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SCREENING SITE INSPECTION REPORT
FOR
AMOCO OIL COMPANY
BELLEVILLE, ILLINOIS
U.S. EPA ID: ILD000670703
SS ID: NONE
TDD: F05-8612-078
PAN: FIL0059SB

JANUARY 3, 1989

ecology and environment, inc.

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International Specialists in the Environment

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1. INTRODUCTION

Ecology and Environment, Inc., Field Investigation Team (FIT) was tasked by the United States Environmental Protection Agency (U.S. EPA) to conduct a screening site inspection (SSI) of the Amoco Oil Company site under contract number 68-01-7347.

The site was initially discovered when a complaint was filed on April 8, 1982, with the Land Development Department of the Zoning Office for St. Clair County (IEPA 1986). The complaint alleged that Amoco Oil Company was illegally storing pesticides in a trailer on a local farmer's land (Colburn 1982). The site was evaluated in the form of a preliminary assessment (PA) that was submitted to U.S. EPA. The PA was prepared by Kenneth L. Page of the Illinois Environmental Protection Agency (IEPA). The PA is dated April 10, 1986.

FIT prepared an SSI work plan for the Amoco Oil Company site under technical directive document (TDD) F05-8612-078, issued on December 17, 1986. The SSI work plan was approved by U.S. EPA on January 6, 1988. The SSI of the Amoco Oil Company site was conducted on March 29, 1988 under TDD F05-8612-078, issued on February 18, 1988.

The FIT SSI included an interview with a site representative, a reconnaissance inspection of the site, and the collection of four soil samples and four residential well samples.

The purposes of an SSI have been stated by U.S. EPA in a directive outlining Pre-Remedial Program strategies. The directive states:

> All sites will receive a screening SI to 1) collect additional data beyond the PA to enable a more refined

> preliminary HRS [Hazard Ranking System] score, 2) establish priorities among sites most likely to qualify for the NPL [National Priorities List], and 3) identify the most critical data requirements for the listing SI step. A screening SI will not have rigorous data quality objectives (DQOs). Based on the refined preliminary HRS score and other technical judgement factors, the site will then either be designated as NFRAP [no further remedial action planned], or carried forward as an NPL listing candidate. A listing SI will not automatically be done on these sites, however. First, they will go through a management evaluation to determine whether they can be addressed by another authority such as RCRA [Resource Conservation and Recovery Act].... Sites that are designated NFRAP or deferred to other statutes are not candidates for a listing SI.
>
> The listing SI will address all the data requirements of the revised HRS using field screening and NPL level DQOs. It may also provide needed data in a format to support remedial investigation work plan development. Only sites that appear to score high enough for listing and that have not been deferred to another authority will receive a listing SI (U.S. EPA 1988).

U.S. EPA Region V has also instructed FIT to identify sites during the SSI that may require removal action to remediate an immediate human health and/or environmental threat.

2. SITE BACKGROUND

2.1 INTRODUCTION

This section includes information obtained from SSI work plan preparation and the site representative interview.

2.2 SITE DESCRIPTION

Located on the Amoco Oil Company site is a custom blending and storage facility for liquid fertilizer and anhydrous ammonia (Ellett 1988). The facility consists of a small tank farm, a small office, a loading pit and a storage area for ammonia nurse tanks. The tank farm consists of five tanks used for base liquid fertilizer storage and one tank for storage of ammonia. A breakdown of the materials stored in the tanks and the capacities of the tanks is given in Table 2-1.

The on-site operation consists primarily of fertilizer distribution and custom blending of liquid fertilizer for local farmers (Ellet 1988). Liquid fertilizer is loaded directly into spreader trucks for subsequent blending and distribution to farmers (Ellett 1988). The base liquid fertilizer product used for custom blending is stored in the aboveground tanks that are located in the tank farm along the Norfolk Southern Railroad tracks. The facility uses three different base fertilizers in their blending operations (these are given in Table 2-1).

The approximately 1/2-acre site is located in a rural area of Shiloh Valley, an unincorporated community, approximately 3 1/2 miles northeast of the Belleville city limits in St. Clair County, Illinois (T.1N., R.7W., sec. 17) on Shiloh Station Road (see Figure 2-1). Land

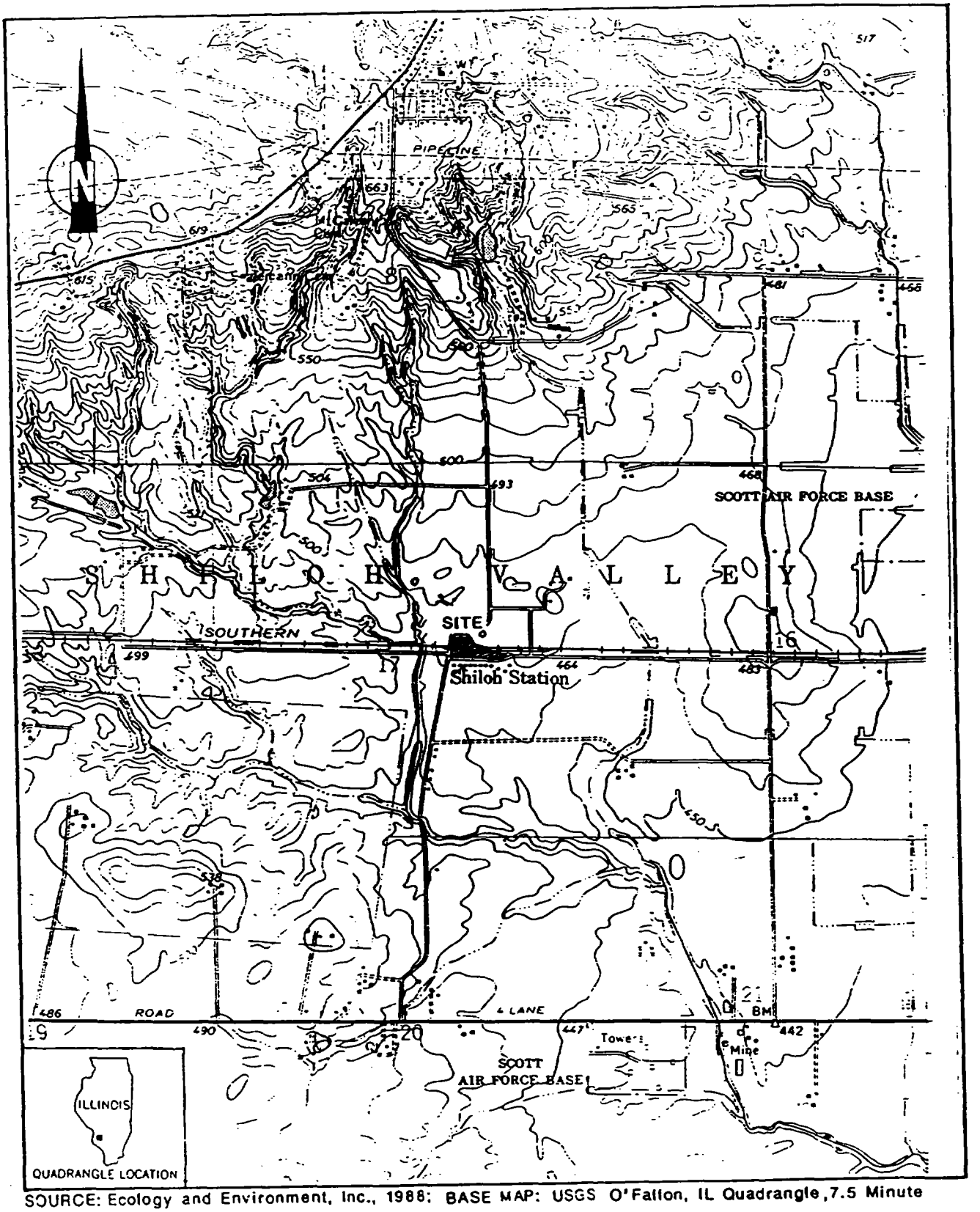
Table 2-1

BASE LIQUID FERTILIZER PRODUCTS
AND
STORAGE TANK CAPACITIES

Base Liquid Fertilizer Product Analysis (N-P-K)*	Tank Number**	Capacity (gallons)
28-0-0	1	25,000
	2	11,000
10-34-0	3	7,500
	4	8,000
3-10-30	5	35,000

* *The analysis is given for nitrogen, phosphorous as* P_2O_5, *and* potassium on a weight percent basis (Ellett 1988).

** Tank numbers have been arbitrarily assigned for this table and do not correspond to any tank numbers assigned by the facility.



SOURCE: Ecology and Environment, Inc., 1988; BASE MAP: USGS O'Fallon, IL Quadrangle, 7.5 Minute Series, 1954.

SCALE
0 0.5 1 MILE

FIGURE 2-1 SITE LOCATION

use surrounding the area is primarily agricultural. A 4-mile radius map of the Amoco Oil Company site is provided in Appendix A.

2.3 SITE HISTORY

The site property on which the current facility user, Shiloh Valley Agricultural Service, operates is owned and leased to the facility operator by two different parties. The portion of the site property south of the railroad tracks is owned and leased to the facility by the Norfolk Southern Railroad (see Figure 3-1 for locations of site features). The northern portion of the site property is owned and leased to the facility operator by Charles Tiedemann.

The facility has had several changes in owner/operator since operations were begun on-site in 1962 by Schurock Brothers (Ellett 1988). The initial facility operations included the handling of rock phosphate. No liquid fertilizer was used at that time. When initial operations began in 1962, the southern portion of the site property was owned and leased to Schurock Brothers by the Southern Railroad. Schurock Brothers continued operations until 1965, at which time Tuloma Gas Products took over operations and added a liquid fertilizer operation to the existing phosphate rock operation. In 1969, Tuloma Gas Products sold to the Standard Oil Division of American Oil Company and operations continued until the early 1970s, at which time the operator became the Amoco Division of American Oil Company. The Amoco Division of American Oil Company continued on-site operations until 1983, at which time the Cropmate Company, a subsidiary of Schooler Grain Company, Omaha, Nebraska, took over operations. In September 1985, Cropmate sold out to its employees. The employees began operations at the facility as Shiloh Valley Agricultural Service. Also in September 1985, Southern Railroad became Norfolk Southern Railroad, which currently leases the southern portion of the site property to Shiloh Valley Agricultural Service. A facility ownership timetable is provided in Table 2-2.

During the late 1970s and early 1980s, while the Amoco Oil Division was operating the site facility, several complaints were filed by local residents alleging that pesticides were being illegally stored on property zoned for agriculture (Colburn 1982). These complaints were filed with the Land Development Division of the Zoning Office for the

Table 2-2

FACILITY OWNERSHIP TIMETABLE

Date	Event
1962	• Rock phosphate business started by Schurock Brothers. • Portion of site property leased from Southern Railroad.
1965	• Schurock Brothers taken over by Tuloma Gas Products. • Liquid fertilizer business is introduced on-site.
1969	• Ownership changed to American Oil Company/Standard Oil Division.
Early 1970s	• Ownership changed to Amoco Division of American Oil.
1983	• Facility purchased by Cropmate Company (of Schooler Grain Company, Omaha, Nebraska).
September 1985	• Cropmate sold out to employees, who operate facility as Shiloh Valley Agricultural Service. • Owner of southern portion of site property becomes Norfolk Southern Railroad.

County of St. Clair (Colburn 1982). According to file information, no documentation exists indicating that any regulatory or enforcement action was taken against the facility as a result of these complaints. There is also no known documentation indicating the storage or disposal of any type of hazardous waste on-site.

3. SCREENING SITE INSPECTION PROCEDURES AND FIELD OBSERVATIONS

3.1 INTRODUCTION

This section outlines procedures and observations of the SSI of the Amoco Oil Company site. Individual subsections address the site representative interview, reconnaissance inspection, and sampling procedures. Rationales for specific FIT activities are also provided. The SSI was conducted in accordance with the U.S. EPA-approved work plan.

The U.S. EPA Potential Hazardous Waste Site Inspection Report (Form 2070-13) for the Amoco Oil Company site is provided in Appendix B. The U.S. EPA Immediate Removal Action Checksheet for the Amoco Oil Company site is provided in Appendix C.

3.2 SITE REPRESENTATIVE INTERVIEW

Robert M. Kurzeja, FIT team leader, and Matt Arnold, a FIT team member, conducted an interview with Charles Ellett, manager of Shiloh Valley Agricultural Service. The interview was conducted on March 29, 1988, at 9:00 a.m. in the facility office located on-site. The interview was conducted to gather information that would aid FIT in conducting SSI activities.

3.3 RECONNAISSANCE INSPECTION

On March 29, 1988, FIT conducted a reconnaissance inspection of the Amoco Oil Company site and surrounding area in accordance with Ecology & Environment (E & E) Health and Safety guidelines. The reconnaissance inspection included a walk-through of the site to determine appropriate

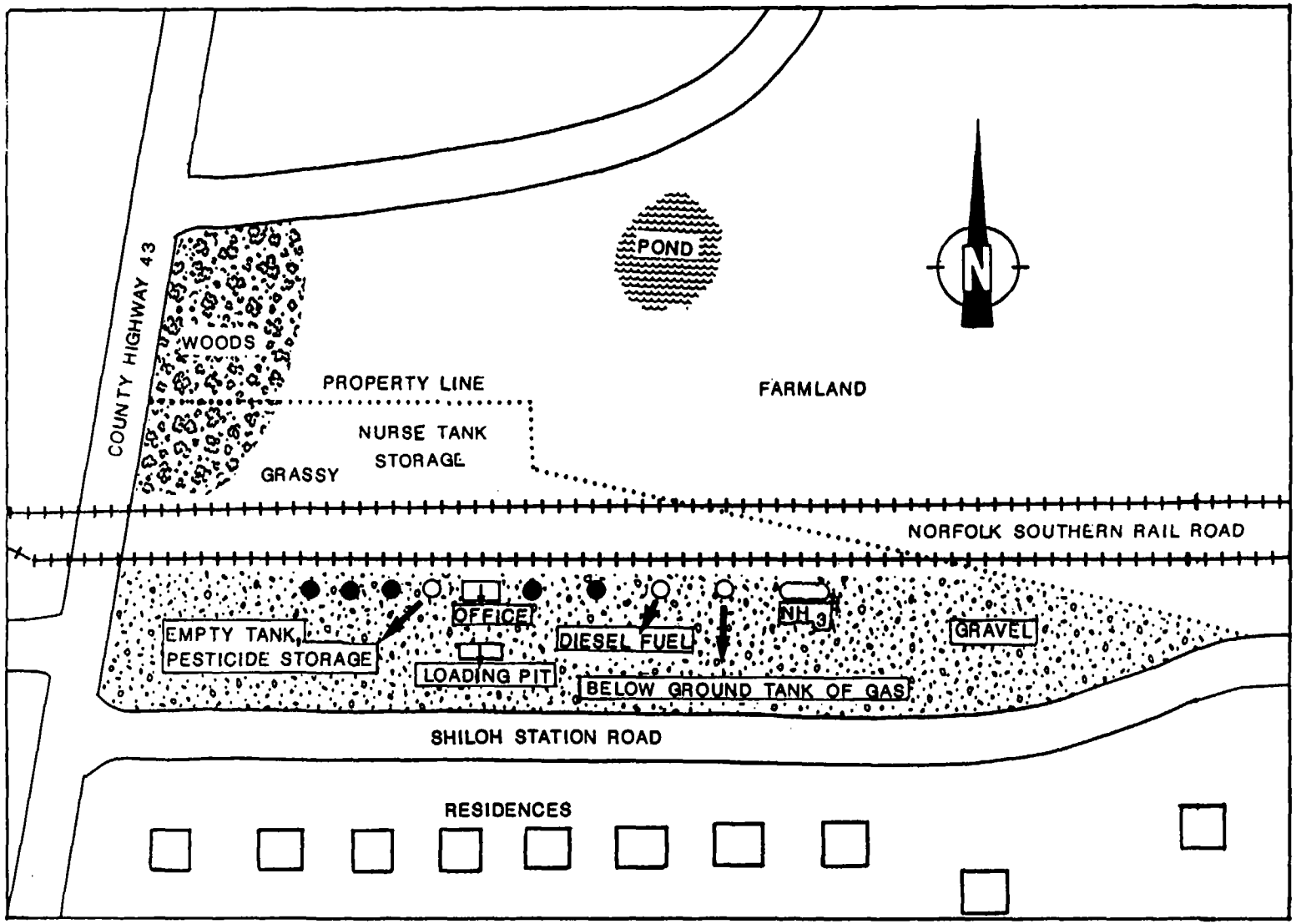
health and safety requirements to conduct on-site activities and to make observations to aid in characterizing the site. FIT also determined exact sampling locations during the reconnaissance inspection.

The reconnaissance inspection was begun on March 29, 1988, at 12:00 noon. The facility manager did not accompany FIT during the reconnaissance inspection.

Reconnaissance Inspection Observations. The Amoco Oil Company site is an approximately 1/2-acre property located in St. Clair County, Illinois, approximately 3 1/2 miles northeast of the city of Belleville. The site is a narrow strip of land running east-west along Shiloh Station Road. The site is in a rural area and is surrounded primarily by farmland. The surface topography of the area surrounding the site is relatively flat.

The site is bounded on the north by farmland and on the west by County Highway 43. Farmland lies west of County Highway 43. The southern site boundary is Shiloh Station Road, which has approximately ten homes located along it to the south. The northern and southern boundaries of the site converge at the eastern end of the property. The Norfolk Southern Railroad tracks run east-west across the site (see Figure 3-1 for locations of site features).

The facility was observed to consist of two areas: a small tank farm to the south of the railroad tracks, and a storage area for anhydrous ammonia nurse tanks to the north of the railroad tracks. The tank farm area includes five aboveground storage tanks for liquid fertilizer (see Table 2-1 for contents and capacities). One of the aboveground storage tanks has been converted to a storage facility for packaged pesticides (Ellett 1988). The conversion was accomplished by cutting a door in the side of the tank (Ellett 1988). Other tanks included an anhydrous ammonia tank of approximately 12,000-gallon capacity, a 1,000-gallon aboveground tank for diesel fuel, and an underground gasoline tank holding approximately 560 gallons (Ellett 1988). A small office and a loading pit for ammonia and liquid fertilizer are also located in the tank farm area south of the railroad tracks.



SOURCE: Ecology and Environment, Inc., 1988.

SCALE

0 50 100 150 200

LEGEND

● ABOVE GROUND TANKS

FIGURE 3-1 SITE FEATURES

The tanks south of the railroad tracks are situated on gravel rather than any type of paving or concrete. The tanks used for storage of pesticides did not appear to have any type of release control, such as a berm or curbing. According to the site representative, Mr. Ellett, approximately 4,000 gallons of pesticides are stored in the converted tank throughout the growing season.

The portion of the site north of the railroad tracks is primarily flat and grassy. Stored nurse tanks were observed on this portion of the site. Photographs of the Amoco Oil Company site are provided in Appendix D.

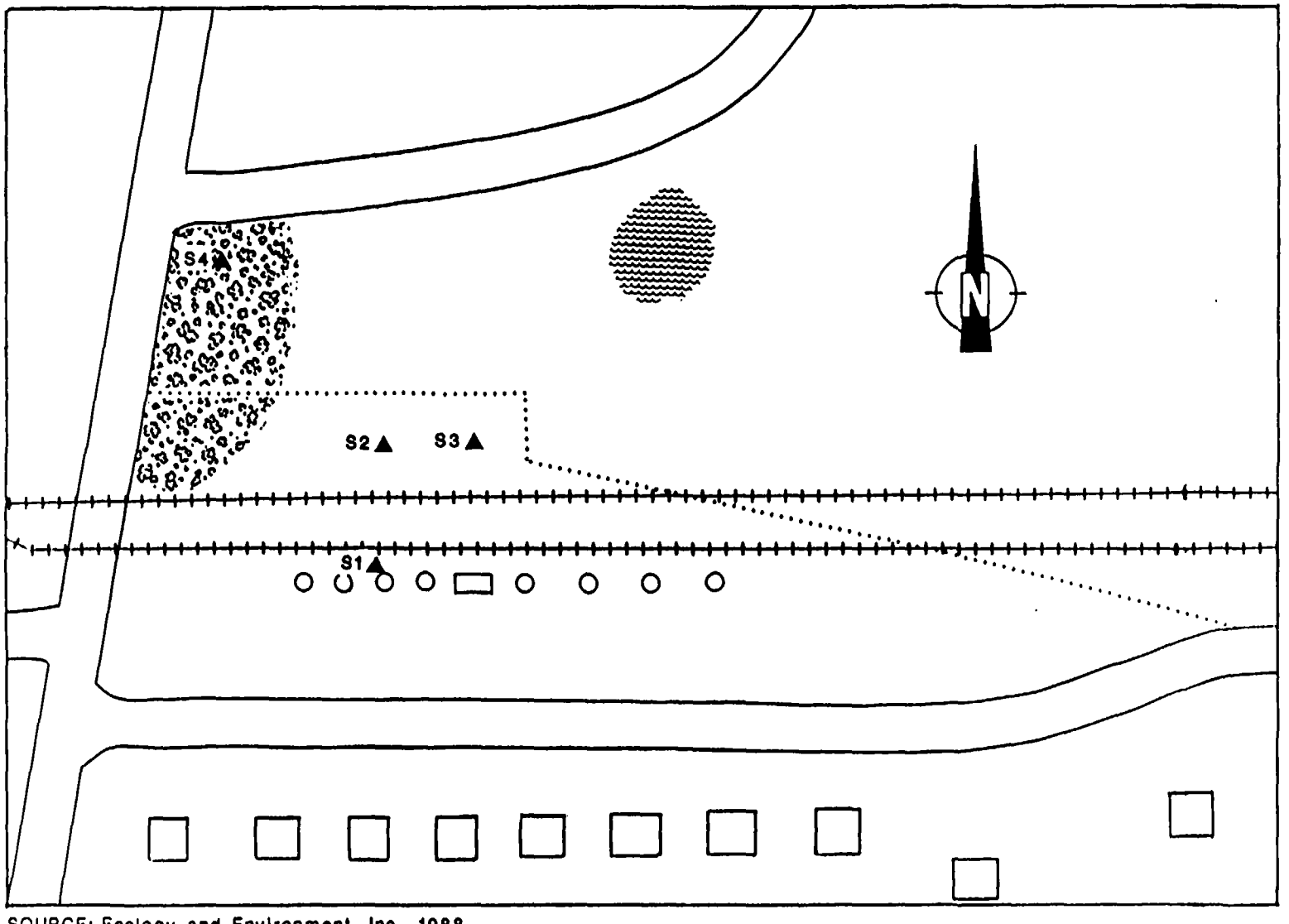
3.4 SAMPLING PROCEDURES

Samples were collected by FIT at locations determined during the reconnaissance inspection to determine levels of U.S. EPA Target Compound List (TCL) compounds and U.S. EPA Target Analyte List (TAL) analytes present at the site. The TCL and TAL and Contract Laboratory Program (CLP) quantitation/detection limits are provided in Appendix E.

On March 29, 1988, FIT collected three on-site surface soil samples and one potential background soil sample. On March 30, 1988, FIT collected samples from three residential wells and an on-site well. A duplicate and distilled water field blank were also collected. FIT offered a portion of each soil sample to the site representative, but the offer was declined.

Soil Sampling Procedures. Surface soil sample S1 was collected north of the tank farm, between the tank farm and railroad tracks, where a green liquid was observed on the sandy soil (see Figure 3-2 for soil sampling locations). The soil was quite wet because of a heavy rain at the time of sampling. Surface soil samples S2 and S3 were collected in the grass-covered area near the stored nurse tanks, north of the railroad tracks.

A potential background soil sample (indicated as S4) was collected from a lightly wooded area, approximately 200 feet north of the northern boundary of the site just east of a bend in County Highway 43. The potential background soil sample was collected to determine the representative chemical content of the soil of the area surrounding the



SOURCE: Ecology and Environment, Inc., 1988.

SCALE

0 50 100 150 200

FIGURE 3-2 SOIL SAMPLING LOCATIONS

site. The location was chosen because the ground surface appeared to be in an undisturbed state.

Soil samples were collected using a garden trowel and placed in a stainless steel bowl. The soil material was then transferred to the appropriate sample bottles using stainless steel spoons (E & E 1987).

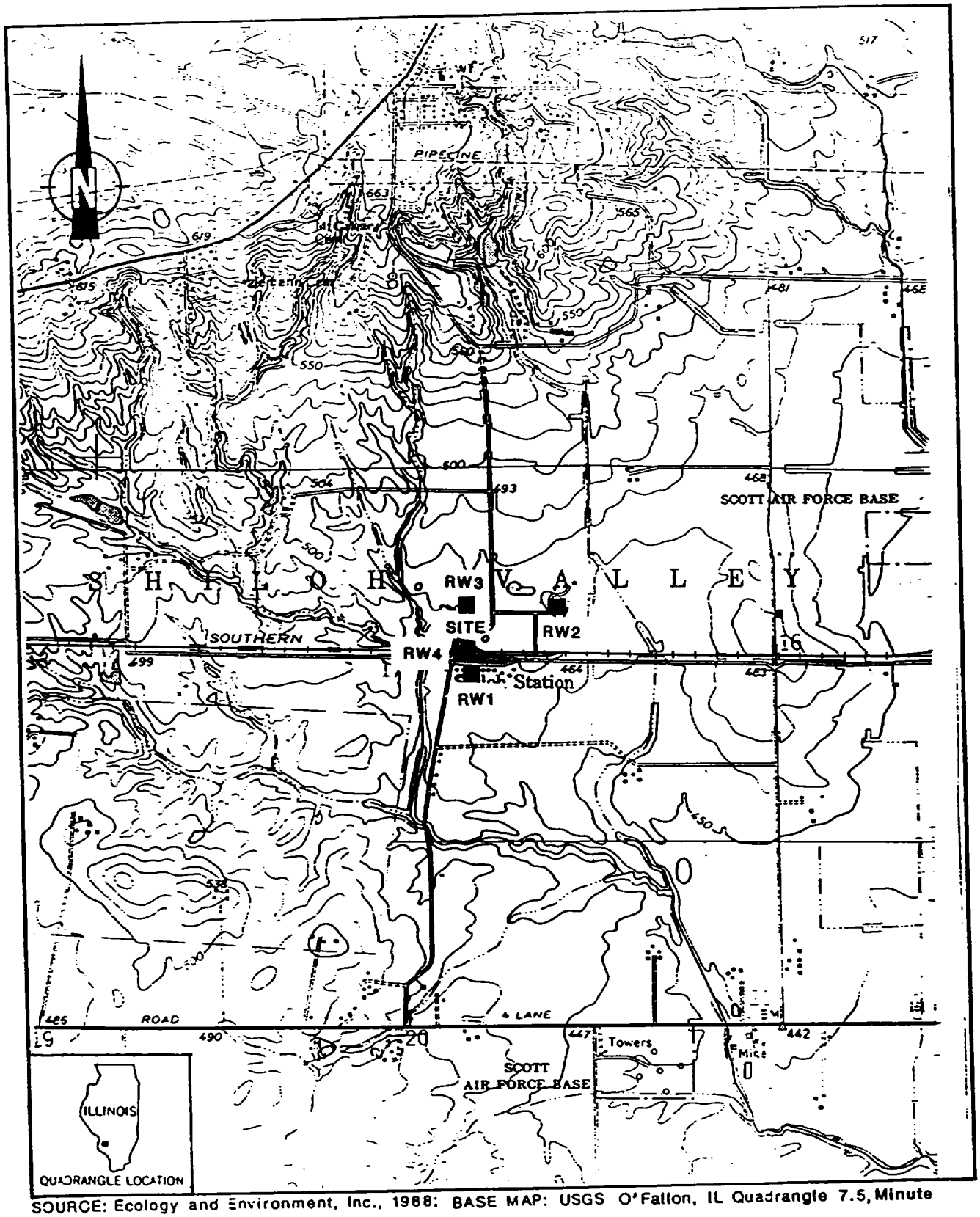
FIT decontamination procedures were adhered to during the collection of all soil samples. The procedures included the scrubbing of all equipment (e.g., trowels, bowls, and spoons) with a solution of detergent and water, and triple rinsing the equipment with distilled water before the collection of each sample (E & E 1987). All soil samples were packaged and shipped in accordance with U.S. EPA-required procedures.

As directed by U.S. EPA, all soil samples were analyzed for TCL compounds by Industrial and Environmental Analysts, Inc. of Cary, North Carolina, and for TAL analytes by Versar, Inc. of Springfield, Virginia.

Residential Well Sampling Procedures. Residential well samples (R1, R2, R3) and an on-site well sample (R4) were collected to determine whether TCL compounds and/or TAL analytes had entered the groundwater on-site, or had migrated from the site via groundwater (see Figure 3-3 for residential and on-site well sampling locations).

The residential well sampling locations were chosen because of their proximity to the site. Sample R1 was collected at a residence located approximately 260 feet south of the site. Sample R2 was collected at a residence located approximately 1,580 feet northeast of the site. Sample R3 was collected at a residence located approximately 530 feet north of the site. Sample R4 was collected at a well located on the site. A duplicate residential well sample and a distilled water field blank were also collected in accordance with U.S. EPA quality assurance/quality control (QA/QC) requirements. The duplicate sample was collected at location R1 and is identified as R1-DUP (see Table 3-1 for addresses of residential well sampling locations).

All well samples were obtained from outlets that bypassed water treatment systems and/or storage tanks. The water was allowed to discharge from the outlets for 15 minutes before samples were collected to ensure that the sample sources had been purged of standing water



SOURCE: Ecology and Environment, Inc., 1988; BASE MAP: USGS O'Fallon, IL Quadrangle 7.5, Minute Series, 1954.

SCALE
0 0.5 1 MILE

FIGURE 3-3 RESIDENTIAL WELL SAMPLING LOCATIONS

Table 3-1

ADDRESSES OF RESIDENTIAL WELL SAMPLING LOCATIONS

Sample	Address
Non-Responsive	

Source: Ecology and Environment, Inc. 1988.

(E & E 1987). All well samples were packaged and shipped in accordance with U.S. EPA-required procedures.

As directed by U.S. EPA, residential well samples and the on-site well sample were analyzed for TCL compounds by Enseco/California Analytical Laboratory of West Sacramento, California and for TAL analytes by Enseco/Rocky Mountain Analytical of Arvada, Colorado.

4. ANALYTICAL RESULTS

4.1 INTRODUCTION

This section includes results of chemical analysis of FIT-collected soil samples and residential well samples for TCL compounds and TAL analytes.

4.2 RESULTS OF CHEMICAL ANALYSIS OF FIT-COLLECTED SAMPLES

Chemical analysis of FIT-collected soil samples revealed substances from the following groups of TCL compounds and TAL analytes: miscellaneous polyaromatic hydrocarbons, common laboratory artifacts such as toluene and phthalates, pesticides, common soil constituents, and cyanide. It should be noted that butylbenzylphthalate was detected in soil sample S1 at a concentration of 10,000 µg/kg. Because this TCL compound was not detected in any other sample, there is a possibility that it may not be a laboratory artifact. Soil sample S2, taken in the vicinity of the nurse tank storage area, revealed the presence of the following pesticides: Heptachlor epoxide at 41 µg/kg, Aldrin at 35 µg/kg, Dieldrin at 57 µg/kg, and Endosulfan II at 26 µg/kg (see Table 4-1 for complete soil sample chemical analysis results).

Analysis of FIT-collected residential well samples revealed the presence of a common laboratory artifact (toluene) as well as TAL analytes, including cyanide in the on-site well (R4) at 10.4 µg/L. Cyanide was also detected in on-site soil sample S3 at 1.40 mg/kg. Cyanide was not detected in any of the other well samples. The site representative informed FIT that water from the on-site well is not used

Table 4-1
RESULTS OF CHEMICAL ANALYSIS OF
FIT-COLLECTED SOIL SAMPLES

Sample Collection Information and Parameters	Sample Number S1	S2	S3	S4
Date	3/29/88	3/29/88	3/29/88	3/29/88
Time	1240	1245	1252	1300
Organic Traffic Report Number	ES758	ES759	ES760	ES761
Inorganic Traffic Report Number	MES202	MES203	MES204	MES205
Compound Detected (values in μg/kg)				
Volatile Organics				
toluene	2J	4J	—	—
Semivolatile Organics				
benzoic acid	460J	—	—	—
2-methylnaphthalene	—	450J	—	—
phenanthrene	—	600	440J	—
anthracene	—	170J	180J	—
fluoranthene	—	540	450J	—
pyrene	—	550	360J	—
butylbenzylphthalate	10,000	—	—	—
benzo[a]anthracene	—	320J	160J	—
chrysene	—	450J	330J	—
bis(2-ethylhexyl)phthalate	460J	—	520	—
benzo[b]fluoranthene	—	360J	210J	—
benzo[k]fluoranthene	—	270J	140J	—
benzo[a]pyrene	—	310J	140J	—
indeno[1,2,3-cd]pyrene	—	200J	—	—
benzo[g,h,i]perylene	—	230J	—	—

Table 4-1 Cont.

Sample Collection Information and Parameters	Sample Number S1	S2	S3	S4
Pesticides/PCBs				
Aldrin	7.7J	35	—	—
Heptachlor epoxide	—	41	13	—
Dieldrin	16J	57	—	—
Endosulfan II	—	26	—	—
Analyte Detected (values in mg/kg)				
aluminum	322	3,760	5,640	12,000
antimony	—	[7.1]	—	—
arsenic	—	7.7s	3.8	6.7
barium	[12]	101	149	179
beryllium	—	[0.86]	[0.82]	[1.1]
cadmium	—	1.8	—	—
calcium	2,480	7,240	2,590	2,320
chromium	98J	16J	15NJ	16J
cobalt	[4.4]	[8.0]	[8.4]	[7.3]
copper	[5.6]	108	14	16
iron	8,840*J	14,600J	11,000*J	16,200*J
lead	66	351J	84	51
magnesium	[221]	1,600	[1,160]	2,050
manganese	66*J	554*J	1,180*J	513*J
nickel	—	19	16	16
potassium	—	—	[1,140]	—
sodium	[44]	[102]	[50]J	[62]
vanadium	[7.9]	18	23	26
zinc	396JN	160J	99J	84J
cyanide	—	—	1.40	—

— Not detected.

Table 4-1, Cont.

COMPOUND QUALIFIERS	DEFINITION	INTERPRETATION
J	Indicates an estimated value.	Compound value may be semiquantitative.

ANALYTE QUALIFIERS OLD	NEW	DEFINITION	INTERPRETATION
s	s	Analysis by Method of Standard Additions.	Value is quantitative.
R	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.
*	*	Duplicate value outside QC protocols which indicates a possible matrix problem.	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.

Source: Ecology and Environment, Inc. 1988.

for drinking (Ellett 1988). See Table 4-2 for complete residential well sample chemical analysis results.

Laboratory analytical data of soil sample analysis and well sample analysis are provided in Appendix E.

Table 4-2

RESULTS OF CHEMICAL ANALYSIS OF

FIT-COLLECTED RESIDENTIAL AND ON-SITE WELL SAMPLES

Sample Collection Information and Parameters	Sample Number					
	R1	R2	R3	R4	DUPLICATE	BLANK
Date	3/30/88	3/30/88	3/30/88	3/30/88	3/30/88	3/30/88
Time	1045	1110	1120	1130	1045	1100
Organic Traffic Report Number	ES762	ES763	ES764	ES765	ES766	ES767
Inorganic Traffic Report Number	MES206	MES207	MES208	MES209	MES210	MES211
Compound Detected (values in μg/L)						
Volatile Organics						
toluene	--	--	--	--	1	3
Analyte Detected (values in μg/L)						
aluminum	--	38.1B	557	32.1	26.3B	--
antimony	--	--	2.2B	3.4BJ	--	--
arsenic	--	1.0Bs	--	5.7s	--	--
barium	19.8B	36.7B	140	94.4	19.7B	--
cadmium	0.2B	0.3Bs	0.1B	2.0s	0.1B	--
calcium	158,000	129,000	1,000	342,000	158,000	170B
cobalt	--	--	--	8.6B	--	--
copper	--	42.0*	53.1	19.3	--	--
iron	48.0B	309	5,010	--	--	--
lead	4.8sN	4.4sN	3.7sN	1.68sN	1.7BsN	1.5BsN
magnesium	63,900	43,600	32,100	109,000	64,300	--
manganese	--	--	83	8,500	--	--
nickel	--	--	--	59.6	--	--
potassium	307B	8,760	978B	96,400	383	150B
sodium	18,800	23,900	28,900	26,400	18,700	--
zinc	50.4	51.1	232	448	53.8	6.5B
cyanide	--	--	--	10.4	--	--

-- Not detected.

ANALYTE QUALIFIERS OLD	NEW	DEFINITION	INTERPRETATION
s	s	Analysis by Method of Standard Additions.	Value is quantitative.
R	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.
*	*	Duplicate value outside QC protocols which indicates a possible matrix problem.	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.

Source: Ecology and Environment, Inc. 1988.

5. DISCUSSION OF MIGRATION PATHWAYS

5.1 INTRODUCTION

This section discusses data and information that apply to potential migration pathways and targets of TCL compounds and/or TAL analytes that may be attributable to the Amoco Oil Company site.

The five migration pathways of concern discussed are groundwater, surface water, air, fire and explosion, and direct contact.

5.2 GROUNDWATER

The direction of local groundwater movement is assumed to follow surface topography toward local discharge zones. Based on this assumption, the apparent groundwater flow would be south to southwest with ultimate discharge to Loop Creek (U.S. Geological Survey, O'Fallon Quadrangle 1974; Southwestern Illinois Metropolitan and Regional Planning Commission [SIMRPC] 1983).

Toluene, a common laboratory artifact, was detected in the duplicate well sample at a concentration of 1 µg/L. The duplicate was collected at location R1. Toluene was also detected in the distilled water field blank at 3 µg/L. No other TCL compounds were detected in the well samples.

Cyanide, a TAL analyte, was detected in the on-site well sample (R4) at a concentration of 10.4 µg/L. Other TAL analytes detected were nickel at 59.6 µg/L in the on-site well sample (R4), cobalt at 8.6B µg/L in the on-site well sample (R4), arsenic at 5.7 µg/L in the on-site well sample (R4) and at 1.0 Bs µg/L in the apparently upgradient well sample (R2). Cadmium was detected in all well samples, including the

duplicate. The highest concentration of cadmium was found in the on-site well sample (R4) at 2.0s µg/L and the lowest concentration was detected in the apparently upgradient well sample (R3) at 0.1B µg/L. Cadmium was also detected at a concentration of 0.1B µg/L in the duplicate sample from residential well R1. The TAL analyte cyanide, although not a constituent of any chemical known to have been stored at the facility, may potentially be attributable to the site for the following reasons:

- Cyanide was detected in an on-site soil sample;
- No cyanide was detected in the potential background soil sample; and
- The apparently upgradient well sample did not contain cyanide.

Also, a potential for the migration of polyaromatic hydrocarbons, cyanide, and pesticides from the site to groundwater in the vicinity does exist. This potential is based on the following information:

- Cyanide was detected in an on-site soil sample;
- The pesticides Aldrin, Heptachlor epoxide, Dieldrin, and Endosulfan II were detected in on-site soil sample S2 at concentrations of 35 µg/kg, 41 µg/kg, 57 µg/kg, and 26 µg/kg respectively;
- Polyaromatic hydrocarbons were detected in on-site soil samples; and
- There is no containment system present at the site.

The potential for the above compounds to migrate to groundwater is based on the following geological information. A review of area well logs indicates that unconsolidated material in the area of the site is

composed of glacially derived deposits of sandy clay. This unit forms the aquifer of concern. Local residents draw water from the sandy clay aquifer at depths of 7 to 54 feet, according to area well logs.

Bedrock in the area is composed of Pennsylvanian sedimentary rocks resting on crystalline basement rocks composed mainly of granite (SIMRPC 1983). The Pennsylvanian rocks, found directly below the glacial drift, have relatively low permeability and consist mainly of shales, sandstone, thin limestone, and coal.

The potential targets of groundwater contamination include approximately 2,192 persons within a 3-mile radius of the site who obtain drinking water from private wells drawing from the aquifer of concern. The potential target population was derived from the following information. According to USGS maps of the area, 758 homes were counted within a 3-mile radius of the site. Using St. Clair County 1980 Census information, an average of 2.89 persons per household can be used to calculate the population.

The nearest well to the site, which draws drinking water from the aquifer of concern, is approximately 260 feet south of the site. There is also a well located on-site, but it is not used for drinking water.

5.3 SURFACE WATER

Loop Creek lies approximately 1 mile southwest of the site. No potential exists for contaminants from the site to reach surface water bodies in the area via surface runoff or flooding. This conclusion is based on the topography of the area in the vicinity of the site, which slopes gently southward to southwestward, and on the character of the intervening terrain. Farmland and houses lie between the site and Loop Creek, with no apparent routes for surface water runoff (USGS O'Fallon Quadrangle 1974). A potential does exist for Loop Creek to be affected by potentially contaminated groundwater via groundwater discharge to the creek.

5.4 AIR

A release of potential contaminants to the air was not documented during the SSI of the Amoco Oil Company site. During the reconnaissance

inspection, FIT site-entry instruments (radiation monitor, oxygen meter, photo-ionization detector, colorimetric monitoring tube, and explosimeter) did not detect levels above background concentrations at the site (Ecology and Environment, Inc. 1987). In accordance with the U.S. EPA-approved work plan, further air monitoring was not conducted by FIT.

A potential does exist for windblown particulates to carry TCL compounds and/or TAL analytes from the site. A potential exists for a release of cyanide gas from the site. This potential is based on the detection of cyanide in an on-site soil sample. If on-site soils are slightly acidic, the potential for a release of cyanide gas would be increased.

5.5 FIRE AND EXPLOSION

FIT observations and explosimeter readings indicated that there is no apparent potential for fire and/or explosion at the site.

5.6 DIRECT CONTACT

According to the federal and state file information, and an interview with the site representative, there is no documentation of an incident of direct contact with TCL compounds and/or TAL analytes at the site.

A potential does exist for the public to come into direct contact with cyanide and/or pesticides at the site. The potential for direct contact is based on the following information:

- Access to the site is not restricted; there is no security of any type employed (Ellett 1988);
- Pesticides and cyanide were detected in soil samples taken on-site; and
- There is a small residential area adjacent to the southern boundary of the site.

According to a USGS topographic map of the area of the site, the population within a 1-mile radius of the site is approximately 111

persons. This figure was obtained by counting homes on a USGS map within a 1-mile radius of the site and multiplying by the census estimate of 2.89 persons per household.

6. BIBLIOGRAPHY

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APPENDIX A

SITE 4-MILE RADIUS MAP

APPENDIX B

U.S. EPA FORM 2070-13

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	D000670703

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Amoco Oil Company	Route 2 Box 329A

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Belleville	IL	62221	St. Clair	163	23

09 COORDINATES		10 TYPE OF OWNERSHIP (Check one)
LATITUDE	LONGITUDE	X A. PRIVATE ___B. FEDERAL ___C. STATE ___D. COUNTY ___E. MUNICIPAL
38°50'05".0	090°00'00".0	___F. OTHER ___ ___G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
3/29/88	X ACTIVE	1962 | Present ___UNKNOWN
MO/DAY/YR	___INACTIVE	BEGINNING YEAR ENDING YEAR

04 AGENCY PERFORMING INSPECTION (Check all that apply)
___A. EPA X B. EPA CONTRACTOR Ecology & Environment, Inc. (Name of firm) ___C. MUNICIPAL ___D. MUNICIPAL CONTRACTOR
___E. STATE ___F. STATE CONTRACTOR ___ (Name of firm) ___G. OTHER ___ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Robert Kurzeja	Chemical Engineer	E & E	(312) 663-9415
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
Matt Arnold	Technician	E & E	(312) 663-9415
Gary Cobb	Geologist	E & E	(312) 663-9415
Katherine Neswick	Entomologist	E & E	(312) 663-9415
13 SITE REPRESENTATIVES INTERVIEWED	**14 TITLE**	**15 ADDRESS**	**16 TELEPHONE NO.**
Charles Ellett	Manager	Route 2 Box 329A, Belleville, IL	(618) 233-6949

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
X PERMISSION ___ WARRANT	9:00 a.m.	Cool, raining

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Tom Crause	I.E.P.A	(217) 782-9848

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Robert Kurzeja	U.S. EPA	E & E	(312) 663-9415	6/15/88

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION	
01 STATE IL	02 SITE NUMBER D000670703

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

___A. SOLID ___E. SLURRY
___B. POWDER, FINES X F. LIQUID
___C. SLUDGE ___G. GAS
___D. OTHER _____ (Specify)

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____
CUBIC YARDS Unknown
NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

X A. TOXIC X E. SOLUBLE ___I. HIGHLY VOLATILE
___B. CORROSIVE ___F. INFECTIOUS ___J. EXPLOSIVE
___C. RADIOACTIVE ___G. FLAMMABLE ___K. REACTIVE
X D. PERSISTENT ___H. IGNITABLE ___L. INCOMPATIBLE
___M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	Unknown	Unknown	
OLW	OILY WASTE	Unknown	Unknown	
SOL	SOLVENTS	Unknown	Unknown	
PSD	PESTICIDES	Unknown	Unknown	
OCC	OTHER ORGANIC CHEMICALS	Unknown	Unknown	
IOC	INORGANIC CHEMICALS	Unknown	Unknown	
ACD	ACIDS	Unknown	Unknown	
BAS	BASES	Unknown	Unknown	
MES	HEAVY METALS	Unknown	Unknown	

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
PSD	Aldrin	309-00-2	These substances were	35	µg/kg
PSD	Heptachlor epoxide	1024-57-3	detected in soil sample S2.	41	µg/kg
PSD	Dieldrin	60-57-1		57	µg/kg
PSD	Endosulfan II	33213-65-9		26	µg/kg
OCC	2-methylnapthalene	91-57-6		450J	µg/kg
OCC	phenanthrene	85-01-8		600	µg/kg
OCC	anthracene	120-12-7		170J	µg/kg
OCC	benzo(a)anthracene	56-55-3		320J	µg/kg
OCC	chrysene	218-01-9		450J	µg/kg
OCC	benzo(b)fluoranthene	205-99-2		360J	µg/kg
OCC	fluoranthene	206-44-0		540	µg/kg
OCC	pyrene	129-60-0		550	µg/kg
OCC	benzo(k)fluoranthene	207-08-9		270J	µg/kg
OCC	benzo(a)pyrene	50-32-8		310J	µg/kg
OCC	indeno(1,2,3-cd)pyrene	193-39-5		200J	µg/kg
OCC	benzo(g,h,i)perylene	191-24-2		230J	µg/kg

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	Anhydrous Ammonia	Unknown	FDS		
FDS	Liquid fertilizer (28-0-0)	Unknown	FDS		
FDS	Liquid fertilizer (10-34-0)	Unknown	FDS		
FDS	Liquid fertilizer (3-10-30)	Unknown	FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

FIT files.
FIT SSI conducted March 29, 1988.

Continued from Part 2, Section IV.

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)					
01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OCC	benzoic acid	65-85-0	soil sample S1	460J	µg/kg
OCC	butylbenzylphthalate	85-68-7	soil sample S1	10,000	µg/kg
IOC	cyanide		on-site well	10.4	µg/L
MES	arsenic	7440-38-2	on-site well	5.7s	µg/L
MES	nickel	7440-02-0	on-site well	59.6	µg/L
MES	zinc	7440-66-6	on-site well	448	µg/L

EPA	POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS	I. IDENTIFICATION 01 STATE IL 02 SITE NUMBER D000670703

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 X A. GROUNDWATER CONTAMINATION — 02 X OBSERVED (DATE: 3/30/88) ___ POTENTIAL ___ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: ~2,192 — 04 NARRATIVE DESCRIPTION

Cyanide was detected in the on-site well at 10.4 µg/L and in one of the on-site soil samples. Nearby residential wells may potentially be affected since the wells draw water from the aquifer of concern, a sandy clay glacial deposit which ranges in depth from 7 to 54 feet.

01 X B. SURFACE WATER CONTAMINATION — 02 ___ OBSERVED (DATE: ___) X POTENTIAL ___ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION

There is no threat to surface water due to the intervening terrain. Groundwater may potentially discharge to Loop Creek; however the creek is not used for drinking water.

01 X C. CONTAMINATION OF AIR — 02 ___ OBSERVED (DATE: ___) X POTENTIAL ___ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: Unknown — 04 NARRATIVE DESCRIPTION

There was no documented release of potential contaminants to the air during the screening site inspection. A potential for cyanide gas release on-site exists due to the presence of cyanide in on-site soil samples.

01 ___ D. FIRE/EXPLOSIVE CONDITIONS — 02 ___ OBSERVED (DATE: ___) ___ POTENTIAL ___ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: ___ — 04 NARRATIVE DESCRIPTION

There were no fire/explosive conditions documented or observed at the site.

01 X E. DIRECT CONTACT — 02 ___ OBSERVED (DATE: ___) X POTENTIAL ___ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: 111 — 04 NARRATIVE DESCRIPTION

A potential exists for direct contact since the site is unfenced with no security system. Laboratory data indicated the presence of pesticides in on-site soil samples. See F below.

01 X F. CONTAMINATION OF SOIL — 02 X OBSERVED (DATE: 3/29/88) ___ POTENTIAL ___ ALLEGED

03 AREA POTENTIALLY AFFECTED: ~ 1/2 (Acres) — 04 NARRATIVE DESCRIPTION

Aldrin, Heptachlor epoxide, Dieldrin, and Endosulfan II were detected in on-site soil samples taken on the above date. It should be noted that these pesticides were not detected in the potential background soil sample taken off-site. The potential background sample was collected approximately 200 feet north of the site.

01 X G. DRINKING WATER CONTAMINATION — 02 X OBSERVED (DATE: 3/30/88) ___ POTENTIAL ___ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: ~ 2,192 — 04 NARRATIVE DESCRIPTION

Toluene, a common lab artifact, was detected at 1 µg/L at RW1, which appears to be a downgradient well. Cyanide was detected at 10.4 µg/L in the on-site well. This well, however, is not used for drinking water.

01 X H. WORKER EXPOSURE/INJURY — 02 ___ OBSERVED (DATE: ___) X POTENTIAL ___ ALLEGED

03 WORKERS POTENTIALLY AFFECTED: 3 — 04 NARRATIVE DESCRIPTION

A potential exists for workers to become exposed by direct contact with soils on-site which have been shown by lab analysis to contain pesticides. See F above.

01 X I. POPULATION EXPOSURE/INJURY — 02 ___ OBSERVED (DATE: ___) X POTENTIAL ___ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: 2,192 — 04 NARRATIVE DESCRIPTION

A potential for population exposure exists since the site is not fenced and is easily accessible. Pesticides and cyanide were detected in on-site soil samples.

EPA	POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS	I. IDENTIFICATION 01 STATE IL 02 SITE NUMBER D000670703

II. HAZARDOUS CONDITIONS AND INCIDENTS (CONTINUED)

01 X J. DAMAGE TO FLORA — 02 ___ OBSERVED (DATE: _____) X POTENTIAL ___ ALLEGED

04 NARRATIVE DESCRIPTION

Although no damage to flora was observed, a potential for flora damage exists due to the presence of pesticides in on-site soil samples.

01 X K. DAMAGE TO FAUNA — 02 ___ OBSERVED (DATE: _____) X POTENTIAL ___ ALLEGED

04 NARRATIVE DESCRIPTION (Include name(s) of species)

Although no damage to fauna was observed, a potential for fauna damage exists due to the presence of pesticides in on-site soil samples.

01 N/A L. CONTAMINATION OF FOOD CHAIN — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED

04 NARRATIVE DESCRIPTION

01 X M. UNSTABLE CONTAINMENT OF WASTES — 02 ___ OBSERVED (DATE: _____) X POTENTIAL ___ ALLEGED

(Spills/runoff/standing liquids/leaking drums)

03 POPULATION POTENTIALLY AFFECTED: 2,192 — 04 NARRATIVE DESCRIPTION

A potential exists for pesticides to contaminate groundwater since they were detected in on-site soil samples. An aboveground storage tank was emptied and converted to a storage tank for packaged pesticides.

01 ___ N. DAMAGE TO OFFSITE PROPERTY — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED

04 NARRATIVE DESCRIPTION

Damage to off-site property appears to be minimal due to intervening railroad tracks and terrain, and the relatively minimal southern slope of site.

01 ___ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED

04 NARRATIVE DESCRIPTION

There are no sewers, storm drains, or WWTPs on-site.

01 ___ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED

04 NARRATIVE DESCRIPTION

There was no illegal or unauthorized dumping observed at this site; however past dumping practices are unknown.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

Packaged pesticides are stored in an aboveground storage tank. The present operator has modified the tank for this use by cutting a door in its side. There are no apparent release controls present, and the estimated seasonal quantity stored is approximately 4,000 gallons.

III. TOTAL POPULATION POTENTIALLY AFFECTED: ~ 2,192

IV. COMMENTS

Although hazardous waste did not appear to be dumped or stored on-site, past hazardous waste dumping practices are not well known, due to the rapid turnover rate of owners/operators over the years.

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

FIT files.
FIT SSI conducted March 29, 1988.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	D000670703

II. PERMIT INFORMATION N/A

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
___A. NPDES				
___B. UIC				
___C. AIR				
___D. RCRA				
___E. RCRA INTERIM STATUS				
___F. SPCC PLAN				
___G. STATE (Specify)				
___H. LOCAL (Specify)				
___I. OTHER (Specify)				
___J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
___A. SURFACE IMPOUNDMENT		
___B. PILES		
___C. DRUMS, ABOVE GROUND		
X D. TANK, ABOVE GROUND		
___E. TANK, BELOW GROUND		
___F. LANDFILL		
___G. LANDFARM		
___H. OPEN DUMP		
___I. OTHER _____ (Specify)		

04 TREATMENT N/A (Check all that apply)

___A. INCINERATION
___B. UNDERGROUND INJECTION
___C. CHEMICAL/PHYSICAL
___D. BIOLOGICAL
___E. WASTE OIL PROCESSING
___F. SOLVENT RECOVERY
___G. OTHER RECYCLING/RECOVERY
___H. OTHER _____ (Specify)

05 Other

X A. BUILDINGS ON SITE

1

06 AREA OF SITE

~ 1/2 (Acres)

07 COMMENTS

The facility does not store or dispose of hazardous waste on-site according to file information and visual observations made during the site inspection. Past storage/disposal practices at the facility, however, are uncertain.

IV. CONTAINMENT N/A Waste is not stored or disposed of at this site.

01 CONTAINMENT OF WASTES (Check one)

___A. ADEQUATE, SECURE ___B. MODERATE ___C. INADEQUATE, POOR ___D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

Aboveground storage tanks, used for liquid fertilizer, are not curbed. Visual observation of the pesticide storage area, including the tank where pesticides are stored, did not indicate any type of release prevention control such as curbing.

V. ACCESSIBILITY N/A

01 WASTE EASILY ACCESSIBLE: ___YES ___NO
02 COMMENTS

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

FIT files.
FIT SSI conducted March 29, 1988.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	D000670703

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A.___	B.___
NON-COMMUNITY	C.___	D. X

02 STATUS

	ENDANGERED	AFFECTED	MONITORED
COMMUNITY	A.___	B.___	C.___
NON-COMMUNITY	D.___	E. X	F.___

03 DISTANCE TO SITE

A.___ (mi)
B. ~ 0.05 (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

X A. ONLY SOURCE FOR DRINKING
___ B. DRINKING (Other sources available)
___ C. COMMERCIAL, INDUSTRIAL IRRIGATION (Limited other sources available)
___ D. NOT USED, UNUSEABLE

COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available)

02 POPULATION SERVED BY GROUND WATER ~ 2,192

03 DISTANCE TO NEAREST DRINKING WATER WELL ~ 0.05 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
7-54 (ft)	South-following surface topography	7-54 (ft)	unknown (gpd)	___ YES X NO

09 DESCRIPTION OF WELLS (Including usage, depth, and location relative to population and buildings)

Wells in the area are finished at depths from 27-70 feet in a sandy clay unit which is the aquifer of concern for local residents. The wells sampled during this investigation were within 1/4 mile of the site.

10 RECHARGE AREA

X YES
___ NO

COMMENTS The site lies in a recharge area for shallow drift aquifer which discharges to the creek.

11 DISCHARGE AREA

___ YES
X NO

COMMENTS

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

___ A. RESERVOIR, RECREATION DRINKING WATER SOURCE
___ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES
___ C. COMMERCIAL, INDUSTRIAL
X D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER N/A

NAME:	AFFECTED	DISTANCE TO SITE
	___	___ (mi)
	___	___ (mi)
	___	___ (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 111	B. 980	C. 2,192
NO. OF PERSONS	NO. OF PERSONS	NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION ~ 0.05 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE ~ 339

04 DISTANCE TO NEAREST OFF-SITE BUILDING ~ 0.05 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

The population within a 3-mile radius of the site is predominantly rural. Farmland surrounds the site area, and approximately 10 occupied homes are located south of the site within 0.05 miles. The city of Belleville is located approximately 3 1/2 miles southwest of the site. Scott Air Force Base is located approximately 2 miles east of the site.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	D000670703

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

___A. 10^{-6} - 10^{-8} cm/sec X B. 10^{-4} - 10^{-6} cm/sec ___C. 10^{-4} - 10^{-3} cm/sec ___D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

___A. IMPERMEABLE (Less than 10^{-6} cm/sec) X B. RELATIVELY IMPERMEABLE (10^{-4} - 10^{-6} cm/sec) ___C. RELATIVELY PERMEABLE (10^{-2} - 10^{-4} cm/sec) ___D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
20-70 (ft)	Unknown (ft)	Unknown

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
0.5 (in)	2.9 (in)	< 3 %	Slightly south	< 3 %

09 FLOOD POTENTIAL N/A
SITE IS IN _____ YEAR FLOOD PLAN

10 N/A SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum) N/A
ESTUARINE OTHER
A. _____ (mi) B. _____ (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species) N/A
_____ (mi)
ENDANGERED SPECIES: _____

13 LAND USE IN VICINITY
DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS PRIME AG LAND	AGRICULTURAL LANDS AG LAND
A. > 3 (mi)	B. _____ (mi)	C. 0.1 (mi)	D. 0.1 (mi)

4 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY
See 4-mile radius topographic map in Appendix A.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

FIT files.
FIT SSI conducted March 29, 1988.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE IL	02 SITE NUMBER D000670703

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	4	TCL compounds: Industrial and Environmental Analysts, Inc., Cary, NC TAL analytes: Versar, Inc., Springfield, VA	Presently available
VEGETATION			
OTHER Drinking water	4	TCL compounds: Enseco/California Analytical Lab, West Sacramento, CA TAL analytes: Enseco/Rocky Mountain Analytical, Arvada, CO	Presently available

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
Photo-ionization detector	No readings were above background.
Oxygen meter	No readings were outside 18.5 to 25.0% O_2 range.
Explosimeter	No readings were above 0% LEL.
Radiation monitor	No readings were above background.

IV. PHOTOGRAPHS AND MAPS

01 TYPE X GROUND ___ AERIAL

02 IN CUSTODY OF Ecology & Environment, Inc., Chicago, IL
(Name of organization or individual)

03 MAPS
X YES
___ NO

04 LOCATION OF MAPS
Ecology & Environment, Inc., Chicago, IL

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

None.

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

FIT files.
FIT SSI conducted March 29, 1988.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION	
01 STATE IL	02 SITE NUMBER D000670703

II. CURRENT OWNER(S)			PARENT COMPANY (If applicable)		
01 NAME Shiloh Valley Agricultural Service		02 D+B NUMBER	08 NAME		09 D+B NUMBER
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.) R.R. 2 Box 329A		04 SIC CODE	10 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		11 SIC CODE
05 CITY Belleville	06 STATE IL	07 ZIP CODE 62221	12 CITY	13 STATE	14 ZIP CODE
01 NAME		02 D+B NUMBER	08 NAME		09 D+B NUMBER
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		04 SIC CODE	10 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		11 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
01 NAME		02 D+B NUMBER	08 NAME		09 D+B NUMBER
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		04 SIC CODE	10 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		11 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first)			IV. REALTY OWNER(S) (If applicable; list most recent first)		
01 NAME Cropmate Co.		02 D+B NUMBER	01 NAME Charles Tiedemann		02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) Unknown		04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.) R.R. #2 Box 332		04 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	05 CITY Belleville	06 STATE IL	07 ZIP CODE 62221
01 NAME American Oil Co./Amoco Division		02 D+B NUMBER	01 NAME Norfolk Southern R.R.		02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) Unknown		04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.) Unknown		04 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
01 NAME Tuloma Gas Products		02 D+B NUMBER	01 NAME		02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) Unknown		04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

FIT files.
FIT SSI conducted March 29, 1988.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION	
01 STATE IL	02 SITE NUMBER D000670703

II. CURRENT OPERATOR (Provide if different from owner)			OPERATOR'S PARENT COMPANY (If applicable)		
01 NAME Shiloh Valley Agricultural Service		02 D+B NUMBER	10 NAME		11 D+B NUMBER
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.) R.R. #2 Box 329A		04 SIC CODE	12 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		13 SIC CODE
05 CITY Belleville	06 STATE IL	07 ZIP CODE 62221	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION ~ 3	09 NAME OF OWNER				

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)			PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)		
01 NAME Cropmate Co.		02 D+B NUMBER	10 NAME Schooler Grain Co.		11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) Unknown		04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.) Unknown		13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14 CITY Omaha	15 STATE NB	16 ZIP CODE
08 YEARS OF OPERATION ~ 2	09 NAME OF OWNER DURING THIS PERIOD				
01 NAME Amoco Division		02 D+B NUMBER	10 NAME American Oil Co.		11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) Unknown		04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.) Unknown		13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION ~ 12	09 NAME OF OWNER DURING THIS PERIOD				
01 NAME Standard Oil Division		02 D+B NUMBER	10 NAME American Oil Co.		11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) Unknown		04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.) Unknown		13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION ~ 2	09 NAME OF OWNER DURING THIS PERIOD				

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

FIT SSI conducted March 29, 1988.

EPA	POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 9 - GENERATOR/TRANSPORTER INFORMATION	I. IDENTIFICATION 01 STATE IL 02 SITE NUMBER D000670703

II. ON-SITE GENERATOR N/A

01 NAME	02 D+B NUMBER	
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.)	04 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE

III. OFF-SITE GENERATOR(S) N/A

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY / 06 STATE	07 ZIP CODE	05 CITY / 06 STATE	07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY / 06 STATE	07 ZIP CODE	05 CITY / 06 STATE	07 ZIP CODE

IV. TRANSPORTER(S) N/A

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY / 06 STATE	07 ZIP CODE	05 CITY / 06 STATE	07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY / 06 STATE	07 ZIP CODE	05 CITY / 06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

FIT files.
FIT SSI conducted March 29, 1988.

EPA	POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 10 - PAST RESPONSE ACTIVITIES	I. IDENTIFICATION 01 STATE IL 02 SITE NUMBER D000670703

II. PAST RESPONSE ACTIVITIES

01 N/A A. WATER SUPPLY CLOSED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A B. TEMPORARY WATER SUPPLY PROVIDED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A C. PERMANENT WATER SUPPLY PROVIDED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A D. SPILLED MATERIAL REMOVED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A E. CONTAMINATED SOIL REMOVED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A F. WASTE REPACKAGED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A G. WASTE DISPOSED ELSEWHERE 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A H. ON SITE BURIAL 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A I. IN SITU CHEMICAL TREATMENT 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A J. IN SITU BIOLOGICAL TREATMENT 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A K. IN SITU PHYSICAL TREATMENT 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A L. ENCAPSULATION 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A M. EMERGENCY WASTE TREATMENT 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A N. CUTOFF WALLS 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A O. EMERGENCY DIKING/SURFACE WATER DIVERSION 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A P. CUTOFF TRENCHES/SUMP 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A Q. SUBSURFACE CUTOFF WALL 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

EPA	POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 10 - PAST RESPONSE ACTIVITIES	I. IDENTIFICATION 01 STATE IL	02 SITE NUMBER D000670703

II. PAST RESPONSE ACTIVITIES (Continued)

01 N/A R. BARRIER WALLS CONSTRUCTED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A S. CAPPING/COVERING 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A T. BULK TANKAGE REPAIRED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A U. GROUT CURTAIN CONSTRUCTED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A V. BOTTOM SEALED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A W. GAS CONTROL 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A X. FIRE CONTROL 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A Y. LEACHATE TREATMENT 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A Z. AREA EVACUATED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A 1. ACCESS TO SITE RESTRICTED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A 2. POPULATION RELOCATED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 N/A 3. OTHER REMEDIAL ACTIVITIES 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

FIT files.
FIT SSI conducted March 29, 1988.

EPA	POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 11 - ENFORCEMENT INFORMATION	I. IDENTIFICATION 01 STATE IL 02 SITE NUMBER D000670703

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION X YES ___ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

There is no documented enforcement action.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

FIT files.

APPENDIX C

U.S. EPA
IMMEDIATE REMOVAL ACTION
CHECKSHEET

Immediate Removal Action Check Sheet

		High	Moderate	Low
Fire and Explosion Hazard				
Flammable Materials	N/A			
Explosives	N/A			
Incompatable Chemicals	N/A			
Direct Contact with Acutely Toxic Chemicals				
Site Security				X
Leaking Drums or Tanks	N/A			
Open Lagoons or Pits	N/A			
Materials on Surface	N/A			
Proximity of Population	#1		X	
Evidence of Casual Site Use	N/A			
Contaminated Water Supply				
Exceeds 10 Day Snarl	N/A			
Gross Taste or Odors	N/A			
Alternate Water Available	N/A			
Potential Contamination				X
Is the site abandoned, active, or inactive?				

Comments: 1. Site is relatively insecure.

APPENDIX D

FIT SITE PHOTOGRAPHS

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: AMOCO OIL CO.

U.S. EPA ID: ILD000670703 TDD: F05-8612-078 PAN: FIL0059SB

DATE: 3/30/88

TIME: 0910

DIRECTION OF PHOTOGRAPH: Northeast

WEATHER CONDITIONS: Sunny, 80° F

PHOTOGRAPHED BY: Matt Arnold

SAMPLE ID (if applicable): N/A

DESCRIPTION: Photograph of bulk ammonia storage tank. FIT was informed by the site representative that its capacity is 12,000 gallons.

DATE: 3/30/88

TIME: 0915

DIRECTION OF PHOTOGRAPH: North

WEATHER CONDITIONS: Sunny, 80° F

PHOTOGRAPHED BY: Matt Arnold

SAMPLE ID (if applicable): N/A

DESCRIPTION: Aboveground storage tanks for 28-0-0 liquid fertilizer. FIT was informed by the site representative that their capacities are 25,000 gallons for one tank and 11,000 gallons for the other tank.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: AMOCO OIL CO.

U.S. EPA ID: ILD000670703 TDD: F05-8612-078 PAN: FIL0059SB

DATE: 3/30/88

TIME: 0920

DIRECTION OF PHOTOGRAPH: Northeast

WEATHER CONDITIONS: Sunny, 80° F

PHOTOGRAPHED BY: Matt Arnold

SAMPLE ID (if applicable): N/A

DESCRIPTION: Photograph of aboveground storage tank for 3-10-30 liquid fertilizer product. The smaller tank on the right was converted to a storage room for packaged pesticides.

DATE: 3/30/88

TIME: 0925

DIRECTION OF PHOTOGRAPH: Northeast

WEATHER CONDITIONS: Sunny, 80° F

PHOTOGRAPHED BY: Matt Arnold

SAMPLE ID (if applicable): N/A

DESCRIPTION: Loading pit area; a nurse tank for ammonia is near the loading area.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: AMOCO OIL CO.

U.S. EPA ID: ILD000670703 TDD: F05-8612-078 PAN: FIL0059SB

DATE: 3/30/88

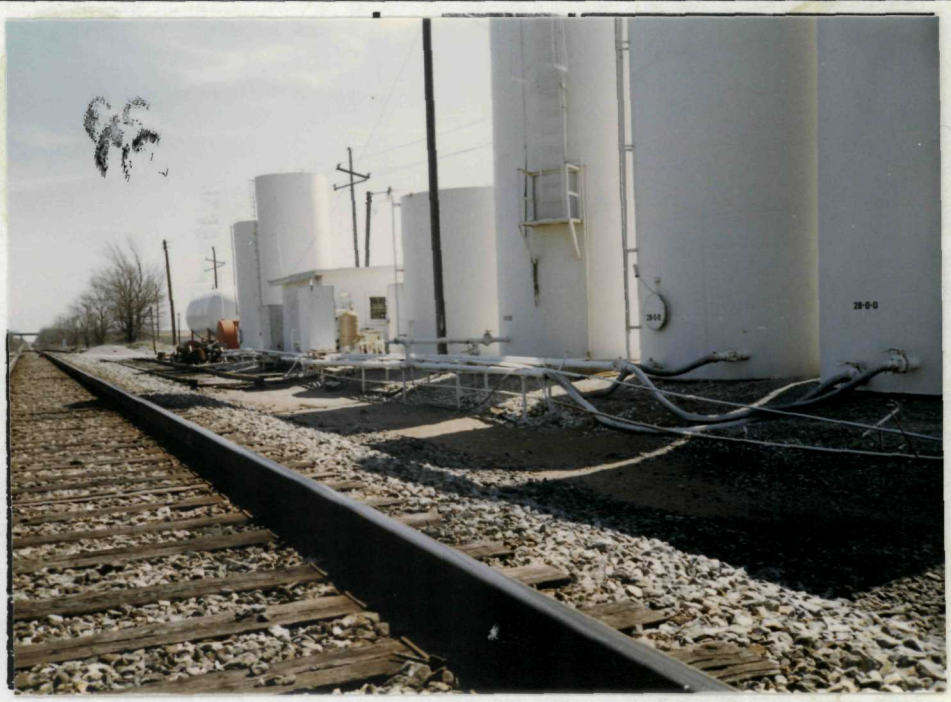
TIME: 0930

DIRECTION OF PHOTOGRAPH: East

WEATHER CONDITIONS: Sunny, 80° F

PHOTOGRAPHED BY: Matt Arnold

SAMPLE ID (if applicable): N/A



DESCRIPTION: North side of tank farm along the railroad tracks.

DATE: 3/30/88

TIME: 0930

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Sunny, 80° F

PHOTOGRAPHED BY: Matt Arnold

SAMPLE ID (if applicable): N/A

DESCRIPTION: Photograph of greenish stain in soil on the north side of the tank farm between the railroad tracks and tank farm.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: AMOCO OIL CO.

U.S. EPA ID: ILD000670703 TDD: F05-8612-078 PAN: FIL0059SB

DATE: 3/30/88

TIME: 0935

DIRECTION OF PHOTOGRAPH: Northwest

WEATHER CONDITIONS: Sunny, 80° F

PHOTOGRAPHED BY: Matt Arnold

SAMPLE ID (if applicable): N/A

DESCRIPTION: Nurse tank storage on northwest portion of property. Wooded area in background.

DATE: 3/30/88

TIME: 0945

DIRECTION OF PHOTOGRAPH: Northwest

WEATHER CONDITIONS: Sunny, 80° F

PHOTOGRAPHED BY: Matt Arnold

SAMPLE ID (if applicable): N/A

DESCRIPTION: Close-up of wooded area on the western perimeter of the site.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: AMOCO OIL CO.

U.S. EPA ID: ILD000670703 TDD: F05-8612-078 PAN: FIL0059SB

DATE: 3/30/88

TIME: 0946

DIRECTION OF PHOTOGRAPH: West

WEATHER CONDITIONS: Sunny, 80° F

PHOTOGRAPHED BY: Matt Arnold

SAMPLE ID (if applicable): N/A

DESCRIPTION: Western view of site along railroad tracks.

DATE: 3/30/88

TIME: 0955

DIRECTION OF PHOTOGRAPH: Northeast

WEATHER CONDITIONS: Sunny, 80° F

PHOTOGRAPHED BY: Matt Arnold

SAMPLE ID (if applicable): N/A

DESCRIPTION: Northeast view of nurse tank storage area on northern half of property.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: AMOCO OIL CO.

U.S. EPA ID: ILD000670703 TDD: F05-8612-078 PAN: FIL0059SB

DATE: 3/30/88

TIME: 0956

DIRECTION OF PHOTOGRAPH: East

WEATHER CONDITIONS: Sunny, 80° F

PHOTOGRAPHED BY: Matt Arnold

SAMPLE ID (if applicable): N/A

DESCRIPTION: View of eastern perimeter along railroad tracks.

DATE: 3/30/88

TIME: 1000

DIRECTION OF PHOTOGRAPH: Northeast

WEATHER CONDITIONS: Sunny, 80° F

PHOTOGRAPHED BY: Matt Arnold

SAMPLE ID (if applicable): N/A

DESCRIPTION: Northeast view of eastern portion of site showing location of residential well sample R2. Trailer is shown in the background.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: AMOCO OIL CO.

U.S. EPA ID: ILD000670703 TDD: F05-8612-078 PAN: FIL0059SB

DATE: 3/29/88

TIME: 1240

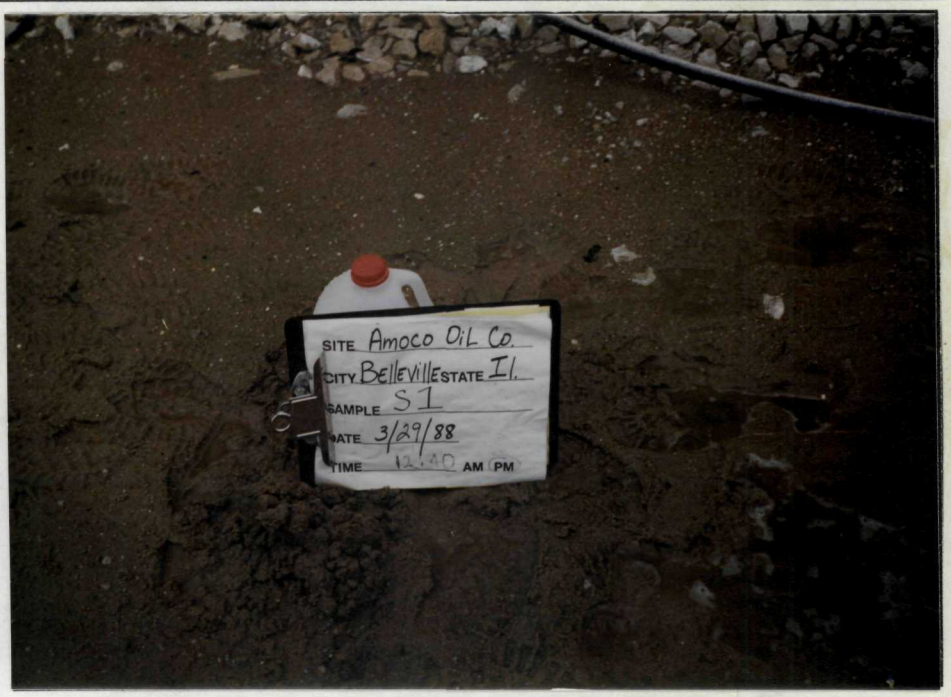
DIRECTION OF PHOTOGRAPH: South

WEATHER CONDITIONS: Cool, 60s

Raining

PHOTOGRAPHED BY: Bob Kurzeja

SAMPLE ID (if applicable): S1



DESCRIPTION: Close-up of surface soil sample S1, taken between tank farm and railroad tracks.

DATE: 3/29/88

TIME: 1240

DIRECTION OF PHOTOGRAPH: South

WEATHER CONDITIONS: Cool, 60s

Raining

PHOTOGRAPHED BY: Bob Kurzeja

SAMPLE ID (if applicable): S1

DESCRIPTION: Overview of soil sample S1 taken at above location. Aboveground storage tank for 3-10-30 liquid fertilizer shown in background.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: AMOCO OIL CO.

U.S. EPA ID: ILD000670703 TDD: F05-8612-078 PAN: FIL0059SB

DATE: 3/29/88

TIME: 1245

DIRECTION OF PHOTOGRAPH: South

WEATHER CONDITIONS: Cool, 60s

Raining

PHOTOGRAPHED BY: Bob Kurzeja

SAMPLE ID (if applicable): S2

DESCRIPTION: Close-up of soil sample S2, taken in the northern half of property, where nurse tanks are stored.

DATE: 3/29/88

TIME: 1245

DIRECTION OF PHOTOGRAPH: South

WEATHER CONDITIONS: Cool, 60s

Raining

PHOTOGRAPHED BY: Bob Kurzeja

SAMPLE ID (if applicable): S2

DESCRIPTION: Overview of soil sample S2. This photograph shows the nurse tank.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: AMOCO OIL CO.

U.S. EPA ID: ILD000670703 TDD: F05-8612-078 PAN: FIL0059SB

DATE: 3/29/88

TIME: 1252

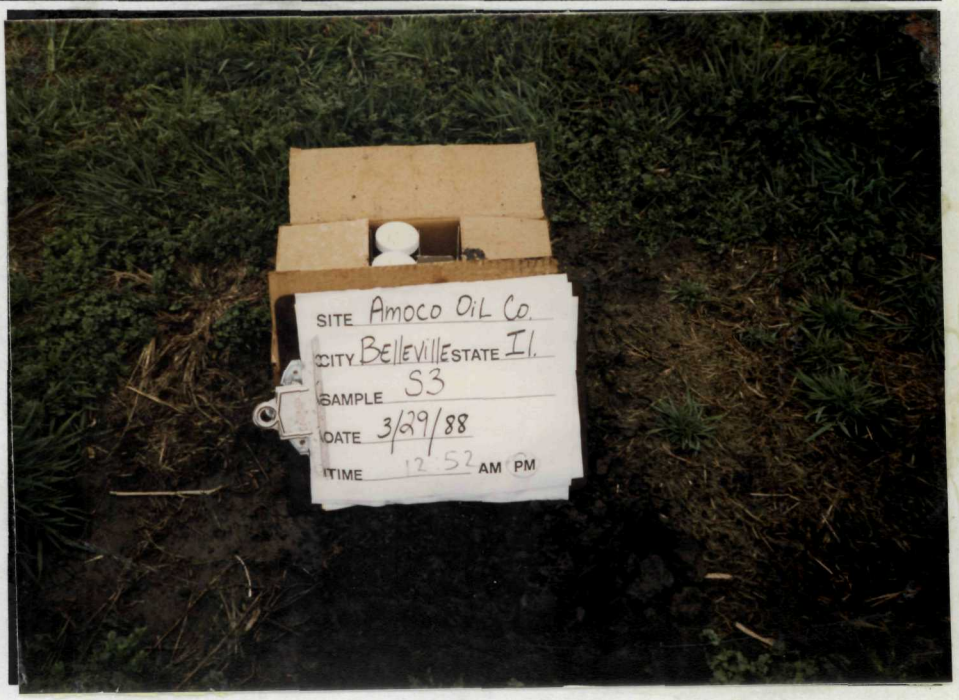
DIRECTION OF PHOTOGRAPH: Southwest

WEATHER CONDITIONS: Cool, 60s

Raining

PHOTOGRAPHED BY: Bob Kurzeja

SAMPLE ID (if applicable): S3



DESCRIPTION: Close-up of soil sample S3, taken east of S2 on the northern half of property in nurse tank storage area.

DATE: 3/29/88

TIME: 1252

DIRECTION OF PHOTOGRAPH: Southwest

WEATHER CONDITIONS: Cool, 60s

Raining

PHOTOGRAPHED BY: Bob Kurzeja

SAMPLE ID (if applicable): S3

DESCRIPTION: Overview of S3, showing bulk ammonia storage tank, red diesel fuel tank, and aboveground fertilizer tanks in the background.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: AMOCO OIL CO.

U.S. EPA ID: ILD000670703 TDD: F05-8612-078 PAN: FIL0059SB

DATE: 3/29/88

TIME: 1300

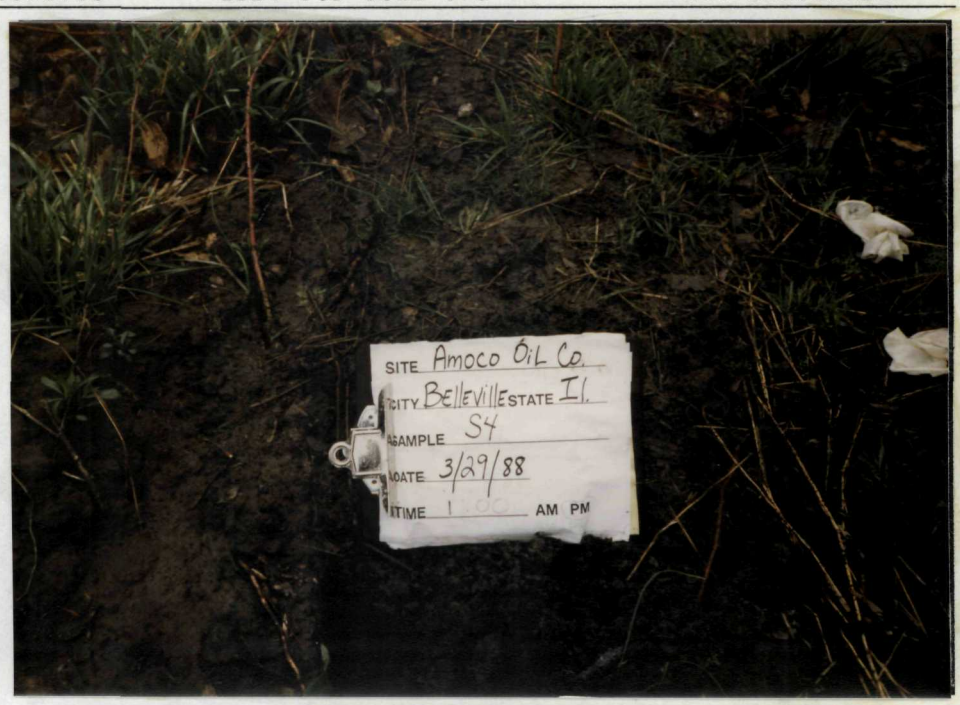
DIRECTION OF PHOTOGRAPH: Southeast

WEATHER CONDITIONS: Cool, 60s

Raining

PHOTOGRAPHED BY: Bob Kurzeja

SAMPLE ID (if applicable): S4



DESCRIPTION: Close-up of potential background soil sample.

DATE: 3/29/88

TIME: 1300

DIRECTION OF PHOTOGRAPH: Southeast

WEATHER CONDITIONS: Cool, 60s

Raining

PHOTOGRAPHED BY: Bob Kurzeja

SAMPLE ID (if applicable): S4

DESCRIPTION: Overview of potential background soil sample.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: AMOCO OIL CO.

U.S. EPA ID: ILD000670703 TDD: F05-8612-078 PAN: FIL0059SB

DATE: 3/30/88

TIME: 1045

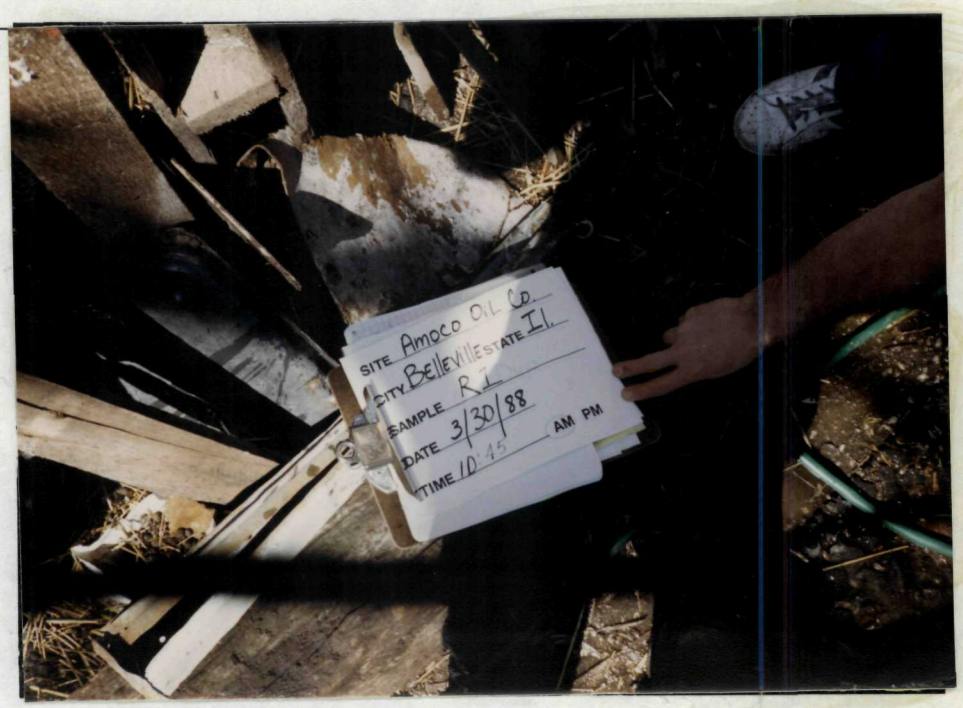
DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Sunny

80° F

PHOTOGRAPHED BY: Bob Kurzeja

SAMPLE ID (if applicable): R1



DESCRIPTION: Close-up of residential well R1.

DATE: 3/30/88

TIME: 1050

DIRECTION OF PHOTOGRAPH: South

WEATHER CONDITIONS: Sunny

80° F

PHOTOGRAPHED BY: Bob Kurzeja

SAMPLE ID (if applicable): R1

DESCRIPTION: Overview of residential well R1.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: AMOCO OIL CO.

U.S. EPA ID: ILD000670703 TDD: F05-8612-078 PAN: FIL0059SB

DATE: 3/30/88

TIME: 1110

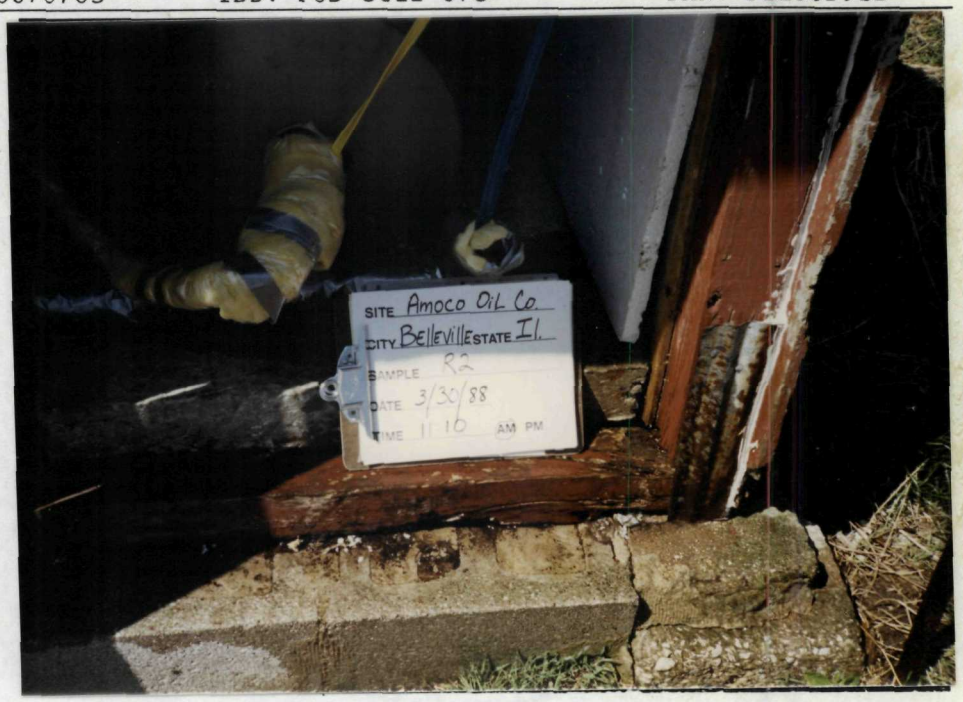
DIRECTION OF PHOTOGRAPH: East

WEATHER CONDITIONS: Sunny

80° F

PHOTOGRAPHED BY: Bob Kurzeja

SAMPLE ID (if applicable): R2



DESCRIPTION: Close-up of residential well R2.

DATE: 3/30/88

TIME: 1115

DIRECTION OF PHOTOGRAPH: West

WEATHER CONDITIONS: Sunny

80° F

PHOTOGRAPHED BY: Bob Kurzeja

SAMPLE ID (if applicable): R2

DESCRIPTION: Overview of residential well R2.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: AMOCO OIL CO.

U.S. EPA ID: ILD000670703 TDD: F05-8612-078 PAN: FIL0059SB

DATE: 3/30/88

TIME: 1120

DIRECTION OF PHOTOGRAPH: South

WEATHER CONDITIONS: Sunny

80° F

PHOTOGRAPHED BY: Bob Kurzeja

SAMPLE ID (if applicable): R3

DESCRIPTION: Close-up of residential well R3.

DATE: 3/30/88

TIME: 1125

DIRECTION OF PHOTOGRAPH: South

WEATHER CONDITIONS: Sunny

80° F

PHOTOGRAPHED BY: Bob Kurzeja

SAMPLE ID (if applicable): R3

DESCRIPTION: Overview of residential well R3.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: AMOCO OIL CO.

U.S. EPA ID: ILD000670703 TDD: F05-8612-078 PAN: FIL0059SB

DATE: 3/30/88

TIME: 1122

DIRECTION OF PHOTOGRAPH: South

WEATHER CONDITIONS: Sunny

80° F

PHOTOGRAPHED BY: Bob Kurzeja

SAMPLE ID (if applicable): N/A

DESCRIPTION: Overview of residential well R3 location.

DATE: 3/30/88

TIME: 1122

DIRECTION OF PHOTOGRAPH: Southwest

WEATHER CONDITIONS: Sunny

80° F

PHOTOGRAPHED BY: Bob Kurzeja

SAMPLE ID (if applicable): N/A

DESCRIPTION: Overview of residential well R3 location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: AMOCO OIL CO.

U.S. EPA ID: ILD000670703 TDD: F05-8612-078 PAN: FIL0059SB

DATE: 3/30/88

TIME: 1130

DIRECTION OF PHOTOGRAPH: West

WEATHER CONDITIONS: Sunny

80° F

PHOTOGRAPHED BY: Bob Kurzeja

SAMPLE ID (if applicable): R4

DESCRIPTION: Close-up of on-site well R4.

DATE: 3/30/88

TIME: 1130

DIRECTION OF PHOTOGRAPH: West

WEATHER CONDITIONS: Sunny

80° F

PHOTOGRAPHED BY: Bob Kurzeja

SAMPLE ID (if applicable): R4

DESCRIPTION: Overview of on-site well R4.

APPENDIX E

CHEMICAL ANALYSIS DATA
OF
FIT-COLLECTED SAMPLES

ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

CRL Receipt Date 5/9/88 FIT Receipt Date 5/26/88 Review Completed 6/8/88

TO: B. Kurzeja

FROM: Zena Gold-Kaufman ZGK

SUBJECT: Amoco OIL CO.

PAN: IL0595 (1 hour charged for review) Case # 9255

Sample Description

Organics (VOA, ABN, Pest/PCB)		Inorganics (Metals, Cyanide)	
# 4	Low Soil	#	Low Soil
	Low Water		Low Water
	Drinking Water		Drinking Water
	Other		Other

Project Data ~~Status~~ X Completed!! Good Luck!

Incomplete, awaiting

FIT Data Review Findings:

Compounds detected include: common lab artifacts, PAHs ~~and~~ pesticides and Benzoic Acid.

Check Data Sheets for Transcription Errors

✓ Compounds were detected in sample(s); see enclosed sheet.

Book No. 7 Page No. 284 Date Sampled 3/29/88

0759:2

recycled paper

... PROVIDED IN THE ATTACHED DATA SHEETS.

REPORTING UNITS

A. Organics

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - ug/kg or ppb (parts per billion)

B. Metals

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - mg/kg or ppm (parts per million)

DEFINITION OF FOOTNOTES TO ANALYTICAL DATA

A. Organics

FNOTE	DEFINITION	INTERPRETATION
U	Indicates compound was analyzed for but not detected.	Compound was not detected.
J	Indicates an estimated value.	Compound value may be semi-quantitative.
UJ	Quantitation limit is estimated due to a Quality Control (QC) protocol.	Compound was not detected.
C	This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides >10 ng/ul in the final extract shall be confirmed by GC/MS.	Compound was confirmed by mass spectroscop
B	This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.	Compound value may be semi-quantitative if it is <5x the blank concentration (<10x the blank concentrations for common lab artifacts: phthalates, methylene chloride acetone, toluene, 2-butanone).
E	This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods.	Compound value may be semi-quantitative.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.	Alerts data user to a possible change in the CRQL.
A	This flag indicates that a TIC is a suspected aldol-condensation product.	Alerts data user of a lab artifact.
R	Results are unusable due to a major violation of QC protocol.	Compound value is not usable.

B. Metals

OTNOTE	DEFINITION	INTERPRETATION
NEW		
E	Estimated or not reported due to inteference. See laboratory narrative.	Compound or element was not detected or value may be semi-quantitative.
S	Analysis by Method of Standard Additions.	Value may be quantitative.
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.
*	Duplicate value outside QC protocols which indicates a possible matrix problem.	Value may be semi-quantitative.
+	Correlation coefficient for standard additions is less than 0.995. See review and laboratory narrative.	Data value may be biased.
B	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semi-quantitative.
	DL is estimated because of a QC protocol. DL is possibly above or below CRDL.	Compound or element was not detected.
	Value is above CRDL and is an estimated value because of a QC Protocol.	Value may be semi-quantitative.
U	Compound was analyzed for but not detected.	Compound was not detected.
M	Duplicate injection precision not met.	Value may be semi-quantitative.
W	Post digestion spike for furnance AA analysis is out of control limits (85-115%), while sample absorbance is <50% of spike absorbance.	Value may be semi-quantitative.

Other Symbols Used

NA Value not available due to insufficient data.
I Value not calculated since chemical is not a carcinogen.
( ) Estimated value.

5/26/88
51 pages

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 5/25/88

SUBJECT: Review of Region V CLP Data
Received for Review on 5-9-88

FROM: Curtis Ross, Director (5SCRL) Patrick J. Chenille for
Central Regional Laboratory

TO: Data User: FIT

We have reviewed the data for the following case(s).

SITE NAME: AMOCO OIL CO. (IL) SMO Case No. 9255

EPA Data Set No. SF 5013 No. of Samples: 4 D.U./Activity Numbers Y905/C721ZZ

CRL No. 88FK16S62 - S65

SMO Traffic No. ES758 - 761

CLP Laboratory: IEA (Region 4 lab) Hrs. Required for Review: 8 HRS.

Following are our findings:

THE FOLLOWING CASE CONSIST OF 4 SAMPLES (SOIL MATRIX ONLY) TESTED FOR VOA'S, SEMI-VOA'S, & PESTICIDES. ATTENTION HAS BEEN DRAWN TO A COUPLE OF AREAS ON THE PAGES THAT FOLLOW. OVERALL DATA QUALITY IS GOOD & ACCEPTABLE

Philip Somerville
ESAT-WESTON

( ) Data are acceptable for use.
(✓) Data are acceptable for use with qualifications referenced above. See Data Qualifier sheets and Calibration Outlier forms for flags and additional comments.
( ) Data are preliminary - pending verification by Contractor Laboratory. See Case Summary above.
( ) Data are unacceptable.

cc: Carla Dempsey, CLP Quality Assurance Officer, Analytical Operations Branch
James Petty, Chief Quality Assurance Research, EMSL, Las Vegas

DATA QUALIFIERS

Contractor: IEA

Case 9255

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

① HOLDING TIME

IN THE VOLATILE FRACTION ALL SAMPLES (ES 758 - ES 761) EXCEEDED THE Q.C. LIMITS FOR HOLDING TIME BY 2 DAYS. AS A RESULT, ALL AROMATICS THAT ARE POSITIVE SHOULD BE FLAGGED "J" AS ESTIMATED AND THE SAMPLE QUANTITATION LIMITS FLAGGED "UJ" AS ESTIMATES.

THE SEMI-VOLATILE AND PESTICIDE FRACTIONS WERE WITHIN THE REQUIRED Q.C. LIMIT.

② GC/MS TUNING & INSTRUMENT PERFORMANCE

THE VOLATILE & SEMI-VOLATILE FRACTIONS ACHIEVED THE GC/MS TUNING CRITERIA AND WERE WITHIN THE Q.C. LIMITS.

THE PESTICIDE FRACTION WAS ALSO WITHIN Q.C. LIMITS FOR GC/MS TUNING AND DID NOT PRESENT ANY AREAS OF CONCERN

③ CALIBRATION

VOLATILE & SEMI-VOLATILE OUTLIERS ARE NOTED ON THE CALIBRATION OUTLIER SHEETS. THE PESTICIDE FRACTION WAS WITHIN THE REQUIRED Q.C. LIMITS FOR CALIBRATION.

④ BLANKS

IN THE VOLATILE BLANK (VBLK) THE FOLLOWING COMPOUNDS (TCL) WERE DETECTED: METHYLENE CHLORIDE, 2-BUTANONE, 4-METHYL-2-PENTANONE, 2-HEXANONE [ALL WERE ESTIMATES, LESS THAN CRQL], AND ACETONE (ACETONE WAS BEYOND THE CRQL).

Reviewed by: Philip Somerville

Phone: (312) 353-2947

Date: 5-19-88

DATA QUALIFIERS

Contractor: IEA

Case 9255

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

④ (CONT)
ALL VOLATILE SAMPLES (EW 758-EW 761) CONTAINED DETECTABLE LEVELS OF; METHYLENE CHLORIDE, ACETONE, AND 2-BUTANONE. THE AMOUNTS DETECTED WERE < 10 X THE BLANK AND WERE FLAGGED "U" OR "UJ" AS UNDETECTED.
IN THE SEMI-VOLATILE BLANK (S BLK) THERE WERE NO DETECTABLE LEVELS OF ANY TCL COMPOUND. THE PESTICIDE BLANK (P BLK) WAS ALSO VOID OF ANY DETECTABLE TCL COMPOUND

⑤ SURROGATE RECOVERIES
IN THE VOLATILE AND PESTICIDE FRACTION THERE WERE NO SURROGATE RECOVERIES OUTSIDE THE Q.C. LIMITS.
IN THE SEMI-VOLATILE FRACTION SAMPLE ES 760 HAD A HIGH RECOVERY OF PHENOL-d5 (S1), HOWEVER NO SPECIFIC ACTION IS REQUIRED.

⑥ MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD)
IN THE VOLATILE FRACTION THE MS/MSD RECOVERIES WERE ALL WITHIN Q.C. LIMITS
WITHIN THE SEMI-VOLATILE FRACTION THE MS % REC FOR PENTACHLOROPHENOL WAS BELOW THE Q.C. LIMIT. FOR MSD THE % RPD FOR THE SAME COMPOUND WAS BEYOND THE Q.C. LIMIT. BASED ON THIS DATA, POSITIVE RESULTS FOR PENTACHLOROPHENOL SHOULD BE CONSIDERED ESTIMATED AND FLAGGED "J", WHILE SAMPLE QUANTITATION LIMITS ARE FLAGGED "UJ" AS ESTIMATED (IN THE UNSPIKED SAMPLE).

Reviewed by: Philip Somerville
Phone: (312) 353-2947
Date: 5-16-88

DATA QUALIFIERS

Contractor: IEA

Case 9255

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

⑥ (CONT.)
LOOKING AT THE PESTICIDE FRACTION THE MSD % RPD FOR ALDRIN EXCEEDED THE Q.C. LIMIT. IN THE UNSPIKED SAMPLE POSITIVE RESULTS FOR THIS COMPOUND SHOULD BE FLAGGED "J" AS ESTIMATED AND SAMPLE QUANTITATION LIMITS FLAGGED "UJ" AS ESTIMATED.

⑦ FIELD DUPLICATES
THERE ARE NO DUPLICATES INCLUDED IN THIS CASE & THERE ARE NO FIELD BLANKS

⑧ INTERNAL STANDARDS PERFORMANCE
THE INTERNAL STANDARDS PERFORMANCE WAS ADEQUATE AND WITHIN Q.C. LIMITS FOR ALL FRACTIONS TESTED

⑨ COMPOUND IDENTIFICATION
COMPOUND IDENTIFICATION WAS CARRIED OUT PROPERLY, GC/MS RESULTS SUBSTANTIATE THIS FOR ALL FRACTIONS.

⑩ COMPOUND QUANTITATION & DETECTION LIMITS
COMPOUND QUANTITATION WAS WITHIN Q.C. LIMITS AND CARRIED OUT PROPERLY. THE DETECTION LIMITS WERE NOT INCLUDED IN THIS CASE

⑪ SYSTEM PERFORMANCE
SYSTEM PERFORMANCE WAS ADEQUATE AND CONSISTENT THROUGHOUT THIS WAS SUBSTANTIATED BY PREVIOUS

Reviewed by: Philip Sonnevill
Phone: (312) 353-2947
Date: 5-15-00

DATA QUALIFIERS

Contractor: IEA

Case 9255

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

(11) (CONT)
INSTRUMENT CHECKS.

(12) ADDITIONAL CASE SPECIFIC PROBLEMS
THE ITEM NEEDING ATTENTION IN THIS CASE IS THE HOLDING TIME VIOLATIONS, ALL OTHER CRITERIA IS OVERALL GOOD AND ACCEPTABLE. DATA IS OF GOOD QUALITY AND THIS REVIEWER FINDS IT ACCEPTABLE.

Reviewed by: Philip Somerville
Phone: (312) 353-2047
Date: 5-15-86

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
VOLATILE HSL COMPOUNDS

CASE/SAS # 9255 CONTRACTOR IEA

Instrument # 105001	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	4-7-88			4-7-88 751											
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane															
Bromomethane															
Vinyl Chloride															
Chloroethane															
Methylene Chloride															
Acetone															
Carbon Disulfide															
1,1-Dichloroethane															
1,1-Dichloroethene															
Trans-1,2-Dichloroethene															
Chloroform															
2-Butanone	0.04	23.5	R/J	0.03	28.2	R/J									
1,2-Dichloroethane															
1,1,1-Trichloroethane															
Carbon Tetrachloride															
Vinyl Acetate	0.54			0.38	29.2	J									
Bromodichloromethane															
1,2-Dichloropropane															
Trans-1,3-Dichloropropene															
Trichloroethene															
Dibromochloromethane															
1,1,2-Trichloroethane															
Benzene															
cis-1,3-Dichloropropene															
2-Chloroethylvinylether															
Bromoform															
4-Methyl-2-Pentanone	0.51			0.30	40.7	J									
2-Hexanone	0.41	42.1	J	0.25	37.7	J									
Tetrachloroethene															
1,1,2,2-Tetrachloroethane															
Toluene															
Chlorobenzene															
Ethylbenzene															
Styrene															
m-Xylene															
o/p-Xylene															

AFFECTED SAMPLES:

VBLK
ES 758
TC
ES 761
ES 761 MS
ES 761 MSD

Reviewer's Initials/Date: PS 5/11/88

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

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

CASE/SAS # 9255 CONTRACTOR IEA

Instrument # EXTR 2	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	4-27-88			4-28-88 1047											
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Phenol															
bis(-2-Chloroethyl)Ether															
2-Chlorophenol															
1,3-Dichlorobenzene															
1,4-Dichlorobenzene															
Benzyl Alcohol															
1,2-Dichlorobenzene															
2-Methylphenol															
bis(2-chloroisopropyl)Ether															
4-Methylphenol															
N-Nitroso-Di-n-Propylamine															
Hexachloroethane															
Nitrobenzene															
Isophorone															
2-Nitrophenol															
2,4-Dimethylphenol															
Benzoic Acid	0.18			0.25	42.2	J									
bis(2-Chloroethoxy)Methane															
2,4-Dichlorophenol															
1,2,4-Trichlorobenzene															
Naphthalene															
4-Chloroaniline															
Hexachlorobutadiene															
4-Chloro-3-Methylphenol															
2-Methylnaphthalene															
Hexachlorocyclopentadiene	0.22	31.3	J												
2,4,6-Trichlorophenol															
2,4,5-Trichlorophenol															
2-Chloronaphthalene															
2-Nitroaniline															
Dimethyl Phthalate															
Acenaphthylene															
3-Nitroaniline															
Acenaphthene															
2,4-Dinitrophenol	0.13	47.2	J												
4-Nitrophenol															
Dibenzofuran															

AFFECTED SAMPLES:

S BLK
ES 759
TO
ES 760
ES 758 DL
ES 760 MS
ES 760 MSD

Reviewer Initials/Date: PS 5/19/88

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

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
Page 2

CASE/SAS # 9255 CONTRACTOR IEA

Instrument # EXTR 2	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	4-27-88			4-28-88 1017											
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
2,4-Dinitrotoluene															
2,6-Dinitrotoluene															
Diethylphthalate															
4-Chlorophenyl-phenylether															
Fluorene															
4-Nitroaniline															
4,6-Dinitro-2-Methylphenol															
N-Nitrosodiphenylamine															
4-Bromophenyl-phenylether															
Hexachlorobenzene															
Pentachlorophenol															
Phenanthrene															
Anthracene															
Di-n-Butylphthalate															
Fluoranthene															
Pyrene															
Butylbenzylphthalate															
Benzo(a)Anthracene															
bis(2-Ethylhexyl)Phthalate															
Chrysene															
Di-n-Octyl Phthalate															
Benzo(b)Fluoranthene															
Benzo(k)Fluoranthene															
Benzo(a)Pyrene															
Indeno(1,2,3-cd)Pyrene	1.41			1.90	34.3	J									
Dibenz(a,h)Anthracene	1.10			1.56	41.7	J									
Benzo(g,h,i) Perylene	1.18			1.64	38.9	J									

SEE PAGE 1 FOR AFFECTED SAMPLES.

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

Reviewer's Initials/Date: PE 5/10/88

8/87

Case: 9255

Contractor: IEA

TENTATIVELY IDENTIFIED COMPOUNDS MATCH ASSESSMENT

NOTE: Reviewer should note directly on Organic Analysis Data Sheet (OADS) those matches that in his opinion (based on contract criteria) are unreasonable.

CRITERIA

(1) Relative intensities of major ions (>10%) reference spectrum should be present in the sample spectrum.

(2) Relative intensities of major ions in sample spectrum should agree to within ± 20% of reference spectrum intensities.

(3) Molecular ions present in reference spectrum should be present in sample spectrum.

(4) Ions present in sample spectrum, but not in reference spectrum should be reviewed for possible background contamination or presence of coeluting interferences.

(5) Ions present in reference spectrum, but not in the sample spectrum should be reviewed for possible subtraction from the sample spectrum because of background contamination or coeluting interferences.

(6) If, in the reviewer's opinion, no valid identification can be made the compound should be labelled as "unknown" and the initials and date of the reviewer placed on the OADS.

PS 5/19/88

Industrial & Environmental Analysts, Inc.
P.O. Box 12846 • Research Triangle Park, NC 27709 • 919-467-9919

RECEIVED
JUN 1988
U.S. EPA CENTRAL
REGIONAL LAB

CASE NARRATIVE

CONTRACT: 68-W8-0045
CASE: 9255
SDG: ES758
SAMPLES: 4 LOW SOILS
ES758, ES759, ES760 & ES761

All samples processed for this case were received in good condition on 3/30/88 with no discrepancies. The semivolatile extract of sample ES758 was diluted prior to analysis due to the high concentration of butylbenzylphthalate in the sample.

The samples in this case were analyzed for pesticides using a DB-608 wide bore capillary column, ID 0.53 mm. Confirmations were performed using a DB-5 wide bore capillary column, ID 0.53 mm. Acceptance criteria for the dibutylchlorendate (DBC) in all samples and standards was the retention time of DBC in the initial EVALA standard ±1.5%. All samples and standards analyzed for this case met that criteria. No breakdown was observed for endrin or 4,4'-DDT on the quantitation column (DB-608). A small amount of endrin breakdown (6.3%) was observed for endrin on the confirmation column (DB-5). The percent differences observed for all continuing calibration standards were within specifications for both columns.

EPA sample identifiers, date and time of analysis, description of column, instrument ID and attenuation have been included in the headers of each analysis. These items have been labelled 1-5 on the attached example chromatogram. All injection volumes were 2.0 ul. The injection volume has been hand-written in the lower left corner of each chromatogram header.

The retention time and area data for the quantitation and confirmation of each sample and quality control sample were compared to the standards via a spreadsheet program. The presence or absence of analytes was determined by comparison of the data from the two analyses. All compounds identified on both columns and having calculated concentrations with relative percent difference of less than 80% were considered positive identifications. Due to the complexity of the samples in this case, only

concentrations equal to or greater than the stated detection limits have been reported for the samples, with the exception of ES758. ES758 was selected as the original sample for the MS/MSD pair. The presence of aldrin and dieldrin was confirmed through the addition of these compounds in the spiking mixture. Because the retention time of the aldrin and dieldrin peaks in all three samples matched exactly on both the quantitation and confirmation column, these compounds were reported for ES758 with the "J" footnote.

The compounds reported for this case are summarized below:

	ES758 ug/Kg	ES759 ug/Kg	ES760 ug/Kg	ES761 ug/Kg
Aldrin	7.7J	35		
Heptachlor epoxide		41	13	
Dieldrin	16 J	57		
Endosulfan II		26		

Due to the presence of one very large non-analyte peak in each of the samples, multiple chromatograms have been supplied for each analysis. One chromatogram was attenuated such that the large peak was 80-100% of full scale. The second chromatogram was attenuated to fully display the smaller peaks of interest. The attenuation values have been circled in the header of each chromatogram for convenience during data review.

Version 9.5 of the public domain software written by D. Thomas Terwilliger for the generation of forms and disc deliverables was used for this case. A few problems were encountered which required manual correction of the forms.

1. The software does not allow reporting of the required two (2) significant figures for pesticide values less than 10. The printed values and detection limits have been manually adjusted where necessary. A copy of the supplemental printout from the Terwilliger software has been included as the last page for each sample which required manual adjustment.

2. The software did not print the percent breakdown on Form VIII PEST-1. The calculated percent was manually added to each form.

3. The instrument number was not accessible after the initial entry of 1A for the confirmation data. The instrument ID on all forms associated with the DB-608 quantitation column have been manually changed to 1B.

Release of the data contained in this hardcopy data package adn 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.

Lee Helms
CLP Coordinator

Patty L. Ragsdale
Quality Assurance Manager

APR 1 8 1988

CENTRAL REGIONAL LABORATORY SAMPLE DATA REPORT
ORGANICS/INORGANICS

LOG IN DATE: 4/19/88
DUE DATE: 6/7/88

SUPERFUND 5013

THIS FORM IS TO BE USED FOR SAMPLES SENT TO CONTRACT ONLY

CASE NUMBER/SAS No. 9255 SITE NAME Amoco Oil Co. LABORATORY IEA/Versar DATE SHIPPED 3/29/88

SUPERFUND DU NUMBER 4915 EPA RPM or OSC (S.M.S.)/(CES) CERCLIS NUMBER ILD000610703 PAGE 1 OF 2

ACTIVITY NUMBER C12310

CRL LOG NUMBER	ORGANIC TRAFFIC REPORT NUMBER or SAS Packing List No.	INORGANIC TRAFFIC REPORT NUMBER or SAS Packing List No.	WATER OR LIQUIDS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN UG/L TOX17574	VOLATILE ORGANIC ANALYSIS ORGANIC SCAN UG/L TOX17564	WATER POLYCHLORINATED BIPHENYLS UG/L PES17144	WATER CHLORINATED PESTICIDES UG/L PES17134	TOTAL METALS IN WATER UG/L MET1111	WATER CYANIDE UG/L MIN74919	NITRATE NITRITE MG/L MIN7284	AMMONIA MG/L MIN7294	RESIDUE FILTERABLE TDS MG/L MIN7362	RESIDUE NON-FILT TSS MG/L MIN7372			SEDIMENTS or SOILS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN MG/KG TOX215722	VOLATILE ORGANIC ANALYSIS ORGANIC SCAN MG/KG TOX215622	SEDIMENTS POLYCHLORINATED BIPHENYLS MG/KG PES211422	SEDIMENT CHLORINATED PESTICIDES MG/KG 211322	TOTAL METALS MG/KG MET413	CYANIDE MG/KG MIN44930	EP TOXICITY METALS MG/KG	AMMONIA MG/KG MIN42925				
88FK-16501	ES758	MES201													✓	✓	✓	✓	✓	✓						
88FK-16503	ES759	MES203													✓	✓	✓	✓	✓	✓						
88FK-16504	ES760	MES204													✓	✓	✓	✓	✓	✓						
88FK-16505	ES761	MES205													✓	✓	✓	✓	✓	✓						
0.12.	TR																									

USEPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 ALEXANDRIA, VA 22313
703/557-2490 FTS-557-2490

CASE NO: 9255

SAS NO: (IF APPLICABLE)

ORGANIC TRAFFIC REPORT

(FOR CLP USE ONLY)

TYPE OF ACTIVITY (CIRCLE ONE) ①
SUPERFUND—PA SI ESI RIFS RD RA ER NPLD O&M OTHER _____
NON-SUPERFUND—_____ PROGRAM

SAMPLE DESCRIPTION
(ENTER IN BOX A)
1. SURFACE WATER
2. GROUND WATER
3. LEACHATE
4. SOIL
5. SEDIMENT
6. OIL (SAS)
7. WASTE (SAS)

REGION NO: V
SAMPLING COMPANY ② FIT
SAMPLER: (NAME) KATHERINE NESWICK

SHIP TO: IEA. ③
1901 N Harrison Ave
Cary, NC 27511
ATTN: Gary Gilleland

SAMPLING DATE: ④
BEGIN: 3/21/88 END: 3/29/88

DATE SHIPPED: 3/29/88 CARRIER: F ⑤
AIRBILL NO: 4994349673

DATE REC'D: 3/30/88
SDG NO: ES 758 ⑥
REC'D BY: Gary Gilleland
LABORATORY CONTRACT NO.: Q045
UNIT PRICE: $919

TRANSFER TO:
DATE REC'D: ⑦
REC'D BY:
CONTRACT NO./PRICE:

CLP SAMPLE NUMBER (FROM LABELS)	Ⓐ SAMPLE DESCRIPTION (FROM BOX 1) 1 2 3 4 5 6 7	Ⓑ CONCENTRATION L = LOW/MED. H = HIGH (SAS)	Ⓒ RAS ANALYSIS: VOLATILE	BASE/NEUT /ACID	PESTICIDE /PCB's		Ⓓ SPECIAL HANDLING	Ⓔ STATION LOCATION	Ⓕ SAMPLE CONDITION ON RECEIPT	Ⓖ HIGH CONC PHASES (CHECK): SOLID	WATER—MIS LIQUID	NON WATER—MIS LIQUID
ES 758	4	L	✓	✓	✓			Soil 1	Okay			
ES 759	4	L	✓	✓	✓			Soil 2	↓			
ES 760	4	L	✓	✓	✓			Soil 3				
ES 761	4	L	✓	✓	✓			Soil 4	↓			
KN ~~EW 255~~	~~1~~	~~L~~	~~✓~~	~~✓~~	~~✓~~		~~MSD~~	~~Sw 1~~				
KN ~~EW 256~~	~~1~~	~~L~~	~~✓~~	~~✓~~	~~✓~~			~~Blank~~				

EPA Form 2075-7 (8-87)

7

WHITE — SMO COPY PINK — CLIENT COPY WHITE — LAB COPY FOR RETURN TO SMO YELLOW — LAB COPY

2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
1	VBLK	106	112	98		0
2	ES758	97	99	96		0
3	ES759	108	87	98		0
4	ES760	103	91	96		0
5	ES761	94	95	96		0
6	ES761MS	109	98	105		0
7	ES761MSD	96	95	90		0
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	QC LIMITS
S1 (TOL) = TOLUENE-D8	(81-117)
S2 (BFB) = BROMOFLUOROBENZENE	(74-121)
S3 (DCE) = 1,2-DICHLOROETHANE-D4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	OTHER	TOT OUT
1	SBLK	59	69	74	80	79	95		0
2	ES758DL	73	94	88	112	98	75		0
3	ES761	25	33	30	30	25	30		0
4	ES761MS	38	44	41	46	40	36		0
5	ES761MSD	42	46	38	62	56	38		0
6	ES759	82	80	96	110	98	40		0
7	ES760	91	107	90	123 *	97	80		1
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		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)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

144

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (DBC)#	OTHER
1	PBLK	84	
2	ES758	76	
3	ES758MS	81	
4	ES758MSD	68	
5	ES759	125	
6	XXXXX	82	
7	ES760	112	
8	ES761	88	
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ADVISORY
QC LIMITS
(20-150)

S1 (DBC) = Dibutylchlorendate

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

Matrix Spike - EPA Sample No.: ES761 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	67.	0.	60.	90.	59-172
TRICHLOROETHENE	67.	0.	74.	110.	62-137
BENZENE	67.	0.	84.	125.	66-142
TOLUENE	67.	0.	84.	125.	59-139
CHLOROBENZENE	67.	0.	85.	127.	60-133

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-DICHLOROETHENE	67.	56.	84.	7.	22	59-172
TRICHLOROETHENE	67.	72.	107.	3.	24	62-137
BENZENE	67.	78.	116.	8.	21	66-142
TOLUENE	67.	70.	104.	19.	21	59-139
CHLOROBENZENE	67.	82.	122.	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:

3D
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

Matrix Spike - EPA Sample No.: ES761 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	MS CONCENTRATION (UG/KG)	MS % REC #	QC LIMITS REC.
Phenol	8602.	0.	4033.	47.	26- 90
2-Chlorophenol	8602.	0.	3843.	45.	25-102
1,4-Dichlorobenzene	4301.	0.	1534.	36.	28-104
N-Nitroso-di-n-prop.(1)	4301.	0.	1848.	43.	41-126
1,2,4-Trichlorobenzene	4301.	0.	1756.	41.	38-107
4-Chloro-3-methylphenol	8602.	0.	4370.	51.	26-103
Acenaphthene	4301.	0.	2054.	48.	31-137
4-Nitrophenol	8602.	0.	3968.	46.	11-114
2,4-Dinitrotoluene	4301.	0.	2073.	48.	28- 89
Pentachlorophenol	8602.	0.	1352.	16. *	17-109
Pyrene	4301.	0.	1964.	46.	35-142

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	8889.	5302.	60.	24.	35	26- 90
2-Chlorophenol	8889.	4916.	55.	21.	50	25-102
1,4-Dichlorobenzene	4444.	1773.	40.	11.	27	28-104
N-Nitroso-di-n-prop.(1)	4444.	2226.	50.	15.	38	41-126
1,2,4-Trichlorobenzene	4444.	1853.	42.	2.	23	38-107
4-Chloro-3-methylphenol	8889.	5129.	58.	13.	33	26-103
Acenaphthene	4444.	2113.	48.	0.	19	31-137
4-Nitrophenol	8889.	5207.	59.	24.	50	11-114
2,4-Dinitrotoluene	4444.	1978.	45.	8.	47	28- 89
Pentachlorophenol	8889.	3053.	34.	74. *	47	17-109
Pyrene	4444.	1781.	40.	13.	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: 1 out of 11 outside limits
Spike Recovery: 1 out of 22 outside limits

COMMENTS:

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

Matrix Spike - EPA Sample No.: ES758 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	MS CONCENTRATION (UG/KG)	MS % REC #	QC LIMITS REC.
gamma-BHC	26.43	.00	29.82	113.	46-127
Heptachlor	26.43	.00	19.59	74.	35-130
Aldrin	26.43	7.70	39.09	119.	34-132
Dieldrin	66.07	15.90	84.84	104.	31-134
Endrin	66.07	.00	65.13	99.	42-139
4,4'-DDT	66.07	.00	63.98	97.	23-134

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC	26.65	25.07	94.	18.	50	46-127
Heptachlor	26.65	16.84	63.	16.	31	35-130
Aldrin	26.65	27.40	74.	47. *	43	34-132
Dieldrin	66.62	76.01	90.	15.	38	31-134
Endrin	66.62	55.74	84.	16.	45	42-139
4,4'-DDT	66.62	54.76	82.	16.	50	23-134

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

* Values outside of QC limits

RPD: 1 out of 6 outside limits
Spike Recovery: 0 out of 12 outside limits

COMMENTS:

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

Lab File ID: 10VBLK Lab Sample ID:_____

Date Analyzed: 4/ 7/88 Time Analyzed: 8:51

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: 105001

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
1	ES758		ES758V	10:00
2	ES759		ES759V	11:04
3	ES760		ES760V	12:04
4	ES761		ES761V	13:02
5	ES761MS		ES761MS	14:16
6	ES761MSD		ES761MSD	15:20
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COMMENTS:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 5. (g/mL) G Lab File ID: 10VBLK

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 4/ 7/88

Column: (pack/cap) PACK Dilution Factor: 1.00

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	3.	J
67-64-1	ACETONE	14.	
75-15-0	CARBON DISULFIDE	5.	U
75-35-4	1,1-DICHLOROETHENE	5.	U
75-34-3	1,1-DICHLOROETHANE	5.	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	5.	U
67-66-3	CHLOROFORM	5.	U
107-06-2	1,2-DICHLOROETHANE	5.	U
78-93-3	2-BUTANONE	8.	J
71-55-6	1,1,1-TRICHLOROETHANE	5.	U
56-23-5	CARBON TETRACHLORIDE	5.	U
108-05-4	VINYL ACETATE	10.	U
75-27-4	BROMODICHLOROMETHANE	5.	U
78-87-5	1,2-DICHLOROPROPANE	5.	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	5.	U
79-01-6	TRICHLOROETHENE	5.	U
124-48-1	DIBROMOCHLOROMETHANE	5.	U
79-00-5	1,1,2-TRICHLOROETHANE	5.	U
71-43-2	BENZENE	5.	U
10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.	U
75-25-2	BROMOFORM	5.	U
108-10-1	4-METHYL-2-PENTANONE	4.	J
591-78-6	2-HEXANONE	7.	J
127-18-4	TETRACHLOROETHENE	5.	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	5.	U
108-88-3	TOLUENE	5.	U
108-90-7	CHLOROBENZENE	5.	U
100-41-4	ETHYLBENZENE	5.	U
100-42-5	STYRENE	5.	U
1330-20-7	XYLENE (TOTAL)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 5. (g/mL) G Lab File ID: 10VBLK

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 4/ 7/88

Column: (pack/cap) PACK Dilution Factor: 1.00

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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4B

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

Lab File ID: 307SBLK Lab Sample ID:_____

Date Extracted: 4/ 5/88 Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed: 4/28/88 Time Analyzed: 11:35

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: EXTR2

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
1	ES758DL		30701	4/28/88
2	ES761		30702	4/28/88
3	ES761MS		30703	4/28/88
4	ES761MSD		30704	4/28/88
5	ES759		30706	4/28/88
6	ES760		30708	4/28/88
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COMMENTS:

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 30. (g/mL) G Lab File ID: 307SBLK

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec. 0. Date Extracted: 4/ 5/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 4/28/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

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
100-51-6	Benzyl alcohol	330.	U
95-50-1	1,2-Dichlorobenzene	330.	U
95-48-7	2-Methylphenol	330.	U
108-60-1	bis(2-Chloroisopropyl)ether	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
65-85-0	Benzoic acid	1700.	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	1700.	U
91-58-7	2-Chloronaphthalene	330.	U
88-74-4	2-Nitroaniline	1700.	U
131-11-3	Dimethylphthalate	330.	U
208-96-8	Acenaphthylene	330.	U
606-20-2	2,6-Dinitrotoluene	330.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 30. (g/mL) G Lab File ID: 307SBLK

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec. 0. Date Extracted: 4/ 5/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 4/28/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1700.	U
83-32-9	Acenaphthene	330.	U
51-28-5	2,4-Dinitrophenol	1700.	U
100-02-7	4-Nitrophenol	1700.	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	1700.	U
534-52-1	4,6-Dinitro-2-methylphenol	1700.	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	1700.	U
85-01-8	Phenanthrene	330.	U
120-12-7	Anthracene	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	670.	U
56-55-3	Benzo(a)anthracene	330.	U
218-01-9	Chrysene	330.	U
117-81-7	bis(2-Ethylhexyl)phthalate	330.	U
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.

SBLK

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 30. (g/mL) G Lab File ID: 307SBLK

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec. 0. Date Extracted: 4/ 5/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 4/28/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 8

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	7.25	7000.	J
2.	- -	UNKNOWN HYDROCARBON	7.50	400.	J
3.	- -	UNKNOWN	7.57	300.	J
4.	- -	UNKNOWN HYDROCARBON	7.70	1000.	J
5.	- -	UNKNOWN HYDROCARBON	7.87	1000.	J
6.	- -	UNKNOWN AROMATIC	9.10	1000.	J
7.	- -	UNKNOWN	26.15	200.	J
8.	- -	UNKNOWN	27.97	200.	J
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4C
PESTICIDE METHOD BLANK SUMMARY

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

Lab Sample ID: _____ Lab File ID: HPEC14

Matrix: (soil/water) SOIL Level:(low/med) LOW

Date Extracted: 4/ 5/88 Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed (1): 4/20/88 Date Analyzed (2): 4/23/88

Time Analyzed (1): 9:39 Time Analyzed (2): 10:42

Instrument ID (1): H5891A Instrument ID (2): H5891~~A~~B

GC Column ID (1): DB-5 GC Column ID (2): DB-608

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

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	ES758		4/20/88	4/23/88
2	ES758MS		4/20/88	4/23/88
3	ES758MSD		4/20/88	4/23/88
4	ES759		4/20/88	4/23/88
5	XXXXX		4/20/88	4/23/88
6	ES760		4/20/88	4/23/88
7	ES761		4/20/88	4/23/88
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Comments:

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 30. (g/mL) G Lab File ID: ECHP84

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec. 0. Date Extracted: 4/ 5/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 4/23/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.3	U
319-85-7	beta-BHC	8.3	U
319-86-8	delta-BHC	8.3	U
58-89-9	gamma-BHC	8.3	U
76-44-8	Heptachlor	8.3	U
309-00-2	Aldrin	8.3	U
1024-57-3	Heptachlor epoxide	8.3	U
959-98-8	Endosulfan I	8.3	U
60-57-1	Dieldrin	17.	U
72-55-9	4,4'-DDE	17.	U
72-20-8	Endrin	17.	U
33213-65-9	Endosulfan II	17.	U
72-54-8	4,4'-DDD	17.	U
1031-07-8	Endosulfan sulfate	17.	U
50-29-3	4,4'-DDT	17.	U
72-43-5	Methoxychlor	83.	U
53494-70-5	Endrin ketone	17.	U
5103-71-9	alpha-Chlordane	83.	U
5103-74-2	gamma-Chlordane	83.	U
8001-35-2	Toxaphene	170.	U
12674-11-2	Aroclor-1016	83.	U
11104-28-2	Aroclor-1221	83.	U
11141-16-5	Aroclor-1232	83.	U
53469-21-9	Aroclor-1242	83.	U
12672-29-6	Aroclor-1248	83.	U
11097-69-1	Aroclor-1254	170.	U
11096-82-5	Aroclor-1260	170.	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ES758

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 5. (g/mL) G Lab File ID: ES758V

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 5. Date Analyzed: 4/ 7/88

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	CHLOROMETHANE	11.	U
74-83-9	BROMOMETHANE	11.	U
75-01-4	VINYL CHLORIDE	11.	U
75-00-3	CHLOROETHANE	11.	U
75-09-2	METHYLENE CHLORIDE	8.	~~B~~U
67-64-1	ACETONE	28.	~~B~~U
75-15-0	CARBON DISULFIDE	5.	U
75-35-4	1,1-DICHLOROETHENE	5.	U
75-34-3	1,1-DICHLOROETHANE	5.	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	5.	U
67-66-3	CHLOROFORM	5.	U
107-06-2	1,2-DICHLOROETHANE	5.	U
78-93-3	2-BUTANONE	52.	~~BJ~~U
71-55-6	1,1,1-TRICHLOROETHANE	5.	U
56-23-5	CARBON TETRACHLORIDE	5.	U
108-05-4	VINYL ACETATE	11.	U
75-27-4	BROMODICHLOROMETHANE	5.	U
78-87-5	1,2-DICHLOROPROPANE	5.	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	5.	U
79-01-6	TRICHLOROETHENE	5.	U
124-48-1	DIBROMOCHLOROMETHANE	5.	U
79-00-5	1,1,2-TRICHLOROETHANE	5.	U
71-43-2	BENZENE	5.	U
10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.	U
75-25-2	BROMOFORM	5.	U
108-10-1	4-METHYL-2-PENTANONE	11.	U
591-78-6	2-HEXANONE	11.	U
127-18-4	TETRACHLOROETHENE	5.	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	5.	U
108-88-3	TOLUENE	2.	J
108-90-7	CHLOROBENZENE	5.	U
100-41-4	ETHYLBENZENE	5.	U
100-42-5	STYRENE	5.	U
1330-20-7	XYLENE (TOTAL)	5.	U

PS 5/19/

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ES758

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 5. (g/mL) G Lab File ID: ES758V

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 5. Date Analyzed: 4/ 7/88

Column: (pack/cap) PACK Dilution Factor: 1.00

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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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ES759

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 5. (g/mL) G Lab File ID: ES759V

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 35. Date Analyzed: 4/ 7/88

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	CHLOROMETHANE	15.	U
74-83-9	BROMOMETHANE	15.	U
75-01-4	VINYL CHLORIDE	15.	U
75-00-3	CHLOROETHANE	15.	U
75-09-2	METHYLENE CHLORIDE	28.	~~B~~U
67-64-1	ACETONE	35.	~~B~~U
75-15-0	CARBON DISULFIDE	8.	U
75-35-4	1,1-DICHLOROETHENE	8.	U
75-34-3	1,1-DICHLOROETHANE	8.	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	8.	U
67-66-3	CHLOROFORM	8.	U
107-06-2	1,2-DICHLOROETHANE	8.	U
78-93-3	2-BUTANONE	15~~8~~.	~~B~~U
71-55-6	1,1,1-TRICHLOROETHANE	8.	U
56-23-5	CARBON TETRACHLORIDE	8.	U
108-05-4	VINYL ACETATE	15.	U
75-27-4	BROMODICHLOROMETHANE	8.	U
78-87-5	1,2-DICHLOROPROPANE	8.	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	8.	U
79-01-6	TRICHLOROETHENE	8.	U
124-48-1	DIBROMOCHLOROMETHANE	8.	U
79-00-5	1,1,2-TRICHLOROETHANE	8.	U
71-43-2	BENZENE	8.	U
10061-02-6	TRANS-1,3-DICHLOROPROPENE	8.	U
75-25-2	BROMOFORM	8.	U
108-10-1	4-METHYL-2-PENTANONE	15.	U
591-78-6	2-HEXANONE	15.	U
127-18-4	TETRACHLOROETHENE	8.	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	8.	U
108-88-3	TOLUENE	4.	J
108-90-7	CHLOROBENZENE	8.	U
100-41-4	ETHYLBENZENE	8.	U
100-42-5	STYRENE	8.	U
1330-20-7	XYLENE (TOTAL)	8.	U

PS 5/19/88

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ES759

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 5. (g/mL) G Lab File ID: ES759V

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 35. Date Analyzed: 4/ 7/88

Column: (pack/cap) PACK Dilution Factor: 1.00

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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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ES760

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 5. (g/mL) G Lab File ID: ES760V

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 28. Date Analyzed: 4/ 7/88

Column: (pack/cap) PACK Dilution Factor: 1.00

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	15.	~~B~~U
67-64-1	ACETONE	29.	~~B~~U
75-15-0	CARBON DISULFIDE	7.	U
75-35-4	1,1-DICHLOROETHENE	7.	U
75-34-3	1,1-DICHLOROETHANE	7.	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	7.	U
67-66-3	CHLOROFORM	7.	U
107-06-2	1,2-DICHLOROETHANE	7.	U
78-93-3	2-BUTANONE	14 ~~8~~.	~~B~~JU
71-55-6	1,1,1-TRICHLOROETHANE	7.	U
56-23-5	CARBON TETRACHLORIDE	7.	U
108-05-4	VINYL ACETATE	14.	U
75-27-4	BROMODICHLOROMETHANE	7.	U
78-87-5	1,2-DICHLOROPROPANE	7.	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	7.	U
79-01-6	TRICHLOROETHENE	7.	U
124-48-1	DIBROMOCHLOROMETHANE	7.	U
79-00-5	1,1,2-TRICHLOROETHANE	7.	U
71-43-2	BENZENE	7.	U
10061-02-6	TRANS-1,3-DICHLOROPROPENE	7.	U
75-25-2	BROMOFORM	7.	U
108-10-1	4-METHYL-2-PENTANONE	14.	U
591-78-6	2-HEXANONE	14.	U
127-18-4	TETRACHLOROETHENE	7.	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	7.	U
108-88-3	TOLUENE	7.	U
108-90-7	CHLOROBENZENE	7.	U
100-41-4	ETHYLBENZENE	7.	U
100-42-5	STYRENE	7.	U
1330-20-7	XYLENE (TOTAL)	7.	U

PS 5/4/88

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ES760

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 5. (g/mL) G Lab File ID: ES760V

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 28. Date Analyzed: 4/ 7/88

Column: (pack/cap) PACK Dilution Factor: 1.00

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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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ES761

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 5. (g/mL) G Lab File ID: ES761V

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 25. Date Analyzed: 4/ 7/88

Column: (pack/cap) PACK Dilution Factor: 1.00

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	7.	~~B~~ U
67-64-1	ACETONE	24.	~~B~~ U
75-15-0	CARBON DISULFIDE	7.	U
75-35-4	1,1-DICHLOROETHENE	7.	U
75-34-3	1,1-DICHLOROETHANE	7.	U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	7.	U
67-66-3	CHLOROFORM	7.	U
107-06-2	1,2-DICHLOROETHANE	7.	U
78-93-3	2-BUTANONE	13 ~~4~~.	~~B~~ JU
71-55-6	1,1,1-TRICHLOROETHANE	7.	U
56-23-5	CARBON TETRACHLORIDE	7.	U
108-05-4	VINYL ACETATE	13.	U
75-27-4	BROMODICHLOROMETHANE	7.	U
78-87-5	1,2-DICHLOROPROPANE	7.	U
10061-01-5	CIS-1,3-DICHLOROPROPENE	7.	U
79-01-6	TRICHLOROETHENE	7.	U
124-48-1	DIBROMOCHLOROMETHANE	7.	U
79-00-5	1,1,2-TRICHLOROETHANE	7.	U
71-43-2	BENZENE	7.	U
10061-02-6	TRANS-1,3-DICHLOROPROPENE	7.	U
75-25-2	BROMOFORM	7.	U
108-10-1	4-METHYL-2-PENTANONE	13.	U
591-78-6	2-HEXANONE	13.	U
127-18-4	TETRACHLOROETHENE	7.	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	7.	U
108-88-3	TOLUENE	7.	U
108-90-7	CHLOROBENZENE	7.	U
100-41-4	ETHYLBENZENE	7.	U
100-42-5	STYRENE	7.	U
1330-20-7	XYLENE (TOTAL)	7.	U

BS 5/16/88

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ES761

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 5. (g/mL) G Lab File ID: ES761V

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 25. Date Analyzed: 4/ 7/88

Column: (pack/cap) PACK Dilution Factor: 1.00

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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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ES758DL

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 31. (g/mL) G Lab File ID: 30701

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 5. dec. 0. Date Extracted: 4/ 5/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 4/28/88

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	680.	U
111-44-4	bis(2-Chloroethyl)ether	680.	U
95-57-8	2-Chlorophenol	680.	U
541-73-1	1,3-Dichlorobenzene	680.	U
106-46-7	1,4-Dichlorobenzene	680.	U
100-51-6	Benzyl alcohol	680.	U
95-50-1	1,2-Dichlorobenzene	680.	U
95-48-7	2-Methylphenol	680.	U
108-60-1	bis(2-Chloroisopropyl)ether	680.	U
106-44-5	4-Methylphenol	680.	U
621-64-7	N-Nitroso-di-n-propylamine	680.	U
67-72-1	Hexachloroethane	680.	U
98-95-3	Nitrobenzene	680.	U
78-59-1	Isophorone	680.	U
88-75-5	2-Nitrophenol	680.	U
105-67-9	2,4-Dimethylphenol	680.	U
65-85-0	Benzoic acid	460.	J
111-91-1	bis(2-Chloroethoxy)methane	680.	U
120-83-2	2,4-Dichlorophenol	680.	U
120-82-1	1,2,4-Trichlorobenzene	680.	U
91-20-3	Naphthalene	680.	U
106-47-8	4-Chloroaniline	680.	U
87-68-3	Hexachlorobutadiene	680.	U
59-50-7	4-Chloro-3-methylphenol	680.	U
91-57-6	2-Methylnaphthalene	680.	U
77-47-4	Hexachlorocyclopentadiene	680.	U
88-06-2	2,4,6-Trichlorophenol	680.	U
95-95-4	2,4,5-Trichlorophenol	3400.	U
91-58-7	2-Chloronaphthalene	680.	U
88-74-4	2-Nitroaniline	3400.	U
131-11-3	Dimethylphthalate	680.	U
208-96-8	Acenaphthylene	680.	U
606-20-2	2,6-Dinitrotoluene	680.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ES758DL

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 31. (g/mL) G Lab File ID: 30701

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 5. dec. 0. Date Extracted: 4/ 5/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 4/28/88

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3400.	U
83-32-9	Acenaphthene	680.	U
51-28-5	2,4-Dinitrophenol	3400.	U
100-02-7	4-Nitrophenol	3400.	U
132-64-9	Dibenzofuran	680.	U
121-14-2	2,4-Dinitrotoluene	680.	U
84-66-2	Diethylphthalate	680.	U
7005-72-3	4-Chlorophenyl-phenylether	680.	U
86-73-7	Fluorene	680.	U
100-01-6	4-Nitroaniline	3400.	U
534-52-1	4,6-Dinitro-2-methylphenol	3400.	U
86-30-6	N-Nitrosodiphenylamine (1)	680.	U
101-55-3	4-Bromophenyl-phenylether	680.	U
118-74-1	Hexachlorobenzene	680.	U
87-86-5	Pentachlorophenol	3400.	U
85-01-8	Phenanthrene	680.	U
120-12-7	Anthracene	680.	U
84-74-2	Di-n-butylphthalate	680.	U
206-44-0	Fluoranthene	680.	U
129-00-0	Pyrene	680.	U
85-68-7	Butylbenzylphthalate	10000.	
91-94-1	3,3'-Dichlorobenzidine	1400.	U
56-55-3	Benzo(a)anthracene	680.	U
218-01-9	Chrysene	680.	U
117-81-7	bis(2-Ethylhexyl)phthalate	460.	J
117-84-0	Di-n-octylphthalate	680.	U
205-99-2	Benzo(b)fluoranthene	680.	U
207-08-9	Benzo(k)fluoranthene	680.	U
50-32-8	Benzo(a)pyrene	680.	U
193-39-5	Indeno(1,2,3-cd)pyrene	680.	U
53-70-3	Dibenz(a,h)anthracene	680.	U
191-24-2	Benzo(g,h,i)perylene	680.	U

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ES758DL

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 31. (g/mL) G Lab File ID: 30701

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 5. dec. 0. Date Extracted: 4/ 5/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 4/28/88

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 2.00

Number TICs found: 20

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	7.23	9000.	BJ
2.	- -	UNKNOWN HYDROCARBON	7.70	800.	BJ
3.	- -	UNKNOWN HYDROCARBON	7.87	1000.	BJ
4.	- -	UNKNOWN AROMATIC	9.12	1000.	BJ
5.	- -	UNKNOWN	9.78	1000.	J
6.	- -	UNKNOWN	10.80	1000.	J
7.	- -	UNKNOWN ORGANIC ACID	15.23	500.	J
8.	85-44-9	Phthalic anhydride	16.27	10000.	J
9.	- -	UNKNOWN	19.88	1000.	J
10.	- -	UNKNOWN	22.05	400.	J
11.	- -	UNKNOWN	23.12	600.	J
12.	- -	UNKNOWN AMINE	23.40	600.	J
13.	- -	UNKNOWN ORGANIC ACID	23.93	2000.	J
14.	- -	UNKNOWN	25.23	1000.	J
15.	- -	UNKNOWN	25.43	2000.	J
16.	- -	UNKNOWN ORGANIC ACID	25.93	400.	J
17.	- -	UNKNOWN	26.17	300.	J
18.	- -	UNKNOWN	26.42	400.	J
19.	- -	UNKNOWN	28.90	1000.	J
20.	- -	UNKNOWN	36.18	400.	J
21.					
22.					
23.					
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ES759

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 30. (g/mL) G Lab File ID: 30706

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 35. dec. 0. Date Extracted: 4/ 5/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 4/28/88

GPC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	510.	U
111-44-4	bis(2-Chloroethyl)ether	510.	U
95-57-8	2-Chlorophenol	510.	U
541-73-1	1,3-Dichlorobenzene	510.	U
106-46-7	1,4-Dichlorobenzene	510.	U
100-51-6	Benzyl alcohol	510.	U
95-50-1	1,2-Dichlorobenzene	510.	U
95-48-7	2-Methylphenol	510.	U
108-60-1	bis(2-Chloroisopropyl)ether	510.	U
106-44-5	4-Methylphenol	510.	U
621-64-7	N-Nitroso-di-n-propylamine	510.	U
67-72-1	Hexachloroethane	510.	U
98-95-3	Nitrobenzene	510.	U
78-59-1	Isophorone	510.	U
88-75-5	2-Nitrophenol	510.	U
105-67-9	2,4-Dimethylphenol	510.	U
65-85-0	Benzoic acid	2600.	U
111-91-1	bis(2-Chloroethoxy)methane	510.	U
120-83-2	2,4-Dichlorophenol	510.	U
120-82-1	1,2,4-Trichlorobenzene	510.	U
91-20-3	Naphthalene	510.	U
106-47-8	4-Chloroaniline	510.	U
87-68-3	Hexachlorobutadiene	510.	U
59-50-7	4-Chloro-3-methylphenol	510.	U
91-57-6	2-Methylnaphthalene	450.	J
77-47-4	Hexachlorocyclopentadiene	510.	U
88-06-2	2,4,6-Trichlorophenol	510.	U
95-95-4	2,4,5-Trichlorophenol	2600.	U
91-58-7	2-Chloronaphthalene	510.	U
88-74-4	2-Nitroaniline	2600.	U
131-11-3	Dimethylphthalate	510.	U
208-96-8	Acenaphthylene	510.	U
606-20-2	2,6-Dinitrotoluene	510.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ES759

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 30. (g/mL) G Lab File ID: 30706

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 35. dec. 0. Date Extracted: 4/ 5/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 4/28/88

GPC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2600.	U
83-32-9	Acenaphthene	510.	U
51-28-5	2,4-Dinitrophenol	2600.	U
100-02-7	4-Nitrophenol	2600.	U
132-64-9	Dibenzofuran	510.	U
121-14-2	2,4-Dinitrotoluene	510.	U
84-66-2	Diethylphthalate	510.	U
7005-72-3	4-Chlorophenyl-phenylether	510.	U
86-73-7	Fluorene	510.	U
100-01-6	4-Nitroaniline	2600.	U
534-52-1	4,6-Dinitro-2-methylphenol	2600.	U
86-30-6	N-Nitrosodiphenylamine (1)	510.	U
101-55-3	4-Bromophenyl-phenylether	510.	U
118-74-1	Hexachlorobenzene	510.	U
87-86-5	Pentachlorophenol	2600.	U
85-01-8	Phenanthrene	600.	
120-12-7	Anthracene	170.	J
84-74-2	Di-n-butylphthalate	510.	U
206-44-0	Fluoranthene	540.	
129-00-0	Pyrene	550.	
85-68-7	Butylbenzylphthalate	510.	U
91-94-1	3,3'-Dichlorobenzidine	1000.	U
56-55-3	Benzo(a)anthracene	320.	J
218-01-9	Chrysene	450.	J
117-81-7	bis(2-Ethylhexyl)phthalate	510.	U
117-84-0	Di-n-octylphthalate	510.	U
205-99-2	Benzo(b)fluoranthene	360.	J
207-08-9	Benzo(k)fluoranthene	270.	J
50-32-8	Benzo(a)pyrene	310.	J
193-39-5	Indeno(1,2,3-cd)pyrene	200.	J
53-70-3	Dibenz(a,h)anthracene	510.	U
191-24-2	Benzo(g,h,i)perylene	230.	J

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ES759

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 30. (g/mL) G Lab File ID: 30706

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 35. dec. 0. Date Extracted: 4/ 5/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 4/28/88

GPC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 1.00

Number TICs found: 20

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	7.30	10000.	BJ
2.	- -	UNKNOWN HYDROCARBON	7.72	1000.	BJ
3.	- -	UNKNOWN HYDROCARBON	7.88	1000.	BJ
4.	- -	UNKNOWN AROMATIC	9.10	2000.	BJ
5.	- -	UNKNOWN	9.62	2000.	J
6.	- -	UNKNOWN	10.80	900.	J
7.	- -	UNKNOWN POLYNUCLEAR AROMATIC	16.15	500.	J
8.	- -	UNKNOWN AROMATIC	18.00	600.	J
9.	- -	UNKNOWN	20.32	700.	J
10.	- -	UNKNOWN	20.50	700.	J
11.	- -	UNKNOWN HYDROCARBON	21.08	1000.	J
12.	1610-18-0	Prometon (ACN)	21.80	9000.	J
13.	- -	UNKNOWN	23.12	800.	J
14.	- -	UNKNOWN HYDROCARBON	23.27	500.	J
15.	15972-60-8	Alachlor (ACN)	23.67	1000.	J
16.	- -	UNKNOWN HYDROCARBON	26.28	300.	J
17.	- -	UNKNOWN HYDROCARBON	28.92	400.	J
18.	- -	UNKNOWN HYDROCARBON	32.48	700.	J
19.	- -	UNKNOWN POLYNUCLEAR AROMATIC	33.13	400.	J
20.	- -	UNKNOWN	39.85	400.	J
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ES760

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 30. (g/mL) G Lab File ID: 30708

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 28. dec. 0. Date Extracted: 4/ 5/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 4/28/88

GPC Cleanup: (Y/N) N pH: 5.7 Dilution Factor: 1.00

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	460.	U
541-73-1	1,3-Dichlorobenzene	460.	U
106-46-7	1,4-Dichlorobenzene	460.	U
100-51-6	Benzyl alcohol	460.	U
95-50-1	1,2-Dichlorobenzene	460.	U
95-48-7	2-Methylphenol	460.	U
108-60-1	bis(2-Chloroisopropyl)ether	460.	U
106-44-5	4-Methylphenol	460.	U
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
65-85-0	Benzoic acid	2300.	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	460.	U
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	2300.	U
91-58-7	2-Chloronaphthalene	460.	U
88-74-4	2-Nitroaniline	2300.	U
131-11-3	Dimethylphthalate	460.	U
208-96-8	Acenaphthylene	460.	U
606-20-2	2,6-Dinitrotoluene	460.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ES760

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 30. (g/mL) G Lab File ID: 30708

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 28. dec. 0. Date Extracted: 4/ 5/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 4/28/88

GPC Cleanup: (Y/N) N pH: 5.7 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2300.	U
83-32-9	Acenaphthene	460.	U
51-28-5	2,4-Dinitrophenol	2300.	U
100-02-7	4-Nitrophenol	2300.	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	2300.	U
534-52-1	4,6-Dinitro-2-methylphenol	2300.	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	2300.	U
85-01-8	Phenanthrene	440.	J
120-12-7	Anthracene	180.	J
84-74-2	Di-n-butylphthalate	460.	U
206-44-0	Fluoranthene	450.	J
129-00-0	Pyrene	360.	J
85-68-7	Butylbenzylphthalate	460.	U
91-94-1	3,3'-Dichlorobenzidine	930.	U
56-55-3	Benzo(a)anthracene	160.	J
218-01-9	Chrysene	330.	J
117-81-7	bis(2-Ethylhexyl)phthalate	520.	
117-84-0	Di-n-octylphthalate	460.	U
205-99-2	Benzo(b)fluoranthene	210.	J
207-08-9	Benzo(k)fluoranthene	140.	J
50-32-8	Benzo(a)pyrene	140.	J
193-39-5	Indeno(1,2,3-cd)pyrene	460.	U
53-70-3	Dibenz(a,h)anthracene	460.	U
191-24-2	Benzo(g,h,i)perylene	460.	U

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ES760

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 30. (g/mL) G Lab File ID: 30708

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 28. dec. 0. Date Extracted: 4/ 5/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 4/28/88

GPC Cleanup: (Y/N) N pH: 5.7 Dilution Factor: 1.00

Number TICs found: 20

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	7.30	9000.	BJ
2.	- -	UNKNOWN HYDROCARBON	7.70	1000.	BJ
3.	- -	UNKNOWN HYDROCARBON	7.88	1000.	BJ
4.	- -	UNKNOWN AROMATIC	9.10	2000.	BJ
5.	- -	UNKNOWN	9.62	2000.	J
6.	- -	UNKNOWN	10.52	3000.	J
7.	- -	UNKNOWN HYDROCARBON	18.00	1000.	J
8.	- -	UNKNOWN HYDROCARBON	18.52	700.	J
9.	- -	UNKNOWN HYDROCARBON	19.82	900.	J
10.	- -	UNKNOWN HYDROCARBON	20.42	2000.	J
11.	- -	UNKNOWN HYDROCARBON	21.03	1000.	J
12.	- -	UNKNOWN HYDROCARBON	21.12	4000.	J
13.	- -	UNKNOWN HYDROCARBON	22.20	1000.	J
14.	- -	UNKNOWN HYDROCARBON	22.32	3000.	J
15.	- -	UNKNOWN HYDROCARBON	22.65	1000.	J
16.	- -	UNKNOWN	23.30	2000.	J
17.	- -	UNKNOWN HYDROCARBON	24.33	2000.	J
18.	- -	UNKNOWN HYDROCARBON	25.33	1000.	J
19.	- -	UNKNOWN	32.50	1000.	J
20.	- -	UNKNOWN HYDROCARBON	35.18	1000.	J
21.					
22.					
23.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ES761

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 31. (g/mL) G Lab File ID: 30702

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 25. dec. 0. Date Extracted: 4/ 5/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 4/28/88

GPC Cleanup: (Y/N) N pH: 5.5 Dilution Factor: 1.00

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
100-51-6	Benzyl alcohol	430.	U
95-50-1	1,2-Dichlorobenzene	430.	U
95-48-7	2-Methylphenol	430.	U
108-60-1	bis(2-Chloroisopropyl)ether	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
65-85-0	Benzoic acid	2200.	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	2200.	U
91-58-7	2-Chloronaphthalene	430.	U
88-74-4	2-Nitroaniline	2200.	U
131-11-3	Dimethylphthalate	430.	U
208-96-8	Acenaphthylene	430.	U
606-20-2	2,6-Dinitrotoluene	430.	U

296

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ES761

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 31. (g/mL) G Lab File ID: 30702

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 25. dec. 0. Date Extracted: 4/ 5/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 4/28/88

GPC Cleanup: (Y/N) N pH: 5.5 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2200.	U
83-32-9	Acenaphthene	430.	U
51-28-5	2,4-Dinitrophenol	2200.	U
100-02-7	4-Nitrophenol	2200.	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	2200.	U
534-52-1	4,6-Dinitro-2-methylphenol	2200.	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	2200.	U
85-01-8	Phenanthrene	430.	U
120-12-7	Anthracene	430.	U
84-74-2	Di-n-butylphthalate	430.	U
206-44-0	Fluoranthene	430.	U
129-00-0	Pyrene	430.	U
85-68-7	Butylbenzylphthalate	430.	U
91-94-1	3,3'-Dichlorobenzidine	860.	U
56-55-3	Benzo(a)anthracene	430.	U
218-01-9	Chrysene	430.	U
117-81-7	bis(2-Ethylhexyl)phthalate	430.	U
117-84-0	Di-n-octylphthalate	430.	U
205-99-2	Benzo(b)fluoranthene	430.	U
207-08-9	Benzo(k)fluoranthene	430.	U
50-32-8	Benzo(a)pyrene	430.	U
193-39-5	Indeno(1,2,3-cd)pyrene	430.	U
53-70-3	Dibenz(a,h)anthracene	430.	U
191-24-2	Benzo(g,h,i)perylene	430.	U

(1) - Cannot be separated from diphenylamine

297

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ES761

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 31. (g/mL) G Lab File ID: 30702

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 25. dec. 0. Date Extracted: 4/ 5/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 4/28/88

GPC Cleanup: (Y/N) N pH: 5.5 Dilution Factor: 1.00

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	7.25	3000.	BJ
2.	- -	UNKNOWN HYDROCARBON	7.70	200.	BJ
3.	- -	UNKNOWN HYDROCARBON	7.87	300.	BJ
4.	- -	UNKNOWN AROMATIC	9.10	400.	BJ
5.	- -	UNKNOWN	9.58	600.	J
6.	- -	UNKNOWN	9.78	200.	J
7.	- -	UNKNOWN	10.52	900.	J
8.	- -	UNKNOWN	10.78	200.	J
9.	- -	UNKNOWN	39.20	200.	J
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ES758

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 32. (g/mL) G Lab File ID: ECHP85

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 5. dec. 0. Date Extracted: 4/ 5/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 4/23/88

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.3	U
319-85-7	beta-BHC	8.3	U
319-86-8	delta-BHC	8.3	U
58-89-9	gamma-BHC	8.3	U
76-44-8	Heptachlor	8.3	U
309-00-2	Aldrin	7.7 ~~8.3~~	J
1024-57-3	Heptachlor epoxide	8.3	U
959-98-8	Endosulfan I	8.3	U
60-57-1	Dieldrin	16.	J
72-55-9	4,4'-DDE	17.	U
72-20-8	Endrin	17.	U
33213-65-9	Endosulfan II	17.	U
72-54-8	4,4'-DDD	17.	U
1031-07-8	Endosulfan sulfate	17.	U
50-29-3	4,4'-DDT	17.	U
72-43-5	Methoxychlor	83.	U
53494-70-5	Endrin ketone	17.	U
5103-71-9	alpha-Chlordane	83.	U
5103-74-2	gamma-Chlordane	83.	U
8001-35-2	Toxaphene	170.	U
12674-11-2	Aroclor-1016	83.	U
11104-28-2	Aroclor-1221	83.	U
11141-16-5	Aroclor-1232	83.	U
53469-21-9	Aroclor-1242	83.	U
12672-29-6	Aroclor-1248	83.	U
11097-69-1	Aroclor-1254	170.	U
11096-82-5	Aroclor-1260	170.	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ES759

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 30. (g/mL) G Lab File ID: ECHP88

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 35. dec. 0. Date Extracted: 4/ 5/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 4/23/88

GPC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	13.	U
319-85-7	beta-BHC	13.	U
319-86-8	delta-BHC	13.	U
58-89-9	gamma-BHC	13.	U
76-44-8	Heptachlor	13.	U
309-00-2	Aldrin	35.	
1024-57-3	Heptachlor epoxide	41.	
959-98-8	Endosulfan I	13.	U
60-57-1	Dieldrin	57.	
72-55-9	4,4'-DDE	25.	U
72-20-8	Endrin	25.	U
33213-65-9	Endosulfan II	26.	
72-54-8	4,4'-DDD	25.	U
1031-07-8	Endosulfan sulfate	25.	U
50-29-3	4,4'-DDT	25.	U
72-43-5	Methoxychlor	130.	U
53494-70-5	Endrin ketone	25.	U
5103-71-9	alpha-Chlordane	130.	U
5103-74-2	gamma-Chlordane	130.	U
8001-35-2	Toxaphene	250.	U
12674-11-2	Aroclor-1016	130.	U
11104-28-2	Aroclor-1221	130.	U
11141-16-5	Aroclor-1232	130.	U
53469-21-9	Aroclor-1242	130.	U
12672-29-6	Aroclor-1248	130.	U
11097-69-1	Aroclor-1254	250.	U
11096-82-5	Aroclor-1260	250.	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ES760

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 30. (g/mL) G Lab File ID: ECHP91

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 28. dec. 0. Date Extracted: 4/ 5/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 4/23/88

GPC Cleanup: (Y/N) N pH: 5.7 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	12.	U
319-85-7	beta-BHC	12.	U
319-86-8	delta-BHC	12.	U
58-89-9	gamma-BHC	12.	U
76-44-8	Heptachlor	12.	U
309-00-2	Aldrin	12.	U
1024-57-3	Heptachlor epoxide	13.	
959-98-8	Endosulfan I	12.	U
60-57-1	Dieldrin	23.	U
72-55-9	4,4'-DDE	23.	U
72-20-8	Endrin	23.	U
33213-65-9	Endosulfan II	23.	U
72-54-8	4,4'-DDD	23.	U
1031-07-8	Endosulfan sulfate	23.	U
50-29-3	4,4'-DDT	23.	U
72-43-5	Methoxychlor	120.	U
53494-70-5	Endrin ketone	23.	U
5103-71-9	alpha-Chlordane	120.	U
5103-74-2	gamma-Chlordane	120.	U
8001-35-2	Toxaphene	230.	U
12674-11-2	Aroclor-1016	120.	U
11104-28-2	Aroclor-1221	120.	U
11141-16-5	Aroclor-1232	120.	U
53469-21-9	Aroclor-1242	120.	U
12672-29-6	Aroclor-1248	120.	U
11097-69-1	Aroclor-1254	230.	U
11096-82-5	Aroclor-1260	230.	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ES761

Lab Name: IEA Contract: 68-W8-0045

Lab Code: IEA Case No.: 9255 SAS No.: SDG No.: ES758

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

Sample wt/vol: 31. (g/mL) G Lab File ID: ECHP92

Level: (low/med) LOW Date Received: 3/30/88

% Moisture: not dec. 25. dec. 0. Date Extracted: 4/ 5/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 4/23/88

GPC Cleanup: (Y/N) N pH: 5.5 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	11.	U
319-85-7	beta-BHC	11.	U
319-86-8	delta-BHC	11.	U
58-89-9	gamma-BHC	11.	U
76-44-8	Heptachlor	11.	U
309-00-2	Aldrin	11.	U
1024-57-3	Heptachlor epoxide	11.	U
959-98-8	Endosulfan I	11.	U
60-57-1	Dieldrin	22.	U
72-55-9	4,4'-DDE	22.	U
72-20-8	Endrin	22.	U
33213-65-9	Endosulfan II	22.	U
72-54-8	4,4'-DDD	22.	U
1031-07-8	Endosulfan sulfate	22.	U
50-29-3	4,4'-DDT	22.	U
72-43-5	Methoxychlor	110.	U
53494-70-5	Endrin ketone	22.	U
5103-71-9	alpha-Chlordane	110.	U
5103-74-2	gamma-Chlordane	110.	U
8001-35-2	Toxaphene	220.	U
12674-11-2	Aroclor-1016	110.	U
11104-28-2	Aroclor-1221	110.	U
11141-16-5	Aroclor-1232	110.	U
53469-21-9	Aroclor-1242	110.	U
12672-29-6	Aroclor-1248	110.	U
11097-69-1	Aroclor-1254	220.	U
11096-82-5	Aroclor-1260	220.	U

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ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

CRL Receipt Date 5/4/88 FIT Receipt Date 5/16/88 Review Completed 5/22/88

TO: Kurzeja
FROM: Zena Gold-Kaufman
SUBJECT: Amoco Oil Company
PAN: IL0059 (1 hour charged for review) Case # 9255

Sample Description

Organics (VOA, ABN, Pest/PCB)		Inorganics (Metals, Cyanide)	
# 4	Low Soil	# 4	Low Soil
	Low Water		Low Water
	Drinking Water		Drinking Water
	Other		Other

Project Data Status _____ Completed!!

Incomplete, awaiting les well organics, low soil metals

FIT Data Review Findings:
Cyanide detected MES 204. Chromium, Cobalt and Lead detected in all ~~see~~ samples. See memo concerning usability of Chromium and Zinc data.

Check Data Sheets for Transcription Errors

✓ Compounds were detected in sample(s); see enclosed sheet.

Book No. 7 Page No. 284 Date Sampled 3/29/88

0759:2

recycled paper

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MEMORANDUM

DATE:

TO: File

FROM: Zena Gold-Kaufman ZGK

SUBJECT: Amoco OIL Company

PAN # IL

Below is a list of elements whose spike recoveries were biased low:

Element	Spike Recovery
Chromium	66%
Zinc	31%
Selenium	50%

The low recoveries rates biases the data low, thereby raising the detection limits and estimating any reported values. This means that in the worst case the true concentration is greater than the reported values and the data is an underestimation.

It is the opinion of this reviewer that the data is acceptable for HRS scoring.

0759:2

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CHICAGO, ILLINOIS

CHEMICAL EVALUATION FORM

SITE NAME: Amoco Oil Comp. PAN # IL0059 DATE: 5/22/88
CASE # 9255 UNITS - mg/Kg REVIEWER: ZGK

COMPOUND	CRDL** RAS SOIL mg/Kg (ppm)	CRDL** RAS WATER ug/L (ppb)	CRDL** SAS DRINKING WATER ug/L (ppb)	MES 202	MES 203	MES 204	MES 205			
ALUMINUM *	40	200	100	322	8760	5640	12000			
ANTIMONY	2.4	60	5	—	[7.1]	—	—			
ARSENIC	2	10	5	—	7.7S	3.8	6.7			
BARIUM *	40	200	50	[12]	101	149	179			
BERYLLIUM	1	5	5	—	[0.86]	[0.82]	[1.1]			
CADMIUM	1	5	0.5	—	1.8	—	—			
CALCIUM *	1000	5000	1000	2480	7240	2690	2320			
CHROMIUM J	2	10	10	98J	16 J	15 NJ	16J			
COBALT	10	50	10	[4.4]	[8.0]	[8.4]	[7.3]			
COPPER	5	25	10	[5.6]	108	14	16			
IRON * J	20	100	100	8840*J	14600 J	11000*J	16200*J			
LEAD	1	5	2	66	351 J	84	51			
MAGNESIUM *	1000	5000	1000	[221]	1600	[1160]	2050			
MANGANESE J*	3	15	10	66*J	554*J	1180*J	513*J			
MERCURY	0.008	0.2	0.2	—	—	—	—			
NICKEL	8	40	20	—	19	16	16			
POTASSIUM *	1000	5000	2000	—	—	[1140]	—			
SELENIUM UJ	1	5	2	—	—	—	—			
SILVER	2	10	5	—	—	—	—			
SODIUM *	1000	5000	1000	[44]	[102]	[50]J	[62]			
THALLIUM	2	10	2	—	—	—	—			
VANADIUM	10	50	10	[7.9]	18	23	26			
ZINC * J	4	20	20	396 J N	160J	99J	84J			
CYANIDE	2	10	10	—	—	1.40	—			

* NOT GENERALLY USED FOR HRS SCORING
** SPECIFIC DETECTION LIMITS ARE HIGHLY MATRIX DEPENDENT. THE DETECTION LIMITS LISTED HEREIN ARE PROVIDED FOR GUIDANCE AND MAY NOT ALWAYS BE ACHIEVABLE.

[illegible] QA/QC AS PROVIDED IN THE ATTACHED DATA SHEETS.

I. REPORTING UNITS

A. Organics

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - ug/kg or ppb (parts per billion)

B. Metals

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - mg/kg or ppm (parts per million)

II. DEFINITION OF FOOTNOTES TO ANALYTICAL DATA

A. Organics

FOOTNOTE	DEFINITION	INTERPRETATION
U	Indicates compound was analyzed for but not detected.	Compound was not detected.
J	Indicates an estimated value.	Compound value may be semi-quantitative.
UJ	Quantitation limit is estimated due to a Quality Control (QC) protocol.	Compound was not detected.
C	This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides >10 ng/ul in the final extract shall be confirmed by GC/MS.	Compound was confirmed by mass spectroscop
B	This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.	Compound value may be semi-quantitative if it is <5x the blank concentration (<10x the blank concentrations for common lab artifacts: phthalates, methylene chloride acetone, toluene, 2-butanone).
E	This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods.	Compound value may be semi-quantitative.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.	Alerts data user to a possible change in the CRQL.
A	This flag indicates that a TIC is a suspected aldol-condensation product.	Alerts data user of a lab artifact.
R	Results are unusable due to a major violation of QC protocol.	Compound value is not usable.

B. Metals

FOOTNOTE OLD	FOOTNOTE NEW	DEFINITION	INTERPRETATION
E	E	Estimated or not reported due to inteference. See laboratory narrative.	Compound or element was not detected or value may be semi-quantitative.
S	S	Analysis by Method of Standard Additions.	Value may be quantitative.
N	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.
*	*	Duplicate value outside QC protocols which indicates a possible matrix problem.	Value may be semi-quantitative.
+	+	Correlation coefficient for standard additions is less than 0.995. See review and laboratory narrative.	Data value may be biased.
B	B	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semi-quantitative.
J		DL is estimated because of a QC protocol. DL is possibly above or below CRDL.	Compound or element was not detected.
J		Value is above CRDL and is an estimated value because of a QC Protocol.	Value may be semi-quantitative.
U	U	Compound was analyzed for but not detected.	Compound was not detected.
	N	Duplicate injection precision not met.	Value may be semi-quantitative.
	W	Post digestion spike for furnance AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance.	Value may be semi-quantitative.

C. Other Symbols Used

A Value not available due to insufficient data.
R Value not calculated since chemical is not a carcinogen.
( ) Estimated value.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

recd 6/16/88
23 pages

DATE: 5-11-88

SUBJECT: Review of Region V CLP Data
Received for Review on 5-4-88

FROM: Curtis Ross, Director (5SCRL)
Central Regional Laboratory
Jay Thurber

TO: Data User: FIT

We have reviewed the data for the following case(s).

SITE NAME: Amoco Oil Co. (IL) SMO Case No. 9255

EPA Data Set No. SF5013 No. of Samples: 4 D.U./Activity Numbers Y905/CD122

CRL No. 88FK16562-565

SMO Traffic No. MES202 - MES205

CLP Laboratory: Versar Hrs. Required for Review: 3

Following are our findings:

This review covers 4 soil samples analyzed for metals and cyanide. The chromium (66%) and zinc (31%) spike recoveries are biased low and these elements are estimated (J). The selenium spike recovery has been recalculated using the value obtained which is between CRDL and IDL. The originally reported value on Form V reported undetected below CRDL. The recalculated Se spike is 50% and biased low. The detection limit can be raised and Se is estimated (UJ). The duplicate results for Fe and Mn are outside limits and these elements are estimated in the samples (J). Aluminum duplicate result is less than ±35RPD set for soils and is acceptable. The '*' flag has been removed. Sodium was found in the preparation blank at [43] µg/l and at a comparable level in MES204. This sample is estimated for sodium (J).

( ) Data are acceptable for use.
(X) Data are acceptable for use with qualifications referenced above. See Data Qualifier sheets and Calibration Outlier forms for flags and additional comments.
( ) Data are preliminary - pending verification by Contractor Laboratory. See Case Summary above.
( ) Data are unacceptable.

cont'd next sheet.

Amoco Oil Co. (Ill.)

pg 2 of 2

DATA QUALIFIERS

Contractor: Versar

Case 9255

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

Lead is estimated in sample MES203 because the correlation coefficient was out of control.

R. P. Ricci
5.11.88

Reviewed by:

Phone: 886-1974

CENTRAL REGIONAL LABORATORY SAMPLE DATA REPORT
ORGANICS/INORGANICS

APR 13 1988

SUPERFUND 5013

LOG IN DATE: 4/19/88
DUE DATE: 6/7/88

THIS FORM IS TO BE USED FOR SAMPLES SENT TO CONTRACT ONLY

CASE NUMBER/SAS No. 9255 SITE NAME Amoco Oil Co. LABORATORY IEA/Versar DATE SHIPPED 3/29/88

SUPERFUND DU NUMBER 4905 EPA RPM or OSC (S.M.S.)/(CES) _____ CERCLIS NUMBER ILD000610703 PAGE 1 OF 2

ACTIVITY NUMBER C72100

CRL LOG NUMBER	ORGANIC TRAFFIC REPORT NUMBER or SAS Packing List No.	INORGANIC TRAFFIC REPORT NUMBER or SAS Packing List No.	WATER OR LIQUIDS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN UG/L TOX17574	VOLATILE ORGANIC ANALYSIS ORGANIC SCAN UG/L TOX17564	WATER POLYCHLORINATED BIPHENYLS UG/L PES17144	WATER CHLORINATED PESTICIDES UG/L PES17134	TOTAL METALS IN WATER UG/L MET111	WATER CYANIDE UG/L MIN74919	NITRATE-NITRITE MG/L MIN7284	AMMONIA MG/L MIN7294	RESIDUE, FILTERABLE TDS MG/L MIN7382	RESIDUE, NON-FILT TSS MG/L MIN7372			SEDIMENTS or SOILS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN MG/KG TOX215722	VOLATILE ORGANIC ANALYSIS ORGANIC SCAN MG/KG TOX215422	SEDIMENTS POLYCHLORINATED BIPHENYLS MG/KG PES211422	SEDIMENT CHLORINATED PESTICIDES MG/KG 211322	TOTAL METALS MG/KG MET413	CYANIDE MG/KG MIN44930	EP TOXICITY METALS MG/KG	AMMONIA MG/KG MIN42925				
88FK-165162	ES758	MES202	✓	✓	✓										✓	✓	✓	✓	✓	✓						
88FK-165163	ES759	MES203	✓	✓	✓										✓	✓	✓	✓	✓	✓						
88FK-165164	ES760	MES204	✓	✓	✓										✓	✓	✓	✓	✓	✓						
88FK-165165	ES761	MES205	✓	✓	✓										✓	✓	✓	✓	✓	✓						
			CC	TK	DAP																					

USEPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 ALEXANDRIA, VA 22313
703/557-2490 FTS-557-2490

CASE NO: 9255 | SAS NO: (IF APPLICABLE)

INORGANIC TRAFFIC REPORT

(FOR CLP USE ONLY)

TYPE OF ACTIVITY (CIRCLE ONE) ①
SUPERFUND—PA SI ESI RIFS RD RA ER NPLD O&M OTHER _____
NON-SUPERFUND—_____ PROGRAM

SITE NAME: Amoco Oil Co
CITY, STATE: Belleville, IL
SITE SPILL ID:

REGION NO: V
SAMPLING COMPANY ②: FIT
SAMPLER: (NAME) KATHERINE NESWICK

SHIP TO: ③ Versar Inc
6850 Versar Center
PO Box 1549
Springfield VA 22151
ATTN: Janet Beckman

SAMPLING DATE: ④
BEGIN: 3/29/88 END: 3/29/88

DATE SHIPPED: 3/29/88 CARRIER: F ⑤
AIRBILL NO: 3940245606

SAMPLE DESCRIPTION ⑥
(ENTER IN BOX A)
1. SURFACE WATER
2. GROUND WATER
3. LEACHATE
4. SOIL
5. SEDIMENT
6. OIL (SAS)
7. WASTE (SAS)

DOUBLE VOLUME REQUIRED FOR MATRIX SPIKE/DUPLICATE AQUEOUS SAMPLE

SHIP MEDIUM AND HIGH CONCENTRATION SAMPLES IN PAINT CANS

SEE REVERSE FOR ADDITIONAL INSTRUCTIONS

CLP SAMPLE NUMBER (FROM LABELS)	Ⓐ SAMPLE DESCRIPTION (FROM BOX 1) 1 2 3 4 5 6 7	Ⓑ CONCENTRATION L = LOW M = MED H = HIGH (SAS)	Ⓒ RAS ANALYSIS: TOTAL METALS	CYANIDE	DISSOLVED METALS	HIGH ONLY (SAS): SULFIDE	pH	CONDUCTIVITY	OXIDANTS	Ⓓ SPECIAL HANDLING	Ⓔ STATION LOCATION
MES 202	4	L	✓	✓							Soil 1
MES 203	4	L	✓	✓							Soil 2
MES 204	4	L	✓	✓							Soil 3
MES 205	4	L	✓	✓							Soil 4
~~MEW 249~~	~~1~~	~~L~~	~~✓~~	~~✓~~							~~SW 1~~
~~MEW 250~~	~~1~~	~~L~~	~~✓~~	~~✓~~							~~BLANK~~

EPA Form 2075-6 (8-87)
WHITE — SMO COPY PINK — CLIENT COPY WHITE — LAB COPY FOR RETURN TO SMO YELLOW — LAB COPY

QC EXCEPTION SUMMARY REPORT

CASE # 9255
DATA SET # SF 5013
LAB Q.C. # 190
DATE: 5.11.83

SITE Amoco Oil Co. (Illinois)
LAB Versar
REVIEWED BY R Piccione

MATRIX: _____
CONC. : _____
MATRIX: soil
CONC. : low

WATER SAMPLE SPK. _____
WATER SAMPLE DUP. _____
SOIL SAMPLE SPK. MES 20C
SOIL SAMPLE DUP. MES 20C

	OVERALL CASE QC									MATRIX SPECIFIC QC						SAMPLE SPECIFIC QC		FIELD QC			REGIONAL QC			OTHER/ COMMENTS
	Holding Time	Cal Blanks	Init Calver	Contin Calver	Prep Blk AQ	Prep Blk SOL	ICS %R	LCS %R AQ	LCS %R SOL	Sol Dup RPD	Sol Spk %R	AQ Dup RPD	AQ Spk %R	Ser Dilu AQ	Ser Dilu SOL	GFAA Dup	GFAA Spike	Blank	Dup RPD	Spike %R	Blind Blank	Blind Spike %R	Split Sample RPD	
aluminum										<35														
antimony																								
arsenic																								
barium																								
beryllium																								
cadmium																								
calcium																								
chromium											66													
cobalt																								
copper																								
iron										46														
lead																	>4xSA							
magnesium																								
manganese										40														
mercury																								
nickel																								
potassium																								
selenium																	50							
silver																								
sodium																								
strontium																								
thallium																								
tin																								
titanium																								
vanadium																								
zinc											31													
cyanide																								

U.S. ENVIRONMENTAL PROTECTION AGENCY
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 - ALEXANDRIA, VA 22313
703/557-2490 FTS.8-557-2490

DATE: 4/25/88

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

Q.C. REPORT: 190
LAB NAME: VERSAR, INC.
CASE NO.: 44255
SOW NO.: 785
PROJECT NO.: 5027.0000

SAMPLE NUMBERS

EPA NO.	LAB ID NO.	EPA NO.	LAB ID NO.
MES 202	47261	MES 203	47262
MES 204	47263	MES 205	47264

COMMENTS: THE INITIAL PREPARATION BLANK WAS CONTAMINATED WITH CHROMIUM. ALL SAMPLES (MES 203, MES 204, MES 205) WHOSE CHROMIUM LEVEL WAS LESS THAN TEN TIMES THE BLANK LEVEL WERE REDIGESTED AND REANALYZED. THE ORIGINAL ANALYSIS OF THESE SAMPLES WAS USED TO DETERMINE WHICH SAMPLES NEEDED TO BE REDIGESTED. ALL RESULTS FOR THESE SAMPLES ARE TAKEN FROM THE REANAYSIS. THE SOLID LCS FOR MAY IS INCLUDED IN THIS DATA PACKAGE.

ICP INTERELEMENT AND BACKGROUND CORRECTION APPLIED? YES.
CORRECTIONS APPLIED BEFORE GENERATION OF RAW DATA.

FOOTNOTES:

NR - NOT REQUIRED BY CONTRACT AT THIS TIME

FORM I:

VALUE - IF THE RESULT IS A VALUE GREATER THAN OR EQUAL TO THE INSTRUMENT DETECTION LIMIT BUT LESS THAN THE CONTRACT REQUIRED DETECTION LIMIT, REPORT THE VALUE IN BRACKETS (I.E., [10]). INDICATE THE ANALYTICAL METHOD USED WITH P (FOR ICP/FLAME AA) OR F (FOR FURNACE).

U - INDICATES ELEMENT WAS ANALYZED FOR BUT NOT DETECTED. REPORT WITH THE DETECTION LIMIT VALUE (E.G., 10U).

E - INDICATES A VALUE ESTIMATED OR NOT REPORTED DUE TO THE PRESENCE OF INTERFERENCE. EXPLANATORY NOTE INCLUDED ON COVER PAGE.

S - INDICATES VALUE DETERMINED BY METHOD OF STANDARD ADDITION

N - INDICATES SPIKE SAMPLE RECOVERY IS NOT WITHIN CONTROL LIMITS.

* - INDICATES DUPLICATE ANALYSIS IS NOT WITHIN CONTROL LIMITS.

+ - INDICATES THE CORRELATION COEFFICIENT FOR METHOD OF STANDARD ADDITION IS LESS THAN 0.995

DF - DILUTION FACTOR

SD - SAMPLE USED FOR ICP SERIAL DILUTION

M - INDICATES DUPLICATE INJECTION RESULTS EXCEED CONTROL LIMITS

INDICATE METHOD USED: P FOR ICP; A FOR FLAME AA; AND F FOR FURNACE.

FORM I

U.S. EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 - ALEXANDRIA, VA. 22313
703/557-2490 FTS: 8-557-2490

SAMPLE NO.
MES 202

DATE 4/25/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 9255

SOW NO. 785

LAB RECEIPT DATE 3/30/88

LAB SAMPLE ID. NO. 47261

QC REPORT NO. 190

PROJECT-TASK 5027.0000

BATCH 190

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH

MATRIX: WATER SOIL X WIPE

MG/KG DRY WEIGHT

1.	ALUMINUM	322. *	P	13.	MAGNESIUM	[221.]	P
2.	ANTIMONY	5.5 U	P	14.	MANGANESE J	66. *	P
3.	ARSENIC	2.5 U	F	15.	MERCURY	0.12 U	
4.	BARIUM	[12.]	P	16.	NICKEL	4.0 U	P
5.	BERYLLIUM	0.25 U J	P	17.	POTASSIUM	427. U	P
6.	CADMIUM	1.0 U	P	18.	SELENIUM UJ	1.2 UN	F
7.	CALCIUM	2480.	P	19.	SILVER	0.50 U	P
8.	CHROMIUM J	98. N	P	20.	SODIUM	[44.]	P
9.	COBALT	[4.4]	P	21.	THALLIUM	2.5 U	F
10.	COPPER	[5.6]	P	22.	VANADIUM	[7.9]	P
11.	IRON J	8840. *	P	23.	ZINC J	396. N	P
12.	LEAD	66.	F		PERCENT SOLIDS	79.6	
	CYANIDE	0.63 U					

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - BROWN; TEXTURE - FINE; DF OF 10 FOR PB; SD;

LAB SUPERVISOR Janet Beckman

JANET BECKMAN

FORM I

U.S. EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 - ALEXANDRIA, VA. 22313
703/557-2490 FTS: 8-557-2490

SAMPLE NO.
MES 203

DATE 4/25/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 9255

SOW NO. 785

LAB RECEIPT DATE 3/30/88

LAB SAMPLE ID. NO. 47262

QC REPORT NO. 190

PROJECT-TASK 5027.0000

BATCH 190

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH

MATRIX: WATER SOIL X WIPE

MG/KG DRY WEIGHT

1.	ALUMINUM	3760. *	P	13.	MAGNESIUM	1600.	P
2.	ANTIMONY	[7.1]	P	14.	MANGANESE J	554. *	P
3.	ARSENIC	7.7	F S	15.	MERCURY	0.15 U	
4.	BARIUM	101.	P	16.	NICKEL	19.	P
5.	BERYLLIUM	[0.86]	P	17.	POTASSIUM	501. U	P
6.	CADMIUM	1.8	P	18.	SELENIUM UJ	7.4 UN	F
7.	CALCIUM	7240.	P	19.	SILVER	0.59 U	P
8.	CHROMIUM J	16. N	P	20.	SODIUM	[102.]	P
9.	COBALT	[8.0]	P	21.	THALLIUM	2.9 U	F
10.	COPPER	108.	P	22.	VANADIUM	18.	P
11.	IRON J	14600. *	P	23.	ZINC J	160. N	P
12.	LEAD J	351.	F S+		PERCENT SOLIDS	67.9	
	CYANIDE	0.74 U					

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - BROWN; TEXTURE - FINE; DF OF 60 FOR PB; DF OF 5 FOR SE;

LAB SUPERVISOR Janet Beckman
JANET BECKMAN

FORM I

U.S. EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 - ALEXANDRIA, VA. 22313
703/557-2490 FTS: 8-557-2490

SAMPLE NO.
MES 204

DATE 4/25/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 9255

SOW NO. 785

LAB RECEIPT DATE 3/30/88

LAB SAMPLE ID. NO. 47263

QC REPORT NO. 190

PROJECT-TASK 5027.0000

BATCH 190

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH

MATRIX: WATER SOIL X WIPE

MG/KG DRY WEIGHT

1.	ALUMINUM	5640. *	P	13.	MAGNESIUM	[1160.]	P
2.	ANTIMONY	5.9 U	P	14.	MANGANESE J	1180. *	P
3.	ARSENIC	3.8	F	15.	MERCURY	0.13 U	
4.	BARIUM	149.	P	16.	NICKEL	16.	P
5.	BERYLLIUM	[0.82]	P	17.	POTASSIUM	[1140.]	P
6.	CADMIUM	1.1 U	P	18.	SELENIUM UJ	6.7 UN	F
7.	CALCIUM	2590.	P	19.	SILVER	0.54 U	P
8.	CHROMIUM J	15. N	P	20.	SODIUM J	[50.]	P
9.	COBALT	[8.4]	P	21.	THALLIUM	2.7 U	F
10.	COPPER	14.	P	22.	VANADIUM	23.	P
11.	IRON J	11000. *	P	23.	ZINC J	99. N	P
12.	LEAD	84.	F		PERCENT SOLIDS	74.2	
	CYANIDE	1.40					

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - BROWN; TEXTURE - FINE; DF OF 10 FOR PB; DF OF 5 FOR SE;

LAB SUPERVISOR Janet Beckman
JANET BECKMAN

FORM I

U.S. EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 - ALEXANDRIA, VA. 22313
703/557-2490 FTS: 8-557-2490

SAMPLE NO.
MES 205

DATE 4/25/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 9255

SDW NO. 785

LAB RECEIPT DATE 3/30/88

LAB SAMPLE ID. NO. 47264

QC REPORT NO. 190

PROJECT-TASK 5027.0000

BATCH 190

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH

MATRIX: WATER SOIL X WIPE

MG/KG DRY WEIGHT

1.	ALUMINUM	12000. *	P	13.	MAGNESIUM	2050.	P
2.	ANTIMONY	5.8 U	P	14.	MANGANESE J	513. *	P
3.	ARSENIC	6.7	F	15.	MERCURY	0.13 U	
4.	BARIUM	179.	P	16.	NICKEL	16.	P
5.	BERYLLIUM	[1.1]	P	17.	POTASSIUM	450. U	P
6.	CADMIUM	1.0 U	P	18.	SELENIUM UJ	13. UN	F
7.	CALCIUM	2320.	P	19.	SILVER	0.53 U	P
8.	CHROMIUM J	16. N	P	20.	SODIUM	[62.]	P
9.	COBALT	[7.3]	P	21.	THALLIUM	2.6 U	F
10.	COPPER	16.	P	22.	VANADIUM	26.	P
11.	IRON J	16200. *	P	23.	ZINC J	84. N	P
12.	LEAD	51.	F		PERCENT SOLIDS	75.6	
	CYANIDE	0.66 U					

FP 5-11-88

FOOTNOTES: SEE COVER PAGE.

COMMENTS: COLOR - BROWN; TEXTURE - FINE; DF OF 10 FOR PB; DF OF 10 FOR SE;

LAB SUPERVISOR Janet Beckman

JANET BECKMAN

FORM III A
BLANKS

Q.C. REPORT: 190

LAB NAME: VERSAR, INC.
DATE: 4/25/88

CASE NO.: 9255
UNITS: UG/L

MATRIX HOH

COMPOUND	INITIAL CALIB BLANK VALUE	CONTINUING CALIB BLANK VALUE 1	2	3	4	PREP BLANK (1) MATRIX 1: SOIL	MATRIX 2: SOIL
1. ALUMINUM	8.0U	8.0U	8.0U	8.0U		[4.5]	1.6U
2. ANTIMONY	22.U	22.U	22.U	22.U		4.4U	4.4U
3. ARSENIC	3.0U	3.0U	3.0U	3.0U		0.60U	0.60U
4. BARIUM	2.0U	2.0U	2.0U	2.0U		0.40U	0.40U
5. BERYLLIUM	1.0U	1.0U	1.0U	1.0U		0.20U	0.20U
6. CADMIUM	4.0U	4.0U	4.0U	4.0U		0.80U	0.80U
7. CALCIUM	14.U	14.U	14.U	14.U		[12.]	2.8U
8. CHROMIUM	7.0U	7.0U	7.0U	7.0U		2.2	1.4U
9. COBALT	5.0U	5.0U	5.0U	5.0U		1.0U	1.0U
10. COPPER	5.0U	5.0U	[24.]	[8.9]		[1.5]	1.0U
11. IRON	13.U	13.U	13.U	13.U		2.6U	2.6U
12. LEAD	2.0U	2.0U	2.0U	2.0U		0.40U	0.40U
13. MAGNESIUM	10.U	10.U	10.U	10.U		[5.8]	2.0U
14. MANGANESE	2.0U	2.0U	2.0U	2.0U		0.40U	0.40U
15. MERCURY	0.2U	0.2U	---	---		0.10U	---
16. NICKEL	16.U	16.U	16.U	16.U		3.2U	3.2U
17. POTASSIUM	1700.U	1700.U	1700.U	1700.U		[427.]	340.U
18. SELENIUM	2.0U	2.0U	2.0U	2.0U		0.40U	0.40U
19. SILVER	2.0U	2.0U	2.0U	2.0U		0.40U	0.40U
20. SODIUM	25.U	[46.]	[31.]	[32.]		[23.]	5.0U
21. THALLIUM	2.0U	2.0U	---	---		0.40U	0.40U
22. VANADIUM	4.0U	4.0U	4.0U	4.0U		[1.2]	0.80U
23. ZINC	6.0U	6.0U	6.0U	6.0U		1.2U	1.2U
24. CYANIDE	10.U	10.U	---	---		2.5U	---

(1) REPORTING UNITS: AQUEOUS, UG/L; SOLID, MG/KG

FORM III B
BLANKS

Q.C. REPORT: 190

LAB NAME: VERSAR, INC.
DATE: 4/25/88

CASE NO.: 9255
UNITS: UG/L

COMPOUND	MATRIX HOH INITIAL CALIB BLANK VALUE	CONTINUING CALIB BLANK VALUE 1	2	3	4	PREP BLANK (1) MATRIX 1: SOIL	MATRIX 2:
1. ALUMINUM	8.0U	8.0U	8.0U	8.0U		1.6U	
2. ANTIMONY	22.U	22.U	22.U	22.U		4.4U	
3. ARSENIC	3.0U	3.0U	---	---		---	
4. BARIUM	2.0U	2.0U	2.0U	2.0U		0.40U	
5. BERYLLIUM	1.0U	1.0U	1.0U	[1.2]		0.20U	
6. CADMIUM	4.0U	4.0U	4.0U	4.0U		0.80U	
7. CALCIUM	14.U	14.U	14.U	14.U		2.8U	
8. CHROMIUM	7.0U	7.0U	7.0U	7.0U		1.4U	
9. COBALT	5.0U	5.0U	5.0U	5.0U		1.0U	
10. COPPER	5.0U	5.0U	5.0U	5.0U		1.0U	
11. IRON	13.U	13.U	[18.]	13.U		[2.7]	
12. LEAD	2.0U	2.0U	---	---		---	
13. MAGNESIUM	10.U	10.U	10.U	10.U		2.0U	
14. MANGANESE	2.0U	2.0U	2.0U	2.0U		0.40U	
15. MERCURY	---	---	---	---		---	
16. NICKEL	16.U	16.U	16.U	16.U		3.2U	
17. POTASSIUM	1700.U	1700.U	1700.U	1700.U		340.U	
18. SELENIUM	2.0U	2.0U	2.0U	---		---	
19. SILVER	2.0U	2.0U	2.0U	2.0U		0.40U	
20. SODIUM	[90.]	25.U	25.U	[57.]		[8.5]	
21. THALLIUM	2.0U	2.0U	---	---		---	
22. VANADIUM	4.0U	4.0U	4.0U	4.0U		0.80U	
23. ZINC	6.0U	6.0U	6.0U	6.0U		1.2U	
24. CYANIDE	---	---	---	---		---	

(1) REPORTING UNITS: AQUEOUS, UG/L; SOLID, MG/KG

FORM III C
BLANKS

Q.C. REPORT: 190

LAB NAME: VERSAR, INC.
DATE: 4/25/88

CASE NO.: 9255
UNITS: UG/L

MATRIX HOH

COMPOUND	INITIAL CALIB BLANK VALUE	CONTINUING CALIB BLANK VALUE 1	2	3	4	PREP BLANK (1) MATRIX 1:	MATRIX 2:
1. ALUMINUM							
2. ANTIMONY							
3. ARSENIC							
4. BARIUM							
5. BERYLLIUM							
6. CADMIUM							
7. CALCIUM							
8. CHROMIUM							
9. COBALT							
10. COPPER							
11. IRON							
12. LEAD		2.0U	2.0U	2.0U			
13. MAGNESIUM							
14. MANGANESE							
15. MERCURY							
16. NICKEL							
17. POTASSIUM							
18. SELENIUM		2.0U	2.0U				
19. SILVER							
20. SODIUM							
21. THALLIUM							
22. VANADIUM							
23. ZINC							
24. CYANIDE							

(1) REPORTING UNITS: AQUEOUS, UG/L; SOLID, MG/KG

FORM V A
SPIKE SAMPLE RECOVERY

Q.C. REPORT: 190

LAB NAME: VERSAR, INC.
DATE: 4/25/88

MATRIX: L. SOIL

CASE NO.: 9255
EPA SAMPLE NO.: MES 202
LAB SAMPLE ID NO.: 47261
UNITS: MG/KG

COMPOUND	CONTROL LIMIT %R	SPIKED SAMPLE RESULT (SSR)	SAMPLE RESULT (SR)	SPIKED ADDED (SA)	%R (1)	
1. ALUMINUM	75-125	NR	---	---	---	
2. ANTIMONY	75-125	107.	5.5U	126.	85.	
3. ARSENIC	75-125	9.2	2.5U	10.	92.	
4. BARIUM	75-125	534.	[12.]	502.	106.	
5. BERYLLIUM	75-125	12.	0.25U	12.	100.	
6. CADMIUM	75-125	12.	1.0U	12.	100.	
7. CALCIUM	75-125	NR	---	---	---	
8. CHROMIUM	75-125	131.	98.	50.	66.	N
9. COBALT	75-125	128.	[4.4]	126.	98.	
10. COPPER	75-125	67.	[5.6]	63.	97.	
11. IRON	75-125	NR	---	---	---	
12. LEAD	75-125	55.	66.	12.	0.0	
13. MAGNESIUM	75-125	NR	---	---	---	
14. MANGANESE	75-125	186.	66.	126.	95.	
15. MERCURY	75-125	0.71	0.12U	0.63	113.	
16. NICKEL	75-125	134.	4.0U	126.	106.	
17. POTASSIUM	75-125	NR	---	---	---	
18. SELENIUM	75-125	~~1.2U~~ 1.24	1.2U	2.5	~~0.0~~ 50	N
19. SILVER	75-125	11.	0.50U	12.	92.	
20. SODIUM	75-125	NR	---	---	---	
21. THALLIUM	75-125	11.	2.5U	12.	92.	
22. VANADIUM	75-125	136.	[7.9]	126.	102.	
23. ZINC	75-125	435.	396.	126.	31.	N
24. CYANIDE	75-125	5.78	0.63U	5.24	93.	

(1) %R = [(SSR-SR)/SA] X 100 "N"- OUT OF CONTROL "NR" - NOT REQUIRED

FORM VI A
DUPLICATES

Q.C. REPORT: 190

LAB NAME: VERSAR, INC.
DATE: 4/25/88

MATRIX: L. SOIL

CASE NO.: 9255
EPA SAMPLE NO.: MES 202
LAB SAMPLE ID NO.: 47261
UNITS: MG/KG

COMPOUND	CONTROL LIMITS (1)	SAMPLE(S)	DUPLICATE(D)	RPD(2)	
1. ALUMINUM		322.	261.	21.	*
2. ANTIMONY		5.5U	5.5U	NC	
3. ARSENIC		2.5U	2.5U	NC	
4. BARIUM		[12.]	[9.2]	NC	
5. BERYLLIUM		0.25U	0.25U	NC	
6. CADMIUM		1.0U	[1.1]	NC	
7. CALCIUM	+/- 1260.	2480.	2110.	16.	
8. CHROMIUM		98.	86.	13.	
9. COBALT		[4.4]	[3.5]	NC	
10. COPPER		[5.6]	[4.2]	NC	
11. IRON		8840.	5510.	46.	*
12. LEAD		66.	69. J St	4.4	
13. MAGNESIUM		[221.]	[181.]	NC	
14. MANGANESE		66.	44.	40.	*
15. MERCURY		0.12U	0.12U	NC	
16. NICKEL		4.0U	4.0U	NC	
17. POTASSIUM		427.U	427.U	NC	
18. SELENIUM		1.2U	1.2U	NC	
19. SILVER		0.50U	0.50U	NC	
20. SODIUM		[44.]	[34.]	NC	
21. THALLIUM		2.5U	2.5U	NC	
22. VANADIUM		[7.9]	[5.9]	NC	
23. ZINC		396.	373.	6.0	
24. CYANIDE		0.63U	0.63U	NC	

(1) TO BE ADDED AT A LATER DATE (2) RPD = [(S-D)/((S+D)/2)]X100
NC - NON CALCULABLE RPD DUE TO VALUE(S) LESS THAN CRDL * - OUT OF CONTROL

FORM VII A Q.C. REPORT: 190

INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

LAB NAME: VERSAR, INC. CASE NO.: 9255 DATE: 4/25/88

LCS NO.:LCSA OR LCSFA (SOIL)

COMPOUND	CRDL	IDL (UG/L) ICP/AA ID# 9	IDL (UG/L) Furnace ID# 8	LABORATORY CONTROL SAMPLE UNITS: UG/L TRUE	FOUND	%R
1. ALUMINUM	200.	8.		1980.	1980.	100.
2. ANTIMONY (1)	60.	22.		1010.	953.	94.
3. ARSENIC	10.		3.	47.0	52.	111.
4. BARIUM	200.	2.		1980.	2070.	104.
5. BERYLLIUM	5.	1.		481.	498.	104.
6. CADMIUM	5.	4.		489.	483.	99.
7. CALCIUM	5000.	14.		49800.	46600.	94.
8. CHROMIUM	10.	7.		506.	498.	98.
9. COBALT	50.	5.		474.	491.	104.
10. COPPER	25.	5.		542.	539.	99.
11. IRON	100.	13.		1990.	1970.	99.
12. LEAD	5.		1.	97.9	94.	96.
13. MAGNESIUM	5000.	10.		25000.	22600.	90.
14. MANGANESE	15.	2.		513.	513.	100.
15. MERCURY	0.2					
16. NICKEL	40.	16.		496.	495.	100.
17. POTASSIUM	5000.	1700.		50200.	45100.	90.
18. SELENIUM	5.					
19. SILVER	10.	2.		509.	445.	87.
20. SODIUM	5000.	25.		50700.	50600.	100.
21. THALLIUM	10.					
22. VANADIUM	50.	4.		511.	511.	100.
23. ZINC	20.	6.		3100.	2850.	92.
24. CYANIDE	10.	NR	NR	1000.	911.	91.

NR - NOT REQUIRED ID# 9- JARRELL ASH ICAP 61 ID# 8- PERKIN ELMER 3030

(1) LCS NO. IS LCS B

FORM VII B Q.C. REPORT: 190

INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

LAB NAME: VERSAR, INC. CASE NO.: 9255 DATE: 4/25/88

LCS NO.: LCSF A (SOIL)

COMPOUND	CRDL	IDL (UG/L) ICP/AA ID#	IDL (UG/L) Furnace ID# 6	LABORATORY CONTROL SAMPLE UNITS: UG/L TRUE	FOUND	%R
1. ALUMINUM	200.					
2. ANTIMONY	60.					
3. ARSENIC	10.					
4. BARIUM	200.					
5. BERYLLIUM	5.					
6. CADMIUM	5.					
7. CALCIUM	5000.					
8. CHROMIUM	10.					
9. COBALT	50.					
10. COPPER	25.					
11. IRON	100.					
12. LEAD	5.					
13. MAGNESIUM	5000.					
14. MANGANESE	15.					
15. MERCURY	0.2					
16. NICKEL	40.					
17. POTASSIUM	5000.					
18. SELENIUM	5.		2.	104.	104.	100.
19. SILVER	10.					
20. SODIUM	5000.					
21. THALLIUM	10.					
22. VANADIUM	50.					
23. ZINC	20.					
24. CYANIDE	10.					

NR - NOT REQUIRED ID# 6- PERKIN ELMER 5000

FORM VII C

Q.C. REPORT: 190

INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

LAB NAME: VERSAR, INC.

CASE NO.: 9255

DATE: 4/25/88

LCS NO.: LCSF B (SOIL)

COMPOUND	CRDL	IDL (UG/L) ICP/AA ID#	IDL (UG/L) Furnace ID# 10	LABORATORY CONTROL SAMPLE UNITS: UG/L TRUE	FOUND	%R
1. ALUMINUM	200.					
2. ANTIMONY	60.					
3. ARSENIC	10.					
4. BARIUM	200.					
5. BERYLLIUM	5.					
6. CADMIUM	5.					
7. CALCIUM	5000.					
8. CHROMIUM	10.					
9. COBALT	50.					
10. COPPER	25.					
11. IRON	100.					
12. LEAD	5.					
13. MAGNESIUM	5000.					
14. MANGANESE	15.					
15. MERCURY	0.2					
16. NICKEL	40.					
17. POTASSIUM	5000.					
18. SELENIUM	5.					
19. SILVER	10.					
20. SODIUM	5000.					
21. THALLIUM	10.		2.	97.3	103.	106.
22. VANADIUM	50.					
23. ZINC	20.					
24. CYANIDE	10.					

NR - NOT REQUIRED

ID# 10- PERKIN ELMER 3030

FORM VII D

Q.C. REPORT: 190

INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

LAB NAME: VERSAR, INC. CASE NO.: 9255 DATE: 4/25/88

LCS NO.: ICV #5 (SOIL)

COMPOUND	CRDL	IDL (UG/L) ICP/AA ID#	IDL (UG/L) Furnace ID# 7	LABORATORY CONTROL SAMPLE UNITS: UG/L TRUE	FOUND	%R
1. ALUMINUM	200.					
2. ANTIMONY	60.					
3. ARSENIC	10.					
4. BARIUM	200.					
5. BERYLLIUM	5.					
6. CADMIUM	5.					
7. CALCIUM	5000.					
8. CHROMIUM	10.					
9. COBALT	50.					
10. COPPER	25.					
11. IRON	100.					
12. LEAD	5.					
13. MAGNESIUM	5000.					
14. MANGANESE	15.					
15. MERCURY	0.2		0.2	5.2	5.4	104.
16. NICKEL	40.					
17. POTASSIUM	5000.					
18. SELENIUM	5.					
19. SILVER	10.					
20. SODIUM	5000.					
21. THALLIUM	10.					
22. VANADIUM	50.					
23. ZINC	20.					
24. CYANIDE	10.					

NR - NOT REQUIRED ID# 7- MAS 50

FORM VII E Q.C. REPORT: 190

INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

LAB NAME: VERSAR, INC. CASE NO.: 9255 DATE: 4/25/88

LCS NO.: LCSS

(SOLID LCS # 0287)

COMPOUND	CRDL	IDL (UG/L) ICP/AA ID# 4	IDL (UG/L) Furnace ID# 8	LABORATORY CONTROL SAMPLE UNITS: MG/KG TRUE	FOUND	%R
1. ALUMINUM	200.	8.		325.	306.	94.
2. ANTIMONY	60.	22.		211.	233.	110.
3. ARSENIC	10.		3.	917.	961.	105.
4. BARIUM	200.	2.		[4.8]	[5.9]	123.
5. BERYLLIUM	5.	1.		19.4	18.	93.
6. CADMIUM	5.	4.		45.4	48.	106.
7. CALCIUM	5000.	14.		196200.	185000.	94.
8. CHROMIUM	10.	7.		99.6	102.	102.
9. COBALT	50.	5.		144.	145.	101.
10. COPPER	25.	5.		6910.	6800.	98.
11. IRON	100.	13.		22430.	23800.	106.
12. LEAD	75.	15.				
13. MAGNESIUM	5000.	10.		118100.	108000.	91.
14. MANGANESE	15.	2.		208.	202.	97.
15. MERCURY	0.	0.				
16. NICKEL	40.	16.		60.9	58.	95.
17. POTASSIUM	5000.	1700.		[50.]	1700.U	0.0
18. SELENIUM	500.	63.				
19. SILVER	10.	2.		22.2	19.	86.
20. SODIUM	5000.	25.		[50.]	[55.]	110.
21. THALLIUM	50.	74.				
22. VANADIUM	50.	4.		65.8	68.	103.
23. ZINC	20.	6.		187.	184.	98.
24. CYANIDE	10.					

NR - NOT REQUIRED ID# 9- JARRELL ASH ICAP 61 ID# 5- PERKIN ELMER 5000

FORM VII F Q.C. REPORT: 190

INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

LAB NAME: VERSAR, INC. CASE NO.: 9255 DATE: 4/25/88

LCS NO.: SOLID LCS (# 0287)

COMPOUND	CRDL	IDL (UG/L) ICP/AA ID#	IDL (UG/L) Furnace ID# 6	LABORATORY CONTROL SAMPLE UNITS: UG/L TRUE	FOUND	%R
1. ALUMINUM	200.					
2. ANTIMONY	60.					
3. ARSENIC	10.					
4. BARIUM	200.					
5. BERYLLIUM	5.					
6. CADMIUM	5.					
7. CALCIUM	5000.					
8. CHROMIUM	10.					
9. COBALT	50.					
10. COPPER	25.					
11. IRON	100.					
12. LEAD	5.					
13. MAGNESIUM	5000.					
14. MANGANESE	15.					
15. MERCURY	0.2					
16. NICKEL	40.					
17. POTASSIUM	5000.					
18. SELENIUM	5.		2.	39.2	33.	84.
19. SILVER	10.					
20. SODIUM	5000.					
21. THALLIUM	10.					
22. VANADIUM	50.					
23. ZINC	20.					
24. CYANIDE	10.					

NR - NOT REQUIRED ID# 6- PERKIN ELMER 5000

FORM VII G

Q.C. REPORT: 190

INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

LAB NAME: VERSAR, INC.

CASE NO.: 9255

DATE: 4/25/88

LCS NO.: SOLID LCS (# 0287)

COMPOUND	CRDL	IDL (UG/L) ICP/AA ID#	IDL (UG/L) Furnace ID# 3	LABORATORY CONTROL SAMPLE UNITS: UG/L TRUE	FOUND	%R
1. ALUMINUM	200.					
2. ANTIMONY	60.					
3. ARSENIC	10.					
4. BARIUM	200.					
5. BERYLLIUM	5.					
6. CADMIUM	5.					
7. CALCIUM	5000.					
8. CHROMIUM	10.					
9. COBALT	50.					
10. COPPER	25.					
11. IRON	100.					
12. LEAD	5.		2.	236.	221.	94.
13. MAGNESIUM	5000.					
14. MANGANESE	15.					
15. MERCURY	0.2					
16. NICKEL	40.					
17. POTASSIUM	5000.					
18. SELENIUM	5.					
19. SILVER	10.					
20. SODIUM	5000.					
21. THALLIUM	10.		2.	39.	30.	77.
22. VANADIUM	50.					
23. ZINC	20.					
24. CYANIDE	10.					

NR - NOT REQUIRED

ID# 3- PERKIN ELMER 2380

FORM VII H Q.C. REPORT: 190

INSTRUMENT DETECTION LIMITS AND LABORATORY CONTROL SAMPLE

LAB NAME: VERSAR, INC. CASE NO.: 9255 DATE: 4/25/88

LCS NO.: SOLID LCS (# 0287)

COMPOUND	CRDL	IDL (UG/L) ICP/AA ID#	IDL (UG/L) Furnace ID# 7	LABORATORY CONTROL SAMPLE UNITS: UG/L TRUE	FOUND	%R
1. ALUMINUM	200.					
2. ANTIMONY	60.					
3. ARSENIC	10.					
4. BARIUM	200.					
5. BERYLLIUM	5.					
6. CADMIUM	5.					
7. CALCIUM	5000.					
8. CHROMIUM	10.					
9. COBALT	50.					
10. COPPER	25.					
11. IRON	100.					
12. LEAD	5.					
13. MAGNESIUM	5000.					
14. MANGANESE	15.					
15. MERCURY	0.2		0.2	12.7	11.	87.
16. NICKEL	40.					
17. POTASSIUM	5000.					
18. SELENIUM	5.					
19. SILVER	10.					
20. SODIUM	5000.					
21. THALLIUM	10.					
22. VANADIUM	50.					
23. ZINC	20.					
24. CYANIDE	10.					

NR - NOT REQUIRED ID# 7- PERKIN ELMER MAS 50A

ecology and environment, inc.

111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

CRL Receipt Date 4/20 FIT Receipt Date 5/4 Review Completed 5/10/88

TO: Bob Kuzeja

FROM: ~~Loretta Guzdziol~~ Zena Gold - Kaufman

SUBJECT: AMOCO OIL COMPANY

PAN: ILO595 (1 hour charged for review) Case # 9255/3758E

Sample Description

Organics (VOA, ABN, Pest/PCB)		Inorganics (Metals, Cyanide)	
# _____	Low Soil	# _____	Low Soil
_____	Low Water	_____	Low Water
_____	Drinking Water	6	Drinking Water
_____	Other	_____	Other

Project Data Status _____ Completed!!

_____ Incomplete, awaiting 4 organic and inorganic soils.

FIT Data Review Findings:
Toluence detected : ES766 1 µg/l
ES 767 3 µg/l

Check Data Sheets for Transcription Errors

X Compounds were detected in sample(s); see enclosed sheet.

Book No. 7 Page No. 285 Date Sampled 3/30/88

recycled paper

9255/3755

AMOCO OIL COMPANY

COMPOUND	SAMPLE	Detection Limits	ES 766	767
chloromethane				
bromomethane				
vinyl chloride				
chloroethane				
methylene chloride				
acetone				
carbon disulfide				
1,1-dichloroethene				
1,1-dichloroethane				
trans-1,2,-dichloroethene				
chloroform				
1,2-dichloroethane				
2-butanone				
1,1,1-trichloroethane				
carbon tetrachloride				
vinyl acetate				
bromodichloromethane				
1,1,2,2-tetrachloroethane				
1,2-dichloropropane				
trans-1,3-dichloropropene				
trichloroethene				
dibromochloromethane				
1,1,2-trichloroethane				
benzene				
cis-1,3-dichloropropene				
2-chloroethylvinylether				
bromoform				
2-hexanone				
4-methyl-2-pentanone				
tetrachloroethene				
toluene		1	1	3
chlorobenzene				
ethylbenzene				
styrene				
total xylenes				
N-nitrosodimethylamine				
phenol				
aniline				
bis(2-chloroethyl)ether				
2-chlorophenol				
1,3-dichlorobenzene				
1,4-dichlorobenzene				
benzyl alcohol				
1,2-dichlorobenzene				
2-methylphenol				
bis(2-chloroisopropyl)ether				
4-methylphenol				
N-nitroso-di-n-propylamine				
hexachloroethane				
nitrobenzene				
isophrone				
2-nitrophenol				
2,4-dimethylphenol				
benzoic acid				
bis(2-chloroethoxy)methane				
2,4-dichlorophenol				
1,2,4-trichlorobenzene				
naphthalene				
4-chloroaniline				
hexachlorobutadiene				
4-chloro-3-methylphenol				
2-methylnaphthalene				
hexachlorocyclopentadiene				
2,4,6-trichlorophenol				
2,4,5-trichlorophenol				
2-chloronaphthalene				
2-nitroaniline				
dimethyl phthalate				
acenaphthylene				
3-nitroaniline				
acenaphthene				
2,4-dinitrophenol				
4-nitrophenol				
dibenzofuran				
2,4-dinitrotoluene				
2,6-dinitrotoluene				
diethylphthalate				
4-chlorophenyl-phenylether				
fluorene				
4-nitroaniline				
4,6-dinitro-2-methylphenol				
N-nitrosodiphenylamine				
4-bromophenyl-phenylether				
hexachlorobenzene				

STATE _____ SITE _____ TDD _____ PAGE 1 OF 2, SET # ____

AMOCO OIL COMPANY/
9255/3755

COMPOUND	DETECTION LIMITS									
pentachlorophenol										
phenanthrene										
anthracene										
di-n-butylphthalate										
fluoranthene										
benzidine										
pyrene										
butylbenzylphthalate										
3,3'-dichlorobenzidine										
benzo(a)anthracene										
bis(2-ethylhexyl)phthalate										
chrysene										
di-n-octylphthalate										
benzo(bik)fluoranthene										
benzo(a)pyrene										
indeno(1,2,3-cd)pyrene										
dibenzo(a,h)anthracene										
benzo(g,h,i)perylene										
alpha-BHC										
beta-BHC										
delta-BHC										
gamma-BHC(lindane)										
heptachlor										
aldrin										
heptachlor epoxide										
endosulfan I										
dieldrin										
4,4'-DDE										
endrin										
endosulfan II										
4,4'-DDD										
endrin aldehyde										
endosulfan sulfate										
4,4'-DDT										
methoxychlor										
endrin ketone										
chlordane										
toxaphene										
Aroclor-1016										
Aroclor-1221										
Aroclor-1232										
Aroclor-1242										
Aroclor-1248										
Aroclor-1254										
Aroclor-1260										
METALS										
aluminum										
antimony										
arsenic										
barium										
beryllium										
cadmium										
calcium										
chromium										
cobalt										
copper										
iron										
lead										
magnesium										
manganese										
mercury										
nickel										
potassium										
selenium										
silver										
sodium										
thallium										
tin										
vanadium										
zinc										
cyanide CHECK IF ANALYZED ( )										
TENTATIVELY IDENTIFIED ORGANICS										

STATE _____ SITE _____ TOD _____ PAGE 2 OF 2, SET 8

... ADDITIONAL QA/QC IS PROVIDED IN THE ATTACHED DATA SHEETS.

. REPORTING UNITS

A. Organics

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - ug/kg or ppb (parts per billion)

B. Metals

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - mg/kg or ppm (parts per million)

II. DEFINITION OF FOOTNOTES TO ANALYTICAL DATA

A. Organics

OOTNOTE	DEFINITION	INTERPRETATION
U	Indicates compound was analyzed for but not detected.	Compound was not detected.
J	Indicates an estimated value.	Compound value may be semi-quantitative.
UJ	Quantitation limit is estimated due to a Quality Control (QC) protocol.	Compound was not detected.
C	This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides >10 ng/ul in the final extract shall be confirmed by GC/MS.	Compound was confirmed by mass spectroscop
B	This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.	Compound value may be semi-quantitative if it is <5x the blank concentration (<10x the blank concentrations for common lab artifacts: phthalates, methylene chloride acetone, toluene, 2-butanone).
E	This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods.	Compound value may be semi-quantitative.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.	Alerts data user to a possible change in the CRQL.
A	This flag indicates that a TIC is a suspected aldol-condensation product.	Alerts data user of a lab artifact.
R	Results are unusable due to a major violation of QC protocol.	Compound value is not usable.

B. Metals

FOOTNOTE		DEFINITION	INTERPRETATION
D	NEW		
E	E	Estimated or not reported due to inteference. See laboratory narrative.	Compound or element was not detected or value may be semi-quantitative.
	S	Analysis by Method of Standard Additions.	Value may be quantitative.
	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.
*	*	Duplicate value outside QC protocols which indicates a possible matrix problem.	Value may be semi-quantitative.
	+	Correlation coefficient for standard additions in less than 0.995. See review and laboratory narrative.	Data value may be biased.
( )	B	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semi-quantitative.
U		DL is estimated because of a QC protocol. DL is possibly above or below CRDL.	Compound or element was not detected.
J		Value is above CRDL and is an estimated value because of a QC Protocol.	Value may be semi-quantitative.
	U	Compound was analyzed for but not detected.	Compound was not detected.
	M	Duplicate injection precision not met.	Value may be semi-quantitative.
	W	Post digestion spike for furnance AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance.	Value may be semi-quantitative.

C. Other Symbols Used

NA Value not available due to insufficient data.
NR Value not calculated since chemical is not a carcinogen.
( ) Estimated value.

5/4/88

56 pages

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 5/2/88

SUBJECT: Review of Region V CLP Data
Received for Review on 4 - ~~20~~ 88

FROM. Curtis Ross, Director (5SCRL) Patrick J. Chinella for
Central Regional Laboratory

TO: Data User: FIT

We have reviewed the data for the following case(s).

SITE NAME: AMOCO OIL CO. SMO Case No. 9255 SAS 3758 E

EPA Data Set No. SF 5013 No. of Samples: 6 D.U./Activity Numbers Y905/C721ZZ

CRL No. 88FK16S66 - S69, D66, R07

SMO Traffic No. ES762 - 767

CLP Laboratory: CAL Hrs. Required for Review: 8½ hr.

Following are our findings:

This review covers the analyses for 6 low concentration water samples for volatiles, semi-volatiles and pesticide/PCBs.

Several problems which should be taken into consideration by the data user for these samples are outlined on the following pages.

John R. Mizeczko
ESAT - Weston
4-26-88

( ) Data are acceptable for use.
(x) Data are acceptable for use with qualifications referenced above. See Data Qualifier sheets and Calibration Outlier forms for flags and additional comments.
( ) Data are preliminary - pending verification by Contractor Laboratory. See Case Summary above.
( ) Data are unacceptable.

cc: Carla Dempsey, CLP Quality Assurance Officer, Analytical Operations Branch
James Petty, Chief Quality Assurance Research, EMSL, Las Vegas

E FORM 1320-6 (REV 3-76)

DATA QUALIFIERS

Contractor: ENSECO - CAL

Case 9255 SAS3758E

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

1) Holding Times

For the volatile fraction all samples exceeded the 40 CFR 136 holding time of seven days. Therefore, for aromatic compounds positive results should be flagged estimated (J) and negative results flagged UJ. All volatile fraction samples met the 40 CFR 136 14 day holding time.

All samples semi-volatile and pesticide/PCB fractions met the holding time requirement.

2) GC/MS Tuning

The GC/MS tuning criteria was met for both the volatile and semi-volatile fractions. Overall instrument performance was acceptable. All instrument performance criteria were met for the pesticide/PCB fraction.

3) Calibration

Calibration outliers for the volatile and semi-volatile fractions are noted on the calibration outlier sheets. Calibration criteria for the pesticide/PCB fraction were acceptable.

4) Blanks.

Common contaminants were found in 4 of 5 volatile blanks and in the semi-volatile blank. Other HSL compounds were found in 2 of 5 volatile blanks. No contaminants were found in the pesticide/PCB blanks. All contaminants were found at levels less than 5 times the CRQL.

5) Surrogate Recoveries

For sample ES765 the surrogate recoveries for two semi-

Reviewed by: John R. Kuzenka

Phone: 312-353-2917

Date: 4-26-88

DATA QUALIFIERS

Contractor: ENSECO - CAL

Case 9255SA53758E

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

volatile compounds were less than the control limits. The recovery of Phenol-D5 was 0%. This sample was also used for the MS/MSD analysis. The recoveries of surrogate compounds was similar to the original sample with the recovery of Phenol-D5 at 0%. A matrix interference is indicated for these results. Positive results for the semi-volatile fraction of this sample should be flagged estimated (J). Negative results are unusable (R).

The surrogate recovery in the pesticide/PCB fraction of sample ES763 was 8%. Positive results for this fraction should be flagged estimated (J), negative results are unusable (R).

6) Matrix Spike / Matrix Spike Duplicate.

The volatile fraction had one %RPD outside limits. The semi-volatile fraction had 2 MS recoveries at 0% and one recovery less than the control limit. The fraction had 3 MSD recoveries less than the limit (same 3 as in the MS run). The %RPD for these compounds exceeded the control limit.

The pesticide fraction had 2 MS recoveries over the control limit and 3 recoveries at 0%. The MSD had the same recovery problems.

Sample ES765 which was used for the MS/MSD had problems with surrogate recovery also (see #5) and has already been appropriately flagged.

7) Field Duplicate

A duplicate sample was included in sample set but there was no indication on the traffic report what it was a duplicate of. Therefore no comment can be made concerning this sample as a duplicate

Reviewed by: John R. Hyzer Jr.

Phone: 312-353-2914

Date: 4-21-88

DATA QUALIFIERS

Contractor: ENSECO-CAL

Case 9255 SAS3758E

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

8) Internal Standards Performance

The internal standard area summaries were acceptable for all volatile and semi-volatile samples.

9. Compound Identification

All compound identifications were acceptable

10) The quantitation limits used in conjunction with the flag U on the Organic Analysis Data Sheets to indicate that a compound was not detected were not consistent with the quantitation limits given in the SAS document for low level water analyses. The discrepancies are indicated in Table I following this review. These differences should be taken into account when using this data.

The problems identified in the review will not directly affect the quality and soundness of the data as a whole. Therefore I find the data contained within acceptable for use.

Reviewed by: John R. Nyquist Jr.

Phone: 312-353-2717

DATA QUALIFIERS

Contractor: ENSECO - CAL

Case 9255 SAS 3758E

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

Table I Quantitation Limits Incorrectly Listed

COMPOUND	CRQL LISTED	CORRECT CRQL
Chloromethane	5 ug/l	1.5 ug/l
Bromomethane	5	1.5
Vinyl Chloride	5	10.0
Methylene Chloride	5	1
Acetone	10	75
Carbon Disulfide	1	3
2-Butanone	10	50
cis-1,3-Dichloropropene	1	2
2-chloroethyl vinyl ether	10	1.5
2-Hexanone	10	50
4-methyl 2-Pentanone	10	3
Total Xylene	1	2
Acetone	10	75
Phenol	1	2
2-chlorophenol	1	2
1,3-Dichlorobenzene	1	2
1,4-Dichlorobenzene	1	2
Benzyl Alcohol	1	2
1,2-Dichlorobenzene	1	2
bis (2-chloroisopropyl) ether	1	2
Hexachloroethane	1	2
Nitrobenzene	1	2
Isophorone	1	2
2-Nitrophenol	1	2
2,4-Dimethylphenol	1	2

Reviewed by: John R. Grzeczka

Phone: 312-353-2917

DATA QUALIFIERS

Contractor: ENSECO - CAL

Case 9255 SAS 375PE

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

Table I (cont.) Quantitation Limits Incorrectly Listed

Compound	CRQL Listed	Correct CRQL
Benzoic Acid	20	30
Bis (2-chloroethoxy) methane	1	2
2,4-Dichlorophenol	1	2
1,2,4-Trichlorobenzene	1	2
Naphthalene	1	2
4-Chloroaniline	1	2
Hexachlorobutadiene	1	2
Hexachlorocyclopentadiene	1	2
2-Nitroaniline	5	1
3-Nitroaniline	5	2.5
4-Nitrophenol	15	1.5
4-Nitroaniline	5	3

Reviewed by: John R. Yuzefka

Phone: 312-353-2917

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
VOLATILE HSL COMPOUNDS

CASE/SAS # _____ CONTRACTOR _____

Instrument #	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:															
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane															
Bromomethane															
Vinyl Chloride															
Chloroethane															
Methylene Chloride															
Acetone															
Carbon Disulfide															
1,1-Dichloroethane															
1,1-Dichloroethene															
Trans-1,2-Dichloroethene															
Chloroform															
2-Butanone															
1,2-Dichloroethane															
1,1,1-Trichloroethane															
Carbon Tetrachloride															
Vinyl Acetate															
Bromodichloromethane															
1,2-Dichloropropane															
Trans-1,3-Dichloropropene															
Trichloroethene															
Dibromochloromethane															
1,1,2-Trichloroethane															
Benzene															
cis-1,3-Dichloropropene															
2-Chloroethylvinylether															
Bromoform															
4-Methyl-2-Pentanone															
2-Hexanone															
Tetrachloroethene															
1,1,2,2-Tetrachloroethane															
Toluene															
Chlorobenzene															
Ethylbenzene															
Styrene															
m-Xylene															
o/p-Xylene															

AFFECTED SAMPLES:

Reviewer's Initials/Date: _____

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

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
VOLATILE HSL COMPOUNDS

CASE/SAS # [illegible] CONTRACTOR [illegible]

Instrument # [illegible]	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	[illegible]			[illegible]			[illegible]								
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane															
Bromomethane															
Vinyl Chloride															
Chloroethane															
Methylene Chloride															
Acetone															
Carbon Disulfide															
1,1-Dichloroethane															
1,1-Dichloroethene															
Trans-1,2-Dichloroethene															
Chloroform															
2-Butanone	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		[illegible]						
1,2-Dichloroethane															
1,1,1-Trichloroethane															
Carbon Tetrachloride															
Vinyl Acetate															
Bromodichloromethane															
1,2-Dichloropropane															
Trans-1,3-Dichloropropene															
Trichloroethene															
Dibromochloromethane															
1,1,2-Trichloroethane															
Benzene															
cis-1,3-Dichloropropene															
2-Chloroethylvinylether	[illegible]	4.9					[illegible]	[illegible]	[illegible]						
Bromoform															
4-Methyl-2-Pentanone															
2-Hexanone															
Tetrachloroethene															
1,1,2,2-Tetrachloroethane															
Toluene															
Chlorobenzene															
Ethylbenzene															
Styrene															
m-Xylene															
o/p-Xylene															

AFFECTED SAMPLES:

Reviewer's Initials/Date: [illegible]

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

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
VOLATILE HSL COMPOUNDS

CASE/SAS # _____ CONTRACTOR _____

Instrument #	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:															
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane															
Bromomethane															
Vinyl Chloride															
Chloroethane															
Methylene Chloride															
Acetone															
Carbon Disulfide															
1,1-Dichloroethane															
1,1-Dichloroethene															
Trans-1,2-Dichloroethene															
Chloroform															
2-Butanone															
1,2-Dichloroethane															
1,1,1-Trichloroethane															
Carbon Tetrachloride															
Vinyl Acetate															
Bromodichloromethane															
1,2-Dichloropropane															
Trans-1,3-Dichloropropene															
Trichloroethene															
Dibromochloromethane															
1,1,2-Trichloroethane															
Benzene															
cis-1,3-Dichloropropene															
2-Chloroethylvinylether															
Bromoform															
4-Methyl-2-Pentanone															
2-Hexanone															
Tetrachloroethene															
1,1,2,2-Tetrachloroethane															
Toluene															
Chlorobenzene															
Ethylbenzene															
Styrene															
m-Xylene															
o/p-Xylene															

AFFECTED SAMPLES:

Reviewer's Initials/Date: _____

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

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

CASE/SAS # [illegible] CONTRACTOR [illegible]

Instrument # [illegible]	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	[illegible]			[illegible]			[illegible]								
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Phenol															
bis(-2-Chloroethyl)Ether															
2-Chlorophenol															
1,3-Dichlorobenzene															
1,4-Dichlorobenzene															
Benzyl Alcohol															
1,2-Dichlorobenzene															
2-Methylphenol															
bis(2-chloroisopropyl)Ether															
4-Methylphenol															
N-Nitroso-Di-n-Propylamine															
Hexachloroethane															
Nitrobenzene															
Isophorone															
2-Nitrophenol															
2,4-Dimethylphenol															
Benzoic Acid															
bis(2-Chloroethoxy)Methane															
2,4-Dichlorophenol															
1,2,4-Trichlorobenzene															
Naphthalene															
4-Chloroaniline															
Hexachlorobutadiene															
4-Chloro-3-Methylphenol															
2-Methylnaphthalene															
Hexachlorocyclopentadiene															
2,4,6-Trichlorophenol															
2,4,5-Trichlorophenol															
2-Chloronaphthalene															
2-Nitroaniline															
Dimethyl Phthalate															
Acenaphthylene															
3-Nitroaniline															
Acenaphthene															
2,4-Dinitrophenol															
4-Nitrophenol															
Dibenzofuran															

AFFECTED SAMPLES:

[illegible]

Reviewer Initials/Date: [illegible]

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

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
Page 2

CASE/SAS # _____ CONTRACTOR _____

Instrument #	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:															
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
2,4-Dinitrotoluene															
2,6-Dinitrotoluene															
Diethylphthalate															
4-Chlorophenyl-phenylether															
Fluorene															
4-Nitroaniline															
4,6-Dinitro-2-Methylphenol															
N-Nitrosodiphenylamine															
4-Bromophenyl-phenylether															
Hexachlorobenzene															
Pentachlorophenol															
Phenanthrene															
Anthracene															
Di-n-Butylphthalate															
Fluoranthene															
Pyrene															
Butylbenzylphthalate															
Benzo(a)Anthracene															
bis(2-Ethylhexyl)Phthalate															
Chrysene															
Di-n-Octyl Phthalate															
Benzo(b)Fluoranthene															
Benzo(k)Fluoranthene															
Benzo(a)Pyrene															
Indeno(1,2,3-cd)Pyrene															
Dibenz(a,h)Anthracene															
Benzo(g,h,i) Perylene															

SEE PAGE 1 FOR AFFECTED SAMPLES.

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

Reviewer's Initials/Date: _____

Case: _____

Contractor: _____

TENTATIVELY IDENTIFIED COMPOUNDS
MATCH ASSESSMENT

NOTE: Reviewer should note directly on Organic Analysis Data Sheet (OADS) those matches that in his opinion (based on contract criteria) are unreasonable.

CRITERIA

(1) Relative intensities of major ions (>10%) reference spectrum should be present in the sample spectrum.

(2) Relative intensities of major ions in sample spectrum should agree to within ± 20% of reference spectrum intensities.

(3) Molecular ions present in reference spectrum should be present in sample spectrum.

(4) Ions present in sample spectrum, but not in reference spectrum should be reviewed for possible background contamination or presence of coeluting interferences.

(5) Ions present in reference spectrum, but not in the sample spectrum should be reviewed for possible subtraction from the sample spectrum because of background contamination or coeluting interferences.

(6) If, in the reviewer's opinion, no valid identification can be made the compound should be labelled as "unknown" and the initials and date of the reviewer placed on the OADS.

Enseco

April 19, 1988

Joan Fisk
U.S. EPA
Hazardous Waste Investigation
401 M Street, SW
Washington, DC 20460

Dear Joan Fisk:

Enclosed are data summary sheets and documentation for samples and QA/QC comprising case 9255/3758E (SDG ES762) of Contract 68-W8-0069. These samples were received 3/31/88 and logged in under the following ENSECO CAL Lab numbers:

ENSECO CAL LAB Number	Sample I.D.
40887-1	ES762
-2	ES763
-3	ES764
-4	ES765
-5	ES766
-6	ES767

The samples were analyzed as low concentration water samples for low detection limits on a twenty one day turnaround. Because of the confusion concerning the RAS part of this contract the VOA samples were not analyzed within seven days which is required by our old contract. Our current contract allows ten days before analyses and only one sample ES764 was analyzed beyond this date. If the ten day hold time is valid for normal RAS it should be valid for this set of samples.

The semivolatile sample used for the QA/QC had two surrogates outside the limits. Since it was out for all three samples we believe this to be a matrix effect and no further work needed to be done.

This report was checked for contractual compliance, assembled, paginated then printed and assembled by a Kodak copier/assembler. Each copy has been checked for completeness. This check may miss some individual pages. Please request by page number if any page is missing. If you have any questions, please give us a call.

Enseco Incorporated
2544 Industrial Boulevard
West Sacramento, California 95691
916/372-1393 Fax: 916/372-1059

Sincerely,

Michael W. Orbanosky
Director of GC/MS Services

Karin S. Yee
Data Control Coordinator

CENTRAL REGIONAL LABORATORY SAMPLE DATA REPORT
ORGANICS/INORGANICS

THIS FORM IS TO BE USED FOR SAMPLES SENT TO CONTRACT ONLY

SAMPLE [illegible] 200 IN DATE: 4/19/88
DUE DATE: 6/7/88

SUPERFUND 5013

CASE NUMBER/SAS No. [illegible] SITE NAME [illegible] Co LABORATORY CAL/RMAL DATE SHIPPED 3/30/88

SUPERFUND DU NUMBER [illegible] EPA RPM or OSC (S M S)/(CES) _____ CERCLIS NUMBER [illegible] PAGE 2 OF 2

ACTIVITY NUMBER [illegible]

CRL LOG NUMBER	ORGANIC TRAFFIC REPORT NUMBER or SAS Packing List No.	INORGANIC TRAFFIC REPORT NUMBER	WATER OR LIQUIDS: ACID BASE NEUTRAL CPDS ORGANIC SCAN UG L TOX17574	VOLATILE ORGANIC ANALYSIS ORGANIC SCAN UG L TOX17554	WATER POLYCHLORINATED BIPHENYLS UG L PES17144	WATER CHLORINATED PESTICIDES UG L PES17134	TOTAL METALS IN WATER UG L MET111	WATER CYANIDE UG L MIN74919	NITRATE NITRITE MG L MIN7284	AMMONIA MG L MIN7294	RESIDUE FILTERABLE TDS MG L MIN7362	RESIDUE NON-FILT TSS MG L MIN7372			SEDIMENTS or SOILS: ACID BASE NEUTRAL CPDS ORGANIC SCAN MG KG TOX215722	VOLATILE ORGANIC ANALYSIS ORGANIC SCAN MG KG TOX215622	SEDIMENTS POLYCHLORINATED BIPHENYLS MG KG PES211422	SEDIMENT CHLORINATED PESTICIDES MG KG 211322	TOTAL METALS MG KG MET413	CYANIDE MG KG MIN44930	EP TOXICITY METALS MG KG	AMMONIA MG KG MIN42925				
88FK16S66	ES 166	MES 206	✓	✓	✓	✓	✓	✓																		
88FK16S67	ES 165	MES 207	✓	✓	✓	✓	✓	✓																		
88FK16S68	ES 164	MES 208	✓	✓	✓	✓	✓	✓																		
88FK16S69	ES 165	MES 209	✓	✓	✓	✓	✓	✓																		
88FK16D66	ES 166	MES 210	✓	✓	✓	✓	✓	✓																		
88FK16R07	ES 161	MES 211	✓	✓	✓	✓	✓	✓																		

WATER SURROGATE PERCENT RECOVERY SUMMARY

CASE NO.: 9255/3758E CONTRACT LABORATORY: CALIFORNIA ANALYTICAL LABS CONTRACT NO.: 68-W8-0069 DATA PREP/RELEASE BY: _____

SMO TRAFFIC NO.	VOLATILE: TOLUENE D8 (88-110)	VOLATILE: BFB (86-115)	VOLATILE: 1,2 DICHLORO ETHANE D4 (76-114)	SEMI-VOLATILE: NITRO-BENZENE D5 (35-114)	SEMI-VOLATILE: 2-FLUORO BIPHENYL (43-116)	SEMI-VOLATILE: TERPHENYL D14 (33-141)	SEMI-VOLATILE: PHENOL-D5 (10-94)	SEMI-VOLATILE: 2-FLUORO-PHENOL (21-100)	SEMI-VOLATILE: 2,4,6 TRIBROMO-PHENOL (10-123)	PESTICIDE: DIBUTYL-CHLORENDATE (24-154)**
ES762	100	99	94	73	84	83	42	62	61	100
ES763	100	100	93	70	79	81	44	64	63	0 *
ES764	101	96	96	76	77	81	40	57	63	100
ES765	96	99	97	82	81	87	0 *	11 *	15	109
ES765MS	96	96	99	57	82	86	0 *	9 *	11	109
ES765MSD	96	98	95	59	74	79	0 *	10 *	25	109
ES766	102	101	84	48	70	70	33	55	66	99
ES767	90	103	97	43	69	67	33	51	65	100
VBK16880407	102	104	82	NR	NR	NR	NR	NR	NR	NR
VBK9880408	98	98	98	NR	NR	NR	NR	NR	NR	NR
VBK48804088	101	99	90	NR	NR	NR	NR	NR	NR	NR
VBK4880409	98	99	94	NR	NR	NR	NR	NR	NR	NR
VBK9880411	92	111	83	NR	NR	NR	NR	NR	NR	NR
40887MB	NR	NR	NR	74	79	81	40	60	54	102

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

** ADVISORY LIMITS ONLY

VOLATILES: 0 OUT OF 39 : OUTSIDE OF QC LIMITS
SEMI-VOLATILES: 6 OUT OF 54 : OUTSIDE OF QC LIMITS
PESTICIDES: 1 OUT OF 9 : OUTSIDE OF QC LIMITS

COMMENTS: _____

WATER MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

CASE NO.: 9255/3758E CONTRACTOR: Enseco - Cal Lab CONTRACT NO.68-W8-0069

FRACTION	COMPOUND	CONC.SPIKE ADDED(ug/L) SPIKE	DUPLICATE	SAMPLE RESULT	CONC. MS	% REC	CONC. MSD	% REC	%RPD	QC LIMITS* RPD	RECOVERY
VOA	1,1-Dichloroethene	10	10	0	12	120	10.7	107	11	14	61-145
SMO	Trichloroethene	10	10	0	10.7	107	9.4	94	13	14	71-120
SAMPLE NO.	Chlorobenzene	10	10	2.7	12.9	102	11.3	86	17 *	13	75-130
	Toluene	10	10	0	10.8	108	9.5	95	13	13	76-125
ES765	Benzene	10	10	0	10.6	106	9.6	96	10	11	76-127
B/N	1,2,4-Trichlorobenzene	20	20	0	15.8	79	14.6	73	8	28	39-98
SMO	Acenaphthene	20	20	0	17.8	89	16.1	81	10	31	46-118
SAMPLE NO.	2,4-Dinitrotoluene	20	20	0	12.4	62	10.6	53	16	38	24-96
	Pyrene	20	20	0	16.7	84	14.8	74	12	31	26-127
	N-Nitrosodi-n-Propylamine	20	20	0	12	60	11	55	9	38	41-116
ES765	1,4-Dichlorobenzene	20	20	0	15.4	77	13.6	68	12	28	36-97
ACID	Pentachlorophenol	40	40	0	14.1	35	19.9	50	34	50	9-103
SMO	Phenol	40	40	0	0	0 *	2.3	6 *	200 *	42	12-89
SAMPLE NO.	2-Chlorophenol	40	40	0	0	0 *	3.4	9 *	200 *	40	27-123
	4-Chloro-3-Methylphenol	40	40	0	4	10 *	7.1	18 *	56 *	42	23-97
ES765	4-Nitrophenol	40	40	0	18.6	47	7.1	18	89 *	50	10-80
PEST	Lindane	0.02	0.02	0	0.0503	252 *	0.056	280 *	11	15	56-123
SMO	Heptachlor	0.02	0.02	0	0	0 *	0	0 *	0	20	40-131
SAMPLE NO.	Aldrin	0.02	0.02	0	0	0 *	0	0 *	0	22	40-120
	Dieldrin	0.05	0.05	0	0	0 *	0	0 *	0	18	52-126
	Endrin	0.05	0.05	0	0.142	284 *	0.126	252 *	12	21	56-121
ES765	4,4-DDT	0.05	0.05	0	0.0523	105	0.0543	109	4	27	38-127

* ASTERISKED VALUES ARE OUTSIDE QC LIMITS

RPD: VOAs 1 out of 5 ; outside QC limits
B/Ns 0 out of 6 ; outside QC limits
ACID 1 out of 5 ; outside QC limits
PEST 0 out of 6 ; outside QC limits

RECOVERY: VOAs 0 out of 10 ; outside QC limits
B/Ns 0 out of 12 ; outside QC limits
ACID 6 out of 10 ; outside QC limits
PEST 10 out of 12 ; outside QC limits

Comments:

FORM III

7/85

SPECIAL COMPOUNDS

Method 624/CLP

Case: 9255/3758E
EPA ID: ES 765MS
Lab ID: 40887-4MS
Matrix: Water
Authorized: 31-Mar-88

Enseco ID: NA
Sampled: 30-Mar-88
Prepared: NA

Received: 31-Mar-88
Analyzed: 08-Apr-88

Parameter	Result	Units	Reporting Limit
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	50

ND=Not Detected
NA=Not Applicable

Reported by: DNB

Approved by: DAT

The cover letter is an integral part of this report.
Rev 041588

SPECIAL COMPOUNDS

Method 624/CLP

Case: 9255/3758E
EPA ID: ES 765MSD
Lab ID: 40887-4MSD
Enseco ID: NA
Matrix: Water
Sampled: 30-Mar-88
Received: 31-Mar-88
Authorized: 31-Mar-88
Prepared: NA
Analyzed: 09-Apr-88

Parameter	Result	Units	Reporting Limit
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	50

ND=Not Detected
NA=Not Applicable

Reported by: DNB

Approved by: DAT

The cover letter is an integral part of this report.
Rev 041588

SPECIAL COMPOUNDS

Method 624/CLP

Case: 9255/3758E
EPA ID: ES 762
Lab ID: 40887-1 Enseco ID: NA
Matrix: Water Sampled: 30-Mar-88 Received: 31-Mar-88
Authorized: 31-Mar-88 Prepared: NA Analyzed: 09-Apr-88

Parameter	Result	Units	Reporting Limit
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	50

ND=Not Detected
NA=Not Applicable

Reported by: DNB Approved by: DAT

The cover letter is an integral part of this report.
Rev 041588

Sample Number
ES762

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: ENSECO CAL LAB

Case No: 9255/3755

Lab Sample ID No: 40887-1

QC Report No: 3758E

Sample Matrix: WATER

Contract No: 68-W8-0069

Data Release Authorized By:

Date Sample Received: 3/31/88

Volatile Compounds

Concentration: Low

Date Extracted/Prepared: 4/9/88

Date Analyzed: 4/9/88

Conc/Dil Factor: 1 pH: NR

Percent Moisture: NR

Percent Moisture (Decanted): NR

CAS Number		ug/L
74-87-3	Chloromethane	5 U
74-83-9	Bromomethane	5 U
75-01-4	Vinyl Chloride	5 U
75-00-3	Chloroethane	1 U
75-09-2	Methylene Chloride	5 U
67-64-1	Acetone	~~1 JB~~
75-15-0	Carbon Disulfide	1 U
75-35-4	1,1-Dichloroethene	1 U
75-34-3	1,1-Dichloroethane	1 U
156-60-5	Trans-1,2-Dichloroethene	1 U
67-66-3	Chloroform	1 U
107-06-2	1,2-Dichloroethane	1 U
78-93-3	2-Butanone	10 U
71-55-6	1,1,1-Trichloroethane	1 U
56-23-5	Carbon Tetrachloride	1 U
108-05-4	Vinyl Acetate	10 U
75-27-4	Bromodichloromethane	1 U

CAS Number		ug/L
79-34-5	1,1,2,2-Tetrachloroethane	1 U
78-87-5	1,2-Dichloropropane	1 U
10061-02-6	Trans-1,3-Dichloropropene	1 U
79-01-6	Trichloroethene	1 U
124-48-1	Dibromochloromethane	1 U
79-00-5	1,1,2-Trichloroethane	1 U
71-43-2	Benzene	1 U
10061-01-5	cis-1,3-Dichloropropene	1 U
110-75-8	2-Chloroethylvinylether	10 U
75-25-2	Bromoform	1 U
591-78-6	2-Hexanone	10 U
108-10-1	4-Methyl-2-Pentanone	10 U
127-18-4	Tetrachloroethene	1 U
108-88-3	Toluene	1 U
108-90-7	Chlorobenzene	1 U
100-41-4	Ethylbenzene	1 U
100-42-5	Styrene	1 U
	Total Xylenes	1 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/ dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J). If limit of detection is 10ug/l and a concentration of 3ug/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides >= 10ng/ul in the final extract should be confirmed by GC/MS

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

NA Not Analyzed.
See cover letter.
NR Not Required.
S Spiked Compound.

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9255/3758E

Sample Number
ES762

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low

Date Extracted/Prepared: 4/4/88

Date Analyzed: 4/8/88

Conc/DiL Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

CAS Number		ug/L
108-95-2	Phenol	1.0 U
111-44-4	bis(-2-Chloroethyl)Ether	1.0 U
95-57-8	2-Chlorophenol	1.0 U
541-73-1	1,3-Dichlorobenzene	1.0 U
106-46-7	1,4-Dichlorobenzene	1.0 U
100-51-6	Benzyl Alcohol	1.0 U
95-50-1	1,2-Dichlorobenzene	1.0 U
95-48-7	2-Methylphenol	1.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	1.0 U
106-44-5	4-Methylphenol	1.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	1.0 U
67-72-1	Hexachloroethane	1.0 U
98-95-3	Nitrobenzene	1.0 U
78-59-1	Isophorone	1.0 U
88-75-5	2-Nitrophenol	1.0 U
105-67-9	2,4-Dimethylphenol	1.0 U
65-85-0	Benzoic Acid	20 U
111-91-1	bis(-2-Chloroethoxy)Methane	1.0 U
120-83-2	2,4-Dichlorophenol	1.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0 U
91-20-3	Naphthalene	1.0 U
106-47-8	4-Chloroaniline	1.0 U
87-68-3	Hexachlorobutadiene	1.0 U
59-50-7	4-Chloro-3-Methylphenol	1.0 U
91-57-6	2-Methylnaphthalene	1.0 U
77-47-4	Hexachlorocyclopentadiene	1.0 U
88-06-2	2,4,6-Trichlorophenol	1.0 U
95-95-4	2,4,5-Trichlorophenol	1.0 U
91-58-7	2-Chloronaphthalene	1.0 U
88-74-4	2-Nitroaniline	5.0 U
131-11-3	Dimethyl Phthalate	1.0 U
208-96-8	Acenaphthylene	1.0 U
99-09-2	3-Nitroaniline	5.0 U

CAS Number		ug/L
83-32-9	Acenaphthene	1.0 U
51-28-5	2,4-Dinitrophenol	15 U
100-02-7	4-Nitrophenol	15 U
132-64-9	Dibenzofuran	1.0 U
121-14-2	2,4-Dinitrotoluene	1.0 U
606-20-2	2,6-Dinitrotoluene	1.0 U
84-66-2	Diethylphthalate	1.0 U
7005-72-3	4-Chlorophenyl-phenylether	1.0 U
86-73-7	Fluorene	1.0 U
100-01-6	4-Nitroaniline	5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15 U
86-30-6	N-Nitrosodiphenylamine(1)	1.5 U
101-55-3	4-Bromophenyl-phenylether	1.5 U
118-74-1	Hexachlorobenzene	1.5 U
87-86-5	Pentachlorophenol	2.0 U
85-01-8	Phenanthrene	1.0 U
120-12-7	Anthracene	2.5 U
84-74-2	Di-n-Butylphthalate	2.0 U
206-44-0	Fluoranthene	1.5 U
129-00-0	Pyrene	1.5 U
85-68-7	Butylbenzylphthalate	3.5 U
91-94-1	3,3'-Dichlorobenzidine	20 U
56-55-3	Benzo(a)Anthracene	1.5 U
117-81-7	bis(2-Ethylhexyl)Phthalate	5 ~~6~~ U
218-01-9	Chrysene	1.5 U
117-84-0	Di-n-Octyl Phthalate	1.5 U
205-99-2	Benzo(b)Fluoranthene	1.5 U
207-08-9	Benzo(k)Fluoranthene	1.5 U
50-32-8	Benzo(a)Pyrene	2.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	3.5 U
53-70-3	Dibenz(a,h)Anthracene	2.5 U
191-24-2	Benzo(g,h,i)Perylene	4.0 U

(1) - Cannot be separated from Diphenylamine

CLF: 10/11/85 Form I Prepared by: _____ 7/85

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9255/3758E

Sample Number
ES762

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: LOW

Date Extracted/Prepared: 4/4/88

Date Analyzed: 4/12/88

Conc/Dil Factor: 5

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

CAS Number		ug/L
319-84-6	Alpha-BHC	0.050 U
319-85-7	Beta-BHC	0.025 U
319-86-8	Delta-BHC	0.025 U
58-89-9	Gamma-BHC (Lindane)	0.025 U
76-44-8	Heptachlor	0.15 U
309-00-2	Aldrin	0.025 U
1024-57-3	Heptachlor Epoxide	0.025 U
959-98-8	Endosulfan I	0.050 U
60-57-1	Dieldrin	0.050 U
72-55-9	4,4'-DDE	0.025 U
72-20-8	Endrin	0.050 U
33213-65-9	Endosulfan II	0.050 U
72-54-8	4,4'-DDD	0.10 U
1031-07-8	Endosulfan Sulfate	0.50 U
50-29-3	4,4'-DDT	0.10 U
72-43-5	Methoxychlor	0.10 U
53494-70-5	Endrin Ketone	0.15 U
57-74-9	Chlordane	0.10 U
8001-35-2	Toxaphene	1.3 U
12674-11-2	Aroclor-1016	0.50 U
11104-28-2	Aroclor-1221	0.50 U
11141-16-5	Aroclor-1232	0.50 U
53469-21-9	Aroclor-1242	0.50 U
12672-29-6	Aroclor-1248	0.50 U
11097-69-1	Aroclor-1254	0.50 U
11096-82-5	Aroclor-1260	0.50 U

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s =950 or W_s =NR V_t = 25000 V_i = 5

ORGANICS ANALYSIS DATA SHEET
Page 4
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: CAL Case No. 9255/3758E Sample No. [illegible]0169
Or Report No. 3758E Lab Sample No. 4088701AB E5762

Probability that Identification is Correct:
A= HIGH B= MODERATE C= UNKNOWN D= SOLVENT IMPURITY, see VOA

	CAS#	COMPOUND NAME	FRACTION	SCAN NUMBER	PURITY	Estimated CONC. J VALUE
1.	625-06-9	2-PENTANOL, 2,4-DIMETHYL-	A/BN	268	857	9.9 UG/L

COMPOUND NAME	PROBABILITY	COMMENTS
2-PENTANOL, 2,4-DIMETHYL-	1. B	1. [illegible]

FORM 1, PART B

No volatile compounds

Sample Number
ES763

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: ENSECO CAL LAB

Case No: 9255/3758E

Lab Sample ID No: 40887-2

QC Report No: 3758E

Sample Matrix: WATER

Contract No: 68-W8-0069

Data Release Authorized By:

Date Sample Received: 3/31/88

Volatile Compounds

Concentration: Low

Date Extracted/Prepared: 4/9/88

Date Analyzed: 4/9/88

Conc/Dil Factor: 1 pH: NR

Percent Moisture: NR

Percent Moisture (Decanted): NR

CAS Number		ug/L
74-87-3	Chloromethane	5 U
74-83-9	Bromomethane	5 U
75-01-4	Vinyl Chloride	5 U
75-00-3	Chloroethane	1 U
75-09-2	Methylene Chloride	5 U
67-64-1	Acetone	750 4-d8
75-15-0	Carbon Disulfide	1 U
75-35-4	1,1-Dichloroethene	1 U
75-34-3	1,1-Dichloroethane	1 U
156-60-5	Trans-1,2-Dichloroethene	1 U
67-66-3	Chloroform	1 U
107-06-2	1,2-Dichloroethane	1 U
78-93-3	2-Butanone	10 U
71-55-6	1,1,1-Trichloroethane	1 U
56-23-5	Carbon Tetrachloride	1 U
108-05-4	Vinyl Acetate	10 U
75-27-4	Bromodichloromethane	1 U

CAS Number		ug/L
79-34-5	1,1,2,2-Tetrachloroethane	1 U
78-87-5	1,2-Dichloropropane	1 U
10061-02-6	Trans-1,3-Dichloropropene	1 U
79-01-6	Trichloroethene	1 U
124-48-1	Dibromochloromethane	1 U
79-00-5	1,1,2-Trichloroethane	1 U
71-43-2	Benzene	1 U
10061-01-5	cis-1,3-Dichloropropene	1 U
110-75-8	2-Chloroethylvinylether	10 U
75-25-2	Bromoform	1 U
591-78-6	2-Hexanone	10 U
108-10-1	4-Methyl-2-Pentanone	10 U
127-18-4	Tetrachloroethene	1 U
108-88-3	Toluene	1 U
108-90-7	Chlorobenzene	1 U
100-41-4	Ethylbenzene	1 U
100-42-5	Styrene	1 U
	Total Xylenes	1 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/ dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J). If limit of detection is 10ug/l and a concentration of 3ug/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides >= 10ng/ul in the final extract should be confirmed by GC/MS

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

NA Not Analyzed.

See cover letter.

NR Not Required.

S Spiked Compound.

68

SPECIAL COMPOUNDS

Method 624/CLP

Case:	9255/3758E				
EPA ID:	ES 763				
Lab ID:	40887-2	Enseco ID:	NA		
Matrix:	Water	Sampled:	30-Mar-88	Received:	31-Mar-88
Authorized:	31-Mar-88	Prepared:	NA	Analyzed:	09-Apr-88

Parameter	Result	Units	Reporting Limit
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	50

ND=Not Detected
NA=Not Applicable

Reported by: DNB JR

Approved by: DAT

The cover letter is an integral part of this report.
Rev 041588

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9255/3758E

Sample Number
ES763

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low

Date Extracted/Prepared: 4/4/88

Date Analyzed: 4/8/88

Conc/Dil. Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

CAS Number		ug/L
108-95-2	Phenol	1.0 U
111-44-4	bis(-2-Chloroethyl)Ether	1.0 U
95-57-8	2-Chlorophenol	1.0 U
541-73-1	1,3-Dichlorobenzene	1.0 U
106-46-7	1,4-Dichlorobenzene	1.0 U
100-51-6	Benzyl Alcohol	1.0 U
95-50-1	1,2-Dichlorobenzene	1.0 U
95-48-7	2-Methylphenol	1.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	1.0 U
106-44-5	4-Methylphenol	1.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	1.0 U
67-72-1	Hexachloroethane	1.0 U
98-95-3	Nitrobenzene	1.0 U
78-59-1	Isophorone	1.0 U
88-75-5	2-Nitrophenol	1.0 U
105-67-9	2,4-Dimethylphenol	1.0 U
65-85-0	Benzoic Acid	20 U
111-91-1	bis(-2-Chloroethoxy)Methane	1.0 U
120-83-2	2,4-Dichlorophenol	1.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0 U
91-20-3	Naphthalene	1.0 U
106-47-8	4-Chloroaniline	1.0 U
87-68-3	Hexachlorobutadiene	1.0 U
59-50-7	4-Chloro-3-Methylphenol	1.0 U
91-57-6	2-Methylnaphthalene	1.0 U
77-47-4	Hexachlorocyclopentadiene	1.0 U
88-06-2	2,4,6-Trichlorophenol	1.0 U
95-95-4	2,4,5-Trichlorophenol	1.0 U
91-58-7	2-Chloronaphthalene	1.0 U
88-74-4	2-Nitroaniline	5.0 U
131-11-3	Dimethyl Phthalate	1.0 U
208-96-8	Acenaphthylene	1.0 U
99-09-2	3-Nitroaniline	5.0 U

CAS Number		ug/L
83-32-9	Acenaphthene	1.0 U
51-28-5	2,4-Dinitrophenol	15 U
100-02-7	4-Nitrophenol	15 U
132-64-9	Dibenzofuran	1.0 U
121-14-2	2,4-Dinitrotoluene	1.0 U
606-20-2	2,6-Dinitrotoluene	1.0 U
84-66-2	Diethylphthalate	1.0 U
7005-72-3	4-Chlorophenyl-phenylether	1.0 U
86-73-7	Fluorene	1.0 U
100-01-6	4-Nitroaniline	5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15 U
86-30-6	N-Nitrosodiphenylamine(1)	1.5 U
101-55-3	4-Bromophenyl-phenylether	1.5 U
118-74-1	Hexachlorobenzene	1.5 U
87-86-5	Pentachlorophenol	2.0 U
85-01-8	Phenanthrene	1.0 U
120-12-7	Anthracene	2.5 U
84-74-2	Di-n-Butylphthalate	2.0 U
206-44-0	Fluoranthene	1.5 U
129-00-0	Pyrene	1.5 U
85-68-7	Butylbenzylphthalate	2.5 U
91-94-1	3,3'-Dichlorobenzidine	20 U
56-55-3	Benzo(a)Anthracene	1.5 U
117-81-7	bis(2-Ethylhexyl)Phthalate	5.5 U
218-01-9	Chrysene	1.5 U
117-84-0	Di-n-Octyl Phthalate	1.5 U
205-99-2	Benzo(b)Fluoranthene	1.5 U
207-08-9	Benzo(k)Fluoranthene	1.5 U
50-32-8	Benzo(a)Pyrene	2.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	2.5 U
53-70-3	Dibenz(a,h)Anthracene	2.5 U
191-24-2	Benzo(g,h,i)Perylene	4.0 U

(1) - Cannot be separated from diphenylamine

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9255/3758E

Sample Number
ES763

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: LOW

Date Extracted/Prepared: 4/4/88

Date Analyzed: 4/12/88

Conc/Dil Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

CAS Number		ug/L
319-84-6	Alpha-BHC	0.010 U
319-85-7	Beta-BHC	0.0050 U
319-86-8	Delta-BHC	0.0050 U
58-89-9	Gamma-BHC (Lindane)	0.0050 U
76-44-8	Heptachlor	0.030 U
309-00-2	Aldrin	0.0050 U
1024-57-3	Heptachlor Epoxide	0.0050 U
959-98-8	Endosulfan I	0.010 U
60-57-1	Dieldrin	0.010 U
72-55-9	4,4'-DDE	0.0050 U
72-20-8	Endrin	0.010 U
33213-65-9	Endosulfan II	0.010 U
72-54-8	4,4'-DDD	0.020 U
1031-07-8	Endosulfan Sulfate	0.10 U
50-29-3	4,4'-DDT	0.020 U
72-43-5	Methoxychlor	0.020 U
53494-70-5	Endrin Ketone	0.030 U
57-74-9	Chlordane	0.020 U
8001-35-2	Toxaphene	0.25 U
12674-11-2	Aroclor-1016	0.10 U
11104-28-2	Aroclor-1221	0.10 U
11141-16-5	Aroclor-1232	0.10 U
53469-21-9	Aroclor-1242	0.10 U
12672-29-6	Aroclor-1248	0.10 U
11097-69-1	Aroclor-1254	0.10 U
11096-82-5	Aroclor-1260	0.10 U

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s =980 or W_s =NR V_t = 5000 V_i = 5

ORGANICS ANALYSIS DATA SHEET
Page 4
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: CAL Case No. 9255/3758E Sample No. ~~5~~ 0169
Report No. 3758E Lab Sample No. 4088702AB ES763

Probability that Identification is Correct:
A= HIGH B= MODERATE C= UNKNOWN D= SOLVENT IMPURITY, see VOA

	CAS#	COMPOUND NAME	FRACTION	SCAN NUMBER	PURITY	Estimated CONC. J VALUE
1	625-06-9	2-PENTANOL, 2,4-DIMETHYL-	A/BN	268	862	34.1 UG/L

	COMPOUND NAME	PROBABILITY	COMMENTS
1.	2-PENTANOL, 2,4-DIMETHYL-	1. B	1. isomer

Raymond L. Jones Chemist

FORM 1, PART B

No volatile Compounds

Sample Number
ES764

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: ENSECO CAL LAB

Case No: 9255/3758E

Lab Sample ID No: 40887-3

QC Report No: 3758E

Sample Matrix: WATER

Contract No: 68-W8-0069

Data Release Authorized By:

Date Sample Received: 3/31/88

Volatile Compounds

Concentration: Low

Date Extracted/Prepared: 4/11/88

Date Analyzed: 4/11/88

Conc/Dil Factor: 1 pH: NR

Percent Moisture: NR

Percent Moisture (Decanted): NR

CAS Number		ug/L
74-87-3	Chloromethane	5 U
74-83-9	Bromomethane	5 U
75-01-4	Vinyl Chloride	5 U
75-00-3	Chloroethane	1 U
75-09-2	Methylene Chloride	5 U
67-64-1	Acetone	10 U
75-15-0	Carbon Disulfide	1 U
75-35-4	1,1-Dichloroethene	1 U
75-34-3	1,1-Dichloroethane	1 U
156-60-5	Trans-1,2-Dichloroethene	1 U
67-66-3	Chloroform	1 U
107-06-2	1,2-Dichloroethane	1 U
78-93-3	2-Butanone	10 U
71-55-6	1,1,1-Trichloroethane	1 U
56-23-5	Carbon Tetrachloride	1 U
108-05-4	Vinyl Acetate	10 U
75-27-4	Bromodichloromethane	1 U

CAS Number		ug/L
79-34-5	1,1,2,2-Tetrachloroethane	1 U
78-87-5	1,2-Dichloropropane	1 U
10061-02-6	Trans-1,3-Dichloropropene	1 U
79-01-6	Trichloroethene	1 U
124-48-1	Dibromochloromethane	1 U
79-00-5	1,1,2-Trichloroethane	1 U
71-43-2	Benzene	1 U
10061-01-5	cis-1,3-Dichloropropene	1 U
110-75-8	2-Chloroethylvinylether	10 U
75-25-2	Bromoform	1 U
591-78-6	2-Hexanone	10 U
108-10-1	4-Methyl-2-Pentanone	10 U
127-18-4	Tetrachloroethene	1 U
108-88-3	Toluene	1 U
108-90-7	Chlorobenzene	1 U
100-41-4	Ethylbenzene	1 U
100-42-5	Styrene	1 U
	Total Xylenes	1 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/ dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J). If limit of detection is 10ug/l and a concentration of 3ug/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides >= 10ng/ul in the final extract should be confirmed by GC/MS

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

NA Not Analyzed.
See cover letter.
NR Not Required.
S Spiked Compound.

106

SPECIAL COMPOUNDS

Method 624/CLP

Case:	9255/3758E				
EPA ID:	ES 764				
Lab ID:	40887-3	Enseco ID:	NA		
Matrix:	Water	Sampled:	30-Mar-88	Received:	31-Mar-88
Authorized:	31-Mar-88	Prepared:	NA	Analyzed:	11-Apr-88

Parameter	Result	Units	Reporting Limit
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	50

ND=Not Detected
NA=Not Applicable

Reported by: DNB Approved by: DAT

The cover letter is an integral part of this report.
Rev 041588

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9255/3758E

Sample Number
ES764

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low

Date Extracted/Prepared: 4/4/88

Date Analyzed: 4/8/88

Conc/DiL Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

CAS Number		ug/L
108-95-2	Phenol	1.0 U
111-44-4	bis(-2-Chloroethyl)Ether	1.0 U
95-57-8	2-Chlorophenol	1.0 U
541-73-1	1,3-Dichlorobenzene	1.0 U
106-46-7	1,4-Dichlorobenzene	1.0 U
100-51-6	Benzyl Alcohol	1.0 U
95-50-1	1,2-Dichlorobenzene	1.0 U
95-48-7	2-Methylphenol	1.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	1.0 U
106-44-5	4-Methylphenol	1.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	1.0 U
67-72-1	Hexachloroethane	1.0 U
98-95-3	Nitrobenzene	1.0 U
78-59-1	Isophorone	1.0 U
88-75-5	2-Nitrophenol	1.0 U
105-67-9	2,4-Dimethylphenol	1.0 U
65-85-0	Benzoic Acid	20 U
111-91-1	bis(-2-Chloroethoxy)Methane	1.0 U
120-83-2	2,4-Dichlorophenol	1.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0 U
91-20-3	Naphthalene	1.0 U
106-47-8	4-Chloroaniline	1.0 U
87-68-3	Hexachlorobutadiene	1.0 U
59-50-7	4-Chloro-3-Methylphenol	1.0 U
91-57-6	2-Methylnaphthalene	1.0 U
77-47-4	Hexachlorocyclopentadiene	1.0 U
88-06-2	2,4,6-Trichlorophenol	1.0 U
95-95-4	2,4,5-Trichlorophenol	1.0 U
91-58-7	2-Chloronaphthalene	1.0 U
88-74-4	2-Nitroaniline	5.0 U
131-11-3	Dimethyl Phthalate	1.0 U
208-96-8	Acenaphthylene	1.0 U
99-09-2	3-Nitroaniline	5.0 U

CAS Number		ug/L
83-32-9	Acenaphthene	1.0 U
51-28-5	2,4-Dinitrophenol	15 U
100-02-7	4-Nitrophenol	15 U
132-64-9	Dibenzofuran	1.0 U
121-14-2	2,4-Dinitrotoluene	1.0 U
606-20-2	2,6-Dinitrotoluene	1.0 U
84-66-2	Diethylphthalate	1.0 U
7005-72-3	4-Chlorophenyl-phenylether	1.0 U
86-73-7	Fluorene	1.0 U
100-01-6	4-Nitroaniline	5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15 U
86-30-6	N-Nitrosodiphenylamine(1)	1.5 U
101-55-3	4-Bromophenyl-phenylether	1.5 U
118-74-1	Hexachlorobenzene	1.5 U
87-86-5	Pentachlorophenol	2.0 U
85-01-8	Phenanthrene	1.0 U
120-12-7	Anthracene	2.5 U
84-74-2	Di-n-Butylphthalate	2.0 U
206-44-0	Fluoranthene	1.5 U
129-00-0	Pyrene	1.5 U
85-68-7	Butylbenzylphthalate	3.5 U
91-94-1	3,3'-Dichlorobenzidine	20 U
56-55-3	Benzo(a)Anthracene	1.5 U
117-81-7	bis(2-Ethylhexyl)Phthalate	5 B
218-01-9	Chrysene	1.5 U
117-84-0	Di-n-Octyl Phthalate	1.5 U
205-99-2	Benzo(b)Fluoranthene	1.5 U
207-08-9	Benzo(k)Fluoranthene	1.5 U
50-32-8	Benzo(a)Pyrene	2.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	3.5 U
53-70-3	Dibenz(a,h)Anthracene	2.5 U
191-24-2	Benzo(g,h,i)Perylene	4.0 U

(1) - Cannot be separated from diphenylamine

CLF: 10/11/85

Form I

Prepared by:

7/85

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9255/3758E

Sample Number
ES764

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: LOW

GPC Cleanup: NO

Date Extracted/Prepared: 4/4/88

Separatory Funnel Extraction: YES

Date Analyzed: 4/12/88

Continuous Liquid - Liquid Extraction: NO

Conc/Dil Factor: 1

CAS Number		ug/L
319-84-6	Alpha-BHC	0.010 U
319-85-7	Beta-BHC	0.0050 U
319-86-8	Delta-BHC	0.0050 U
58-89-9	Gamma-BHC (Lindane)	0.0050 U
76-44-8	Heptachlor	0.030 U
309-00-2	Aldrin	0.0050 U
1024-57-3	Heptachlor Epoxide	0.0050 U
959-98-8	Endosulfan I	0.010 U
60-57-1	Dieldrin	0.010 U
72-55-9	4,4'-DDE	0.0050 U
72-20-8	Endrin	0.010 U
33213-65-9	Endosulfan II	0.010 U
72-54-8	4,4'-DDD	0.020 U
1031-07-8	Endosulfan Sulfate	0.10 U
50-29-3	4,4'-DDT	0.020 U
72-43-5	Methoxychlor	0.020 U
53494-70-5	Endrin Ketone	0.030 U
57-74-9	Chlordane	0.020 U
8001-35-2	Toxaphene	0.25 U
12674-11-2	Aroclor-1016	0.10 U
11104-28-2	Aroclor-1221	0.10 U
11141-16-5	Aroclor-1232	0.10 U
53469-21-9	Aroclor-1242	0.10 U
12672-29-6	Aroclor-1248	0.10 U
11097-69-1	Aroclor-1254	0.10 U
11096-82-5	Aroclor-1260	0.10 U

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s =870 or W_s =NR V_t = 5000 V_i = 5

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CLF: 11/14/85 Form I Prepared by: _____ 7/85

ORGANICS ANALYSIS DATA SHEET
Page 4
TENTATIVELY IDENTIFIED COMPOUNDS

a_ Name: CAL Case No. 9255/3758E Sample No. 170169
C Report No. 3758E Lab Sample No. 4088703AB ES704

Probability that Identification is Correct:
A= HIGH B= MODERATE C= UNKNOWN D= SOLVENT IMPURITY, see VOA

CAS#	COMPOUND NAME	FRACTION	SCAN NUMBER	PURITY	Estimated CONC. J VALUE
	No A/BN				

No volatile compounds

FORM 1, PART B

Sample Number
ES765

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: ENSECO CAL LAB

Case No: 9255/3758E

Lab Sample ID No: 40887-4

QC Report No: 3758E

Sample Matrix: WATER

Contract No: 68-W8-0069

Data Release Authorized By:

Date Sample Received: 3/31/88

Volatile Compounds

Concentration: Low

Date Extracted/Prepared: 4/8/88

Date Analyzed: 4/8/88

Conc/Dil Factor: 1 pH: NR

Percent Moisture: NR

Percent Moisture (Decanted): NR

CAS Number		ug/L
74-87-3	Chloromethane	5 U
74-83-9	Bromomethane	5 U
75-01-4	Vinyl Chloride	5 U
75-00-3	Chloroethane	1 U
75-09-2	Methylene Chloride	5 U
67-64-1	Acetone	10 U
75-15-0	Carbon Disulfide	1 U
75-35-4	1,1-Dichloroethene	1 U
75-34-3	1,1-Dichloroethane	1 U
156-60-5	Trans-1,2-Dichloroethene	1 U
67-66-3	Chloroform	1 U
107-06-2	1,2-Dichloroethane	1 U
78-93-3	2-Butanone	10 U
71-55-6	1,1,1-Trichloroethane	1 U
56-23-5	Carbon Tetrachloride	1 U
108-05-4	Vinyl Acetate	10 U
75-27-4	Bromodichloromethane	1 U

CAS Number		ug/L
79-34-5	1,1,2,2-Tetrachloroethane	1 U
78-87-5	1,2-Dichloropropane	1 U
10061-02-6	Trans-1,3-Dichloropropene	1 U
79-01-6	Trichloroethene	1 U
124-48-1	Dibromochloromethane	1 U
79-00-5	1,1,2-Trichloroethane	1 U
71-43-2	Benzene	1 U
10061-01-5	cis-1,3-Dichloropropene	1 U
110-75-8	2-Chloroethylvinylether	10 U
75-25-2	Bromoform	1 U
591-78-6	2-Hexanone	10 U
108-10-1	4-Methyl-2-Pentanone	10 U
127-18-4	Tetrachloroethene	1 U
108-88-3	Toluene	1 U
108-90-7	Chlorobenzene	3
100-41-4	Ethylbenzene	1 U
100-42-5	Styrene	1 U
	Total Xylenes	1 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J). If limit of detection is 10ug/l and a concentration of 3ug/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides >= 10ng/ul in the final extract should be confirmed by GC/MS

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

NA Not Analyzed.

See cover letter.

NR Not Required.

S Spiked Compound.

SPECIAL COMPOUNDS

Method 624/CLP

Case: 9255/3758E
EPA ID: ES 765
Lab ID: 40887-4 Enseco ID: NA
Matrix: Water Sampled: 30-Mar-88 Received: 31-Mar-88
Authorized: 31-Mar-88 Prepared: NA Analyzed: 08-Apr-88

Parameter	Result	Units	Reporting Limit
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	50

ND=Not Detected
NA=Not Applicable

Reported by: DNB Approved by: DAT

The cover letter is an integral part of this report.
Rev 041588

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9255/3857E

Sample Number
ES765

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low

Date Extracted/Prepared:

Date Analyzed: /87

Conc/DiL Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

CAS Number		ug/L
108-95-2	Phenol	1.0 U
111-44-4	bis(-2-Chloroethyl)Ether	1.0 U
95-57-8	2-Chlorophenol	1.0 U
541-73-1	1,3-Dichlorobenzene	1.0 U
106-46-7	1,4-Dichlorobenzene	1.0 U
100-51-6	Benzyl Alcohol	1.0 U
95-50-1	1,2-Dichlorobenzene	1.0 U
95-48-7	2-Methylphenol	1.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	1.0 U
106-44-5	4-Methylphenol	1.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	1.0 U
67-72-1	Hexachloroethane	1.0 U
98-95-3	Nitrobenzene	1.0 U
78-59-1	Isophorone	1.0 U
88-75-5	2-Nitrophenol	1.0 U
105-67-9	2,4-Dimethylphenol	1.0 U
65-85-0	Benzoic Acid	20 U
111-91-1	bis(-2-Chloroethoxy)Methane	1.0 U
120-83-2	2,4-Dichlorophenol	1.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0 U
91-20-3	Naphthalene	1.0 U
106-47-8	4-Chloroaniline	1.0 U
87-68-3	Hexachlorobutadiene	1.0 U
59-50-7	4-Chloro-3-Methylphenol	1.0 U
91-57-6	2-Methylnaphthalene	1.0 U
77-47-4	Hexachlorocyclopentadiene	1.0 U
88-06-2	2,4,6-Trichlorophenol	1.0 U
95-95-4	2,4,5-Trichlorophenol	1.0 U
91-58-7	2-Chloronaphthalene	1.0 U
88-74-4	2-Nitroaniline	5.0 U
131-11-3	Dimethyl Phthalate	1.0 U
208-96-8	Acenaphthylene	1.0 U
99-09-2	3-Nitroaniline	5.0 U

CAS Number		ug/L
83-32-9	Acenaphthene	1.0 U
51-28-5	2,4-Dinitrophenol	15 U
100-02-7	4-Nitrophenol	15 U
132-64-9	Dibenzofuran	1.0 U
121-14-2	2,4-Dinitrotoluene	1.0 U
606-20-2	2,6-Dinitrotoluene	1.0 U
84-66-2	Diethylphthalate	1.0 U
7005-72-3	4-Chlorophenyl-phenylether	1.0 U
86-73-7	Fluorene	1.0 U
100-01-6	4-Nitroaniline	5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15 U
86-30-6	N-Nitrosodiphenylamine(1)	1.5 U
101-55-3	4-Bromophenyl-phenylether	1.5 U
118-74-1	Hexachlorobenzene	1.5 U
87-86-5	Pentachlorophenol	2.0 U
85-01-8	Phenanthrene	1.0 U
120-12-7	Anthracene	2.5 U
84-74-2	Di-n-Butylphthalate	2.0 U
206-44-0	Fluoranthene	1.5 U
129-00-0	Pyrene	1.5 U
85-68-7	Butylbenzylphthalate	3.5 U
91-94-1	3,3'-Dichlorobenzidine	20 U
56-55-3	Benzo(a)Anthracene	1.5 U
117-81-7	bis(2-Ethylhexyl)Phthalate	6.6 U
218-01-9	Chrysene	1.5 U
117-84-0	Di-n-Octyl Phthalate	1.5 U
205-99-2	Benzo(b)Fluoranthene	1.5 U
207-08-9	Benzo(k)Fluoranthene	1.5 U
50-32-8	Benzo(a)Pyrene	2.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	3.5 U
53-70-3	Dibenz(a,h)Anthracene	2.5 U
191-24-2	Benzo(g,h,i)Perylene	4.0 U

(1) - Cannot be separated from diphenylamine

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Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9255/3758E

Sample Number
ES765

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: LOW

GPC Cleanup: NO

Date Extracted/Prepared: 4/4/88

Separatory Funnel Extraction: YES

Date Analyzed: 4/12/88

Continuous Liquid - Liquid Extraction: NO

Conc/Dil Factor: 10

CAS Number		ug/L
319-84-6	Alpha-BHC	0.10 U
319-85-7	Beta-BHC	0.0050 U
319-86-8	Delta-BHC	0.0050 U
58-89-9	Gamma-BHC (Lindane)	0.0050 U
76-44-8	Heptachlor	0.20 U
309-00-2	Aldrin	0.0050 U
1024-57-3	Heptachlor Epoxide	0.0050 U
959-98-8	Endosulfan I	0.10 U
60-57-1	Dieldrin	0.10 U
72-55-9	4,4'-DDE	0.0050 U
72-20-8	Endrin	0.10 U
33213-65-9	Endosulfan II	0.10 U
72-54-8	4,4'-DDD	0.20 U
1031-07-8	Endosulfan Sulfate	1.0 U
50-29-3	4,4'-DDT	0.20 U
72-43-5	Methoxychlor	0.20 U
53494-70-5	Endrin Ketone	0.20 U
57-74-9	Chlordane	0.20 U
8001-35-2	Toxaphene	2.0 U
12674-11-2	Aroclor-1016	1.0 U
11104-28-2	Aroclor-1221	1.0 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

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s =870 or W_s =NR V_t = 50000 V_i = 5

Prepared by:

CLF: 11/14/85 Form I 7/85

ORGANICS ANALYSIS DATA SHEET
Page 4
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: CAL Case No. 9255/3758E Sample No. 5-0169 ES165
QC Report No. 3758E Lab Sample No. 4088704AB

Probability that Identification is Correct:
A= HIGH B= MODERATE C= UNKNOWN D= SOLVENT IMPURITY, see VOA

	CAS#	COMPOUND NAME	FRACTION	SCAN NUMBER	PURITY	Estimated CONC. J VALUE
1	19340-96-6	1-HEXANAMINE, N-(PHENYLMETHYLE	A/BN	1094	440	45.9 UG/L
2.	69697-21-8	ACETONITRILE, (3,5,5-TRIMETHYL	A/BN	1109	392	15.4 UG/L
3.	1610-18-0	PROMETON (ACN)	A/BN	1137	809	6.2 UG/L
4.	5074-71-5	PHOSPHINE, BIS(PENTAFLUOROPHEN	A/BN	1237	846	47.8 UG/L
5.	15972-60-8	ALACHLOR (ACN)	A/BN	1245	767	119.5 UG/L
6.	57-10-3	HEXADECANOIC ACID	A/BN	1267	763	6.1 UG/L
7.	330-55-2	UREA, N'-(3,4-DICHLOROPHENYL)-	A/BN	1272	600	5.4 UG/L
8.	27410-98-6	1(2H)-NAPHTHALENONE, 3,4-DIHYD	A/BN	1291	475	7.4 UG/L
9	15972-60-8	ALACHLOR (ACN)	A/BN	1327	347	6.1 UG/L

	COMPOUND NAME	PROBABILITY	COMMENTS
1	1-HEXANAMINE, N-(PHENYLMETHYLE	1. C	1.
2.	ACETONITRILE, (3,5,5-TRIMETHYL	2. C	2.
3.	PROMETON (ACN)	3. B	3.
4.	PHOSPHINE, BIS(PENTAFLUOROPHEN	4. DFTPP Breakdown	
5.	ALACHLOR (ACN)	5. B	5.
6.	HEXADECANOIC ACID	6. B	6.
7.	UREA, N'-(3,4-DICHLOROPHENYL)-	7. B	7.
8.	1(2H)-NAPHTHALENONE, 3,4-DIHYD	8. ~~B~~ C at	8.
9.	ALACHLOR (ACN)	9. C	9.

Raymond L. James chemist

FORM 1, PART B

No volatile compounds

Sample Number
ES766

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: ENSECO CAL LAB

Case No: 9255/3758E

Lab Sample ID No: 40887-5

QC Report No: 3758E

Sample Matrix: WATER

Contract No: 88-W8-0069

Data Release Authorized By:

Date Sample Received: 3/31/88

Volatile Compounds

Concentration: Low

Date Extracted/Prepared: 4/7/88

Date Analyzed: 4/7/88

Conc/Dil Factor: 1 pH: NR

Percent Moisture: NR

Percent Moisture (Decanted): NR

CAS Number		ug/L
74-87-3	Chloromethane	5 U
74-83-9	Bromomethane	5 U
75-01-4	Vinyl Chloride	5 U
75-00-3	Chloroethane	1 U
75-09-2	Methylene Chloride	5 U
67-64-1	Acetone	10 U
75-15-0	Carbon Disulfide	1 U
75-35-4	1,1-Dichloroethene	1 U
75-34-3	1,1-Dichloroethane	1 U
156-60-5	Trans-1,2-Dichloroethene	1 U
67-66-3	Chloroform	1 U
107-06-2	1,2-Dichloroethane	1 U
78-93-3	2-Butanone	10 U
71-55-6	1,1,1-Trichloroethane	1 U
56-23-5	Carbon Tetrachloride	1 U
108-05-4	Vinyl Acetate	10 U
75-27-4	Bromodichloromethane	1 U

CAS Number		ug/L
79-34-5	1,1,2,2-Tetrachloroethane	1 U
78-87-5	1,2-Dichloropropane	1 U
10061-02-6	Trans-1,3-Dichloropropene	1 U
79-01-6	Trichloroethene	1 U
124-48-1	Dibromochloromethane	1 U
79-00-5	1,1,2-Trichloroethane	1 U
71-43-2	Benzene	1 U
10061-01-5	cis-1,3-Dichloropropene	1 U
110-75-8	2-Chloroethylvinylether	10 U
75-25-2	Bromoform	1 U
591-78-6	2-Hexanone	10 U
108-10-1	4-Methyl-2-Pentanone	10 U
127-18-4	Tetrachloroethene	1 U
108-88-3	Toluene	1
108-90-7	Chlorobenzene	1 U
100-41-4	Ethylbenzene	1 U
100-42-5	Styrene	1 U
	Total Xylenes	1 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/ dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

J Indicates an estimated value. This flag is used either when estimating a concentration for tenatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J). If limit of detection is 10ug/l and a concentration of 3ug/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides >= 10ng/ul in the final extract should be confirmed by GC/MS

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

NA Not Analyzed.
See cover letter.
NR Not Required.
S Spiked Compound.

SPECIAL COMPOUNDS

Method 624/CLP

Case:	9255/3758E				
EPA ID:	ES 766				
Lab ID:	40887-5	Enseco ID:	NA		
Matrix:	Water	Sampled:	30-Mar-88	Received:	31-Mar-88
Authorized:	31-Mar-88	Prepared:	NA	Analyzed:	07-Apr-88

Parameter	Result	Units	Reporting Limit
Acrolein	ND	ug/L	100
Acrylonitrile	1.3	ug/L	50

ND=Not Detected
NA=Not Applicable

Reported by: DNB

Approved by: DAT

The cover letter is an integral part of this report.
Rev 041588

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9255/3758E

Sample Number
ES766

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low

GPC Cleanup: NO

Date Extracted/Prepared: 4/4/88

Separatory Funnel Extraction: YES

Date Analyzed: 4/11/88

Continuous Liquid - Liquid Extraction: NO

Conc/Dil. Factor: 1

CAS Number		ug/L
108-95-2	Phenol	1.0 U
111-44-4	bis(-2-Chloroethyl)Ether	1.0 U
95-57-8	2-Chlorophenol	1.0 U
541-73-1	1,3-Dichlorobenzene	1.0 U
106-46-7	1,4-Dichlorobenzene	1.0 U
100-51-6	Benzyl Alcohol	1.0 U
95-50-1	1,2-Dichlorobenzene	1.0 U
95-48-7	2-Methylphenol	1.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	1.0 U
106-44-5	4-Methylphenol	1.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	1.0 U
67-72-1	Hexachloroethane	1.0 U
98-95-3	Nitrobenzene	1.0 U
78-59-1	Isophorone	1.0 U
88-75-5	2-Nitrophenol	1.0 U
105-67-9	2,4-Dimethylphenol	1.0 U
65-85-0	Benzoic Acid	20 U
111-91-1	bis(-2-Chloroethoxy)Methane	1.0 U
120-83-2	2,4-Dichlorophenol	1.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0 U
91-20-3	Naphthalene	1.0 U
106-47-8	4-Chloroaniline	1.0 U
87-68-3	Hexachlorobutadiene	1.0 U
59-50-7	4-Chloro-3-Methylphenol	1.0 U
91-57-6	2-Methylnaphthalene	1.0 U
77-47-4	Hexachlorocyclopentadiene	1.0 U
88-06-2	2,4,6-Trichlorophenol	1.0 U
95-95-4	2,4,5-Trichlorophenol	1.0 U
91-58-7	2-Chloronaphthalene	1.0 U
88-74-4	2-Nitroaniline	5.0 U
131-11-3	Dimethyl Phthalate	1.0 U
208-96-8	Acenaphthylene	1.0 U
99-09-2	3-Nitroaniline	5.0 U

CAS Number		ug/L
83-32-9	Acenaphthene	1.0 U
51-28-5	2,4-Dinitrophenol	15 U
100-02-7	4-Nitrophenol	15 U
132-64-9	Dibenzofuran	1.0 U
121-14-2	2,4-Dinitrotoluene	1.0 U
606-20-2	2,6-Dinitrotoluene	1.0 U
84-66-2	Diethylphthalate	1.0 U
7005-72-3	4-Chlorophenyl-phenylether	1.0 U
86-73-7	Fluorene	1.0 U
100-01-6	4-Nitroaniline	5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15 U
86-30-6	N-Nitrosodiphenylamine(1)	1.5 U
101-55-3	4-Bromophenyl-phenylether	1.5 U
118-74-1	Hexachlorobenzene	1.5 U
87-86-5	Pentachlorophenol	2.0 U
85-01-8	Phenanthrene	1.0 U
120-12-7	Anthracene	2.5 U
84-74-2	Di-n-Butylphthalate	2.0 U
206-44-0	Fluoranthene	1.5 U
129-00-0	Pyrene	1.5 U
85-68-7	Butylbenzylphthalate	3.5 U
91-94-1	3,3'-Dichlorobenzidine	20 U
56-55-3	Benzo(a)Anthracene	1.5 U
117-81-7	bis(2-Ethylhexyl)Phthalate	4 ~~B~~ U
218-01-9	Chrysene	1.5 U
117-84-0	Di-n-Octyl Phthalate	1.5 U
205-99-2	Benzo(b)Fluoranthene	1.5 U
207-08-9	Benzo(k)Fluoranthene	1.5 U
50-32-8	Benzo(a)Pyrene	2.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	3.5 U
53-70-3	Dibenz(a,h)Anthracene	2.5 U
191-24-2	Benzo(g,h,i)Perylene	4.0 U

BB 4-26-88

(1) - Cannot be separated from diphenylamine

200

CLF: 10/11/85 Form I Prepared by: KY 7/85

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9255/3758E

Sample Number
ES 766

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: LOW

Date Extracted/Prepared: 4/4/88

Date Analyzed: 4/12/88

Conc/Dil Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

CAS Number		ug/L
319-84-6	Alpha-BHC	0.010 U
319-85-7	Beta-BHC	0.0060 U
319-86-8	Delta-BHC	0.0050 U
58-89-9	Gamma-BHC (Lindane)	0.0060 U
76-44-8	Heptachlor	0.030 U
309-00-2	Aldrin	0.0060 U
1024-57-3	Heptachlor Epoxide	0.0050 U
959-98-8	Endosulfan I	0.010 U
60-57-1	Dieldrin	0.010 U
72-55-9	4,6'-DDE	0.0060 U
72-20-8	Endrin	0.010 U
33213-65-9	Endosulfan II	0.010 U
72-54-8	4,6'-DDD	0.020 U
1031-07-8	Endosulfan Sulfate	0.10 U
50-29-3	4,6'-DDT	0.020 U
72-43-5	Methoxychlor	0.020 U
53494-70-5	Endrin Ketone	0.030 U
57-74-9	Chlordane	0.020 U
8001-35-2	Toxaphene	0.25 U
12674-11-2	Aroclor-1016	0.10 U
11104-28-2	Aroclor-1221	0.10 U
11141-16-5	Aroclor-1232	0.10 U
53469-21-9	Aroclor-1242	0.10 U
12672-29-6	Aroclor-1248	0.10 U
11097-69-1	Aroclor-1254	0.10 U
11096-82-5	Aroclor-1260	0.10 U

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s =1000 or W_s =NR V_t = 5000 V_i = 5

ORGANICS ANALYSIS DATA SHEET
Page 4
TENTATIVELY IDENTIFIED COMPOUNDS

Name: CAL Case No. 9255/3758E Sample No. ES-766

C Report No. 3758E Lab Sample No. 4088705AB

bability that Identification is Correct:
A= HIGH B= MODERATE C= UNKNOWN D= SOLVENT IMPURITY, see VOA

	CAS#	COMPOUND NAME	FRACTION	SCAN NUMBER	PURITY	Estimated CONC. J VALUE
1.	625-06-9	2-PENTANOL, 2,4-DIMETHYL-	A/BN	268	611	3.7 UG/L
2.	77-21-4	2,6-PIPERIDINEDIONE, 3-ETHYL-3	A/BN	1095	412	1.8 UG/L

	COMPOUND NAME	PROBABILITY	COMMENTS
1	2-PENTANOL, 2,4-DIMETHYL-	1. B	1. ~~none~~
2.	2,6-PIPERIDINEDIONE, 3-ETHYL-3	2. C	2.

No volatile compounds

FORM 1, PART B

Sample Number
ES767

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: ENSECO CAL LAB

Case No: 9255/3758E

Lab Sample ID No: 40887-5

QC Report No: 3758E

Sample Matrix: WATER

Contract No: 88-W8-0069

Data Release Authorized By:

Date Sample Received: 3/31/88

Volatile Compounds

Concentration: Low

Date Extracted/Prepared: 4/9/88

Date Analyzed: 4/9/88

Conc/Dil Factor: 1 pH: NR

Percent Moisture: NR

Percent Moisture (Decanted): NR

CAS Number		ug/L
74-87-3	Chloromethane	5 U
74-83-9	Bromomethane	5 U
75-01-4	Vinyl Chloride	5 U
75-00-3	Chloroethane	1 U
75-09-2	Methylene Chloride	5 U
67-64-1	Acetone	8 B
75-15-0	Carbon Disulfide	1 U
75-35-4	1,1-Dichloroethene	1 U
75-34-3	1,1-Dichloroethane	1 U
156-60-5	Trans-1,2-Dichloroethene	1 U
67-66-3	Chloroform	1 U
107-06-2	1,2-Dichloroethane	1 U
78-93-3	2-Butanone	10 U
71-55-6	1,1,1-Trichloroethane	1 U
56-23-5	Carbon Tetrachloride	1 U
108-05-4	Vinyl Acetate	10 U
75-27-4	Bromodichloromethane	1 U

CAS Number		ug/L
79-34-5	1,1,2,2-Tetrachloroethane	1 U
78-87-5	1,2-Dichloropropane	1 U
10061-02-6	Trans-1,3-Dichloropropene	1 U
79-01-6	Trichloroethene	1 U
124-48-1	Dibromochloromethane	1 U
79-00-5	1,1,2-Trichloroethane	1 U
71-43-2	Benzene	1 U
10061-01-5	cis-1,3-Dichloropropene	1 U
110-75-8	2-Chloroethylvinylether	10 U
75-25-2	Bromoform	1 U
591-78-6	2-Hexanone	10 U
108-10-1	4-Methyl-2-Pentanone	10 U
127-18-4	Tetrachloroethene	1 U
108-88-3	Toluene	3
108-90-7	Chlorobenzene	1 U
100-41-4	Ethylbenzene	1 U
100-42-5	Styrene	1 U
	Total Xylenes	1 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J). If limit of detection is 10ug/l and a concentration of 3ug/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides >= 10ng/ul in the final extract should be confirmed by GC/MS

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

NA Not Analyzed.
See cover letter.
NR Not Required.
S Spiked Compound.

SPECIAL COMPOUNDS

Method 624/CLP

Case:	9255/3758E				
EPA ID:	ES 767				
Lab ID:	40887-6	Enseco ID:	NA		
Matrix:	Water	Sampled:	30-Mar-88	Received:	31-Mar-88
Authorized:	31-Mar-88	Prepared:	NA	Analyzed:	09-Apr-88

Parameter	Result	Units	Reporting Limit
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	50

ND=Not Detected
NA=Not Applicable

Reported by: DNB Approved by: DAT

The cover letter is an integral part of this report.
Rev 041588

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9255/3758E

Sample Number
ES767

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low

Date Extracted/Prepared: 4/4/88

Date Analyzed: 4/11/88

Conc/DIL Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

CAS Number		ug/L
108-95-2	Phenol	1.0 U
111-44-4	bis(-2-Chloroethyl)Ether	1.0 U
95-57-8	2-Chlorophenol	1.0 U
541-73-1	1,3-Dichlorobenzene	1.0 U
106-46-7	1,4-Dichlorobenzene	1.0 U
100-51-6	Benzyl Alcohol	1.0 U
95-50-1	1,2-Dichlorobenzene	1.0 U
95-48-7	2-Methylphenol	1.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	1.0 U
106-44-5	4-Methylphenol	1.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	1.0 U
67-72-1	Hexachloroethane	1.0 U
98-95-3	Nitrobenzene	1.0 U
78-59-1	Isophorone	1.0 U
88-75-5	2-Nitrophenol	1.0 U
105-67-9	2,4-Dimethylphenol	1.0 U
65-85-0	Benzoic Acid	20 U
111-91-1	bis(-2-Chloroethoxy)Methane	1.0 U
120-83-2	2,4-Dichlorophenol	1.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0 U
91-20-3	Naphthalene	1.0 U
106-47-8	4-Chloroaniline	1.0 U
87-68-3	Hexachlorobutadiene	1.0 U
59-50-7	4-Chloro-3-Methylphenol	1.0 U
91-57-6	2-Methylnaphthalene	1.0 U
77-47-4	Hexachlorocyclopentadiene	1.0 U
88-06-2	2,4,6-Trichlorophenol	1.0 U
95-95-4	2,4,5-Trichlorophenol	1.0 U
91-58-7	2-Chloronaphthalene	1.0 U
88-74-4	2-Nitroaniline	5.0 U
131-11-3	Dimethyl Phthalate	1.0 U
208-96-8	Acenaphthylene	1.0 U
99-09-2	3-Nitroaniline	5.0 U

CAS Number		ug/L
83-32-9	Acenaphthene	1.0 U
51-28-5	2,4-Dinitrophenol	15 U
100-02-7	4-Nitrophenol	15 U
132-64-9	Dibenzofuran	1.0 U
121-14-2	2,4-Dinitrotoluene	1.0 U
606-20-2	2,6-Dinitrotoluene	1.0 U
84-66-2	Diethylphthalate	1.0 U
7005-72-3	4-Chlorophenyl-phenylether	1.0 U
86-73-7	Fluorene	1.0 U
100-01-6	4-Nitroaniline	5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15 U
86-30-6	N-Nitrosodiphenylamine(1)	1.5 U
101-55-3	4-Bromophenyl-phenylether	1.5 U
118-74-1	Hexachlorobenzene	1.5 U
87-86-5	Pentachlorophenol	2.0 U
85-01-8	Phenanthrene	1.0 U
120-12-7	Anthracene	2.5 U
84-74-2	Di-n-Butylphthalate	2.0 U
206-44-0	Fluoranthene	1.5 U
129-00-0	Pyrene	1.5 U
85-68-7	Butylbenzylphthalate	3.5 U
91-94-1	3,3'-Dichlorobenzidine	20 U
56-55-3	Benzo(a)Anthracene	1.5 U
117-81-7	bis(2-Ethylhexyl)Phthalate	4.0 U
218-01-9	Chrysene	1.5 U
117-84-0	Di-n-Octyl Phthalate	1.5 U
205-99-2	Benzo(b)Fluoranthene	1.5 U
207-08-9	Benzo(k)Fluoranthene	1.5 U
50-32-8	Benzo(a)Pyrene	2.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	3.5 U
53-70-3	Dibenz(a,h)Anthracene	2.5 U
191-24-2	Benzo(g,h,i)Perylene	4.0 U

(1) - Cannot be separated from diphenylamine

CLF: 10/11/85 Form I Prepared by: 7/85

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No:9255/3758E

Sample Number
ES 767

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: LOW

GPC Cleanup: NO

Date Extracted/Prepared: 4/4/88

Separatory Funnel Extraction: YES

Date Analyzed: 4/12/88

Continuous Liquid - Liquid Extraction: NO

Conc/Dil Factor: 1

CAS Number		ug/L
319-84-6	Alpha-BHC	0.010 U
319-85-7	Beta-BHC	0.0050 U
319-86-8	Delta-BHC	0.0050 U
58-89-9	Gamma-BHC (Lindane)	0.0050 U
76-44-8	Heptachlor	0.030 U
309-00-2	Aldrin	0.0050 U
1024-57-3	Heptachlor Epoxide	0.0050 U
959-98-8	Endosulfan I	0.010 U
60-57-1	Dieldrin	0.010 U
72-55-9	4,4'-DDE	0.0050 U
72-20-8	Endrin	0.010 U
33213-65-9	Endosulfan II	0.010 U
72-54-8	4,4'-DDD	0.020 U
1031-07-8	Endosulfan Sulfate	0.10 U
50-29-3	4,4'-DDT	0.020 U
72-43-5	Methoxychlor	0.020 U
53494-70-5	Endrin Ketone	0.030 U
57-74-9	Chlordane	0.020 U
8001-35-2	Toxaphene	0.25 U
12674-11-2	Aroclor-1016	0.10 U
11104-28-2	Aroclor-1221	0.10 U
11141-16-5	Aroclor-1232	0.10 U
53469-21-9	Aroclor-1242	0.10 U
12672-29-6	Aroclor-1248	0.10 U
11097-69-1	Aroclor-1254	0.10 U
11096-82-5	Aroclor-1260	0.10 U

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s =920 or W_s =NR V_t = 5000 V_i = 5

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ORGANICS ANALYSIS DATA SHEET
Page 4
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: CAL Case No. 9255/3758E Sample No. ES-767

GC Report No. 31588 Lab Sample No. 4088706AB

Probability that Identification is Correct:
A= HIGH B= MODERATE C= UNKNOWN D= SOLVENT IMPURITY, see VOA

	CAS#	COMPOUND NAME	FRACTION	SCAN NUMBER	PURITY	Estimated CONC. J VALUE
1.	128-37-0	PHENOL, 2,6-BIS(1,1-DIMETHYLET	A/BN	974	852	4.8 UG/L
2.	57-10-3	HEXADECANOIC ACID	A/BN	1268	728	2.0 UG/L

COMPOUND NAME	PROBABILITY	COMMENTS
1. PHENOL, 2,6-BIS(1,1-DIMETHYLET	1. A	1.
2. HEXADECANOIC ACID	2. C	2.

No volatile compounds

FORM 1, PART B

METHOD BLANK SUMMARY

CASE NO. 9255/3758E REGION: 5 CONTRACTOR: Enseco - Cal Lab CONTRACT NO. 68-W8-0169

FILE ID	DATE OF ANALYSIS	FRACTION	MATRIX	CONC. LEVEL	INST. ID	CAS NUMBER	COMPOUND (HSL,TIC OR UNKNOWN)	CONC.	UNITS	CRDL
VBK16880407	4/7/88	VOA	WATER	LOW	F16	108-10-1	4-METHYL-2-PENTANONE	2	UG/L	10
						591-78-6	2-HEXANONE	3	UG/L	10
VBK9880408	4/8/88	VOA	WATER	LOW	F9	67-64-1	ACETONE	3	UG/L	10
						78-93-3	2-BUTANONE	2	UG/L	10
						108-10-1	4-METHYL-2-PENTANONE	2	UG/L	10
						591-78-6	2-HEXANONE	2	UG/L	10
						79-34-5	1,1,2,2-TETRACHLOROETHANE	1	UG/L	1
VBK48804088	4/9/88	VOA	WATER	LOW	F4	67-64-1	ACETONE	2	UG/L	10
VBK4880409	4/9/88	VOA	WATER	LOW	F4	67-64-1	ACETONE	2	UG/L	10
VBK9880411	4/11/88	VOA	WATER	LOW	F9	67-64-1	ACETONE	2	UG/L	10
40887MB	4/8/88	ABN	WATER	LOW	F4	117-81-7	BIS-(2-ETHYLHEXYL)PHTHALATE	4	UG/L	1
40887MB	4/12/88	PEST	WATER	LOW	GC#12	-	NO PESTICIDES FOUND	-	-	-

COMMENTS:

FORM IV 7/85

Enseco

SPECIAL COMPOUNDS

Method 624/CLP

Case:	9255/3758E				
EPA ID:	VOA BLANK				
Lab ID:	VBK16880407	Enseco ID:	NA		
Matrix:	Water	Sampled:	NA	Received:	NA
Authorized:	NA	Prepared:	NA	Analyzed:	07-Apr-88

Parameter	Result	Units	Reporting Limit
Acrolein	9.3	ug/L	100
Acrylonitrile	2.6	ug/L	50

ND=Not Detected
NA=Not Applicable

Reported by: DNB AR Approved by: DAT

The cover letter is an integral part of this report.
Rev 041588

SPECIAL COMPOUNDS

Method 624/CLP

Case: 9255/3758E
EPA ID: VOA BLANK
Lab ID: VBK9880408 Enseco ID: NA
Matrix: Water Sampled: NA Received: NA
Authorized: NA Prepared: NA Analyzed: 08-Apr-88

Parameter	Result	Units	Reporting Limit
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	50

ND=Not Detected
NA=Not Applicable

Reported by: DNB Approved by: DAT

The cover letter is an integral part of this report.
Rev 041588

SPECIAL COMPOUNDS

Method 624/CLP

Case: 9255/3758E

SPECIAL COMPOUNDS

Method 624/CLP

Case:	9255/3758E				
EPA ID:	VOA BLANK				
Lab ID:	VBK4880408B	Enseco ID:	NA		
Matrix:	Water	Sampled:	NA	Received:	NA
Authorized:	NA	Prepared:	NA	Analyzed:	09-Apr-88

Parameter	Result	Units	Reporting Limit
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	50

ND=Not Detected
NA=Not Applicable

Reported by: DNB

Approved by: DAT

The cover letter is an integral part of this report.
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SPECIAL COMPOUNDS

Method 624/CLP

Case:	9255/3758E				
EPA ID:	VOA BLANK				
Lab ID:	VBK4880409	Enseco ID:	NA		
Matrix:	Water	Sampled:	NA	Received:	NA
Authorized:	NA	Prepared:	NA	Analyzed:	09-Apr-88

Parameter	Result	Units	Reporting Limit
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	50

ND=Not Detected
NA=Not Applicable

Reported by: DNB

Approved by: DAT

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SPECIAL COMPOUNDS

Method 624/CLP

Case: 9255/3758E
EPA ID: VOA BLANK
Lab ID: VBK9880411 Enseco ID: NA
Matrix: Water Sampled: NA Received: NA
Authorized: NA Prepared: NA Analyzed: 11-APR-88

Parameter	Result	Units	Reporting Limit
Acrolein	ND	ug/L	100
Acrylonitrile	ND	ug/L	50

ND=Not Detected
NA=Not Applicable

Reported by: DNB Approved by: DAT

The cover letter is an integral part of this report.
Rev 041588

ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

CRL Receipt Date 4/22 FIT Receipt Date 5/16 Review Completed 5/18/88

TO: Bob Kurzeja
FROM: Zena Gold-Kaufman ZGK
SUBJECT: Amoco Oil Company
PAN: IL #0599 (1 hour charged for review) Case # 9255/35546

Sample Description

Organics (VOA, ABN, Pest/PCB)		Inorganics (Metals, Cyanide)	
#	Low Soil	#	Low Soil
	Low Water		Low Water
X	Drinking Water	6	Drinking Water
	Other		Other

Project Data Status _____ Completed!!

_____ Incomplete, awaiting drinking water ~~inorganics~~ organics

inorganics: low soils, organics: low soil

FIT Data Review Findings:

See case narrative regarding the uncertainty concerning ~~Cyna~~ cyanide hit

Check Data Sheets for Transcription Errors

✓ Compounds were detected in sample(s); see enclosed sheet.

Book No. 7 Page No. 284 Date Sampled 3/29/88

0759:2

recycled paper

QA/QC IS PROVIDED IN THE ATTACHED DATA SHEETS.

Amoco Oil Company #9255/3554E

REPORTING UNITS

A. Organics

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - ug/kg or ppb (parts per billion)

B. Metals

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - mg/kg or ppm (parts per million)

II. DEFINITION OF FOOTNOTES TO ANALYTICAL DATA

A. Organics

FOOTNOTE	DEFINITION	INTERPRETATION
U	Indicates compound was analyzed for but not detected.	Compound was not detected.
J	Indicates an estimated value.	Compound value may be semi-quantitative.
UJ	Quantitation limit is estimated due to a Quality Control (QC) protocol.	Compound was not detected.
C	This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract shall be confirmed by GC/MS.	Compound was confirmed by mass spectroscop
B	This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.	Compound value may be semi-quantitative if it is <5x the blank concentration (<10x the blank concentrations for common lab artifacts: phthalates, methylene chloride acetone, toluene, 2-butanone).
E	This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods.	Compound value may be semi-quantitative.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.	Alerts data user to a possible change in the CRQL.
A	This flag indicates that a TIC is a suspected aldol-condensation product.	Alerts data user of a lab artifact.
R	Results are unusable due to a major violation of QC protocol.	Compound value is not usable.

B. Metals

FOOTNOTE		DEFINITION	INTERPRETATION
M	NEW		
E	E	Estimated or not reported due to inteference. See laboratory narrative.	Compound or element was not detected or value may be semi-quantitative.
S	S	Analysis by Method of Standard Additions.	Value may be quantitative.
N	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.
*	*	Duplicate value outside QC protocols which indicates a possible matrix problem.	Value may be semi-quantitative.
+	+	Correlation coefficient for standard additions in less than 0.995. See review and laboratory narrative.	Data value may be biased.
J	B	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semi-quantitative.
J		DL is estimated because of a QC protocol. DL is possibly above or below CRDL.	Compound or element was not detected.
J		Value is above CRDL and is an estimated value because of a QC Protocol.	Value may be semi-quantitative.
U	U	Compound was analyzed for but not detected.	Compound was not detected.
	M	Duplicate injection precision not met.	Value may be semi-quantitative.
	W	Post digestion spike for furnance AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance.	Value may be semi-quantitative.

C. Other Symbols Used

NA Value not available due to insufficient data.
NR Value not calculated since chemical is not a carcinogen.
) Estimated value.

ecology and environment, inc.
CHICAGO, ILLINOIS

CHEMICAL EVALUATION FORM

SITE NAME: Amoco Oil Co PAN # IL0595 DATE: 5/18/88
CASE # 9255/35546 UNITS µg/l REVIEWER: Z Kaufman

COMPOUND	CRDL** RAS SOIL mg/Kg (ppm)	CRDL** RAS WATER ug/L (ppb)	CRDL** SAS DRINKING WATER ug/L (ppb)	MES 206	207	208	209	210	211
ALUMINUM *	40	200	100	R –	38.1 B	557	32.1	26.3B	—
ANTIMONY	2.4	60	5	—	—	2.2B	3.4 BJ	—	—
ARSENIC	2	10	5	—	1.0 BS	—	5.7 S	—	—
BARIUM *	40	200	50	19.8B	36.7B	140	94.4	19.7B	—
BERYLLIUM	1	5	5	—	—	—	—	—	—
CADMIUM	1	5	0.5	0.2B	0.3BS	0.1B	2.0S	0.1B	—
CALCIUM *	1000	5000	1000	158000	129000	1000	342000	158000	170B
CHROMIUM	2	10	10	—	—	—	—	—	—
COBALT	10	50	10	—	—	—	8.6B	—	—
COPPER J	5	25	10	—	42.0+	53.1	19.3	—	—
IRON *	20	100	100	48.0B	309	5010	R –	—	—
LEAD J	1	5	2	4.8SN	4.4SN	3.7SN	1.6BSN	1.7BSN	1.5BSN
MAGNESIUM *	1000	5000	1000	63900	43600	32100	109000	64300	—
MANGANESE *	3	15	10	—	—	83	8500	—	—
MERCURY	0.008	0.2	0.2	—	—	—	—	—	—
NICKEL	8	40	20	—	—	—	59.6	—	—
POTASSIUM *	1000	5000	2000	307B	8760	978B	96400	383	150B
SELENIUM	1	5	2	—	—	—	—	—	—
SILVER	2	10	5	—	—	—	—	—	—
SODIUM *	1000	5000	1000	18800	23900	28900	26400	18700	— J
THALLIUM J	2	10	2	—	—	—	—	—	—
VANADIUM	10	50	10	—	—	—	—	—	—
ZINC *	4	20	20	50.4	51.1	232	448	53.8	6.5B
CYANIDE	2	10	10	—	—	—	10.4	—	—

* NOT GENERALLY USED FOR HRS SCORING
** SPECIFIC DETECTION LIMITS ARE HIGHLY MATRIX DEPENDENT. THE DETECTION LIMITS LISTED HEREIN ARE PROVIDED FOR GUIDANCE AND MAY NOT ALWAYS BE ACHIEVABLE.

ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

MEMORANDUM

DATE: 5/18/86
TO: File
FROM: Zena Gold-Kaufman ZGK
SUBJECT: Amoco Oil Company

PAN IL 0595

Below is a list of elements whose spike recoveries were biased low:

Element	Spike Recovery
Lead	74%
Thallium	78.5%

The low recoveries rates biases the data low, thereby raising the detection limits and estimating any reported values. This means that in the worst case the true concentration is greater than the reported values and the data is an underestimation.

It is the opinion of this reviewer that the data is acceptable for HRS scoring.

0759:2

recycled paper

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 5.4.88

SUBJECT: Review of Region V CLP Data Received for Review on 4-22-88

FROM: Curtis Ross, Director (5SCRL) Central Regional Laboratory

TO: Data User: Fit

We have reviewed the data for the following case(s).

SITE NAME: Amoco Oil Co (IL) SMO Case No. 92555AS3554E

EPA Data Set No. SF 5013 No. of Samples: 6 D.U./Activity Numbers Y905 / C72122

CRL No. 88FR16 566-569, D66, R07

SMO Traffic No. MES 206-211

CLP Laboratory: RMAL Hrs. Required for Review: 10.6 HRS / 1 hr

Following are our findings:

This case review covers the analysis of 6 low ground (drinking) waters for the analysis of total metals and cyanide (QC# 87740).

ICP Analysis: The IDL for Na (1360 ug/l) is above the contract required IDL of 1000 ug/l; the Na value for MES211 is estimated (J). Matrix spike recovery for Ag(83.4%) indicates low bias; all Ag values are estimated (UJ) and detection limits may be elevated.

GFAA Analysis: Matrix spike recoveries for Pb(74%) and Tl(78.5%) indicate low bias while that for Sb(121.5%) indicates high bias. For Pb all results are estimated (J); for Tl all results are estimated (UJ) and the detection limits may be elevated.

Richard Daly 5-2-88

( ) Data are acceptable for use.
(X) Data are acceptable for use with qualifications referenced above. See Data Qualifier sheets and Calibration Outlier forms for flags and additional comments.
( ) Data are preliminary - pending verification by Contractor Laboratory. See Case Summary above.
( ) Data are unacceptable.

cc: Carla Dempsey, CLP Quality Assurance Officer, Analytical Operations Branch
James Petty, Chief Quality Assurance Research, EMSL, Las Vegas

DATA QUALIFIERS

CONTRACT LAB: RMAL CASE NO. 9255

ICP Analysis (continued): For Sb the results for MES208 and MES209 are estimated (J) while for the remaining samples the Sb results are acceptable. The duplicate analysis for Cu(> +/-10) shows Cu to be out of control; the Cu results are estimated (J).

Hg and CN results are acceptable. The data user is advised of the lab's narrative concerning the cyanide value for MES209.

General Comments: Sample MES211 is a field blank; all the analysis results were less than contract required detection limits. Samples MES206 and MES210 are designated as duplicates; RPD calculations indicate Fe(200%) and Pb(95.4%) to differ by more than 20 percent.

The MSA value for Cd was incorrectly calculated for the LCS sample; the reviewer has entered the correct value on Forms 7, and 8.

Richard Dilg
5-2-88

Reviewed by: Richard Dilg

Date: May 2, 1988

SF 5013

U.S. EPA - CLP

00001

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

SOW No.: 7/87

EPA Sample No.	Lab Sample ID.
MES206	
MES206D	
MES207	
MES207S	
MES208	
MES209	
MES210	
MES211	

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:

6 LOW WATERS FOR TOTAL METALS AND CYANIDE ANALYSIS
ALL FURNACE VALUES ARE DETERMINED BY MSA
RMA QC# 87740 21 DAY TURNAROUND

Release of the data contained in this hardcopy data package and in the computer readable data submitted on floppy diskette have been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Lab Manager: [signature]

Date: 04/21/88

NARRATIVE

RMA QC # 87740

CASE/SAS # 9255/35554E

Sample MES209 was analyzed for Cyanide and found to have a cyanide concentration of 10.4 ug/l which is just above the cyanide CRDL. Since the sample was known to be a drinking water, and since there was still time in the 14 day holding time to reprep the sample, the sample was reprepped and analyzed. This second prep and analysis proved that there is indeed a small amount of cyanide in MES209, however, this analysis found the sample concentration to be below the cyanide CRDL.

The results from the original analysis are reported, however, the raw data from both analyses is included in the raw data package.

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MES206

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

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

Level (low/med): LOW Date Recieved: 03/31/88

% 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	25.0	U		P
7440-36-0	Antimony				
7440-38-2	Arsenic	1.0	U	S	F
7440-39-3	Barium	19.8	B		P
7440-41-7	Beryllium	2.0	U		P
7440-43-9	Cadmium				
7440-70-2	Calcium	158000			P
7440-47-3	Chromium	4.0	U		P
7440-48-4	Cobalt	4.0	U		P
7440-50-8	Copper	10.0	U	*	P
7439-89-6	Iron	48.0	B		P
7439-92-1	Lead	4.8		SN	F
7439-95-4	Magnesium	63900			P
7439-96-5	Manganese	6.0	U		P
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel	10.0	U		P
7440-09-7	Potassium	307	B		P
7482-49-2	Selenium	1.0	U	S	F
7440-22-4	Silver	4.0	U	N	P
7440-23-5	Sodium	18800			P
7440-28-0	Thallium	2.0	U	SN	F
7440-62-2	Vanadium	4.0	U		P
7440-66-6	Zinc	50.4			P
	Cyanide	10.0	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

U.S. EPA - CLP
1

EPA SAMPLE NO

MES206 00004

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

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

Level (low/med): LOW Date Received: 03/31/88

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-36-0	Antimony	2.0	U	SN	F
7440-43-9	Cadmium	0.2	B	S	F

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

COMMENTS:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MES207

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

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

Level (low/med): LOW Date Recieved: 03/31/88

% 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	38.1	B		P
7440-36-0	Antimony				
7440-38-2	Arsenic	1.0	B	S	F
7440-39-3	Barium	36.7	B		P
7440-41-7	Beryllium	2.0	U		P
7440-43-9	Cadmium				
7440-70-2	Calcium	129000			P
7440-47-3	Chromium	4.0	U		P
7440-48-4	Cobalt	4.0	U		P
7440-50-8	Copper	42.0		*	P
7439-89-6	Iron	309			P
7439-92-1	Lead	4.4		SN	F
7439-95-4	Magnesium	43600			P
7439-96-5	Manganese	6.0	U		P
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel	10.0	U		P
7440-09-7	Potassium	8760			P
7482-49-2	Selenium	1.0	U	S	F
7440-22-4	Silver	4.0	U	N	P
7440-23-5	Sodium	23900			P
7440-28-0	Thallium	2.0	U	SN	F
7440-62-2	Vanadium	4.0	U		P
7440-66-6	Zinc	51.1			P
	Cyanide	10.0	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

U.S. EPA - CLP
1

EPA SAMPLE NO

MES20000006

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

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

Level (low/med): LOW Date Received: 03/31/88

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-36-0	Antimony	2.0	U	SN	F
7440-43-9	Cadmium	0.3	B	S	F

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

COMMENTS:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MES208

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

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

Level (low/med): LOW Date Recieved: 03/31/88

% 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	557			P
7440-36-0	Antimony				
7440-38-2	Arsenic	1.0	U	S	F
7440-39-3	Barium	140			P
7440-41-7	Beryllium	2.0	U		P
7440-43-9	Cadmium				
7440-70-2	Calcium	100000			P
7440-47-3	Chromium	4.0	U		P
7440-48-4	Cobalt	4.0	U		P
7440-50-8	Copper	53.1		*	P
7439-89-6	Iron	5010			P
7439-92-1	Lead	3.7		SN	F
7439-95-4	Magnesium	32100			P
7439-96-5	Manganese	83.0			P
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel	10.0	U		P
7440-09-7	Potassium	978	B		P
7482-49-2	Selenium	1.0	U	S	F
7440-22-4	Silver	4.0	U	N	P
7440-23-5	Sodium	28900			P
7440-28-0	Thallium	2.0	U	SN	F
7440-62-2	Vanadium	4.0	U		P
7440-66-6	Zinc	23.2			P
	Cyanide	10.0	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
Color After: YELLOW Clarity After: CLEAR Artifacts: _____

Comments:

U.S. EPA - CLP
1

EPA SAMPLE NO

MES208

00008

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

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

Level (low/med): LOW Date Received: 03/31/88

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-36-0	Antimony	2.2	B	SN	F
7440-43-9	Cadmium	0.1	B	S	F

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

COMMENTS:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MES209

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

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

Level (low/med): LOW Date Recieved: 03/31/88

% 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	32.1	B		P
7440-36-0	Antimony				
7440-38-2	Arsenic	5.7		S	F
7440-39-3	Barium	94.4			P
7440-41-7	Beryllium	2.0	U		P
7440-43-9	Cadmium				
7440-70-2	Calcium	342000			P
7440-47-3	Chromium	4.0	U		P
7440-48-4	Cobalt	8.6	B		P
7440-50-8	Copper	19.3		*	P
7439-89-6	Iron	14.0	U		P
7439-92-1	Lead	1.6	B	SN	F
7439-95-4	Magnesium	109000			P
7439-96-5	Manganese	8500			P
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel	59.6			P
7440-09-7	Potassium	96400			P
7482-49-2	Selenium	1.0	U	S	F
7440-22-4	Silver	4.0	U	N	P
7440-23-5	Sodium	26400			P
7440-28-0	Thallium	2.0	U	SN	F
7440-62-2	Vanadium	4.0	U		P
7440-66-6	Zinc	448			P
	Cyanide	10.4			AS

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

U.S. EPA - CLP
1

EPA SAMPLE NO

MES209 00010

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

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

Level (low/med): LOW Date Received: 03/31/88

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-36-0	Antimony	3.4	B	SN	F
7440-43-9	Cadmium	2.0		S	F

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

COMMENTS:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MES210

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

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

Level (low/med): LOW Date Recieved: 03/31/88

% 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	26.3	B		P
7440-36-0	Antimony				
7440-38-2	Arsenic	1.0	U	S	F
7440-39-3	Barium	19.7	B		P
7440-41-7	Beryllium	2.0	U		P
7440-43-9	Cadmium				
7440-70-2	Calcium	158000			P
7440-47-3	Chromium	4.0	U		P
7440-48-4	Cobalt	4.0	U		P
7440-50-8	Copper	10.0	U	*	P
7439-89-6	Iron	14.0	U		P
7439-92-1	Lead	1.7	B	SN	F
7439-95-4	Magnesium	64300			P
7439-96-5	Manganese	6.0	U		P
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel	10.0	U		P
7440-09-7	Potassium	383	B		P
7482-49-2	Selenium	1.0	U	S	F
7440-22-4	Silver	4.0	U	N	P
7440-23-5	Sodium	18700			P
7440-28-0	Thallium	2.0	U	SN	F
7440-62-2	Vanadium	4.0	U		P
7440-66-6	Zinc	53.8			P
	Cyanide	10.0	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

U.S. EPA - CLP
1

EPA SAMPLE NO

MES210

00012

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

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

Level (low/med): LOW Date Received: 03/31/88

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-36-0	Antimony	2.0	U	SN	F
7440-43-9	Cadmium	0.1	B	S	F

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

COMMENTS:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MES211

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

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

Level (low/med): LOW Date Recieved: 03/31/88

% 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	25.0	U		P
7440-36-0	Antimony				
7440-38-2	Arsenic	1.0	U	S	F
7440-39-3	Barium	2.0	U		P
7440-41-7	Beryllium	2.0	U		P
7440-43-9	Cadmium				
7440-70-2	Calcium	170	B		P
7440-47-3	Chromium	4.0	U		P
7440-48-4	Cobalt	4.0	U		P
7440-50-8	Copper	10.0	U	*	P
7439-89-6	Iron	14.0	U		P
7439-92-1	Lead	1.5	B	SN	F
7439-95-4	Magnesium	81.0	U		P
7439-96-5	Manganese	6.0	U		P
7439-97-6	Mercury	0.2	U		CV
7440-02-0	Nickel	10.0	U		P
7440-09-7	Potassium	150	B		P
7482-49-2	Selenium	1.0	U	S	F
7440-22-4	Silver	4.0	U	N	P
7440-23-5	Sodium	1360	U		P
7440-28-0	Thallium	2.0	U	SN	F
7440-62-2	Vanadium	4.0	U		P
7440-66-6	Zinc	6.5	B		P
	Cyanide	10.0	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
SAMPLE IS A BLANK.

U.S. EPA - CLP
1

EPA SAMPLE NO

MES211

00014

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

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

Level (low/med): LOW Date Received: 03/31/88

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7440-36-0	Antimony	2.0	U	SN	F
7440-43-9	Cadmium	0.1	U	S	F

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

COMMENTS: SAMPLE IS A BLANK.

QC EXCEPTION SUMMARY REPORT

CASE # 9255
DATA SET # MES 206
LAB Q.C. # 37740
DATE: 5-2-88

SITE Amoco Oil (IL)
LAB RMAL
REVIEWED BY RJD

MATRIX: WATER
CONC. : LOW

WATER SAMPLE SPK.
WATER SAMPLE DUP.
SOIL SAMPLE SPK.
SOIL SAMPLE DUP.

	OVERALL CASE QC									MATRIX SPECIFIC QC						SAMPLE SPECIFIC QC		FIELD QC			REGIONAL QC			OTHER/ COMMENTS
	Holding Time	Cal Blanks	Init Calver	Contin. Calver	Prep Blk AQ	Prep Blk SOL	ICS %R	LCS % AQ	LCS % SOL	Sol Dup RPD	Sol Spk. %R	AQ Dup RPD	AQ Spk. %R	Ser Dilu AQ	Ser Dilu SOL	GFAA Dup	GFAA Spike	Blank	Dup RPD	Spike %R	Blind Blank	Blind Spike %R	Split Sample RPD	
Aluminum																								
Antimony													121.5											
Arsenic																								
Barium																								
Beryllium																								
Cadmium																								
Calcium																								
Chromium																								
Cobalt																								
Copper												200												
Iron																			200					
Lead													74						954					
Magnesium																								
Manganese																								
Mercury																								
Nickel																								
Potassium																								
Selenium																								
Silver													83.4											
Sodium																								IDL >1000 (136
Thallium													78.5											
Tin																								
Vanadium																								
Zinc																								
Cyanide																								

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00025

3
BLANKS

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

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	25.0	U	25.0	U	25.0	U	25.0	U	25.0	U	P
Antimony											
Arsenic											
Barium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Beryllium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	P
Cadmium											
Calcium	81.0	U	81.0	U	81.0	U	81.0	U	81.0	U	P
Chromium	4.0	U	4.0	U	-4.2	B	4.0	U	4.0	U	P
Cobalt	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	P
Copper	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Iron	14.0	U	14.0	U	14.0	U	14.0	U	14.0	U	P
Lead											
Magnesium	81.0	U	81.0	U	81.0	U	81.0	U	81.0	U	P
Manganese	6.0	U	6.0	U	6.0	U	6.0	U	6.0	U	P
Mercury											
Nickel	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	P
Potassium	95.0	U	95.0	U	95.0	U	95.0	U	95.0	U	P
Selenium											
Silver	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	P
Sodium	1360	U	1360	U	1360	U	1360	U	1360	U	P
Thallium											
Vanadium	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	P
Zinc	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	P
Cyanide											

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00025A

3
BLANKS

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

Preparation Blank Matrix (soil/water): WATER

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

Preparation Blank Matrix (soil/water): WATER

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

Analyte	Initial Calib. Blank (ug/L)		Continuing Calibration Blank 1	C	2	C	3	C	Prepa-ration Blank	C	M
Antimony	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	F
Cadmium	0.1	U	-0.1	B	0.1	U	0.1	U	-0.1	B	F

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3
BLANKS

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

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											
Antimony											
Arsenic	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	F
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	F
Magnesium											
Manganese											
Mercury	0.2	U	0.2	U	0.2	U			0.2	U	CV
Nickel											
Potassium											
Selenium	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	F
Silver											
Sodium											
Thallium	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	F
Vanadium											
Zinc											
Cyanide	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	AS

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3
BLANKS

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

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											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium			1.0	U							F
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

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											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead	1.0	U	1.0	U	1.0	U					F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MES207S

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

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

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	1900		38.1	B	2000	93.1		P
Antimony									
Arsenic	75-125	18.5		1.0	B	20.0	87.5		F
Barium	75-125	1880		36.7	B	2000	92.2		P
Beryllium	75-125	48.4		2.0	U	50.0	96.8		P
Cadmium									
Calcium	75-125	175000		129000		50000	92.0		P
Chromium	75-125	170		4.0	U	200	85.0		P
Cobalt	75-125	466		4.0	U	500	93.2		P
Copper	75-125	287		42.0		250	98.0		P
Iron	75-125	1240		309		1000	93.1		P
Lead	75-125	19.2		4.4		20.0	74.0	N	F
Magnesium	75-125	69300		43600		25000	102.8		P
Manganese	75-125	191		6.0	U	200	95.5		P
Mercury	75-125	1.1		0.2	U	1.0	110.0		CV
Nickel	75-125	375		10.0	U	400	93.8		P
Potassium	75-125	28900		8760		20000	100.7		P
Selenium	75-125	8.7		1.0	U	10.0	87.0		F
Silver	75-125	41.7		4.0	U	50.0	83.4	N	P
Sodium	75-125	79400		23900		50000	111.0		P
Thallium	75-125	15.7		2.0	U	20.0	78.5	N	F
Vanadium	75-125	460		4.0	U	500	92.0		P
Zinc	75-125	231		51.1		200	89.9		P
Cyanide	75-125	100		10.0	U	100	100.0		AS

Comments:
CONTROL LIMIT IS 85 TO 115% FOR ALL METALS EXCEPT MERCURY AND CYANIDE.
MERCURY AND CYANIDE CONTROL LIMIT IS 80 TO 120% RECOVERY.

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MES207S

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

Matrix (soil/water): WATER Level (low/medium): LOW

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

Analyte	Control Limit %R	Spike Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Antimony	85-115	24.3		2.0	U	20.0	121.5	N	F
Cadmium	85-115	2.1		0.3	B	2.0	90.0		F

EPA SAMPLE NO.

DUPLICATES

MS2061D

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Antimony		2.0	U	2.0	U			F
Cadmium	0.5	0.2	B	0.1	B	66.7		F

Comments:

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DUPLICATES

EPA SAMPLE NO.

MES206D

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

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		25.0	U	29.5	B	200		P
Antimony								
Arsenic		1.0	U	1.0	U			F
Barium		19.8	B	19.5	B	1.5		P
Beryllium		2.0	U	2.0	U			P
Cadmium								
Calcium		158000		158000		0.0		P
Chromium		4.0	U	4.0	U			P
Cobalt		4.0	U	4.0	U			P
Copper	10.0	10.0	U	11.6		200	*	P
Iron		48.0	B	16.6	B	97.2		P
Lead	2.0	4.8		4.1		15.7		F
Magnesium		63900		64100		0.3		P
Manganese		6.0	U	6.0	U			P
Mercury		0.2	U	0.2	U			CV
Nickel		10.0	U	10.0	U			P
Potassium		307	B	451	B	38.0		P
Selenium		1.0	U	1.0	U			F
Silver		4.0	U	4.0	U			P
Sodium		18800		18800		0.0		P
Thallium		2.0	U	2.0	U			F
Vanadium		4.0	U	4.0	U			P
Zinc	20.0	50.4		52.2		3.5		P
Cyanide		10.0	U	10.0	U			AS

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LABORATORY CONTROL SAMPLE

ab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

olid LCS Source: EMSL - LV

Aqueous LCS Source: EMSL - LV

Analyte	Aqueous (ug/L) True	Found	%R(1)	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum	1980	1950	98.5						
Antimony									
Arsenic									
Barium	1980	1920	97.0						
Beryllium	481	489	102						
Cadmium									
Calcium	49800	51200	103						
Chromium	506	439	86.8						
Cobalt	474	490	103						
Copper	542	555	102						
Iron	1990	1970	99.0						
Lead									
Magnesium	25000	24300	97.2						
Manganese	513	513	100						
Mercury									
Nickel	496	475	95.8						
Potassium	50200	48800	97.2						
Selenium									
Silver	509	450	88.4						
Sodium	50700	49800	98.2						
Thallium									
Vanadium	511	484	94.7						
Zinc	3100	2970	95.8						
Cyanide									

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LABORATORY CONTROL SAMPLE

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 9255 SAS No.: 3554E SDG No.: MES206

Solid LCS Source: EMSL - LV

Aqueous LCS Source: EMSL - LV

Analyte	Aqueous (ug/L) True	Found	%R(1)	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum									
Antimony									
Arsenic	47.0	52.6	112						
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead	97.9	108	110						
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium	104	102	98.1						
Silver									
Sodium									
Thallium	97.3	97.2	99.9						
Vanadium									
Zinc									
Cyanide									

Laboratory Control Sample

Lab Name: ROCKY MOUNTAIN ANALYTICAL

Solid LCS Source: EMSL-LV

Aqueous LCS Source: EMSL-LV

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Antimony	1010	908	89.9						
Cadmium	96.1	~~85.0~~ 86.4	~~88.4~~ 89.9						

PINK SHEET

ecology and environment, inc.

111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

CRL Receipt Date 4/20 FIT Receipt Date 5/4 Review Completed 5/10/85

TO: Bob Kweeg

FROM: ~~Lorrie [illegible]~~ Zena Gold Kaufman

SUBJECT: Amoco Oil Company

PAN: 1L0595 (1 hour charged for review) Case # 9255/37588

Sample Description

Organics (VOA, ABN, Pest/PCB)		Inorganics (Metals, Cyanide)	
#	Low Soil	#	Low Soil
	Low Water		Low Water
6	Drinking Water	3	Drinking Water
	Other		Other

Project Data Status: Completed:

Incomplete Volatile Pesticide Inorganic

Soil

RIT Data Review Indicates:

Tolerance Detected [illegible]

Check Data Sheets for Transcription Errors

X Compounds were detected in sample(s); see enclosed sheet.

Book No. 7 Page No. 285 Date Sampled 3/30/85

recycled paper

TABLE A
CONTRACT LABORATORY PROGRAM
HAZARDOUS SUBSTANCE LIST (HSL)
VOLATILES DETECTION LIMITS

COMPOUND	CAS #	WATER		SOIL SEDIMENT SLUDGE	
Chloromethane	74-87-3	10	ug/L	10	ug/KG
Bromomethane	74-83-9	10		10	
Vinyl Chloride	75-01-4	10		10	
Chloroethane	75-00-3	10		10	
Methylene Chloride	75-09-2	5		5	
Acetone	67-64-1	10		10	
Carbon Disulfide	75-15-0	5		5	
1,1-Dichloroethene	75-35-4	5		5	
1,1-Dichloroethane	75-35-3	5		5	
trans-1,2-Dichloroethene	156-60-5	5		5	
Chloroform	67-66-3	5		5	
1-2-Dichloroethane	107-06-2	5		5	
2-Butanone (MEK)	78-93-3	10		10	
1,1,1-Trichloroethane	71-55-6	5		5	
Carbon Tetrachloride	56-23-5	5		5	
Vinyl Acetate	108-05-4	10		10	
Bromodichloromethane	75-27-4	5		5	
1,1,2,2-Tetrachloroethane	79-34-5	5		5	
1,2-Dichloropropane	78-87-5	5		5	
trans-1,3-Dichloropropene	10061-02-6	5		5	
Trichloroethene	79-01-6	5		5	
Dibromochloromethane	124-48-1	5		5	
1,1,2-Trichloroethane	79-00-5	5		5	
Benzene	71-43-2	5		5	
cis-1,3-Dichloropropene	10061-01-5	5		5	
2-Chloroethyl Vinyl Ether	110-75-8	10		10	
Bromoform	75-25-2	5		5	
2-Hexanone	591-78-6	10		10	
4-Methyl-2-pentanone	108-10-1	10		10	
Tetrachloroethene	127-18-4	5		5	
Toluene	108-88-3	5		5	
Chlorobenzene	108-90-7	5		5	
Ethyl Benzene	100-41-4	5		5	
Styrene	100-42-5	5		5	
Total Xylenes		5		5	

TABLE A (Cont.)
CONTRACT LABORATORY PROGRAM
HAZARDOUS SUBSTANCE LIST (HSL)
SEMI-VOLATILES DETECTION LIMITS

COMPOUND	CAS #	WATER	SOIL SEDIMENT SLUDGE
N-Nitrosodimethylamine	62-75-9	10 ug/L	330 ug/KG
Phenol	108-95-2	10	330
Aniline	62-53-3	10	330
bis(2-Chloroethyl) ether	111-44-4	10	330
2-Chlorophenol	95-57-8	10	330
1,3-Dichlorobenzene	541-73-1	10	330
1,4-Dichlorobenzene	106-46-7	10	330
Benzyl Alcohol	100-51-6	10	330
1,2-Dichlorobenzene	95-50-1	10	330
2-Methylphenol	95-48-7	10	330
bis(2-Chloroisopropyl) ether	39638-32-9	10	330
4-Methylphenol	106-44-5	10	330
N-Nitroso-Di-n-propylamine	621-64-7	10	330
Hexachloroethane	67-72-1	10	330
Nitrobenzene	98-95-3	10	330
Isophorone	78-59-1	10	330
2-Nitrophenol	88-75-5	10	330
2,4-Dimethylphenol	105-67-9	10	330
Benzoic Acid	65-85-0	50	1600
bis-(2-Chloroethoxy) methane	111-91-1	10	330
2,4-Dichlorophenol	120-83-2	10	330
1,2,4-Trichlorobenzene	120-82-1	10	330
Naphthalene	91-20-3	10	330
4-Chloroaniline	106-47-8	10	330
Hexachlorobutadiene	87-68-3	10	300
4-Chloro-3-methylphenol	59-50-7	10	330
2-Methylnaphthalene	91-57-6	10	330
Hexachlorocyclopentadiene	77-47-4	10	330
2,4,6-Trichlorophenol	88-06-2	10	330
2,4,5-Trichlorophenol	95-95-4	50	1600
2-Chloronaphthalene	91-58-7	10	330
2-Nitroaniline	88-74-4	50	1600
Dimethyl Phthalate	131-11-3	10	330
Acenaphtylene	208-96-8	10	330
3-Nitroaniline	99-09-2	50	1600
Acenaphthene	83-32-9	10	330
2,4-Dinitrophenol	51-28-5	50	1600
4-Nitrophenol	100-02-7	50	1600
Dibenzofuran	132-64-9	10	330
2,4-Dinitrotoluene	121-14-2	10	330
2,6-Dinitrotoluene	606-20-2	10	330
Diethylphthalate	84-66-2	10	330
4-Chlorophenyl phenylether	7005-72-3	10	330

Cont.

TABLE A (Cont.)
CONTRACT LABORATORY PROGRAM
HAZARDOUS SUBSTANCE LIST (HSL)
SEMI-VOLATILES DETECTION LIMITS

COMPOUND	CAS #	WATER	SOIL SLUDGE SEDIMENT
Fluorene	86-73-7	10 ug/L	330 ug/KG
4-Nitroaniline	100-01-6	50	1600
4,6-Dinitro-2-methylphenol	534-52-1	50	1600
N-nitrosodiphenylamine	86-30-6	10	330
4-Bromophenyl phenyl ether	101-55-3	10	330
Hexachlorobenzene	118-74-1	10	330
Pentachlorophenol	87-86-5	50	1600
Phenanthrene	85-01-8	10	330
Anthracene	120-12-7	10	330
Di-n-butyl phthalate	84-74-2	10	330
Fluoranthene	206-44-0	10	330
Benzidine	92-87-5	80	2600
Pyrene	129-00-0	10	330
Butylbenzyl phthalate	85-68-7	10	330
3,3'-Dichlorobenzidine	91-94-7	10	660
Benzo(a)anthracene	56-55-3	10	330
bis(2-ethylhexyl)phthalate	117-81-7	10	330
Chrysene	218-01-9	10	330
Di-n-octyl phthalate	117-84-0	10	330
Benzo(b)fluoranthene	205-99-2	10	330
Benzo(k)fluoranthene	207-08-9	10	330
Benzo(a)pyrene	50-32-8	10	330
Indeno(1,2,3-cd)pyrene	193-39-5	10	330
Dibenz(a,h)anthracene	53-70-3	10	330
Benzo(g,h,i)perylene	191-24-2	10	330

TABLE A (Cont.)
CONTRACT LABORATORY PROGRAM
HAZARDOUS SUBSTANCE LIST (HSL)
PESTICIDE AND PCB DETECTION LIMITS

COMPOUND	CAS #	WATER	SOIL SEDIMENT SLUDGE
alpha-BHC	319-84-6	0.05 ug/L	8 ug/KG
beta-BHC	319-85-7	0.05	8
delta-BHC	319-86-8	0.05	8
gamma-BHC (Lindane)	58-89-9	0.05	8
Heptachlor	76-44-8	0.05	8
Aldrin	309-00-2	0.05	8
Heptachlor Epoxide	1024-57-3	0.05	8
Edosulfan I	959-98-8	0.05	8
Dieldrin	60-57-1	0.10	16
4,4'-DDE	72-55-9	0.10	16
Endrin	72-20-8	0.10	16
Edosulfan II	33213-65-9	0.10	16
4,4'-DDD	72-54-8	0.10	16
Endrin Aldehyde	7421-93-4	0.10	16
Endosulfan Sulfate	1031-07-8	0.10	16
4,4'-DDT	50-29-3	0.10	16
Endrin Ketone	53494-70-5	0.10	16
Methoxychlor (Mariate)	72-43-5	0.5	80
Chlordane	57-74-9	0.5	80
Toxaphene	8001-35-2	1.0	160
AROCLOR-1016	12674-11-2	0.5	80
AROCLOR-1221	11104-28-2	0.5	80
AROCLOR-1232	11141-16-5	0.5	80
AROCLOR-1242	53469-21-9	0.5	80
AROCLOR-1248	12672-29-6	0.5	80
AROCLOR-1254	11097-69-1	1.0	160
AROCLOR-1260	11096-82-5	1.0	160

TABLE A (Cont.)
CONTRACT LABORATORY PROGRAM
HAZARDOUS SUBSTANCE LIST (HSL)
INORGANIC DETECTION LIMITS

COMPOUND	PROCEDURE	DETECTION LIMITS WATER	DETECTION LIMITS SOIL SEDIMENT SLUDGE
ALUMINUM	ICP	200 ug/L	40 mg/KG
ANTIMONY	FURNACE	60	2.4
ARSENIC	FURNACE	10	2
BARIUM	ICP	200	40
BERYLLIUM	ICP	5	1
CADMIUM	ICP	5	1
CALCIUM	ICP	5000	1000
CHROMIUM	ICP	10	2
COBALT	ICP	50	10
COPPER	ICP	25	5
IRON	ICP	100	20
LEAD	FURNACE	5	1
MAGNESIUM	ICP	5000	1000
MANGANESE	ICP	15	3
MERCURY	COLD VAPOR	0.2	0.008
NICKEL	ICP	40	8
POTASSIUM	ICP	5000	1000
SELENIUM	FURNACE	5	1
SILVER	ICP	10	2
SODIUM	ICP	5000	1000
THALLIUM	FURNACE	10	2
TIN	ICP	40	8
VANADIUM	ICP	50	10
ZINC	ICP	20	4
CYANIDE	COLOR	10	2

TABLE B
CENTRAL REGIONAL LABORATORY
VOLATILES DETECTION LIMITS

PARAMETER	CAS #	DETECTION LIMIT IN REAGENT WATER
BENZENE	71-43-2	1.5 ug/L
BROMODICHLOROMETHANE	75-27-4	1.5
BROMOFORM	75-25-2	1.5
BROMOMETHANE	74-83-9	10
CARBON TETRACHLORIDE	56-23-5	1.5
CHLOROBENZENE	108-90-7	1.5
CHLOROETHANE	75-00-3	1.5
2-CHLOROETHYL VINYL ETHER	110-75-8	1.5
CHLOROFORM	67-66-3	1.5
CHLOROMETHANE	74-87-3	10
DIBROMOCHLOROMETHANE	124-48-1	1.5
1,1-DICHLOROETHANE	75-34-3	1.5
1,2-DICHLOROETHANE	107-06-2	1.5
1,1-DICHLOROETHENE	75-35-4	1.5
trans-1,2-DICHLOROETHENE	156-60-5	1.5
1,2-DICHLOROPROPANE	78-87-5	1.5
cis-1,3-DICHLOPROPROPENE	10061-01-5	2
trans-1,3-DICHLOROPROPENE	10061-02-6	1
ETHYL BENZENE	100-41-4	1.5
METHYLENE CHLORIDE *	75-09-2	1
1,1,2,2-TETRACHLOROETHANE	79-34-5	1.5
TETRACHLOROETHENE	127-18-4	1.5
TOLUENE *	108-88-3	1.5
1,1,1-TRICHLOROETHANE	71-55-6	1.5
1,1,2-TRICHLOROETHANE	79-00-5	1.5
TRICHLOROETHENE	79-01-6	1.5
VINYL CHLORIDE	75-01-4	10
ACROLEIN	107-02-8	100
ACETONE *	67-64-1	75
ACRYLONITRILE	107-13-1	50
CARBON DISULFIDE	75-15-0	3
2-BUTANONE	78-93-3	(50)
VINYL ACETATE	108-05-4	15
4-METHYL-2-PENTANONE	108-10-1	(3)
2-HEXANONE	519-78-6	(50)
STYRENE	100-42-5	1
m-XYLENE	108-38-3	2
o-XYLENE **	95-47-6	
p-XYLENE **	106-42-3	2.5 **

* Common Laboratory Solvents.
Blank Limit is 5x Method Detection Limit.
( ) Values in parentheses are estimates.
Actual values are being determined at this time
** The o-Xylene and p-xylene are reported as a total of the two.

TABLE B (Cont.)
CRL
SEMI-VOLATILES DETECTION LIMITS

PARAMETER	CAS #	DETECTION LIMIT	BLANK LIMIT
ANILINE	62-53-3	1.5 ug/L	3 ug/L
BIS(2-CHLOROETHYL)ETHER	111-44-4	1.5	3
PHENOL	108-95-2	2	4
2-CHLOROPHENOL	95-57-8	2	4
1,3-DICHLOROBENZENE	541-73-1	2	4
1,4-DICHLOROBENZENE	106-46-7	2	4
1,2-DICHLOROBENZENE	95-50-1	2.5	5
BENZYL ALCOHOL	100-51-6	2	4
BIS(2-CHLOROISOPROPYL) ETHER	39638-32-9	2.5	5
2-METHYLPHENOL	95-48-7	1	2
HEXACHLOROETHANE	67-72-1	2	4
N-NITROSODIPROPYLAMINE	621-64-7	1.5	3
NITROBENZENE	98-95-3	2.5	5
4-METHYLPHENOL	106-44-5	1	2
ISOPHORONE	78-59-1	2.5	5
2-NITROPHENOL	88-75-5	2	4
2,4-DIMETHYLPHENOL	105-67-9	2	4
BIS(2-CHLOROETHOXY)METHANE	111-91-1	2.5	5
2,4-DICHLOROPHENOL	120-83-2	2	4
1,2,4-TRICHLOROBENZENE	120-82-1	2	4
NAPHTHALENE	91-20-3	2	4
4-CHLOROANILINE	106-47-8	2	4
HEXACHLOROBUTADIENE	87-68-3	2.5	5
BENZOIC ACID	65-85-0	(30)	(60)
2-METHYLNAPTHALENE	91-57-6	2	4
4-CHLORO-3-METHYLPHENOL	59-50-7	1.5	3
HEXACHLOROCYCLOPENTADIENE	77-47-4	2	4
2,4,6-TRICHLOROPHENOL	88-06-2	1.5	3
2,4,5-TRICHLOROPHENOL	95-95-4	1.5	3
2-CHLORONAPTHALENE	91-58-7	1.5	3
ACENAPTHYLENE	208-96-8	1.5	3
DIMETHYL PHTHALATE	131-11-3	1.5	3
2,6-DINITROTOLUENE	606-20-2	1	2
ACENAPHTHENE	83-32-9	1.5	3
3-NITROANILINE	99-09-2	2.5	5
DIBENZOFURAN	132-64-9	1	2
2,4-DINITROPHENOL	51-28-5	(15)	(30)
2,4-DINITROTOLUENE	121-14-2	1	2

Cont.

TABLE B (Cont.)
CRL
SEMI-VOLATILE DETECTION LIMITS

PARAMETER	CAS #	DETECTION LIMIT	BLANK LIMIT
FLUORENE	86-73-7	1 ug/L	2 ug/L
4-NITROPHENOL	100-02-7	1.5	3
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	1	2
DIETHYL PHTHALATE	84-66-2	1	2
4,6-DINITRO-2-METHYLPHENOL	534-52-1	(15)	(30)
1,2-DIPHENYLHYDRAZINE	122-66-7	1	2
N-NITROSODIPHENYLAMINE *	86-30-6		
DIPHENYLAMINE *	122-39-4	1.5	3
4-NITROANILINE	100-01-6	3	6
4-BROMOPHENYL PHENYL ETHER	101-55-3	1.5	3
HEXACHLOROBENZENE	118-74-1	1.5	3
PENTACHLOROPHENOL	87-86-5	2	4
PHENANTHRENE	85-01-8	1	2
ANTHRACENE	120-12-7	2.5	5
DI-n-BUTYL PHTHALATE	84-74-2	2	4
FLUORANTHENE	206-44-0	1.5	3
PYRENE	129-00-0	1.5	3
BUTYL BENZYL PHTHALATE	85-68-7	3.5	7
CHRYSENE **	218-01-9		
BENZO(a)ANTHRACENE **	56-55-3	1.5	3
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	1	2
DI-n-OCTYL PHTHALATE	117-84-0	1.5	3
BENZO(b)FLUORANTHENE ***	205-99-2		
BENZO(k)FLUORANTHENE ***	207-08-9	1.5	3
BENZO(a)PYRENE	50-32-8	2	4
INDENO(1,2,3-cd)PYRENE	193-39-5	3.5	7
DIBENZO(a,h)ANTHRACENE	53-70-3	2.5	5
BENZO(g,h,i)PERYLENE	191-24-2	4	8
2-NITROANILINE	88-74-4	1	2

* These two parameters are reported as a total.
** These two parameters are reported as a total.
*** These two parameters are reported as a total.

( ) Values in Paranentheses are estimates.of theALUES ARE BEING
The actual values are being determined at this time.

NOTE: Limits are for reagent water.

TABLE B (Cont.)
CRL
PESTICIDE AND PCB DETECTION LIMITS

PARAMETER	CAS #	DETECTION LIMIT	
ALDRIN	309-00-2	0.005	ug/L
alpha BHC	319-84-6	(0.010)	
beta BHC	319-85-7	(0.005)	
delta BHC	319-86-8	(0.005)	
gama BHC(LINDANE)	58-89-9	0.005	
CHLORDANE	57-74-9	(0.020)	
4,4'-DDD	72-54-8	(0.020)	
4,4'-DDE	72-55-9	(0.005)	
4,4'-DDT	50-29-3	0.020	
DIELDRIN	60-57-1	0.010	
ENDOSULFAN I	959-98-8	0.010	
ENDOSULFAN II	33213-65-9	0.010	
ENDOSULFAN SULFATE	1031-07-8	(0.10)	
ENDRIN	72-20-8	0.010	
ENDRIN ALDEHYDE	7421-93-4	(0.030)	
ENDRIN KETONE	53494-70-5	(0.030)	
HEPTACHLOR	76-44-8	0.030	
HEPTACHLOR EPOXIDE	1024-57-3	0.005	
4,4'-METHOXYCHLOR	72-43-5	0.020	
TOXAPHENE	8001-35-2	(0.25)	
PCB-1242	53469-21-9	(0.10)	
PCB-1248	12672-29-6	(0.10)	
PCB-1254	11097-69-1	(0.10)	
PCB-1260	11096-82-5	(0.10)	

( ) Values in parentheses are estimates.
Actual values are being determined at this time.

NOTE: Limits are for reagent water.

TABLE B (Cont.)
CRL
INORGANIC DETECTION LIMITS

JANUARY 1986

COMPOUND	PROCEDURE	DETECTION LIMITS	RANGE	UNITS
ALUMINUM	ICP	80	80 TO 1,000,000	ug/L
ANTIMONY	FURNACE	2	2 TO 30	ug/L
ARSENIC	FURNACE	2	2 TO 30	ug/L
BARIUM	ICP	6	6 TO 20,000	ug/L
BERYLLIUM	ICP	1	1 TO 20,000	ug/L
BORON	ICP	80	80 TO 20,000	ug/L
CADMIUM	ICP	10	10 TO 20,000	ug/L
CADMIUM	FURNACE	0.2	0.2 TO 2	ug/L
CALCIUM	ICP	0.5	0.5 TO 1,000	mg/L
CHROMIUM	ICP	8	8 TO 20,000	ug/L
COBALT	ICP	6	6 TO 20,000	ug/L
COPPER	ICP	6	6 TO 20,000	ug/L
IRON	ICP	80	80 TO 1,000,000	ug/L
LEAD	FURNACE	2	2 TO 30	ug/L
LEAD	ICP	70	70 TO 20,000	ug/L
LITHIUM	ICP	10	10 TO 20,000	ug/L
MAGNESIUM	ICP	0.1	0.1 TO 200	mg/L
MANGANESE	ICP	5	5 TO 20,000	ug/L
MERCURY	COLD VAPOR	0.1	0.1 TO 2	ug/L
MOLYBDENUM	ICP	15	15 TO 20,000	ug/L
NICKEL	ICP	15	15 TO 20,000	ug/L
POTASSIUM	ICP	2	2 TO 1,000	mg/L
SELENIUM	FURNACE	2	2 TO 30	ug/L
SILVER	ICP	6	6 TO 10,000	ug/L
SODIUM	ICP	1	1 TO 1000	mg/L
STRONTIUM	ICP	10	10 TO 20,000	ug/L
SULFIDE	TITRATION	1	< 1	mg/L
SULFIDE	COLOR	0.05	< 1	mg/L
THALLIUM	FURNACE	2	2 TO 30	ug/L
TITANIUM	ICP	25	25 TO 20,000	ug/L
TIN	ICP	40	40 TO 20,000	ug/L
VANADIUM	ICP	5	5 TO 20,000	ug/L
YTTRIUM	ICP	5	5 TO 20,000	ug/L
ZINC	ICP	40	40 TO 1,000,000	ug/L
CYANIDE	AA	8	8 TO 200	ug/L

NOTE: THE ABOVE LIST MAY OR MAY NOT CONTAIN COMPOUNDS THAT ARE ROUTINELY ANALYZED AT CRL FOR LOW LEVEL DETECTION LIMITS FOR DRINKING WATER.

TABLE C
SPECIAL ANALYTICAL SERVICES DRINKING WATER
VOLATILE DETECTION LIMITS

PARAMETER	CAS #	DETECTION LIMIT IN REAGENT WATER
BENZENE	71-43-2	1.5 ug/L
BROMODICHLOROMETHANE	75-27-4	1.5
BROMOFORM	75-25-2	1.5
BROMOMETHANE	74-83-9	10
CARBON TETRACHLORIDE	56-23-5	1.5
CHLOROBENZENE	108-90-7	1.5
CHLOROETHANE	75-00-3	1.5
2-CHLOROETHYL VINYL ETHER	110-75-8	1.5
CHLOROFORM	67-66-3	1.5
CHLOROMETHANE	74-87-3	10
DIBROMOCHLOROMETHANE	124-48-1	1.5
1,1-DICHLOROETHANE	75-34-3	1.5
1,2-DICHLOROETHANE	107-06-2	1.5
1,1-DICHLOROETHENE	75-35-4	1.5
trans-1,2-DICHLOROETHENE	156-60-5	1.5
1,2-DICHLOROPROPANE	78-87-5	1.5
cis-1,3-DICHLOPROPROPENE	10061-01-5	2
trans-1,3-DICHLOROPROPENE	10061-02-6	1
ETHYL BENZENE	100-41-4	1.5
METHYLENE CHLORIDE *	75-09-2	1
1,1,2,2-TETRACHLOROETHANE	79-34-5	1.5
TETRACHLOR0ETHENE	127-18-4	1.5
TOLUENE *	108-88-3	1.5
1,1,1-TRICHLOROETHANE	71-55-6	1.5
1,1,2-TRICHLOROETHANE	79-00-5	1.5
TRICHLOROETHENE	79-01-6	1.5
VINYL CHLORIDE	75-01-4	10
ACROLEIN	107-02-8	100
ACETONE *	67-64-1	75
ACRYLONITRILE	107-13-1	50
CARBON DISULFIDE	75-15-0	3
2-BUTANONE	78-93-3	(50)
VINYL ACETATE	108-05-4	15
4-METHYL-2-PENTANONE	108-10-1	(3)
2-HEXANONE	519-78-6	(50)
STYRENE	100-42-5	1
m-XYLENE	108-38-3	2
o-XYLENE **	95-47-6	
p-XYLENE **	106-42-3	2.5 **

* Common Laboratory Solvents.
Blank Limit is 5x Method Detection Limit.
( ) Values in parentheses are estimates.
Actual values are being determined at this time
** The o-Xylene and p-xylene are reported as a total of the two.

TABLE C (Cont.)
SAS DRINKING WATER
SEMI-VOLATILES DETECTION LIMITS

PARAMETER	CAS #	DETECTION LIMIT	BLANK LIMIT
ANILINE	62-53-3	1.5 ug/L	3 ug/L
BIS(2-CHLOROETHYL)ETHER	111-44-4	1.5	3
PHENOL	108-95-2	2	4
2-CHLOROPHENOL	95-57-8	2	4
1,3-DICHLOROBENZENE	541-73-1	2	4
1,4-DICHLOROBENZENE	106-46-7	2	4
1,2-DICHLOROBENZENE	95-50-1	2.5	5
BENZYL ALCOHOL	100-51-6	2	4
BIS(2-CHLOROISOPROPYL) ETHER	39638-32-9	2.5	5
2-METHYLPHENOL	95-48-7	1	2
HEXACHLOROETHANE	67-72-1	2	4
N-NITROSODIPROPYLAMINE	621-64-7	1.5	3
NITROBENZENE	98-95-3	2.5	5
4-METHYLPHENOL	106-44-5	1	2
ISOPHORONE	78-59-1	2.5	5
2-NITROPHENOL	88-75-5	2	4
2,4-DIMETHYLPHENOL	105-67-9	2	4
BIS(2-CHLOROETHOXY)METHANE	111-91-1	2.5	5
2,4-DICHLOROPHENOL	120-83-2	2	4
1,2,4-TRICHLOROBENZENE	120-82-1	2	4
NAPHTHALENE	91-20-3	2	4
4-CHLOROANILINE	106-47-8	2	4
HEXACHLOROBUTADIENE	87-68-3	2.5	5
BENZOIC ACID	65-85-0	(30)	(60)
2-METHYLNAPTHALENE	91-57-6	2	4
4-CHLORO-3-METHYLPHENOL	59-50-7	1.5	3
HEXACHLOROCYCLOPENTADIENE	77-47-4	2	4
2,4,6-TRICHLOROPHENOL	88-06-2	1.5	3
2,4,5-TRICHLOROPHENOL	95-95-4	1.5	3
2-CHLORONAPTHALENE	91-58-7	1.5	3
ACENAPTHYLENE	208-96-8	1.5	3
DIMETHYL PHTHALATE	131-11-3	1.5	3
2,6-DINITROTOLUENE	606-20-2	1	2
ACENAPHTHENE	83-32-9	1.5	3
3-NITROANILINE	99-09-2	2.5	5
DIBENZOFURAN	132-64-9	1	2
2,4-DINITROPHENOL	51-28-5	(15)	(30)
2,4-DINITROTOLUENE	121-14-2	1	2

Cont.

TABLE C (Cont.)
SAS DRINKING WATER
SEMI-VOLATILE DETECTION LIMITS

PARAMETER	CAS #	DETECTION LIMIT	BLANK LIMIT
FLUORENE	86-73-7	1 ug/L	2 ug/L
4-NITROPHENOL	100-02-7	1.5	3
4-CHLOROPHENYL PHENYL ETHER	7005-72-3	1	2
DIETHYL PHTHALATE	84-66-2	1	2
4,6-DINITRO-2-METHYLPHENOL	534-52-1	(15)	(30)
1,2-DIPHENYLHYDRAZINE	122-66-7	1	2
N-NITROSODIPHENYLAMINE *	86-30-6		
DIPHENYLAMINE *	122-39-4	1.5	3
4-NITROANILINE	100-01-6	3	6
4-BROMOPHENYL PHENYL ETHER	101-55-3	1.5	3
HEXACHLOROBENZENE	118-74-1	1.5	3
PENTACHLOROPHENOL	87-86-5	2	4
PHENANTHRENE	85-01-8	1	2
ANTHRACENE	120-12-7	2.5	5
DI-n-BUTYL PHTHALATE	84-74-2	2	4
FLUORANTHENE	206-44-0	1.5	3
PYRENE	129-00-0	1.5	3
BUTYL BENZYL PHTHALATE	85-68-7	3.5	7
CHRYSENE **	218-01-9		
BENZO(a)ANTHRACENE **	56-55-3	1.5	3
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	1	2
DI-n-OCTYL PHTHALATE	117-84-0	1.5	3
BENZO(b)FLUORANTHENE ***	205-99-2		
BENZO(k)FLUORANTHENE ***	207-08-9	1.5	3
BENZO(a)PYRENE	50-32-8	2	4
INDENO(1,2,3-cd)PYRENE	193-39-5	3.5	7
DIBENZO(a,h)ANTHRACENE	53-70-3	2.5	5
BENZO(g,h,i)PERYLENE	191-24-2	4	8
2-NITROANILINE	88-74-4	1	2

* These two parameters are reported as a total.
** These two parameters are reported as a total.
*** These two parameters are reported as a total.

( ) Values in Paranentheses are estimates.of theALUES ARE BEING
The actual values are being determined at this time.

NOTE: Limits are for reagent water.

TABLE C (Cont.)
SAS DRINKING WATER
PESTICIDE AND PCB DETECTION LIMITS

PARAMETER	CAS #	DETECTION LIMIT
ALDRIN	309-00-2	0.005 ug/L
alpha BHC	319-84-6	(0.010)
beta BHC	319-85-7	(0.005)
delta BHC	319-86-8	(0.005)
gama BHC(LINDANE)	58-89-9	0.005
CHLORDANE	57-74-9	(0.020)
4,4'-DDD	72-54-8	(0.020)
4,4'-DDE	72-55-9	(0.005)
4,4'-DDT	50-29-3	0.020
DIELDRIN	60-57-1	0.010
ENDOSULFAN I	959-98-8	0.010
ENDOSULFAN II	33213-65-9	0.010
ENDOSULFAN SULFATE	1031-07-8	(0.10)
ENDRIN	72-20-8	0.010
ENDRIN ALDEHYDE	7421-93-4	(0.030)
ENDRIN KETONE	53494-70-5	(0.030)
HEPTACHLOR	76-44-8	0.030
HEPTACHLOR EPOXIDE	1024-57-3	0.005
4,4'-METHOXYCHLOR	72-43-5	0.020
TOXAPHENE	8001-35-2	(0.25)
PCB-1242	53469-21-9	(0.10)
PCB-1248	12672-29-6	(0.10)
PCB-1254	11097-69-1	(0.10)
PCB-1260	11096-82-5	(0.10)

( ) Values in parentheses are estimates.
Actual values are being determined at this time.

NOTE: Limits are for reagent water.

TABLE C (Cont.)
SAS DRINKING WATER
INORGANIC DETECTION LIMITS

JANUARY 1986

PARAMETER	PROCEDURE	DETECTION LIMITS	RANGE	UNITS
ALUMINUM	ICP	80	80 TO 1,000,000	ug/L
ANTIMONY	FURNACE	2	2 TO 30	ug/L
ARSENIC	FURNACE	2	2 TO 30	ug/L
BARIUM	ICP	6	6 TO 20,000	ug/L
BERYLLIUM	ICP	1	1 TO 20,000	ug/L
CADMIUM	ICP	10	10 TO 20,000	ug/L
CADMIUM	FURNACE	0.2	0.2 TO 2	ug/L
CALCIUM	ICP	0.5	0.5 TO 1,000	mg/L
CHROMIUM	ICP	8	8 TO 20,000	ug/L
COBALT	ICP	6	6 TO 20,000	ug/L
COPPER	ICP	6	6 TO 20,000	ug/L
IRON	ICP	80	80 TO 1,000,000	ug/L
LEAD	FURNACE	2	2 TO 30	ug/L
LEAD	ICP	70	70 TO 20,000	ug/L
LITHIUM	ICP	10	10 TO 20,000	ug/L
MAGNESIUM	ICP	0.1	0.1 TO 200	mg/L
MANGANESE	ICP	5	5 TO 20,000	ug/L
MERCURY	COLD VAPOR	0.1	0.1 TO 2	ug/L
MOLYBDENUM	ICP	150	15 TO 20,000	ug/L
NICKEL	ICP	15	15 TO 20,000	ug/L
POTASSIUM	ICP	2	2 TO 1,000	mg/L
SELENIUM	FURNACE	2	2 TO 30	ug/L
SILVER	ICP	6	6 TO 10,000	ug/L
SODIUM	ICP	1	1 TO 30	mg/L
STRONTIUM	ICP	10	10 TO 20,000	ug/L
THALLIUM	FURNACE	2	2 TO 30	ug/L
TITANIUM	ICP	25	25 TO 20,000	ug/L
TIN	ICP	40	40 TO 20,000	ug/L
VANADIUM	ICP	5	5 TO 20,000	ug/L
YTTRIUM	ICP	5	5 TO 20,000	ug/L
ZINC	ICP	40	40 TO 1,000,000	ug/L
CYANIDE	AA	8	8 TO 200	ug/L

NOTE: THE ABOVE LIST MAY OR MAY NOT CONTAIN COMPOUNDS THAT ARE ROUTINELY ANALYZED AT CRL FOR LOW LEVEL DETECTION LIMITS FOR DRINKING WATER.

APPENDIX F

WELL LOGS OF THE AREA OF THE SITE

White Copy – Ill. Dept. of Public Health
Yellow Copy – Well Contractor
Blue Copy – Well Owner

INSTRUCTIONS TO DRILLERS

FILL IN ALL PERTINENT INFORMATION REQUESTED AND MAIL ORIGINAL TO STATE DEPARTMENT OF PUBLIC HEALTH, CONSUMER HEALTH PROTECTION, 535 WEST JEFFERSON, SPRINGFIELD, ILLINOIS, 62761. DO NOT DETACH GEOLOGICAL/WATER SURVEYS SECTION. BE SURE TO PROVIDE PROPER WELL LOCATION.

ILLINOIS DEPARTMENT OF PUBLIC HEALTH WELL CONSTRUCTION REPORT

1. Type of Well
   a. Dug____. Bored x. Hole Diam. 36 in. Depth 39 ft.
   Curb material _____. Buried Slab: Yes_____ No_____
   b. Driven _____. Drive Pipe Diam. _____ in. Depth _____ ft.
   c. Drilled _____. Finished in Drift _____. In Rock _____.
   Tubular _____. Gravel Packed _____.
   d. Grout:

(KIND)	FROM (Ft.)	TO (Ft.)
Gravel	39	10
Concrete	10	0

2. Distance to Nearest:
   Building ok Ft. Seepage Tile Field ok
   Cess Pool ok Sewer (non Cast iron) ok
   Privy ok Sewer (Cast iron) ok
   Septic Tank ok Barnyard ok
   Leaching Pit ok Manure Pile ok
3. Well furnishes water for human consumption? Yes x No____
4. Date well completed March 20, 1981
5. Permanent Pump Installed? Yes x Date 3-20-81 No____
   Manufacturer Weber Ind. Type Sub. Location in well
   Capacity 10 gpm. Depth of Setting 34 Ft.
6. Well Top Sealed? Yes x No____ Type Concrete Cap
7. Pitless Adapter Installed? Yes____ No____
   Manufacturer _____ Model Number _____
   How attached to casing? _____
8. Well Disinfected? Yes x No____
9. Pump and Equipment Disinfected? Yes x No____
10. Pressure Tank Size 10 gal. Type Contained Air Tank
    Location in well
11. Water Sample Submitted? Yes x No____

REMARKS:

GEOLOGICAL AND WATER SURVEYS WELL RECORD

[redacted]

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
36	Concrete	0+1	39

16. Size Hole below casing: _____ in.
17. Static level _____ ft. below casing top which is [redacted] above ground level. Pumping level _____ ft. when pumping at _____ gpm for _____ hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Top Soil	1	1 ft.
Brown Clay	11	12 ft.
Sandy Brown Clay	8	20 ft.
Sandy Gray Clay	5	25 ft.
Gray Clay	14	39 ft.

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED Clarence Kohnen/be DATE April 30, 1981

Non-Responsive

Non-Responsive

WELL #1 (ON-SITE WELL)

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(85571—12),M Beta—6-74

Non-Responsive

Non-Responsive

White Copy – Dept. of Public Health
Yellow Copy – Well Contractor
Blue Copy – Well Owner

INSTRUCTIONS TO DRILLERS

FILL IN ALL PERTINENT INFORMATION REQUESTED AND MAIL ORIGINAL TO STATE DEPARTMENT OF PUBLIC HEALTH, CONSUMER HEALTH PROTECTION, 535 WEST JEFFERSON, SPRINGFIELD, ILLINOIS, 62761. DO NOT DETACH GEOLOGICAL/WATER SURVEYS SECTION. BE SURE TO PROVIDE PROPER WELL LOCATION.

ILLINOIS DEPARTMENT OF PUBLIC HEALTH
WELL CONSTRUCTION REPORT

1. Type of Well
   a. Dug ____. Bored x. Hole Diam. 36 in. Depth 60 ft.
      Curb material ____. Buried Slab: Yes ____ No x
   b. Driven ____. Drive Pipe Diam. ____ in. Depth ____ ft.
   c. Drilled ____. Finished in Drift ____. In Rock ____.
      Tubular ____. Gravel Packed x.
   d. Grout:

(KIND)	FROM (Ft.)	TO (Ft.)
Gravel	60	10
Concrete	10	0

2. Distance to Nearest:
   Building ok Ft. Seepage Tile Field ok
   Cess Pool ok Sewer (non Cast iron) ok
   Privy ok Sewer (Cast iron) ok
   Septic Tank ok Barnyard ok
   Leaching Pit ok Manure Pile ok
3. Well furnishes water for human consumption? Yes x No ____
4. Date well completed August 16, 1976
5. Permanent Pump Installed? Yes x Date 8-16-76 No ____
   Manufacturer Goulds Type sub Location in well
   Capacity 10 gpm. Depth of Setting 55 Ft.
6. Well Top Sealed? Yes x No ____ Type Sanitary 5 5/8 well seal
7. Pitless Adapter Installed? Yes ____ No ____
   Manufacturer ____ Model Number ____
   How attached to casing? ____
8. Well Disinfected? Yes x No ____
9. Pump and Equipment Disinfected? Yes x No ____
10. Pressure Tank Size 10 gal. Type Contained air tank
    Location in well
11. Water Sample Submitted? Yes ____ No x

REMARKS:

WELL #2

GEOLOGICAL AND WATER SURVEYS WELL RECORD

[redacted]

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
36	Concrete pipe	0+1	60

[redacted]

16. Size Hole below casing: ____ in.
17. Static level ____ ft. below casing top which is ____ ft. above ground level. Pumping level ____ ft. when pumping at ____ gpm for ____ hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Top soil	1	1
Clay	9	10
Sandy clay	10	20
Sandy clay	10	30
Blue clay	30	60

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED Clarence Kahnen DATE 10-13-76
mlw

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1/74 – KNB-1

WELL #3

Non-Responsive

Drilled by Handrich Drilling Co Year 1966

Formations passed through	Thickness	Depth of Bottom
Yellow Clay	20	20
Gray Clay	34	54
Yellow Sandy clay	4	58
Brown Clay	1	59
Gray Sandy Clay	11	70

[Continue on back if necessary]

Finished in Sandy Clay at to 70 ft.

Cased with 6 inch Plastic from 0 to 70 ft.

and inch from to ft.

Size hole below casing 6 inch. Static level from surf. 15 ft.

Tested capacity 5 gal. per min. Temperature °F.

Water lowered to ft in. in hrs. min.

Length of test 1 hrs. min. Screen

Slot Diam. Length Bottom set at ft.

Non-Responsive

WELL #4

Non-Responsive

Drilled by Handrick Drilling Co Year 1966

Formations passed through	Thickness	Depth of Bottom
Top Soil	2	2
Yellow Clay	26	28
Gray Sandy Clay	17	45
Yellow Clay	14	59
Gray Sandy Clay	11	70

[Continued on back if necessary]

Finished in Sandy Clay at to 70 ft.

Cased with 6 inch Plastic Casing from 0 to 70 ft.

and inch from to ft.

Size hole below casing inch. Static level from surf. 12 ft.

Tested capacity 1 gal. per min. Temperature °F.

Water lowered to ft. in. in hrs. min.

Length of test hrs. min. Screen

Slot Diam. Length Bottom set at ft.

Non-Responsive

White Copy – Ill. Dept. of Public Health
Yellow Copy – Well Contractor
Blue Copy – Well Owner

INSTRUCTIONS TO DRILLERS

FILL IN ALL PERTINENT INFORMATION REQUESTED AND MAIL ORIGINAL TO STATE DEPARTMENT OF PUBLIC HEALTH, CONSUMER HEALTH PROTECTION, 535 WEST JEFFERSON, SPRINGFIELD, ILLINOIS, 62761. DO NOT DETACH GEOLOGICAL/WATER SURVEYS SECTION. BE SURE TO PROVIDE PROPER WELL LOCATION.

ILLINOIS DEPARTMENT OF PUBLIC HEALTH
WELL CONSTRUCTION REPORT

1. Type of Well
   a. Dug____. Bored x. Hole Diam. 36 in. Depth 32 ft.
   Curb material _____. Buried Slab: Yes_____ No x
   b. Driven _____. Drive Pipe Diam. _____ in. Depth _____ ft.
   c. Drilled _____. Finished in Drift _____. In Rock _____.
   Tubular _____. Gravel Packed x.
   d. Grout:

(KIND)	FROM (Ft.)	TO (Ft.)
Gravel	32	10
Concrete	10	0

2. Distance to Nearest:
   Building ok Ft. Seepage Tile Field ok
   Cess Pool ok Sewer (non Cast iron) ok
   Privy ok Sewer (Cast iron) ok
   Septic Tank ok Barnyard ok
   Leaching Pit ok Manure Pile ok
3. Well furnishes water for human consumption? Yes x No____
4. Date well completed December 6, 1978
5. Permanent Pump Installed? Yes____ Date _____ No x
   Manufacturer _____ Type _____ Location _____
   Capacity _____ gpm. Depth of Setting _____ Ft.
6. Well Top Sealed? Yes x No____ Type Concrete cap
7. Pitless Adapter Installed? Yes_____ No_____
   Manufacturer _____ Model Number _____
   How attached to casing? _____
8. Well Disinfected? Yes x No_____
9. Pump and Equipment Disinfected? Yes_____ No_____
10. Pressure Tank Size _____ gal. Type _____
    Location _____
11. Water Sample Submitted? Yes_____ No x

REMARKS:

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GEOLOGICAL AND WATER SURVEYS WELL RECORD

[redacted]

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
36	Concrete pipe	0+1	32

[redacted]

Non-Responsive

Non-Responsive

WELL #5

16. Size Hole below casing: _____ in.
17. Static level _____ ft. below casing top which is _____ ft. above ground level. Pumping level _____ ft. when pumping at _____ gpm for _____ hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Top soil	1	1
Yellow clay	9	10
Yellow sandy clay	10	20
Yellow clay	7	27
Yellow sand	1	28
Blue clay	4	32

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED Clarence Kahnert DATE _____
mb

White — Ill. Dept. of Public Health
Yellow Copy — Well Contractor
Blue Copy — Well Owner

FILL IN ALL PERTINENT INFORMATION REQUESTED AND MAIL ORIGINAL TO STATE DEPARTMENT OF PUBLIC HEALTH, CONSUMER HEALTH PROTECTION, 535 WEST JEFFERSON, SPRINGFIELD, ILLINOIS, 62761. DO NOT DETACH GEOLOGICAL/WATER SURVEYS SECTION. BE SURE TO PROVIDE PROPER WELL LOCATION.

ILLINOIS DEPARTMENT OF PUBLIC HEALTH
WELL CONSTRUCTION REPORT

1. Type of Well
   a. Dug____. Bored x. Hole Diam. 36 in. Depth 36 ft.
   Curb material _____. Buried Slab: Yes____ No x
   b. Driven _____. Drive Pipe Diam. ____in. Depth ____ft.
   c. Drilled _____. Finished in Drift _____. In Rock _____.
   Tubular _____. Gravel Packed x.
   d. Grout:

(KIND)	FROM (Ft.)	TO (Ft.)
concrete	0	10
gravel	10	36

2. Distance to Nearest:
   Building ok Ft. Seepage Tile Field ok
   Cess Pool ok Sewer (non Cast Iron) ok
   Privy ok Sewer (Cast Iron) ok
   Septic Tank ok Barnyard ok
   Leaching Pit ok Manure Pile ok
3. Well furnishes water for human consumption? Yes x No____.
4. Date well completed October 3, 1979
5. Permanent Pump Installed? Yes x Date 10-3-79 No____
   Manufacturer Weber Ind Type sub Location in well
   Capacity 10 gpm. Depth of Setting 34 Ft.
6. Well Top Sealed? Yes x No____ Type concrete cap
7. Pitless Adapter Installed? Yes____ No____
   Manufacturer _____ Model Number _____
   How attached to casing? _____
8. Well Disinfected? Yes x No____
9. Pump and Equipment Disinfected? Yes x No____
10. Pressure Tank Size 30 gal. Type contained air
    Location _____
11. Water Sample Submitted? Yes____ No x

REMARKS:

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1/74 — KNB-1

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. [redacted]
11.
12.
14.
15.

Non-Responsive

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
36	concrete	0+1	36

[redacted] Non-Responsive

WELL #6

16. Size Hole below casing: _____ in.
17. Static level _____ ft. below casing top which is _____ ft. above ground level. Pumping level _____ ft. when pumping at _____ gpm for _____ hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
topsoil black	1	1
yellow clay	6	7
yellow sandy clay	19	26
yellow sand	10	36

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED Clarence Kohnen DATE 10-3-79
mk