-BHC	2.1	U
319-86-8	delta-BHC	2.1	U
58-89-9	gamma-BHC (Lindane)	2.1	U
76-44-8	Heptachlor	2.1	U
309-00-2	Aldrin	2.1	U
1024-57-3	Heptachlor epoxide	2.1	U
959-98-8	Endosulfan I	2.1	U
60-57-1	Dieldrin	4.0	U
72-55-9	4,4'-DDE	4.0	U
72-20-8	Endrin	4.0	U
33213-65-9	Endosulfan II	4.0	U
72-54-8	4,4'-DDD	4.0	U
1031-07-8	Endosulfan sulfate	4.0	U
50-29-3	4,4'-DDT	4.0	U
72-43-5	Methoxychlor	21	U
53494-70-5	Endrin ketone	4.0	U
7421-93-4	Endrin aldehyde	4.0	U
5103-71-9	alpha-Chlordane	2.1	U
5103-74-2	gamma-Chlordane	2.1	U
8001-35-2	Toxaphene	210	U
12674-11-2	Aroclor-1016	40	U
11104-28-2	Aroclor-1221	82	U
11141-16-5	Aroclor-1232	40	U
53469-21-9	Aroclor-1242	40	U
12672-29-6	Aroclor-1248	40	U
11097-69-1	Aroclor-1254	40	U
11096-82-5	Aroclor-1260	40	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK2
MLSW1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.02

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) __ Date Received: 08/02/95

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/02/95

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/05/95

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK4
MCLS1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.04

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 15 decanted: (Y/N) N Date Received: 08/02/95

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/10/95

Concentrated Extract Volume: 5000(uL) Date Analyzed: 08/14/95

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	2.0	U
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	2.0	U
309-00-2	Aldrin	2.0	U
1024-57-3	Heptachlor epoxide	2.0	U
959-98-8	Endosulfan I	2.0	U
60-57-1	Dieldrin	3.9	U
72-55-9	4,4'-DDE	3.9	U
72-20-8	Endrin	3.9	U
33213-65-9	Endosulfan II	3.9	U
72-54-8	4,4'-DDD	3.9	U
1031-07-8	Endosulfan sulfate	3.9	U
50-29-3	4,4'-DDT	3.9	U
72-43-5	Methoxychlor	20	U
53494-70-5	Endrin ketone	3.9	U
7421-93-4	Endrin aldehyde	3.9	U
5103-71-9	alpha-Chlordane	2.0	U
5103-74-2	gamma-Chlordane	2.0	U
8001-35-2	Toxaphene	200	U
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	79	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK5
MCLS2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.05

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 28 decanted: (Y/N) N Date Received: 08/02/95

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/02/95

Concentrated Extract Volume: 5000(uL) Date Analyzed: 08/09/95

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.4	U
319-85-7	beta-BHC	2.4	U
319-86-8	delta-BHC	2.4	U
58-89-9	gamma-BHC (Lindane)	2.4	U
76-44-8	Heptachlor	2.4	U
309-00-2	Aldrin	2.4	U
1024-57-3	Heptachlor epoxide	2.4	U
959-98-8	Endosulfan I	2.4	U
60-57-1	Dieldrin	4.6	U
72-55-9	4,4'-DDE	4.6	U
72-20-8	Endrin	4.6	U
33213-65-9	Endosulfan II	4.6	U
72-54-8	4,4'-DDD	4.6	U
1031-07-8	Endosulfan sulfate	4.6	U
50-29-3	4,4'-DDT	4.6	U
72-43-5	Methoxychlor	24	U
53494-70-5	Endrin ketone	4.6	U
7421-93-4	Endrin aldehyde	4.6	U
5103-71-9	alpha-Chlordane	2.4	U
5103-74-2	gamma-Chlordane	2.4	U
8001-35-2	Toxaphene	240	U
12674-11-2	Aroclor-1016	46	U
11104-28-2	Aroclor-1221	93	U
11141-16-5	Aroclor-1232	46	U
53469-21-9	Aroclor-1242	46	U
12672-29-6	Aroclor-1248	46	U
11097-69-1	Aroclor-1254	46	U
11096-82-5	Aroclor-1260	46	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK6
MCLS3

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.06

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 18 decanted: (Y/N) N Date Received: 08/02/95

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/02/95

Concentrated Extract Volume: 5000(uL) Date Analyzed: 08/09/95

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.1	U
319-85-7	beta-BHC	2.1	U
319-86-8	delta-BHC	2.1	U
58-89-9	gamma-BHC (Lindane)	2.1	U
76-44-8	Heptachlor	2.1	U
309-00-2	Aldrin	2.1	U
1024-57-3	Heptachlor epoxide	2.1	U
959-98-8	Endosulfan I	2.1	U
60-57-1	Dieldrin	4.0	U
72-55-9	4,4'-DDE	4.0	U
72-20-8	Endrin	4.0	U
33213-65-9	Endosulfan II	4.0	U
72-54-8	4,4'-DDD	4.0	U
1031-07-8	Endosulfan sulfate	4.0	U
50-29-3	4,4'-DDT	4.0	U
72-43-5	Methoxychlor	21	U
53494-70-5	Endrin ketone	4.0	U
7421-93-4	Endrin aldehyde	4.0	U
5103-71-9	alpha-Chlordane	2.1	U
5103-74-2	gamma-Chlordane	2.1	U
8001-35-2	Toxaphene	210	U
12674-11-2	Aroclor-1016	40	U
11104-28-2	Aroclor-1221	82	U
11141-16-5	Aroclor-1232	40	U
53469-21-9	Aroclor-1242	40	U
12672-29-6	Aroclor-1248	40	U
11097-69-1	Aroclor-1254	40	U
11096-82-5	Aroclor-1260	40	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK7
MCLSW1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.07

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) __ Date Received: 08/02/95

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/02/95

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/05/95

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.5 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFK9
WHS1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.09

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 23 decanted: (Y/N) N Date Received: 08/02/95

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/02/95

Concentrated Extract Volume: 5000(uL) Date Analyzed: 08/09/95

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.2	U
319-85-7	beta-BHC	2.2	U
319-86-8	delta-BHC	2.2	U
58-89-9	gamma-BHC (Lindane)	2.2	U
76-44-8	Heptachlor	2.2	U
309-00-2	Aldrin	2.2	U
1024-57-3	Heptachlor epoxide	2.2	U
959-98-8	Endosulfan I	2.2	U
60-57-1	Dieldrin	4.3	U
72-55-9	4,4'-DDE	4.3	U
72-20-8	Endrin	4.3	U
33213-65-9	Endosulfan II	4.3	U
72-54-8	4,4'-DDD	4.3	U
1031-07-8	Endosulfan sulfate	4.3	U
50-29-3	4,4'-DDT	4.3	U
72-43-5	Methoxychlor	22	U
53494-70-5	Endrin ketone	4.3	U
7421-93-4	Endrin aldehyde	4.3	U
5103-71-9	alpha-Chlordane	2.2	U
5103-74-2	gamma-Chlordane	2.2	U
8001-35-2	Toxaphene	220	U
12674-11-2	Aroclor-1016	43	U
11104-28-2	Aroclor-1221	87	U
11141-16-5	Aroclor-1232	43	U
53469-21-9	Aroclor-1242	43	U
12672-29-6	Aroclor-1248	43	U
11097-69-1	Aroclor-1254	43	U
11096-82-5	Aroclor-1260	43	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFR1
WHSW1D

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.10

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) __ Date Received: 08/02/95

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/02/95

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/05/95

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.3 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAFR2
MLF1

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.11

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) __ Date Received: 08/02/95

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/02/95

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/05/95

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EPK45
MCLSW2

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.13

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) __ Date Received: 08/02/95

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/02/95

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/05/95

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.6 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ETC02
WHS1D

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.14

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 21 decanted: (Y/N) N Date Received: 08/02/95

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/02/95

Concentrated Extract Volume: 5000(uL) Date Analyzed: 08/09/95

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.6 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.2	U
319-85-7	beta-BHC	2.2	U
319-86-8	delta-BHC	2.2	U
58-89-9	gamma-BHC (Lindane)	2.2	U
76-44-8	Heptachlor	2.2	U
309-00-2	Aldrin	2.2	U
1024-57-3	Heptachlor epoxide	2.2	U
959-98-8	Endosulfan I	2.2	U
60-57-1	Dieldrin	4.2	U
72-55-9	4,4'-DDE	4.2	U
72-20-8	Endrin	4.2	U
33213-65-9	Endosulfan II	4.2	U
72-54-8	4,4'-DDD	4.2	U
1031-07-8	Endosulfan sulfate	4.2	U
50-29-3	4,4'-DDT	4.2	U
72-43-5	Methoxychlor	22	U
53494-70-5	Endrin ketone	4.2	U
7421-93-4	Endrin aldehyde	4.2	U
5103-71-9	alpha-Chlordane	2.2	U
5103-74-2	gamma-Chlordane	2.2	U
8001-35-2	Toxaphene	220	U
12674-11-2	Aroclor-1016	42	U
11104-28-2	Aroclor-1221	85	U
11141-16-5	Aroclor-1232	42	U
53469-21-9	Aroclor-1242	42	U
12672-29-6	Aroclor-1248	42	U
11097-69-1	Aroclor-1254	42	U
11096-82-5	Aroclor-1260	42	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ETC03
WH52

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) SOIL Lab Sample ID: 23089.15

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 18 decanted: (Y/N) N Date Received: 08/02/95

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/02/95

Concentrated Extract Volume: 5000(uL) Date Analyzed: 08/09/95

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.1	U
319-85-7	beta-BHC	2.1	U
319-86-8	delta-BHC	2.1	U
58-89-9	gamma-BHC (Lindane)	2.1	U
76-44-8	Heptachlor	2.1	U
309-00-2	Aldrin	2.1	U
1024-57-3	Heptachlor epoxide	2.1	U
959-98-8	Endosulfan I	2.1	U
60-57-1	Dieldrin	4.0	U
72-55-9	4,4'-DDE	4.0	U
72-20-8	Endrin	4.0	U
33213-65-9	Endosulfan II	4.0	U
72-54-8	4,4'-DDD	4.0	U
1031-07-8	Endosulfan sulfate	4.0	U
50-29-3	4,4'-DDT	4.0	U
72-43-5	Methoxychlor	21	U
53494-70-5	Endrin ketone	4.0	U
7421-93-4	Endrin aldehyde	4.0	U
5103-71-9	alpha-Chlordane	2.1	U
5103-74-2	gamma-Chlordane	2.1	U
8001-35-2	Toxaphene	210	U
12674-11-2	Aroclor-1016	40	U
11104-28-2	Aroclor-1221	82	U
11141-16-5	Aroclor-1232	40	U
53469-21-9	Aroclor-1242	40	U
12672-29-6	Aroclor-1248	40	U
11097-69-1	Aroclor-1254	40	U
11096-82-5	Aroclor-1260	40	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ETC04
WASWID

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 23857 SAS No.: SDG No.: EAFK1

Matrix: (soil/water) WATER Lab Sample ID: 23089.16

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) __ Date Received: 08/02/95

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/02/95

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/05/95

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

ESD Central Regional Laboratory
Data Tracking Form for Contract Samples

Data Set No: _____ CERCLIS No: ILD980498125

Case No: 23857 Site Name Location: Macon Cty #2

Contractor or EPA Lab: SWOK Data User: E & E

No. of Samples: 16 Date Sampled or Data Received: 8-16-95

Have Chain-of-Custody records been received? Yes ✓ No____
Have traffic reports or packing lists been received? Yes ✓ No____
If no, are traffic report or packing list numbers written on the chain-of-custody record? Yes ____ No____
If no, which traffic report or packing list numbers are missing?

Are basic data forms in? Yes ✓ No____
No of samples claimed: 16 No. of samples received: 16

Received by: A. C. Harvey Date: 8-16-95

Received by LSSS: Allison C Harvey Date: 8-17-95

Review started: 8-21-95 Reviewer Signature: Allison C Harvey

Total time spent on review: 16.5 hrs Date review completed: 8-25-95

Copied by: Lynette Burnett Date: 8-31-95

Mailed to user by: Lynette Burnett Date: 8-31-95

DATA USER:
Please fill in the blanks below and return this form to:
Sylvia Griffen, Data mgmt. Coordinator, Region V, 5SCRL

Data received by: _____ Date: _____

Data review received by: _____ Date: _____

Inorganic Data Complete [ ] Suitable for Intended Purpose [ ] ✓ if OK
Organic Data Complete [ ] Suitable for Intended Purpose [ ] ✓ if OK
Dioxin Data Complete [ ] Suitable for Intended Purpose [ ] ✓ if OK
SAS Data Complete [ ] Suitable for Intended Purpose [ ] ✓ if OK

PROBLEMS: Please indicate reasons why data are not suitable for your uses.

_____

_____

Received by Data Mgmt. Coordinator for Files. Date: _____

APPENDIX D

ENDANGERED SPECIES LIST FOR MACON COUNTY

Appendix D

ENDANGERED SPECIES LIST FOR MACON COUNTY, ILLINOIS

Latin Name	Species Name	Habitat	Status
Camassia Angusta (Engelm. & Gray) Blank	Wild Hyacinth	Bulbous perennial herb	E
Carex Austrina (Small) Mack	Southern Sedge	Perennial tufted to slightly rhizomatous sedge	E
Clonophis Kirtlandi (Kennicott)	Kirtland's Snake	Wet meadows, open swamp-forests, reservoirs	T
Cypripedium Candidum	White Lady's Slipper	Rhizomatous perennial orchid	E
Lactuca Ludoviciana (Nutt.) Riddell	Western Wild Lettuce	Biennial or short-lived herb.	E
Nyctanassa Violacea (Linnaeus)	Yellow-Crowned Nigh Heron	Marshes, swamps, lakes, lagoons, breeding in trees in wooded situations near water	T
Nycticorax Nycticorax (Linnaeus)	Black-Crowned Nigh Heron	Bottomland forest trees, herbaceous marsh vegetation	E
Platanthera Leucophaea (Nutt.) Lindl	Prairie White Fringed Orchid	Tuberous perennial orchid	E/FT
Polygonum Arifolium L.	Halbred-Leaved Tear Thumb	Perennial vinelike herb	E
Thryomanes Bewickii (Audubon)	Bewick's Wren	Bottomland forest trees, herbaceous marsh vegetation	E

Key:

E = Endangered Species
T = Threatened Species
FE = Federally Endangered Species

APPENDIX E

REFERENCE DOCUMENTATION

ecology and environment, inc.
CHICAGO, ILLINOIS

TELEPHONE LOG

REFERENCE

CONTACT	COMPANY or AGENCY	POSITION
Linda Tucker	Harristown City Hall	Clerk

CONTACT ADDRESS	CONTACT PHONE NUMBER
P.O. Box 200 Harristown, IL 62537	217 963 2980

E&E EMPLOYEE	DATE	TIME
Alix Rauschman	5/8/95	1:17 pm

PROJECT NUMBER	SITE NAME and LOCATION
2T3051	Waste Hauling

DISCUSSION

They have wells NW of Harristown between Niantic & Harristown. Two wells - one old one which is @ 31 feet. Its not currently used, but will be re-utilized. The Auxillary one - depth unknown. Harristown also utilizes Decatur water and vice-versa. We don't know when the shallow 31' well will be back in business.

SIGNATURE Alix Rauschman

PAGE 1 OF 1

ecology and environment, inc.

International Specialists in the Environment

Job Number ZT3051

Macon County L.F #2

WEDNESDAY APRIL 12, 1995

WEATHER: PTLY SUNNY, COOL 45°F, WINDS SW 10 mph.

PERSONNEL: CHAD EICH E+E
BOB MEYERS E+E

OBJECTIVES: CONDUCT SITE WALKOVERS AT MACON CO. LANDFILL #2 + WASTE HAULING

0800 TEAM HELD SITE SAFETY MEETING AFTER CHECKING OUT OF HOTEL. ONLY DOING WALK-OVER, NO SAMPLING. DISCUSSED TRIP/FALL + PHYSICAL HAZARDS. DEPART FOR SITE.

0855 TEAM ARRIVES AT MACON COUNTY LANDFILL. OBSERVED ACTIVE FILLING. SOME WIND-BLOWN DEBRIS WAS OBSERVED

3L TO MOFFET LANE. CROSS RR LANE TO RT ALONG TRACKS.

MR. LYNCH NOT AVAILABLE. SECRETARY DIRECTED TEAM TO SITE.

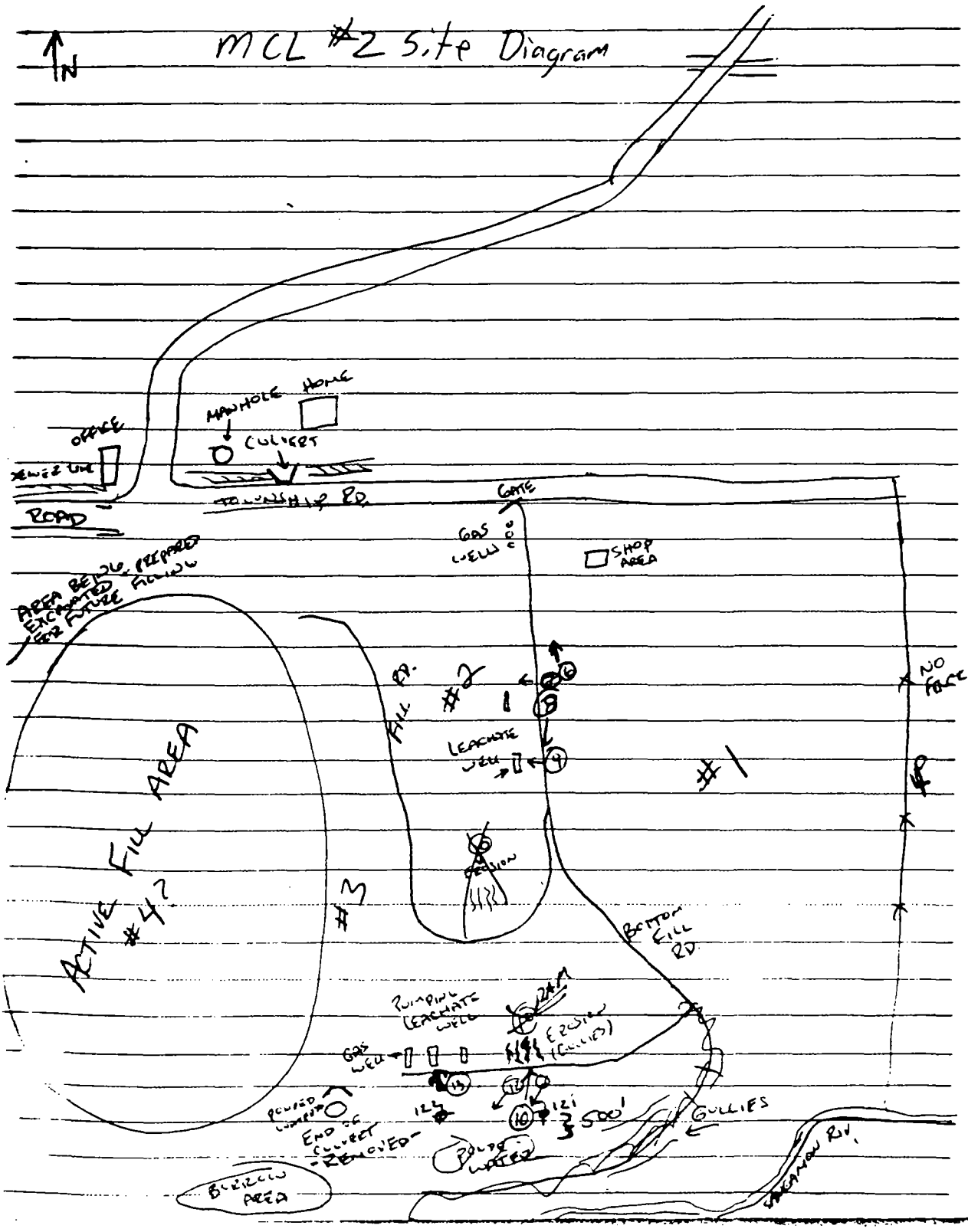
0910 MET EARL MOORE. VP OF MACON CO LANDFILL. LED US ON A TOUR OF SITE (OLD WASTE CONTROL LANDFILL)

PHOTOS ① STEVENS CREEK - N OF LANDFILL
② DITCH FROM TOE OF C+D FILL AREA LEADING TO STEVENS CK ~ 200' N
③ LOOKING S
④ TOP OF FILL.
⑤ TOP OF FILL TO PLAIN OF STEVENS CK

THIS WAS OLD ~~MACON CO.~~ WASTE CONTROL LANDFILL. NOT #2

DROVE TO ACTIVE MACON CO. LANDFILL. THE ONE WE HAD GONE TO THE FIRST TIME
(EARL JUST WANTED TO SHOW US THE FIRST SITE)
IT'S ONE WE HAD PLANNED TO DO DRIVE BY

4-12-95


N
MCL #2 Site Diagram
OFFICE
SEWER LINE
MANHOLE
HOME
CULVERT
TOWNSHIP RD.
ROAD
GATE
GAS WELL
SHOP AREA
AREA BEING PREPARED ENCROACHED FOR FUTURE FILLING
FILL RD.
#2
LEACHATE WELL
#1
NO FACE
ACTIVE FILL AREA #4?
#3
EROSION
BOTTOM FILL RD.
PUMPING LEACHATE WELL
EROSION (GULLIES)
GAS WELL
POURED WATER
END OF CULVERT REMOVED
POURED WATER
500'
GULLIES
STREAMOW RIV.
BURNING AREA

4-12-95

CURRENT FILL AREA HAS LEACHATE COLLECTION SYSTEM
SYSTEM ALSO COVERS AREA #2. SOME LEACHATE WELLS HAVE PUMPS
OVA FIRED UP + BKG MEASURED AT 0ppm.
WIND BLOWING 15 TO 20 mph
WE DROVE AROUND ENTIRE SITE. NO OVA READINGS ABOVE
BKG AT ANY LOCATION.
#2 AREA WELL KEPT + VEGETATED. SOME SMALL
GULLIES NOTED ALONG S SLOPE OF FILL AREA.
NO LEACHATE OBSERVED. NO OFF-SITE MIGRATION OF
RUNOFF OBSERVED. (YESTERDAY HAD HEAVY RAIN).
WALKED TOE OF SLOPE - ALONG BOTTOM FILL RD.
OBSERVED 2 M.W.'S. G-121 + G-122. BOTH LOCKING
CAPS WERE UNLOCKED.
NO LEACHATE OBSERVED. FLOOD PLAIN BETWEEN RD
+ SANGAMON RIVER HAD SOME PONDED WATER (11) + (12)
NO OBSERVED RELEASES
DROVE AROUND TOP OF FILL AREA. NO PONDED
WATER WELL VEGETATED.
CULVERT / DRAIN TILE-PIPE RUNNING N + S THROUGH
FILL AREA WAS REMOVED. S END CAPPED.
N. SEWER FOLLOWS TOWNSHIP RD E + W. + OUTFALLS
IN SMALL CK ~ 0.5 MILES WEST OF OFFICE.
1200 TEAM DEPARTS MACON CO. LANDFILL + DROVE TO
WASTE HAULING SITE LOCATED SITE + BROKE FOR
LUNCH
12:30 - 12:50 - LUNCH
PHOTOS (14), (15) (16) OUTFALL OF DRAINAGE DITCH / SEWER
(17) LOOKING W. FROM WYCKLES RD. BRIDGE OVER
SANGAMON R. ~ .25 MILES UPSTREAM OF SITE

Robert A. Meyer

Recon done on 4-12-95

Q: Is MCh #4 in use? what type of waste will it or does it accept?

what other areas currently accept waste still special waste?

Explain diff. in old waste Control LF site and MCh sites. Was waste Control currently SW of Decatur? Now its NE by Stevens River.

what type of floodplain is the area? 100yr + 100yr?

what types of leachate collection systems are present?

→ Look for Wetland Locations

MWs → 25 wells.
new ones put around
old site.

Quarterly reports.

Springfield — Andrew Associates
Peoria — to Daily Assoc.

As of 1990: FIT

MCL#1 closed → when?

Is MCL #2 closed? MCL#3?

When did MCL#4 start being used?

What are the agricultural crops used for? What is grown? 6 acres N.

Is office on N. side of Hill Rd still used? yes

Are buildings on MCL #1 used?
- ~~Machine~~ shop + former office Bldg.
still used on canull property on S. side E.
not indicated on Bob's drawing.

Is the ~~liquids~~ was disposal pit still used?
NO

~~Are~~ there more than 9 MWs now?

FIT SAMPLED 4 WELLS in 1990

Leachate collection pipes are on MCL#2, are they found @ other landfill areas?

~~South~~ Is there still an unused fuel storage tank w/ dark oil stained soil on ground E of machine shop? no ~~AST~~/UST only diesel tanks

Notice - FIT Re-sampling:
get date right & what was sampled when.

fenced road along locked @ night

MW's are locked

Is there still a mobile home residence W of MCL #4? yes reid

Do ~~36~~ 25-30 shareholders still own site? Who took over the presidency in 1990 after McKinney, and why did he quit / be replaced?

MCL #1 began in 1976 ✓ 6 diff land lords
- special waste disposal permits.

eg ink, solvent waste, waste core sand, used paint filters, solid paint waste, and foundry sand.

Are wastes still disposed of in open trenches. See 2-3.

Are the landfills lined? Are all of them clay covered?

what types of permits do you have for site operation - RCRA or NPES? non haz. spec. waste

→ Post closure bond

20 yrs. pres for 5/6 yr.

- Glen Lynch - owner - 8:30 -

May 18, 1995 - called owner

@ 217-963-2976 to find out about Macon Co. Landfill. The receptionist said Mr. Lynch would be back on Monday and to call @ 8:30 or so.

The landfill is still currently operating.

May 22 @ 9am (217) 963-2981

Move over in Sections

6 sections filled
One section open @ a time

by EPA

Cover w/ topsoil 3'.
6' on new are.

Gas monitoring in buildings
gas recovery. Leachate
@ last 4 sections pumped
sent to sanitary sys - to
Sangamon River after being
treated.

Alix Rauschman + Glen Lynch - site - president

Phone Log notes → 5/22/95

There are six lf areas:

area 1 40 acres bought from Howard + Marie Canull Priv. res. Only 22-25 acres used. rest in floodplain

area 2 40 acres bought from Lewis Shall construction. only 22-25 acres used. ~~rest storm sewer~~ thru area. Shall property just old storage area

area 3 25 acres bought from Carl Alsip. 2 acres then 50 acres bought, Priv. residence

area 4 Karch construction 30 acres bought from them. The 30 acres was used

Notes were too messy to comprehend so they were copied over.

more as a parking lot that a constr. co.

Summer of '94:
Macon bought Williams residence - 3½ acres
Mrs Logue's residence 3½ acres. Storm sewer thru these areas. Kelly residence - 10 acres. on N side. Reid residence - 10 acres on N side.

While Lf is ≈ 200+ acres

all Lf areas are 25 acres except area 6 which is 21 acres.

(6 diff landlords)

25-30 shareholders own the company. Mr. Glen Lynch became the acting president of landfill operations when McKinny left the position midterm. Lynch was VP @ the time. Lynch has been in this position for about 6 yrs since 1988 and has worked w/ the landfill since 1976 when the first of area opened.

The site is fenced along Hill Road. The site gate is locked. The 25 mws which exist around the of are locked. The mws are monitored quarterly by Andrew Associates.

The landfill areas compose one big area. The areas that fill up are closed via a post-closure bond. The site is permitted to accept special, municipal and other non-hazwastes.

On the Reid residence, across the street on N side of Dill road exists a mobile home.

The areas that are closed were covered w/ 3' of topsoil - 6' will go on the newest area. The lf areas are lined w/ clay (5') compacted to 10^{-7}? The newest area has a synthetic liner

over the clay + a sand layer on top to (conceal leachate collection system?)

The first area is built w/ a berm around it b/c part of it was in the 100 yr. flood-plain zone. No other areas are w/in the zone. Flooding does not inundate the lf areas.

There are 20-20 workers on site all day. Windy days require 40 + workers.

The lf has a leachate collection system where before, leachate was pumped out and re-

circled on top of the daily garbage. Now, the waste leachate is pumped into a sewer system and the sanitary sep treatment plant takes it, treats it to drinkable quality, and discharges it into the Sangamon River.

from last page

The MCL is working on installing a gas monitoring system in the off-site buildings to obtain gas recovery and reuse.

The MCL is attempting to secure a permit to continue filling west to the point

from which the lf will not further expand such that there is space betw. the lf and westward residents. If the MCL gets this permit, the lf will be open another 8 yrs. if not, the lf will close in 1.5 yrs. The county gives the permit which the State then approves.

The Carnell property comprises the bust of area. The office building & shop are still used.

Agricultural lands are located b acres N of site.

No USTs are on the property, but diesel fuel tanks are on-site and are monitored for leakage.

ecology and environment, inc.

International Specialists in the Environment

Job Number ZT3051

5125 W. Hill Rd

Macon County

Landfill #2

Hill & Bear

13:56 Arrive @ Macon Co. LF.

15:00 After looking @ Wash Control, we drive back to MCL & go south of MCL#4 to take d.s. sed #3.

1516 Weather is overcast Collected S3d.s. @ MCL#2 @ approx MCL#4.

1527 Alin & Alix leave linda and go to SW2/S2 location @ MCL #2.

1534 arrive @ Sample site for S2 & SW2

1547 finish sampling @ MCL#2

GJR

1600: Arrive back to where Glen and Alix dropped Linda off. The landfill is in good shape. There were no obvious leachate trails. ~~No~~ OOR actual berm @ end of MCL#1. There is a natural berm @ end of MCL#2 and you can see the flood-plain - See photos.

The berm around MCL#1 is 6'. Berm made by MCL. Berm is further east and could not be seen.

MCL#4 is active. It has between 6 to 10 yrs. MCL#5 is being prepared for use @ the same time @ MCL#4.

[signature]

Soil/Sediment/Surface Water #: S3

Time: 1516 Composite/Grab

Surface/Depth: ft. 3 in.

Technique: Shovel/trowel/spoons/bowl
post-hole digger/hand auger/other-describe.

Collected by: Alix Rausch

Location: MCL#4 d.s. of MCL#2

Comments/Physical Description:

Water clear.
Sediment has
garbage odor.
Sand sediment.
River @ ≈ 1ft/4sec
Rives looks good. Soil
Smell is all.

[signature]

Soil / Sediment / Surface Water #: S2

Time: 1538 Composite / Grab

Surface / Depth: ft. in.

Technique: Shovel / trowel / spoons / bowl / post-hole digger / hand auger / other - describe:

Collected by: Alix Rausch

Location: Supposed PPE.

Comments / Physical Description: Soil looks clean. The soil when mixed up looked kind of yellowish in the water, but the was no odor.

ABR

Soil/Sediment/Surface Water #: SW2

Time: 1340 Composite/Grab

Surface/Depth: ---------- ft. 0 in.

Technique: Shovel/trowel/spoons/bowl
post-hole digger/hand auger/other-describe.

Collected by: Alix Rauschman

Location: PPE (Supposed)

Comments/Physical Description: water
Clear. No smell.

ASR

Soil/Sediment/Surface Water #: SW1/MS/MSD

Time: 16:15 Composite/Grab

Surface/Depth: ---------- ft. 0 ------ in.

Technique: Shovel/trowel/spoons/bowl
post-hole digger/hand auger/other-describe.

Collected by: Alix Rausch

Location: ~.25 mile from Wyles Road Bridge along S.R.

Comments/Physical Description:

- Water was very warm
- low flow
- no obvious odors

AJR

Soil/Sediment/Surface Water #: S1/MSMSD

Time: 16:30 Composite/Grab

Surface/Depth: 1 ft 0 in.

Technique: Shovel/trowel/spoons/bowl
post-hole digger/hand auger/other-describe.

Collected by: Alix Rausch

Location: 0.25 miles from wyles rd bridge along S.R.

Comments/Physical Description:

Sed. soil under gravel smelled like petroleum and was black as if stained.

The landfill is in stable condition.

1647 Go to take pictures of site. We had arrived at 16:15. Took MSMSD of SW7 + S7 up streams ~ 1/4 mi from Wyles bridge + SR.

1703 Leave to go home.

1807 Arrive @ house & begin to prepare samples for shipping.

Find out that Fedex is open until 7:30

AP

19:00 start car to leave for fed-ex.

1920 lv. Fed-ex.

2000 arrive back from fed ex. Day over

ABR