US EPA RECORDS CENTER REGION 5
509068

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LETTER REPORT
FOR
COMETCO OIL FACILITY
CHICAGO, COOK COUNTY, ILLINOIS
TDD: S05-9811-002
PAN: 8B0201SIXX

January 20, 1999

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Emergency and Enforcement Response Branch
77 West Jackson Boulevard
Chicago, Illinois 60604

Prepared by: _____ Date: 1/20/99
Megan Fedders, START Project Manager

Reviewed by: _____ Date: 1/20/99
Mary Jane Ripp, START Assistant Program Manager

Approved by: _____ Date: 1/20/99
Thomas Kouris, START Program Manger

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January 20, 1999

Ms. Gail Nabasny, START Project Officer
Emergency Support Section
United States Environmental Protection Agency
77 West Jackson Boulevard - HSE-5J
Chicago, Illinois 60604

Re: Cometco Oil Facility
Chicago, Cook County, Illinois
TDD: S05-9811-002
PAN: 8B0201SIXX

Dear Ms. Nabasny:

The Ecology and Environment, Inc. (E & E), Superfund Technical Assessment and Response Team (START), was tasked by the Emergency Response Branch of the United States Environmental Protection Agency (U.S. EPA), under the Technical Direction Document (TDD) number S05-9811-002, to conduct a site assessment for the Cometco Oil Facility (Cometco), located in Chicago, Cook County, Illinois (Attachment A, Figure 1). START was tasked to prepare and implement a health and safety plan; compile and review background information; subcontract analytical services; document site condition; perform multi-media sampling; evaluate threats to human health and the environment; and make recommendations to U.S. EPA as to the potential need for a removal action, further investigation, referral to other government agencies or U.S. EPA programs, or other actions which may be prudent. The site assessment was performed in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), following 40 Code of Federal Regulations (CFR) Section 300.415, paragraph (b)(2), to evaluate on-site conditions and potential threats to human health and the environment. The site assessment was conducted on November 10, 1998, under the authority of U.S. EPA On-Scene Coordinator (OSC) Paul Steadman. This report provides background information about the Cometco site and summarizes the START site assessment activities.

The Cometco facility is located at 1509 W. Cortland Street, Chicago, Cook County, Illinois. The geographic coordinates of the facility are latitude 87°39'53.7" W and longitude 41°54'56.5' N. The facility is one of seven scrap metal facilities operated by Cozzi Iron and Metal, Inc. (Cozzi), in Chicago. Cometco currently operates as a scrap metal storage and separating facility for Cozzi's four shredding facilities in the area. The primary activities conducted at the Cometco facility include the separation of ferrous from nonferrous metal scraps and bailing of scrap for transport. The site occupies approximately 0.75 acre and is bordered by the Chicago River to the east, commercial property to the west (along Elston Avenue), W. Cortland Street to the north, and railroad tracks to the south

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(Attachment A, Figure 2). The area immediately surrounding the site is predominantly commercial. An apartment above a commercial property borders the site to the west on West Cortland Street, and is the only residential property bordering the site.

Cometco site features include an office building, a garage/machine shop, a pump house, and several large scrap metal piles (Attachment A, Figure 2). The scrap piles range in area from approximately 2,500 square feet to 5,000 square feet, with maximum heights of approximately 30 feet. Drainage from the scrap piles is directed into a 25-foot-diameter settling pond at the southeast corner of the site. Overflow from the settling pond is discharged periodically into the Chicago River via a 1-foot-diameter pipe. The site topography is flat with a small embankment along the length of the river bank. The Chicago River is banked with metal shoring for the entire length of the site, with an approximate 10-foot drop in elevation from the site to the river surface.

Seven Cozzi facilities have been under investigation by U.S. EPA for possible noncompliance with the Resource Conservation and Recovery Act (RCRA) and the Toxic Substances Control Act (TSCA). Previous investigations by U.S. EPA at three Cozzi facilities revealed no visible contamination at two facilities, while polychlorinated biphenyl (PCB) contamination in excess of 50 milligrams per kilogram (mg/kg) was noted at a third. A second round of sampling at three additional Cozzi facilities, including the Cometco facility, was initiated jointly by the RCRA and TSCA Branches within the Waste, Toxics, and Pesticides Division of Region 5 U.S. EPA during the summer of 1998. The seventh Cozzi facility is an office which is not expected to be impacted by any industrial processes.

The U.S. EPA Oil Planning and Response Section was contacted by representatives of the RCRA and TSCA programs in order to address potential threats which might warrant a response under either the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or the Oil Pollution Act (OPA). U.S. EPA OSC Paul Steadman met with representatives of the Office of Regional Counsel (ORC), TSCA, RCRA, and the Clean Water Division of U.S. EPA regarding a multi-media/program approach to investigating potential environmental threats posed by the Cometco facility. It was determined that a joint investigation between the Superfund Division and the RCRA and TSCA programs would be conducted. Contractors to the RCRA program, as well as START, were tasked to provide technical assistance to U.S. EPA in conducting multi-media sampling at the Cometco facility.

START attended a meeting with U.S. EPA representatives on November 6, 1998. The following individuals were present at the meeting: START members Megan Fedders and Chad Gibson, OSC Steadman, U.S. EPA TSCA representative Ken Zolnierczyk, Illinois Environmental Protection Agency (IEPA) representative Gino Bruni, and Tech-Law representatives John Koehnen and Terry Uecker (RCRA contractors). It was determined that sampling of soil, sediment, and water from several locations on site would be performed and that samples would be analyzed for PCBs, Target Compound List metals (total metals), volatile organic compounds (VOCs), and semivolatile organic compounds (SVOCs). Sampling locations were planned to assess the potential for impact to the Chicago River and included soil samples from the river bank area and areas surrounding the settling pond; sediment and surface water samples from the pond; and sediment samples from the river, if easily accessible. START was subsequently tasked to procure a laboratory for analysis of the samples.

START members Fedders and Gibson arrived at the Cometco facility at 0845 hours on November 10, 1998, and accompanied OSC Steadman on site. START and U.S. EPA were met by

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Cometco representatives Mark LeRose and Debra Levin. At 0930, IEPA RCRA program representative Gino Bruni and U.S. EPA TSCA representative Ken Zolnierczyk arrived and met with U.S. EPA, START, and Cometco representatives. At 1010 hours, a site reconnaissance was initiated in order to determine sampling locations, which were then marked with survey flags. In addition, OSC Steadman entered the pump house with Cometco representatives to evaluate the potential need for a Spill Prevention, Control, and Countermeasures (SPCC) plan at the facility.

Drainage from the scrap piles was observed along the southeastern edge of the site. This water, which had a visible sheen, entered the settling pond at its northern edge. The settling pond had a brown, oily layer across part of the surface, and dark staining was visible on vegetation surrounding the pond (Attachment B). Cometco personnel explained that the drainage system for the pond was gravity activated, allowing overflow of the lower layers of the pond into the drainage pipe, and subsequently into the river during high water. No drainage into the river was visible at the time of the site visit despite recent heavy rain. Cometco personnel also indicated that a liner was thought to be present on the bottom of the pond. The composition, date of installation, and condition of the liner were unknown by LeRose and Levin.

At 1055 hours, U.S. EPA water program representative Howard Duckman arrived at the site via boat with representatives of the Water Reclamation District of Chicago. Duckman accompanied the aforementioned personnel for all subsequent site activities. START and U.S. EPA personnel viewed the site from the boat and observed runoff from the site flowing through the metal shoring at several points along the river bank.

During the reconnaissance, five soil sample locations were chosen: two along the river bank; one along the drainage pathway from the easternmost scrap pile into the settling pond; and two from the northern edge of the pond (Attachment A, Figure 2). A sediment sample and surface water sample were planned to be collected from the settling pond. In addition, a water sample of runoff from the embankment into the river was planned to be collected.

Sampling activities were initiated at 1125 hours. START collected additional volumes of each sample to provide split samples for Cometco personnel. At each soil sample location, START collected samples for VOC analysis; using dedicated stainless steel spoons, the sample was placed directly into 4-ounce jars. Additional soils were collected and placed in four 8-ounce jars after being homogenized in dedicated aluminum pie pans or stainless steel bowls. Surficial soil samples S1 through S4 represented the top 0 to 6 inches of material. Soil sample S5 was collected with a hand auger to a depth of approximately 1 foot. Sediment sample S6 was collected from the sediment surface at the western edge of the pond. At the request of U.S. EPA representative Zolnierczyk, toxicity characteristic leaching procedure (TCLP) metals were added to the analytical parameter list for samples S3 through S6. Soil sampling activities were concluded at 1300 hours, at which time custody of the soil split samples for Cometco personnel was relinquished to LeRose.

Surface water sampling commenced at 1315 hours. The surface water sample from the embankment runoff (W1) was collected directly into sample containers for analysis of VOCs, SVOCs, PCBs, and total metals. Sample W2 was collected from the western edge of the settling pond and included some of the top layer visible on the pond. Water sampling activities were concluded at 1430 hours, at which time custody of the water split samples was relinquished to Cometco representative LeRose. At 1500 hours, U.S. EPA, IEPA, START, and Cometco personnel met to discuss the

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investigation. START departed Cometco at 1600 hours.

Samples were shipped to ATAS, Inc., in St. Louis, Missouri, for analysis of total metals, TCLP metals (S3 through S6 only), VOCs, SVOCs, and PCBs. Preliminary analytical data was received by START on December 9, 1998, with a final analytical package arriving on December 15, 1998 (Attachment C). The validated analytical data package is provided as Attachment C. Analytical results are summarized in Tables 1 through 5. Where applicable, U.S. EPA Region 3 Risk-Based Screening Concentrations (RBCs) for industrial soil have been indicated in tables for comparison to site data. U.S. EPA Maximum Contaminant Levels (MCLs) for drinking water have also been listed for reference.

Analytical results for VOCs are summarized in Attachment D, Table 1. Analytical results indicated low levels of VOCs in most soil and sediment samples. The most frequently encountered compounds were acetone and methylene chloride, which are common laboratory contaminants. RBCs for VOCs were not exceeded in any sample. Sample W1 contained acetone at 46 micrograms per liter (μg/L), while no VOCs were detected above sample quantitation limits in sample W2.

Analytical results for SVOCs are summarized in Attachment D, Table 2. Chemical analysis revealed low levels of SVOCs in all soil and sediment samples. Although no RBCs were exceeded for SVOCs, several carcinogenic polynuclear aromatic hydrocarbons, including benzo(a)anthracene, chrysene, and ideo(1,2,3-c,d)pyrene, were detected in three of the five soil samples. Sample W1 contained phenol at 13 μg/L and 4-chloro-3-methylphenol at 32 μg/L. Sample W2 contained several SVOCs, including phenol at 160 μg/L, benzoic acid at 190 μg/L, 4-chloro-3-methylphenol at 260 μg/L, and phenanthrene at 74 μg/L.

In Attachment D, Table 3 summarizes the analytical results for PCB analysis. No PCBs were detected in any soil sample, with quantitation limits ranging from 0.5 to 6.5 mg/kg. PCBs were not detected in either water sample. Quantitation limits for the water samples were 10 μg/L for W1 and 100 μg/L for W2.

Analytical results for total metals and TCLP metals are presented in Attachment D, Tables 4 and 5, respectively. Analysis of soil and sediment samples for total metals revealed arsenic concentrations in five soil samples exceeding the RBC of 3.8 mg/kg. No other RBCs for metallic parameters were exceeded. The metals concentrations observed are consistent with the current use of the property. TCLP metals results revealed leachable cadmium present in samples S3, S4, S5, and S6; however, the cadmium levels were significantly below the RCRA regulatory limit.

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The preparation of this Letter Report serves as the final deliverable under this TDD. Please contact this office should any additional information on this site be needed.

Sincerely,

Brenda P. McLennan

for Megan F. Fedders
START Project Manager

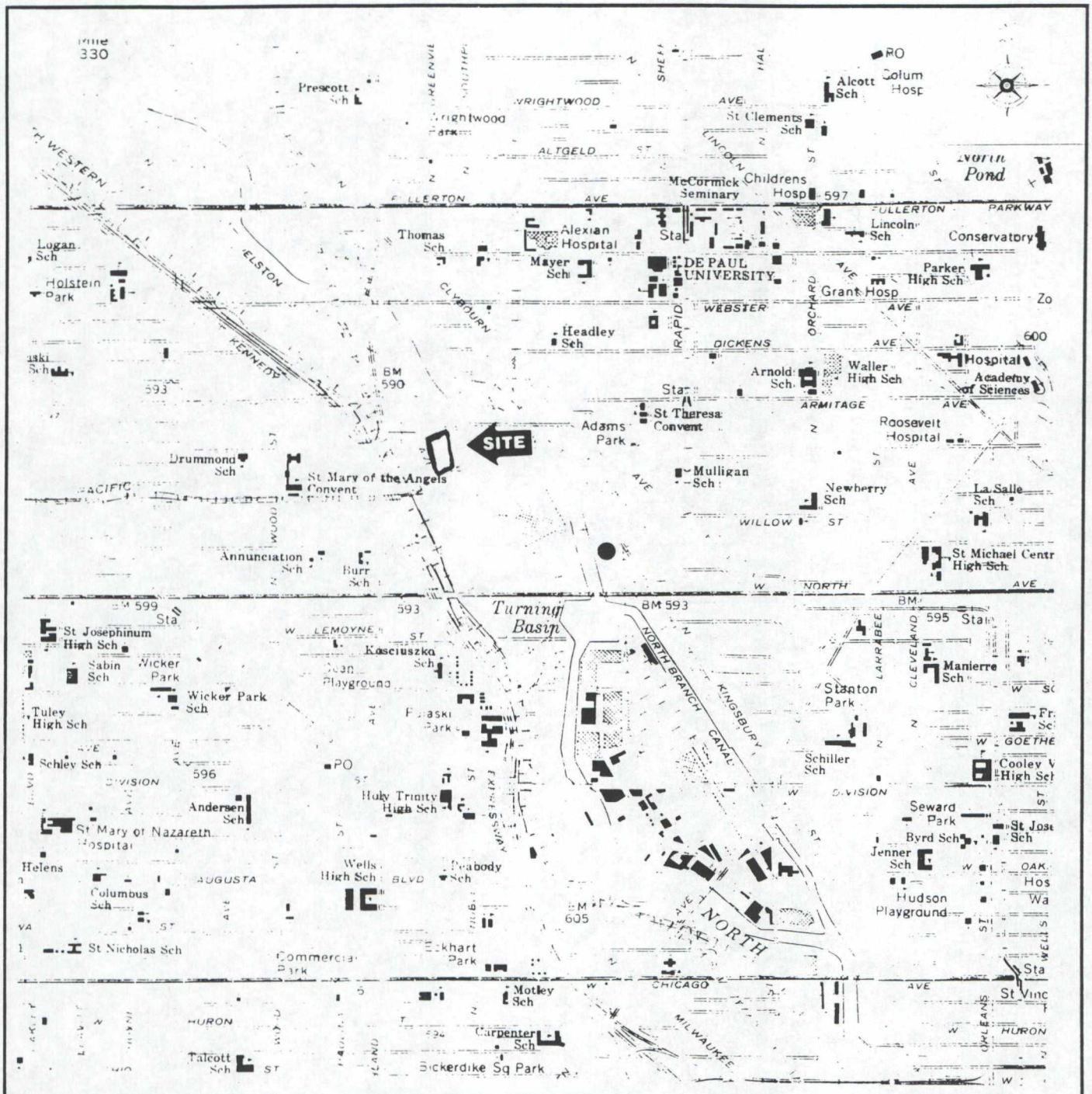
Thomas Kouris
START Program Manager

Attachments: A: Figures
B: Photodocumentation
C: Validated Analytical Data Package
D: Tables

cc: Paul Steadman, U.S. EPA OSC
START TDD site file

Attachment A

Figures



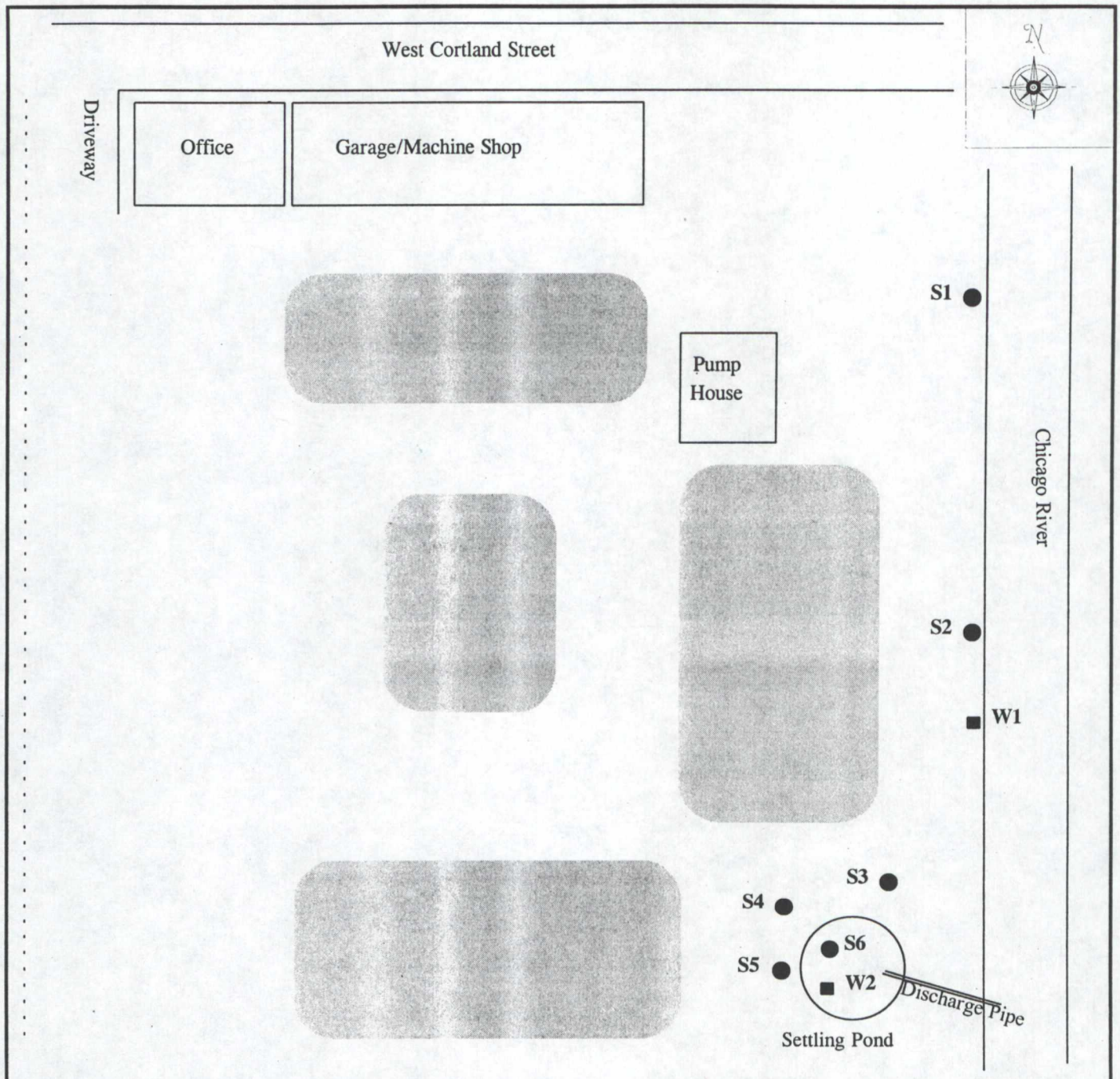
Quadrangle Location

Illinois

ecology and environment, inc.

Region 5 - Superfund Technical Assessment And Response Team
33 North Dearborn Street, Chicago, Illinois 60602

TITLE	Site Location Map	FIGURE	1
SITE	Cometco Oil Facility	SCALE	1:24,000
CITY	Chicago, Cook County	STATE Illinois	TDD S05-9811-002
SOURCE	U.S.G.S. Topographic Map 7.5 minute series Chicago Loop Quadrangle	DATE	1963
		REVISED	1972



Legend

- Scrap Pile
- Railroad Tracks
- Fence
- Soil/Sediment Sample Location
- Surface Water Sample Location

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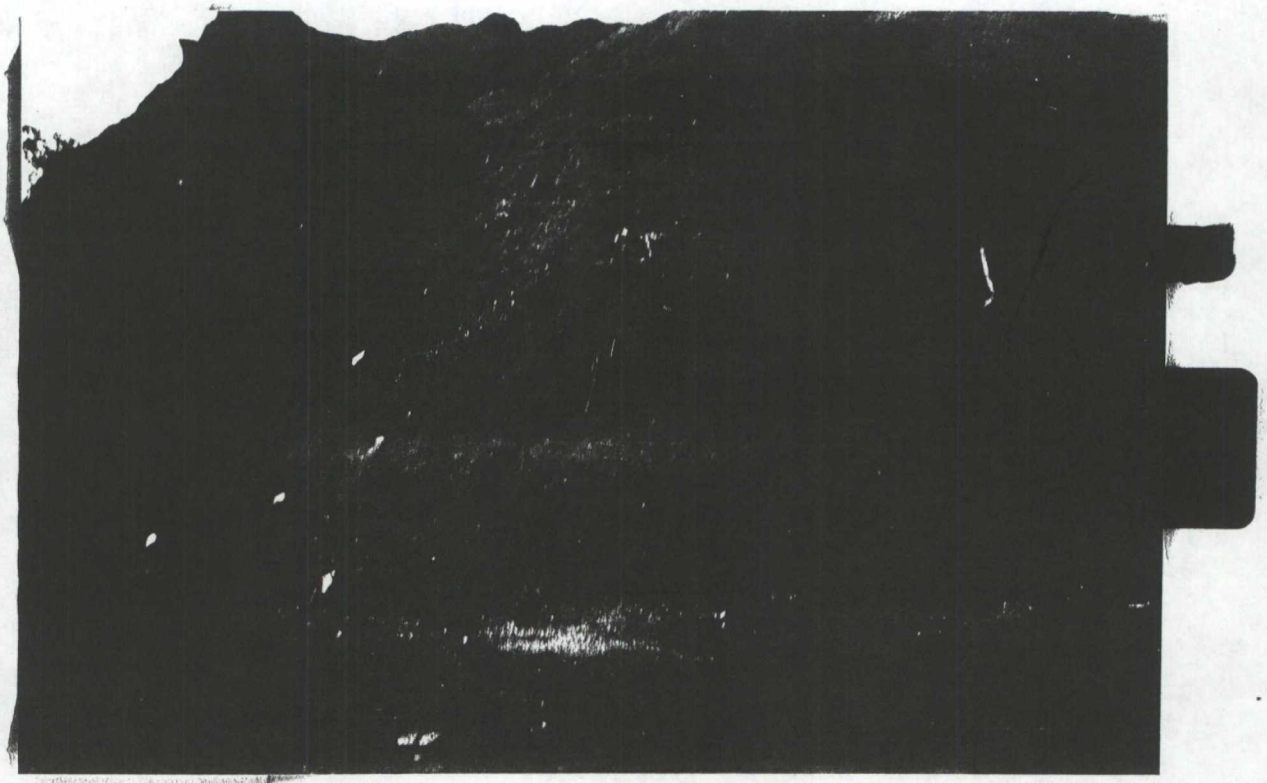
Region 5 - Superfund Technical Assessment And Response Team
33 North Dearborn Street, Chicago, Illinois 60602

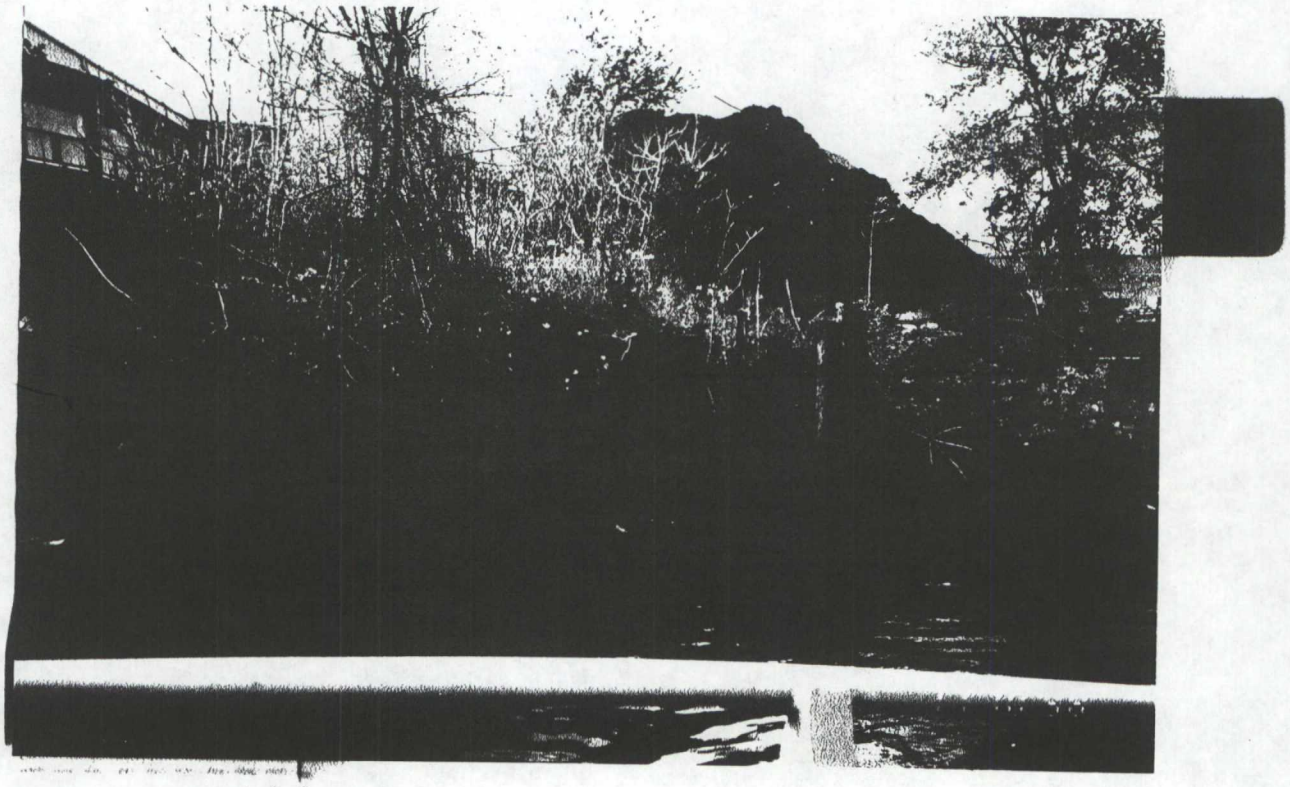
TITLE	Site Features/Sample Location Map	FIGURE	2
SITE	Cometco Facility	SCALE	Not to Scale
CITY	Chicago	STATE Illinois	TDD S05-9811-002
SOURCE	Ecology and Environment, Inc.	DATE	November 1998

Attachment B

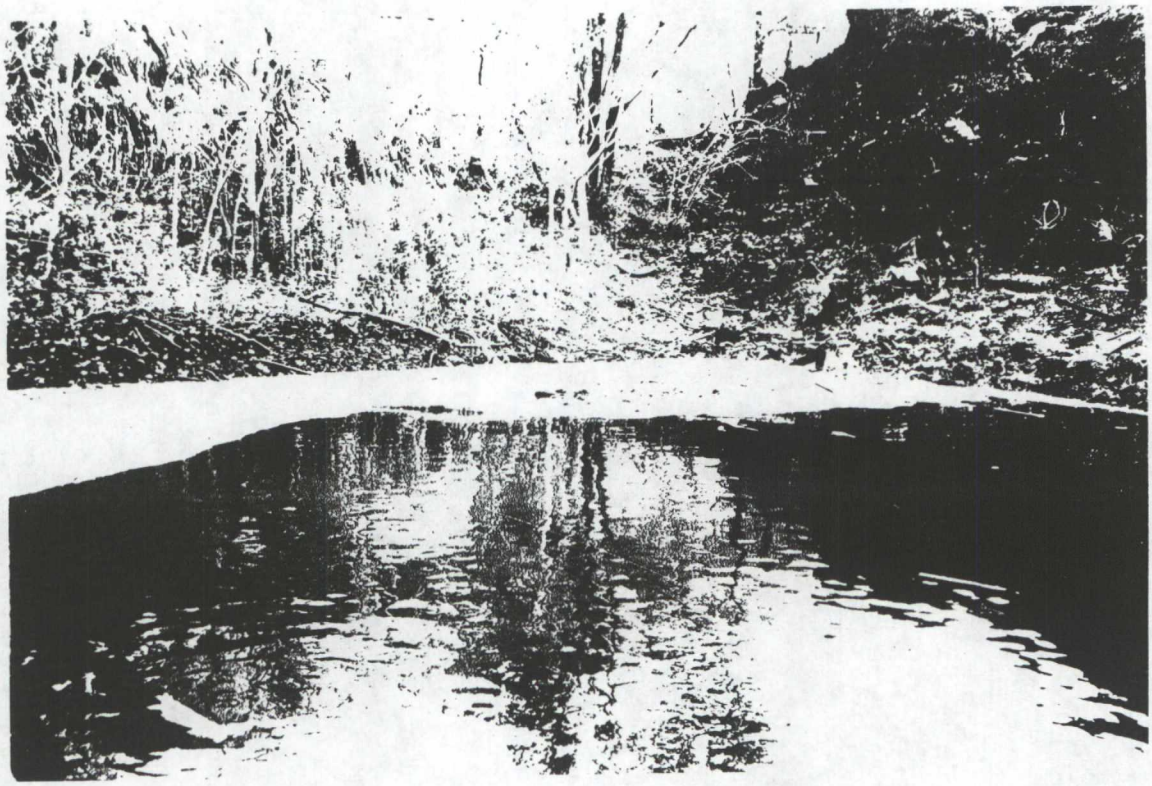
Photodocumentation



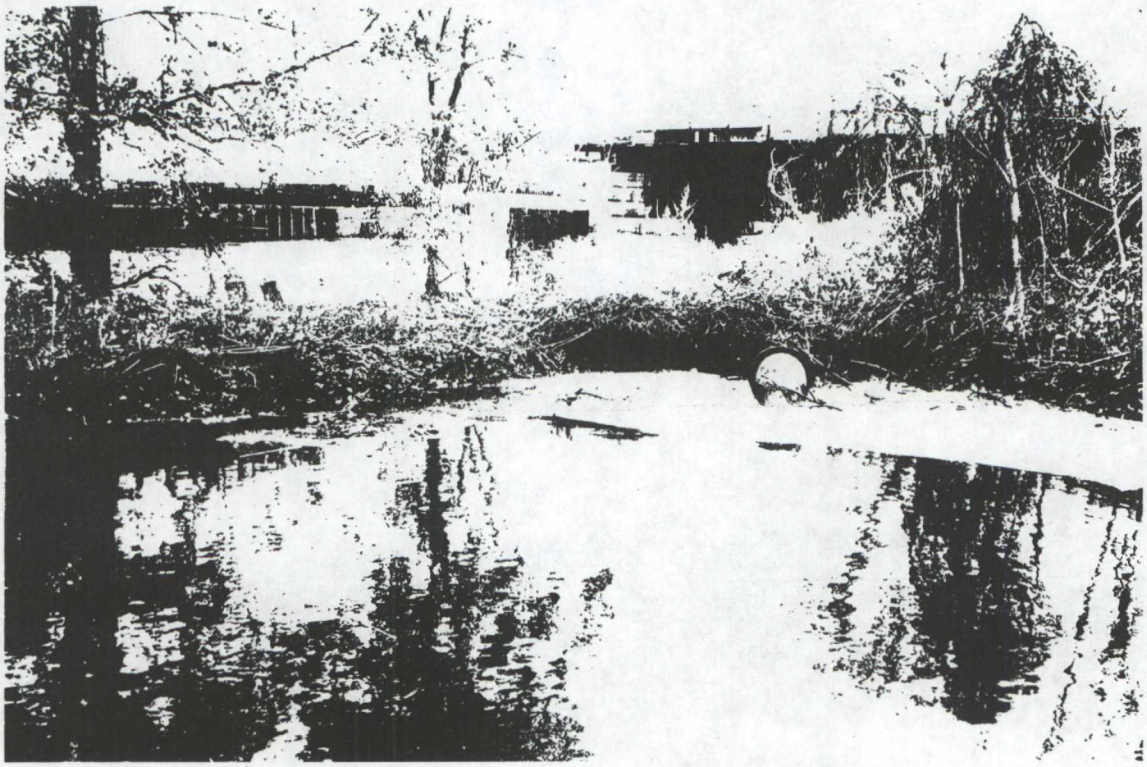
SITE: Cometco **DATE:** November 10, 1998 **TIME:** 1021 **ROLL/FRAME:** 1/14
LOCATION: Chicago, Illinois **DIRECTION:** South **PHOTOGRAPHER**: C. Gibson
SUBJECT: Scrap metal pile at south end of site, just west of settling pond.



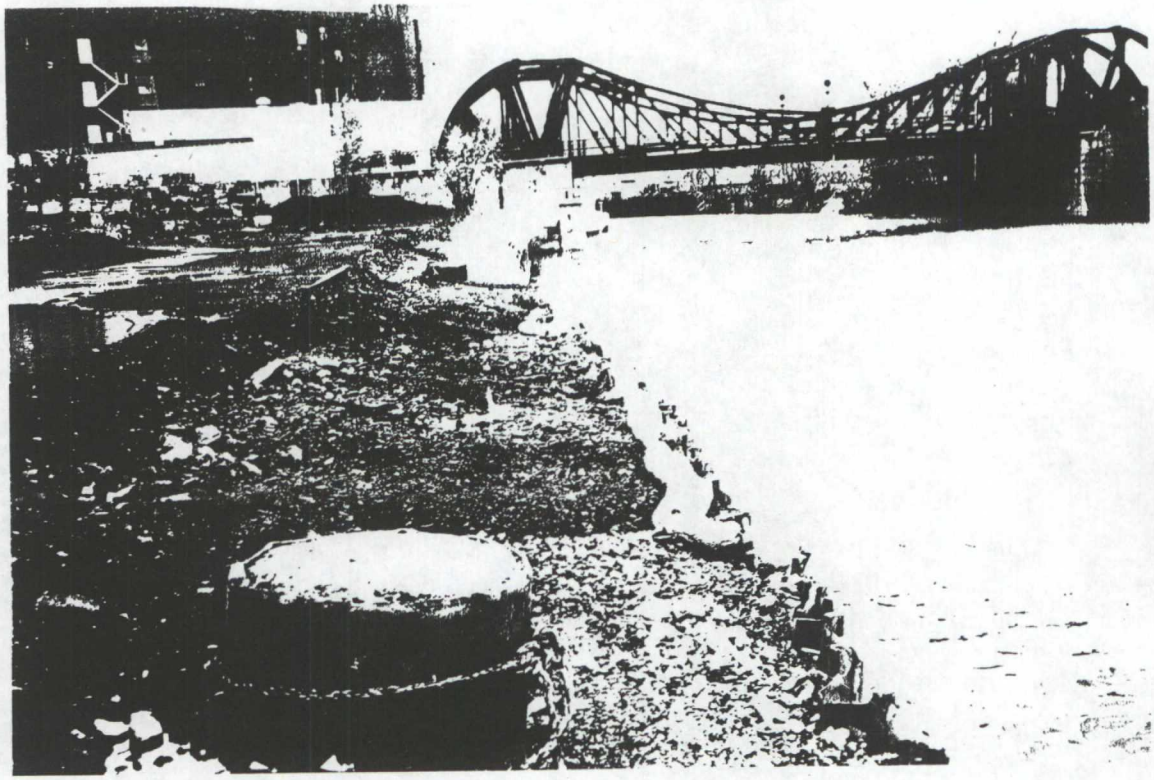
SITE: Cometco **DATE:** November 10, 1998 **TIME:** 1100 **ROLL/FRAME:** 1/10
LOCATION: Chicago, Illinois **DIRECTION:** West **PHOTOGRAPHER**: M. Fedders



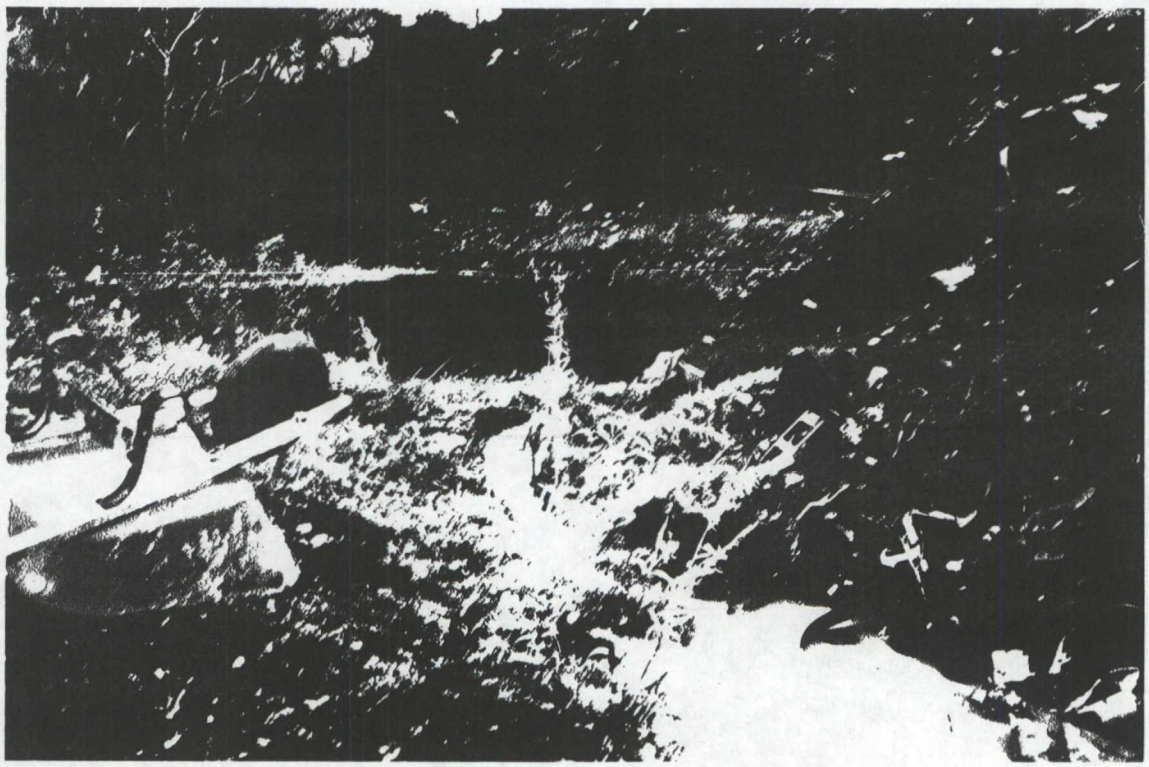
SITE: Cometco **DATE:** November 10, 1998 **TIME:** 1030 **ROLL/FRAME:** 1/5
LOCATION: Chicago, Illinois **DIRECTION:** Southwest **PHOTOGRAPHER**: C. Gibson
SUBJECT: Panoramic of settling pond at southeast corner of site.



SITE: Cometco **DATE:** November 10, 1998 **TIME:** 1030 **ROLL/FRAME:** 1/6
LOCATION: Chicago, Illinois **DIRECTION:** Southwest **PHOTOGRAPHER**: C. Gibson
SUBJECT: View of settling pond at southeast corner of site.



SITE: Cometco **DATE:** November 10, 1998 **TIME:** 1021 **ROLL/FRAME:** [illegible]
LOCATION: Chicago, Illinois **DIRECTION:** North **PHOTOGRAPHER:** C. Gibson
SUBJECT: Sample location S2 (pink flag) and sorbent boom along Chicago River bank.



SITE: Cometco **DATE:** November 10, 1998 **TIME:** 1024 **ROLL/FRAME:** [illegible]
LOCATION: Chicago, Illinois **DIRECTION:** South **PHOTOGRAPHER:** C. Gibson
SUBJECT: Drainage into settling pond from scrap metal pile at southeast corner of site.

Attachment C

Validated Analytical Data Package

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International Specialists in the Environment

33 North Dearborn Street
Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

MEMORANDUM

DATE: December 14, 1998

TO: File

FROM: Megan Fedders, START Chemist, E & E, Chicago, Illinois

THROUGH: Dave Hendren, START Analytical Services Manager, E & E, Chicago, Illinois

SUBJECT: Data Quality Review for Target Analyte List (TAL) Metals and Toxicity Characteristic Leaching Procedure (TCLP) Metals, Cometco Oil Facility Site, Chicago, Illinois

REFERENCE: Project TDD S05-9811-002 Analytical TDD S05-9811-801
Project PAN 8B0201SIXX Analytical PAN 8BAA01TAXX

The data quality assurance (QA) review of six soil/sediment and two water samples collected from the Cometco Oil Facility site is complete. The samples were collected on November 10, 1998, by the Superfund Technical Assessment and Response Team (START) contractor, Ecology & Environment, Inc. (E & E). The samples were submitted to ATAS, Inc., St. Louis, Missouri, for analysis. The laboratory analyses were performed according to United States Environmental Protection Agency (U.S EPA) Solid Waste 846 Method 1311 for TCLP extraction, 7471A for mercury, and 6010A for all other metals.

Sample Identification

START Identification	Laboratory Identification
S1	24507.01
S2	24507.02
S3	24507.03
S4	24507.04
S5	24507.05
S6	24507.06
W1	24507.07
W2	24507.08

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33 North Dearborn Street
Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

MEMORANDUM

DATE: December 14, 1998

TO: File

FROM: Megan Fedders, START Chemist, E & E, Chicago, Illinois

THROUGH: Dave Hendren, START Analytical Services Manager, E & E, Chicago, Illinois

SUBJECT: Data Quality Review for Target Compound List (TCL) Volatile Organic Compounds (VOCs), Cometco Oil Facility Site, Chicago, Illinois

REFERENCE: Project TDD S05-9811-002 Analytical TDD S05-9811-801
Project PAN 8B0201SIXX Analytical PAN 8BAA01TAXX

The data quality assurance (QA) review of six soil/sediment and two water samples collected from the Cometco Oil Facility site is complete. The samples were collected on November 10, 1998, by the Superfund Technical Assessment and Response Team (START) contractor, Ecology & Environment, Inc. (E & E). The samples were submitted to ATAS, Inc., St. Louis, Missouri, for analysis. The laboratory analyses were performed according to United States Environmental Protection Agency (U.S. EPA) Solid Waste 846 Method 8260.

Sample Identification

START Identification	Laboratory Identification
S1	24507.01
S2	24507.02
S3	24507.03
S4	24507.04
S5	24507.05
S6	24507.06
W1	24507.07
W2	24507.08

Data Qualifications:

I Sample Holding Time: Acceptable

The samples were collected on November 10, 1998, and analyzed between November 18 and 23, 1998. This is within the 14-day holding time limit.

II Blanks: Acceptable

Three method blanks (two soil and one water) were analyzed with the samples. Methylene chloride was detected in both of the soil blanks at levels of 6 and 7 micrograms per kilogram (μg/kg). Soil sample results for methylene chloride were qualified as non-detected (NDB) if the sample result was less than 10 times the associated blank value.

III Additional QC Checks: Acceptable

The recoveries of surrogates used in the samples and blanks were within acceptable limits in most cases. One surrogate was out of laboratory-established control limits for samples S1, S2, S5, and S6. No data were qualified as a result of surrogate recoveries.

One matrix spike/matrix spike duplicate (MS/MSD) pair and one laboratory control sample (LCS) were analyzed for each matrix. Percent recoveries for MS/MSD and LCS samples and relative percent difference values for MS/MSD samples were within laboratory-established control limits.

IV Overall Assessment of Data for Use: Acceptable

The overall usefulness of the data is based on criteria for QA Level II as outlined in the Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-01 (April 1990), Data Validation Procedures, Section 5.0, VOAs by GC/MS Analysis. Based upon the information provided, the data are acceptable for use with the above stated qualifications.

ecology and environment, inc.
International Specialists in the Environment

33 North Dearborn Street
Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

MEMORANDUM

DATE: December 14, 1998

TO: File

FROM: Megan Fedders, START Chemist, E & E, Chicago, Illinois

THROUGH: Dave Hendren, START Analytical Services Manager, E & E, Chicago, Illinois

SUBJECT: Data Quality Review for Target Compound List (TCL) Semivolatile Organic Compounds (SVOCs), Cometco Oil Facility Site, Chicago, Illinois

REFERENCE: Project TDD S05-9811-002 Analytical TDD S05-9811-801
Project PAN 8B0201SIXX Analytical PAN 8BAA01TAXX

The data quality assurance (QA) review of six soil/sediment and two water samples collected from the Cometco Oil Facility site is complete. The samples were collected on November 10, 1998, by the Superfund Technical Assessment and Response Team (START) contractor, Ecology & Environment, Inc. (E & E). The samples were submitted to ATAS, Inc., St. Louis, Missouri, for analysis. The laboratory analyses were performed according to United States Environmental Protection Agency (U.S. EPA) Solid Waste 846 Method 8270.

Sample Identification

START Identification	Laboratory Identification
S1	24507.01
S2	24507.02
S3	24507.03
S4	24507.04
S5	24507.05
S6	24507.06
W1	24507.07
W2	24507.08

Data Qualifications:

I Sample Holding Time: Acceptable

The samples were collected on November 10, 1998, extracted between November 16 and 18, 1998, and analyzed between November 17 and 18, 1998. This is within the 14-day holding time limit, from collection to extraction, and the 40-day limit from extraction to analysis.

II Blanks: Acceptable

Two method blanks (one soil and one water) were analyzed with the samples. No target compounds were detected above the method quantitation limit in either method blank.

III Additional QC Checks: Acceptable

The recoveries of surrogates used in the samples and blanks were within acceptable limits in most cases. One surrogate was out of laboratory-established control limits for samples S4 and W2. No data were qualified as a result of surrogate recoveries.

One laboratory control sample (LCS) and LCS duplicate were analyzed for each matrix. Percent recoveries and relative percent difference values for LCS/LCSD samples were within laboratory-established control limits.

IV Overall Assessment of Data for Use: Acceptable

The overall usefulness of the data is based on criteria for QA Level II as outlined in the Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-01 (April 1990), Data Validation Procedures, Section 4.0, BNAs by GC/MS Analysis. Based upon the information provided, the data are acceptable for use.

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33 North Dearborn Street
Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

MEMORANDUM

DATE: December 14, 1998

TO: File

FROM: Megan Fedders, START Chemist, E & E, Chicago, Illinois

THROUGH: Dave Hendren, START Analytical Services Manager, E & E, Chicago, Illinois

SUBJECT: Data Quality Review for Target Compound List (TCL) Polychlorinated Biphenyls (PCBs), Cometco Oil Facility Site, Chicago, Illinois

REFERENCE: Project TDD S05-9811-002 Analytical TDD S05-9811-801
Project PAN 8B0201SIXX Analytical PAN 8BAA01TAXX

The data quality assurance (QA) review of six soil/sediment and two water samples collected from the Cometco Oil Facility site is complete. The samples were collected on November 10, 1998, by the Superfund Technical Assessment and Response Team (START) contractor, Ecology & Environment, Inc. (E & E). The samples were submitted to ATAS, Inc., St. Louis, Missouri, for analysis. The laboratory analyses were performed according to United States Environmental Protection Agency (U.S. EPA) Solid Waste 846 Method 8082.

Sample Identification

START Identification	Laboratory Identification
S1	24507.01
S2	24507.02
S3	24507.03
S4	24507.04
S5	24507.05
S6	24507.06
W1	24507.07
W2	24507.08

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Data Qualifications:

I Sample Holding Time: Acceptable

The samples were collected on November 10, 1998. All samples were extracted and analyzed on November 20, 1998. This is within the 14-day holding time limit, from collection to extraction, and the 40-day limit from extraction to analysis.

II Blanks: Acceptable

Two method blanks (one soil and one water) were analyzed with the samples. No target compounds were detected above the method quantitation limit in either method blank.

III Additional QC Checks: Acceptable

The recoveries of surrogates used in the samples and blanks were within acceptable limits for all samples.

One matrix spike/matrix spike duplicate (MS/MSD) pair and one laboratory control sample (LCS) were analyzed for each matrix. Percent recoveries for MS/MSD and LCS samples and relative percent difference values for MS/MSD samples were within laboratory-established control limits.

IV Overall Assessment of Data for Use: Acceptable

The overall usefulness of the data is based on criteria for QA Level II as outlined in the Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-01 (April 1990), Data Validation Procedures, Section 6.0, Pesticides/PCBs. Based upon the information provided, the data are acceptable for use.

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

NT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701VO(705)

DATE : 12-08-98

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED: 11-13-98
METHOD REF. : SW846-8260, EPA METHODOLOGY

DATE ANALYZED : 11-23-98
PROJECT # : 9811-801
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

OLATILES	R.L.	RESULTS	VOLATILES	R.L.	RESULTS
OTAL-1,2-DICHLOROETHENE	5	ND	TOLUENE	5	ND
YLENE (TOTAL)	5	ND	trans-1,3-DICHLOROPROPENE	5	ND
ICHLORODIFLUOROMETHANE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
HLOROMETHANE	10	ND	TETRACHLOROETHENE	5	ND
INYL CHLORIDE	10	ND	1,3-DICHLOROPROPANE	5	ND
ROMOMETHANE	10	ND	2-HEXANONE	10	ND
HLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
RICHLOROFLUOROMETHANE	10	ND	1,2-DIBROMOETHANE	5	ND
,1-DICHLOROETHENE	5	ND	CHLOROBENZENE	5	ND
CETONE	10	ND	1,1,1,2-TETRACHLOROETHANE	5	ND
ODOMETHANE	10	ND	ETHYLBENZENE	5	ND
ON DISULFIDE	5	ND	STYRENE	5	ND
ENE CHLORIDE	5	ND	BROMOFORM	5	ND
-1,2-DICHLOROETHENE	5	ND	ISOPROPYLBENZENE	5	ND
ETHYL TERT-BUTYL ETHER	10	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
,1-DICHLOROETHANE	5	ND	BROMOBENZENE	5	ND
INYL ACETATE	10	ND	1,2,3-TRICHLOROPROPANE	5	ND
,2-DICHLOROPROPANE	5	ND	n-PROPYLBENZENE	5	ND
is-1,2-DICHLOROETHENE	5	ND	2-CHLOROTOLUENE	5	ND
-BUTANONE	10	ND	1,3,5-TRIMETHYLBENZENE	5	ND
ROMOCHLOROMETHANE	5	ND	4-CHLOROTOLUENE	5	ND
HLOROFORM	5	ND	TERT-BUTYLBENZENE	5	ND
,1,1-TRICHLOROETHANE	5	ND	1,2,4-TRIMETHYLBENZENE	5	ND
ARBON TETRACHLORIDE	5	ND	sec-BUTYLBENZENE	5	ND
,1-DICHLOROPROPENE	5	ND	1,3-DICHLOROBENZENE	5	ND
ENZENE	5	ND	p-ISOPROPYLTOLUENE	5	ND
,2-DICHLOROETHANE	5	ND	1,4-DICHLOROBENZENE	5	ND
RICHLOROETHENE	5	ND	n-BUTYLBENZENE	5	ND
,2-DICHLOROPROPANE	5	ND	1,2-DICHLOROBENZENE	5	ND
IBROMOMETHANE	5	ND	1,2-DIBROMO-3-CHLOROPROPANE	5	ND
ROMODICHLOROMETHANE	5	ND	1,2,4-TRICHLOROBENZENE	5	ND
is-1,3-DICHLOROPROPENE	5	ND	HEXACHLOROBUTADIENE	5	ND
-METHYL-2-PENTANONE	10	ND	NAPHTHALENE	5	ND
,2,3-TRICHLOROBENZENE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(80-116) 103% BROMOFLUOROBENZENE(86-115) 101%
1,2-DICHLOROETHANE-D4(76-114) 92%

= ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.
L = REPORTING LIMIT, DEFINED AS THE PRACTICAL QUANTITATION LIMIT PLUS ANY DILUTION, POSITIVE VALUES BELOW THIS LIMIT WERE NOT REPORTED.
D = NOT DETECTED ABOVE REPORTING LIMIT

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RY QUALITY CONTROL SEQUENCE

: MATRIX : WATER
NALYZED : 11-23-98
: REF. : SW846-8260, EPA METHODOLOGY

REPORT DATE: 12-08-98

: SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

UND	24476.01 MS % REC.	24476.01 MSD % REC.	RPD	QC RPD	ADVISORY LIMITS
ICHLOROETHENE	92	92	0	16	70-139
LOROETHENE	98	100	2	11	75-121
	98	102	4	12	87-118
NE	102	106	4	10	78-127
OBENZENE	100	100	0	8	88-112

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UES OUTSIDE OF ADVISORY LIMITS

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'T: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701VO(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL
ATAS # : METHOD BLANK
DATE SUBMITTED: 11-13-98
METHOD REF. : SW846-8260, EPA METHODOLOGY

DATE ANALYZED : 11-20-98
PROJECT # : 9811-801
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

)LATILES	R.L.	RESULTS	VOLATILES	R.L.	RESULTS
)TAL-1,2-DICHLOROETHENE	5	ND	TOLUENE	5	ND
ʏLENE (TOTAL)	5	ND	trans-1,3-DICHLOROPROPENE	5	ND
ICHLORODIFLUOROMETHANE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
HLOROMETHANE	10	ND	TETRACHLOROETHENE	5	ND
INYL CHLORIDE	10	ND	1,3-DICHLOROPROPANE	5	ND
ROMOMETHANE	10	ND	2-HEXANONE	10	ND
HLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
RICHLOROFLUOROMETHANE	10	ND	1,2-DIBROMOETHANE	5	ND
,1-DICHLOROETHENE	5	ND	CHLOROBENZENE	5	ND
CETONE	10	ND	1,1,1,2-TETRACHLOROETHANE	5	ND
)DOMETHANE	10	ND	ETHYLBENZENE	5	ND
ʌ[illegible]ON DISULFIDE	5	ND	STYRENE	5	ND
ENE CHLORIDE	5	7	BROMOFORM	5	ND
1,2-DICHLOROETHENE	5	ND	ISOPROPYLBENZENE	5	ND
ETHYL TERT-BUTYL ETHER	10	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
,1-DICHLOROETHANE	5	ND	BROMOBENZENE	5	ND
INYL ACETATE	10	ND	1,2,3-TRICHLOROPROPANE	5	ND
,2-DICHLOROPROPANE	5	ND	n-PROPYLBENZENE	5	ND
is-1,2-DICHLOROETHENE	5	ND	2-CHLOROTOLUENE	5	ND
-BUTANONE	10	ND	1,3,5-TRIMETHYLBENZENE	5	ND
ROMOCHLOROMETHANE	5	ND	4-CHLOROTOLUENE	5	ND
HLOROFORM	5	ND	TERT-BUTYLBENZENE	5	ND
,1,1-TRICHLOROETHANE	5	ND	1,2,4-TRIMETHYLBENZENE	5	ND
ARBON TETRACHLORIDE	5	ND	sec-BUTYLBENZENE	5	ND
,1-DICHLOROPROPENE	5	ND	1,3-DICHLOROBENZENE	5	ND
ENZENE	5	ND	p-ISOPROPYLTOLUENE	5	ND
,2-DICHLOROETHANE	5	ND	1,4-DICHLOROBENZENE	5	ND
'RICHLOROETHENE	5	ND	n-BUTYLBENZENE	5	ND
,2-DICHLOROPROPANE	5	ND	1,2-DICHLOROBENZENE	5	ND
)IBROMOMETHANE	5	ND	1,2-DIBROMO-3-CHLOROPROPANE	5	ND
ʒROMODICHLOROMETHANE	5	ND	1,2,4-TRICHLOROBENZENE	5	ND
:is-1,3-DICHLOROPROPENE	5	ND	HEXACHLOROBUTADIENE	5	ND
:-METHYL-2-PENTANONE	10	ND	NAPHTHALENE	5	ND
,2,3-TRICHLOROBENZENE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117) 95% BROMOFLUOROBENZENE(74-121) 91%
1,2-DICHLOROETHANE-D4(70-121) 89%

B = ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.
RL = REPORTING LIMIT; DEFINED AS THE PRACTICAL QUANTITATION LIMIT PLUS ANY DILUTION, POSITIVE VALUES BELOW THIS LIMIT WERE NOT REPORTED.
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. ATORY QUALITY CONTROL SEQUENCE

AMPLE MATRIX : SOIL
ATE ANALYZED : 11-20-98
ETHOD REF. : SW846-8260, EPA METHODOLOGY

REPORT DATE: 12-08-98

ABORATORY CONTROL SAMPLE RECOVERY

OMPOUND	LCS % REC.
,1-DICHLOROETHENE	68
HLOROETHENE	88
ENE	90
OLUENE	92
HLOROBENZENE	98

= VALUES OUTSIDE OF ADVISORY LIMITS

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.BORATORY QUALITY CONTROL SEQUENCE

.MPLE MATRIX : SOIL
.TE ANALYZED : 11-18-98
:THOD REF. : SW846-8260, EPA METHODOLOGY

REPORT DATE: 12-08-98

.TRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

)MPOUND	24507.01 MS % REC.	24507.01 MSD % REC.	RPD	QC RPD	ADVISORY LIMITS
1-DICHLOROETHENE	71	70	1	28	54-152
LOROETHENE	77	73	5	7	60-128
:NZENE	92	89	3	12	68-130
)LUENE	85	84	1	16	65-127
:LOROBENZENE	96	90	6	7	81-113

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- VALUES OUTSIDE OF ADVISORY LIMITS

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'T: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701VO(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL
ATAS # : METHOD BLANK
DATE SUBMITTED: 11-13-98
METHOD REF. : SW846-8260, EPA METHODOLOGY

DATE ANALYZED : 11-18-98
PROJECT # : 9811-801
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

LATILES	R.L.	RESULTS	VOLATILES	R.L.	RESULTS
TAL-1,2-DICHLOROETHENE	5	ND	TOLUENE	5	ND
LENE (TOTAL)	5	ND	trans-1,3-DICHLOROPROPENE	5	ND
CHLORODIFLUOROMETHANE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
LOROMETHANE	10	ND	TETRACHLOROETHENE	5	ND
NYL CHLORIDE	10	ND	1,3-DICHLOROPROPANE	5	ND
OMOMETHANE	10	ND	2-HEXANONE	10	ND
LOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
ICHLOROFLUOROMETHANE	10	ND	1,2-DIBROMOETHANE	5	ND
1-DICHLOROETHENE	5	ND	CHLOROBENZENE	5	ND
ETONE	10	ND	1,1,1,2-TETRACHLOROETHANE	5	ND
DOMETHANE	10	ND	ETHYLBENZENE	5	ND
RBON DISULFIDE	5	ND	STYRENE	5	ND
ENE CHLORIDE	5	6	BROMOFORM	5	ND
1,2-DICHLOROETHENE	5	ND	ISOPROPYLBENZENE	5	ND
THYL TERT-BUTYL ETHER	10	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
1-DICHLOROETHANE	5	ND	BROMOBENZENE	5	ND
NYL ACETATE	10	ND	1,2,3-TRICHLOROPROPANE	5	ND
2-DICHLOROPROPANE	5	ND	n-PROPYLBENZENE	5	ND
s-1,2-DICHLOROETHENE	5	ND	2-CHLOROTOLUENE	5	ND
BUTANONE	10	ND	1,3,5-TRIMETHYLBENZENE	5	ND
OMOCHLOROMETHANE	5	ND	4-CHLOROTOLUENE	5	ND
LOROFORM	5	ND	TERT-BUTYLBENZENE	5	ND
1,1-TRICHLOROETHANE	5	ND	1,2,4-TRIMETHYLBENZENE	5	ND
RBON TETRACHLORIDE	5	ND	sec-BUTYLBENZENE	5	ND
1-DICHLOROPROPENE	5	ND	1,3-DICHLOROBENZENE	5	ND
NZENE	5	ND	p-ISOPROPYLTOLUENE	5	ND
2-DICHLOROETHANE	5	ND	1,4-DICHLOROBENZENE	5	ND
ICHLOROETHENE	5	ND	n-BUTYLBENZENE	5	ND
2-DICHLOROPROPANE	5	ND	1,2-DICHLOROBENZENE	5	ND
BROMOMETHANE	5	ND	1,2-DIBROMO-3-CHLOROPROPANE	5	ND
OMODICHLOROMETHANE	5	ND	1,2,4-TRICHLOROBENZENE	5	ND
s-1,3-DICHLOROPROPENE	5	ND	HEXACHLOROBUTADIENE	5	ND
METHYL-2-PENTANONE	10	ND	NAPHTHALENE	5	ND
2,3-TRICHLOROBENZENE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117) 100% BROMOFLUOROBENZENE(74-121) 101%
1,2-DICHLOROETHANE-D4(70-121) 95%

= ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.
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= NOT DETECTED ABOVE REPORTING LIMIT

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'T: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701VO(705)

DATE : 12-08-98

SAMPLE MATRIX : WATER
ATAS # : 24507.08
DATE SUBMITTED: 11-13-98
METHOD REF. : SW846-8260, EPA METHODOLOGY

DATE ANALYZED : 11-23-98
PROJECT # : 9811-801
SAMPLE ID : W2

RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

LATILES	R.L.	RESULTS	VOLATILES	R.L.	RESULTS
TAL-1,2-DICHLOROETHENE	25	ND	TOLUENE	25	ND
LENE (TOTAL)	25	ND	trans-1,3-DICHLOROPROPENE	25	ND
CHLORODIFLUOROMETHANE	50	ND	1,1,2-TRICHLOROETHANE	25	ND
LOROMETHANE	50	ND	TETRACHLOROETHENE	25	ND
NYL CHLORIDE	50	ND	1,3-DICHLOROPROPANE	25	ND
OMOMETHANE	50	ND	2-HEXANONE	50	ND
LOROETHANE	50	ND	DIBROMOCHLOROMETHANE	25	ND
ICHLOROFLUOROMETHANE	50	ND	1,2-DIBROMOETHANE	25	ND
1-DICHLOROETHENE	25	ND	CHLOROBENZENE	25	ND
ETONE	50	ND	1,1,1,2-TETRACHLOROETHANE	25	ND
DOMETHANE	50	ND	ETHYLBENZENE	25	ND
RBON DISULFIDE	25	ND	STYRENE	25	ND
ENE CHLORIDE	25	ND	BROMOFORM	25	ND
.,2-DICHLOROETHENE	25	ND	ISOPROPYLBENZENE	25	ND
THYL TERT-BUTYL ETHER	50	ND	1,1,2,2-TETRACHLOROETHANE	25	ND
1-DICHLOROETHANE	25	ND	BROMOBENZENE	25	ND
NYL ACETATE	50	ND	1,2,3-TRICHLOROPROPANE	25	ND
2-DICHLOROPROPANE	25	ND	n-PROPYLBENZENE	25	ND
s-1,2-DICHLOROETHENE	25	ND	2-CHLOROTOLUENE	25	ND
BUTANONE	50	ND	1,3,5-TRIMETHYLBENZENE	25	ND
OMOCHLOROMETHANE	25	ND	4-CHLOROTOLUENE	25	ND
LOROFORM	25	ND	TERT-BUTYLBENZENE	25	ND
1,1-TRICHLOROETHANE	25	ND	1,2,4-TRIMETHYLBENZENE	25	ND
RBON TETRACHLORIDE	25	ND	sec-BUTYLBENZENE	25	ND
1-DICHLOROPROPENE	25	ND	1,3-DICHLOROBENZENE	25	ND
NZENE	25	ND	p-ISOPROPYLTOLUENE	25	ND
2-DICHLOROETHANE	25	ND	1,4-DICHLOROBENZENE	25	ND
ICHLOROETHENE	25	ND	n-BUTYLBENZENE	25	ND
2-DICHLOROPROPANE	25	ND	1,2-DICHLOROBENZENE	25	ND
BROMOMETHANE	25	ND	1,2-DIBROMO-3-CHLOROPROPANE	25	ND
OMODICHLOROMETHANE	25	ND	1,2,4-TRICHLOROBENZENE	25	ND
s-1,3-DICHLOROPROPENE	25	ND	HEXACHLOROBUTADIENE	25	ND
METHYL-2-PENTANONE	50	ND	NAPHTHALENE	25	ND
2,3-TRICHLOROBENZENE	25	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(80-116) 98% BROMOFLUOROBENZENE(86-115) 99%
1,2-DICHLOROETHANE-D4(76-114) 94%

= ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.
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NT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701VO(705)

DATE : 12-08-98

SAMPLE MATRIX : WATER
ATAS # : 24507.07
DATE SUBMITTED: 11-13-98
METHOD REF. : SW846-8260, EPA METHODOLOGY

DATE ANALYZED : 11-23-98
PROJECT # : 9811-801
SAMPLE ID : W1

RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

)LATILES	R.L.	RESULTS	VOLATILES	R.L.	RESULTS
)TAL-1,2-DICHLOROETHENE	5	30	TOLUENE	5	ND
:LENE (TOTAL)	5	ND	trans-1,3-DICHLOROPROPENE	5	ND
:CHLORODIFLUOROMETHANE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
;LOROMETHANE	10	ND	TETRACHLOROETHENE	5	ND
:NYL CHLORIDE	10	ND	1,3-DICHLOROPROPANE	5	ND
?OMOMETHANE	10	ND	2-HEXANONE	10	ND
;LOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
?ICHLOROFLUOROMETHANE	10	ND	1,2-DIBROMOETHANE	5	ND
1-DICHLOROETHENE	5	ND	CHLOROBENZENE	5	ND
:ETONE	10	46	1,1,1,2-TETRACHLOROETHANE	5	ND
)DOMETHANE	10	ND	ETHYLBENZENE	5	ND
,RBON DISULFIDE	5	ND	STYRENE	5	ND
'ENE CHLORIDE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE	5	ND	;SOPROPYLBENZENE	5	ND
:THYL TERT-BUTYL ETHER	10	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
1-DICHLOROETHANE	5	ND	BROMOBENZENE	5	ND
:NYL ACETATE	10	ND	1,2,3-TRICHLOROPROPANE	5	ND
2-DICHLOROPROPANE	5	ND	n-PROPYLBENZENE	5	ND
.s-1,2-DICHLOROETHENE	5	30	2-CHLOROTOLUENE	5	ND
BUTANONE	10	ND	1,3,5-TRIMETHYLBENZENE	5	ND
.OMOCHLOROMETHANE	5	ND	4-CHLOROTOLUENE	5	ND
:LOROFORM	5	ND	TERT-BUTYLBENZENE	5	ND
1,1-TRICHLOROETHANE	5	ND	1,2,4-TRIMETHYLBENZENE	5	ND
.RBON TETRACHLORIDE	5	ND	sec-BUTYLBENZENE	5	ND
1-DICHLOROPROPENE	5	ND	1,3-DICHLOROBENZENE	5	ND
NZENE	5	ND	p-ISOPROPYLTOLUENE	5	ND
2-DICHLOROETHANE	5	ND	1,4-DICHLOROBENZENE	5	ND
.ICHLOROETHENE	5	ND	n-BUTYLBENZENE	5	ND
2-DICHLOROPROPANE	5	ND	1,2-DICHLOROBENZENE	5	ND
BROMOMETHANE	5	ND	1,2-DIBROMO-3-CHLOROPROPANE	5	ND
OMODICHLOROMETHANE	5	ND	1,2,4-TRICHLOROBENZENE	5	ND
s-1,3-DICHLOROPROPENE	5	ND	HEXACHLOROBUTADIENE	5	ND
METHYL-2-PENTANONE	10	ND	NAPHTHALENE	5	ND
2,3-TRICHLOROBENZENE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(80-116) 99% BROMOFLUOROBENZENE(86-115) 93%
1,2-DICHLOROETHANE-D4(76-114) 92%

= ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.
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= NOT DETECTED ABOVE REPORTING LIMIT

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ENT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701VO(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL
ATAS # : 24507.06
DATE SUBMITTED: 11-13-98
METHOD REF. : SW846-8260, EPA METHODOLOGY

DATE ANALYZED : 11-20-98
PROJECT # : 9811-801
SAMPLE ID : S6

RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

OLATILES	R.L.	RESULTS	VOLATILES	R.L.	RESULTS
OTAL-1,2-DICHLOROETHENE	500	2900	TOLUENE	500	1600
YLENE (TOTAL)	500	1300	trans-1,3-DICHLOROPROPENE	500	ND
ICHLORODIFLUOROMETHANE	1000	ND	1,1,2-TRICHLOROETHANE	500	ND
HLOROMETHANE	1000	ND	TETRACHLOROETHENE	500	ND
INYL CHLORIDE	1000	ND	1,3-DICHLOROPROPANE	500	ND
ROMOMETHANE	1000	ND	2-HEXANONE	1000	ND
HLOROETHANE	1000	ND	DIBROMOCHLOROMETHANE	500	ND
RICHLOROFLUOROMETHANE	1000	ND	1,2-DIBROMOETHANE	500	ND
,1-DICHLOROETHENE	500	ND	CHLOROBENZENE	500	ND
CETONE	1000	11000	1,1,1,2-TETRACHLOROETHANE	500	ND
ODOMETHANE	1000	ND	ETHYLBENZENE	500	ND
ARBON DISULFIDE	500	1200	STYRENE	500	ND
LENE CHLORIDE	500	1800 B	BROMOFORM	500	ND
1,2-DICHLOROETHENE	500	ND	ISOPROPYLBENZENE	500	ND
ETHYL TERT-BUTYL ETHER	1000	ND	1,1,2,2-TETRACHLOROETHANE	500	ND
,1-DICHLOROETHANE	500	ND	BROMOBENZENE	500	ND
INYL ACETATE	1000	ND	1,2,3-TRICHLOROPROPANE	500	ND
,2-DICHLOROPROPANE	500	ND	n-PROPYLBENZENE	500	ND
is-1,2-DICHLOROETHENE	500	2900	2-CHLOROTOLUENE	500	ND
-BUTANONE	1000	ND	1,3,5-TRIMETHYLBENZENE	500	ND
ROMOCHLOROMETHANE	500	ND	4-CHLOROTOLUENE	500	ND
HLOROFORM	500	ND	TERT-BUTYLBENZENE	500	ND
1,1-TRICHLOROETHANE	500	ND	1,2,4-TRIMETHYLBENZENE	500	3900
ARBON TETRACHLORIDE	500	ND	sec-BUTYLBENZENE	500	ND
1-DICHLOROPROPENE	500	ND	1,3-DICHLOROBENZENE	500	ND
ENZENE	500	ND	p-ISOPROPYLTOLUENE	500	ND
2-DICHLOROETHANE	500	ND	1,4-DICHLOROBENZENE	500	ND
RICHLOROETHENE	500	ND	n-BUTYLBENZENE	500	ND
,2-DICHLOROPROPANE	500	ND	1,2-DICHLOROBENZENE	500	ND
IBROMOMETHANE	500	ND	1,2-DIBROMO-3-CHLOROPROPANE	500	ND
ROMODICHLOROMETHANE	500	ND	1,2,4-TRICHLOROBENZENE	500	ND
is-1,3-DICHLOROPROPENE	500	ND	HEXACHLOROBUTADIENE	500	ND
-METHYL-2-PENTANONE	1000	6300	NAPHTHALENE	500	ND
2,3-TRICHLOROBENZENE	500	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117) 83% BROMOFLUOROBENZENE(74-121) 43% *
1,2-DICHLOROETHANE-D4(70-121) 93%

= ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.
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= REPORTING LIMIT, DEFINED AS THE PRACTICAL QUANTITATION LIMIT PLUS ANY DILUTION
) = NOT DETECTED ABOVE REPORTING LIMIT
= VALUES OUTSIDE OF QC LIMITS ON BOTH ORIGINAL AND RERUN

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

T: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701VO(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL
ATAS # : 24507.05
DATE SUBMITTED: 11-13-98
METHOD REF. : SW846-8260, EPA METHODOLOGY

DATE ANALYZED : 11-20-98
PROJECT # : 9811-801
SAMPLE ID : S5

RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

LATILES	R.L.	RESULTS	VOLATILES	R.L.	RESULTS
TAL-1,2-DICHLOROETHENE	5	ND	TOLUENE	5	ND
LENE (TOTAL)	5	ND	trans-1,3-DICHLOROPROPENE	5	ND
CHLORODIFLUOROMETHANE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
LOROMETHANE	10	ND	TETRACHLOROETHENE	5	ND
NYL CHLORIDE	10	ND	1,3-DICHLOROPROPANE	5	ND
OMOMETHANE	10	ND	2-HEXANONE	10	ND
LOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
ICHLOROFLUOROMETHANE	10	ND	1,2-DIBROMOETHANE	5	ND
1-DICHLOROETHENE	5	ND	CHLOROBENZENE	5	ND
ETONE	10	ND	1,1,1,2-TETRACHLOROETHANE	5	ND
DOMETHANE	10	ND	ETHYLBENZENE	5	ND
DISULFIDE	5	ND	STYRENE	5	ND
NE CHLORIDE	5	26 B	BROMOFORM	5	ND
1,2-DICHLOROETHENE	5	ND	ISOPROPYLBENZENE	5	ND
THYL TERT-BUTYL ETHER	10	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
1-DICHLOROETHANE	5	ND	BROMOBENZENE	5	ND
NYL ACETATE	10	ND	1,2,3-TRICHLOROPROPANE	5	ND
2-DICHLOROPROPANE	5	ND	n-PROPYLBENZENE	5	ND
s-1,2-DICHLOROETHENE	5	ND	2-CHLOROTOLUENE	5	ND
BUTANONE	10	ND	1,3,5-TRIMETHYLBENZENE	5	ND
OMOCHLOROMETHANE	5	ND	4-CHLOROTOLUENE	5	ND
LOROFORM	5	6	TERT-BUTYLBENZENE	5	ND
1,1-TRICHLOROETHANE	5	ND	1,2,4-TRIMETHYLBENZENE	5	ND
RBON TETRACHLORIDE	5	ND	sec-BUTYLBENZENE	5	ND
1-DICHLOROPROPENE	5	ND	1,3-DICHLOROBENZENE	5	ND
NZENE	5	ND	p-ISOPROPYLTOLUENE	5	ND
2-DICHLOROETHANE	5	ND	1,4-DICHLOROBENZENE	5	ND
ICHLOROETHENE	5	ND	n-BUTYLBENZENE	5	ND
2-DICHLOROPROPANE	5	ND	1,2-DICHLOROBENZENE	5	ND
BROMOMETHANE	5	ND	1,2-DIBROMO-3-CHLOROPROPANE	5	ND
OMODICHLOROMETHANE	5	ND	1,2,4-TRICHLOROBENZENE	5	ND
s-1,3-DICHLOROPROPENE	5	ND	HEXACHLOROBUTADIENE	5	ND
METHYL-2-PENTANONE	10	ND	NAPHTHALENE	5	ND
2,3-TRICHLOROBENZENE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117) 77%* BROMOFLUOROBENZENE(74-121) 67%*
1,2-DICHLOROETHANE-D4(70-121) 132%*

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= VALUES OUTSIDE OF QC LIMITS ON BOTH ORIGINAL AND RERUN

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T: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701VO(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL
ATAS # : 24507.04
DATE SUBMITTED: 11-13-98
METHOD REF. : SW846-8260, EPA METHODOLOGY

DATE ANALYZED : 11-18-98
PROJECT # : 9811-801
SAMPLE ID : S4

RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

LATILES	R.L.	RESULTS	VOLATILES	R.L.	RESULTS
TAL-1,2-DICHLOROETHENE	450	ND	TOLUENE	450	580
LENE (TOTAL)	450	1100	trans-1,3-DICHLOROPROPENE	450	ND
CHLORODIFLUOROMETHANE	900	ND	1,1,2-TRICHLOROETHANE	450	ND
LOROMETHANE	900	ND	TETRACHLOROETHENE	450	ND
NYL CHLORIDE	900	ND	1,3-DICHLOROPROPANE	450	ND
OMOMETHANE	900	ND	2-HEXANONE	900	ND
LOROETHANE	900	ND	DIBROMOCHLOROMETHANE	450	ND
ICHLOROFLUOROMETHANE	900	ND	1,2-DIBROMOETHANE	450	ND
1-DICHLOROETHENE	450	ND	CHLOROBENZENE	450	ND
ETONE	900	8500	1,1,1,2-TETRACHLOROETHANE	450	ND
DOMETHANE	900	ND	ETHYLBENZENE	450	ND
DISULFIDE	450	ND	STYRENE	450	ND
NE CHLORIDE	450	980 B	BROMOFORM	450	ND
1,2-DICHLOROETHENE	450	ND	ISOPROPYLBENZENE	450	ND
THYL TERT-BUTYL ETHER	900	ND	1,1,2,2-TETRACHLOROETHANE	450	ND
1-DICHLOROETHANE	450	ND	BROMOBENZENE	450	ND
NYL ACETATE	900	ND	1,2,3-TRICHLOROPROPANE	450	ND
2-DICHLOROPROPANE	450	ND	n-PROPYLBENZENE	450	1100
s-1,2-DICHLOROETHENE	450	ND	2-CHLOROTOLUENE	450	ND
BUTANONE	900	ND	1,3,5-TRIMETHYLBENZENE	450	2800
OMOCHLOROMETHANE	450	ND	4-CHLOROTOLUENE	450	ND
LOROFORM	450	ND	TERT-BUTYLBENZENE	450	ND
1,1-TRICHLOROETHANE	450	ND	1,2,4-TRIMETHYLBENZENE	450	9600
RBON TETRACHLORIDE	450	ND	sec-BUTYLBENZENE	450	ND
1-DICHLOROPROPENE	450	ND	1,3-DICHLOROBENZENE	450	ND
NZENE	450	ND	p-ISOPROPYLTOLUENE	450	ND
2-DICHLOROETHANE	450	ND	1,4-DICHLOROBENZENE	450	ND
ICHLOROETHENE	450	610	n-BUTYLBENZENE	450	ND
2-DICHLOROPROPANE	450	ND	1,2-DICHLOROBENZENE	450	ND
BROMOMETHANE	450	ND	1,2-DIBROMO-3-CHLOROPROPANE	450	ND
OMODICHLOROMETHANE	450	ND	1,2,4-TRICHLOROBENZENE	450	ND
s-1,3-DICHLOROPROPENE	450	ND	HEXACHLOROBUTADIENE	450	ND
METHYL-2-PENTANONE	900	1400	NAPHTHALENE	450	ND
2,3-TRICHLOROBENZENE	450	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117) 94% BROMOFLUOROBENZENE(74-121) 90%
1,2-DICHLOROETHANE-D4(70-121) 107%

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'T: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701VO(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL
ATAS # : 24507.03
DATE SUBMITTED: 11-13-98
METHOD REF. : SW846-8260, EPA METHODOLOGY

DATE ANALYZED : 11-18-98
PROJECT # : 9811-801
SAMPLE ID : S3

RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

)LATILES	R.L.	RESULTS	VOLATILES	R.L.	RESULTS
)TAL-1,2-DICHLOROETHENE	5	ND	TOLUENE	5	ND
;LENE (TOTAL)	5	ND	trans-1,3-DICHLOROPROPENE	5	ND
:CHLORODIFLUOROMETHANE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
HLOROMETHANE	10	ND	TETRACHLOROETHENE	5	ND
:NYL CHLORIDE	10	ND	1,3-DICHLOROPROPANE	5	ND
ROMOMETHANE	10	ND	2-HEXANONE	10	ND
HLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
RICHLOROFLUOROMETHANE	10	ND	1,2-DIBROMOETHANE	5	ND
.1-DICHLOROETHENE	5	ND	CHLOROBENZENE	5	ND
:ETONE	10	ND	1,1,1,2-TETRACHLOROETHANE	5	ND
)DOMETHANE	10	ND	ETHYLBENZENE	5	ND
' 'N DISULFIDE	5	ND	STYRENE	5	ND
:NE CHLORIDE	5	ND	BROMOFORM	5	ND
.. 1,2-DICHLOROETHENE	5	ND	ISOPROPYLBENZENE	5	ND
ETHYL TERT-BUTYL ETHER	10	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
1-DICHLOROETHANE	5	ND	BROMOBENZENE	5	ND
:NYL ACETATE	10	ND	1,2,3-TRICHLOROPROPANE	5	ND
2-DICHLOROPROPANE	5	ND	n-PROPYLBENZENE	5	ND
:s-1,2-DICHLOROETHENE	5	ND	2-CHLOROTOLUENE	5	ND
-BUTANONE	10	ND	1,3,5-TRIMETHYLBENZENE	5	ND
ROMOCHLOROMETHANE	5	ND	4-CHLOROTOLUENE	5	ND
HLOROFORM	5	ND	TERT-BUTYLBENZENE	5	ND
1,1-TRICHLOROETHANE	5	ND	1,2,4-TRIMETHYLBENZENE	5	ND
ARBON TETRACHLORIDE	5	ND	sec-BUTYLBENZENE	5	ND
1-DICHLOROPROPENE	5	ND	1,3-DICHLOROBENZENE	5	ND
:NZENE	5	ND	p-ISOPROPYLTOLUENE	5	ND
2-DICHLOROETHANE	5	ND	1,4-DICHLOROBENZENE	5	ND
RICHLOROETHENE	5	ND	n-BUTYLBENZENE	5	ND
2-DICHLOROPROPANE	5	ND	1,2-DICHLOROBENZENE	5	ND
:BROMOMETHANE	5	ND	1,2-DIBROMO-3-CHLOROPROPANE	5	ND
ROMODICHLOROMETHANE	5	ND	1,2,4-TRICHLOROBENZENE	5	ND
.s-1,3-DICHLOROPROPENE	5	ND	HEXACHLOROBUTADIENE	5	ND
-METHYL-2-PENTANONE	10	ND	NAPHTHALENE	5	ND
2,3-TRICHLOROBENZENE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117) 83% BROMOFLUOROBENZENE(74-121) 84%
1,2-DICHLOROETHANE-D4(70-121) 152% *

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T: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701VO(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL
ATAS # : 24507.02
DATE SUBMITTED: 11-13-98
METHOD REF. : SW846-8260, EPA METHODOLOGY

DATE ANALYZED : 11-20-98
PROJECT # : 9811-801
SAMPLE ID : S2

RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

LATILES	R.L.	RESULTS
TAL-1,2-DICHLOROETHENE	5	ND
LENE (TOTAL)	5	ND
CHLORODIFLUOROMETHANE	10	ND
LOROMETHANE	10	ND
NYL CHLORIDE	10	ND
OMOMETHANE	10	ND
LOROETHANE	10	ND
ICHLOROFLUOROMETHANE	10	ND
1-DICHLOROETHENE	5	ND
ETONE	10	ND
DOMETHANE	10	ND
RBON DISULFIDE	5	ND
ENE CHLORIDE	5	40 B
1,2-DICHLOROETHENE	5	ND
THYL TERT-BUTYL ETHER	10	ND
1-DICHLOROETHANE	5	ND
NYL ACETATE	10	ND
2-DICHLOROPROPANE	5	ND
s-1,2-DICHLOROETHENE	5	ND
BUTANONE	10	ND
OMOCHLOROMETHANE	5	ND
LOROFORM	5	6
1,1-TRICHLOROETHANE	5	ND
RBON TETRACHLORIDE	5	ND
1-DICHLOROPROPENE	5	ND
NZENE	5	ND
2-DICHLOROETHANE	5	ND
ICHLOROETHENE	5	ND
2-DICHLOROPROPANE	5	ND
BROMOMETHANE	5	ND
OMODICHLOROMETHANE	5	ND
s-1,3-DICHLOROPROPENE	5	ND
METHYL-2-PENTANONE	10	ND
2,3-TRICHLOROBENZENE	5	ND

VOLATILES	R.L.	RESULTS
TOLUENE	5	ND
trans-1,3-DICHLOROPROPENE	5	ND
1,1,2-TRICHLOROETHANE	5	ND
TETRACHLOROETHENE	5	ND
1,3-DICHLOROPROPANE	5	ND
2-HEXANONE	10	ND
DIBROMOCHLOROMETHANE	5	ND
1,2-DIBROMOETHANE	5	ND
CHLOROBENZENE	5	ND
1,1,1,2-TETRACHLOROETHANE	5	ND
ETHYLBENZENE	5	ND
STYRENE	5	ND
BROMOFORM	5	ND
ISOPROPYLBENZENE	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND
BROMOBENZENE	5	ND
1,2,3-TRICHLOROPROPANE	5	ND
n-PROPYLBENZENE	5	ND
2-CHLOROTOLUENE	5	ND
1,3,5-TRIMETHYLBENZENE	5	ND
4-CHLOROTOLUENE	5	ND
TERT-BUTYLBENZENE	5	ND
1,2,4-TRIMETHYLBENZENE	5	ND
sec-BUTYLBENZENE	5	ND
1,3-DICHLOROBENZENE	5	ND
p-ISOPROPYLTOLUENE	5	ND
1,4-DICHLOROBENZENE	5	ND
n-BUTYLBENZENE	5	ND
1,2-DICHLOROBENZENE	5	ND
1,2-DIBROMO-3-CHLOROPROPANE	5	ND
1,2,4-TRICHLOROBENZENE	5	ND
HEXACHLOROBUTADIENE	5	ND
NAPHTHALENE	5	ND

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117) 78%* BROMOFLUOROBENZENE(74-121) 63%*
1,2-DICHLOROETHANE-D4(70-121) 135%*

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'T: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701VO(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL
ATAS # : 24507.01
DATE SUBMITTED: 11-13-98
METHOD REF. : SW846-8260, EPA METHODOLOGY

DATE ANALYZED : 11-18-98
PROJECT # : 9811-801
SAMPLE ID : S1

RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

)LATILES	R.L.	RESULTS	VOLATILES	R.L.	RESULTS
)TAL-1,2-DICHLOROETHENE	5	ND	TOLUENE	5	ND
:LENE (TOTAL)	5	ND	trans-1,3-DICHLOROPROPENE	5	ND
:CHLORODIFLUOROMETHANE	10	ND	1,1,2-TRICHLOROETHANE	5	ND
:LOROMETHANE	10	ND	TETRACHLOROETHENE	5	ND
:NYL CHLORIDE	10	ND	1,3-DICHLOROPROPANE	5	ND
:OMOMETHANE	10	ND	2-HEXANONE	10	ND
:LOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
:ICHLOROFLUOROMETHANE	10	ND	1,2-DIBROMOETHANE	5	ND
1-DICHLOROETHENE	5	ND	CHLOROBENZENE	5	ND
:ETONE	10	13	1,1,1,2-TETRACHLOROETHANE	5	ND
)DOMETHANE	10	ND	ETHYLBENZENE	5	ND
,RBON DISULFIDE	5	ND	STYRENE	5	ND
:ENE CHLORIDE	5	7 B	BROMOFORM	5	ND
1,2-DICHLOROETHENE	5	ND	ISOPROPYLBENZENE	5	ND
:THYL TERT-BUTYL ETHER	10	ND	1,1,2,2-TETRACHLOROETHANE	5	ND
1-DICHLOROETHANE	5	ND	BROMOBENZENE	5	ND
:NYL ACETATE	10	ND	1,2,3-TRICHLOROPROPANE	5	ND
2-DICHLOROPROPANE	5	ND	n-PROPYLBENZENE	5	ND
s-1,2-DICHLOROETHENE	5	ND	2-CHLOROTOLUENE	5	ND
BUTANONE	10	ND	1,3,5-TRIMETHYLBENZENE	5	ND
.OMOCHLOROMETHANE	5	ND	4-CHLOROTOLUENE	5	ND
:LOROFORM	5	ND	TERT-BUTYLBENZENE	5	ND
1,1-TRICHLOROETHANE	5	ND	1,2,4-TRIMETHYLBENZENE	5	ND
,RBON TETRACHLORIDE	5	ND	sec-BUTYLBENZENE	5	ND
1-DICHLOROPROPENE	5	ND	1,3-DICHLOROBENZENE	5	ND
:NZENE	5	ND	p-ISOPROPYLTOLUENE	5	ND
2-DICHLOROETHANE	5	ND	1,4-DICHLOROBENZENE	5	ND
.ICHLOROETHENE	5	ND	n-BUTYLBENZENE	5	ND
2-DICHLOROPROPANE	5	ND	1,2-DICHLOROBENZENE	5	ND
BROMOMETHANE	5	ND	1,2-DIBROMO-3-CHLOROPROPANE	5	ND
.OMODICHLOROMETHANE	5	ND	1,2,4-TRICHLOROBENZENE	5	ND
s-1,3-DICHLOROPROPENE	5	ND	HEXACHLOROBUTADIENE	5	ND
METHYL-2-PENTANONE	10	ND	NAPHTHALENE	5	ND
2,3-TRICHLOROBENZENE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-d8(81-117) 85% BROMOFLUOROBENZENE(74-121) 63% *
1,2-DICHLOROETHANE-D4(70-121) 112%

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T: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701SV(705)

DATE : 12-08-98

SAMPLE MATRIX: SOIL
ATAS # : 24507.01
PROJECT : #9811-801
SAMPLE ID : S1

DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-17-98
DATE ANALYZED : 11-18-98
METHOD REF. : SW846-8270

RESULTS REPORTED IN ug/Kg OR PARTS PER BILLION(PPB)

MIVOLATILES	RL	RESULTS (ug/Kg)	SEMIVOLATILE	RL	RESULTS (ug/Kg)
ENOL	330	ND	3-NITROANILINE	830	ND
S(2-CHLOROETHYL)ETHER	330	ND	ACENAPHTHENE	330	ND
CHLOROPHENOL	330	ND	2,4-DINITROPHENOL	830	ND
3-DICHLOROBENZENE	330	ND	4-NITROPHENOL	830	ND
4-DICHLOROBENZENE	330	ND	2,4-DINITROTOLUENE	330	ND
NZYL ALCOHOL	330	ND	DIBENZOFURAN	330	ND
2-DICHLOROBENZENE	330	ND	DIETHYLPHTHALATE	330	ND
METHYLPHENOL	330	ND	4-CHLOROPHENYL-PHENYLETHER	330	ND
S(2-CHLOROISOPROPYL)ETHER	330	ND	FLUORENE	330	ND
METHYLPHENOL	330	ND	4-NITROANILINE	830	ND
OSO-DI-n-PROPYLAMINE	330	ND	4,6-DINITRO-2-METHYLPHENOL	830	ND
OROETHANE	330	ND	N-NITROSODIPHENYLAMINE	330	ND
TROBENZENE	330	ND	4-BROMOPHENYL-PHENYLETHER	330	ND
OPHORONE	330	ND	HEXACHLOROBENZENE	330	ND
4-DIMETHYLPHENOL	330	ND	PENTACHLOROPHENOL	830	ND
NITROPHENOL	330	ND	PHENANTHRENE	330	1000
NZOIC ACID	1600	ND	ANTHRACENE	330	ND
S(2-CHLOROETHOXY)METHANE	330	ND	DI-N-BUTYLPHTHALATE	330	ND
4-DICHLOROPHENOL	330	ND	FLUORANTHENE	330	1300
2,4-TRICHLOROBENZENE	330	ND	PYRENE	330	1400
PHTHALENE	330	ND	BUTYLBENZYLPHTHALATE	330	ND
CHLOROANILINE	330	ND	BIS(2-ETHYLHEXYL)PHTHALATE	330	ND
XACHLOROBUTADIENE	330	ND	3,3'-DICHLOROBENZIDINE	330	ND
CHLORO-3-METHYLPHENOL	330	ND	BENZO(A)ANTHRACENE	330	650
METHYLNAPHTHALENE	330	ND	CHRYSENE	330	850
XACHLOROCYCLOPENTADIENE	330	ND	DI-N-OCTYLPHTHALATE	330	ND
4,6-TRICHLOROPHENOL	330	ND	BENZO(b)FLUORANTHENE	330	ND
4,5-TRICHLOROPHENOL	830	ND	BENZO(k)FLUORANTHENE	330	770
CHLORONAPHTHALENE	330	ND	BENZO(a)PYRENE	330	800
NITROANILINE	830	ND	DIBENZO(A,H)ANTHRACENE	330	ND
METHYLPHTHALATE	330	ND	INDENO(1,2,3-CD)PYRENE	330	790
6-DINITROTOLUENE	330	ND	BENZO(G,H,I)PERYLENE	330	480
ENAPHTHYLENE	330	ND			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-d5(23-120)	83 %	2-FLUOROBIPHENYL(30-115)	85 %
TERPHENYL-d14(18-137)	78 %	PHENOL-d5(24-113)	59 %
2-FLUOROPHENOL(25-121)	61 %	2,4,6-TRIBROMOPHENOL(19-122)	89 %

= NOT DETECTED ABOVE REPORTING LIMIT
= REPORTING LIMIT
= ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.
= SURROGATE RECOVERY OUTSIDE OF QC LIMITS

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

'T: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701SV(705)

DATE : 12-08-98

SAMPLE MATRIX: SOIL
ATAS # : 24507.02
PROJECT : #9811-801
SAMPLE ID : S2

DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-17-98
DATE ANALYZED : 11-18-98
METHOD REF. : SW846-8270

RESULTS REPORTED IN ug/Kg OR PARTS PER BILLION(PPB)

:MIVOLATILES	RL	RESULTS (ug/Kg)	SEMIVOLATILE	RL	RESULTS (ug/Kg)
:ENOL	330	ND	3-NITROANILINE	830	ND
:S(2-CHLOROETHYL)ETHER	330	ND	ACENAPHTHENE	330	ND
CHLOROPHENOL	330	ND	2,4-DINITROPHENOL	830	ND
3-DICHLOROBENZENE	330	ND	4-NITROPHENOL	830	ND
4-DICHLOROBENZENE	330	ND	2,4-DINITROTOLUENE	330	ND
:NZYL ALCOHOL	330	ND	DIBENZOFURAN	330	ND
2-DICHLOROBENZENE	330	ND	DIETHYLPHTHALATE	330	ND
METHYLPHENOL	330	ND	4-CHLOROPHENYL-PHENYLETHER	330	ND
:S(2-CHLOROISOPROPYL)ETHER	330	ND	FLUORENE	330	ND
METHYLPHENOL	330	ND	4-NITROANILINE	830	ND
ROSO-DI-n-PROPYLAMINE	330	ND	4,6-DINITRO-2-METHYLPHENOL	830	ND
LOROETHANE	330	ND	N-NITROSODIPHENYLAMINE	330	ND
:TROBENZENE	330	ND	4-BROMOPHENYL-PHENYLETHER	330	ND
:OPHORONE	330	ND	HEXACHLOROBENZENE	330	ND
4-DIMETHYLPHENOL	330	ND	PENTACHLOROPHENOL	830	ND
NITROPHENOL	330	ND	PHENANTHRENE	330	ND
:NZOIC ACID	1600	ND	ANTHRACENE	330	ND
:S(2-CHLOROETHOXY)METHANE	330	ND	DI-N-BUTYLPHTHALATE	330	ND
4-DICHLOROPHENOL	330	ND	FLUORANTHENE	330	350
2,4-TRICHLOROBENZENE	330	ND	PYRENE	330	370
:PHTHALENE	330	ND	BUTYLBENZYLPHTHALATE	330	ND
CHLOROANILINE	330	ND	BIS(2-ETHYLHEXYL)PHTHALATE	330	ND
:XACHLOROBUTADIENE	330	ND	3,3'-DICHLOROBENZIDINE	330	ND
CHLORO-3-METHYLPHENOL	330	ND	BENZO(A)ANTHRACENE	330	ND
METHYLNAPHTHALENE	330	ND	CHRYSENE	330	ND
:XACHLOROCYCLOPENTADIENE	330	ND	DI-N-OCTYLPHTHALATE	330	ND
4,6-TRICHLOROPHENOL	330	ND	BENZO(b)FLUORANTHENE	330	ND
4,5-TRICHLOROPHENOL	830	ND	BENZO(k)FLUORANTHENE	330	ND
CHLORONAPHTHALENE	330	ND	BENZO(a)PYRENE	330	ND
NITROANILINE	830	ND	DIBENZO(A,H)ANTHRACENE	330	ND
METHYLPHTHALATE	330	ND	INDENO(1,2,3-CD)PYRENE	330	ND
6-DINITROTOLUENE	330	ND	BENZO(G,H,I)PERYLENE	330	ND
:ENAPHTHYLENE	330	ND			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-d5(23-120)	47 %	2-FLUOROBIPHENYL(30-115)	50 %
TERPHENYL-d14(18-137)	52 %	PHENOL-d5(24-113)	39 %
2-FLUOROPHENOL(25-121)	40 %	2,4,6-TRIBROMOPHENOL(19-122)	44 %

= NOT DETECTED ABOVE REPORTING LIMIT
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= ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.
= SURROGATE RECOVERY OUTSIDE OF QC LIMITS

ecology and environment

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

T: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701SV(705)

DATE : 12-08-98

SAMPLE MATRIX: SOIL
ATAS # : 24507.03
PROJECT : #9811-801
SAMPLE ID : S3

DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-17-98
DATE ANALYZED : 11-18-98
METHOD REF. : SW846-8270

RESULTS REPORTED IN ug/Kg OR PARTS PER BILLION(PPB)

MIVOLATILES	RL	RESULTS (ug/Kg)	SEMIVOLATILE	RL	RESULTS (ug/Kg)
ENOL	330	ND	3-NITROANILINE	830	ND
S(2-CHLOROETHYL)ETHER	330	ND	ACENAPHTHENE	330	ND
CHLOROPHENOL	330	ND	2,4-DINITROPHENOL	830	ND
3-DICHLOROBENZENE	330	ND	4-NITROPHENOL	830	ND
4-DICHLOROBENZENE	330	ND	2,4-DINITROTOLUENE	330	ND
NZYL ALCOHOL	330	ND	DIBENZOFURAN	330	ND
2-DICHLOROBENZENE	330	ND	DIETHYLPHTHALATE	330	ND
METHYLPHENOL	330	ND	4-CHLOROPHENYL-PHENYLETHER	330	ND
S(2-CHLOROISOPROPYL)ETHER	330	ND	FLUORENE	330	ND
METHYLPHENOL	330	ND	4-NITROANILINE	830	ND
OSO-DI-n-PROPYLAMINE	330	ND	4,6-DINITRO-2-METHYLPHENOL	830	ND
LOROETHANE	330	ND	N-NITROSODIPHENYLAMINE	330	ND
TROBENZENE	330	ND	4-BROMOPHENYL-PHENYLETHER	330	ND
OPHORONE	330	ND	HEXACHLOROBENZENE	330	ND
4-DIMETHYLPHENOL	330	ND	PENTACHLOROPHENOL	830	ND
NITROPHENOL	330	ND	PHENANTHRENE	330	620
NZOIC ACID	1600	ND	ANTHRACENE	330	ND
S(2-CHLOROETHOXY)METHANE	330	ND	DI-N-BUTYLPHTHALATE	330	ND
4-DICHLOROPHENOL	330	ND	FLUORANTHENE	330	730
2,4-TRICHLOROBENZENE	330	ND	PYRENE	330	720
PHTHALENE	330	ND	BUTYLBENZYLPHTHALATE	330	ND
CHLOROANILINE	330	ND	BIS(2-ETHYLHEXYL)PHTHALATE	33[illegible]	ND
XACHLOROBUTADIENE	330	ND	3,3'-DICHLOROBENZIDINE	330	ND
CHLORO-3-METHYLPHENOL	330	ND	BENZO(A)ANTHRACENE	330	370
METHYLNAPHTHALENE	330	ND	CHRYSENE	330	480
XACHLOROCYCLOPENTADIENE	330	ND	DI-N-OCTYLPHTHALATE	330	ND
4,6-TRICHLOROPHENOL	330	ND	BENZO(b)FLUORANTHENE	330	ND
4,5-TRICHLOROPHENOL	830	ND	BENZO(k)FLUORANTHENE	330	ND
CHLORONAPHTHALENE	330	ND	BENZO(a)PYRENE	330	ND
NITROANILINE	830	ND	DIBENZO(A,H)ANTHRACENE	330	ND
METHYLPHTHALATE	330	ND	INDENO(1,2,3-CD)PYRENE	330	420
6-DINITROTOLUENE	330	ND	BENZO(G,H,I)PERYLENE	330	ND
ENAPHTHYLENE	330	ND			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-d5(23-120)	80 %	2-FLUOROBIPHENYL(30-115)	79 %
TERPHENYL-d14(18-137)	82 %	PHENOL-d5(24-113)	56 %
2-FLUOROPHENOL(25-121)	62 %	2,4,6-TRIBROMOPHENOL(19-122)	93 %

= NOT DETECTED ABOVE REPORTING LIMIT
= REPORTING LIMIT
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SURROGATE RECOVERY OUTSIDE OF QC LIMITS

ecology and environment

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

T: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701SV(705)

DATE : 12-08-98

SAMPLE MATRIX: SOIL
ATAS # : 24507.04
PROJECT : #9811-801
SAMPLE ID : S4

DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-17-98
DATE ANALYZED : 11-18-98
METHOD REF. : SW846-8270

RESULTS REPORTED IN ug/Kg OR PARTS PER BILLION(PPB)

MIVOLATILES	RL	RESULTS (ug/Kg)	SEMIVOLATILE	RL	RESULTS (ug/Kg)
ENOL	1320	ND	3-NITROANILINE	3320	ND
S(2-CHLOROETHYL)ETHER	1320	ND	ACENAPHTHENE	1320	ND
CHLOROPHENOL	1320	ND	2,4-DINITROPHENOL	3320	ND
3-DICHLOROBENZENE	1320	ND	4-NITROPHENOL	3320	ND
4-DICHLOROBENZENE	1320	ND	2,4-DINITROTOLUENE	1320	ND
NZYL ALCOHOL	1320	ND	DIBENZOFURAN	1320	ND
2-DICHLOROBENZENE	1320	ND	DIETHYLPHTHALATE	1320	ND
METHYLPHENOL	1320	ND	4-CHLOROPHENYL-PHENYLETHER	1320	ND
S(2-CHLOROISOPROPYL)ETHER	1320	ND	FLUORENE	1320	420 J
METHYLPHENOL	1320	ND	4-NITROANILINE	3320	ND
OSO-DI-n-PROPYLAMINE	1320	ND	4,6-DINITRO-2-METHYLPHENOL	3320	ND
LOROETHANE	1320	ND	N-NITROSODIPHENYLAMINE	1320	ND
TROBENZENE	1320	ND	4-BROMOPHENYL-PHENYLETHER	1320	ND
OPHORONE	1320	ND	HEXACHLOROBENZENE	1320	ND
4-DIMETHYLPHENOL	1320	ND	PENTACHLOROPHENOL	3320	ND
NITROPHENOL	1320	ND	PHENANTHRENE	1320	1100 J
NZOIC ACID	6400	ND	ANTHRACENE	1320	ND
S(2-CHLOROETHOXY)METHANE	1320	ND	DI-N-BUTYLPHTHALATE	1320	ND
4-DICHLOROPHENOL	1320	ND	FLUORANTHENE	1320	480 J
2,4-TRICHLOROBENZENE	1320	ND	PYRENE	1320	480 J
PHTHALENE	1320	ND	BUTYLBENZYLPHTHALATE	1320	ND
CHLOROANILINE	1320	ND	BIS(2-ETHYLHEXYL)PHTHALATE	1320	5000
XACHLOROBUTADIENE	1320	ND	3,3'-DICHLOROBENZIDINE	1320	ND
CHLORO-3-METHYLPHENOL	1320	4000	BENZO(A)ANTHRACENE	1320	ND
METHYLNAPHTHALENE	1320	880 J	CHRYSENE	1320	ND
XACHLOROCYCLOPENTADIENE	1320	ND	DI-N-OCTYLPHTHALATE	1320	ND
4,6-TRICHLOROPHENOL	1320	ND	BENZO(b)FLUORANTHENE	1320	ND
4,5-TRICHLOROPHENOL	3320	ND	BENZO(k)FLUORANTHENE	1320	ND
CHLORONAPHTHALENE	1320	ND	BENZO(a)PYRENE	1320	ND
NITROANILINE	3320	ND	DIBENZO(A,H)ANTHRACENE	1320	ND
METHYLPHTHALATE	1320	ND	INDENO(1,2,3-CD)PYRENE	1320	ND
6-DINITROTOLUENE	1320	ND	BENZO(G,H,I)PERYLENE	1320	ND
ENAPHTHYLENE	1320	ND			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-d5(23-120)	40 %	2-FLUOROBIPHENYL(30-115)	37 %
TERPHENYL-d14(18-137)	36 %	PHENOL-d5(24-113)	29 %
2-FLUOROPHENOL(25-121)	18 % *	2,4,6-TRIBROMOPHENOL(19-122)	50 %

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ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

T: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701SV(705)

DATE : 12-08-98

SAMPLE MATRIX: SOIL
ATAS # : 24507.05
PROJECT : #9811-801
SAMPLE ID : S5

DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-17-98
DATE ANALYZED : 11-18-98
METHOD REF. : SW846-8270

RESULTS REPORTED IN ug/Kg OR PARTS PER BILLION(PPB)

MIVOLATILES	RL	RESULTS (ug/Kg)	SEMIVOLATILE	RL	RESULTS (ug/Kg)
ENOL	330	ND	3-NITROANILINE	830	ND
S(2-CHLOROETHYL)ETHER	330	ND	ACENAPHTHENE	330	360
CHLOROPHENOL	330	ND	2,4-DINITROPHENOL	830	ND
3-DICHLOROBENZENE	330	ND	4-NITROPHENOL	830	ND
4-DICHLOROBENZENE	330	ND	2,4-DINITROTOLUENE	330	ND
NZYL ALCOHOL	330	ND	DIBENZOFURAN	330	ND
2-DICHLOROBENZENE	330	ND	DIETHYLPHTHALATE	330	ND
METHYLPHENOL	330	ND	4-CHLOROPHENYL-PHENYLETHER	330	ND
S(2-CHLOROISOPROPYL)ETHER	330	ND	FLUORENE	330	370
METHYLPHENOL	330	ND	4-NITROANILINE	830	ND
OSO-DI-n-PROPYLAMINE	330	ND	4,6-DINITRO-2-METHYLPHENOL	830	ND
LOROETHANE	330	ND	N-NITROSODIPHENYLAMINE	330	ND
TROBENZENE	330	ND	4-BROMOPHENYL-PHENYLETHER	330	ND
OPHORONE	330	ND	HEXACHLOROBENZENE	330	ND
4-DIMETHYLPHENOL	330	ND	PENTACHLOROPHENOL	830	ND
NITROPHENOL	330	ND	PHENANTHRENE	330	2600
NZOIC ACID	1600	ND	ANTHRACENE	330	690
S(2-CHLOROETHOXY)METHANE	330	ND	DI-N-BUTYLPHTHALATE	330	ND
4-DICHLOROPHENOL	330	ND	FLUORANTHENE	330	2800
2,4-TRICHLOROBENZENE	330	ND	PYRENE	330	1900
PHTHALENE	330	450	BUTYLBENZYLPHTHALATE	330	ND
CHLOROANILINE	330	ND	BIS(2-ETHYLHEXYL)PHTHALATE	330	ND
XACHLOROBUTADIENE	330	ND	3,3'-DICHLOROBENZIDINE	330	ND
CHLORO-3-METHYLPHENOL	330	ND	BENZO(A)ANTHRACENE	330	1400
METHYLNAPHTHALENE	330	ND	CHRYSENE	330	1500
XACHLOROCYCLOPENTADIENE	330	ND	DI-N-OCTYLPHTHALATE	330	ND
4,6-TRICHLOROPHENOL	330	ND	BENZO(b)FLUORANTHENE	330	1300
4,5-TRICHLOROPHENOL	830	ND	BENZO(k)FLUORANTHENE	330	1000
CHLORONAPHTHALENE	330	ND	BENZO(a)PYRENE	330	1400
NITROANILINE	830	ND	DIBENZO(A,H)ANTHRACENE	330	610
METHYLPHTHALATE	330	ND	INDENO(1,2,3-CD)PYRENE	330	1200
6-DINITROTOLUENE	330	ND	BENZO(G,H,I)PERYLENE	330	690
ENAPHTHYLENE	330	ND			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-d5(23-120)	73 %	2-FLUOROBIPHENYL(30-115)	85 %
TERPHENYL-d14(18-137)	61 %	PHENOL-d5(24-113)	57 %
2-FLUOROPHENOL(25-121)	58 %	2,4,6-TRIBROMOPHENOL(19-122)	116 %

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= SURROGATE RECOVERY OUTSIDE OF QC LIMITS

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T: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701SV(705)

DATE : 12-08-98

SAMPLE MATRIX: SOIL
ATAS # : 24507.06
PROJECT : #9811-801
SAMPLE ID : S6

DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-17-98
DATE ANALYZED : 11-18-98
METHOD REF. : SW846-8270

RESULTS REPORTED IN ug/Kg OR PARTS PER BILLION(PPB)

MIVOLATILES	RL	RESULTS (ug/Kg)	SEMIVOLATILE	RL	RESULTS (ug/Kg)
ENOL	330	ND	3-NITROANILINE	830	ND
S(2-CHLOROETHYL)ETHER	330	ND	ACENAPHTHENE	330	ND
CHLOROPHENOL	330	ND	2,4-DINITROPHENOL	830	ND
3-DICHLOROBENZENE	330	ND	4-NITROPHENOL	830	ND
4-DICHLOROBENZENE	330	ND	2,4-DINITROTOLUENE	330	ND
NZYL ALCOHOL	330	ND	DIBENZOFURAN	330	ND
2-DICHLOROBENZENE	330	ND	DIETHYLPHTHALATE	330	ND
METHYLPHENOL	330	ND	4-CHLOROPHENYL-PHENYLETHER	330	ND
S(2-CHLOROISOPROPYL)ETHER	330	ND	FLUORENE	330	ND
METHYLPHENOL	330	ND	4-NITROANILINE	830	ND
)SO-DI-n-PROPYLAMINE	330	ND	4,6-DINITRO-2-METHYLPHENOL	830	ND
.OROETHANE	330	ND	N-NITROSODIPHENYLAMINE	330	ND
TROBENZENE	330	ND	4-BROMOPHENYL-PHENYLETHER	330	ND
OPHORONE	330	ND	HEXACHLOROBENZENE	330	ND
4-DIMETHYLPHENOL	330	ND	PENTACHLOROPHENOL	830	ND
NITROPHENOL	330	ND	PHENANTHRENE	330	ND
NZOIC ACID	1600	ND	ANTHRACENE	330	ND
S(2-CHLOROETHOXY)METHANE	330	ND	DI-N-BUTYLPHTHALATE	330	ND
4-DICHLOROPHENOL	330	ND	FLUORANTHENE	330	ND
2,4-TRICHLOROBENZENE	330	ND	PYRENE	330	ND
PHTHALENE	330	ND	BUTYLBENZYLPHTHALATE	330	ND
CHLOROANILINE	330	ND	BIS(2-ETHYLHEXYL)PHTHALATE	330	ND
XACHLOROBUTADIENE	330	ND	3,3'-DICHLOROBENZIDINE	330	ND
CHLORO-3-METHYLPHENOL	330	330	BENZO(A)ANTHRACENE	330	ND
METHYLNAPHTHALENE	330	ND	CHRYSENE	330	ND
XACHLOROCYCLOPENTADIENE	330	ND	DI-N-OCTYLPHTHALATE	330	ND
4,6-TRICHLOROPHENOL	330	ND	BENZO(b)FLUORANTHENE	330	ND
4,5-TRICHLOROPHENOL	830	ND	BENZO(k)FLUORANTHENE	330	ND
CHLORONAPHTHALENE	330	ND	BENZO(a)PYRENE	330	ND
NITROANILINE	830	ND	DIBENZO(A,H)ANTHRACENE	330	ND
METHYLPHTHALATE	330	ND	INDENO(1,2,3-CD)PYRENE	330	ND
6-DINITROTOLUENE	330	ND	BENZO(G,H,I)PERYLENE	330	ND
ENAPHTHYLENE	330	ND			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-d5(23-120)	86 %	2-FLUOROBIPHENYL(30-115)	89 %
TERPHENYL-d14(18-137)	67 %	PHENOL-d5(24-113)	65 %
2-FLUOROPHENOL(25-121)	62 %	2,4,6-TRIBROMOPHENOL(19-122)	104 %

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= SURROGATE RECOVERY OUTSIDE QC LIMITS

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T: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701SV(705)

DATE : 12-08-98

SAMPLE MATRIX: WATER
ATAS # : 24507.07
PROJECT : #9811-801
SAMPLE ID : W1

DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-16-98
DATE ANALYZED : 11-17-98
METHOD REF. : SW846-8270

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

MIVOLATILES	RL	RESULTS (ug/L)	SEMIVOLATILE	RL	RESULTS (ug/L)
ENOL	20	13 J	3-NITROANILINE	50	ND
S(2-CHLOROETHYL)ETHER	20	ND	ACENAPHTHENE	20	ND
CHLOROPHENOL	20	ND	2,4-DINITROPHENOL	50	ND
3-DICHLOROBENZENE	20	ND	4-NITROPHENOL	50	ND
4-DICHLOROBENZENE	20	ND	2,4-DINITROTOLUENE	20	ND
NZYL ALCOHOL	20	ND	DIBENZOFURAN	20	ND
2-DICHLOROBENZENE	20	ND	DIETHYLPHTHALATE	20	ND
METHYLPHENOL	20	ND	4-CHLOROPHENYL-PHENYLETHER	20	ND
S(2-CHLOROISOPROPYL)ETHER	20	ND	FLUORENE	20	ND
METHYLPHENOL	20	ND	4-NITROANILINE	50	ND
OSO-DI-n-PROPYLAMINE	20	ND	4,6-DINITRO-2-METHYLPHENOL	50	ND
LOROETHANE	20	ND	N-NITROSODIPHENYLAMINE	20	ND
TROBENZENE	20	ND	4-BROMOPHENYL-PHENYLETHER	20	ND
OPHORONE	20	ND	HEXACHLOROBENZENE	20	ND
4-DIMETHYLPHENOL	20	ND	PENTACHLOROPHENOL	50	ND
NITROPHENOL	20	ND	PHENANTHRENE	20	ND
NZOIC ACID	100	ND	ANTHRACENE	20	ND
S(2-CHLOROETHOXY)METHANE	20	ND	DI-N-BUTYLPHTHALATE	20	ND
4-DICHLOROPHENOL	20	ND	FLUORANTHENE	20	ND
2,4-TRICHLOROBENZENE	20	ND	PYRENE	20	ND
PHTHALENE	20	ND	BUTYLBENZYLPHTHALATE	20	ND
CHLOROANILINE	20	ND	BIS(2-ETHYLHEXYL)PHTHALATE	20	ND
XACHLOROBUTADIENE	20	ND	3,3-'DICHLOROBENZIDINE	20	ND
CHLORO-3-METHYLPHENOL	20	32	BENZO(A)ANTHRACENE	20	ND
METHYLNAPHTHALENE	20	ND	CHRYSENE	20	ND
XACHLOROCYCLOPENTADIENE	20	ND	DI-N-OCTYLPHTHALATE	20	ND
4,6-TRICHLOROPHENOL	20	ND	BENZO(b)FLUORANTHENE	20	ND
4,5-TRICHLOROPHENOL	50	ND	BENZO(k)FLUORANTHENE	20	ND
CHLORONAPHTHALENE	20	ND	BENZO(a)PYRENE	20	ND
NITROANILINE	50	ND	DIBENZO(A,H)ANTHRACENE	20	ND
METHYLPHTHALATE	20	ND	INDENO(1,2,3-CD)PYRENE	20	ND
6-DINITROTOLUENE	20	ND	BENZO(G,H,I)PERYLENE	20	ND
ENAPHTHYLENE	20	ND			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-d5(35-114)	82 %	2-FLUOROBIPHENYL(43-116)	85 %
TERPHENYL-d14(33-141)	87 %	PHENOL-d5(10-94)	27 %
2-FLUOROPHENOL(21-100)	38 %	2,4,6-TRIBROMOPHENOL(10-123)	101 %

= NOT DETECTED ABOVE REPORTING LIMIT
= REPORTING LIMIT
= ESTIMATED VALUE; BELOW REPORTING LIMIT
= SURROGATE RECOVERY OUTSIDE OF QC LIMITS

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ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

'T: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701SV(705)

DATE : 12-08-98

SAMPLE MATRIX: WATER
ATAS # : 24507.08
PROJECT : #9811-801
SAMPLE ID : W2

DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-16-98
DATE ANALYZED : 11-17-98
METHOD REF. : SW846-8270

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

EMIVOLATILES	RL	RESULTS (ug/L)	SEMIVOLATILE	RL	RESULTS (ug/L)
HENOL	100	160	3-NITROANILINE	250	ND
IS(2-CHLOROETHYL)ETHER	100	ND	ACENAPHTHENE	100	ND
-CHLOROPHENOL	100	ND	2,4-DINITROPHENOL	250	ND
,3-DICHLOROBENZENE	100	ND	4-NITROPHENOL	250	ND
,4-DICHLOROBENZENE	100	ND	2,4-DINITROTOLUENE	100	ND
ENZYL ALCOHOL	100	ND	DIBENZOFURAN	100	ND
,2-DICHLOROBENZENE	100	ND	DIETHYLPHTHALATE	100	ND
-METHYLPHENOL	100	ND	4-CHLOROPHENYL-PHENYLETHER	100	ND
IS(2-CHLOROISOPROPYL)ETHER	100	ND	FLUORENE	100	ND
-METHYLPHENOL	100	25 J	4-NITROANILINE	250	ND
OSO-DI-n-PROPYLAMINE	100	ND	4,6-DINITRO-2-METHYLPHENOL	250	ND
LOROETHANE	100	ND	N-NITROSODIPHENYLAMINE	100	ND
ITROBENZENE	100	ND	4-BROMOPHENYL-PHENYLETHER	100	ND
SOPHORONE	100	ND	HEXACHLOROBENZENE	100	ND
,4-DIMETHYLPHENOL	100	ND	PENTACHLOROPHENOL	250	ND
-NITROPHENOL	100	ND	PHENANTHRENE	100	74 J
ENZOIC ACID	500	190 J	ANTHRACENE	100	ND
IS(2-CHLOROETHOXY)METHANE	100	ND	DI-N-BUTYLPHTHALATE	100	ND
,4-DICHLOROPHENOL	100	ND	FLUORANTHENE	100	ND
,2,4-TRICHLOROBENZENE	100	ND	PYRENE	100	ND
APHTHALENE	100	ND	BUTYLBENZYLPHTHALATE	100	ND
-CHLOROANILINE	100	ND	BIS(2-ETHYLHEXYL)PHTHALATE	100	ND
EXACHLOROBUTADIENE	100	ND	3,3-'DICHLOROBENZIDINE	100	ND
-CHLORO-3-METHYLPHENOL	100	260	BENZO(A)ANTHRACENE	100	ND
-METHYLNAPHTHALENE	100	18 J	CHRYSENE	100	ND
EXACHLOROCYCLOPENTADIENE	100	ND	DI-N-OCTYLPHTHALATE	100	ND
,4,6-TRICHLOROPHENOL	100	ND	BENZO(b)FLUORANTHENE	100	ND
,4,5-TRICHLOROPHENOL	250	ND	BENZO(k)FLUORANTHENE	100	ND
-CHLORONAPHTHALENE	100	ND	BENZO(a)PYRENE	100	ND
-NITROANILINE	250	ND	DIBENZO(A,H)ANTHRACENE	100	ND
IMETHYLPHTHALATE	100	ND	INDENO(1,2,3-CD)PYRENE	100	ND
,6-DINITROTOLUENE	100	ND	BENZO(G,H,I)PERYLENE	100	ND
CENAPHTHYLENE	100	ND			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-d5(35-114)	84 %	2-FLUOROBIPHENYL(43-116)	98 %
TERPHENYL-d14(33-141)	90 %	PHENOL-d5(10-94)	29 %
2-FLUOROPHENOL(21-100)	35 %	2,4,6-TRIBROMOPHENOL(10-123)	153 % *

D = NOT DETECTED ABOVE REPORTING LIMIT
L = REPORTING LIMIT
= ESTIMATED VALUE; BELOW REPORTING LIMIT
SURROGATE RECOVERY OUTSIDE OF QC LIMITS

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

'NT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701SV(705)

DATE : 12-08-98

SAMPLE MATRIX: SOIL
ATAS # : METHOD BLANK
PROJECT : #9811-801
SAMPLE ID : METHOD BLANK

DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-17-98
DATE ANALYZED : 11-18-98
METHOD REF. : SW846-8270

RESULTS REPORTED IN ug/Kg OR PARTS PER BILLION(PPB)

EMIVOLATILES	RL	RESULTS (ug/Kg)	SEMIVOLATILE	RL	RESULTS (ug/Kg)
HENOL	330	ND	3-NITROANILINE	830	ND
IS(2-CHLOROETHYL)ETHER	330	ND	ACENAPHTHENE	330	ND
-CHLOROPHENOL	330	ND	2,4-DINITROPHENOL	830	ND
,3-DICHLOROBENZENE	330	ND	4-NITROPHENOL	830	ND
,4-DICHLOROBENZENE	330	ND	2,4-DINITROTOLUENE	330	ND
ENZYL ALCOHOL	330	ND	DIBENZOFURAN	330	ND
,2-DICHLOROBENZENE	330	ND	DIETHYLPHTHALATE	330	ND
-METHYLPHENOL	330	ND	4-CHLOROPHENYL-PHENYLETHER	330	ND
IS(2-CHLOROISOPROPYL)ETHER	330	ND	FLUORENE	330	ND
-METHYLPHENOL	330	ND	4-NITROANILINE	830	ND
ROSO-DI-n-PROPYLAMINE	330	ND	4,6-DINITRO-2-METHYLPHENOL	830	ND
ILOROETHANE	330	ND	N-NITROSODIPHENYLAMINE	330	ND
ITROBENZENE	330	ND	4-BROMOPHENYL-PHENYLETHER	330	ND
SOPHORONE	330	ND	HEXACHLOROBENZENE	330	ND
,4-DIMETHYLPHENOL	330	ND	PENTACHLOROPHENOL	830	ND
-NITROPHENOL	330	ND	PHENANTHRENE	330	ND
ENZOIC ACID	1600	ND	ANTHRACENE	330	ND
IS(2-CHLOROETHOXY)METHANE	330	ND	DI-N-BUTYLPHTHALATE	330	ND
,4-DICHLOROPHENOL	330	ND	FLUORANTHENE	330	ND
,2,4-TRICHLOROBENZENE	330	ND	PYRENE	330	ND
APHTHALENE	330	ND	BUTYLBENZYLPHTHALATE	330	ND
-CHLOROANILINE	330	ND	BIS(2-ETHYLHEXYL)PHTHALATE	330	ND
EXACHLOROBUTADIENE	330	ND	3,3'-DICHLOROBENZIDINE	330	ND
-CHLORO-3-METHYLPHENOL	330	ND	BENZO(A)ANTHRACENE	330	ND
-METHYLNAPHTHALENE	330	ND	CHRYSENE	330	ND
EXACHLOROCYCLOPENTADIENE	330	ND	DI-N-OCTYLPHTHALATE	330	ND
,4,6-TRICHLOROPHENOL	330	ND	BENZO(b)FLUORANTHENE	330	ND
,4,5-TRICHLOROPHENOL	830	ND	BENZO(k)FLUORANTHENE	330	ND
-CHLORONAPHTHALENE	330	ND	BENZO(a)PYRENE	330	ND
-NITROANILINE	830	ND	DIBENZO(A,H)ANTHRACENE	330	ND
IMETHYLPHTHALATE	330	ND	INDENO(1,2,3-CD)PYRENE	330	ND
.6-DINITROTOLUENE	330	ND	BENZO(G,H,I)PERYLENE	330	ND
ENAPHTHYLENE	330	ND			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-d5(23-120)	71 %	2-FLUOROBIPHENYL(30-115)	70 %
TERPHENYL-d14(18-137)	74 %	PHENOL-d5(24-113)	63 %
2-FLUOROPHENOL(25-121)	57 %	2,4,6-TRIBROMOPHENOL(19-122)	69 %

) = NOT DETECTED ABOVE REPORTING LIMIT
= REPORTING LIMIT
= ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.
= SURROGATE RECOVERY OUTSIDE OF QC LIMITS

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RATORY QUALITY CONTROL SEQUENCE

SAMPLE MATRIX : SOIL
DATE EXTRACTED: 11-17-98
DATE ANALYZED : 11-18-98
METHOD REF. : SW846-8270, EPA METHODOLOGY

REPORT DATE: 12-08-98

LABORATORY CONTROL SAMPLE RECOVERY

COMPOUND	LCS % REC.
PHENOL	60
2-CHLOROPHENOL	63
1,4-DICHLOROBENZENE	66
N-NITROSO-DI-n-PROPYLAMINE	66
.4-TRICHLOROBENZENE	72
LORO-3-METHYLPHENOL	66
ACENAPHTHENE	72
4-NITROPHENOL	81
2,4-DINITROTOLUENE	78
PENTACHLOROPHENOL	84
PYRENE	59

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* = VALUES OUTSIDE OF ADVISORY LIMITS

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'NT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701SV(705)

DATE : 12-08-98

SAMPLE MATRIX: WATER
ATAS # : METHOD BLANK
PROJECT : #9811-801
SAMPLE ID : METHOD BLANK

DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-16-98
DATE ANALYZED : 11-17-98
METHOD REF. : SW846-8270

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

SEMIVOLATILES	RL	RESULTS (ug/L)	SEMIVOLATILE	RL	RESULTS (ug/L)
PHENOL	10	ND	3-NITROANILINE	25	ND
BIS(2-CHLOROETHYL)ETHER	10	ND	ACENAPHTHENE	10	ND
2-CHLOROPHENOL	10	ND	2,4-DINITROPHENOL	25	ND
1,3-DICHLOROBENZENE	10	ND	4-NITROPHENOL	25	ND
1,4-DICHLOROBENZENE	10	ND	2,4-DINITROTOLUENE	10	ND
BENZYL ALCOHOL	10	ND	DIBENZOFURAN	10	ND
1,2-DICHLOROBENZENE	10	ND	DIETHYLPHTHALATE	10	ND
2-METHYLPHENOL	10	ND	4-CHLOROPHENYL-PHENYLETHER	10	ND
BIS(2-CHLOROISOPROPYL)ETHER	10	ND	FLUORENE	10	ND
4-METHYLPHENOL	10	ND	4-NITROANILINE	25	ND
'ROSO-DI-n-PROPYLAMINE	10	ND	4,6-DINITRO-2-METHYLPHENOL	25	ND
HLOROETHANE	10	ND	N-NITROSODIPHENYLAMINE	10	ND
NITROBENZENE	10	ND	4-BROMOPHENYL-PHENYLETHER	10	ND
ISOPHORONE	10	ND	HEXACHLOROBENZENE	10	ND
2,4-DIMETHYLPHENOL	10	ND	PENTACHLOROPHENOL	25	ND
2-NITROPHENOL	10	ND	PHENANTHRENE	10	ND
BENZOIC ACID	50	ND	ANTHRACENE	10	ND
BIS(2-CHLOROETHOXY)METHANE	10	ND	DI-N-BUTYLPHTHALATE	10	ND
2,4-DICHLOROPHENOL	10	ND	FLUORANTHENE	10	ND
1,2,4-TRICHLOROBENZENE	10	ND	PYRENE	10	ND
NAPHTHALENE	10	ND	BUTYLBENZYLPHTHALATE	10	ND
4-CHLOROANI: INE	10	ND	BIS(2-ETHYLHEXYL)PHTHALATE	10	ND
HEXACHLOROB: TADIENE	10	ND	3,3-'DICHLOROBENZIDINE	10	ND
4-CHLORO-3-METHYLPHENOL	10	ND	BENZO(A)ANTHRACENE	10	ND
2-METHYLNAPHTHALENE	10	ND	CHRYSENE	10	ND
HEXACHLOROCYCLOPENTADIENE	10	ND	DI-N-OCTYLPHTHALATE	10	ND
2,4,6-TRICHLOROPHENOL	10	ND	BENZO(b)FLUORANTHENE	10	ND
2,4,5-TRICHLOROPHENOL	25	ND	BENZO(k)FLUORANTHENE	10	ND
2-CHLORONAPHTHALENE	10	ND	BENZO(a)PYRENE	10	ND
2-NITROANILINE	25	ND	DIBENZO(A,H)ANTHRACENE	10	ND
DIMETHYLPHTHALATE	10	ND	INDENO(1,2,3-CD)PYRENE	10	ND
2,6-DINITROTOLUENE	10	ND	BENZO(G,H,I)PERYLENE	10	ND
ACENAPHTHYLENE	10	ND			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-d5(35-114)	53 %	2-FLUOROBIPHENYL(43-116)	53 %
TERPHENYL-d14(33-141)	87 %	PHENOL-d5(10-94)	26 %
2-FLUOROPHENOL(21-100)	32 %	2,4,6-TRIBROMOPHENOL(10-123)	71 %

ND = NOT DETECTED ABOVE REPORTING LIMIT
RL = REPORTING LIMIT
B = ANALYTE DETECTED IN METHOD BLANK, POSSIBLY BELOW THE REPORTING LIMIT.
* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

RATORY QUALITY CONTROL SEQUENCE

SAMPLE MATRIX : WATER
DATE EXTRACTED: 11-16-98
DATE ANALYZED : 11-17-98
METHOD REF. : SW846-8270, EPA METHODOLOGY

REPORT DATE: 12-08-98

LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE RECOVERY

COMPOUND	LCS % REC.	LCSD % REC.	RPD	QC RPD	ADVISORY LIMITS
PHENOL	25	24	4	45	9-38
2-CHLOROPHENOL	48	43	11	46	26-78
,4-DICHLOROBENZENE	42	36	15	48	21-71
N-NITROSO-DI-n-PROPYLAMINE	54	50	8	44	28-105
4-TRICHLOROBENZENE	40	34	16	38	25-76
LORO-3-METHYLPHENOL	55	51	8	32	35-88
ACENAPHTHENE	48	44	9	22	43-91
-NITROPHENOL	27	26	4	52	7-44
2,4-DINITROTOLUENE	54	52	4	28	41-106
PENTACHLOROPHENOL	68	57	18	50	9-103
PYRENE	60	60	0	37	34-133

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* = VALUES OUTSIDE OF ADVISORY LIMITS

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CLIENT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701PC(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL % SOLID: 87
ATAS # : 24507.01
DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-20-98
DATE ANALYZED : 11-20-98
METHOD REF. : SW846-8081, EPA METHODOLOGY
PROJECT : #9811-801
SAMPLE ID : S1

RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

PCB'S	REPORTING LIMIT	RESULTS
AROCLOR 1016	575	ND
AROCLOR 1221	575	ND
AROCLOR 1232	575	ND
AROCLOR 1242	575	ND
AROCLOR 1248	575	ND
AROCLOR 1254	575	ND
AROCLOR 1260	575	ND
TOTAL PCBs		ND

QA/QC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150)	47 %
TETRACHLORO-M-XYLENE(30-150)	37 %

NOT DETECTED ABOVE REPORTING LIMIT
B = ANALYTE DETECTED IN METHOD BLANK POSSIBLY BELOW THE REPORTING LIMIT.
NOTE: ALL REPORTED CONCENTRATIONS HAVE BEEN ADJUSTED TO DRY WEIGHT.

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CLIENT: ECOLOGY & ENVIRONMENT, INC.
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CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701PC(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL % SOLID: 90
ATAS # : 24507.02
DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-20-98
DATE ANALYZED : 11-20-98
METHOD REF. : SW846-8081, EPA METHODOLOGY
PROJECT : #9811-801
SAMPLE ID : S2

RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

PCB'S	REPORTING LIMIT	RESULTS
AROCLOR 1016	556	ND
AROCLOR 1221	556	ND
AROCLOR 1232	556	ND
AROCLOR 1242	556	ND
AROCLOR 1248	556	ND
AROCLOR 1254	556	ND
AROCLOR 1260	556	ND
TOTAL PCBs		ND

QA/QC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150)	62 %
TETRACHLORO-M-XYLENE(30-150)	55 %

NOT DETECTED ABOVE REPORTING LIMIT
B = ANALYTE DETECTED IN METHOD BLANK POSSIBLY BELOW THE REPORTING LIMIT.
NOTE: ALL REPORTED CONCENTRATIONS HAVE BEEN ADJUSTED TO DRY WEIGHT.

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CLIENT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701PC(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL % SOLID: 67
ATAS # : 24507.03
DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-20-98
DATE ANALYZED : 11-20-98
METHOD REF. : SW846-8081, EPA METHODOLOGY
PROJECT : #9811-801
SAMPLE ID : S3

RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

PCB'S	REPORTING LIMIT	RESULTS
AROCLOR 1016	746	ND
AROCLOR 1221	746	ND
AROCLOR 1232	746	ND
AROCLOR 1242	746	ND
AROCLOR 1248	746	ND
AROCLOR 1254	746	ND
AROCLOR 1260	746	ND
TOTAL PCBs		ND

QA/QC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150)	48 %
TETRACHLORO-M-XYLENE(30-150)	47 %

NOT DETECTED ABOVE REPORTING LIMIT
B = ANALYTE DETECTED IN METHOD BLANK POSSIBLY BELOW THE REPORTING LIMIT.
NOTE: ALL REPORTED CONCENTRATIONS HAVE BEEN ADJUSTED TO DRY WEIGHT.

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CLIENT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701PC(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL % SOLID: 94
ATAS # : 24507.04
DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-20-98
DATE ANALYZED : 11-20-98
METHOD REF. : SW846-8081, EPA METHODOLOGY
PROJECT : #9811-801
SAMPLE ID : S4

RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

PCB'S	REPORTING LIMIT	RESULTS
AROCLOR 1016	5320	ND
AROCLOR 1221	5320	ND
AROCLOR 1232	5320	ND
AROCLOR 1242	5320	ND
AROCLOR 1248	5320	ND
AROCLOR 1254	5320	ND
AROCLOR 1260	5320	ND
TOTAL PCBs		ND

QA/QC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150)	D %
TETRACHLORO-M-XYLENE(30-150)	D %

NOT DETECTED ABOVE REPORTING LIMIT
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B = ANALYTE DETECTED IN METHOD BLANK POSSIBLY BELOW THE REPORTING LIMIT.
NOTE: ALL REPORTED CONCENTRATIONS HAVE BEEN ADJUSTED TO DRY WEIGHT.

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CLIENT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701PC(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL % SOLID: 77
ATAS # : 24507.05
DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-20-98
DATE ANALYZED : 11-20-98
METHOD REF. : SW846-8081, EPA METHODOLOGY
PROJECT : #9811-801
SAMPLE ID : S5

RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

PCB'S	REPORTING LIMIT	RESULTS
AROCLOR 1016	6490	ND
AROCLOR 1221	6490	ND
AROCLOR 1232	6490	ND
AROCLOR 1242	6490	ND
AROCLOR 1248	6490	ND
AROCLOR 1254	6490	ND
AROCLOR 1260	6490	ND
TOTAL PCBs		ND

QA/QC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150)	D %
TETRACHLORO-M-XYLENE(30-150)	D %

NOT DETECTED ABOVE REPORTING LIMIT
DILUTED OUT
B = ANALYTE DETECTED IN METHOD BLANK POSSIBLY BELOW THE REPORTING LIMIT.
NOTE: ALL REPORTED CONCENTRATIONS HAVE BEEN ADJUSTED TO DRY WEIGHT.

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ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

:LIENT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701PC(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL % SOLID: 70
ATAS # : 24507.06
DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-20-98
DATE ANALYZED : 11-20-98
METHOD REF. : SW846-8081, EPA METHODOLOGY
PROJECT : #9811-801
SAMPLE ID : S6

RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

PCB'S	REPORTING LIMIT	RESULTS
AROCLOR 1016	7140	ND
AROCLOR 1221	7140	ND
AROCLOR 1232	7140	ND
AROCLOR 1242	7140	ND
AROCLOR 1248	7140	ND
AROCLOR 1254	7140	ND
AROCLOR 1260	7140	ND
TOTAL PCBs		ND

QA/QC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150)	D %
TETRACHLORO-M-XYLENE(30-150)	D %

:OT DETECTED ABOVE REPORTING LIMIT
DILUTED OUT
B = ANALYTE DETECTED IN METHOD BLANK POSSIBLY BELOW THE REPORTING LIMIT.
OTE: ALL REPORTED CONCENTRATIONS HAVE BEEN ADJUSTED TO DRY WEIGHT.

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LIENT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701PC(705)

DATE : 12-08-98

SAMPLE MATRIX : WATER
ATAS # : 24507.07
DATE SUBMITTED : 11-13-98
DATE EXTRACTED : 11-18-98
DATE ANALYZED : 11-18-98
METHOD REF. : SW846-8081, EPA METHODOLOGY
PROJECT : #9811-801
SAMPLE ID : W1

RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

PCB'S	REPORTING LIMIT	RESULTS
AROCLOR 1016	10	ND
AROCLOR 1221	10	ND
AROCLOR 1232	10	ND
AROCLOR 1242	10	ND
AROCLOR 1248	10	ND
AROCLOR 1254	10	ND
AROCLOR 1260	10	ND
TOTAL PCBs		ND

QA/QC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150)	D %
TETRACHLORO-M-XYLENE(30-150)	D %

.OT DETECTED ABOVE REPORTING LIMIT
D = DILUTED OUT
B = ANALYTE DETECTED IN METHOD BLANK POSSIBLY BELOW THE REPORTING LIMIT.

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CLIENT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701PC(705)

DATE : 12-08-98

SAMPLE MATRIX : WATER
ATAS # : 24507.08
DATE SUBMITTED : 11-13-98
DATE EXTRACTED : 11-18-98
DATE ANALYZED : 11-18-98
METHOD REF. : SW846-8081, EPA METHODOLOGY
PROJECT : #9811-801
SAMPLE ID : W2

RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

PCB'S	REPORTING LIMIT	RESULTS
AROCLOR 1016	100	ND
AROCLOR 1221	100	ND
AROCLOR 1232	100	ND
AROCLOR 1242	100	ND
AROCLOR 1248	100	ND
AROCLOR 1254	100	ND
AROCLOR 1260	100	ND
TOTAL PCBs		ND

QA/QC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150)	D %
TETRACHLORO-M-XYLENE(30-150)	D %

NOT DETECTED ABOVE REPORTING LIMIT
D = DILUTED OUT
B = ANALYTE DETECTED IN METHOD BLANK POSSIBLY BELOW THE REPORTING LIMIT.

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CLIENT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701PC(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL
ATAS # : METHOD BLANK
DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-20-98
DATE ANALYZED : 11-20-98
METHOD REF. : SW846-8081, EPA METHODOLOGY
PROJECT : #9811-801
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/Kg OR Parts Per Billion (PPB)

PCB'S	REPORTING LIMIT	RESULTS
AROCLOR 1016	33.3	ND
AROCLOR 1221	33.3	ND
AROCLOR 1232	33.3	ND
AROCLOR 1242	33.3	ND
AROCLOR 1248	33.3	ND
AROCLOR 1254	33.3	ND
AROCLOR 1260	33.3	ND
TOTAL PCBs		ND

QA/QC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150)	79 %
TETRACHLORO-M-XYLENE(30-150)	84 %

D = NOT DETECTED ABOVE REPORTING LIMIT
B = ANALYTE DETECTED IN METHOD BLANK POSSIBLY BELOW THE REPORTING LIMIT.

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LABORATORY QUALITY CONTROL SEQUENCE

SAMPLE MATRIX : SOIL
DATE EXTRACTED: 11-20-98
DATE ANALYZED : 11-20-98
METHOD REF. : SW846-8081, EPA METHODOLOGY

REPORT DATE: 12-08-98

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	24507.01 MATRIX SPIKE % RECOVERY	24507.01 MATRIX SPIKE DUP. % RECOVERY	RELATIVE PERCENT DIFFERENCE
AR1260	88 %	98 %	11 %

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LIENT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701PC(705)

DATE : 12-08-98

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED : 11-13-98
DATE EXTRACTED : 11-18-98
DATE ANALYZED : 11-18-98
METHOD REF. : SW846-8081, EPA METHODOLOGY
PROJECT : #9811-801
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR Parts Per Billion (PPB)

PCB'S	REPORTING LIMIT	RESULTS
AROCLOR 1016	1.00	ND
AROCLOR 1221	1.00	ND
AROCLOR 1232	1.00	ND
AROCLOR 1242	1.00	ND
AROCLOR 1248	1.00	ND
AROCLOR 1254	1.00	ND
AROCLOR 1260	1.00	ND
TOTAL PCBs		ND

QA/QC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150)	44 %
TETRACHLORO-M-XYLENE(30-150)	50 %

D = NOT DETECTED ABOVE REPORTING LIMIT
B = ANALYTE DETECTED IN METHOD BLANK POSSIBLY BELOW THE REPORTING LIMIT.

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LABORATORY QUALITY CONTROL SEQUENCE

SAMPLE MATRIX : WATER
DATE EXTRACTED: 11-18-98
DATE ANALYZED : 11-18-98
METHOD REF. : SW846-8081, EPA METHODOLOGY

REPORT DATE: 12-08-98

LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE RECOVERY

COMPOUND	LCS PERCENT RECOVERY	LCS DUP. PERCENT RECOVERY	RELATIVE PERCENT DIFFERENCE
AR1260	88 %	84 %	5 %

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CLIENT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701MT(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL % SOLID: 87
ATAS # : 24507.01
DATE SUBMITTED: 11-13-98
PROJECT : #9811-801
SAMPLE ID : S1

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
			METALS		
ALUMINUM	5.75	mg/Kg	4920	12-01-98	SW 6010
ANTIMONY	1.38	mg/Kg	2.44	12-01-98	SW 6010
BERYLLIUM	0.115	mg/Kg	0.483	12-01-98	SW 6010
COBALT	0.230	mg/Kg	8.09	12-01-98	SW 6010
THALLIUM	11.5	mg/Kg	ND	12-01-98	SW 6010
VANADIUM	1.15	mg/Kg	17.9	12-01-98	SW 6010
ARSENIC	1.15	mg/Kg	5.84	11-25-98	SW 6010
BARIUM	0.46	mg/Kg	66.8	11-25-98	SW 6010
CADMIUM	0.115	mg/Kg	8.80	11-25-98	SW 6010
CHROMIUM	0.230	mg/Kg	84.0	11-25-98	SW 6010
LEAD	1.15	mg/Kg	675	11-25-98	SW 6010
SILVER	0.230	mg/Kg	0.667	11-25-98	SW 6010
SELENIUM	2.30	mg/Kg	ND	11-25-98	SW 6010
CALCIUM	1150	mg/Kg	105000	11-30-98	SW 6010
MAGNESIUM	1150	mg/Kg	55100	11-30-98	SW 6010
POTASSIUM	46.0	mg/Kg	643	11-30-98	SW 6010
SODIUM	11.5	mg/Kg	211	11-30-98	SW 6010
COPPER	2.30	mg/Kg	443	11-30-98	SW 6010
IRON	115	mg/Kg	43200	11-30-98	SW 6010
MANGANESE	4.60	mg/Kg	716	11-30-98	SW 6010
NICKEL	0.230	mg/Kg	47.6	12-01-98	SW 6010
ZINC	3.45	mg/Kg	2030	11-30-98	SW 6010
MERCURY	0.230	mg/Kg	0.486	12-01-98	SW 7471

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mg/Kg = PARTS PER MILLION(PPM)
ND = NOT DETECTED ABOVE REPORTING LIMIT
NOTE: ALL REPORTED CONCENTRATIONS HAVE BEEN ADJUSTED TO DRY WEIGHT.

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CLIENT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701MT(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL % SOLID: 90
ATAS # : 24507.02
DATE SUBMITTED: 11-13-98
PROJECT : #9811-801
SAMPLE ID : S2

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
			METALS		
ALUMINUM	11.1	mg/Kg	1710	12-01-98	SW 6010
ANTIMONY	1.33	mg/Kg	ND	12-01-98	SW 6010
BERYLLIUM	0.111	mg/Kg	0.156	12-01-98	SW 6010
COBALT	0.222	mg/Kg	1.96	12-01-98	SW 6010
THALLIUM	22.2	mg/Kg	ND	12-01-98	SW 6010
VANADIUM	1.11	mg/Kg	9.98	12-01-98	SW 6010
ARSENIC	1.11	mg/Kg	1.69	11-25-98	SW 6010
BARIUM	0.444	mg/Kg	19.8	11-25-98	SW 6010
CADMIUM	0.111	mg/Kg	0.533	11-25-98	SW 6010
CHROMIUM	0.222	mg/Kg	9.91	11-25-98	SW 6010
LEAD	1.11	mg/Kg	174	11-25-98	SW 6010
SILVER	0.222	mg/Kg	ND	11-25-98	SW 6010
SELENIUM	2.22	mg/Kg	ND	11-25-98	SW 6010
CALCIUM	11100	mg/Kg	129000	11-30-98	SW 6010
MAGNESIUM	1110	mg/Kg	74400	11-30-98	SW 6010
POTASSIUM	44.4	mg/Kg	462	11-30-98	SW 6010
SODIUM	11.1	mg/Kg	159	11-30-98	SW 6010
COPPER	0.222	mg/Kg	62.3	11-30-98	SW 6010
IRON	111	mg/Kg	7640	11-30-98	SW 6010
MANGANESE	0.444	mg/Kg	173	11-30-98	SW 6010
NICKEL	0.222	mg/Kg	8.29	11-30-98	SW 6010
ZINC	0.333	mg/Kg	102	11-30-98	SW 6010
MERCURY	0.222	mg/Kg	ND	11-18-98	SW 7471

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mg/Kg = PARTS PER MILLION(PPM)
ND = NOT DETECTED ABOVE REPORTING LIMIT
NOTE: ALL REPORTED CONCENTRATIONS HAVE BEEN ADJUSTED TO DRY WEIGHT.

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CLIENT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701MT(705)
DATE : 12-08-98

SAMPLE MATRIX : SOIL % SOLID: 67
ATAS # : 24507.03
DATE SUBMITTED: 11-13-98
PROJECT : #9811-801
SAMPLE ID : S3

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
			METALS		
ALUMINUM	14.9	mg/Kg	9120	12-01-98	SW 6010
TIMONY	17.9	mg/Kg	ND	12-01-98	SW 6010
BERYLLIUM	0.149	mg/Kg	0.478	12-01-98	SW 6010
COBALT	0.299	mg/Kg	14.1	12-01-98	SW 6010
THALLIUM	29.9	mg/Kg	ND	12-01-98	SW 6010
VANADIUM	1.49	mg/Kg	26.0	12-01-98	SW 6010
ARSENIC	1.49	mg/Kg	9.55	11-25-98	SW 6010
BARIUM	0.60	mg/Kg	46.1	11-25-98	SW 6010
CADMIUM	0.149	mg/Kg	3.16	11-25-98	SW 6010
CHROMIUM	29.9	mg/Kg	3490	11-25-98	SW 6010
LEAD	1.49	mg/Kg	164	11-25-98	SW 6010
SILVER	0.30	mg/Kg	0.925	11-25-98	SW 6010
SELENIUM	2.99	mg/Kg	ND	11-25-98	SW 6010
CALCIUM	1490	mg/Kg	32500	11-30-98	SW 6010
MAGNESIUM	1490	mg/Kg	19700	11-30-98	SW 6010
POTASSIUM	59.7	mg/Kg	1870	11-30-98	SW 6010
SODIUM	14.9	mg/Kg	199	11-30-98	SW 6010
COPPER	2.99	mg/Kg	273	11-30-98	SW 6010
IRON	149	mg/Kg	69600	11-30-98	SW 6010
MANGANESE	5.97	mg/Kg	881	11-30-98	SW 6010
NICKEL	0.299	mg/Kg	109	12-01-98	SW 6010
ZINC	4.48	mg/Kg	539	11-30-98	SW 6010
MERCURY	0.299	mg/Kg	0.412	11-18-98	SW 7471

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mg/Kg = PARTS PER MILLION(PPM)
ND = NOT DETECTED ABOVE REPORTING LIMIT
NOTE: ALL REPORTED CONCENTRATIONS HAVE BEEN ADJUSTED TO DRY WEIGHT.

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CLIENT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701MT(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL % SOLID: 94
ATAS # : 24507.04
DATE SUBMITTED: 11-13-98
PROJECT : #9811-801
SAMPLE ID : S4

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
			METALS		
ALUMINUM	106	mg/Kg	12000	12-01-98	SW 6010
ANTIMONY	1.28	mg/Kg	5.79	12-01-98	SW 6010
BERYLLIUM	0.106	mg/Kg	0.191	12-01-98	SW 6010
COBALT	0.213	mg/Kg	7.47	12-01-98	SW 6010
THALLIUM	21.3	mg/Kg	ND	12-01-98	SW 6010
VANADIUM	1.06	mg/Kg	15.0	12-01-98	SW 6010
ARSENIC	1.06	mg/Kg	6.02	11-25-98	SW 6010
BARIUM	0.426	mg/Kg	49.5	11-25-98	SW 6010
CADMIUM	1.06	mg/Kg	28.9	11-25-98	SW 6010
CHROMIUM	2.13	mg/Kg	580	11-25-98	SW 6010
LEAD	1.06	mg/Kg	432	11-25-98	SW 6010
SILVER	0.213	mg/Kg	1.43	11-25-98	SW 6010
SELENIUM	2.13	mg/Kg	ND	11-25-98	SW 6010
CALCIUM	10600	mg/Kg	164000	11-30-98	SW 6010
MAGNESIUM	1060	mg/Kg	66600	11-30-98	SW 6010
POTASSIUM	42.6	mg/Kg	542	11-30-98	SW 6010
SODIUM	10.6	mg/Kg	260	11-30-98	SW 6010
COPPER	21.3	mg/Kg	6840	11-30-98	SW 6010
IRON	106	mg/Kg	49500	11-30-98	SW 6010
MANGANESE	4.26	mg/Kg	677	11-30-98	SW 6010
NICKEL	0.213	mg/Kg	168	12-01-98	SW 6010
ZINC	31.9	mg/Kg	3010	11-30-98	SW 6010
MERCURY	0.213	mg/Kg	ND	11-18-98	SW 7471

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mg/Kg = PARTS PER MILLION(PPM)
ND = NOT DETECTED ABOVE REPORTING LIMIT
NOTE: ALL REPORTED CONCENTRATIONS HAVE BEEN ADJUSTED TO DRY WEIGHT.

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CLIENT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701MT(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL % SOLID: 77
ATAS # : 24507.05
DATE SUBMITTED: 11-13-98
PROJECT : #9811-801
SAMPLE ID : S5

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
			METALS		
ALUMINUM	13.0	mg/Kg	8010	12-01-98	SW 6010
ANTIMONY	1.56	mg/Kg	ND	12-01-98	SW 6010
BERYLLIUM	0.130	mg/Kg	0.623	12-01-98	SW 6010
COBALT	0.260	mg/Kg	22.6	12-01-98	SW 6010
THALLIUM	26.0	mg/Kg	ND	12-01-98	SW 6010
VANADIUM	1.30	mg/Kg	23.2	12-01-98	SW 6010
ARSENIC	1.30	mg/Kg	11.1	11-25-98	SW 6010
BARIUM	0.519	mg/Kg	62.3	11-25-98	SW 6010
CADMIUM	0.130	mg/Kg	2.83	11-25-98	SW 6010
CHROMIUM	0.260	mg/Kg	49.9	11-25-98	SW 6010
LEAD	1.30	mg/Kg	95.8	11-25-98	SW 6010
SILVER	0.260	mg/Kg	0.779	11-25-98	SW 6010
SELENIUM	2.60	mg/Kg	ND	11-25-98	SW 6010
CALCIUM	1300	mg/Kg	17100	11-30-98	SW 6010
MAGNESIUM	130	mg/Kg	9780	11-30-98	SW 6010
POTASSIUM	51.9	mg/Kg	1160	11-30-98	SW 6010
SODIUM	13.0	mg/Kg	171	11-30-98	SW 6010
COPPER	2.60	mg/Kg	201	11-30-98	SW 6010
IRON	130	mg/Kg	66600	11-30-98	SW 6010
MANGANESE	5.19	mg/Kg	1420	11-30-98	SW 6010
NICKEL	0.260	mg/Kg	57.0	12-01-98	SW 6010
ZINC	3.90	mg/Kg	349	11-30-98	SW 6010
MERCURY	0.260	mg/Kg	ND	11-18-98	SW 7471

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mg/Kg = PARTS PER MILLION(PPM)
ND = NOT DETECTED ABOVE REPORTING LIMIT
NOTE: ALL REPORTED CONCENTRATIONS HAVE BEEN ADJUSTED TO DRY WEIGHT

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CLIENT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701MT(705)
DATE : 12-08-98

SAMPLE MATRIX : SOIL % SOLID: 70
ATAS # : 24507.06
DATE SUBMITTED: 11-13-98
PROJECT : #9811-801
SAMPLE ID : S6

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
			METALS		
ALUMINUM	14.3	mg/Kg	5060	12-01-98	SW 6010
ANTIMONY	17.1	mg/Kg	18.9	12-01-98	SW 6010
BERYLLIUM	0.143	mg/Kg	0.171	12-01-98	SW 6010
COBALT	2.86	mg/Kg	23.7	12-01-98	SW 6010
THALLIUM	286	mg/Kg	ND	12-02-98	SW 6010
VANADIUM	14.3	mg/Kg	35.4	12-01-98	SW 6010
ARSENIC	1.43	mg/Kg	10.3	11-25-98	SW 6010
BARIUM	0.571	mg/Kg	37.7	11-25-98	SW 6010
CADMIUM	0.143	mg/Kg	3.31	11-25-98	SW 6010
CHROMIUM	2.86	mg/Kg	2490	11-25-98	SW 6010
LEAD	1.43	mg/Kg	213	11-25-98	SW 6010
SILVER	0.286	mg/Kg	0.429	11-25-98	SW 6010
SELENIUM	28.6	mg/Kg	ND	11-25-98	SW 6010
CALCIUM	1430	mg/Kg	18600	11-30-98	SW 6010
MAGNESIUM	143	mg/Kg	3740	11-30-98	SW 6010
POTASSIUM	57.1	mg/Kg	476	11-30-98	SW 6010
SODIUM	14.3	mg/Kg	167	11-30-98	SW 6010
COPPER	2.86	mg/Kg	1470	11-30-98	SW 6010
IRON	143	mg/Kg	236000	11-30-98	SW 6010
MANGANESE	5.71	mg/Kg	2710	11-30-98	SW 6010
NICKEL	0.286	mg/Kg	160	12-01-98	SW 6010
ZINC	4.29	mg/Kg	767	11-30-98	SW 6010
MERCURY	0.286	mg/Kg	ND	11-18-98	SW 7471

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ecology and environment

mg/Kg = PARTS PER MILLION(PPM)
ND = NOT DETECTED ABOVE REPORTING LIMIT
NOTE: ALL REPORTED CONCENTRATIONS HAVE BEEN ADJUSTED TO DRY WEIGHT.

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701MT(705)

DATE : 12-08-98

QA/QC

DESCRIPTION		PARAMETER	RESULTS	
METHOD BLANK	12-01-98	ALUMINUM	<1.0	mg/Kg
METHOD BLANK	12-01-98	ANTIMONY	<1.2	mg/Kg
METHOD BLANK	12-01-98	BERYLLIUM	<0.1	mg/Kg
METHOD BLANK	12-01-98	COBALT	<0.2	mg/Kg
METHOD BLANK	12-01-98	THALLIUM	<2.0	mg/Kg
METHOD BLANK	12-01-98	VANADIUM	<1.0	mg/Kg
METHOD BLANK	11-25-98	ARSENIC	<1.0	mg/Kg
METHOD BLANK	11-25-98	BARIUM	<0.40	mg/Kg
METHOD BLANK	11-25-98	CADMIUM	<0.10	mg/Kg
METHOD BLANK	11-25-98	CHROMIUM	<0.20	mg/Kg
METHOD BLANK	11-25-98	LEAD	<1.0	mg/Kg
METHOD BLANK	11-25-98	SILVER	<0.20	mg/Kg
METHOD BLANK	11-25-98	SELENIUM	<2.0	mg/Kg
METHOD BLANK	11-30-98	CALCIUM	<10.0	mg/Kg
METHOD BLANK	11-30-98	MAGNESIUM	<10.0	mg/Kg
METHOD BLANK	11-30-98	POTASSIUM	<40.0	mg/Kg
METHOD BLANK	11-30-98	SODIUM	<10.0	mg/Kg
METHOD BLANK	11-30-98	COPPER	0.280	mg/Kg
METHOD BLANK	11-30-98	IRON	1.00	mg/Kg
METHOD BLANK	11-30-98	MANGANESE	<0.40	mg/Kg
METHOD BLANK	11-30-98	NICKEL	<0.20	mg/Kg
METHOD BLANK	11-30-98	ZINC	2.36	mg/Kg
METHOD BLANK	12-01-98	MERCURY	<0.2	mg/Kg
METHOD BLANK	11-18-98	MERCURY	<0.2	mg/Kg
CONTROL SPIKE	12-01-98	ALUMINUM	96 %	RECOVERY
CONTROL SPIKE	12-01-98	ANTIMONY	95 %	RECOVERY
CONTROL SPIKE	12-01-98	BERYLLIUM	94 %	RECOVERY
CONTROL SPIKE	12-01-98	COBALT	93 %	RECOVERY
CONTROL SPIKE	12-01-98	THALLIUM	89 %	RECOVERY
CONTROL SPIKE	12-01-98	VANADIUM	95 %	RECOVERY
CONTROL SPIKE	11-25-98	ARSENIC	98 %	RECOVERY
CONTROL SPIKE	11-25-98	BARIUM	94 %	RECOVERY
CONTROL SPIKE	11-25-98	CADMIUM	97 %	RECOVERY
CONTROL SPIKE	11-25-98	CHROMIUM	97 %	RECOVERY
CONTROL SPIKE	11-25-98	LEAD	95 %	RECOVERY
CONTROL SPIKE	11-25-98	SILVER	100 %	RECOVERY
CONTROL SPIKE	11-25-98	SELENIUM	98 %	RECOVERY
CONTROL SPIKE	11-30-98	CALCIUM	118 %	RECOVERY
CONTROL SPIKE	11-30-98	MAGNESIUM	112 %	RECOVERY
CONTROL SPIKE	11-30-98	POTASSIUM	94 %	RECOVERY
CONTROL SPIKE	11-30-98	SODIUM	96 %	RECOVERY
CONTROL SPIKE	11-30-98	COPPER	96 %	RECOVERY
CONTROL SPIKE	11-30-98	IRON	97 %	RECOVERY
CONTROL SPIKE	11-30-98	MANGANESE	96 %	RECOVERY
CONTROL SPIKE	11-30-98	NICKEL	94 %	RECOVERY
CONTROL SPIKE	11-30-98	ZINC	93 %	RECOVERY
CONTROL SPIKE	12-01-98	MERCURY	86 %	RECOVERY
CONTROL SPIKE	11-18-98	MERCURY	92 %	RECOVERY

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CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701MT(705)
DATE : 12-08-98

SAMPLE MATRIX : WATER
ATAS # : 24507.07
DATE SUBMITTED: 11-13-98
PROJECT : #9811-801
SAMPLE ID : W1

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
			METALS		
ALUMINUM	0.05	mg/L	0.953	11-20-98	SW 6010
ANTIMONY	0.06	mg/L	ND	11-20-98	SW 6010
BERYLLIUM	0.005	mg/L	ND	11-20-98	SW 6010
COBALT	0.01	mg/L	ND	11-20-98	SW 6010
THALLIUM	0.1	mg/L	ND	11-20-98	SW 6010
VANADIUM	0.05	mg/L	ND	11-20-98	SW 6010
ARSENIC	0.05	mg/L	ND	11-22-98	SW 6010
BARIUM	0.02	mg/L	0.029	11-22-98	SW 6010
CADMIUM	0.005	mg/L	ND	11-22-98	SW 6010
CHROMIUM	0.005	mg/L	0.020	11-22-98	SW 6010
LEAD	0.05	mg/L	ND	11-22-98	SW 6010
SILVER	0.01	mg/L	ND	11-22-98	SW 6010
SELENIUM	0.1	mg/L	ND	11-22-98	SW 6010
CALCIUM	0.5	mg/L	23.3	11-18-98	SW 6010
MAGNESIUM	0.5	mg/L	11.2	11-18-98	SW 6010
POTASSIUM	2.0	mg/L	15.4	11-18-98	SW 6010
SODIUM	0.5	mg/L	34.9	11-18-98	SW 6010
COPPER	0.01	mg/L	0.062	11-20-98	SW 6010
IRON	0.05	mg/L	4.90	11-20-98	SW 6010
MANGANESE	0.02	mg/L	0.213	11-20-98	SW 6010
NICKEL	0.01	mg/L	0.040	11-20-98	SW 6010
ZINC	0.015	mg/L	2.10	11-20-98	SW 6010
MERCURY	0.002	mg/L	ND	11-25-98	SW 7470

mg/L = PARTS PER MILLION(PPM)
ND = NOT DETECTED ABOVE REPORTING LIMIT

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CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701MT(705)
DATE : 12-08-98

SAMPLE MATRIX : WATER
ATAS # : 24507.08
DATE SUBMITTED: 11-13-98
PROJECT : #9811-801
SAMPLE ID : W2

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
			METALS		
UMINUM	0.05	mg/L	2.40	11-20-98	SW 6010
TIMONY	0.06	mg/L	ND	11-20-98	SW 6010
BERYLLIUM	0.005	mg/L	ND	11-20-98	SW 6010
COBALT	0.01	mg/L	0.012	11-20-98	SW 6010
THALLIUM	0.1	mg/L	ND	11-20-98	SW 6010
VANADIUM	0.05	mg/L	ND	11-20-98	SW 6010
ARSENIC	0.05	mg/L	ND	11-22-98	SW 6010
BARIUM	0.02	mg/L	0.133	11-22-98	SW 6010
CADMIUM	0.005	mg/L	0.009	11-22-98	SW 6010
CHROMIUM	0.005	mg/L	0.182	11-22-98	SW 6010
LEAD	0.05	mg/L	0.449	11-22-98	SW 6010
SILVER	0.01	mg/L	ND	11-22-98	SW 6010
SELENIUM	0.1	mg/L	ND	11-22-98	SW 6010
CALCIUM	0.5	mg/L	9.03	11-18-98	SW 6010
MAGNESIUM	0.5	mg/L	31.4	11-18-98	SW 6010
POTASSIUM	2.0	mg/L	49.4	11-18-98	SW 6010
SODIUM	0.5	mg/L	11.6	11-18-98	SW 6010
COPPER	0.01	mg/L	0.536	11-20-98	SW 6010
IRON	0.05	mg/L	33.5	11-20-98	SW 6010
MANGANESE	0.02	mg/L	1.70	11-20-98	SW 6010
NICKEL	0.01	mg/L	0.196	11-20-98	SW 6010
ZINC	0.015	mg/L	3.08	11-20-98	SW 6010
MERCURY	0.002	mg/L	ND	11-25-98	SW 7470

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ND = NOT DETECTED ABOVE REPORTING LIMIT

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CLIENT: ECOLOGY & ENVIRONMENT, INC.
33 N. DEARBORN ST., FL 9
CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701MT(705)

DATE : 12-08-98

QA/QC

DESCRIPTION		PARAMETER	RESULTS	
METHOD BLANK	11-20-98	ALUMINUM	0.08	mg/L
METHOD BLANK	11-20-98	ANTIMONY	<0.06	mg/L
METHOD BLANK	11-20-98	BERYLLIUM	<0.005	mg/L
METHOD BLANK	11-20-98	COBALT	<0.01	mg/L
METHOD BLANK	11-20-98	THALLIUM	<0.1	mg/L
METHOD BLANK	11-20-98	VANADIUM	<0.05	mg/L
METHOD BLANK	11-22-98	ARSENIC	<0.05	mg/L
METHOD BLANK	11-22-98	BARIUM	<0.02	mg/L
METHOD BLANK	11-22-98	CADMIUM	<0.005	mg/L
METHOD BLANK	11-22-98	CHROMIUM	<0.005	mg/L
METHOD BLANK	11-22-98	LEAD	<0.05	mg/L
METHOD BLANK	11-22-98	SILVER	<0.01	mg/L
METHOD BLANK	11-22-98	SELENIUM	<0.1	mg/L
METHOD BLANK	11-18-98	CALCIUM	<0.5	mg/L
METHOD BLANK	11-18-98	MAGNESIUM	<0.5	mg/L
METHOD BLANK	11-18-98	POTASSIUM	<2.0	mg/L
METHOD BLANK	11-18-98	SODIUM	<0.5	mg/L
METHOD BLANK	11-20-98	COPPER	<0.01	mg/L
METHOD BLANK	11-20-98	IRON	<0.05	mg/L
METHOD BLANK	11-20-98	MANGANESE	<0.02	mg/L
METHOD BLANK	11-20-98	NICKEL	<0.01	mg/L
METHOD BLANK	11-20-98	ZINC	0.028	mg/L
CONTROL SPIKE	11-20-98	ALUMINUM	96 %	RECOVERY
CONTROL SPIKE	11-20-98	ANTIMONY	96 %	RECOVERY
CONTROL SPIKE	11-20-98	BERYLLIUM	94 %	RECOVERY
CONTROL SPIKE	11-20-98	COBALT	95 %	RECOVERY
CONTROL SPIKE	11-20-98	THALLIUM	97 %	RECOVERY
CONTROL SPIKE	11-20-98	VANADIUM	98 %	RECOVERY
CONTROL SPIKE	11-22-98	ARSENIC	97 %	RECOVERY
CONTROL SPIKE	11-22-98	BARIUM	91 %	RECOVERY
CONTROL SPIKE	11-22-98	CADMIUM	95 %	RECOVERY
CONTROL SPIKE	11-22-98	CHROMIUM	94 %	RECOVERY
CONTROL SPIKE	11-22-98	LEAD	92 %	RECOVERY
CONTROL SPIKE	11-22-98	SILVER	95 %	RECOVERY
CONTROL SPIKE	11-22-98	SELENIUM	94 %	RECOVERY
CONTROL SPIKE	11-18-98	CALCIUM	100 %	RECOVERY
CONTROL SPIKE	11-18-98	MAGNESIUM	97 %	RECOVERY
CONTROL SPIKE	11-18-98	POTASSIUM	96 %	RECOVERY
CONTROL SPIKE	11-18-98	SODIUM	98 %	RECOVERY
CONTROL SPIKE	11-20-98	COPPER	96 %	RECOVERY
CONTROL SPIKE	11-20-98	IRON	97 %	RECOVERY
CONTROL SPIKE	11-20-98	MANGANESE	97 %	RECOVERY
CONTROL SPIKE	11-20-98	NICKEL	95 %	RECOVERY
CONTROL SPIKE	11-20-98	ZINC	97 %	RECOVERY

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CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701MT(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL
ATAS # : 24507.09
DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-16-98
PROJECT : #9811-801
SAMPLE ID : S3 (TCLP)

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
			TCLP TOXICITY METALS		
ARSENIC	0.10	mg/L	ND	11-18-98	SW 6010
BARIUM	1.00	mg/L	ND	11-18-98	SW 6010
CADMIUM	0.01	mg/L	0.027	11-18-98	SW 6010
CHROMIUM	0.01	mg/L	ND	11-18-98	SW 6010
LEAD	0.10	mg/L	ND	11-18-98	SW 6010
SILVER	0.02	mg/L	0.039	11-18-98	SW 6010
SELENIUM	0.10	mg/L	ND	11-18-98	SW 6010
MERCURY	0.002	mg/L	ND	11-25-98	SW 7470

mg/L = PARTS PER MILLION(PPM)
ND = NOT DETECTED ABOVE REPORTING LIMIT

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CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701MT(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL
ATAS # : 24507.10
DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-16-98
PROJECT : #9811-801
SAMPLE ID : S4 (TCLP)

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
			TCLP TOXICITY METALS		
SENIC	0.10	mg/L	ND	11-18-98	SW 6010
BARIUM	1.00	mg/L	ND	11-18-98	SW 6010
CADMIUM	0.01	mg/L	0.206	11-18-98	SW 6010
CHROMIUM	0.01	mg/L	ND	11-18-98	SW 6010
LEAD	0.10	mg/L	ND	11-18-98	SW 6010
SILVER	0.02	mg/L	ND	11-18-98	SW 6010
SELENIUM	0.10	mg/L	ND	11-18-98	SW 6010
MERCURY	0.002	mg/L	ND	11-25-98	SW 7470

mg/L = PARTS PER MILLION(PPM)
ND = NOT DETECTED ABOVE REPORTING LIMIT

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CLIENT: ECOLOGY & ENVIRONMENT, INC.
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CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701MT(705)
DATE : 12-08-98

SAMPLE MATRIX : SOIL
ATAS # : 24507.11
DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-16-98
PROJECT : #9811-801
SAMPLE ID : S5 (TCLP)

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
			TCLP TOXICITY METALS		
ARSENIC	0.10	mg/L	ND	11-18-98	SW 6010
BARIUM	1.00	mg/L	ND	11-18-98	SW 6010
CADMIUM	0.01	mg/L	0.012	11-18-98	SW 6010
CHROMIUM	0.01	mg/L	ND	11-18-98	SW 6010
LEAD	0.10	mg/L	ND	11-18-98	SW 6010
SILVER	0.02	mg/L	ND	11-18-98	SW 6010
SELENIUM	0.10	mg/L	ND	11-18-98	SW 6010
MERCURY	0.002	mg/L	ND	11-25-98	SW 7470

mg/L = PARTS PER MILLION(PPM)
ND = NOT DETECTED ABOVE REPORTING LIMIT

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CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701MT(705)

DATE : 12-08-98

SAMPLE MATRIX : SOIL
ATAS # : 24507.12
DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-16-98
PROJECT : #9811-801
SAMPLE ID : S6 (TCLP)

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
			TCLP TOXICITY METALS		
SENIC	0.10	mg/L	ND	11-18-98	SW 6010
BARIUM	1.00	mg/L	ND	11-18-98	SW 6010
CADMIUM	0.01	mg/L	ND	11-18-98	SW 6010
CHROMIUM	0.01	mg/L	0.019	11-18-98	SW 6010
LEAD	0.10	mg/L	ND	11-18-98	SW 6010
SILVER	0.02	mg/L	ND	11-18-98	SW 6010
SELENIUM	0.10	mg/L	ND	11-18-98	SW 6010
MERCURY	0.002	mg/L	ND	11-25-98	SW 7470

mg/L = PARTS PER MILLION(PPM)
ND = NOT DETECTED ABOVE REPORTING LIMIT

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CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701MT(705)

DATE : 12-08-98

SAMPLE MATRIX : TCLP LEACHATE
ATAS # : TCLP BLANK
DATE SUBMITTED: 11-13-98
DATE EXTRACTED: 11-16-98
PROJECT : #9811-801
SAMPLE ID : TCLP BLANK

AMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
			TCLP TOXICITY METALS		
	0.10	mg/L	ND	12-07-98	SW 6010
	1.00	mg/L	ND	12-07-98	SW 6010
MIUM	0.01	mg/L	ND	12-07-98	SW 6010
OMIUM	0.01	mg/L	ND	12-07-98	SW 6010
D	0.10	mg/L	ND	11-18-98	SW 6010
VER	0.02	mg/L	0.033	12-07-98	SW 6010
ENIUM	0.10	mg/L	ND	12-07-98	SW 6010
CURY	0.002	mg/L	ND	11-25-98	SW 7470

L = PARTS PER MILLION(PPM)
= NOT DETECTED ABOVE REPORTING LIMIT

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CHICAGO, IL 60602
ATTN: DAVE HENDRON

REPORT: 2450701MT(705)

DATE : 12-08-98

QA/QC

DESCRIPTION		PARAMETER	RESULTS	
METHOD BLANK	11-18-98	ARSENIC	<0.10	mg/L
METHOD BLANK	11-18-98	BARIUM	<1.00	mg/L
METHOD BLANK	11-18-98	CADMIUM	<0.01	mg/L
METHOD BLANK	11-18-98	CHROMIUM	<0.01	mg/L
METHOD BLANK	11-18-98	LEAD	<0.10	mg/L
METHOD BLANK	11-18-98	SILVER	<0.02	mg/L
METHOD BLANK	11-18-98	SELENIUM	<0.10	mg/L
METHOD BLANK	11-25-98	MERCURY	<0.002	mg/L
CONTROL SPIKE	11-18-98	ARSENIC	101 %	RECOVERY
CONTROL SPIKE	11-18-98	BARIUM	102 %	RECOVERY
CONTROL SPIKE	11-18-98	CADMIUM	101 %	RECOVERY
CONTROL SPIKE	11-18-98	CHROMIUM	100 %	RECOVERY
CONTROL SPIKE	11-18-98	LEAD	100 %	RECOVERY
CONTROL SPIKE	11-18-98	SILVER	103 %	RECOVERY
CONTROL SPIKE	11-18-98	SELENIUM	105 %	RECOVERY
CONTROL SPIKE	11-25-98	MERCURY	104 %	RECOVERY

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Attachment D

Tables

Table 1

ANALYTICAL RESULTS SUMMARY - VOLATILE ORGANIC COMPOUNDS
COMETCO SITE
CHICAGO, COOK COUNTY, ILLINOIS
NOVEMBER 10, 1998

Compound	Soil Samples units = μg/kg							Water Samples units = μg/L		
	S1	S2	S3	S4	S5	S6	Region 3 RBC[1]	W1	W2	U.S. EPA MCL[2]
Acetone	13	10 ND	10 ND	9,500	10 ND	11,000	2.00 E+8	46	50 ND	NA
Carbon Disulfide	5 ND	5 ND	5 ND	5 ND	5 ND	1,200	2.00 E+8	5 ND	25 ND	NA
Chloroform	5 ND	6	5 ND	450 ND	6	500 ND	940,000	5 ND	25 ND	100
cis-1,2-Dichloroethylene	5 ND	5 ND	5 ND	5 ND	5 ND	2,900	2.00 E+7	5 ND	25 ND	70
4-Methyl-2-pentanone	10 ND	10 ND	10 ND	1,400	10 ND	6,300	NA	10 ND	50 ND	NA
Methylene Chloride	7 NDB	40 NDB	5 ND	980 B	26 NDB	1,800 B	760,000	5 ND	25 ND	NA
n-Propylbenzene	5 ND	5 ND	5 ND	1,000	5 ND	500 ND	NA	5 ND	25 ND	NA
Toluene	5 ND	5 ND	5 ND	580	5 ND	1,600	4.10 E+8	5 ND	25 ND	1.0
Trichloroethylene	5 ND	5 ND	5 ND	610	5 ND	500 ND	520,000	5 ND	25 ND	5.0
1,3,5-Trimethylbenzene	5 ND	5 ND	5 ND	2,800	5 ND	500 ND	1.00 E+8	5 ND	25 ND	NA
1,2,4-Trimethylbenzene	5 ND	5 ND	5 ND	9,600	5 ND	3,900	1.00 E+8	5 ND	25 ND	NA
Xylenes (total)	5 ND	5 ND	5 ND	1,100	5 ND	500 ND	1.00 E+9	5 ND	25 ND	1,000

Key:

[1] = U.S. EPA Region 3 Risk-Based Screening Concentration (RBC) for industrial soil (10/98).
[2] = U.S. EPA Maximum Contaminant Level (MCL).
B = Analyte detected in method blank. Concentration detected is more than 10 times the associated blank level.
NA = Not applicable.
ND = Analyte not detected. Associated value represents sample quantitation limit.
NDB = Analyte detected in method blank. Concentration detected is less than 10 times the associated blank value. Anlayte should be considered not detected.

Source: ATAS, Inc., Saint Louis, Missouri under analytical TDD S05-9811-801.

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Table 2

ANALYTICAL RESULTS SUMMARY - SEMIVOLATILE ORGANIC COMPOUNDS
COMETCO SITE
CHICAGO, COOK COUNTY, ILLINOIS
NOVEMBER 10, 1998

Compound	Soil Samples units = μg/kg							Water Samples units = μg/L		
	S1	S2	S3	S4	S5	S6	Region 3 RBC[1]	W1	W2	U.S. EPA MCL[2]
Phenol	330 ND	330 ND	330 ND	1,320 ND	330 ND	330 ND	1.2 E+9	13 J	160	NA
Benzoic Acid	1,600 ND	1,600 ND	1,600 ND	6,400 ND	1,600 ND	1,600 ND	8.2 E+9	100 ND	190 J	NA
Naphthalene	330 ND	330 ND	330 ND	1,320 ND	450	330 ND	4.1 E+7	20 ND	100 ND	NA
4-Methylphenol	330 ND	330 ND	330 ND	1,320 ND	330 ND	330 ND	1.0 E+7	20 ND	25 J	NA
4-Chloro-3-methylphenol	330 ND	330 ND	330 ND	4,000	330 ND	330	NA	32	260	NA
2-Methylnaphthalene	330 ND	330 ND	330 ND	880 J	330 ND	330 ND	4.1 E+7	20 ND	18 J	NA
Acenapthene	330 ND	330 ND	330 ND	1,320 ND	360	330 ND	1.2 E+8	20 ND	100 ND	NA
Fluorene	330 ND	330 ND	330 ND	420 J	370	330 ND	8.2 E+7	20 ND	100 ND	NA
Phenanthrene	1,000	330 ND	620	1,100 J	2,600	330 ND	NA	20 ND	74 J	NA
Anthracene	330 ND	330 ND	330 ND	1,320 ND	690	330 ND	6.1 E+8	20 ND	100 ND	NA
Fluoranthene	1,300	350	730	480 J	2,800	330 ND	8.2 E+7	20 ND	100 ND	NA
Pyrene	1,400	370	720	480 J	1,900	330 ND	6.1 E+7	20 ND	100 ND	NA
Bis(2-ethylhexyl)phthalate	330 ND	330 ND	330 ND	5,000	330 ND	330 ND	4.1 E+8	20 ND	100 ND	NA
Benzo(a)anthracene	650	330 ND	370	1,320 ND	1,400	330 ND	7,800	20 ND	100 ND	NA
Chrysene	850	330 ND	480	1,320 ND	1,500	330 ND	780,000	20 ND	100 ND	NA
Benzo(b)fluoranthene	330 ND	330 ND	330 ND	1,320 ND	1,300	330 ND	7,800	20 ND	100 ND	NA

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Table 2

ANALYTICAL RESULTS SUMMARY - SEMIVOLATILE ORGANIC COMPOUNDS
COMETCO SITE
CHICAGO, COOK COUNTY, ILLINOIS
NOVEMBER 10, 1998

Compound	Soil Samples units = μg/kg							Water Samples units = μg/L		
	S1	S2	S3	S4	S5	S6	Region 3 RBC[1]	W1	W2	U.S. EPA MCL[2]
Benzo(k)fluoranthene	770	330 ND	330 ND	1.320 ND	1.000	330 ND	78,000	20 ND	100 ND	NA
Benzo(a)pyrene	800	330 ND	330 ND	1,320 ND	1,400	330 ND	780	20 ND	100 ND	NA
Dibenzo(a,h)anthracene	330 ND	330 ND	330 ND	1,320 ND	610	330 ND	780	20 ND	100 ND	NA
Ideno(1,2,3-c,d)pyrene	790	330 ND	420	1,320 ND	1,200	330 ND	7,800	20 ND	100 ND	NA
Benzo(g,h,i)pyrelene	480	330 ND	330 ND	1,320 ND	690	330 ND	NA	20 ND	100 ND	NA

Key:

[1] = U.S. EPA Region 3 Risk-Based Screening Concentration (RBC) for industrial soil (10/98).
[2] = U.S. EPA Maximum Contaminant Level (MCL).
J = Estimated value. Analyte detected but concentration is below sample reporting limit.
NA = Not applicable.
ND = Analyte not detected. Associated value represents sample quantitation limit.
= Shading indicates that contaminant level exceeds Region 3 RBC.

Source: ATAS, Inc., Saint Louis, Missouri under analytical TDD S05-9811-801.

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Table 3

ANALYTICAL RESULTS SUMMARY - POLYCHLORINATED BIPHENYLS
COMETCO SITE
CHICAGO, COOK COUNTY, ILLINOIS
NOVEMBER 10, 1998

Compound	Soil Samples units = μg/kg							Water Samples units = μg/L		
	S1	S2	S3	S4	S5	S6	Region 3 RBC[1]	W1	W2	U.S. EPA MCL[2]
Aroclor 1016	575 ND	556 ND	746 ND	5,320 ND	6,490 ND	7,140 ND	8,200	10 ND	100 ND	5.0
Aroclor 1221	575 ND	556 ND	746 ND	5,320 ND	6,490 ND	7,140 ND	2,900	10 ND	100 ND	5.0
Aroclor 1232	575 ND	556 ND	746 ND	5,320 ND	6,490 ND	7,140 ND	2,900	10 ND	100 ND	5.0
Aroclor 1242	575 ND	556 ND	746 ND	5,320 ND	6,490 ND	7,140 ND	2,900	10 ND	100 ND	5.0
Aroclor 1248	575 ND	556 ND	746 ND	5,320 ND	6,490 ND	7,140 ND	2,900	10 ND	100 ND	5.0
Aroclor 1254	575 ND	556 ND	746 ND	5,320 ND	6,490 ND	7,140 ND	2,900	10 ND	100 ND	5.0
Aroclor 1260	575 ND	556 ND	746 ND	5,320 ND	6,490 ND	7,140 ND	2,900	10 ND	100 ND	5.0

Key:

[1] = U.S. EPA Region 3 Risk-Based Screening Concentration (RBC) for industrial soil (10/98).
[2] = U.S. EPA Maximum Contaminant Level (MCL).
ND = Analyte not detected. Associated value represents sample quantitation limit.

Source: ATAS, Inc., Saint Louis, Missouri under analytical TDD S05-9811-801.

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Table 4

ANALYTICAL RESULTS SUMMARY - TOTAL METALS
COMETCO SITE
CHICAGO, COOK COUNTY, ILLINOIS
NOVEMBER 10, 1998

Compound	Soil Samples units = mg/kg							Water Samples units = mg/L		
	S1	S2	S3	S4	S5	S6	Region 3 RBC	W1	W2	U.S. EPA MCL
Aluminum	4920	1.710	9.120	12.000	8.010	5.060	2.00 E+6	0.953	2.40	NA
Antimony	2.44	1.33 ND	17.9 ND	5.79	1.56 ND	18.9	820	0.06 ND	0.06 ND	6.0
Beryllium	0.483	0.156	0.478	0.191	0.623	0.171	4,100	0.005 ND	0.005 ND	4.0
Cobalt	8.09	1.96	14.1	7.47	22.6	23.7	120,000	0.01 ND	0.012	NA
Thallium	11.5 ND	22.2 ND	29.9 ND	21.3 ND	26.0 ND	286 ND	140	0.1 ND	0.1 ND	2.0
Vanadium	17.9	9.98	26.0	15.0	23.2	35.4	14,000	0.05 ND	0.05 ND	NA
Arsenic	5.84	1.69	9.55	6.02	11.1	10.3	3.8	0.05 ND	0.05 ND	NA
Barium	66.8	19.8	46.1	49.5	62.3	37.7	140,000	0.029	0.133	2,000
Cadmium	8.80	0.533	3.16	28.9	2.83	3.31	1,000	0.005 ND	0.009	5.0
Chromium	84.0	9.91	3,490	580	49.9	2,490	NA	0.020	0.182	100
Lead	675	174	164	432	95.8	213	NA	0.05 ND	0.449	15.0
Silver	0.667	0.22 ND	0.925	1.43	0.779	0.429	10,000	0.01 ND	0.01 ND	NA
Selenium	2.3 ND	2.22 ND	2.99 ND	2.13 ND	2.60 ND	28.6 ND	10,000	0.10 ND	0.10 ND	50.0
Calcium	105,000	129,000	32,500	164,000	17,100	18,600	NA	23.3	9.03	NA
Magnesium	55,100	74,440	19,700	66,600	9,780	3,740	NA	11.2	31.4	NA
Potassium	643	462	1,870	542	1,160	476	NA	15.4	49.4	NA

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Table 5

ANALYTICAL RESULTS SUMMARY - TCLP METALS
COMETCO SITE
CHICAGO, COOK COUNTY, ILLINOIS
NOVEMBER 10, 1998

Compound	Soil Samples units = mg/L				TCLP Regulatory Limit
	S3	S4	S5	S6	
Arsenic	0.10 ND	0.10 ND	0.10 ND	0.10 ND	5.0
Barium	1.00 ND	1.00 ND	1.00 ND	1.00 ND	100
Cadmium	0.027	0.206	0.012	0.019	1.0
Chromium	0.01 ND	0.01 ND	0.01 ND	0.01 ND	5.0
Lead	0.10 ND	0.10 ND	0.10 ND	0.10 ND	5.0
Silver	0.039 NDB	0.02 ND	0.02 ND	0.02 ND	5.0
Selenium	0.10 ND	0.10 ND	0.10 ND	0.10 ND	1.0
Mercury	0.002 ND	0.002 ND	0.002 ND	0.002 ND	0.2

Key:

ND = Analyte not detected. Associated value represents sample quantitation limit.
NDB = Analyte detected in method blank. Concentration indicated is less than 5 times the associated blank value. Analyte should be considered not detected.

Source: ATAS, Inc., Saint Louis, Missouri under analytical TDD S05-9811-801.

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Attachment C

Validated Analytical Data Package