SCREENING SITE INSPECTION REPORT
FOR

LARSON BOAT COMPANY
LITTLE FALLS, MINNESOTA

U.S. EPA ID: MND062822960

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EPA Region 5 Records Ctr
391770

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TEXT

# 1.0 EXECUTIVE SUMMARY

On June 20 through July 18, 1989, the Minnesota Pollution Control Agency (MPCA) staff conducted a Screening Site Investigation (SSI) at the Larson Boat Company in Little Falls, Morrison County, Minnesota. The purpose of this SSI was to determine if past on site disposal practices have contaminated surrounding ground water, surface water, or soils.

Work conducted during the SSI included taking ten soil samples from ten soil borings and istallation of four monitoring wells. After development and stabilization of the monitoring wells, five ground water samples were obtained.

Chemical analysis of the samples revealed an observed release to the ground water pathway. Organic compounds including methylene chloride, toluene, and ethylbenzene were detected in ground water samples. It is unlikely that the municipal wells or the 26 residential wells will be impacted by the site.

## 2.0 INTRODUCTION

The MPCA working under Cooperative Agreement No. V005848-01 with the United States Environmental Protection (EPA), has conducted a SSI at the Larson Boat Company (Site). The Site was first brought to the attention of the MPCA on March 16, 1981. On this date, the MPCA received a Hotline Complaint alleging disposal of hazardous waste on Larson Boat Company property.

The Site was placed on EPA's Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) list and evaluated in the form of a Preliminary Assessment (PA) dated March 9, 1984. The PA was conducted by Susan Cedarleaf of the MPCA. The site was assigned EPA identification number MND062822960.

A SSI work plan was prepared and submitted to the EPA on April 27, 1989. The SSI work plan was approved by the EPA. The SSI for the Larson Boat Company was conducted between June 20 and July 18, 1989.

The objectives of an SSI have been stated by EPA in a directive outlining pre-remedial strategies. The directive states:

All sites will receive a SSI to: 1) collect additional data beyond the PA to enable a more refined preliminary Hazard Ranking System (HSR) Score, 2) establish priorities among sites most likely to qualify for the National Priorities List (NPL), and 3) identify the most critical data requirements for the listing SI step (U.S. EPA 1988).

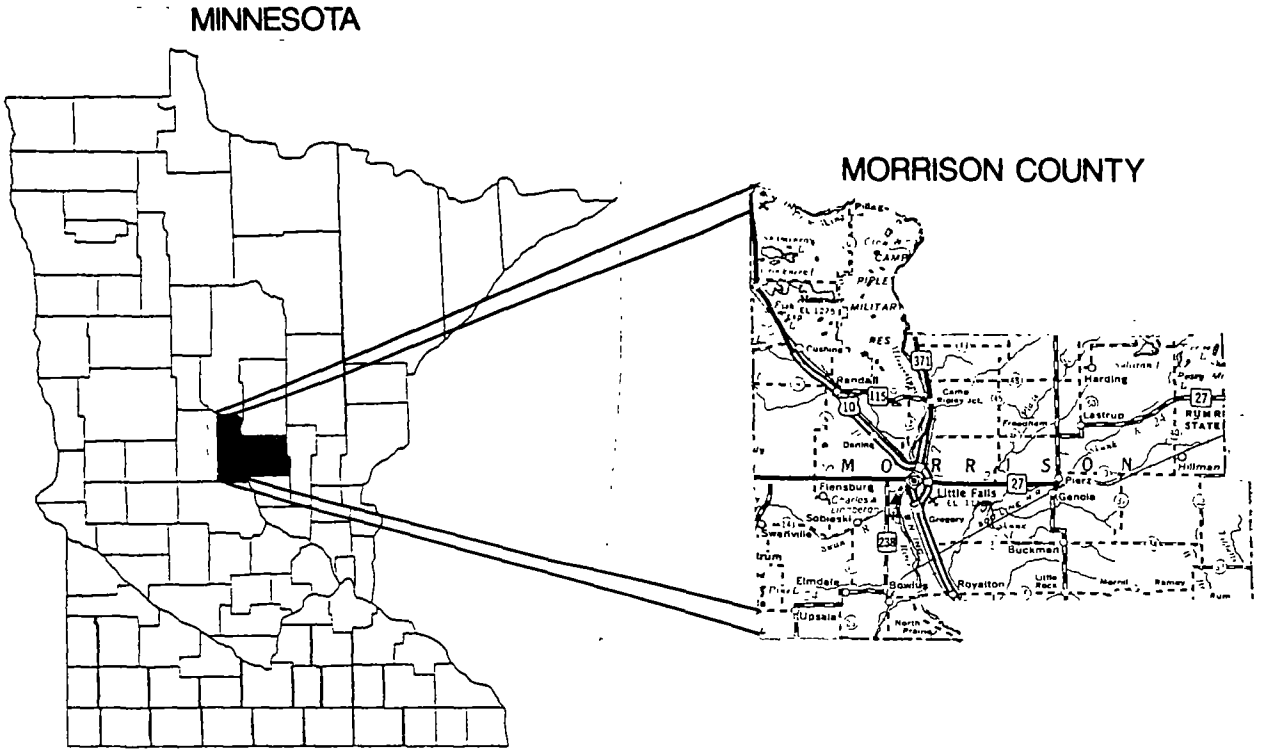
# 3.0 SITE DATA

## 3.1 Site Description

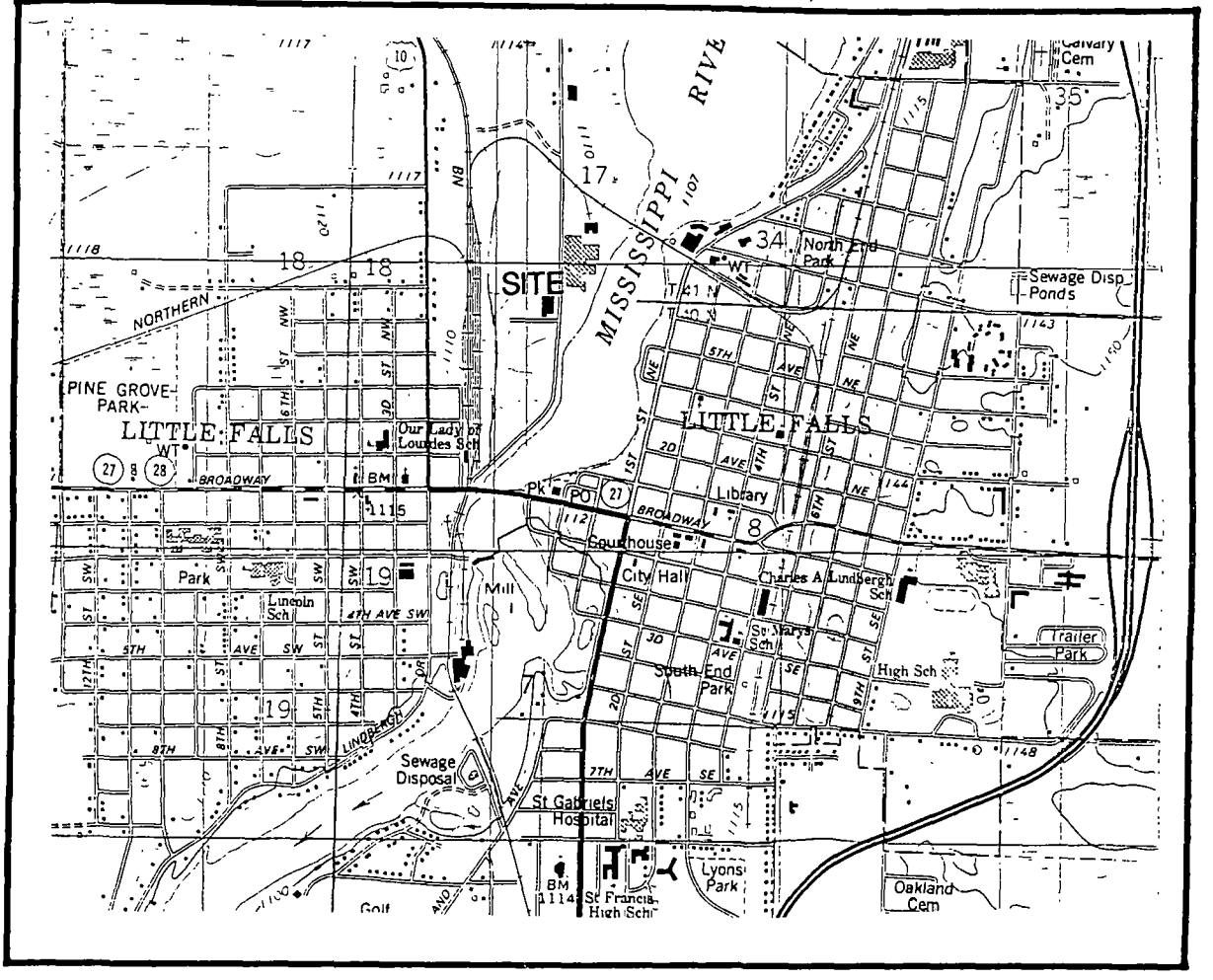
The Site is located at 702 West Mississippi River Road, Little Falls, Morrison County, Minnesota (Figure 3-1). The site is situated on the west bank of the Mississippi River and is comprised of a manufacturing area and a former permitted solid waste facility. The eastern section of the Site is occupied by six manufacturing buildings and is mostly paved with asphalt. The 33 acre area used as a permitted solid waste disposal area is situated on the west side of the West Mississippi River Boulevard. A portion of the past disposal area is now used as a boat storage area.

## 3.2 Site History

An informal title search conducted at the Morrison County Tax Records Office indicates that the Pine Tree Manufacturing Company was located on the Site from 1909 to 1939. The Sandborn Fire Insurance Maps document this fact (Figure 3.2). After closure of the Pine Tree Manufacturing Company the Little Falls Area Industrial Development Corporation purchased the land. In 1959 Larson Boat Company leased a lot on the west bank of the Mississippi River. In 1962 the Munsingwear Company purchased the lot adjacent to the lot the Larson Boat Company was leasing. In 1967 the Larson Boat Company purchased the leased land and in 1985 the Munsingwear property was purchased.

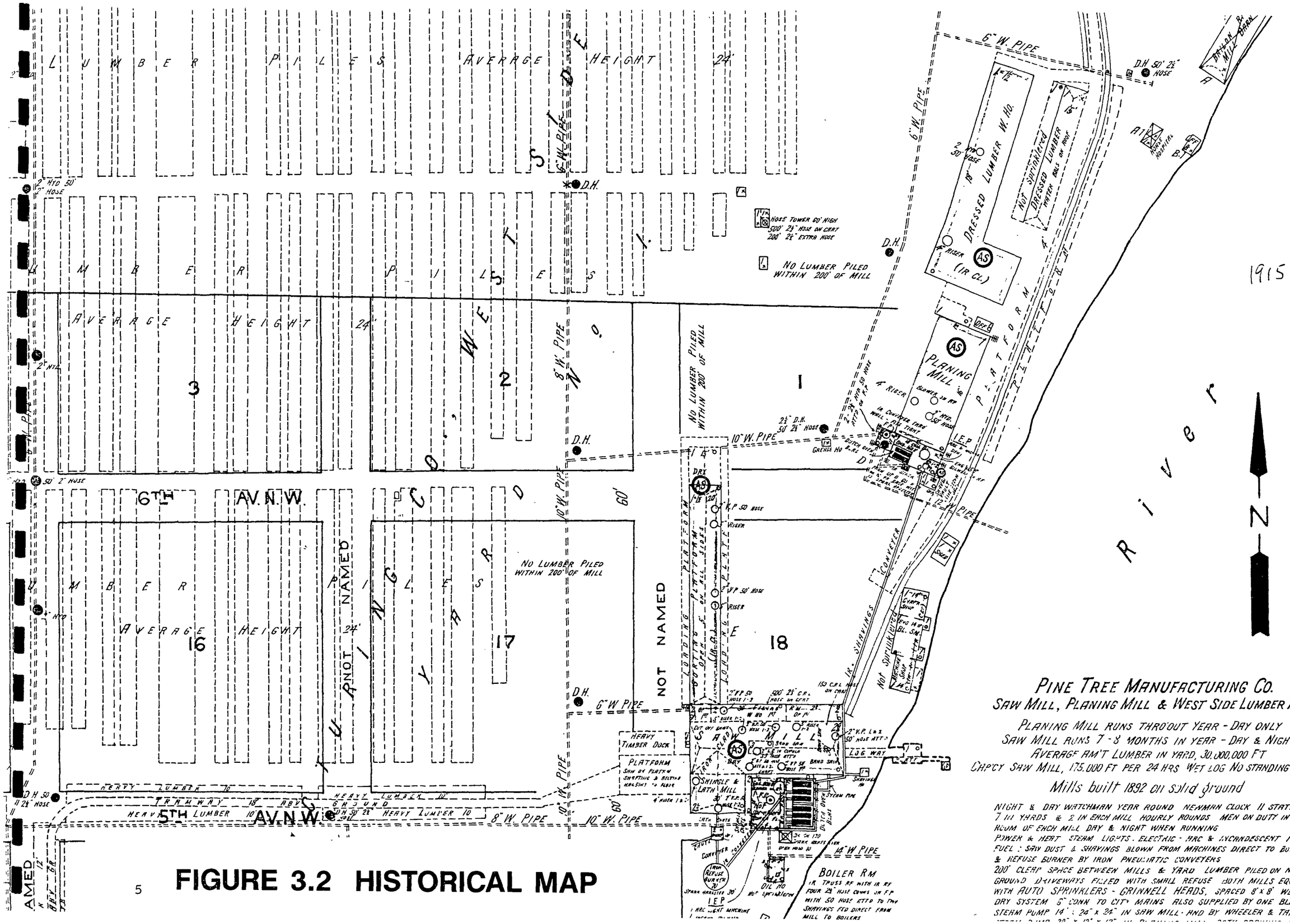



SITE LOCATION IN LITTLE FALLS, MN




SOURCE: MPCA 1989

FIGURE 3.1: SITE LOCATION




# FIGURE 3.2 HISTORICAL MAP

## PINE TREE MANUFACTURING CO.

### SAW MILL, PLANING MILL & WEST SIDE LUMBER YARD

PLANING MILL RUNS THRO'OUT YEAR - DAY ONLY
SAW MILL RUNS 7 - 8 MONTHS IN YEAR - DAY & NIGHT
AVERAGE AM'T LUMBER IN YARD, 30,000,000 FT
CAP'CY SAW MILL, 175,000 FT PER 24 HRS WET LOG NO STANDING TIMBER NEAR

*Mills built 1892 on solid ground*

NIGHT & DAY WATCHMAN YEAR ROUND NEWMAN CLOCK 11 STATIONS
7 IN YARDS & 2 IN EACH MILL HOURLY ROUNDS MEN ON DUTY IN BOILER
ROOM OF EACH MILL DAY & NIGHT WHEN RUNNING
POWER & HEAT STEAM LIGHTS. ELECTRIC - ARC & INCANDESCENT I.E.P
FUEL : SAW DUST & SHAVINGS BLOWN FROM MACHINES DIRECT TO BOILERS
& REFUSE BURNER BY IRON PNEUMATIC CONVEYERS
200' CLEAR SPACE BETWEEN MILLS & YARD LUMBER PILED ON NATURAL
GROUND DRIVEWAYS FILLED WITH SMALL REFUSE BOTH MILLS EQUIPPED
WITH AUTO SPRINKLERS - GRINNELL HEADS, SPACED 8' x 8' WET &
DRY SYSTEM 5" CONN TO CITY MAINS ALSO SUPPLIED BY ONE BLAKE
STEAM PUMP 14" : 24" x 24" IN SAW MILL - HND BY WHEELER & TAPPEN

The Larson Boat Company has manufactured Fiberglass water craft at the Site since approximately 1960. The wastes generated from the construction processes include methylethyl keytone, acetone, paint sludges, resins, gelcoates and fiberglass boat hulls. Prior to the early 1970's waste disposal practices are vague. In 1973, a solid waste disposal permit (SW-132) was issued for the 33 acre area on the west side of the West Mississippi River Boulevard. Although the permit allowed only for the disposal of solid waste (boat hulls and scrap Fiberglass), MPCA and Morrison County inspection record indicate that hazardous waste was disposed of in the permitted areas. Specifically, a 1974 inspection conducted by MPCA staff reveled approximately 1000 55-gallon drums on-site. Ten percent of the drums were reported to contain hazardous waste.

The MPCA has received two separate Hotline Complaints regarding disposal of hazardous waste on the Larson Boat Company property. The first complaint was received on March 16, 1981. The complaint alleged that hazardous waste had been disposed of in the swamp across from Larson Boat Company for the last 15 years. The second complaint was received on May 9, 1986. The complaint alleged that 100 barrels of resin and acetone were dumped into the swamp across from the main Larson Boat Company area between 1964 and 1966. The MPCA staff has determined the the swamp referred to in both complaints is actually the permitted solid waste disposal area.

Based upon the past history of the Larson Boat Company, the MPCA staff initiated a SSI at the Site. A formal access agreement was sent to Mr. Allen Kubelbeck of the Larson Boat Company on April 13, 1989. After lengthy negotiations a signed access agreement was returned to the MPCA dated June 15, 1989. As a condition of the access agreement a representative of Barr Engineering Company was allowed to observe all field work and split soil and ground water samples with MPCA staff.

## 4.0 OBJECTIVES

The principle objective of the Larson Boat Company SSI was to determine if the ground water, surface water and site soils have been impacted by past activities. MPCA staff feels the objectives of this SSI have been met.

# 5.0 GEOLOGY

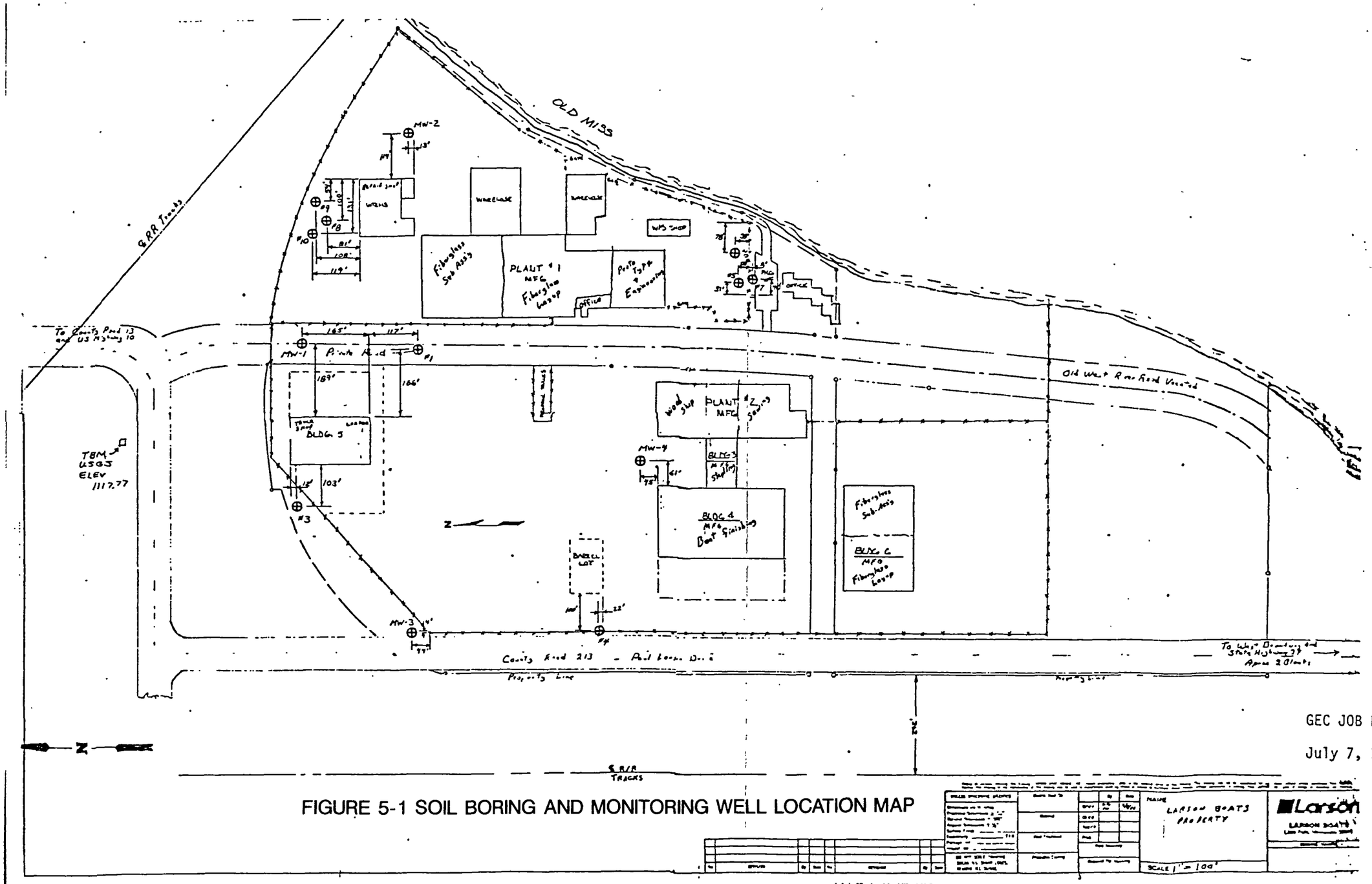
## 5.1 Site Topography

The Site is located in the lowest flood plain of of the west bank of the Mississippi River in Little Falls, Minnesota. A Federal Flood Insurance Map for Little Falls indicates the lowest flood plain is under the "100 year" classification. The average slope is less than 2% from west to east toward the River (Appendix A). There is no intervening terrain to retard runoff from the Site to the river. Approximately 70 percent of the Site is covered with impermeable asphalt or buildings which may prevent precipitation infiltration in those areas (Figure 5-1).

## 5.2 Regional Geology

The Site is located in the Brainard - Automba Drumlin physiographic province. The province is defined by drumlin fields, end moraines, outwash and till plains (Sims and Morey, 1972). Little Falls is located in the southern margins of a broad till plain bordered by the St. Croix moraine to the west and the Pierz Drumlin field to the east (Helgeson et. al., 1975). The Mississippi River flows from north to south through the area and is marked by recent fluvial sand and gravel deposits (Sims and Morey, 1972).

The underlying bedrock is composed of formations of the Animikie Group. The Animikie Group is grossly characterized by metamorphosed sedimentary formations of the Middle and Upper Precambrian. The Little Falls area is underlain by the




GEC JOB NO: 89-273

July 7, 1989

FIGURE 5-1 SOIL BORING AND MONITORING WELL LOCATION MAP

Thomson formation consisting of various schist, metagraywackes, siltstones, fealties and slates. Thickness has been estimated from 3000 feet (Wright et al., 1970) to 20,000 feet in Central to Northeastern Minnesota (Schwartz, 1942). The bedrock slopes toward the Mississippi River forming a shallow trough filled with various glacial deposits (Sims and Morey, 1972).

## 5.3 Regional Hydrology

The Site is located in the Mississippi and Sauk River Watershed of Central Minnesota. Regional ground water in the glacial drift is recharged in the upland areas and flows toward the Mississippi River in the Little Falls area. Locally, ground water flow is controlled by tributaries or geological structures (Helgeson, et al, 1975).

Most potable ground water is drawn from wells completed in the glacial deposits under unconfined conditions at depths less than 150 feet (Helgeson, et al, 1975 and Appendix G). Confined conditions may exist in areas where clay layers are of sufficient thickness and continuity. However, well logs in the Little Falls area indicate unconfined conditions prevail (Appendix G). In areas where drift is absent or yields are limited, the metamorphic bedrock is used as limited water source when fracturing and jointing allow sufficient permeability.

## 5.4 Site Geology

Soil borings taken at the Site indicate the bedrock is a mica schist of the Little Falls Formation overlain by fine to coarse grained sands and gravels

(Bloomgren, 1989 and Appendix D). Discontinuous clay and silt layers appear to be randomly dispersed in the sands and gravels (Appendix D). Figure 5-3 is a west to east cross-section through monitoring wells 3, 1, and 2, respectively. For cross-sectional purposes the clay and silt areas of less than one foot in thickness have not been discerned in the sand and gravel deposits. Depth to bedrock was difficult to discern do to the weathered nature of the bedrock surface. The greenish-gray mica schist exhibited clay-like qualities in the weathered margin of the bedrock surface. However, the weathered bedrock was harder than the interspersed clay in the overlying unconsolidated deposits. For cross sectional interpretation the weathered bedrock was assumed to be competent bedrock (Figure 5-3).

## 5.5 Site Hydrology

Static water levels taken on July 18, 1989 indicate the ground water is flowing from west to east toward the Mississippi River (Figure 5-2). The average gradient measured from monitoring well MW-3 to MW-2 is .002 (Figure 5-2). Based on visual examination of the sands and gravels the permeability is estimated to range from 10 -4 to 10 -3 cm/sec (U. S. EPA, 1984). The bedrock does not appear to be highly permeable based upon samples collected in the upper margin. Area well logs confirm this, as most area wells draw from the unconsolidated sand and gravel aquifer or the upper most margins of the bedrock where weathering, fracturing and jointing have increased permeability (Appendix G). Based upon area well logs and data collected during the SSI, the aquifer of concern is defined as the unconsolidated deposits and the upper most margin of the metamorphic bedrock.

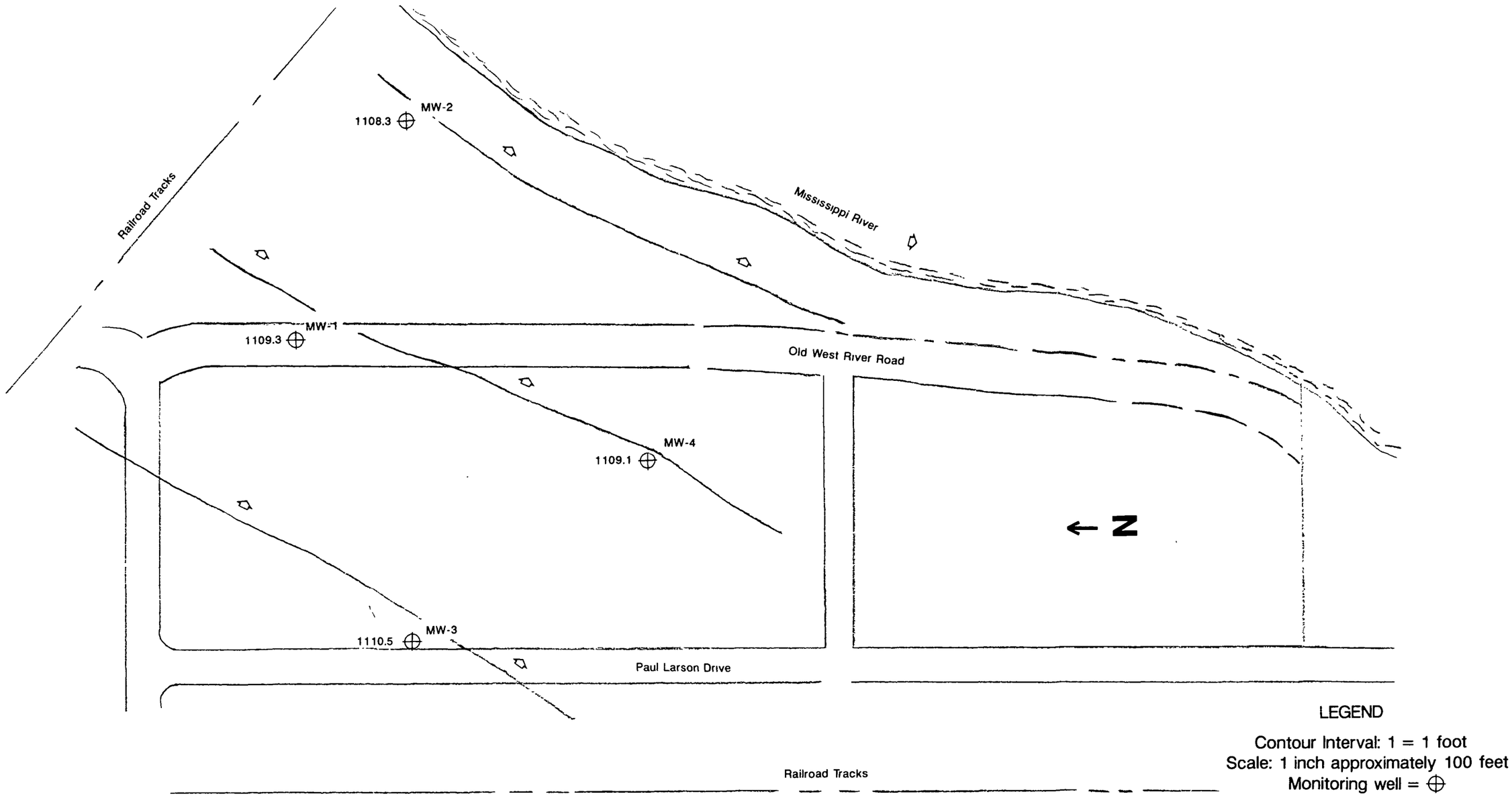
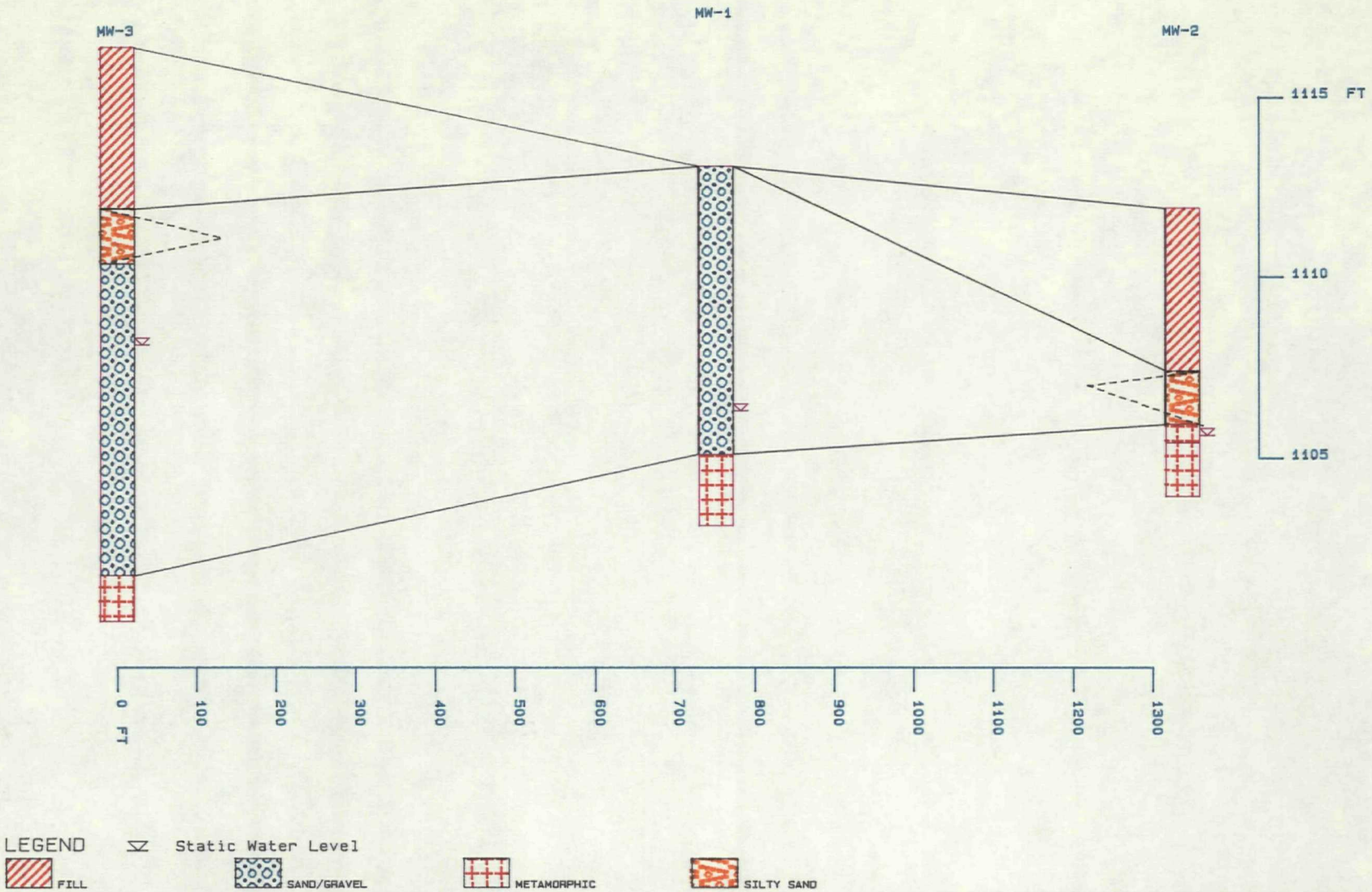



FIGURE 5-2 GROUND WATER FLOW IN THE SURFICIAL AQUIFER

(adapted from FIGURE 5-1)




TITLE: WEST-EAST CROSS-SECTION, LARSON BOATS | PREPARED BY: S. PRICE DATE: 12/7/89

MINNESOTA POLLUTION CONTROL AGENCY FIGURE: 5-3

## 6.0 SURFACE WATER

The Site is adjacent to the Mississippi River. No tributaries or man-made ditches flow through the Site. A small drainage ditch was located north of the Site flowing through the Burlington Northern railroad property into the Mississippi River. The ditch is not discernible on any topographic maps of the area. It is not known whether the ditch was naturally occurring or man-made.

Prior to the issuance of Solid Waste Permit 132 the Site was partially covered by a small wetland (less than 5 acres). The MPCA permit allowed the wetland to be filled and as a result, it no longer exists. This area is now paved with asphalt and is used as a storage area (MPCA Files).

# 7.0 FIELD PROCEDURES

## 7.1 Site Reconnaissance

On April 18, 1989 MPCA staff performed a site reconnaissance at the Site. The Site was examined for accessibility of vehicles, boring placement, and surficial evidence of contamination. The Site is relatively flat therefore standard vehicles were deemed adequate for site access. There were no obvious areas of contamination visible at the ground surface in the form of stressed or absent vegetation, stained soils and/or leachate generation along the Mississippi River bank. The area used for storage of Gel-cote resin waste is not underlain by an impermeable pad to prevent leakage into the soil. This storage area is being addressed by the Hazardous Waste Division of the MPCA in the RCRA program. Recent construction of a new road along the western margin of the Site made it difficult to establish Site boundaries based upon MPCA Solid Waste records. A former fertilizer/pesticide storage area was located northwest of the Site along the railroad tracks and a ditch was found to flow from the fertilizer/ pesticide area to the Mississippi River.

Pete Larsen, Supervisor of Maintenance and Compliance was interviewed concerning past waste management practice. Mr. Larsen indicated he was not aware of any specific area(s) on Site where disposal of hazardous substances or wastes had occurred. MPCA staff met with Al Kuebelbeck, then president of Larson Boats, and explained the basic field procedures the MPCA field staff would be following. Mr. Kuebelbeck denied any knowledge of improper hazardous waste disposal during his employment as Larson Boat Company.

## 7.2 Field Activities

The SSI field work consisted of the taking of 10 soil borings to bedrock and the installation of 4 water table monitoring wells. Drilling activities were initiated on June 19, 1989. The Site was cleared for utilities prior to the initiation of drilling. A Central Mining Equipment model 550 drilling rig was used to advance 3 1/4 inch I.D. hollow stem auger. A 2 inch I.D. split-spoon sampler was used to collect representative soil samples at discrete intervals.

The drill rig was steam cleaned on-site prior to drilling. All downhole tools were steam cleaned between each boring. Well materials were steam cleaned prior to installation. The split-spoon sampler was washed in trisodium phosphate and deionized water then triple rinsed with deionized water between each sample collection.

Air monitoring was performed with a Foxboro organic vapor analyzer (OVA). Ambient levels tended to fluctuate from 0 to 7 ppm depending upon the location relative to the manufacturing buildings and wind direction (Appendix F). The area surrounding each borehole was monitored before and after the drill string was removed. The split-spoon sampler was screened along the seams and open ends prior to dismantlement. Once the sample was exposed, it was screened as MPCA staff collected a portion of the sample. The remaining sample was split between the Barr representative and the driller. OVA readings per sample are noted on MPCA borings logs (Appendix F).

After completion of drilling and well installation activities all monitoring wells and soil borings were surveyed. A U.S. Geological Survey benchmark was located along the northern margin of the Site and used as a datum. Monitoring

wells and soil borings were surveyed within 1/100 and 1/10 of an inch, respectively. Closure was met with the contract specification of .05 miles surveyed (Appendix D).

## 7.3 Boring and Well Location

Boring placement was selected based upon reports received from former Morrison County Solid Waste Officer, Kathy Kendell, MPCA Solid Waste records and through negotiations with Barr Engineering (Figure 5.1). The location of MW-2 was moved approximately 100 feet north of the proposed location. The proposed location would have placed the well in an area of high traffic thus, it may have created a safety hazard. Boring 2 was proposed in the northern margin of the Site. However, further examination of Morrison County tax assessor records indicate the property is owned by Burlington Northern Railroad (BN). As the MPCA did not have permission from BN to access the property, boring 2 was not taken.

## 7.4 Soil Sampling

The original work plan called for one composite soil sample to be taken above the water table and one composite soil sample below the water table for each boring. This sampling scheme was based upon extrapolation from area well logs that indicated the depth to bedrock as approximately 25 feet and a depth to water table of approximately 10 to 15 feet. As drilling proceeded it became evident that the bedrock surface and the water table were much shallower than expected (Appendix F). In most borings the volume of sample obtained between the water table and the bedrock surface was not a sufficient quantity to meet requirements of U.S. EPA Contract Laboratory Program. Therefore, soil samples were only taken above the water table.

Soil samples were analyzed for U.S. EPA Target Compound List (TCL) compounds by PEI Associates, Incorporated (PEI) in Cincinnati, Ohio. Soil samples shipped to Chemtech Consulting Group were evaluated for U. S. EPA Target Analyte List (TAL) analytes. All shipping was performed through Federal Express overnight delivery service.

## 7.5 Ground Water Sampling

Ground water sampling was performed on July 18, 1989. Each monitoring well was developed through pumping and stabilized through temperature, conductivity, and pH prior to sampling by Precision Environmental (Appendix E). Ground water samples were obtained with a stainless steel bailer. A bailer and rope was dedicated to each well to prevent cross contamination. All samples taken cyanide were placed directly in the designated sample container, preserved with the appropriate preservative if required by CLP procedure, sealed and placed in a cooler containing ice and vermiculite.

Ground water samples for organic analysis were sent to PEI Associates, Incorporated located in Cincinnati, Ohio. Inorganic ground water samples were analyzed by Enseco/Rocky Mountain Analytical laboratory in Arvada, Colorado. All samples were shipped through Federal Express overnight service.

## 8.0 ANALYTICAL RESULTS

U.S. EPA TCL compounds found in the soils and ground water are associated with industrial processes used by Larson Boats. Methylene chloride and toluene were found in the soil and ground water at the Site (Tables 8.1 and 8.3). Three phthalate compounds were detected in the soil, but not in the ground water. Although methylene chloride and phthalates are common laboratory artifacts, these compounds do not appear to have impacted the ground water analysis and are considered to be representative of the ground water. (Appendix H). All five organic compounds are used by Larson Boats individually or occur as constituents of hazardous materials of industrial processes (MPCA Files). Phthalates are common in plasticizers and epoxy resins which are used in the fiberglass industry (Mattsfield, 1990). Methylene chloride and toluene are common solvent compounds used in industrial processes. Three phenol compounds were detected in the ground water but did not occur in the soils. The source of these compounds does not appear to be on the Site. The former fertilizer/ pesticide facility that was located during the site reconnaissance does not appear to be impacting the Site, as no pesticides were found in the ground water at the time of sampling.

There appears to be no significant differences in the background inorganic levels and the U. S. EPA TAL analytes found in on-site ground water. The soils were also within the normal range for inorganic constituents (Tables 8.2 and 8.4, U.S. Soil Survey, 1975).

Table 8.1



Summary of
Chemical Analysis For
Organic Compounds: Soil

| Sample Collection Information and Detected Parameter | Sample Number | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | S01 | S02 | S03 | S04 | S05 | S06 | S07 | S08 | S09 |
| Date | 6/20/89 | 6/20/89 | 6/20/89 | 6/21/89 | 6/21/89 | 6/21/89 | 6/21/89 | 6/22/89 | 6/22/89 |
| Time | 1030 | 1550 | 1615 | 0850 | 1330 | 1430 | 1645 | 0805 | 1115 |
| Organic Traffic Report Number | EDH 64 | EDH 65 | EDH 66 | EDH 67 | EDH 68 | EDH 69 | EDH 70 | EDH 71 | EAQ 09 |
| Sample Location | B-3 | B-1 | B-1 | B-8 | B-9 | B-10 | B-6 | B-7 | B-5 |
| Compound Detected - mg/kg | | | | | | | | | |
| Methylene Chloride | 3J | 11 | -- | 7 | -- | 5J | -- | 10 | 10 |
| Tetrachloroethene | -- | -- | -- | -- | -- | -- | -- | 2J | 2J |
| Toluene | -- | -- | -- | 3J | -- | -- | -- | 7 | 4J |
| Acetone | -- | -- | -- | 14BJ | -- | -- | -- | 5BJ | -- |
| Xylene | -- | -- | -- | .6J | -- | -- | -- | -- | -- |
| Di-n-butylphthalate | 100J | -- | -- | -- | -- | -- | -- | -- | 130J |
| bis(2-Ethylhexyl)phthalate | 80J | -- | -- | 120J | -- | -- | -- | -- | 170J |
| Diethylphthalate | 330J | -- | -- | -- | -- | -- | -- | -- | -- |

Table 8.2

Summary of
Chemical Analysis For
Metals and Cyanide: Soils

| Sample Collection Information and Detected Parameters | Sample Number S01 | S04 | S05 | S07 | S08 | S09 |
|---|---|---|---|---|---|---|
| Date | 6/20/89 | 6/21/89 | 6/21/89 | 6/21/89 | 6/22/89 | 6/22/89 |
| Time | 1030 | 0850 | 1330 | 1645 | 0805 | 1115 |
| Inorganic Traffic Report Number | MECS61 | MECS64 | MECS65 | MECS67 | MECS68 | MECS82 |
| Sample Location | B-3 | B-8 | B-9 | B-6 | B-7 | B-5 |
| Compound Detected - mg/kg | | | | | | |
| Aluminum | 6940 | 4020 | 9110 | 5880 | 4720 | 3950 |
| Barium | 253 | 81.80 | 82.90 | 143 | 87.40 | 60.70 |
| Cadmium | 2.50 | 3.10 | 4.40 | 1470 | 3.80 | 3.00 |
| Calcium | 2270 | 1550 | 2200 | -- | 1490 | 1250 |
| Copper | 23 | 8.60 | 45.90 | 22.10 | 8.30 | 18.70 |
| Iron | 20,200 | 9830 | 19,200 | 12,500 | 10,000 | 9310 |
| Lead | 3.40 | 4.60 | 4.30 | 4.40 | 6.40 | 3.40 |
| Magnesium | 4250 | 1610 | 4880 | 1880 | 1580 | 1560 |
| Manganese | 1810 | 964 | 982 | 2070 | 1030 | 609 |
| Potassium | 1340 | 435B | 1790 | -- | 360B | 367B |
| Sodium | 209B | 328B | 212B | 244B | 230B | 238B |
| Vanadium | 33.20 | -- | -- | -- | -- | -- |
| Zinc | 33.70 | 35.30 | 48.10 | 26.80 | 29.30 | 22.90 |

Table 8.3

Summary of
Chemical Analysis For
Organic Compounds: Ground Water

| Sample Collection Information and Detected Parameter | Sample Number | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | S10 | S11 | S12 | S13 | S13 | D01 | R02 | R01 |
| Date | 7/18/89 | 7/18/89 | 7/18/89 | 7/18/89 | 7/18/89 | 7/18/89 | 7/18/89 | 7/18/89 |
| Time | 0950 | 1215 | 1440 | 1600 | 1600 | 1600 | 1350 | 1610 |
| Organic Traffic Report Number | EEJ00 | EEJ01 | EEJ02 | EEJ03 | EEJO3DL | EEJO4 | EEJO5 | EEJ06 |
| Sample Location | MW1 | MW2 | MW3 | MW4 | MW4 | MW4 | F.B. | T.B. |
| Compound Detected - ug/L | | | | | | | | |
| Benzene | -- | 4J | -- | -- | -- | -- | -- | -- |
| Methylene Chloride | -- | -- | -- | 6 | -- | -- | -- | -- |
| 2-Hexanone | -- | -- | -- | 27 | 25JD | -- | -- | -- |
| Toluene | -- | -- | -- | 290E | 200D | -- | -- | -- |
| Ethylbenzene | -- | -- | -- | 83 | 48D | -- | -- | -- |
| Phenol | -- | -- | -- | 58 | -- | 40 | -- | -- |
| 2-Methylphenol | -- | -- | -- | 10 | -- | 7J | -- | -- |
| 4-Methylphenol | -- | -- | -- | 81 | -- | 62 | -- | -- |
| Benzoic Acid | -- | -- | -- | 180 | -- | -- | -- | -- |

Table 8.4

Summary of
Chemical Analysis For
Metals and Cyanide: Ground Water

| Sample Collection Information and Detected Parameters | Sample Number S10 | S11 | S12 | S13 | D01 | R02 |
|---|---|---|---|---|---|---|
| Date | 7/18/89 | 7/18/89 | 7/18/89 | 7/18/89 | 7/18/89 | 7/18/89 |
| Time | 0950 | 1215 | 1440 | 1600 | 1600 | 1350 |
| Inorganic Traffic Report Number | MEAJ12 | MEAJ14 | MEAJ15 | MEAJ44 | MEAJ45 | MECS83 |
| Sample Location | MW-1 | MW-2 | MW-3 | MW-4 | Dup. MW-4 | F.B. |
| Compound Detected - mg/kg | | | | | | |
| Aluminum | -- | -- | 135B | 145B | 158B | -- |
| Arsenic | -- | 11.9J | 9.2BJ | 8.9BJ | 8.2BJ | -- |
| Barium | 276 | 217 | 812 | 418 | 441 | -- |
| Calcium | 124,000 | 91,800 | 105,000 | 109,000 | 116,000 | 273B |
| Cobalt | 10.9B | -- | 15.0B | -- | -- | -- |
| Iron | 214J | 4770J | 32,600J | 35,800J | 37,600J | -- |
| Magnesium | 34,600 | 20,100 | 22,500 | 25,500 | 27,400 | -- |
| Manganese | 1770 | 3620 | 9170 | 4100 | 4290 | -- |
| Mercury | -- | -- | 0.3 | -- | -- | -- |
| Nickel | 15.2B | -- | 8.0B | -- | -- | -- |
| Potassium | 5650 | 5920 | 2580B | 3990B | 4250B | -- |
| Sodium | 14,700 | 39,600 | 8340 | 10,100 | 10,700 | -- |
| Zinc | 9.7B | -- | -- | -- | -- | -- |

# 9.0 MIGRATION PATHWAYS

## 9.1 Ground Water

Through sampling of the soil and ground water at the Site, an observed release to the ground water migration pathway has been documented. The Mississippi River creates a ground water divide through the City of Little Falls. Therefore, the municipal wells located on the east side of the Mississippi River are hydrologically separated from potential contaminant migration from the Site. All residents within the City of Little Falls receive their drinking water from the municipal well system. However, there are 26 residential wells outside the city limits drawing from the aquifer of concern within a 3-mile radius of the Site (Appendix G and MGS, 1989). It is highly unlikely these wells have the potential to be impacted given their upgradient location relative to the Site and the prevailing ground water flow toward the Mississippi River.

## 9.2 Surface Water

The Site is bordered on its eastern margin by the Mississippi River. Although there are no surface water bodies on the Site or flowing through the Site, ground water discharge to the Mississippi River may impact surface water.

## 9.3 Air Migration

OVA readings taken during drilling activities in June, 1989 indicate volatile compounds may be released during physical disturbance of the soil. However,

there is no indication that observed releases have occurred when the soil is undisturbed. Air monitoring performed during field work indicates volatile compounds may be originating from the Larson Boats manufacturing facility, as background readings of 1 to 7 ppm registered on the OVA.

## 9.4 Direct Contact

Direct contact is highly unlikely as 70 percent of the Site is covered with asphalt and building structures. In addition, Site is surrounded by fencing and secured from approximately 5:00 pm to 7:00 am.

## 9.5 Fire and Explosion

Contaminants are subsurface and incompatible compounds were not detected in the soils. MPCA staff observations during the SSI field work indicated no apparent potential for fire or explosion due to past waste disposal practices.

## 10.0 REFERENCES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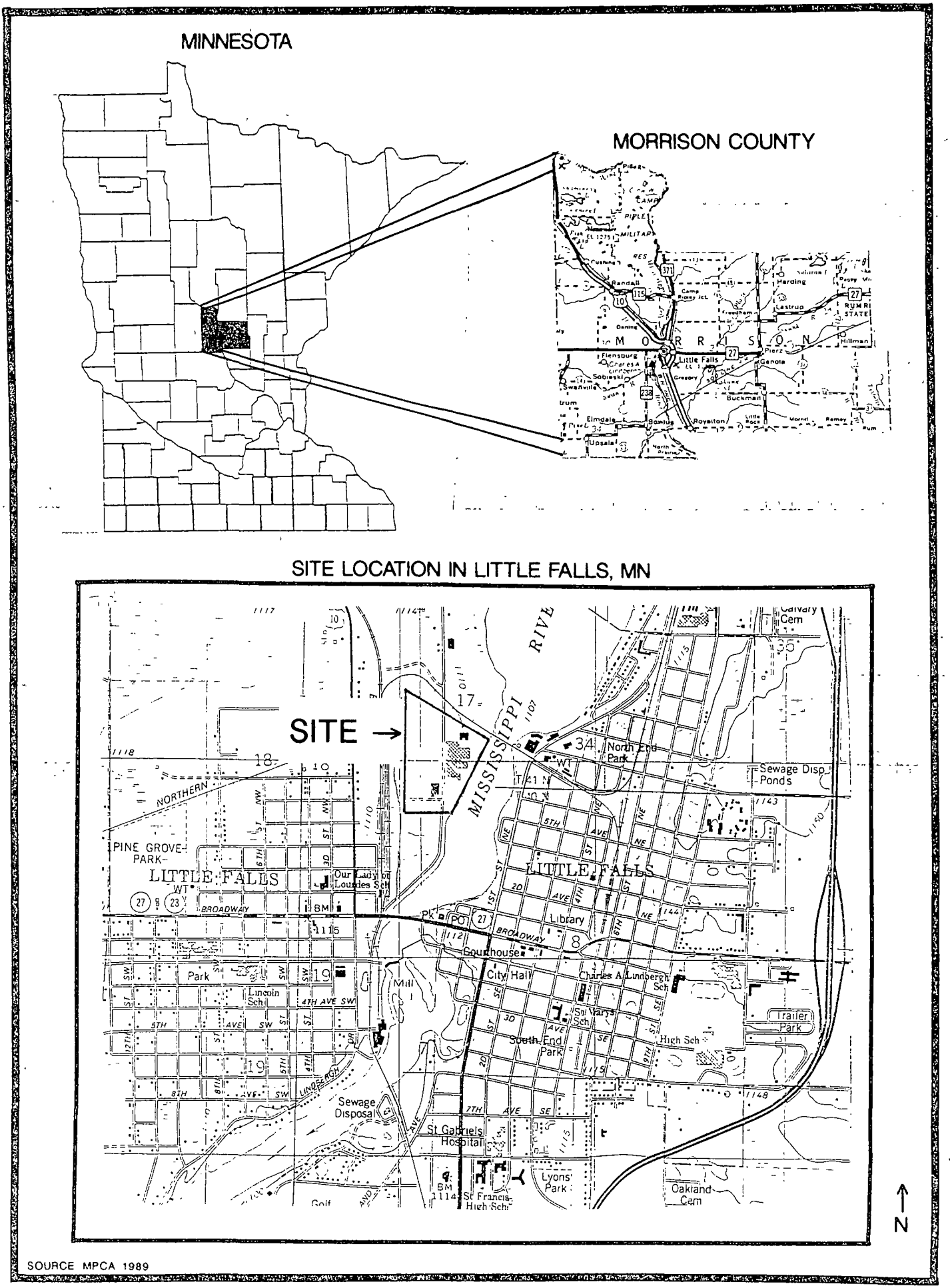
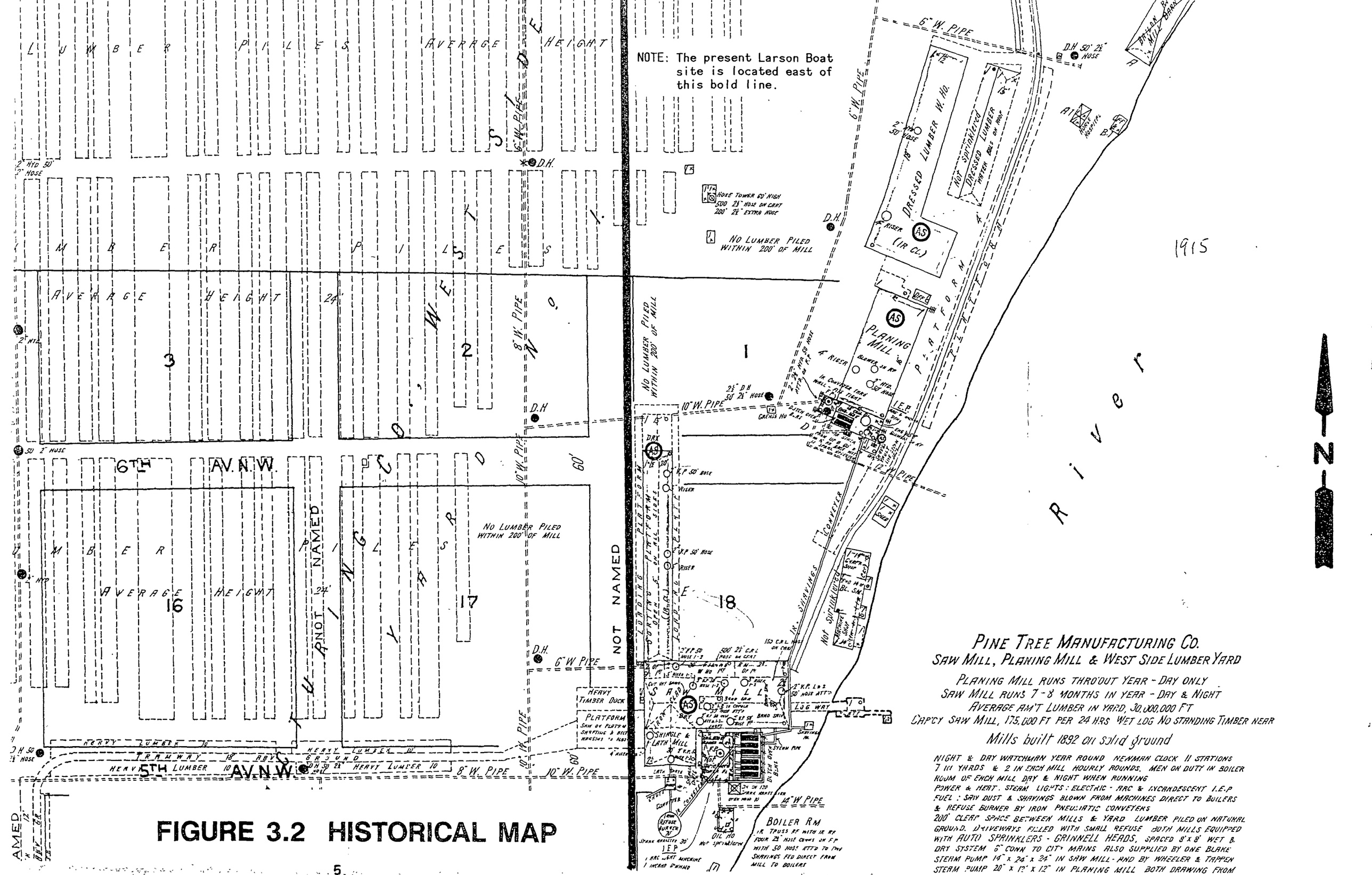
A




SOURCE MPCA 1989

FIGURE 3.1: SITE LOCATION




# FIGURE 3.2 HISTORICAL MAP

# 9.0 MIGRATION PATHWAYS

## 9.1 Ground Water

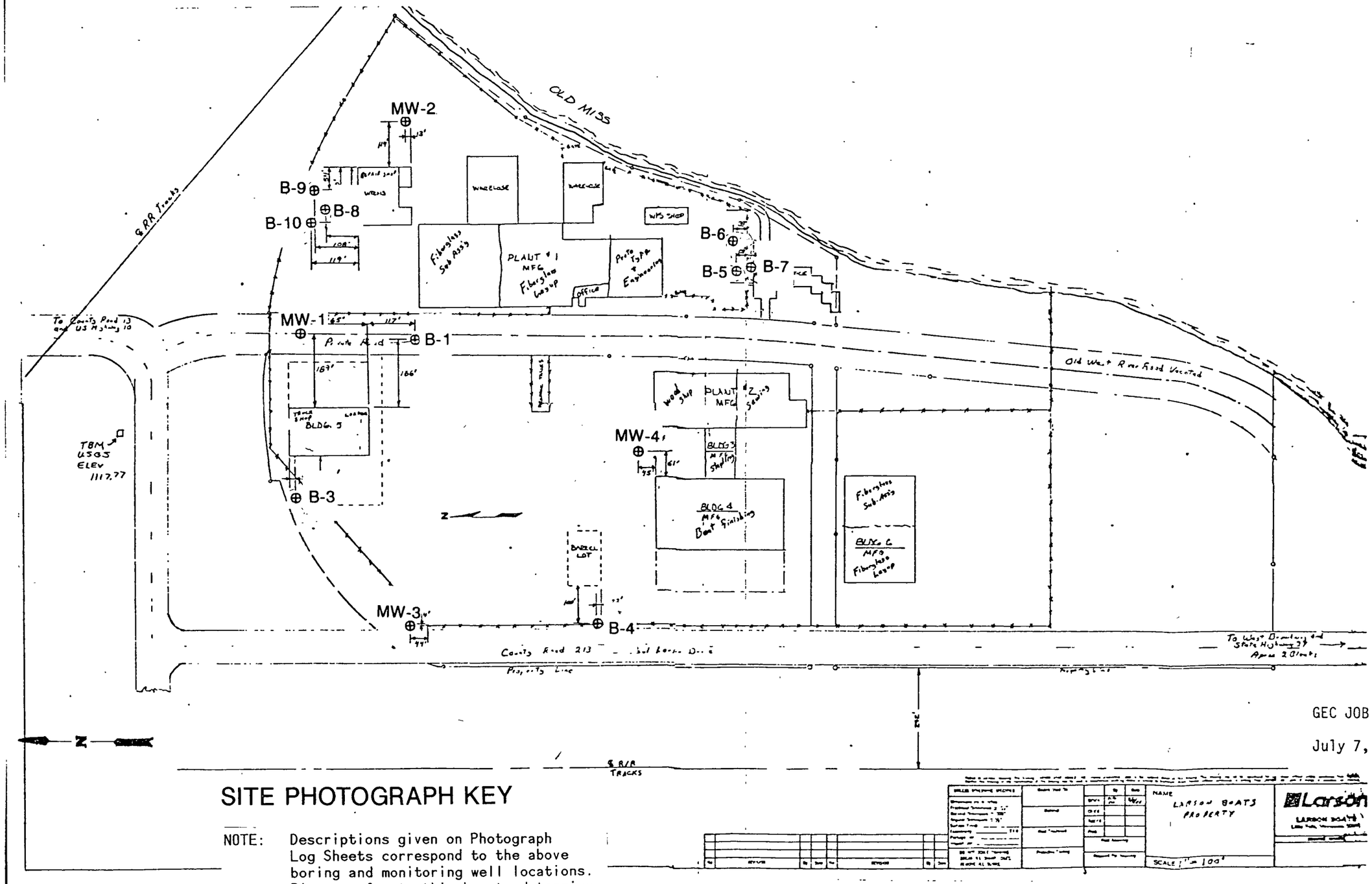
Through sampling of the soil and ground water at the Site, an observed release to the ground water migration pathway has been documented. Organic compounds detected are attributable to the site. The Mississippi River creates a ground water divide through the City of Little Falls. Therefore, the municipal wells located on the east side of the Mississippi River are hydrologically separated from potential contaminant migration from the Site. All residents within the City of Little Falls receive their drinking water from the municipal well system. However, there are 26 residential wells outside the city limits drawing from the aquifer of concern within a 3-mile radius of the Site (Appendix G and MGS, 1989). It is highly unlikely these wells have the potential to be impacted given their upgradient location relative to the Site and the prevailing ground water flow toward the Mississippi River.

## 9.2 Surface Water

The Site is bordered on its eastern margin by the Mississippi River. Although there are no surface water bodies on the Site or flowing through the Site, ground water discharge to the Mississippi River may impact surface water.

## 9.3 Air Migration

OVA readings taken during drilling activities in June, 1989 indicate volatile compounds may be released during physical disturbance of the soil. However,




GEC JOB NO: 89-273

July 7, 1989

# SITE PHOTOGRAPH KEY

NOTE: Descriptions given on Photograph Log Sheets correspond to the above boring and monitoring well locations. Please refer to this key to determine photograph's location in relation to site boundries or buildings, etc.

NAME LARSON BOATS PROPERTY

SCALE 1" = 100'

Larson

Site: Larson Boat Company

EPA #MND062822960

Date: 6/20/89

Time: 1500

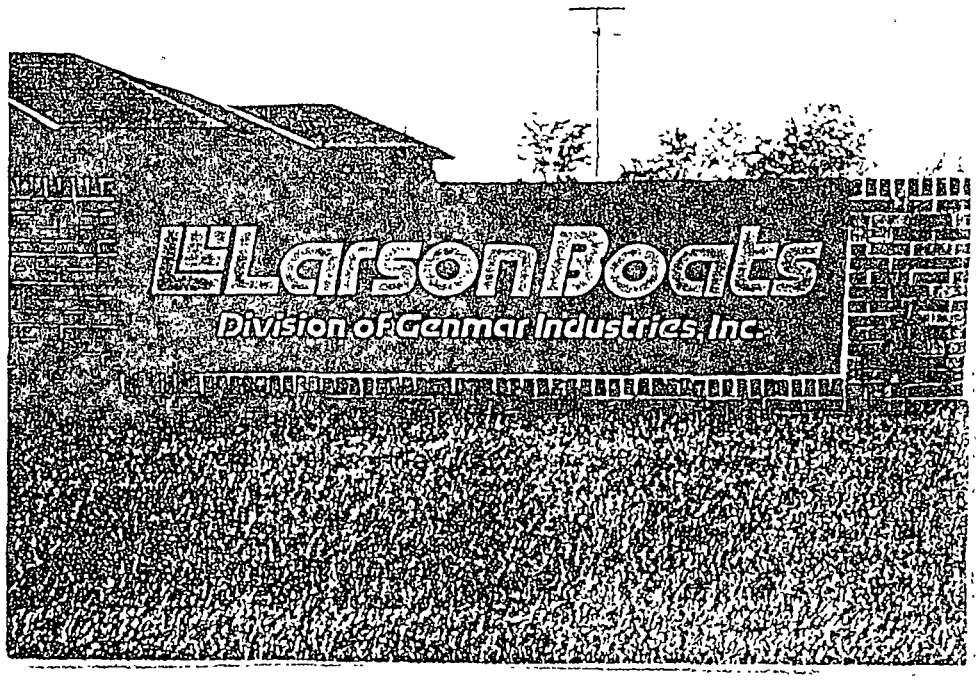
Direction: South

Weather: Clear 80° F.

Photographed by: M. Lapp

Sample ID #N/A

Description:




---

Site: Larson Boat Company

EPA #MND062822960

Date: 6/20/89

Time: 1615

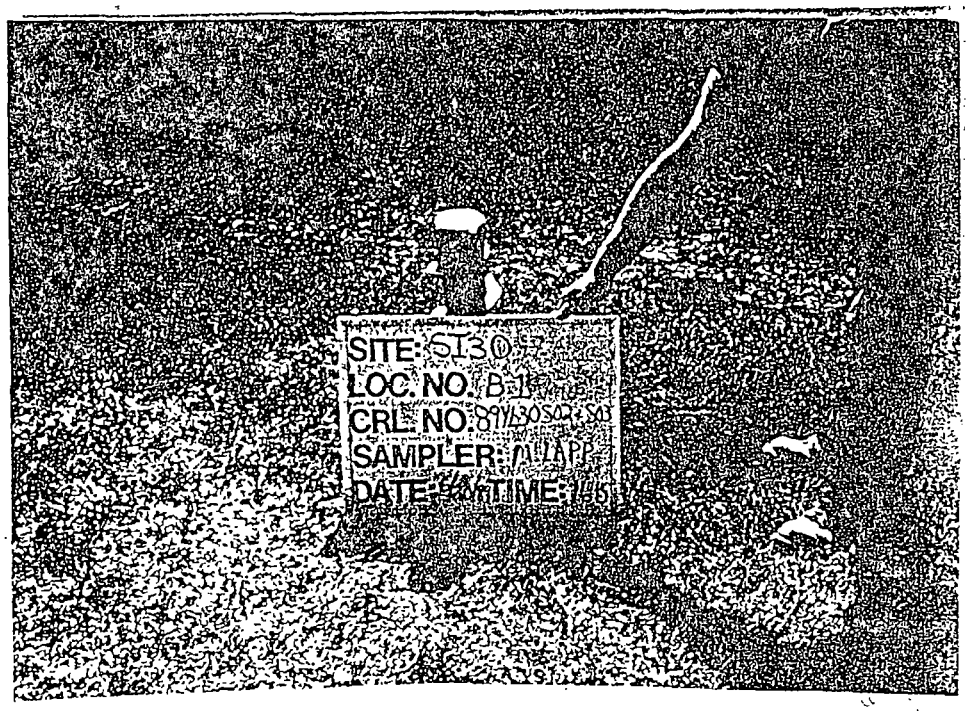
Direction: West

Weather: Clear 80° F.

Photographed by: M. Lapp

Sample ID #89YL30 S02, S03

Description: Boring Number 1



Site: Larson Boat Company

EPA #MND062822960

Date: 6/20/89

Time: 1615

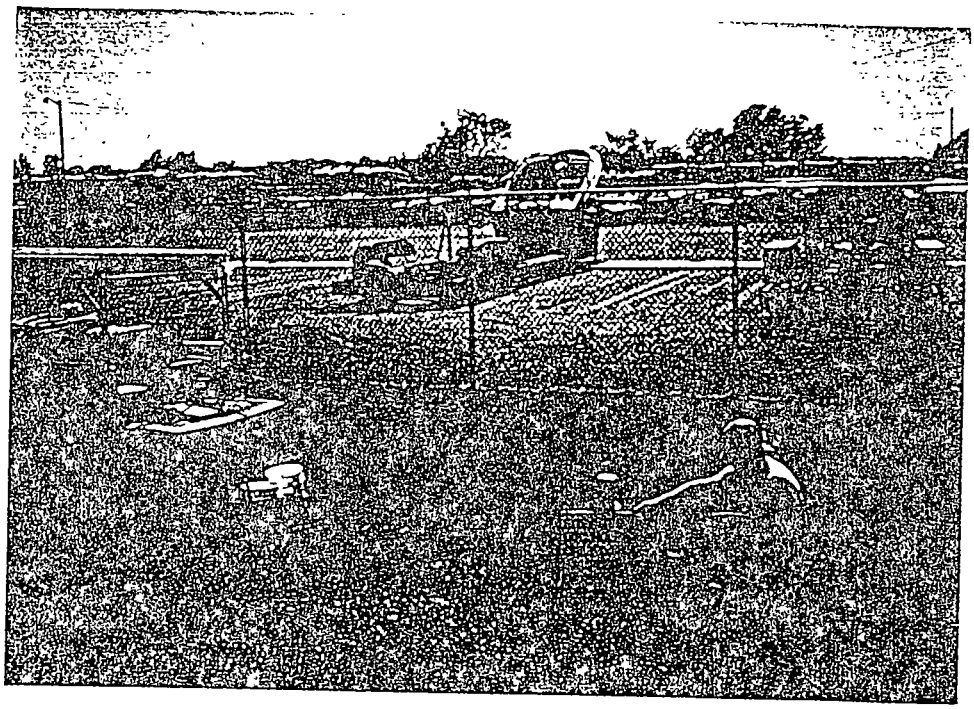
Direction: West

Weather: Clear 80° F.

Photographed by: M. Lapp

Sample ID #89YL30 S02, S03

Description: Boring Number 1



---

Site: Larson Boat Company

EPA #MND062822960

Date: 6/20/89

Time: 1030

Direction: South

Weather: Clear 80° F.

Photographed by: M. Lapp

Sample ID #89YL30 S01

Description: Boring Number 3

Site: Larson Boat Company

EPA #MND062822960

Date: 6/20/89

Time: 1030

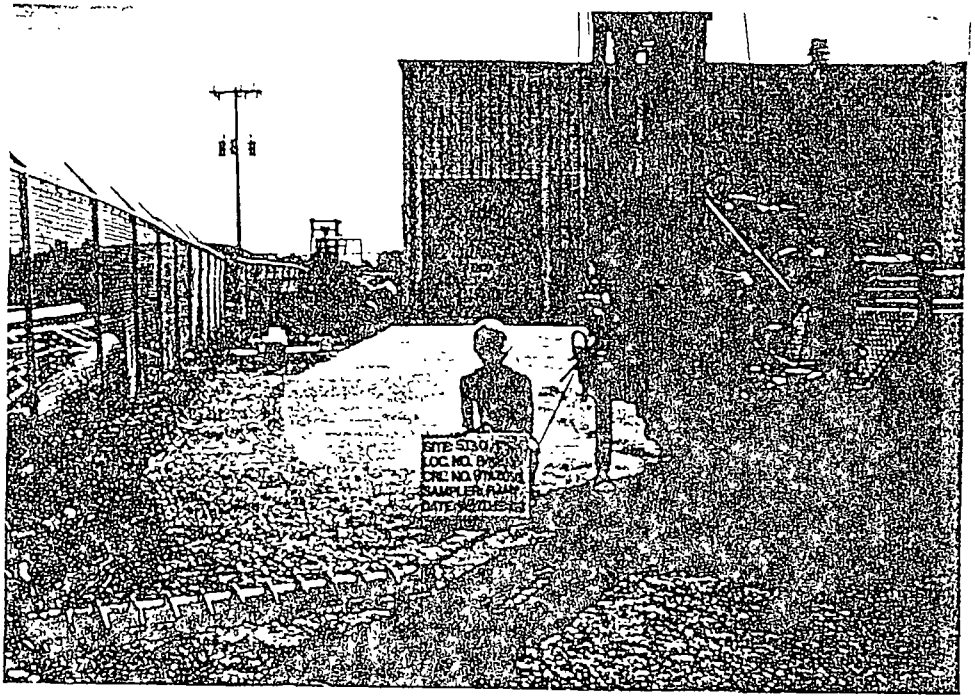
Direction: South

Weather: Clear 80° F.

Photographed by: M. Lapp

Sample ID #89YL30 S01

Description: Boring Number 3



---

Site: Larson Boat Company

EPA #MND062822960

Date: 6/22/89

Time: 1115

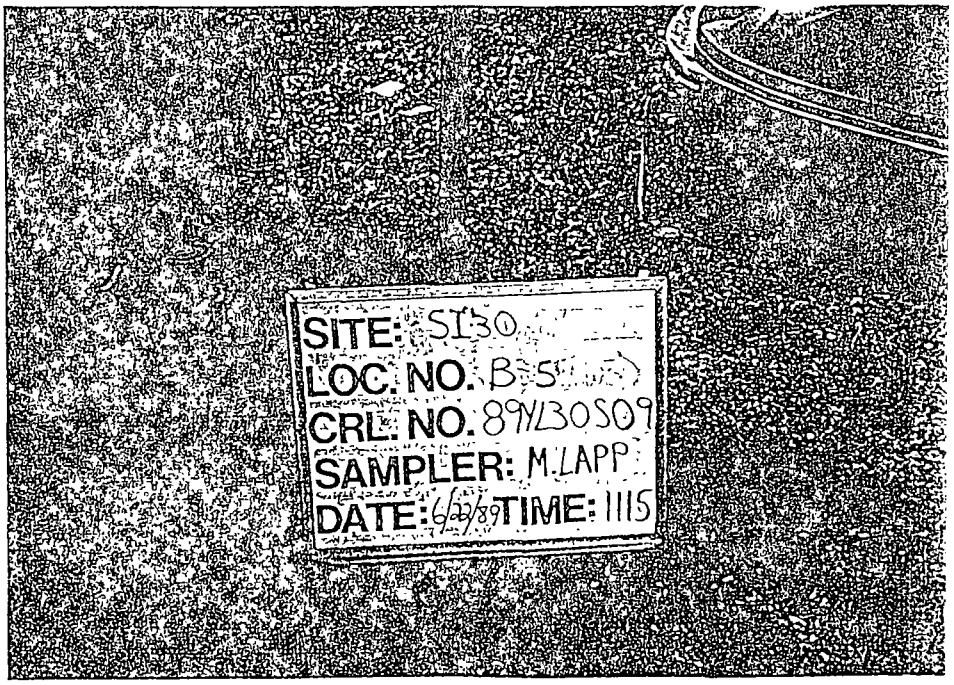
Direction: South

Weather: Clear 85° F.

Photographed by: M. Lapp

Sample ID #89YL30 S09

Description: Boring Number 5



Site: Larson Boat Company

EPA #MND062822960

Date: 6/22/89

Time: 1030

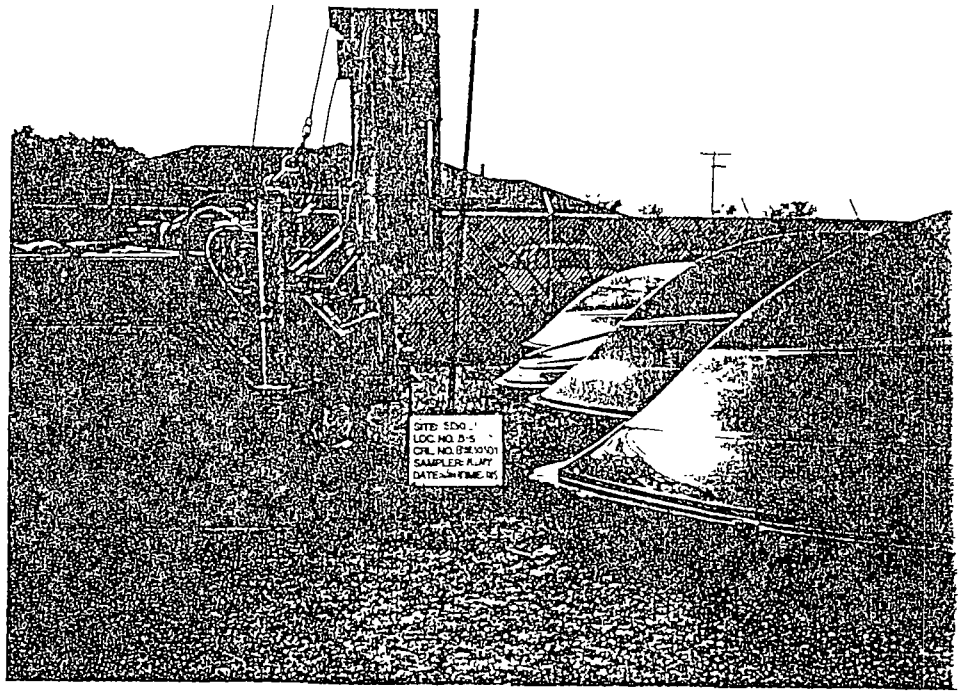
Direction: South

Weather: Clear 85° F.

Photographed by: M. Lapp

Sample ID #89YL30 S09

Description: Boring Number 5



---

Site: Larson Boat Company

EPA #MND062822960

Date: 6/21/89

Time: 1645

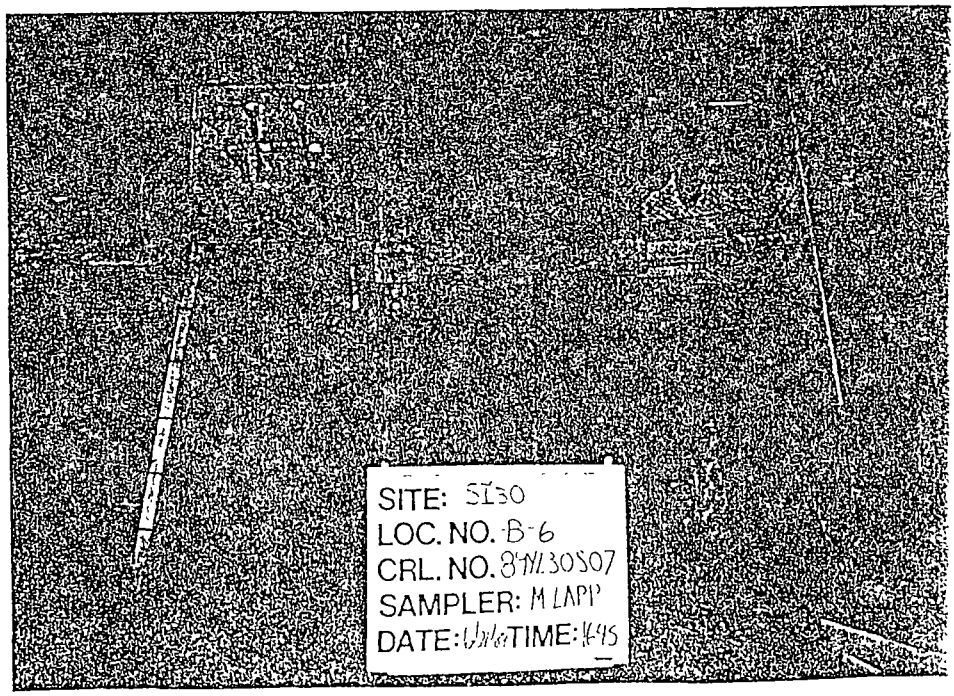
Direction: South

Weather: Overcast 75° F.

Photographed by: M. Lapp

Sample ID #89YL30 S07

Description: Boring Number 6



Site: Larson Boat Company

EPA #MND062822960

Date: 6/21/89

Time: 1645

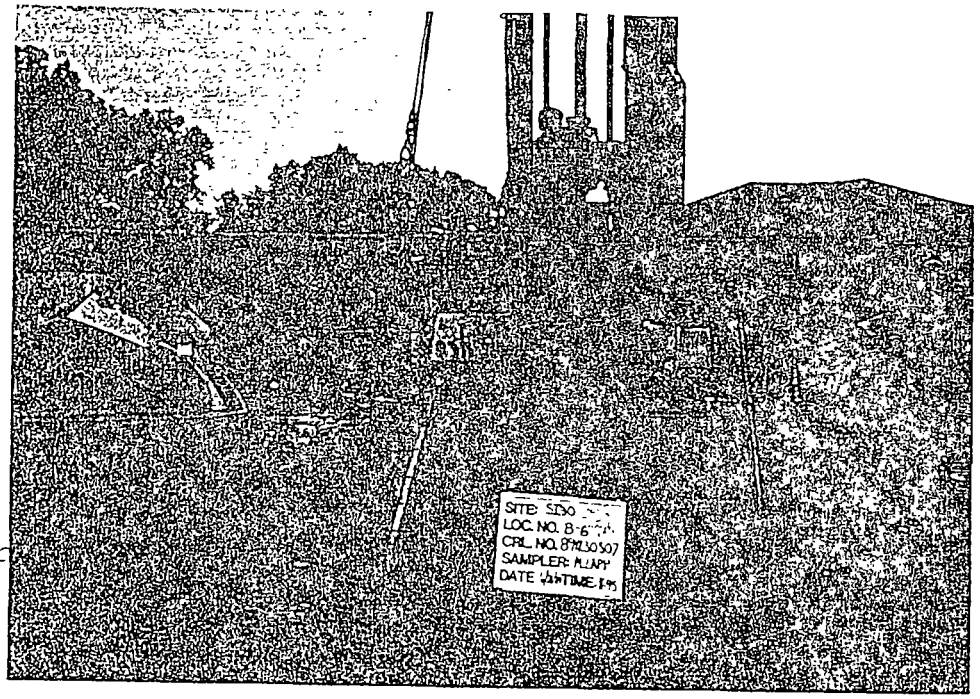
Direction: South

Weather: Overcast 75° F.

Photographed by: M. Lapp

Sample ID #89YL30 S07

Description: Boring Number 6




---

Site: Larson Boat Company

EPA #MND062822960

Date: 6/22/89

Time: 0805

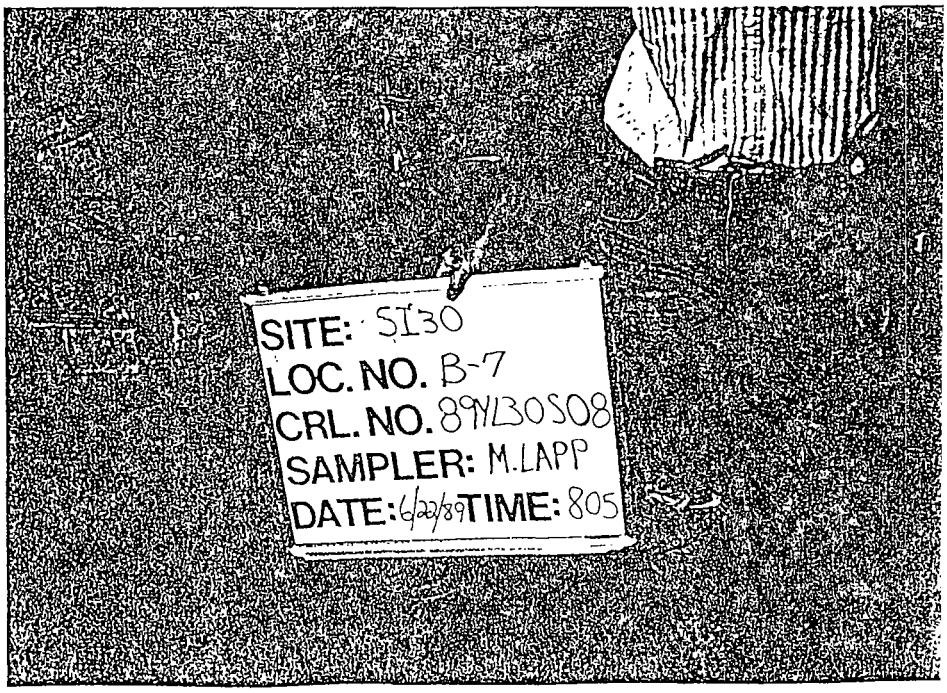
Direction: South

Weather: Clear 85° F.

Photographed by: M. Lapp

Sample ID #89YL30 S08

Description: Boring Number 7



Site: Larson Boat Company

EPA #MND062822960

Date: 6/22/89

Time: 0805

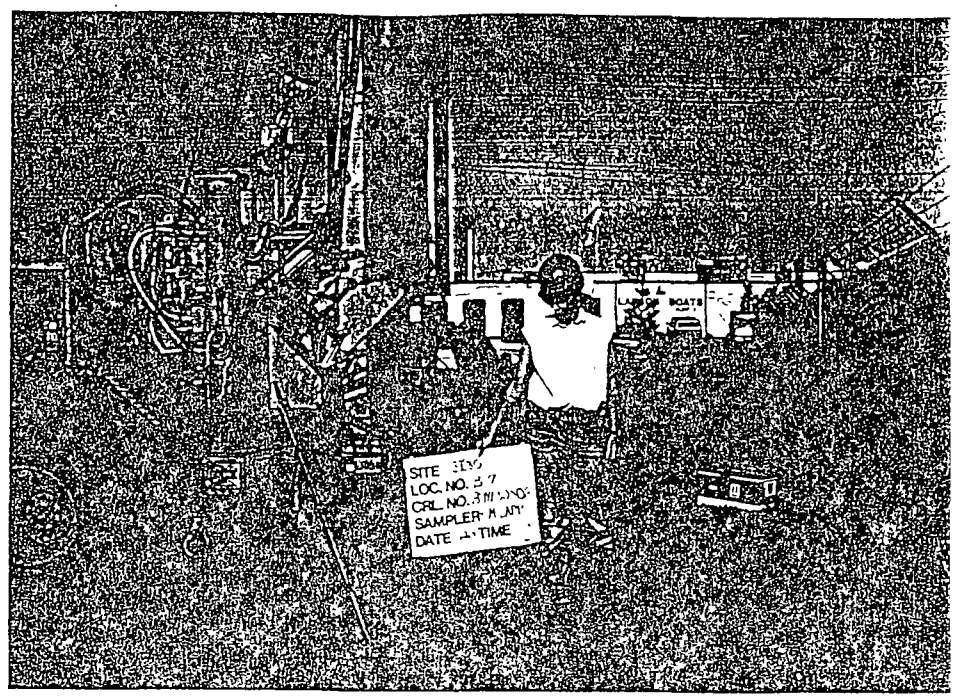
Direction: South

Weather: Clear 85° F.

Photographed by: M. Lapp

Sample ID #89YL30 S08

Description: Boring Number 7




---

Site: Larson Boat Company

EPA #MND062822960

Date: 6/21/89

Time: 0850

Direction: North

Weather: Light Rain 65° F.

Photographed by: M. Lapp

Sample ID #89YL30 S04

Description: Boring Number 8

Site: Larson Boat Company

EPA #MND062822960

Date: 6/21/89

Time: 1330

Direction: West

Weather: Overcast 75° F.

Photographed by: M. Lapp

Sample ID #89YL30 S05

Description: Boring Number 9

---

Site: Larson Boat Company

EPA #MND062822960

Date: 6/21/89

Time: 1330

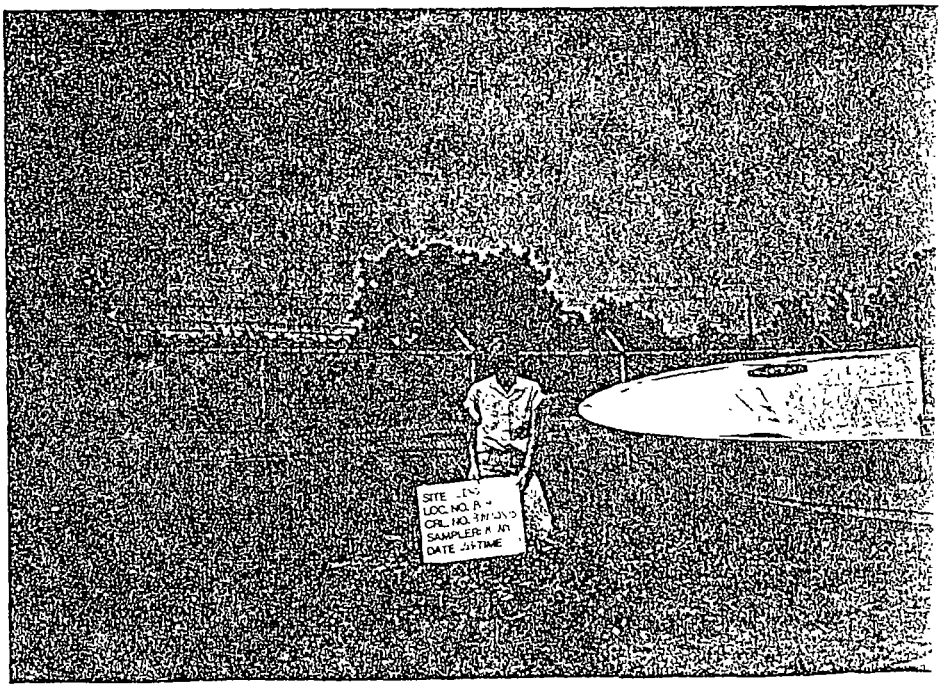
Direction: West

Weather: Overcast 75° F.

Photographed by: M. Lapp

Sample ID #89YL30 S05

Description: Boring Number 9



Site: Larson Boat Company

EPA #MND062822960

Date: 6/21/89

Time: 1430

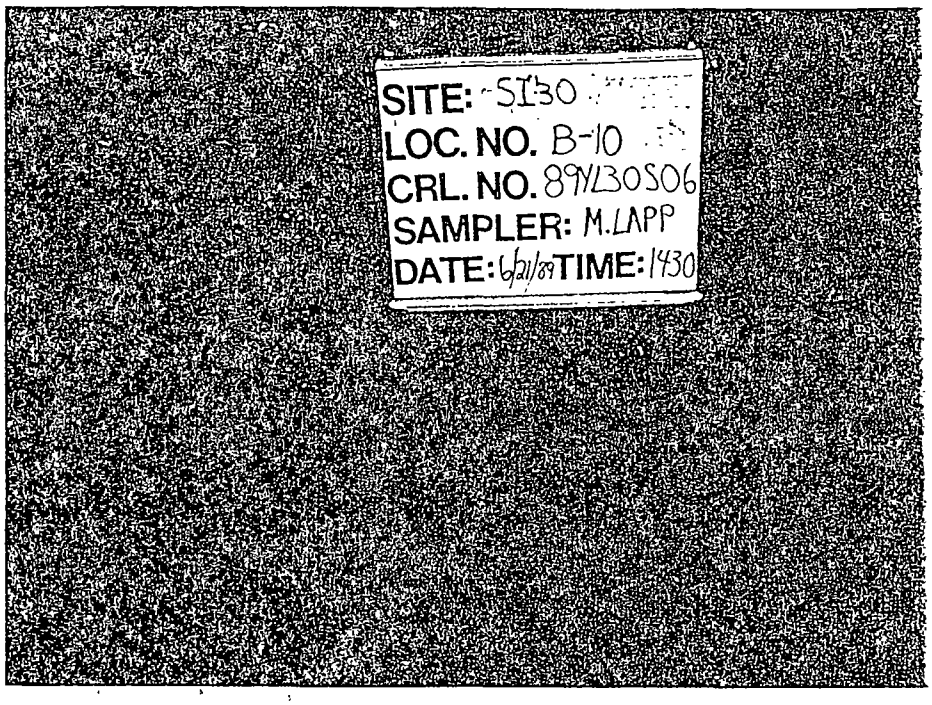
Direction: Northeast

Weather: Overcast 75° F.

Photographed by: M. Lapp

Sample ID #89YL30 S06

Description: Boring Number 10

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Site: Larson Boat Company

EPA #MND062822960

Date: 6/21/89

Time: 1430

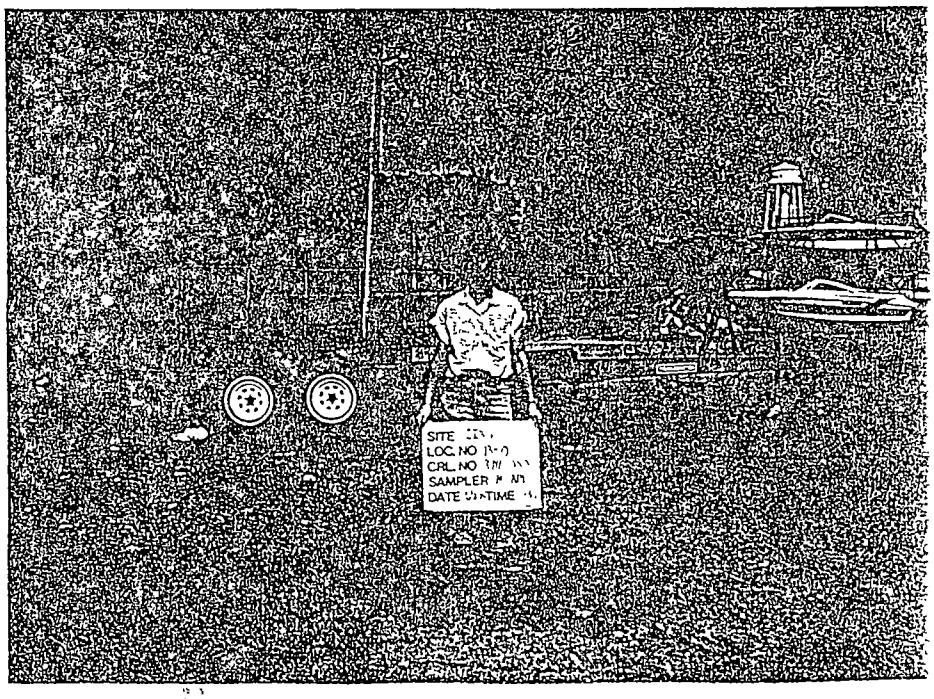
Direction: South

Weather: Overcast 75° F.

Photographed by: M. Lapp

Sample ID #89YL30 S06

Description: Boring Number 10



Site: Larson Boat Company

EPA #MND062822960

Date: 7/18/89

Time: 0950

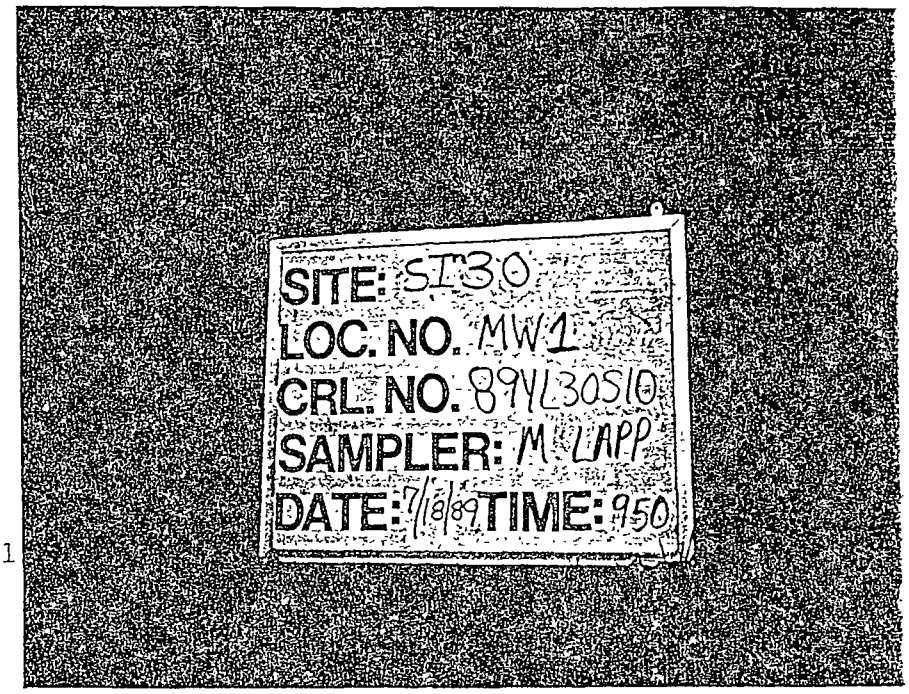
Direction: West

Weather: Clear 80° F.

Photographed by: M. Lapp

Sample ID #89YL30 S10

Description: Monitoring Well #1

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Site: Larson Boat Company

EPA #MND062822960

Date: 7/18/89

Time: 0950

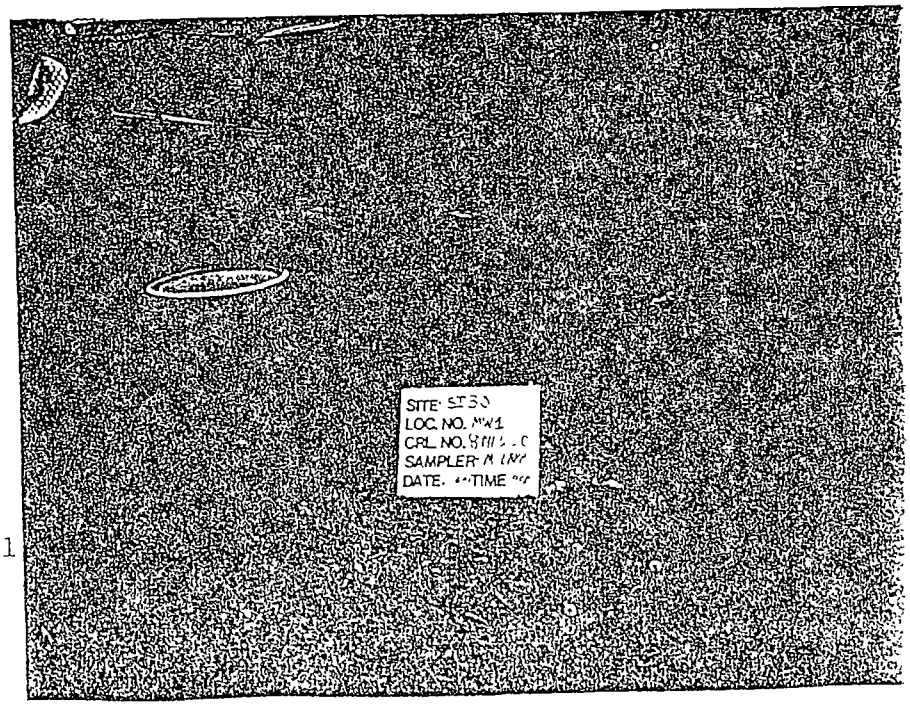
Direction: West

Weather: Clear 80° F.

Photographed by: M. Lapp

Sample ID #89YL30 S10

Description: Monitoring Well #1



Site: Larson Boat Company

EPA #MND062822960

Date: 7/18/89

Time: 1215

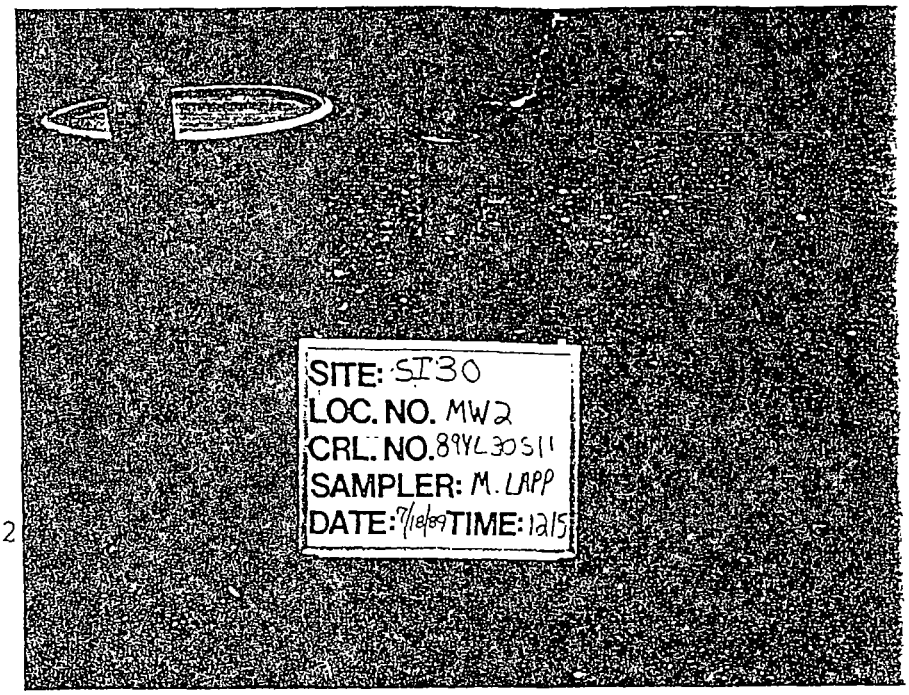
Direction: South

Weather: Clear 85° F.

Photographed by: M. Lapp

Sample ID #89YL30 S11

Description: Monitoring Well #2

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Site: Larson Boat Company

EPA #MND062822960

Date: 7/18/89

Time: 1215

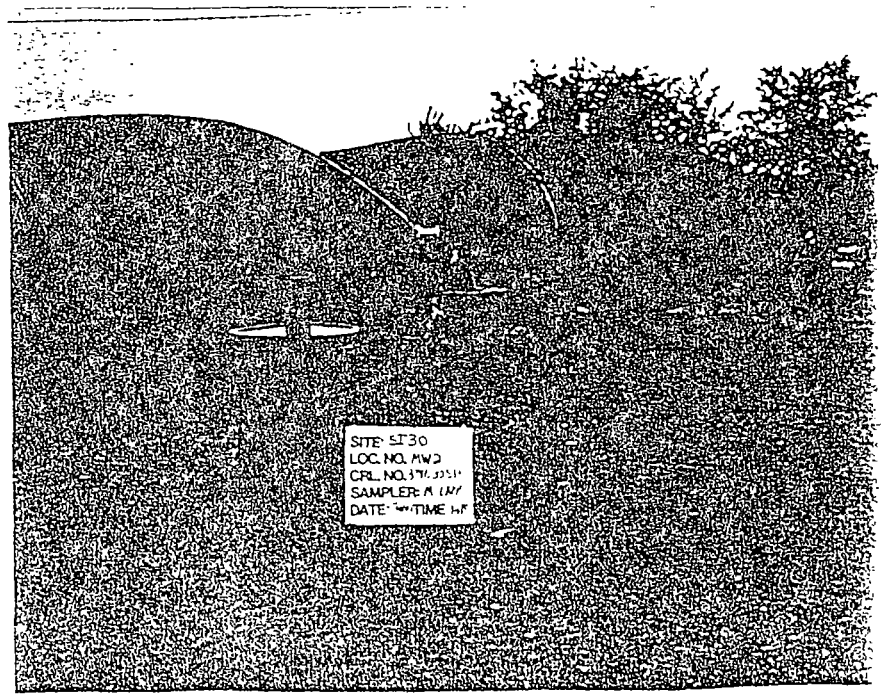
Direction: South

Weather: Clear 85° F.

Photographed by: M. Lapp

Sample ID #89YL30 S11

Description: Monitoring Well #2



Site: Larson Boat Company

EPA #MND062822960

Date: 7/18/89

Time: 1440

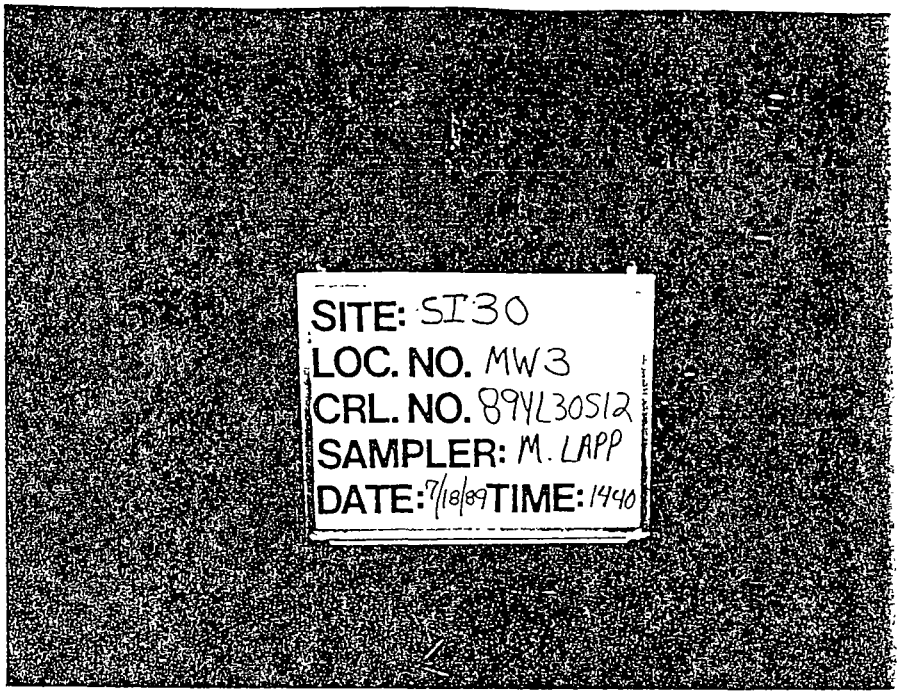
Direction: East

Weather: Clear 85° F.

Photographed by: M. Lapp

Sample ID #89YL30 S12

Description: Monitoring Well #3

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Site: Larson Boat Company

EPA #MND062822960

Date: 7/18/89

Time: 1440

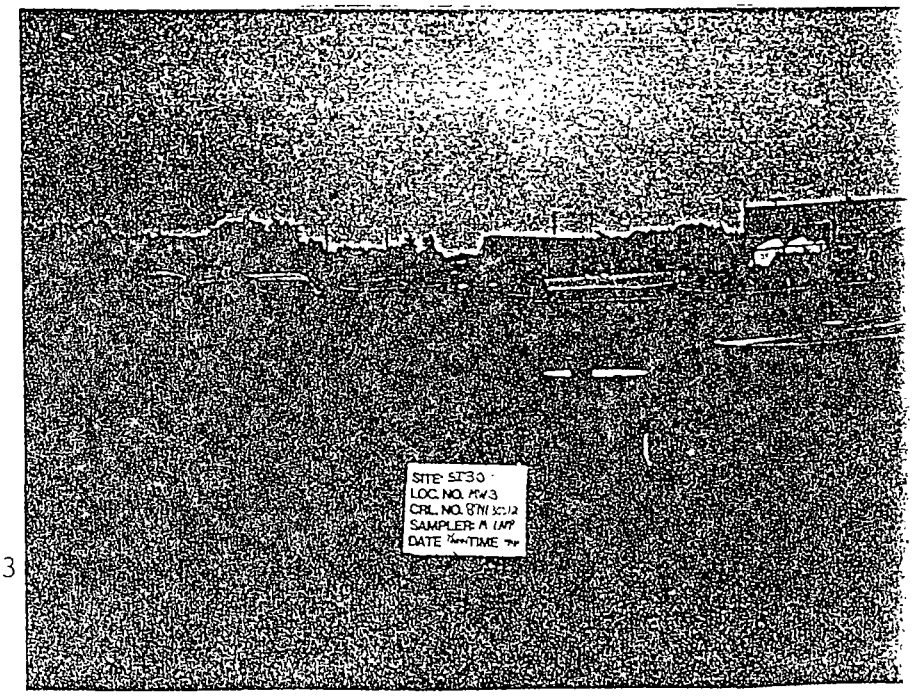
Direction: East

Weather: Clear 85° F.

Photographed by: M. Lapp

Sample ID #89YL30 S12

Description: Monitoring Well #3



Site: Larson Boat Company

EPA #MND062822960

Date: 7/18/89

Time: 1600

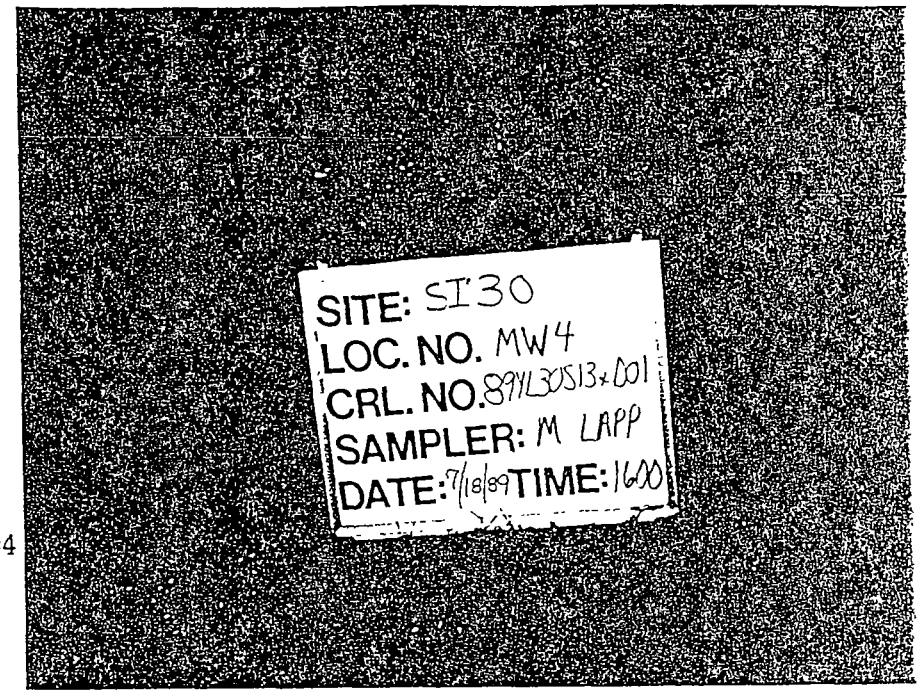
Direction: North

Weather: Clear 85° F.

Photographed by: M. Lapp

Sample ID #89YL30 S13 & D01

Description: Monitoring Well #4

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Site: Larson Boat Company

EPA #MND062822960

Date: 7/18/89

Time: 1600

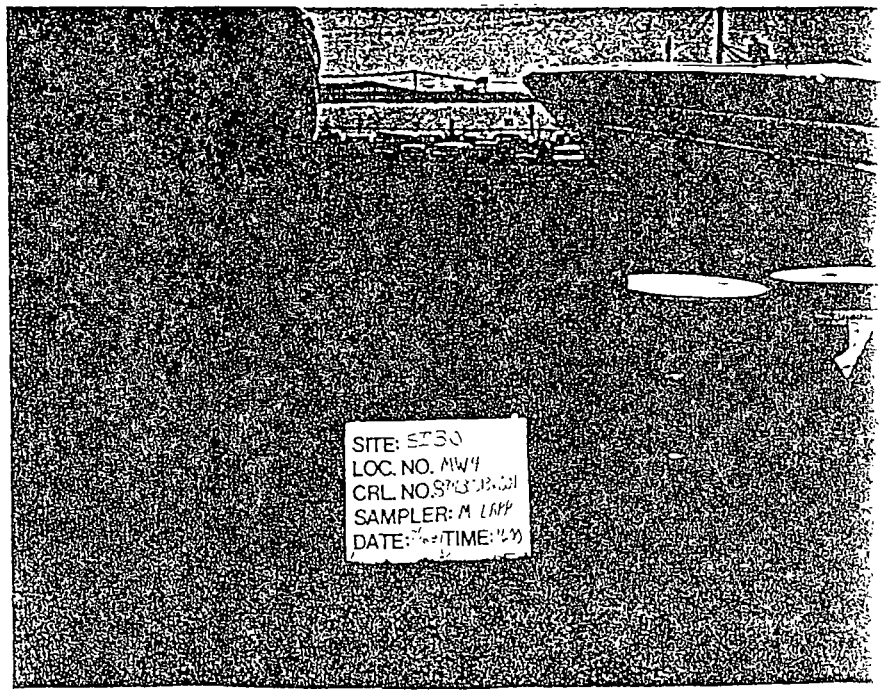
Direction: North

Weather: Clear 85° F.

Photographed by: M. Lapp

Sample ID #89YL30 S13 & D01

Description: Monitoring Well #4



Site: Larson Boat Company

EPA #MND062822960

Date: 6/20/89

Time: N/A

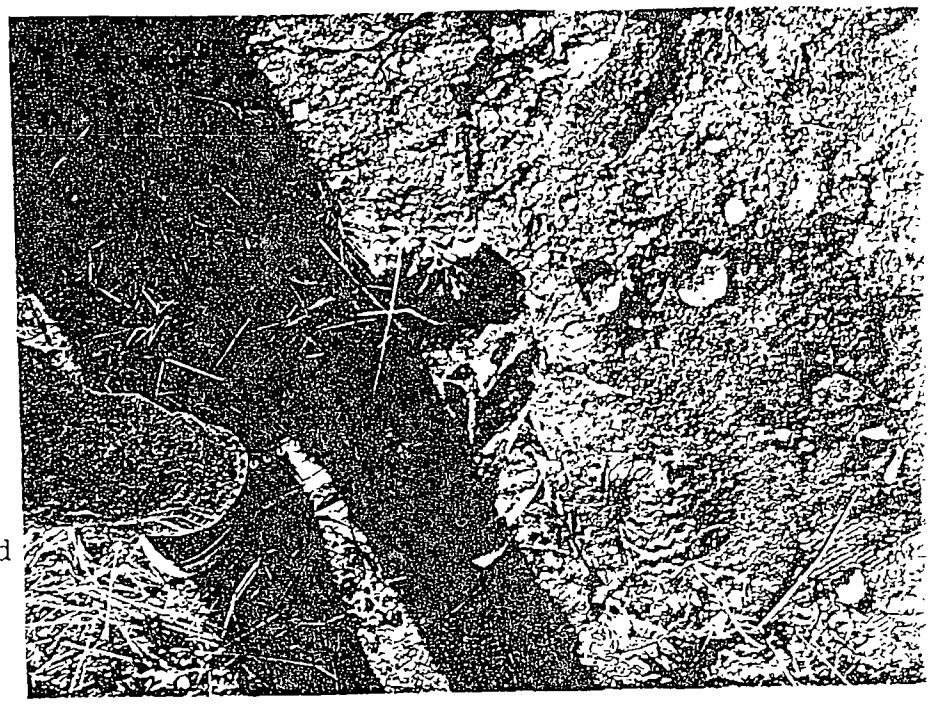
Direction: N/A

Weather: N/A

Photographed by: M. Lapp

Sample ID # N/A

Description: Plastic Jug found in Boring #4.



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Site: Larson Boat Company

EPA #MND062822960

Date: 7/19/89

Time: N/A

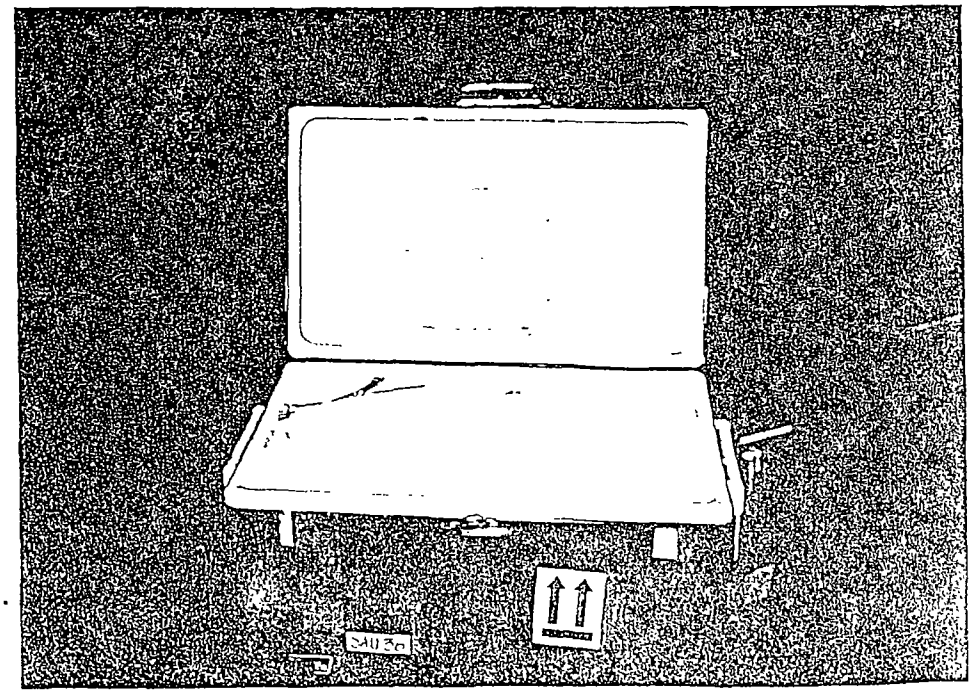
Direction: N/A

Weather: N/A

Photographed by: M. Lapp

Sample ID # N/A

Description: Example of Chain-of-Custody procedures.



Site: Larson Boat Company

EPA #MND062822960

Date: 7/19/89

Time: N/A

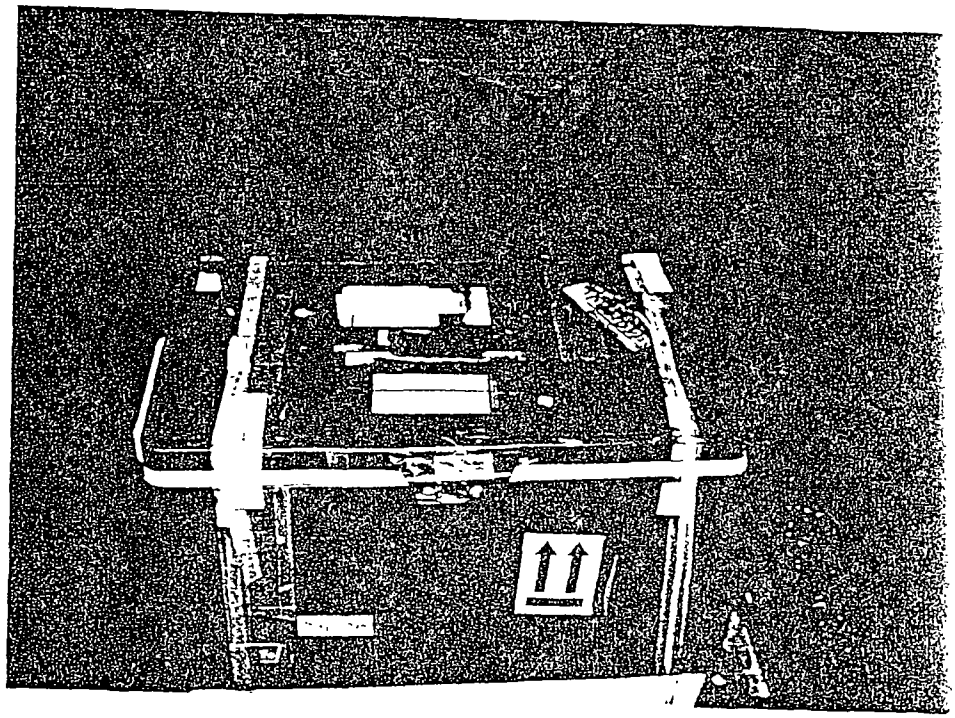
Direction: N/A

Weather: N/A

Photographed by: M. Lapp

Sample ID # N/A

Description: Example of Chain-of-Custody procedures.



# SDMS US EPA Region V

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Oversized Map

☐ Document is available at the EPA Region 5 Records Center.

**Specify Type of Document(s) / Comments:**

B

Larson Boats
Division of Genmar Industries, Inc.

SITE: SI30
LOC. NO. B-1
CRL. NO. 89YL30S02+S03
SAMPLER: M. LAPP
DATE: 6/20/89 TIME: 1615

SITE
LOC. NO.
CRL NO.
SAMPLER
DATE

SITE: SI30
LOC. NO. B-3
CRL. NO. 89YL30S01
SAMPLER: M. LAPP
DATE: 6/20/89 TIME: 1030

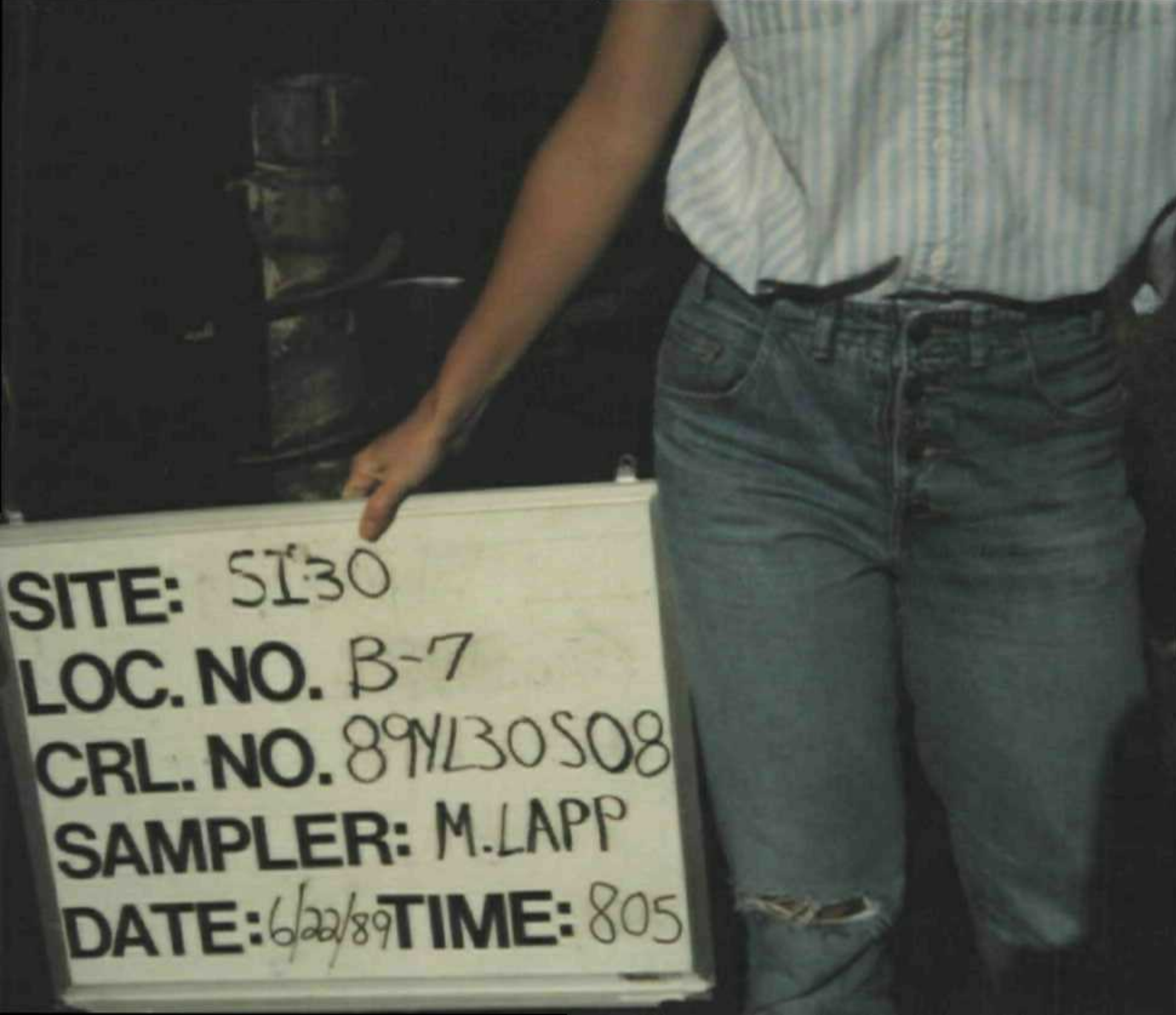
SITE:
LOC. NO.
CRL. NO.
SAMPLER:
DATE:
TIME:

SITE: SI-30
LOC. NO. B-5
CRL. NO. 89YL30S09
SAMPLER: M.LAPP
DATE: 6/22/89 TIME: 1115

SITE:
LOC. NO.
CRL. NO.
SAMPLER:
DATE:
TIME:

SITE: SI30
LOC. NO. B-6
CRL. NO. 89N130S07
SAMPLER: M. LAPP
DATE: 6/21/89 TIME: 1645

SITE: SD30
LOC. NO. B-6
CRL. NO. 8N230507
SAMPLER: M. APP
DATE:
TIME:


SITE: SI30
LOC. NO. B-7
CRL. NO. 89YL30S08
SAMPLER: M.LAPP
DATE: 6/22/89 TIME: 805

SITE: SI30
LOC. NO. B-7
CRL. NO.
SAMPLER: M.LAPP
DATE:
TIME:

SITE:
LOC. NO.
CRL. NO.
SAMPLER:
DATE:
TIME:

SITE: SI30
LOC. NO. B-9
CRL. NO. 89YL30S05
SAMPLER: M.LAPP
DATE: 6/21/89 TIME: 1330

SITE:
LOC. NO.
CRL. NO.
SAMPLER:
DATE:
TIME:

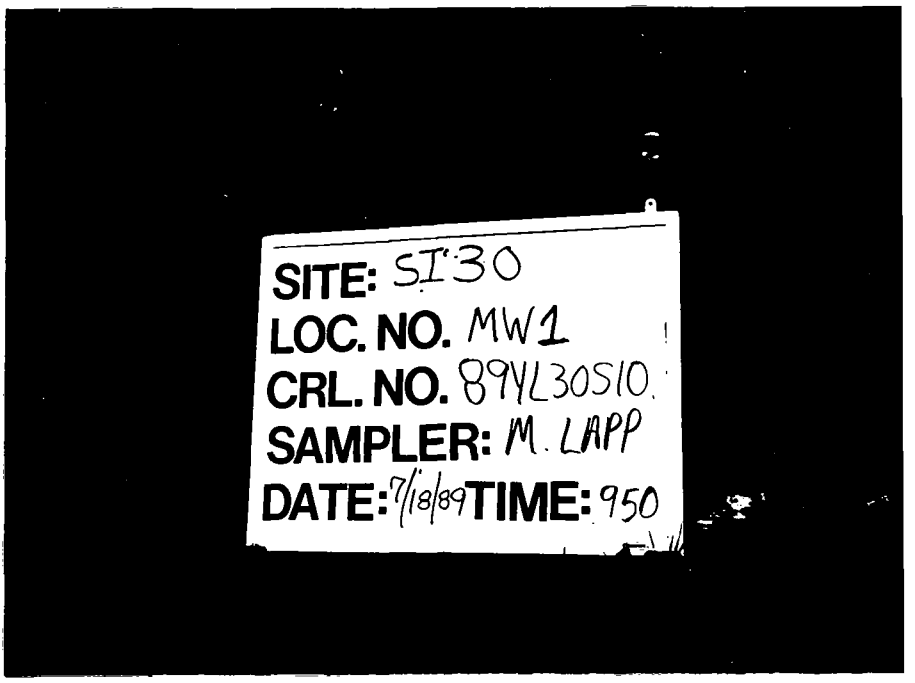
SITE: SI30

LOC. NO. B-10

CRL. NO. 89YL30S06

SAMPLER: M. LAPP

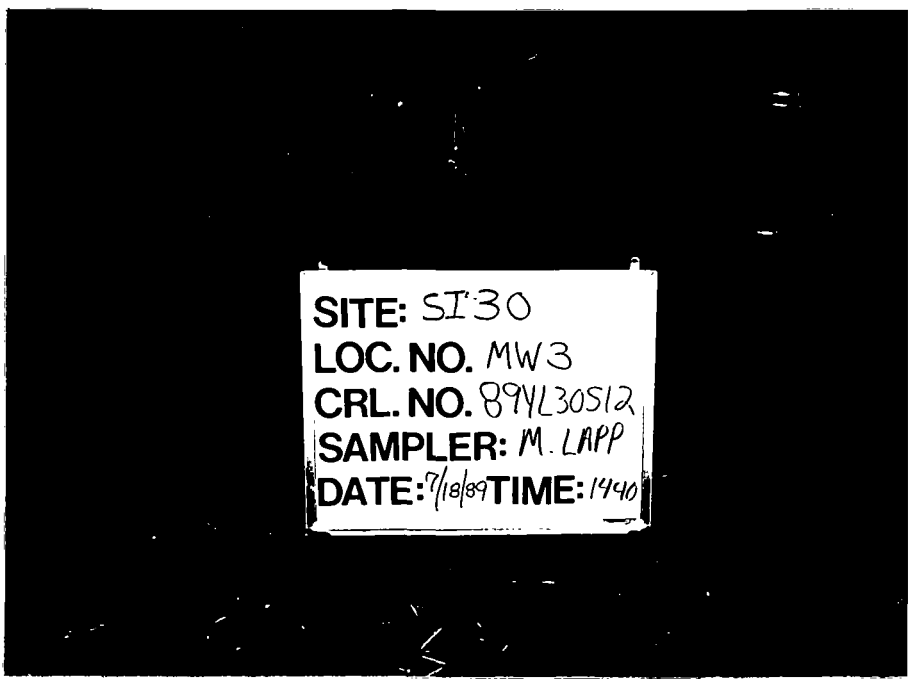
DATE: 6/21/89 TIME: 1430


SITE: SI30
LOC. NO. MW1
CRL. NO. 89YL30S10
SAMPLER: M. LAPP
DATE: 7/18/89 TIME: 950

SITE: ST30
LOC. NO. MW1
CRL. NO.
SAMPLER: M. LAPP
DATE:
TIME:

SITE: SI30
LOC. NO. MW2
CRL. NO. 89YL30511
SAMPLER: M LAPP
DATE: 7/18/89 TIME: 1215

SITE: ST30
LOC. NO. MW2
CRL. NO.
SAMPLER: M. LAPP
DATE:
TIME:


SITE: SI30
LOC. NO. MW3
CRL. NO. 89YL30512
SAMPLER: M. LAPP
DATE: 7/18/89 TIME: 1440

SITE: ST30
LOC. NO. MW3
CRL. NO.
SAMPLER: M. LAPP
DATE:
TIME:

SITE: SI30
LOC. NO. MW4
CRL. NO. 89YL30S13x.D01
SAMPLER: M. LAPP
DATE: 7/18/89 TIME: 1600

SITE: SI30
LOC. NO. MW4
CRL. NO. 89YL30513+001
SAMPLER: M LAPP
DATE:
TIME: 1600

SMU 36

SAU 36

Site: Larson Boat Company

EPA #MND062822960

Date: 6/20/89

Time: 1500

Direction: South

Weather: Clear 80° F.

Photographed by: M. Lapp

Sample ID #N/A

Description:

1

---

Site: Larson Boat Company

EPA #MND062822960

Date: 6/20/89

Time: 1615

Direction: West

Weather: Clear 80° F.

Photographed by: M. Lapp

Sample ID #89YL30 S02, S03

Description: Boring Number 1

2

Site: Larson Boat Company

EPA #MND062822960

Date: 6/20/89

Time: 1615

Direction: West

Weather: Clear 80° F.

Photographed by: M. Lapp

Sample ID #89YL30 S02, S03

Description: Boring Number 1

3

---

Site: Larson Boat Company

EPA #MND062822960

Date: 6/20/89

Time: 1030

Direction: South

Weather: Clear 80° F.

Photographed by: M. Lapp

Sample ID #89YL30 S01

Description: Boring Number 3

4

Site: Larson Boat Company

EPA #MND062822960

Date: 6/20/89

Time: 1030

5

Direction: South

Weather: Clear 80° F.

Photographed by: M. Lapp

Sample ID #89YL30 S01

Description: Boring Number 3

---

Site: Larson Boat Company

EPA #MND062822960

Date: 6/22/89

Time: 1115

6

Direction: South

Weather: Clear 85° F.

Photographed by: M. Lapp

Sample ID #89YL30 S09

Description: Boring Number 9

Site: Larson Boat Company

EPA #MND062822960

Date: 6/22/89

Time: 1030

Direction: South

7

Weather: Clear 85° F.

Photographed by: M. Lapp

Sample ID #89YL30 S09

Description: Boring Number 5

---

Site: Larson Boat Company

EPA #MND062822960

Date: 6/21/89

Time: 1645

8

Direction: South

Weather: Overcast 75° F.

Photographed by: M. Lapp

Sample ID #89YL30 S07

Description: Boring Number 6

Site: Larson Boat Company

EPA #MND062822960

Date: 6/21/89

Time: 1645

Direction: South

Weather: Overcast 75° F.

Photographed by: M. Lapp

Sample ID #89YL30 S07

Description: Boring Number 6

9

---

Site: Larson Boat Company

EPA #MND062822960

Date: 6/22/89

Time: 0805

Direction: South

Weather: Clear 85° F.

Photographed by: M. Lapp

Sample ID #89YL30 S08

Description: Boring Number 7

10

Site: Larson Boat Company

EPA #MND062822960

Date: 6/22/89

Time: 0805

11

Direction: South

Weather: Clear 85° F.

Photographed by: M. Lapp

Sample ID #89YL30 S08

Description: Boring Number 7

---

Site: Larson Boat Company

EPA #MND062822960

Date: 6/21/89

Time: 0850

12

Direction: North

Weather: Light Rain 65° F.

Photographed by: M. Lapp

Sample ID #89YL30 S04

Description: Boring Number 8

Site: Larson Boat Company

EPA #MND062822960

Date: 6/21/89

Time: 1330

Direction: West

Weather: Overcast 75° F.

Photographed by: M. Lapp

Sample ID #89YL30 S05

Description: Boring Number 9

13

---

Site: Larson Boat Company

EPA #MND062822960

Date: 6/21/89

Time: 1330

Direction: West

Weather: Overcast 75° F.

Photographed by: M. Lapp

Sample ID #89YL30 S05

Description: Boring Number 9

14

Site: Larson Boat Company

EPA #MND062822960

Date: 6/21/89

Time: 1430

Direction: Northeast

15

Weather: Overcast 75° F.

Photographed by: M. Lapp

Sample ID #89YL30 S06

Description: Boring Number 10

---

Site: Larson Boat Company

EPA #MND062822960

Date: 6/21/89

Time: 1430

16

Direction: South

Weather: Overcast 75° F.

Photographed by: M. Lapp

Sample ID #89YL30 S06

Description: Boring Number 10

Site: Larson Boat Company

EPA #MND062822960

Date: 7/18/89

Time: 0950

Direction: West

17

Weather: Clear 80° F.

Photographed by: M. Lapp

Sample ID #89YL30 S10

Description: Monitoring Well #1

---

Site: Larson Boat Company

EPA #MND062822960

Date: 7/18/89

Time: 0950

Direction: West

18

Weather: Clear 80° F.

Photographed by: M. Lapp

Sample ID #89YL30 S10

Description: Monitoring Well #1

Site: Larson Boat Company

EPA #MND062822960

Date: 7/18/89

Time: 1215

Direction: South

Weather: Clear 85° F.

Photographed by: M. Lapp

Sample ID #89YL30 S11

Description: Monitoring Well #2

19

---

Site: Larson Boat Company

EPA #MND062822960

Date: 7/18/89

Time: 1215

Direction: South

Weather: Clear 85° F.

Photographed by: M. Lapp

Sample ID #89YL30 S11

Description: Monitoring Well #2

20

Site: Larson Boat Company

EPA #MND062822960

Date: 7/18/89

Time: 1440

Direction: East

21

Weather: Clear 85° F.

Photographed by: M. Lapp

Sample ID #89YL30 S12

Description: Monitoring Well #3

---

Site: Larson Boat Company

EPA #MND062822960

Date: 7/18/89

Time: 1440

Direction: East

22

Weather: Clear 85° F.

Photographed by: M. Lapp

Sample ID #89YL30 S12

Description: Monitoring Well #3

Site: Larson Boat Company

EPA #MND062822960

Date: 7/18/89

Time: 1600

Direction: North

23

Weather: Clear 85° F.

Photographed by: M. Lapp

Sample ID #89YL30 S13 & D01

Description: Monitoring Well #4

---

Site: Larson Boat Company

EPA #MND062822960

Date: 7/18/89

Time: 1600

Direction: North

24

Weather: Clear 85° F.

Photographed by: M. Lapp

Sample ID #89YL30 S13 & D01

Description: Monitoring Well #4

Site: Larson Boat Company

EPA #MND062822960

Date: 6/20/89

Time: N/A

Direction: N/A

25

Weather: N/A

Photographed by: M. Lapp

Sample ID # N/A

Description: Plastic Jug found in Boring #4.

---

Site: Larson Boat Company

EPA #MND062822960

Date: 7/19/89

Time: N/A

Direction: N/A

26

Weather: N/A

Photographed by: M. Lapp

Sample ID # N/A

Description: Example of Chain-of-Custody procedures.

Site: Larson Boat Company

EPA #MND062822960

Date: 7/19/89

Time: N/A

Direction: N/A

27

Weather: N/A

Photographed by: M. Lapp

Sample ID # N/A

Description: Example of
Chain-of-Custody procedures.

C

EPA

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

**I. IDENTIFICATION**

| 01 STATE | 02 SITE NUMBER |
|---|---|
| MND | 062822960 |

**II. SITE NAME AND LOCATION**

| 01 SITE NAME (Legal, common, or descriptive name of site) | 02 STREET, ROUTE NO. OR SPECIFIC LOCATION IDENTIFIER |
|---|---|
| Larson Boat Company | 702 W. River Road |

| 03 CITY | 04 STATE | 05 ZIP CODE | 06 COUNTY | 07 COUNTY CODE | 06 CONG DIST |
|---|---|---|---|---|---|
| Little Falls | MN | 56345 | Morrison | 097 | 07 |

| 09 COORDINATES LATITUDE | LONGITUDE | 10 TYPE OF OWNERSHIP (Check one) |
|---|---|---|
| 45° 59' 04.6" | 094° 21' 25.0" | ☒ A PRIVATE ☐ B FEDERAL ☐ C STATE ☐ D COUNTY ☐ E MUNICIPAL ☐ F OTHER ☐ G UNKNOWN |

**III. INSPECTION INFORMATION**

| 01 DATE OF INSPECTION | 02 SITE STATUS | 03 YEARS OF OPERATION |
|---|---|---|
| 6 / 19 / 89 (MONTH DAY YEAR) | ☒ ACTIVE ☐ INACTIVE | 1959 (BEGINNING YEAR) / Active (ENDING YEAR) ___ UNKNOWN |

04 AGENCY PERFORMING INSPECTION (Check all that apply)

☐ A EPA ☐ B EPA CONTRACTOR ___ (Name of firm) ☐ C MUNICIPAL ☐ D MUNICIPAL CONTRACTOR ___ (Name of firm)
☒ E STATE ☐ F STATE CONTRACTOR ___ (Name of firm) ☐ G OTHER ___ (Specify)

| 05 CHIEF INSPECTOR | 06 TITLE | 07 ORGANIZATION | 08 TELEPHONE NO |
|---|---|---|---|
| Meri Lapp | Project Manager | MPCA | (612) 296 7735 |

| 09 OTHER INSPECTORS | 10 TITLE | 11 ORGANIZATION | 12 TELEPHONE NO |
|---|---|---|---|
| Susan Price | Hydrologist | MPCA | (612) 297 1784 |
| | | | ( ) |
| | | | ( ) |
| | | | ( ) |
| | | | ( ) |

| 13 SITE REPRESENTATIVES INTERVIEWED | 14 TITLE | 15 ADDRESS | 16 TELEPHONE NO |
|---|---|---|---|
| Al Kuebelbeck | President | Larson Boats, 702 West River Rd Little Falls, MN | (612) 632-5481 |
| Pete Larsen | Supervisor of maintenance | Same as above | (612) 632-5481 |
| | | | ( ) |
| | | | ( ) |
| | | | ( ) |
| | | | ( ) |
| | | | |

| 17 ACCESS GAINED BY (Check one) | 18 TIME OF INSPECTION | 19 WEATHER CONDITIONS |
|---|---|---|
| ☒ PERMISSION ☐ WARRANT | 0800 | 90 - 95°F, winds gusting to 40 mph. |

**IV. INFORMATION AVAILABLE FROM**

| 01 CONTACT | 02 OF (Agency/Organization) | 03 TELEPHONE NO |
|---|---|---|
| Meri Lapp / Susan Price | Minnesota Pollution Control Agency | (612) 296 6300 |

| 04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM | 05 AGENCY | 06 ORGANIZATION | 07 TELEPHONE NO | 08 DATE |
|---|---|---|---|---|
| Meri Lapp / Susan Price | MPCA | GWSW | (612) 296 6300 | 1 / 17 / 90 (MONTH DAY YEAR) |

EPA FORM 2070 13 (7-81)

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

**I. IDENTIFICATION**

| 01 STATE | 02 SITE NUMBER |
|---|---|
| MN | D062822960 |

**II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS**

01 PHYSICAL STATES (Check all that apply)

- ☐ A SOLID
- ☐ B POWDER FINES
- ☐ C SLUDGE
- ☐ D OTHER _____ (Specify)
- ☐ E SLURRY
- ☒ F LIQUID
- ☐ G GAS

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

TONS Unknown
CUBIC YARDS _____
NO OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- ☒ A TOXIC
- ☐ B CORROSIVE
- ☐ C RADIOACTIVE
- ☐ D PERSISTENT
- ☐ E SOLUBLE
- ☐ F INFECTIOUS
- ☐ G FLAMMABLE
- ☐ H IGNITABLE
- ☐ I HIGHLY VOLATILE
- ☐ J EXPLOSIVE
- ☐ K REACTIVE
- ☐ L INCOMPATIBLE
- ☐ M NOT APPLICABLE

**III. WASTE TYPE**

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

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

| 01 CATEGORY | 02 SUBSTANCE NAME | 03 CAS NUMBER | 04 STORAGE/DISPOSAL METHOD | 05 CONCENTRATION | 06 MEASURE OF CONCENTRATION |
|---|---|---|---|---|---|
| | See tables 8.1-8.4 of SSI Report | | | | |

**V. FEEDSTOCKS** (See Appendix for CAS Numbers)

| CATEGORY | 01 FEEDSTOCK NAME | 02 CAS NUMBER | CATEGORY | 01 FEEDSTOCK NAME | 02 CAS NUMBER |
|---|---|---|---|---|---|
| FDS | | | FDS | | |
| FDS | | | FDS | | |
| FDS | | | FDS | | |
| FDS | | | FDS | | |

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

MPCA Files

EPA FORM 2070-13 (7-81)

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**POTENTIAL HAZARDOUS WASTE SITE**
**SITE INSPECTION REPORT**
**PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS**

| I. IDENTIFICATION | |
|---|---|
| 01 STATE | 02 SITE NUMBER |
| MN | D062822960 |

**II. HAZARDOUS CONDITIONS AND INCIDENTS**

01 ☒ A GROUNDWATER CONTAMINATION — 02 ☒ OBSERVED (DATE 7/18/89) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED 102 within 4-mile radius — 04 NARRATIVE DESCRIPTION

Residents in Little Falls are not impacted by the Site as muni. wells are on eastern side of Miss. River. Only residents beyond Little Falls corporate limits we counted. Note: Residents are upgradient.

01 ☒ B SURFACE WATER CONTAMINATION — 02 ☐ OBSERVED (DATE ____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED ____ — 04 NARRATIVE DESCRIPTION

Contaminated ground water could discharge to the Mississippi River which is adjacent to the site.

01 ☒ C CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE ____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED ____ — 04 NARRATIVE DESCRIPTION

Past disposal of hazardous waste on site poses little threat for air contamination as contaminants are subsurface. However fugative emissions from the fiberglass boat manufacturing process may impact air quality.

01 ☐ D FIRE/EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE ____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED ____ — 04 NARRATIVE DESCRIPTION

None observed

01 ☐ E DIRECT CONTACT — 02 ☐ OBSERVED (DATE ____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED ____ — 04 NARRATIVE DESCRIPTION

Slight potential as contaminants are subsurface and site is fenced.

01 ☒ F CONTAMINATION OF SOIL — 02 ☒ OBSERVED (DATE 6/19/89) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED ≈10 (Acres) — 04 NARRATIVE DESCRIPTION

See Section 8.0 Analytical Results for detailed description.

01 ☒ G DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE ____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED 102 — 04 NARRATIVE DESCRIPTION

Release to gw observed. Drinking water wells upgradient therefore contamination unlikely

01 ☐ H WORKER EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE ____) ☐ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED ____ — 04 NARRATIVE DESCRIPTION

None known

01 ☐ I POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE ____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED ____ — 04 NARRATIVE DESCRIPTION

None known

EPA

# POTENTIAL HAZARDOUS WASTE SITE
## SITE INSPECTION REPORT
### PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

| I. IDENTIFICATION | |
|---|---|
| 01 STATE | 02 SITE NUMBER |
| MN | D062822960 |

**II. HAZARDOUS CONDITIONS AND INCIDENTS** (Continued)

01 ☐ J DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None observed

01 ☐ K DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)

None observed

01 ☐ L CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

N/A

01 ☐ M UNSTABLE CONTAINMENT OF WASTES (Spills, Runoff, Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION

See SSI Report Section 7.1

01 ☐ N DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

N/A

01 ☐ O CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

N/A

01 ☐ P ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

N/A

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

III TOTAL POPULATION POTENTIALLY AFFECTED 102

**IV. COMMENTS**

Dumping occurred at a permitted Solid waste Facility

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

MPCA Files

EPA

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

**I. IDENTIFICATION**

| 01 STATE | 02 SITE NUMBER |
|---|---|
| MN | D062822960 |

**II. PERMIT INFORMATION**

| 01 TYPE OF PERMIT ISSUED (Check all that apply) | 02 PERMIT NUMBER | 03 DATE ISSUED | 04 EXPIRATION DATE | 05 COMMENTS |
|---|---|---|---|---|
| ☐ A NPDES | | | | |
| ☐ B UIC | | | | |
| ☒ C AIR | See Part II.02 | | | |
| ☒ D RCRA | | | | |
| ☐ E RCRA INTERIM STATUS | | | | |
| ☐ F SPCC PLAN | | | | |
| ☐ G STATE (Specify) | | | | |
| ☐ H LOCAL (Specify) | | | | |
| ☐ I OTHER (Specify) | | | | |
| ☐ J NONE | | | | |

**III. SITE DESCRIPTION**

| 01 STORAGE/DISPOSAL (Check all that apply) | 02 AMOUNT | 03 UNIT OF MEASURE |
|---|---|---|
| ☐ A SURFACE IMPOUNDMENT | | |
| ☐ B PILES | | |
| ☐ C DRUMS, ABOVE GROUND | | |
| ☐ D TANK, ABOVE GROUND | | |
| ☐ E TANK, BELOW GROUND | | |
| ☐ F LANDFILL | | |
| ☐ G LANDFARM | | |
| ☐ H OPEN DUMP | | |
| ☒ I OTHER Permitted Disposal Area (Specify) | | |

04 TREATMENT (Check all that apply)

- ☐ A INCENERATION
- ☐ B UNDERGROUND INJECTION
- ☐ C CHEMICAL/PHYSICAL
- ☐ D BIOLOGICAL
- ☐ E WASTE OIL PROCESSING
- ☐ F SOLVENT RECOVERY
- ☐ G OTHER RECYCLING/RECOVERY
- ☒ H OTHER None (Specify)

05 OTHER

☒ A BUILDINGS ON SITE 6

06 AREA OF SITE

33 (Acres)

07 COMMENTS

**IV. CONTAINMENT**

01 CONTAINMENT OF WASTES (Check one)

☐ A ADEQUATE, SECURE ☐ B MODERATE ☒ C INADEQUATE, POOR ☐ D INSECURE UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS DIKING LINERS, BARRIERS ETC

Drums, allegedly containing hazardous wastes, were buried in a permitted on site disposal area in the late '60's early '70's.

**V. ACCESSIBILITY**

01 WASTE EASILY ACCESSIBLE ☐ YES ☒ NO

02 COMMENTS Subsurface Contamination

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

MPCA Files

EPA FORM 2070-13 (7-81)

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

**I. IDENTIFICATION**

| 01 STATE | 02 SITE NUMBER |
|---|---|
| MN | D062822960 |

**II. DRINKING WATER SUPPLY**

| 01 TYPE OF DRINKING SUPPLY (Check as applicable) | SURFACE | WELL | 02 STATUS ENDANGERED | AFFECTED | MONITORED | 03 DISTANCE TO SITE |
|---|---|---|---|---|---|---|
| COMMUNITY | A ☐ | B ☐ | A ☐ | B ☐ | C ☐ | A ____ (mi) |
| NON-COMMUNITY | C ☐ | D ☒ | D ☐ | E ☐ | F ☐ | B 3/4 (mi) |

**III. GROUNDWATER**

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A ONLY SOURCE FOR DRINKING ☒ B DRINKING (Other sources available) COMMERCIAL INDUSTRIAL IRRIGATION (No other water sources available) ☐ C COMMERCIAL INDUSTRIAL IRRIGATION (Limited other sources available) ☐ D NOT USED UNUSEABLE

02 POPULATION SERVED BY GROUND WATER Geok 102

03 DISTANCE TO NEAREST DRINKING WATER WELL 3/4 (mi)

| 04 DEPTH TO GROUNDWATER | 05 DIRECTION OF GROUNDWATER FLOW | 06 DEPTH TO AQUIFER OF CONCERN | 07 POTENTIAL YIELD OF AQUIFER | 08 SOLE SOURCE AQUIFER |
|---|---|---|---|---|
| 6 (ft) | east | 6 (ft) | $7.2 \times 10^4$ (gpd) | ☐ YES ☒ NO |

09 DESCRIPTION OF WELLS (Including useage depth and location relative to population and buildings)
Residential wells are used for drinking water outside Little Falls city limits. Wells are placed in the glacial overburden on the upper margin of crystalline bedrock. Municipal wells for Little Falls are on the eastside of the Mississippi River therefore, they are hydraulically separate from the site.

10 RECHARGE AREA
☐ YES ☒ NO
COMMENTS

11 DISCHARGE AREA
☒ YES ☐ NO
COMMENTS ground water discharges to Mississippi R.

**IV. SURFACE WATER**

01 SURFACE WATER USE (Check one)

☒ A RESERVOIR, RECREATION DRINKING WATER SOURCE ☐ B IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C COMMERCIAL, INDUSTRIAL ☐ D NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

| NAME | AFFECTED | DISTANCE TO SITE |
|---|---|---|
| Mississippi River | ☐ | 0 (mi) |
| | ☐ | (mi) |
| | ☐ | (mi) |

**V. DEMOGRAPHIC AND PROPERTY INFORMATION**

01 TOTAL POPULATION WITHIN

| ONE (1) MILE OF SITE | TWO (2) MILES OF SITE | THREE (3) MILES OF SITE |
|---|---|---|
| A 6,000 NO OF PERSONS | B 8,000 NO OF PERSONS | C 9,000 NO OF PERSONS |

02 DISTANCE TO NEAREST POPULATION .25 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE
Several hundred - Downtown Little Falls

04 DISTANCE TO NEAREST OFF-SITE BUILDING .25 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site e.g. rural village densely populated urban area)
The site is located on the North side of Little Falls on the west bank of the mississippi River. Residential areas, approximately .25 miles away, surround the site to the south.

EPA

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

| I. IDENTIFICATION | |
|---|---|
| 01 STATE | 02 SITE NUMBER |
| MN | D062822960 |

## VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A $10^{-6} - 10^{-8}$ cm/sec ☐ B $10^{-4} - 10^{-6}$ cm/sec ☒ C $10^{-4} - 10^{-3}$ cm/sec ☐ D GREATER THAN $10^{-3}$ cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A IMPERMEABLE (Less than $10^{-6}$ cm/sec) ☐ B RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☒ C RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D VERY PERMEABLE (Greater than $10^{-2}$ cm/sec)

| 03 DEPTH TO BEDROCK | 04 DEPTH OF CONTAMINATED SOIL ZONE | 05 SOIL pH |
|---|---|---|
| 7.0 (ft) | 7.0 (ft) | unknown |

| 06 NET PRECIPITATION | 07 ONE YEAR 24 HOUR RAINFALL | 08 SLOPE: SITE SLOPE | DIRECTION OF SITE SLOPE | TERRAIN AVERAGE SLOPE |
|---|---|---|---|---|
| -2 (in) | 2.15 (in) | 1 % | east | 1-3 % |

09 FLOOD POTENTIAL

SITE IS IN >100 YEAR FLOODPLAIN

10 ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE: A N/A (mi)

OTHER: B N/A (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

N/A (mi)

ENDANGERED SPECIES N/A

13 LAND USE IN VICINITY

DISTANCE TO

| COMMERCIAL/INDUSTRIAL | RESIDENTIAL AREAS NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES | AGRICULTURAL LANDS: PRIME AG LAND | AG LAND |
|---|---|---|---|
| SITE LOCATED IN COMM./IND. A 0 (mi) | B 1/4 (mi) | C > 5 (mi) | D 1 (mi) |

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Site is located in a flood plain therefore, it is relatively flat. The slope is to the east toward the Mississippi River. The eastern margin of the site is formed by the Mississippi River.

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

Joe Gibson, MDNR (612) 296 2773

Carroll Henderson, MDNR 296 3344

Water Resources of the Mississippi and Sauk Rivers Water Shed, USGS 1975

Ron Eliason, MDNR (612) 296-8324

EPA

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

| I. IDENTIFICATION | |
|---|---|
| 01 STATE | 02 SITE NUMBER |
| MN | D062822960 |

## SAMPLES TAKEN

| SAMPLE TYPE | 01 NUMBER OF SAMPLES TAKEN | 02 SAMPLES SENT TO | 03 ESTIMATED DATE RESULTS AVAILABLE |
|---|---|---|---|
| GROUNDWATER | 5 | Organics - PEI Associates, Cincinnati, Ohio<br>Inorganics - Ensecco/RMAL Arvada, Colorado | Received |
| SURFACE WATER | | | |
| WASTE | | | |
| AIR | | | |
| RUNOFF | | | |
| SPILL | | | |
| SOIL | 10 | Organics - PEI Associates, Cincinnati, Ohio<br>Inorganics - Chemtech Consulting Group | Received |
| VEGETATION | | | |
| OTHER | | | |

## II. FIELD MEASUREMENTS TAKEN

| 01 TYPE | 02 COMMENTS |
|---|---|
| | |
| OVA | used to monitor ambient air and soil samples |
| | |
| | |
| | |

## III. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF MPCA, Site Assessment Unit
(Name of organization or individual)

MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS MPCA, Site Assessment Unit, St. Paul, MN

## IV. OTHER FIELD DATA COLLECTED (Provide narrative description)

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

MPCA Larson Boats, SSI File

EPA

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

| I. IDENTIFICATION | |
|---|---|
| 01 STATE | 02 SITE NUMBER |
| MN | D062822960 |

## II. CURRENT OWNER(S)

| 01 NAME | 02 D+B NUMBER | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE | 05 CITY | 06 STATE | 07 ZIP CODE |
|---|---|---|---|---|---|---|
| Larson Boats, Division of Genmar Industries | | 702 West Mississippi River Drive | | Little Falls | MN | 56345 |
| | | | | | | |
| | | | | | | |

## PARENT COMPANY (If applicable)

| 08 NAME | 09 D+B NUMBER | 10 STREET ADDRESS (P.O. Box, RFD #, etc.) | 11 SIC CODE | 12 CITY | 13 STATE | 14 ZIP CODE |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |

## III. PREVIOUS OWNER(S) (List most recent first)

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

## IV. REALTY OWNER(S) (If applicable; list most recent first)

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

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

EPA FORM 2070-13 (7-81)

EPA

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

| I. IDENTIFICATION | |
|---|---|
| 01 STATE | 02 SITE NUMBER |
| MN | D062822960 |

| II. CURRENT OPERATOR (Provide if different from owner) | | | OPERATOR'S PARENT COMPANY (If applicable) | | |
|---|---|---|---|---|---|
| 01 NAME | | 02 D+B NUMBER | 10 NAME | | 11 D+B NUMBER |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 04 SIC CODE | 12 STREET ADDRESS (P.O. Box, RFD #, etc.) | | 13 SIC CODE |
| 05 CITY | 06 STATE | 07 ZIP CODE | 14 CITY | 15 STATE | 16 ZIP CODE |
| 08 YEARS OF OPERATION | 09 NAME OF OWNER | | | | |

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

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

EPA

# POTENTIAL HAZARDOUS WASTE SITE
## SITE INSPECTION REPORT
### PART 9 - GENERATOR/TRANSPORTER INFORMATION

| I. IDENTIFICATION | |
|---|---|
| 01 STATE | 02 SITE NUMBER |
| MN | D062822960 |

## II. ON-SITE GENERATOR

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

## III. OFF-SITE GENERATOR(S)

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

## IV. TRANSPORTER(S)

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

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

EPA

# POTENTIAL HAZARDOUS WASTE SITE
## SITE INSPECTION REPORT
### PART 10 - PAST RESPONSE ACTIVITIES

| I. IDENTIFICATION | |
|---|---|
| 01 STATE | 02 SITE NUMBER |
| MN | D062822960 |

**II. PAST RESPONSE ACTIVITIES**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

EPA

# POTENTIAL HAZARDOUS WASTE SITE
## SITE INSPECTION REPORT
## PART 10 - PAST RESPONSE ACTIVITIES

| I. IDENTIFICATION | |
|---|---|
| 01 STATE | 02 SITE NUMBER |
| MN | D062822960 |

**II PAST RESPONSE ACTIVITIES** *(Continued)*

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

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

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

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

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

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

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

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

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

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

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

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

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

MPCA files

EPA

# POTENTIAL HAZARDOUS WASTE SITE
## SITE INSPECTION REPORT
### PART 11 - ENFORCEMENT INFORMATION

| I. IDENTIFICATION | |
|---|---|
| 01 STATE | 02 SITE NUMBER |
| MN | D062822960 |

**II. ENFORCEMENT INFORMATION**

01 PAST REGULATORY/ENFORCEMENT ACTION ☒ YES ☐ NO

02 DESCRIPTION OF FEDERAL STATE LOCAL REGULATORY/ENFORCEMENT ACTION

The MPCA Division of Hazardous waste is currently working with Larson Boat Company to properly manage wastes and bring the company into compliance with applicable Hazardous waste regulations. The MPCA Air quality Division has asked Larson Boats to assess their potential air emissions.

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

MPCA Files

EPA FORM 2070-13 (7-81)

**GEOTECHNICAL ENGINEERING CORPORATION**

Soil Engineering
Soil Testing
Site Assessments
Monitoring Wells
Soil Borings

# REPORT OF TEST BORINGS AND MONITORING WELLS

PROJECT:

702 WEST MISSISSIPPI RIVER BLVD.
LITTLE FALLS, MINNESOTA

REPORTED TO:

MINNESOTA POLLUTTION CONTROL AGENCY
520 NORTH LAFAYETTE
ST. PAUL, MN 55101

ATTN: SUSAN PRICE

GEC JOB NO: 89-273

DATE: JULY 7, 1989

RECEIVED
JUL 10 89
Water

## INTRODUCTION

During the period of June 19-23, and 26 and 27, 1989, we drilled nine test borings (#1, 3-10) and installed four monitoring wells (#MW-1 - MW-4) at the referenced project site.

The scope of investigation (boring and well method, location, depth, etc.) was directed by the MPCA.

## TEST BORINGS

### Procedures

The borings were made at locations selected by the MPCA and are shown on the attached sketch.

The elevations of the ground surface at the borings were determined in reference to a temporary bench mark shown on the sketch. The bench mark elevation there, according to the City Engineer, is 1117.77. The surveying closure error was 0.38 feet.

The borings were made using the standard penetration - split spoon method. Refer to the attached sheets (Field Sampling and Testing Methods) for additional information.

A field log was maintained for each soil boring. Information on field logs includes: contacts between soil layers; geologic identification (driller's opinion) of materials; notes; and other information.

1925 Oakcrest Avenue • St Paul, Minnesota 55113 • Office (612) 636-7744 • Fax (612) 636-8451

Soil samples were then examined in the laboratory, and soil classification information was added to the field logs. Soil identifications and descriptions are in accordance (generally) with the ASTM Visual-Manual (D2488) system as shown on the attached sheet. (We save samples for 45 days and then discard them--unless we are requested to do otherwise.)

Typewritten logs were then prepared from field logs. Typewritten logs may not contain all information shown on field logs. (Field logs are available for inspection by our client.)

Results

Copies of the logs are enclosed. Refer to the attached logs for a description of the subsurface conditions encountered in the borings. The logs show: the depths to the contacts between the soil layers; the identification and geology of the soils; the surface elevations at the borings; water level measurements; standard penetration resistance (N column); and other information. Refer to the attached sheets (Abbreviations, Notations, and Symbols; General Terminology; Ground Water Information; Geologic Terminology) for descriptions of terminology used on the logs.

## MONITORING WELLS

Logs

Logs of the monitoring wells are attached. The monitoring well/piezometer log shows the details of "as-built" construction.

## DECONTAMINATION

The drill rig and tools were steam cleaned before being brought to the site.

Drilling tools and down-hole equipment and materials were steam-cleaned before drilling each boring and installing each well. The soil sampler was cleaned with a sequence of trisodium phosphate solution and clean water before each sample was taken.

## REMARKS

Subsurface soil and ground water conditions can vary from that encountered in the borings and monitoring wells at other locations, depths, and times. Refer to the attached sheet for more information regarding limitations of subsurface exploration.

## CLOSURE

To protect the addressee(s), the public, and ourselves, this report (and all supporting information) is provided for the addressee(s)' own use. No representations are made to parties other than the addressee(s).

Report Prepared By:

Lawrence F. Feldsien

Lawrence F. Feldsien, P.E.
MN Reg. No. 9103
Monitoring Well Eng. No. 0016

# GEOTECHNICAL ENGINEERING CORPORATION

GEC JOB NO 89-273 LOG OF BORING NO 1

PROJECT 702 WEST MISSISSIPPI RIVER BLVD.; LITTLE FALLS, MN (MPCA)

| DEPTH, IN FEET | SURFACE ELEVATION 1111.6 IDENTIFICATION | GEOLOGY | N BPF | MC | SAMPLE TYPE | REC | FIELD & LABORATORY TESTS WC | DEN | LL/PL | qc |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 - 2 - | Organic soil with sand, with roots, black, (OL/OH) | FILL | 4 | M | SS | 14 | | | | |
| 3 - 4 - | Silty sand, very fine grained, with a trace of gravel, with roots, with organics, black, (SM) | | 9 | M | SS | 1 | | | | |
| 5 - 6 - | Silty sand, very fine grained, with a trace of gravel, gray, (SM) | ALLUVIUM | 11 | M | SS | 16 | | | | |
| 7 - 8 - | Silty sand, very fine grained, with a trace of gravel, brownish gray, (SM) | WEATHERED BEDROCK | 60 | W | SS | 15 | | | | |
| 9 - | Sandy silt, with a trace of gravel, brownish gray, (ML) | | 36 | W | SS | 13 | | | | |
| 10 - | END OF BORING | | | | | | | | | |
| 11 - | | | | | | | | | | |
| 12 - | | | | | | | | | | |
| 13 - | | | | | | | | | | |
| 14 - | | | | | | | | | | |
| 15 - | | | | | | | | | | |
| 16 - | | | | | | | | | | |
| 17 - | | | | | | | | | | |
| 18 - | | | | | | | | | | |
| 19 - | | | | | | | | | | |
| 20 - | | | | | | | | | | |
| 21 - | | | | | | | | | | |

| DEPTH : DRILLING METHOD | WATER LEVEL MEASUREMENTS | | | | | | |
|---|---|---|---|---|---|---|---|
| 0- 8-1/2: 3-1/4 HSA | DATE | TIME | SAMPLED DEPTH | CASING DEPTH | CAVE-IN DEPTH | DRILLING FLUID LEVEL | WATER LEVEL |
| | 6/20 | 4:00 | 8-1/2 | 7 | 8.2 | | 3.9 |
| | 6/20 | 4:15 | 10 | 8-1/2 | 9.4 | | 5.6 |
| BORING COMPLETED 6/20/89 10:14 | 6/21 | 9:50 | 10 | 8-1/2 | 8.4 | | 1.9 |
| CC VD CA: KS Rig 550 | | | | | | | |

NOTE REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

# GEOTECHNICAL ENGINEERING CORPORATION

GEC JOB NO 89-273 LOG OF BORING NO 3

PROJECT 702 WEST MISSISSIPPI RIVER BLVD.; LITTLE FALLS, MN (MPCA)

SURFACE ELEVATION 1114.8

| DEPTH, IN FEET | IDENTIFICATION | GEOLOGY | N BPF | MC | SAMPLE TYPE | REC | FIELD & LABORATORY TESTS WC | DEN | LL/PL | qc |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 - 4 | Silty sand, fine grained, with a trace of gravel, mostly brown with a trace of black, (SM) | FILL | 20 | M | SS | 7 | | | | |
| | | | 10 | M | SS | 16 | | | | |
| 5 - 6 | Poorly graded sand with silt, fine grained, brown, (SP-SM) | COARSE ALLUVIUM | 16 | W | SS | 9 | | | | |
| 7 - 9 | Poorly graded gravel with silt & sand, brown, (GP-GM) | | 16 | W | SS | 10 | | | | |
| | | | 33 | W | SS | 10 | | | | |
| 10 - 21 | Silty gravel with sand, brownish * | WEATHERED BEDROCK | | | | | | | | |
| | Silty gravel with sand, gray, (GM) | | 33 | W | SS | 10 | | | | |
| | | | 33 | W | SS | 10 | | | | |
| | | | 41 | W | SS | 10 | | | | |
| 16 - 17 | Clayey gravel with sand, gray, (GC) | | 85 | M | SS | 16 | | | | |
| | END OF BORING | | | | | | | | | |
| 18 - 21 | *gray, (GM) | | | | | | | | | |

| DEPTH | DRILLING METHOD |
|---|---|
| 0- 15: | 3-1/4 HSA |

WATER LEVEL MEASUREMENTS

| DATE | TIME | SAMPLED DEPTH | CASING DEPTH | CAVE-IN DEPTH | DRILLING FLUID LEVEL | WATER LEVEL |
|---|---|---|---|---|---|---|
| 6/20 | 9:52 | 7 | 5 | 4.8 | | 4.2 |
| 6/20 | 10:51 | 17 | 15 | 16.4 | | 10.6 |

BORING COMPLETED 6/20/89 1:30

CC VD CA: KS Rig: 550

NOTE REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

# GEOTECHNICAL ENGINEERING CORPORATION

GEC JOB NO. 89-273 LOG OF BORING NO 4

PROJECT: 702 WEST MISSISSIPPI RIVER BLVD.; LITTLE FALLS, MN (MPCA)

SURFACE ELEVATION 1113.2

| DEPTH, IN FEET | IDENTIFICATION | GEOLOGY | N BPF | MC | SAMPLE TYPE | REC. | FIELD & LABORATORY TESTS WC | DEN | LL/PL | qc |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | |
| 2 | | | 6 | M | SS | 10 | | | | |
| 3 | Silty sand, fine grained, with pieces of wood, plastic, plywood, paint chips, brown, (SM) | FILL | | | | | | | | |
| 4 | | | 5 | M | SS | 5 | | | | |
| 5 | | | | | | | | | | |
| 6 | | | 6 | W | SS | 8 | | | | |
| 7 | Silty sand with gravel, fine grained, brown, (SM) | | | | | | | | | |
| 8 | | | 20 | W | SS | 1 | | | | |
| 9 | ~~Poorly graded sand with silt, *~~ ~~Sandy silt with gravel, brownish**~~ ~~Lean clay with gravel, laminated ***~~ | | 13 | M | SS | 11 | | | | |
| 10 | | | | | | | | | | |
| 11 | Sandy silt with gravel, brownish gray, (ML) | ALLUVIUM | 21 50/5 | W | SS | 8 | | | | |
| 12 | Poorly graded gravel with silt, gray, (GP-GM) | BEDROCK | 54 | | | | | | | |
| 13 | END OF BORING | | 70/4 | W | SS | 6 | | | | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | *fine grained, with a trace of gravel, brown, (SP-SM) | | | | | | | | | |
| 18 | **gray, (ML) | | | | | | | | | |
| 19 | ***gray, (CL) | | | | | | | | | |
| 20 | | | | | | | | | | |
| 21 | | | | | | | | | | |

| DEPTH | DRILLING METHOD |
|---|---|
| 0- 12: | 3-1/4 HSA |

WATER LEVEL MEASUREMENTS

| DATE | TIME | SAMPLED DEPTH | CASING DEPTH | CAVE-IN DEPTH | DRILLING FLUID LEVEL | WATER LEVEL |
|---|---|---|---|---|---|---|
| 6/20 | 8:12 | 8-1/2 | 7 | 6.9 | | 5.5 |
| 6/20 | 1:32 | 13-1/2 | 12 | 11.5 | | 3.2 |

BORING COMPLETED 6/20/89 1:55

CC: VD CA: KS Rig: 550

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

# GEOTECHNICAL ENGINEERING CORPORATION

GEC JOB NO. 89-273 LOG OF BORING NO 5

PROJECT 702 WEST MISSISSIPPI RIVER BLVD.; LITTLE FALLS, MN (MPCA)

| DEPTH, IN FEET | SURFACE ELEVATION 1113.4 IDENTIFICATION | GEOLOGY | N BPF | MC | SAMPLE TYPE | REC. | FIELD & LABORATORY TESTS WC | DEN | LL/PL | qc |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Poorly graded sand with silt, fine grained, brown, (SP-SM) | | | | | | | | | |
| 2 | | FILL | 3 | M | SS | 18 | Client retained lower part of sample. | | | |
| 3 | | | | | | | | | | |
| 4 | | | 2 | M | SS | 15 | Client retained sample. | | | |
| 5 | | | | | | | | | | |
| 6 | Poorly graded sand with silt, fine grained, with a trace of gravel, brown, (SP-SM) | COARSE ALLUVIUM | 13 | M | SS | 12 | Client retained sample. | | | |
| 7 | | | | | | | | | | |
| 8 | | | 9 | W | SS | 12 | | | | |
| 9 | Silt with gravel, brownish gray, (ML) | TILL?/ WEATHERED BEDROCK? | 6 | M | SS | 10 | | | | |
| 10 | | | | | | | | | | |
| 11 | Sandy silt with gravel, brownish gray, (ML) | WEATHERED BEDROCK | | | | | | | | |
| 12 | END OF BORING | | | | | | | | | |
| 13 | | | | | | | | | | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |
| 21 | | | | | | | | | | |

| DEPTH | DRILLING METHOD |
|---|---|
| 0- 10: | 3-1/4 HSA |

WATER LEVEL MEASUREMENTS

| DATE | TIME | SAMPLED DEPTH | CASING DEPTH | CAVE-IN DEPTH | DRILLING FLUID LEVEL | WATER LEVEL |
|---|---|---|---|---|---|---|
| 6/22 | 11:08 | 8-1/2 | 7 | 6.7 | | 6.4 |

BORING COMPLETED 6/22/89 2:00

CC: VD CA: KS Rig: 550

NOTE REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

0/[illegible]3

# GEOTECHNICAL ENGINEERING CORPORATION

GEC JOB NO 89-273 LOG OF BORING NO 6

PROJECT 702 WEST MISSISSIPPI RIVER BLVD.; LITTLE FALLS, MN (MPCA)

| DEPTH, IN FEET | SURFACE ELEVATION 1113.7 IDENTIFICATION | GEOLOGY | N BPF | MC | SAMPLE TYPE | REC | FIELD & LABORATORY TESTS WC | DEN | LL/PL | qc |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 - 2 - | Silty sand, fine grained, with a trace of gravel, black, (SM) | FILL | 8 | M | SS | 14 | | | | |
| 3 - 4 - 5 - | Silty sand, fine grained, with a trace of gravel, dark brown, (SM) | COARSE ALLUVIUM | 2 | M | SS | 16 | | | | |
| 6 - 7 - | Poorly graded sand with silt, fine grained, with a trace of gravel, brown, (SP-SM) | | 16 | M | SS | 13 | | | | |
| 8 - 9 - | Sandy silt with gravel, brownish gray, (ML) | ALLUVIUM?/ WEATHERED BEDROCK? | 6 | M | SS | 12 | | | | |
| 10 - 11 - | | | 33 | M | SS | 16 | | | | |
| 12 - | Sandy silt, with a trace of gravel,* | | 22 | M | SS | 18 | | | | |
| 13 - 14 - 15 - 16 - 17 - 18 - 19 - 20 - 21 - | END OF BORING<br>*brown, (ML) | | | | | | | | | |

| DEPTH : DRILLING METHOD | WATER LEVEL MEASUREMENTS | | | | | | |
|---|---|---|---|---|---|---|---|
| 0- 10: 3-1/4 HSA | DATE | TIME | SAMPLED DEPTH | CASING DEPTH | CAVE-IN DEPTH | DRILLING FLUID LEVEL | WATER LEVEL |
| | 6/21 | 4:55 | 12 | 10 | 11.9 | | dry |
| | 6/22 | 7:22 | 12 | 10 | 9.9 | | 5.8 |
| BORING COMPLETED 6/22/89 9:45 | 6/22 | 9:28 | 12 | 10 | 9.8 | | 5.7 |
| CC: VD CA: KS Rig: 550 | | | | | | | |

NOTE REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

# GEOTECHNICAL ENGINEERING CORPORATION

GEC JOB NO. 89-273 LOG OF BORING NO. 7

PROJECT 702 WEST MISSISSIPPI RIVER BLVD.; LITTLE FALLS, MN (MPCA)

| DEPTH, IN FEET | SURFACE ELEVATION 1113.9 IDENTIFICATION | GEOLOGY | N BPF | MC | SAMPLE TYPE | REC. | FIELD & LABORATORY TESTS WC | DEN | LL/PL | qc |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 - 2 - | Silty sand, fine grained, with a trace of gravel, black, (SM) | FILL | 7 | M | SS | 18 | | | | |
| 3 - 4 - 5 - | Silty sand, fine grained, dark brown, (SM) | | 2 | M | SS | 16 | | | | |
| 6 - | | COARSE ALLUVIUM?/ ALLUVIUM? | 4 | M | SS | 15 | | | | |
| 7 - | Poorly graded sand with silt, fine grained, with a trace of* | | | | | | | | | |
| 8 - | | | 37 | M | SS | 10 | | | | |
| 9 - | Silty gravel with sand, brown, (GM) | | | | | | | | | |
| | Sandy silt, brownish gray, (ML) | | 9 | W | SS | 10 | | | | |
| 10 - 11 - | Silty sand, fine grained, with a trace of gravel, grayish brown, (SM) | COARSE ALLUVIUM?/ WEATHERED BEDROCK? | 17 | W | SS | 12 | | | | |
| 12 - | Sandy silt, brownish gray, (ML) | WEATHERED BEDROCK | | | | | | | | |
| 13 - | Sandy silt with gravel, brown, (ML) | | 18 | M | SS | 12 | | | | |
| 14 - | END OF BORING | | | | | | | | | |
| 15 - | | | | | | | | | | |
| 16 - | | | | | | | | | | |
| 17 - | | | | | | | | | | |
| 18 - | *gravel, brown, with roots, (SP-SM) | | | | | | | | | |
| 19 - | | | | | | | | | | |
| 20 - | | | | | | | | | | |
| 21 - | | | | | | | | | | |

| DEPTH | DRILLING METHOD |
|---|---|
| 0- 12: | 3-1/4 HSA |
| BORING COMPLETED | 6/22/89 9:25 |
| CC: VD | CA: KS Rig: 550 |

WATER LEVEL MEASUREMENTS

| DATE | TIME | SAMPLED DEPTH | CASING DEPTH | CAVE-IN DEPTH | DRILLING FLUID LEVEL | WATER LEVEL |
|---|---|---|---|---|---|---|
| 6/22 | 8:00 | 8-1/2 | 7 | 6.5 | | 5.8 |
| 6/22 | 8:32 | 13-1/2 | 12 | 11.9 | | 5.6 |

NOTE. REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

# GEOTECHNICAL ENGINEERING CORPORATION

GEC JOB NO 89-273 LOG OF BORING NO 8

PROJECT 702 WEST MISSISSIPPI RIVER BLVD.; LITTLE FALLS, MN (MPCA)

SURFACE ELEVATION 1113.3

| DEPTH, IN FEET | IDENTIFICATION | GEOLOGY | N BPF | MC | SAMPLE TYPE | REC. | WC | DEN | LL/PL | $q_c$ |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Silty sand with gravel, fine grained, brown, (SM) | FILL | 11 | M | SS | 12 | | | | |
| 2 | | | | | | | | | | |
| 3 | Silty sand, fine grained, with a trace of gravel, with pieces of wood, black - dark brown, (SM) | | 2 | W | SS | 15 | Client retained sample. | | | |
| 4 | | | | | | | | | | |
| 5 | Poorly graded sand with silt, fine grained, with a trace of gravel, brown, (SP-SM) | COARSE ALLUVIUM | 10 | W | SS | 10 | | | | |
| 6 | | | | | | | | | | |
| 7 | Sandy silt with gravel, brownish gray, (ML) | WEATHERED BEDROCK | 36 | W | SS | 10 | | | | |
| 8 | | | | | | | | | | |
| 9 | Gravelly silt, gray, (ML) | | 30 47 50/3 | W | SS | 8 | | | | |
| 10 | END OF BORING | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | | | | | | | | | | |
| 13 | | | | | | | | | | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |
| 21 | | | | | | | | | | |

| DEPTH | DRILLING METHOD |
|---|---|
| 0- 8-1/2: | 3-1/4 HSA |

WATER LEVEL MEASUREMENTS

| DATE | TIME | SAMPLED DEPTH | CASING DEPTH | CAVE-IN DEPTH | DRILLING FLUID LEVEL | WATER LEVEL |
|---|---|---|---|---|---|---|
| 6/21 | 8:38 | 5 | 3 | 4.9 | | 4.8 |
| 6/21 | 9:34 | 10 | 8-1/2 | 7.9 | | 5.6 |

BORING COMPLETED 6/21/89 9:45

CC. VD CA: KS Rig 550

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

# GEOTECHNICAL ENGINEERING CORPORATION

GEC JOB NO 89-273 LOG OF BORING NO 9

PROJECT 702 WEST MISSISSIPPI RIVER BLVD.; LITTLE FALLS, MN (MPCA)

| DEPTH, IN FEET | SURFACE ELEVATION 1112.8 IDENTIFICATION | GEOLOGY | N BPF | MC | SAMPLE TYPE | REC. | FIELD & LABORATORY TESTS WC | DEN | LL/PL | qc |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 - 2 - | Silty sand with gravel, fine grained, brown, (SM) | FILL | 13 | M | SS | 12 | | | | |
| 3 - 4 - | Silty sand, fine grained, with a trace of gravel, dark brown, (SM) | | 6 | M | SS | 16 | | | | |
| 5 - 6 - 7 - | Silty sand, fine grained, with gravel, brown, (SM) | COARSE ALLUVIUM | 13 | W | SS | 5 | Client retained sample. | | | |
| 8 - 9 - | Gravelly silt, gray, (ML) | WEATHERED BEDROCK | 17 | W | SS | 14 | | | | |
| | | | 48 | M | SS | 9 | | | | |
| 10 - | END OF BORING | | | | | | | | | |
| 11 - | | | | | | | | | | |
| 12 - | | | | | | | | | | |
| 13 - | | | | | | | | | | |
| 14 - | | | | | | | | | | |
| 15 - | | | | | | | | | | |
| 16 - | | | | | | | | | | |
| 17 - | | | | | | | | | | |
| 18 - | | | | | | | | | | |
| 19 - | | | | | | | | | | |
| 20 - | | | | | | | | | | |
| 21 - | | | | | | | | | | |

| DEPTH | DRILLING METHOD |
|---|---|
| 0- 8-1/2: | 3-1/4 HSA |
| BORING COMPLETED | 6/21/89 3:25 |
| CC VD | CA: KS Rig: 550 |

WATER LEVEL MEASUREMENTS

| DATE | TIME | SAMPLED DEPTH | CASING DEPTH | CAVE-IN DEPTH | DRILLING FLUID LEVEL | WATER LEVEL |
|---|---|---|---|---|---|---|
| 6/21 | 1:14 | 7 | 5 | 4.8 | | 4.6 |
| 6/21 | 1:37 | 10 | 8-1/2 | 8.9 | | 4.9 |
| 6/21 | 3:12 | 10 | 8-1/2 | 8.5 | | 3.9 |

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

.0/88

# GEOTECHNICAL ENGINEERING CORPORATION

GEC JOB NO 89-273 LOG OF BORING NO 10

PROJECT 702 WEST MISSISSIPPI RIVER BLVD.; LITTLE FALLS, MN (MPCA)

| DEPTH, IN FEET | SURFACE ELEVATION 1113.1 IDENTIFICATION | GEOLOGY | N BPF | MC | SAMPLE TYPE | REC | FIELD & LABORATORY TESTS WC | DEN | LL/PL | qc |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 - 2 - | Poorly graded sand with silt, fine grained, with gravel, brown, (SP-SM) | FILL | 9 | M | SS | 10 | | | | |
| 3 - | Silty sand, fine grained, with * | | | | | | | | | |
| 4 - | Poorly graded sand with silt, fine grained, with a trace of gravel, brown, (SP-SM) | | 8 | M | SS | 14 | | | | |
| 5 - 6 - | Sandy silt, with a trace of gravel, brown & black, (ML) | | 24 | W | SS | 7 | | | | |
| 7 - 8 - | Gravelly silt, gray, (ML) | WEATHERED BEDROCK | 13 19 50/5 | M | SS | 12 | | | | |
| | END OF BORING | | | | | | | | | |
| 9 - 10 - 11 - | *pieces of wood, black, (SM) | | | | | | | | | |
| 12 - 13 - 14 - 15 - 16 - 17 - 18 - 19 - 20 - 21 - | | | | | | | | | | |

| DEPTH | DRILLING METHOD |
|---|---|
| 0- 7: | 3-1/4 HSA |

| WATER LEVEL MEASUREMENTS | | | | | | | |
|---|---|---|---|---|---|---|---|
| DATE | TIME | SAMPLED DEPTH | CASING DEPTH | CAVE-IN DEPTH | DRILLING FLUID LEVEL | WATER LEVEL |
| 6/21 | 2:15 | 7 | 5 | 5.1 | | 4.2 |

BORING COMPLETED 6/21/89 3:10

CC VD CA: KS Rig. 550

NOTE REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

0/88

# GEOTECHNICAL ENGINEERING CORPORATION

GEC JOB NO 89-273 LOG OF BORING NO. MW-1

PROJECT 702 WEST MISSISSIPPI RIVER BLVD.; LITTLE FALLS, MN (MPCA)

| DEPTH, IN FEET | SURFACE ELEVATION 1112.7 IDENTIFICATION | GEOLOGY | N BPF | MC | SAMPLE TYPE | REC | FIELD & LABORATORY TESTS WC | DEN | LL/PL | $q_c$ |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | No samples to 8' | | | | | | | | | |
| 5 | | | | | | | | | | |
| 6 | | | | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | Gravelly silt, gray, (ML) | WEATHERED BEDROCK | 31 | | | | | | | |
| 9 | | | 36 | M | SS | 14 | | | | |
| | END OF BORING | | 50/3 | | | | | | | |
| 10 | | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | | | | | | | | | | |
| 13 | | | | | | | | | | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |
| 21 | | | | | | | | | | |

| DEPTH | DRILLING METHOD |
|---|---|
| 0- 9-1/2: | 4-1/4 HSA |

| WATER LEVEL MEASUREMENTS | | | | | | |
|---|---|---|---|---|---|---|
| DATE | TIME | SAMPLED DEPTH | CASING DEPTH | CAVE-IN DEPTH | DRILLING FLUID LEVEL | WATER LEVEL |
| 6/20 | 10:17 | 10 | 8 | 7.6 | | 3.5 |

BORING COMPLETED 6/20/89 4:30

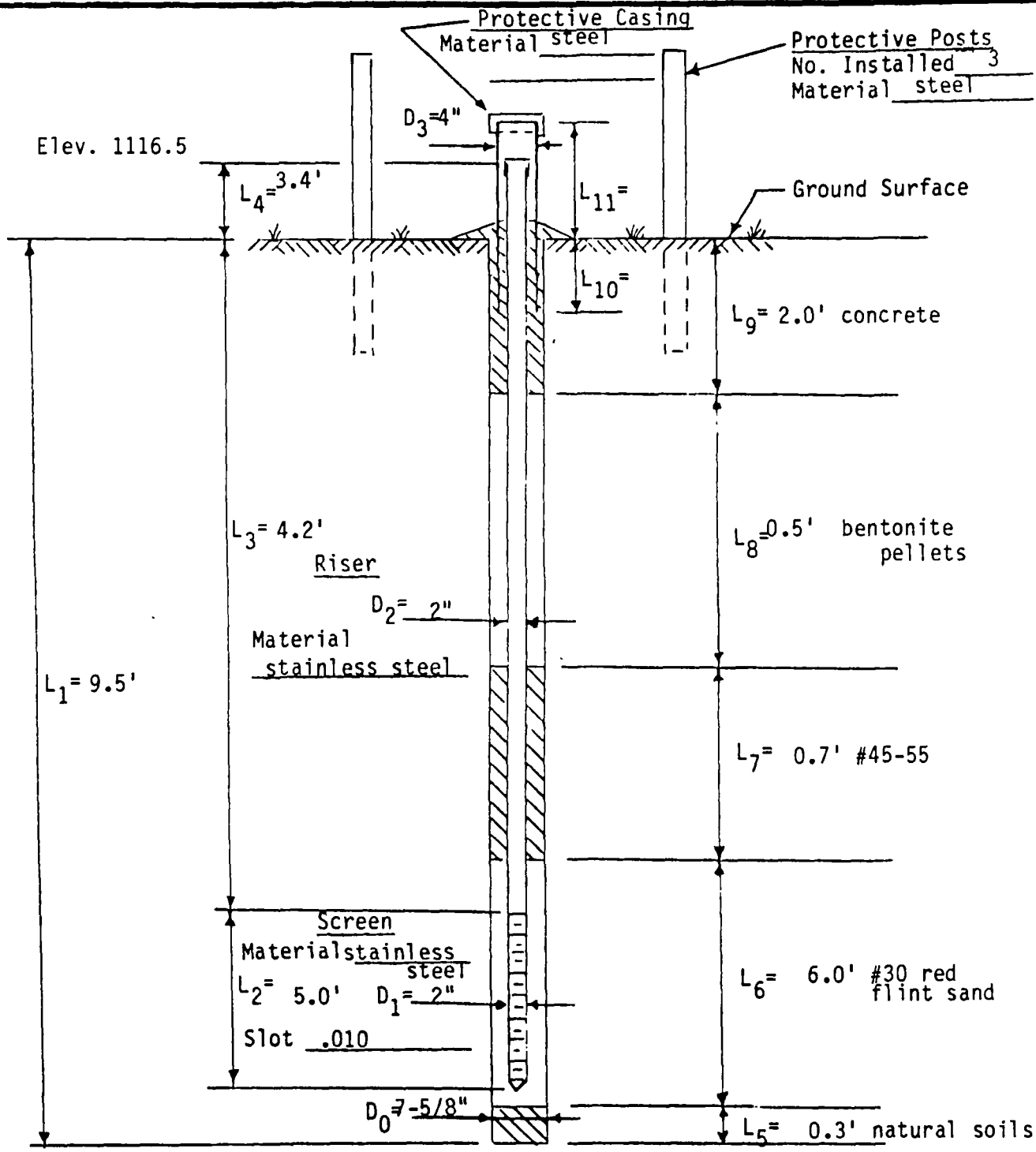
CC VD CA: KS Rig 550

NOTE REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

# MONITORING WELL/PIEZOMETER LOG

JOB NO: 89-273
DATE INSTALLED: 6-26-89
ELEVATION OF

REF. BORING NO. MW-1
INSTALLATION NO.




REMARKS

GEOTECHNICAL ENGINEERING CORPORATION

1/85

# GEOTECHNICAL ENGINEERING CORPORATION

GEC JOB NO 89-273 LOG OF BORING NO MW-2

PROJECT 702 WEST MISSISSIPPI RIVER BLVD.; LITTLE FALLS, MN (MPCA)

| DEPTH, IN FEET | SURFACE ELEVATION 1111.9 IDENTIFICATION | GEOLOGY | N BPF | MC | SAMPLE TYPE | REC | FIELD & LABORATORY TESTS WC | DEN | LL/PL | qc |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | | | | | | | | | | |
| 5 | Silty sand, fine grained, with a trace of gravel, gray & brown, (SM) | ALLUVIUM | 8 | W | SS | 12 | | | | |
| 6 | | | | | | | | | | |
| 7 | Gravelly silt, gray, (ML) | WEATHERED BEDROCK | | | | | | | | |
| 8 | END OF BORING | | | | | | | | | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | | | | | | | | | | |
| 13 | | | | | | | | | | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |
| 21 | | | | | | | | | | |

| DEPTH | DRILLING METHOD |
|---|---|
| 0- 8: | 4-1/4 HSA |

| WATER LEVEL MEASUREMENTS | | | | | | |
|---|---|---|---|---|---|---|
| DATE | TIME | SAMPLED DEPTH | CASING DEPTH | CAVE-IN DEPTH | DRILLING FLUID LEVEL | WATER LEVEL |
| 6/26 | 1:22 | 6-1/2 | 4-1/2 | 4.0 | | 3.7 |

BORING COMPLETED 6/26/89 3:30

CC VD CA: KS Rig. 550

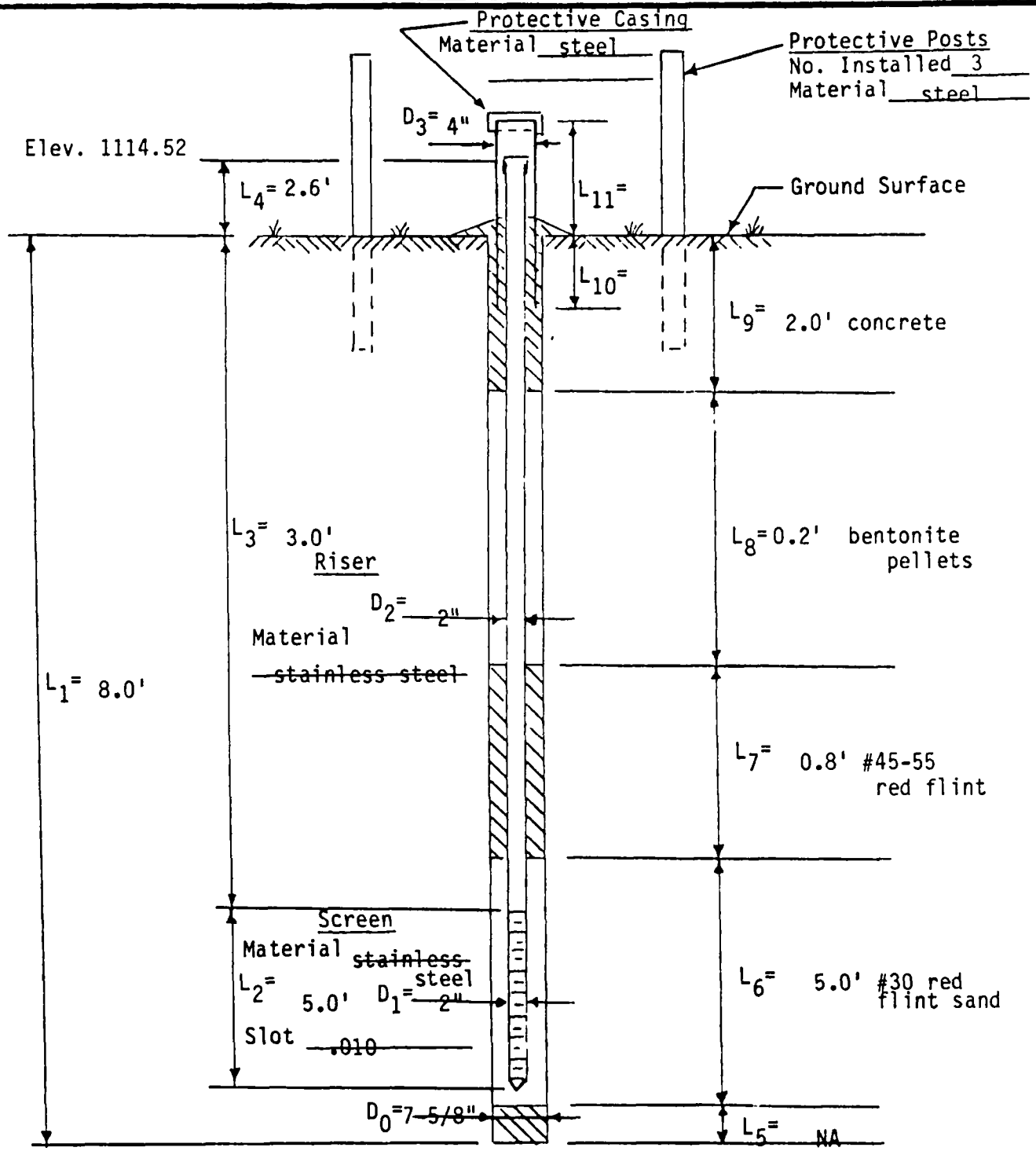
NOTE REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

0/[redacted]8

MONITORING WELL/PIEZOMETER LOG

JOB NO: 89-273
DATE INSTALLED: 6-26-89
ELEVATION OF

REF. BORING NO. MW-2
INSTALLATION NO.




REMARKS

GEOTECHNICAL ENGINEERING CORPORATION

1/85

# GEOTECHNICAL ENGINEERING CORPORATION

GEC JOB NO 89-273 LOG OF BORING NO. MW-3

PROJECT 702 WEST MISSISSIPPI RIVER BLVD.; LITTLE FALLS, MN (MPCA)

SURFACE ELEVATION 1116.4

| DEPTH, IN FEET | IDENTIFICATION | GEOLOGY | N BPF | MC | SAMPLE TYPE | REC | WC | DEN | LL/PL | $q_c$ |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 - 2 - 3 - 4 - | Mostly black fibers, with a trace of silty sand, black | FILL | | | | | | | | |
| 5 - 6 - | Silty sand, fine grained, grayish brown, (SM) | | 2 | M | SS | 15 | | | | |
| 7 - 8 - 9 - 10 - 11 - | Poorly graded sand with silt and gravel, fine grained, grayish brown, (SP-SM) | COARSE ALLUVIUM | 10 | W | SS | 15 | | | | |
| 12 - 13 - 14 - | Silty sand, fine grained, with a trace of gravel, brownish gray, (SM) | | 18 | W | SS | 15 | | | | |
| 15 - | Silty gravel with sand, gray & * | ** | | | | | | | | |
| | END OF BORING | | | | | | | | | |
| 16 - 17 - 18 - 19 - 20 - 21 - | *brown, (GM) | **WEATHERED BEDROCK | | | | | | | | |

| DEPTH | DRILLING METHOD |
|---|---|
| 0- 15: | 3-1/4 HSA |

WATER LEVEL MEASUREMENTS

| DATE | TIME | SAMPLED DEPTH | CASING DEPTH | CAVE-IN DEPTH | DRILLING FLUID LEVEL | WATER LEVEL |
|---|---|---|---|---|---|---|
| 6/22 | 3:41 | 10 | 8 | 7.2 | | 6.1 |
| 6/22 | 4:37 | 15 | 15 | 14.4 | | 7.3 |

BORING COMPLETED 6/22/89 9:00

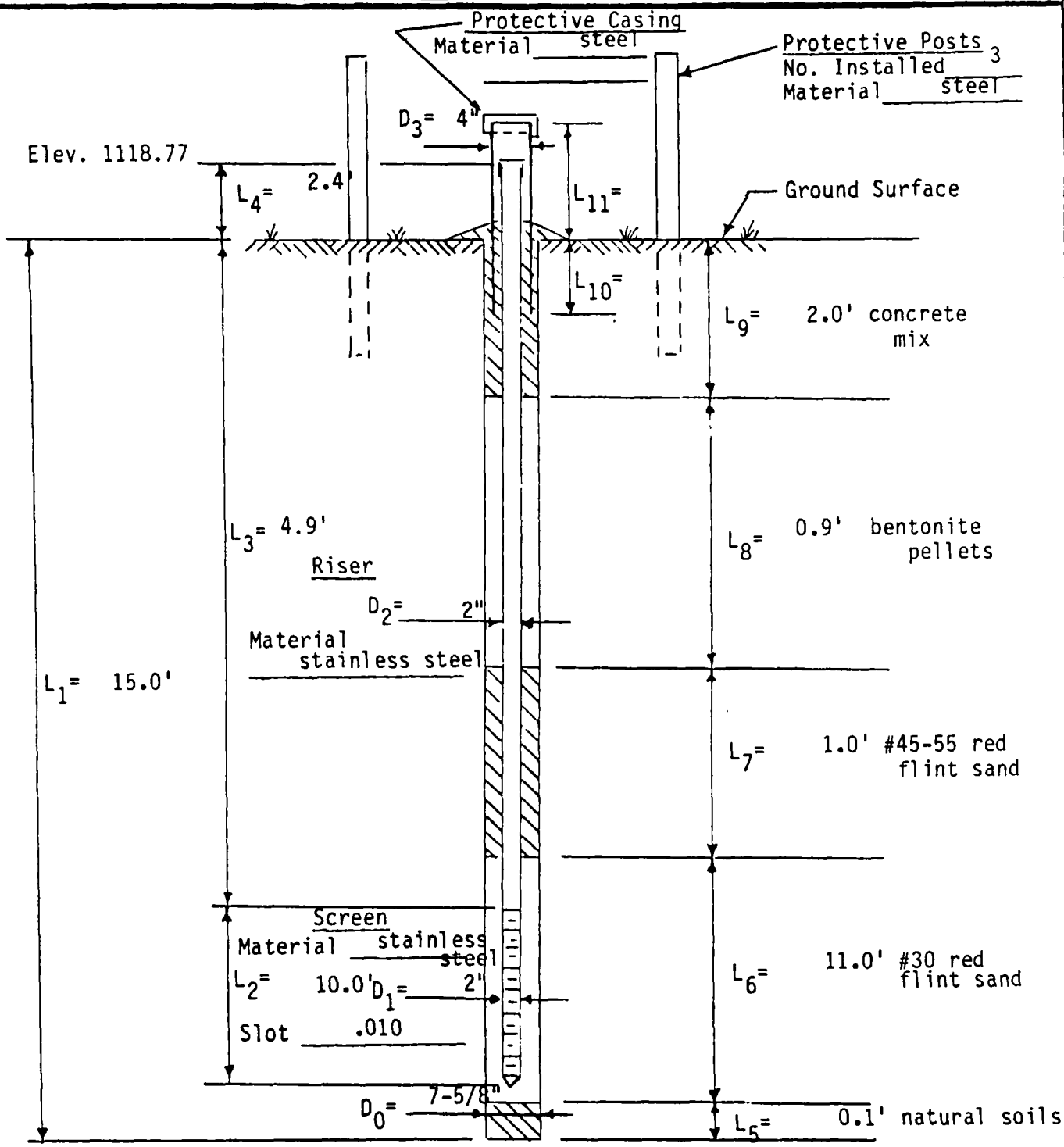
CC: VD CA: KS Rig 550

NOTE REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

# MONITORING WELL/PIEZOMETER LOG

JOB NO: 89-273
DATE INSTALLED: 6-22-89
ELEVATION OF

REF. BORING NO. MW-3
INSTALLATION NO.




REMARKS

GEOTECHNICAL ENGINEERING CORPORATION

1/85

# GEOTECHNICAL ENGINEERING CORPORATION

GEC JOB NO. 89-273 LOG OF BORING NO. MW-4

PROJECT 702 WEST MISSISSIPPI RIVER BLVD.; LITTLE FALLS, MN (MPCA)

SURFACE ELEVATION 1115.9

| DEPTH, IN FEET | IDENTIFICATION | GEOLOGY | N, BPF | MC | SAMPLE TYPE | REC | WC | DEN | LL/PL | qc |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | |
| 2 | | | | | | | | | | |
| 3 | No samples to 8' | | | | | | | | | |
| 4 | | | | | | | | | | |
| 5 | | | | | | | | | | |
| 6 | | | | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | Silty sand, fine grained, with a trace of gravel, brown, (SM) | | 4 | W | SS | 8 | | | | |
| 10 | | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | Poorly graded sand with silt, fine grained, with a trace of gravel, brown, (SP-SM) | COARSE ALLUVIUM | | | | | | | | |
| 13 | | | 10 50 / 4 | W | SS | 9 | | | | |
| 14 | Silty sand, fine grained, with * | | | | | | | | | |
| 15 | Sandy silt, with a trace of gravel, gray, (ML) | | | | | | | | | |
| 16 | | | 10 | M | SS | 13 | | | | |
| 17 | Gravelly silt, gray, (ML) | WEATHERED BEDROCK? | | | | | | | | |
| 18 | | | 15 | W | SS | 8 | | | | |
| 19 | END OF BORING | | | | | | | | | |
| 20 | *gravel, brown, (SM) | | | | | | | | | |
| 21 | | | | | | | | | | |

| DEPTH : DRILLING METHOD | WATER LEVEL MEASUREMENTS | | | | | | |
|---|---|---|---|---|---|---|---|
| | DATE | TIME | SAMPLED DEPTH | CASING DEPTH | CAVE-IN DEPTH | DRILLING FLUID LEVEL | WATER LEVEL |
| 0- 17: 3-1/4 HSA | | | | | | | |
| | 6/23 | 10:10 | 10 | 8 | 7.7 | | 7.4 |
| | 6/23 | 12:26 | 19 | 17 | 17.0 | | 7.0 |
| BORING COMPLETED 6/23/89 2:15 | | | | | | | |
| CC: VD CA: KS Rig: 550 | | | | | | | |

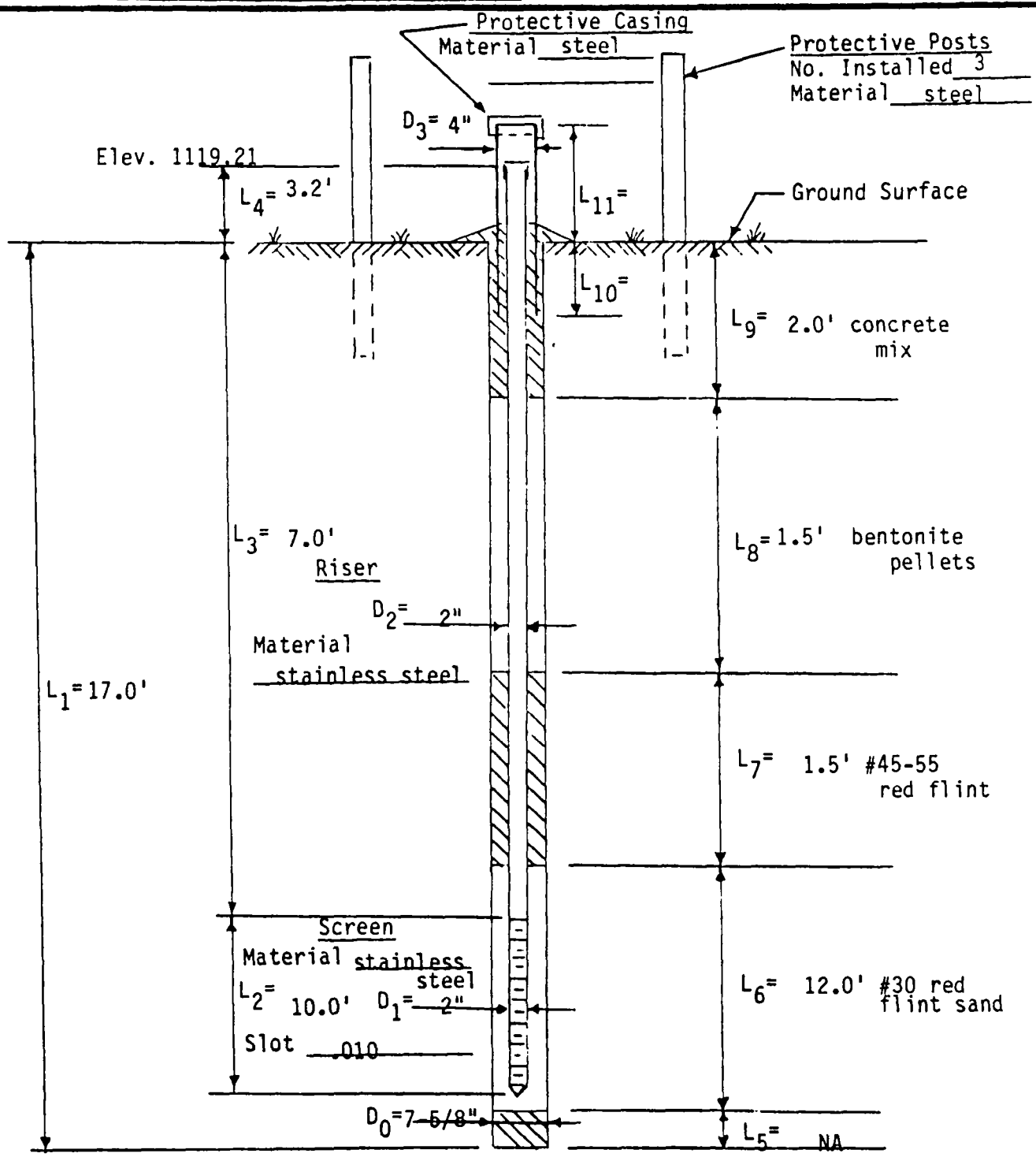
NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

0/68

MONITORING WELL/PIEZOMETER LOG

JOB NO: 89-273
DATE INSTALLED: 6-23-89
ELEVATION OF

REF. BORING NO. MW-4
INSTALLATION NO.




REMARKS

GEOTECHNICAL ENGINEERING CORPORATION

1/85

# FIELD SAMPLING AND TESTING METHODS



Standard Penetration/Split-Spoon Sampling Method. In this method, a steel split-barrel sampling tube is driven into the soil with a 140-pound hammer dropped from a height of 30 inches (the hammer is dropped onto a rod attached to the sampler). The number of hammer blows required to drive the sampler tube 1 foot into the ground (after an initial set of 1/2 foot) is recorded as the standard penetration resistance (N-value) of the soil for the sampling interval. When driving is complete, the sampler is retracted and opened, and soil samples are taken from the tube. The bore hole is advanced between sampling intervals with an auger, casing, or rotary drill bit (with drilling fluid). When the ground surface is frozen, soil samples from the frozen zone are taken off the flights of the hollow-stem auger.

Static Cone Test. This field test determines the static cone bearing pressure of the soil--that is, how much resistance the soil has to penetration by a cone-shaped point. The cone bearing pressure ($q_c$ value) is equal to the total load applied divided by the area of the base of the cone. Two types of penetrometers are used, mechanical and manual. Mechanical cones are pushed hydraulically with the drill rig. Manual cones are pushed by hand.

Thin-Walled Tube Sampling Method. In this method, thin-walled tubes (2 or 3 inches in diameter and about 2 feet long) are pushed into the soil, then retracted. Relatively undisturbed soil samples are recovered from inside the tubes.

Coring. In this boring method, a diamond or carbide bit on a double-tubed barrel is rotated into rock to the desired depth, then retracted. Rock samples are taken from the inner tube.

Auger Borings. Auger borings are drilled by hand or with a power-driven auger.

The hand auger method consists of drilling the auger into the soil in increments of approximately 4", then retracting the auger and observing the material recovered. This allows almost continuous observation of the soil profile.

Two procedures are available in drilling power auger borings: "spinning" and "pulling."

- In the spinning procedure, the auger is drilled into the ground in increments of 5' or less. The auger is then spun rapidly. Soil "rides up" the flights of the auger to the ground surface, where samples are taken. In general, this method results in reasonably accurate identification of the soil profile above the ground water table, but it can be very misleading - particularly in sandy and gravelly soils - below the water table.

- In the pulling procedure, the auger is drilled into the ground and then withdrawn to above the ground surface. The general soil profile can be observed, and samples of materials adhering to the auger are taken. In general, this method is considered to be a little more accurate than the spinning method in soil above the ground water table, and more accurate than the spinning method in soil below the ground water table.

## BORING LOGS: ABBREVIATIONS, NOTATIONS, AND SYMBOLS



This list defines some of the abbreviations, notations, and symbols used on the boring logs.

| | |
|---|---|
| A,B,H,N: | Size of casing or core |
| AC: | At completion of boring |
| CA: | Crew assistant |
| CAS: | Casing |
| CC: | Crew chief |
| CONS: | One-dimensional consolidation test |
| COT: | Clean-out tube |
| D: | Sampled soil appears dry |
| DEN: | Dry density, pounds per cubic foot |
| DM: | Drilling mud or bentonite slurry |
| FA: | Power-driven flight auger; P-pulling procedures; S-spinning procedure |
| HA: | Hand auger |
| HSA: | Hollow-stem auger |
| HYD: | Hydrometer analysis |
| LL: | Liquid limit |
| M: | Sampled soil appears moist |
| MC: | Column used to describe moisture condition of samples and for the ground water level symbol. |
| N (BPF): | Standard penetration resistance (N-value) in blows per foot (see note #2 below) |
| PAP: | Paper plug |
| PL: | Plastic limit |
| $q_p$: | Pocket penetrometer strength, tons per square foot |
| $q_c$: | Static cone bearing pressure, tons per square foot |
| $q_u$: | Unconfined compressive strength, pounds per square foot |
| RD: | Rotary drilling with fluid and cone-type roller bit |
| REC: | In split-spoon and thin-walled-tube sampling, the length (in inches) of sample recovered (see note #2 below). In rock coring, the length of core recovered (expressed as per cent of the total core run). |
| REV: | Revert drilling fluid |
| SA: | Sieve analysis |
| SR: | Skid rig; non-rotary drill (skid-mounted) |

## BORING LOGS: ABBREVIATIONS, NOTATIONS, AND SYMBOLS



| | |
|---|---|
| SS: | Standard split-spoon sampler (steel; 1-3/8-inch inside diameter; 2-inch outside diameter) |
| TW: | Thin-walled tube (2" and 3" diameter) |
| VANE: | Vane shear strength, pounds per square foot; L-laboratory; F-field |
| wc: | Water content, as percent of dry weight |
| W: | Sampled soil appears wet |
| WASH: | Sample of material obtained by screening returning rotary drilling fluid or by taking a split-spoon sample of material which has collected inside the bore hole after "falling" through drilling fluid |
| WAT: | Water |
| WH: | Sampler advanced by static weight of drill rod and 140-pound hammer |
| WR: | Sampler advanced by static weight of drill rod |
| -200: | Percent of material finer than #200 sieve |
| ▼ : | Water level symbol |
| 25: | Diedrich Model 25 rotary drill (skid or truck-mounted) |
| 55: | Central Mine Equipment Model 55 rotary drill (truck-mounted) |
| 57: | Mobile Drill Company Model 57 rotary drill (truck-mounted) |
| 550: | Central Mine Equipment Model 550 rotary drill (rubber tire-mounted) |

NOTES:

1. The size of drilling tools and related equipment is indicated by a number or letter. Examples: 1) a hollow-stem auger with an inside diameter of 3-3/4 inches is shown as 3-3/4 HSA; 2) a B size core barrel is shown as B core.

2. In highly resistant material, the N-value (in the "N" column) may be shown as a "fraction," with an upper and a lower number separated by a slash (/) or a bar (—). The lower number is the distance the sampler is driven, in inches (below the initial 1/2 foot set) and the upper figure is the number of hammer blows to drive the sampler that distance (after the initial 1/2 foot set). Also, the length of sample recovered, as shown on the "REC" column, may be greater than the distance indicated in the N column. The disparity is because the N value is recorded below the initial 1/2 foot set, whereas length of sample recovered is for the entire sampler drive.

## BORING LOGS: GROUND WATER INFORMATION



Ground water information is shown under "Water Level Measurements" at the bottom of the log and in the "MC" (moisture condition) column on the right side. Because the presence of water in the soil and the level of the ground water table can change over time, the information presented is accurate only for the date and time the observations and measurements were made.

The following information (in addition to the sampling date and time) appears under "Water Level Measurements":

- The sampled depth, which is the lowest depth of soil sampling at the time of the measurement.
- The casing depth, which is the depth to the bottom of the casing or hollow-stem auger at the time of the measurement.
- The cave-in depth, which is the depth at which the measuring tape stops in the bore hole.
- The water level, which is the point in the bore hole at which free-standing water is encountered with the measuring tape. If free-standing water was not present above the cave-in depth, the word "wet" or "dry" in this column indicates whether soil adhering to the end of the measuring tape appeared to be wet or dry at the cave-in depth.
- The drilling fluid level is similar to the water level, except that the liquid in the bore hole is drilling fluid.

The water level, drilling fluid level, and cave-in depths are measured with a weighted measuring tape.

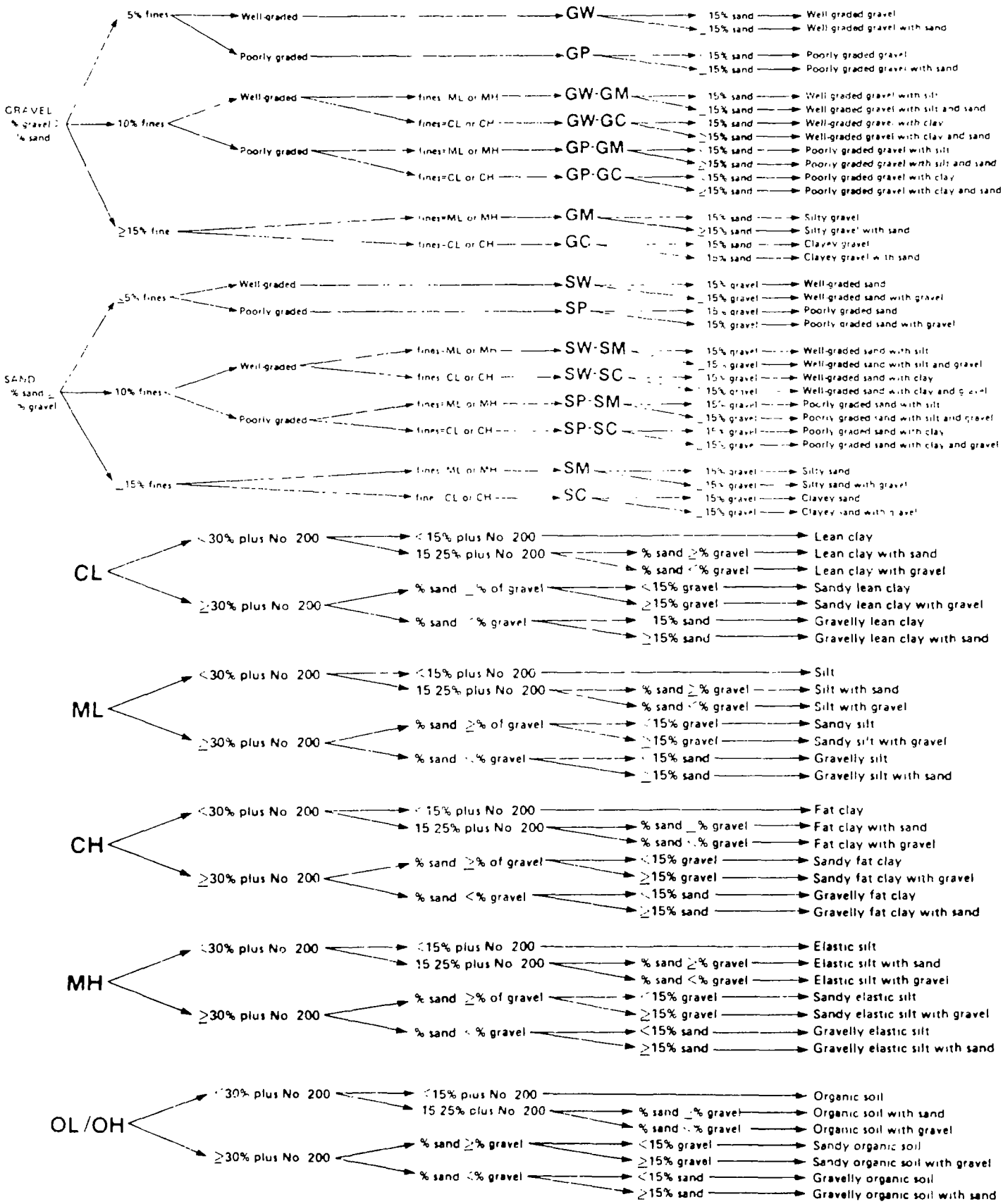
## BORING LOGS: GROUND WATER INFORMATION
(Page 2 of 2)

The "MC" column indicates the moisture condition of soil samples. A "D" in the column means that a soil sample appears dry (absence of moisture, dusty, dry to touch); "M" means moist (damp but no visible water), and "W" means wet (visible free water). (NOTE: An isolated "W" at the top of the boring, over a column of "D's" or "M's" may be an indicator of recent thawing of frozen soil in the top layer.)

The water level symbol ▼ in the "MC" column indicates the estimated position of the ground water table in the boring. A water level symbol with a downward-pointing arrow means that the water table is interpreted to be at or below the level indicated. A water level symbol with an upward-pointing arrow means that the water level is interpreted to be at or above the depth indicated. The absence of the water level symbol on a log does not necessarily mean that ground water was not encountered or that the water table or piezometric surface was not penetrated.

Overall, determining the position of the ground water table is an interpretive process that depends on such factors as water level measurements, the presence and type of drilling fluid, the condition of samples, subsurface conditions, site conditions, whether the bore hole is covered or open, and weather conditions. Because of these factors and those noted previously, the actual ground water level in the field may vary from that shown on the boring logs.

# IDENTIFICATION OF SOILS
## (VISUAL-MANUAL PROCEDURE)




NOTE—Percentages are based on estimating amounts of fines, sand, and gravel to the nearest 5%.

# GENERAL TERMINOLOGY NOTES FOR SOIL IDENTIFICATION AND DESCRIPTION

## Grain Size

| Term | Size |
|---|---|
| Boulders | >12" |
| Cobbles | 3"-12" |
| Gravel | #4 sieve - 3" |
| Sand | #200 - #4 sieve |
| Fines (silt & clay) | <#200 sieve |

## Stratification

| Term | Thickness |
|---|---|
| Layer | >1/2' |
| Lense | 1/2" - 1/2' |
| Lamination | <1/2" |

## Fiber Content of Peat (ASTM D2607)

| Term | Fiber Content (Visual Estimate) |
|---|---|
| Fibric | >67% |
| Hemic | 33 - 67% |
| Sapric | <33% |

## Consistency and Strength of Fine Grained Soils

| Term | Unconfined Compressive Strength, psf (Normal Range) | N-value, BPF |
|---|---|---|
| Very soft | <500 | <2 |
| Soft | 500-1000 | 2-4 |
| Medium stiff | 1000-2000 | 4-8 |
| Stiff | 2000-4000 | 8-15 |
| Very stiff | 4000-8000 | 15-30 |
| Hard | >8000 | >30 |

## Relative Density of Coarse Grained Soils

| Term | N-value, BPF |
|---|---|
| Very loose | <5 |
| Loose | 5-10 |
| Medium dense | 10-30 |
| Dense | 30-50 |
| Very dense | >50 |

## GEOLOGIC TERMINOLOGY

The geologic description indicates the apparent depositional origin or stratigraphic name. Geologic identification is interpretive and subject to error.

General categories of geologic deposits, and descriptive information is as follows:

| | | |
|---|---|---|
| ALLUVIUM | COARSE ALLUVIUM: | Sandy (and gravelly). Stratified. Deposited from fast moving waters in streams and rivers. (Includes glacial outwash.) |
| | FINE ALLUVIUM: | Clayey and/or silty. Stratified. Deposited from slow moving waters in streams, rivers, lakes, and ponds. |
| BEDROCK | Wide range of characteristics: from hard, dense, consolidated rock; to soft, compressible, and unconsolidated soil-like material. | |
| FILL | CONTROLLED: | Compact, uniform material; inorganic; no debris. |
| | UNCONTROLLED: | Loose or variable density. Mixture of soil types. Often contains debris and organic material. |
| TILL | Normally contains a wide range of grain sizes, from boulders through clay. Usually non-stratified. Deposited directly from glaciers. | |
| LOESS | Silty. Non-stratified. Upper layer. Deposited from wind. | |
| SLOPE WASH | Organic and/or inorganic material washed from slopes and redeposited. | |
| SWAMP DEPOSITS | Peat, muck, and marl, and organic soil. Formed through accumulation of organic material under water. | |
| TOPSOIL | Contains both inorganic and organic material. Upper, black layer of soil. Formed by weathering of inorganic soil and accumulation of organic material. | |
| TUMBLEROCK | Dominantly gravel, boulders and rock slabs. Deposited from gravity flow down hills or cliffs. | |
| WEATHERED BEDROCK | Bedrock which has been substantially weathered through disintegration or decomposition. Texture and composition grades into bedrock. | |
| WEATHERED SOIL | Texture, composition, and position is intermediate between topsoil and non-weathered soil. | |

## LIMITATIONS OF SUBSURFACE EXPLORATION

Subsurface exploration programs can not reveal totally what is in the subsurface. Conditions between borings and between samples and at other times may differ from those described on boring logs. Depending on the sampling method and frequency, every soil layer may not be observed, and some materials or layers which are present in the ground may not be noted on boring logs.

The intent of the "Identification" and "Geology" columns is to portray the soil profile or stratigraphy. It is based on our interpretation and opinion of available data.

Unless actually observed in a sample, contacts between soil layers are estimated based on the spacing of samples and the action of drill tools. Thus, most contacts shown on logs are approximate, with the possible upper and lower limits defined by the position of the overlying and underlying soil samples.

The extent and detail of information about subsurface conditions is directly related to the scope of exploration. It should be understood, therefore, that additional information can be obtained by means of additional exploration.

Cobbles, boulders, and other large objects generally cannot be recovered from test borings, and they may be present in the ground even if they are not noted on the boring logs. Other than as indicated by standard penetration resistance values, static cone bearing pressure values, or by borings being obstructed, drilling and sampling methods do not permit us to form specific opinions about the presence of cobbles, boulders and other large objects, and none are stated on boring logs. In general, cobbles, boulders, and large objects commonly are in deposits such as coarse alluvium, fill, till, tumblerock, and weathered bedrock.

Typewritten logs are prepared based on field logs. A field log may contain information which is not indicated on the typewritten log. (Field logs are available to our client for inspection.)

**GEOTECHNICAL ENGINEERING CORPORATION**

- Soil Engineering
- Soil Testing
- Site Assessments
- Monitoring Wells
- Soil Borings

RECEIVED
DEC 18 89
Ground Water
Waste Div

December 12, 1989

Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155

Attn: Susan Price

Re: Monitoring Wells
Little Falls, MN
GEC #89-273

Dear Susan:

Upon review of our report for the above referenced project, it was noted that the elevation of the riser pipe for MW-1 was not correct as shown in the report. The riser elevation on the monitoring well MW-1 log was reported as 1116.5. This elevation should be 1116.15. Monitoring well MW-1 has a Minnesota Department of Health unique number 501710. Attached is a copy of monitoring well MW-1 log with the corrected elevation.

If you have any questions please call us.

Sincerely,

Lawrence F. Feldsien

Lawrence F. Feldsien
Project Manager

LFF/jw

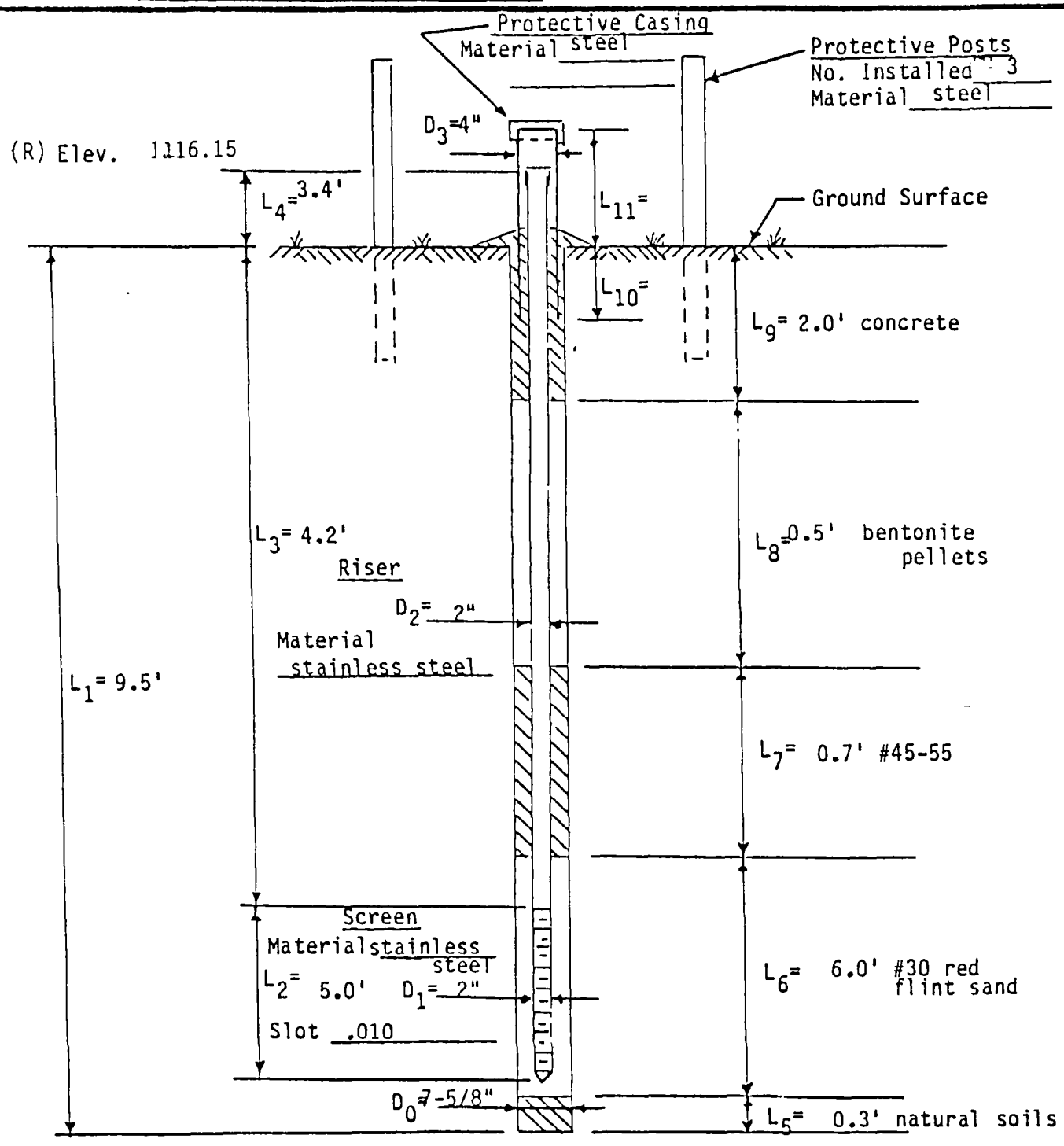
enc.

1925 Oakcrest Avenue • St. Paul, Minnesota 55113 • Office (612) 636-7744 • Fax (612) 636-8451

MONITORING WELL/PIEZOMETER LOG

JOB NO: 89-273
DATE INSTALLED: ~~6-26-89~~
ELEVATION OF

REF. BORING NO. MW-1
INSTALLATION NO. 501710




REMARKS

(R) Elevation of riser revised 1116.5 to 1116.15

GEOTECHNICAL ENGINEERING CORPORATION

1/85

E

# Report of Ground Water Monitoring
# At
# Larson Boats - Little Falls, Minnesota
# July 18, 1989

Job No. 89-273-1

Prepared for:

Steve Bennett
Geotechnical Engineering
1925 Oakcrest
Roseville, MN 55113

Prepared by:

Precision Environmental
8251 Main Street Northeast
Minneapolis, Minnesota 55432
(612) 780-9787
FAX (612) 780-7157

Printed August 28, 1989

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## 1.00 Introduction

The following report is a summary of ground water monitoring and sampling procedures conducted by Precision Environmental as requested by:

Steve Bennett
Geotechnical Engineering
1925 Oakcrest
Roseville, MN 55113

Monitoring and sampling procedures described in this report were performed at four ground water monitoring wells located at:

Larson Boats
Little Falls, Minnesota
Job No. 89-273-1

These monitoring wells are identified as follows:

| | |
|---|---|
| MW-01 | MW-03 |
| MW-02 | MW-04 |

This location will be referred to as the project site for the remainder of the report. Services provided by Precision Environmental were conducted in accordance with the sampling plan outlined during a telephone conversation with Mr. Bennett on July 11, 1989

## 2.00 Summary

Monitoring at the project site was conducted on July 18, 1989. Susan Price of the Minnesota Pollution Control Agency (MPCA) and a representative from Barr Engineering (Barr) were also on site Samples were collected by the MPCA and Barr Engineering with the assistance of Precision Environmental. The samples remained in the possession of the MPCA at all times. As per the sampling plan a total of four samples were collected. The samples are listed below in the order of collection:

1. MW-01
2. MW-02
3. MW-03
4. MW-04

Monitoring data is summarized in Table 1-3. This data is summarized from ground water monitoring data sheets completed in the field. Copies of these forms are included in Appendix A.

## 3.00 Summary of Monitoring Procedures

Monitoring and sampling results are summarized as follows:

| | |
|---|---|
| Table 1 | Monitoring Well Development Data |
| Table 2 | Monitoring Well Stabilization Data |
| Table 3 | Monitoring Well Sampling Data |

All sample containers were provided by the MPCA and Barr. The sample containers listed in Table 3 are as follows:

| | |
|---|---|
| Container A | One, MPCA 1,000 ml polyethylene bottle preserved with nitric acid. Two containers were collected at MW-04. |
| Container B | One, MPCA 1,000 ml polyethylene bottle preserved with sodium hydroxide. Two containers were collected at MW-04. |
| Container C | One, Barr 500 ml amber glass bottle preserved with nitric acid. |
| Container D | Two, MPCA 3,000 ml amber glass bottle. Four were containers were collected at MW-02 and MW-04. |
| Container E | Two, MPCA 40 ml flint glass septum vial. Four containers were collected at MW-02 and MW-04. |
| Container F | Two, Barr 40 ml amber glass septum vial. |

Table 1
Monitoring Well Development Data
Larson Boats - Little Falls, Minnesota
Precision Environmental July 18, 1989

| Development Data | MW-01 | MW-02 | MW-03 | MW-04 |
|---|---|---|---|---|
| Date | 7/18/89 | 7/18/89 | 7/18/89 | 7/18/89 |
| Chronology | 1 | 2 | 3 | 4 |
| Casing Lock, Y or N | Y | Y | Y | Y |
| Key Number | 2106 | 2106 | 2106 | 2106 |
| Casing Diameter, in. | 2.00 | 2.00 | 2.00 | 2.00 |
| Casing Stick-up ft. | 3.31 | 2.41 | 2.21 | 3.04 |
| Static Depth, ft. | 6.83 | 6.27 | 8.27 | 10.16 |
| Casing Length, ft. | 12.24 | 10.24 | 16.77 | 19.93 |
| Column Length, ft. | 5.41 | 3.97 | 8.50 | 9.77 |
| Column Volume, gal. | 0.88 | 0.65 | 1.39 | 1.59 |
| Development Volume, gal. | 17 | 31 | 43 | 75 |
| Method | 2" Cent. | 2" Cent. | 2" Cent. | 2" Cent. |
| Start Time, hrs. | 8:45 | 10:20 | 13:51 | 15:05 |
| Stop Time, hrs. | 8:55 | 11:40 | 14:06 | 15:33 |
| Pumping Duration, hrs. : min. | 0:10 | 1:20 | 0:15 | 0:28 |
| Development Rate, gpm | 1.73 | 0.38 | 2.87 | 2.68 |
| Casing Volumes Purged | 19.60 | 47.23 | 30.94 | 47.17 |
| Field Work By | DAM | DAM | DAM | DAM |

2" Cent. = 2" Centrifugal Pump

Table 2
Monitoring Well Stabilization Data
Larson Boats - Little Falls, Minnesota
*Precision Environmental* July 18, 1989

| Stabilization Data | MW-01 | MW-02 | MW-03 | MW-04 |
|---|---|---|---|---|
| Stabilization Date | 7/18/89 | 7/18/89 | 7/18/89 | 7/18/89 |
| Chronology | 1 | 2 | 3 | 4 |
| Casing Lock, Y or N | Y | Y | Y | Y |
| Key Number | 2106 | 2106 | 2106 | 2106 |
| Casing Diameter, in. | 2.00 | 2 00 | 2 00 | 2.00 |
| Casing Stick-up ft. | 3 31 | 2.41 | 2.21 | 3.04 |
| Static Depth, ft. | 6.83 | 6.27 | 8.27 | 10.16 |
| Casing Length, ft. | 12.24 | 10.24 | 16.77 | 19.93 |
| Column Length, ft. | 5.41 | 3.97 | 8.50 | 9.77 |
| Column Volume, gal. | 0.88 | 0.65 | 1.39 | 1.59 |
| Stabilized, Y or N | Y | Y | Y | Y |
| Volume Interval, gal. | 1.00 | 4.00 | 1.50 | 2.00 |
| Method | 1.8" Sub. | 1.8" Sub. | 1.8" Sub. | 1.8" Sub. |
| Start Time, hrs. | 9.18 | 11:45 | 14:13 | 15:36 |
| Stop Time, hrs. | 9:30 | 12:00 | 14:20 | 15.41 |
| Duration, hrs. : min. | 0.12 | 0:15 | 0:07 | 0:05 |
| Volume Purged, gal. | 9 0 | 4.5 | 8.5 | 12.0 |
| Casing Volumes Purged | 10.23 | 6.92 | 6.12 | 7.55 |
| Purge Rate, gpm | 0.75 | 0.30 | 1.21 | 2.40 |
| R-1 Temperature, °C | 14.7 | 21.0 | 14.5 | 13.4 |
| R-2 Temperature, °C | 14.6 | 20.8 | 14.4 | 13.3 |
| R-3 Temperature, °C | 14.4 | 20.5 | 14.2 | 13.3 |
| Maximum Deviation, °C | 0.3 | 0.5 | 0.3 | 0.1 |
| R-1 Conductivity, umhos/cm | 500 | 400 | 410 | 410 |
| R-2 Conductivity, umhos/cm | 500 | 420 | 410 | 410 |
| R-3 Conductivity, umhos/cm | 500 | 410 | 400 | 400 |
| Maximum Deviation, percent | <0 01 | 4.76 | 2.44 | 2.44 |
| R-1 pH, st'd units | 7.3 | 7.5 | 6.6 | 6.4 |
| R-2 pH, st'd units | 7.4 | 7.4 | 6.6 | 6.4 |
| R-3 pH, st'd units | 7.3 | 7.4 | 6.6 | 6.4 |
| Maximum Deviation, st'd units | 0.1 | 0.1 | <0.1 | <0.1 |
| Pumped Dry, Y or N | N | N | N | N |
| Recovery Rate, gpm | NA | NA | NA | NA |
| Field Work By | DAM | DAM | DAM | DAM |

1.8" Sub. = 1.8" Submersible Pump

Table 3
Monitoring Well Sampling Data
Larson Boats - Little Falls, Minnesota
Precision Environmental July 18, 1989

| Sampling Data | MW-01 | MW-02 | MW-03 | MW-04 |
|---|---|---|---|---|
| Matrix | Water | Water | Water | Water |
| Time Collected, hrs. | 9:45 | 12.15 | 14:45 | 16:02 |
| Date Collected | 7/18/89 | 7/18/89 | 7/18/89 | 7/18/89 |
| Chronology | 1 | 2 | 3 | 4 |
| **Sample Appearance** | | | | |
| Color | L. Gray | None | None | None |
| Phases | None | None | None | None |
| Odor | None | None | None | None |
| General Appearance | S. Turbid | Clear | Clear | Clear |
| **Weather Data** | | | | |
| Ambient Temperature, °C | 22.0 | 22.0 | 22.0 | 22.0 |
| Percent Overcast | 100 | 100 | 100 | 100 |
| Precipitation | None | None | None | None |
| Wind Direction, Est. MPH | N, 0-5 | N, 0-5 | NE, 5-10 | NE, 5-10 |
| **Sampling Method*** | Method | Method | Method | Method |
| Container A | 1 | 1 | 1 | 1 |
| Container B | 1 | 2 | 3 | 3 |
| Container C | 1 | 1 | 1 | 1 |
| Container D | 2 | 2 | 2 | 2 |
| Container E | 2 | 2 | 2 | 2 |
| Container F | 2 | 2 | 2 | 2 |
| **Field Parameters** | | | | |
| Temperature, °C | 14.6 | 20.8 | 14.6 | 13.6 |
| Conductivity, umhos/cm | 520 | 400 | 400 | 400 |
| pH, st'd units | 7.4 | 7.5 | 6.7 | 6.4 |

*Sampling Method

Method #1 A disposable 0.45 micron in-line filter was installed on pump discharge line after stabilization testing. The sample was collected from the filter discharge.

Method #2 Collected using an MPCA stainless steel bailer after stabilization testing.

Method #3 Grab sampled from the pump discharge line after stabilization testing.

Appendix A

Field Data Forms

| PRECISION ENVIRONMENTAL | GROUND WATER MONITORING DATA SHEET | Page 1 of 2 |
|---|---|---|

| | |
|---|---|
| Client: Geotechnical Engineering | Project Title: GW Mont - Little Falls |
| Address: 1925 Oakcrest | Project Number C152-GW13 |
| City, State Zip. Roseville, MN 55113 | Contact: Steve Bennett/636-7744 |

| General Data | |
|---|---|
| Location I.D. | MW-1 |
| Date: | 7/18/89 |
| Chron.: | 1 |
| Casing Lock: | (Y) N |
| Key No.: | 2106 |
| Casing Dia., in.: | 2" |
| Casing Stick-up, ft.: | 3.31 |
| Static Depth, ft.: | 6.83 |
| Casing Length, ft.: | 12.24 |
| Column Length, ft.: | 5.41 |
| Column Vol., gal.: | .88 |
| Development/Purge Data | NA |
| Result: | clear |
| Vol Purged, gal.: | 17.25 |
| Method: | 2" cent. |
| Start Time, hrs: | 8 45 |
| Stop Time, hrs.: | 8.55 |
| Duration, min.: | 10 |
| Rate, gpm | 1.73 |
| Casing Vol. Purged. | 19.60 |
| Stabilization Data | NA |
| Stabilized | (Y) N |
| Casing Vols Required. | 3 |
| Vol Interval, gal: | 1.0 |
| Method. | 1.4" Sub |
| Start Time, hrs.: | 9 18 |
| Stop Time, hrs. | 9 30 |
| Duration, min: | 12 |
| Vol Purged, gal: | 9.0 |
| Casing Vol. Purged: | 10.23 |
| Purge Rate, gpm: | ~~.85~~ .75 |
| Form Completed by | DAM |

Stabilization Test

| Calibration Check | | | | | 4 (7) (10) | |
|---|---|---|---|---|---|---|
| Vol. No. | Time | Vol, gal | Temp, °C | SC, umhos | pH, units | Other |
| (1) | 922 | 3.0 | 14.7 | 500 | 7.3 | |
| (2) | 924 | 4.0 | 14.6 | 500 | 7.4 | |
| (3) | 926 | 5.0 | 14.4 | 500 | 7.3 | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |

| | | | |
|---|---|---|---|
| Maximum Result | 14.7 | 500 | 7.4 |
| Minimum Result | 14.4 | 500 | 7.3 |
| Difference | .3 | 0 % | .1 |

| Recovery Rate Data (NA) | Weather Data |
|---|---|
| Recovery Rate, gpm. | Ambient Temp., °C: 22 |
| Purge Method: | Percent Overcast: 100 |
| Initial Static Depth, ft.: | Precipitation. Light rain |
| Final Static Depth, ft.: | Wind Dir., Est. MPH. Calm |
| Test Time, min.: | Sampling Data |
| Recovery, ft.: | Samples Collected (Y) N |
| Recovery, gal.. | SCDS Attached (Y) N |

Comments

3 Gelman filters

$$\frac{2.6}{55} = \frac{.82}{x}$$

Date Completed: 7/18

Present On-site: Spice

| PRECISION ENVIRONMENTAL | SAMPLE COLLECTION DATA SHEET | Page 2 of 2 |
|---|---|---|

| | | | |
|---|---|---|---|
| Client: | Geotechnical Engineering | Project Title: | GW Mont - Little Falls |
| Address: | 1925 Oakcrest | Project Number. | C152-GW13 |
| City, State Zip: | Roseville, MN 55113 | Contact: | Steve Bennett/636-7744 |

| | |
|---|---|
| Sample I.D.: | MW - 1 |
| Matrix: | Water |
| Time Collected: | 9:45 |
| Date Collected: | 7/18/89 |
| Chronology: | 1 |
| Sample Appearance | |
| Color: | light grey |
| Phases: | None |
| Odor: | None |
| General Appearance: | slightly Turb.d |
| Ambient Temp., °C: | 22 |
| Percent Overcast: | 100 |
| Precipitation | None |
| Wind Dir., Est. MPH: | N, 0-5 |

Comments or Diagrams:

| | |
|---|---|
| Sampling Method #1 | Grab from 1.8" sub pump .45 micron 90/min |
| Sampling Method #2 | Grab from SS bailer |
| Sampling Method #3 | |

| I.D. | Quantity | Dist | Material | Type | Size | Preparation | Preservative | Method # |
|---|---|---|---|---|---|---|---|---|
| A | 1 | MPCA | PE | B | 1000 | MPCA | $HNO_3$ | 1 |
| B | 1 | MPCA | PE | B | 1000 | MPCA | NaOH | 1 |
| C | 1 | Barr | A | B | 500 | Barr | $HNO_3$ | 1 |
| D | 2 | MPCA | A | B | 3000 | MPCA | None | 2 |
| E | 2 | MPCA | F | SV | 40 | MPCA | None | 2 |
| F | 2 | ~~MPCA~~ Barr | A | SV | 40 | Barr | None | 2 |

| Field Parameters | Result | Method | MDL | Calibration |
|---|---|---|---|---|
| Temp, °C | 14.6 | Beckman | 0.1 | Hg |
| SC, umhos/cm | 520 | YSI | 10 | CT RL |
| pH St'd Units | 7.4 | Beckman | 0.1 | 7 10 |
| | | | | |

| | | |
|---|---|---|
| Form Completed by DAM | Date Completed. 7/18/89 | Present On-site Susan Price / Randy |

| PRECISION ENVIRONMENTAL | GROUND WATER MONITORING DATA SHEET | Page 1 of 2 |
|---|---|---|

| | |
|---|---|
| Client: Geotechnical Engineering | Project Title: GW Mont - Little Falls |
| Address: 1925 Oakcrest | Project Number: C152-GW13 |
| City, State Zip: Roseville, MN 55113 | Contact: Steve Bennett/636-7744 |

| General Data | |
|---|---|
| Location I.D. | MW-2 |
| Date: | 7/18/89 |
| Chron.: | 2 |
| Casing Lock: | (Y) N |
| Key No.: | 2106 |
| Casing Dia., in.: | 2" |
| Casing Stick-up, ft.: | 2.41 |
| Static Depth, ft.: | 6.27 |
| Casing Length, ft: | 10.24 |
| Column Length, ft: | 3.97 |
| Column Vol, gal.: | .65 |
| Development/Purge Data | NA |
| Result: | Clear |
| Vol Purged, gal: | ~~14.4~~ 30.7 |
| Method: | 2" cent |
| Start Time, hrs.: | 1020 |
| Stop Time, hrs.: | ~~1100~~ 1140 |
| Duration, min: | ~~40~~ 80 |
| Rate, gpm: | ~~.36~~ .38 |
| Casing Vol. Purged: | ~~7.2~~ 47.23 |
| Stabilization Data | NA |
| Stabilized | (Y) N |
| Casing Vols Required: | 4 |
| Vol. Interval, gal | 1.0 |
| Method: | 1.5" sub |
| Start Time, hrs: | 1145 |
| Stop Time, hrs. | 1160 |
| Duration, min.: | 15 |
| Vol. Purged, gal: | 4.5 |
| Casing Vol. Purged: | 6.92 |
| Purge Rate, gpm | .3 |

Stabilization Test

| Calibration Check | | | | | 4 7 10 | |
|---|---|---|---|---|---|---|
| Vol. No. | Time | Vol, gal. | Temp, °C | SC, umhos | pH, units | Other |
| 1 | 11:49 | 1.0 | 21.5 | 400 | 7.5 | |
| (2) | 11:52 | 2.0 | 21.0 | 400 | 7.5 | |
| (3) | 11:55 | 3.0 | 20.8 | 420 | 7.4 | |
| (4) | 11:58 | 4.0 | 20.5 | 410 | 7.4 | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |
| Maximum Result | | | 21.0 | 420 | 7.5 | |
| Minimum Result | | | 20.5 | 400 | 7.4 | |
| Difference | | | .5 | 4.76 % | .1 | |

| Recovery Rate Data (NA) | Weather Data |
|---|---|
| Recovery Rate, gpm: | Ambient Temp., °C: 22 |
| Purge Method: | Percent Overcast: 100 |
| Initial Static Depth, ft.: | Precipitation: None |
| Final Static Depth, ft.: | Wind Dir., Est. MPH: N, 0-5 |
| Test Time, min.: | Sampling Data |
| Recovery, ft: | Samples Collected (Y) N |
| Recovery, gal.: | SCDS Attached Y N |

Comments:

| | | |
|---|---|---|
| Form Completed by: DAM | Date Completed: 7/18/89 | Present On-site: S. Price, J. Aike |

| PRECISION ENVIRONMENTAL | SAMPLE COLLECTION DATA SHEET | Page of |
|---|---|---|

| | | | |
|---|---|---|---|
| Client: | Geotechnical Engineering | Project Title: | GW Mont - Little Falls |
| Address: | 1925 Oakcrest | Project Number. | C152-GW13 |
| City, State Zip. | Roseville, MN 55113 | Contact: | Steve Bennett/636-7744 |

| | |
|---|---|
| Sample I.D.: | MW-2 |
| Matrix: | Water |
| Time Collected: | 12:15 |
| Date Collected: | 7/18/87 |
| Chronology. | 2 |
| Sample Appearance | |
| Color: | None |
| Phases: | None |
| Odor: | None |
| General Appearance: | clear |
| Ambient Temp., °C: | 22 |
| Percent Overcast: | 100 |
| Precipitation | None |
| Wind Dir., Est MPH: | N, 0-5 |

Comments or Diagrams:

3 filters used

| | |
|---|---|
| Sampling Method #1 | Grab from 1.8" sub .45 micron Gelman |
| Sampling Method #2 | Grab from SS bailer (MPCA bailer) |
| Sampling Method #3 | |

| I.D. | Quantity | Dist | Material | Type | Size | Preparation | Preservative | Method # |
|---|---|---|---|---|---|---|---|---|
| A | 1 | MPCA | PE | B | 1000 | MPCA | $HNO_3$ | 1 |
| B | 1 | MPCA | PE | B | 1000 | MPCA | NaOH | 2 |
| C | 1 | Barr | A | B | 500 | Barr | $HNO_3$ | 1 |
| D | 4 | MPCA | A | B | 3000 | MPCA | None | 2 |
| E | 4 | MPCA | F | SV | 40 | MPCA | None | 2 |
| F | 2 | Barr | A | SV | 40 | Barr | None | 2 |

| Field Parameters | Result | Method | MDL | Calibration |
|---|---|---|---|---|
| Temp, °C | 20.8 | Beckman | 0.1 | Hg |
| SC, umhos/cm | 400 | YSI | 1 | CT RL |
| pH St'd Units | 7.5 | Beckman | 0.1 | 7, 10 |
| | | | | |

| | | |
|---|---|---|
| Form Completed by DAM | Date Completed 7/18/87 | Present On-site S. Price, J. Aikin |

| PRECISION ENVIRONMENTAL | GROUND WATER MONITORING DATA SHEET | Page 1 of 2 |
|---|---|---|

| | | | |
|---|---|---|---|
| Client: | Geotechnical Engineering | Project Title: | GW Mont - Little Falls |
| Address: | 1925 Oakcrest | Project Number: | C152-GW13 |
| City, State Zip: | Roseville, MN 55113 | Contact: | Steve Bennett/636-7744 |

| General Data | | Stabilization Test | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Location I.D. | MW - 3 | Calibration Check | | | | | 4 7 10 | |
| Date: | 7/18/88 | Vol. No. | Time | Vol, gal. | Temp, °C | SC, umhos | pH, units | Other |
| Chron.: | 3 | 1 | 1415 | 2.0 | 15.0 | 450 | 6.4 | |
| Casing Lock: | (Y) N | 2 | 1416 | 3.5 | 14.5 | 410 | 6.6 | |
| Key No.: | 7106 | 3 | 1417 | 5.0 | 14.4 | 410 | 6.6 | |
| Casing Dia., In.: | 2" | 4 | 1419 | 6.5 | 14.2 | 400 | 6.6 | |
| Casing Stick-up, ft.: | 2.21 | 5 | | | | | | |
| Static Depth, ft.: | 8.27 | 6 | | | | | | |
| Casing Length, ft.: | 16.77 | 7 | | | | | | |
| Column Length, ft.: | 8.5 | 8 | | | | | | |
| Column Vol., gal.: | 1.39 | 9 | | | | | | |
| Development/Purge Data | NA | 10 | | | | | | |
| Result: | clear | Maximum Result | | | 14.5 | 410 | 6.6 | |
| Vol. Purged, gal: | ~~42.94~~ 43 | Minimum Result | | | 14.2 | 400 | 6.6 | |
| Method: | 7" cent | Difference | | | .3 | 2.44 % | < .1 | |
| Start Time, hrs.: | 1351 | Recovery Rate Data | | | (NA) | Weather Data | | |
| Stop Time, hrs.: | 1406 | Recovery Rate, gpm: | | | | Ambient Temp., °C: | 21 | |
| Duration, min.: | 15 | Purge Method: | | | | Percent Overcast: | 100 | |
| Rate, gpm: | 2.87 | Initial Static Depth, ft.: | | | | Precipitation: | None | |
| Casing Vol. Purged: | 30.94 | Final Static Depth, ft.: | | | | Wind Dir., Est. MPH: | NE, 10-15 | |
| Stabilization Data | NA | Test Time, min: | | | | Sampling Data | | |
| Stabilized | (Y) N | Recovery, ft: | | | | Samples Collected | (Y) N | |
| Casing Vols. Required: | 4 | Recovery, gal: | | | | SCDS Attached | (Y) N | |
| Vol. Interval, gal: | 1.5 | Comments: | | | | | | |
| Method: | 1.8" sub. | | | | | | | |
| Start Time, hrs: | 1413 | | | | | | | |
| Stop Time, hrs | 1420 | | | | | | | |
| Duration, min.: | 7.0 | | | | | | | |
| Vol Purged, gal: | 8.5 | | | | | | | |
| Casing Vol. Purged: | 6.12 | | | | | | | |
| Purge Rate, gpm | 1.21 | | | | | | | |
| Form Completed by | DAM | Date Completed | 7/18 | | | Present On-site | S. Price, J. Aike | |

| PRECISION ENVIRONMENTAL | SAMPLE COLLECTION DATA SHEET | Page 2 of 2 |
|---|---|---|

| | | | |
|---|---|---|---|
| Client: | Geotechnical Engineering | Project Title: | GW Mont - Little Falls |
| Address: | 1925 Oakcrest | Project Number: | C152-GW13 |
| City, State Zip: | Roseville, MN 55113 | Contact | Steve Bennett/636-7744 |

| | |
|---|---|
| Sample I.D.: | MW-3 |
| Matrix: | Water |
| Time Collected: | 1445 |
| Date Collected: | 7/18/89 |
| Chronology: | 3 |
| Sample Appearance | |
| Color: | None |
| Phases: | None |
| Odor: | None |
| General Appearance: | clear |
| Ambient Temp., °C: | 22 |
| Percent Overcast: | 100 |
| Precipitation | NE |
| Wind Dir., Est MPH: | 5-10 |

Comments or Diagrams:

2 Gelman filters

| | |
|---|---|
| Sampling Method #1 | Grab from 1.8" sub .45 micron |
| Sampling Method #2 | Grab from SS bailer |
| Sampling Method #3 | Grab from 1.8" sub |

| I.D. | Quantity | Dist | Material | Type | Size | Preparation | Preservative | Method # |
|---|---|---|---|---|---|---|---|---|
| A | 1 | MPCA | PE | B | 1000 | MPCA | $HNO_3$ | 1 |
| B | 1 | MPCA | PE | B | 1000 | MPCA | NaOH | 3 |
| C | 1 | Barr | A | B | 500 | Barr | $HNO_3$ | 1 |
| D | 2 | MPCA | A | B | 3000 | MPCA | None | 2 |
| E | 2 | MPCA | F | SV | 40 | MPCA | None | 2 |
| F | 2 | Barr | A | SV | 40 | Barr | None | 2 |

| Field Parameters | Result | Method | MDL | Calibration |
|---|---|---|---|---|
| Temp, °C | 14.6 | Beckman | 0.1 | Hg |
| SC, umhos/cm | 400 | YSI | 1 | CT RL |
| pH St'd Units | 6.7 | Beckman | 0.1 | 7, 10 |
| | | | | |

| | | |
|---|---|---|
| Form Completed by: DAM | Date Completed: 7/18/89 | Present On-site: S Price J Aiken |

| PRECISION ENVIRONMENTAL | GROUND WATER MONITORING DATA SHEET | Page 1 of 2 |
|---|---|---|

| | | | |
|---|---|---|---|
| Client: | Geotechnical Engineering | Project Title: | GW Mont - Little Falls |
| Address: | 1925 Oakcrest | Project Number: | C152-GW13 |
| City, State Zip: | Roseville, MN 55113 | Contact: | Steve Bennett/636-7744 |

| General Data | | Stabilization Test | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Location I.D. | MW-4 | Calibration Check | | | | | 4 7 10 | |
| Date: | 7/18/89 | Vol. No | Time | Vol, gal | Temp, °C | SC, umhos | pH, units | Other |
| Chron.: | 4 | 1 | 1537 | 2.0 | 14.7 | 425 | 6.5 | |
| Casing Lock: | (Y) N | 2 | 1538 | 4.0 | 15.1 | 440 | 6.3 | |
| Key No.: | 2106 | (3) | 1539 | 6.0 | 13.4 | 410 | 6.4 | |
| Casing Dia., in.: | 2" | (4) | 1540 | 8.0 | 13.4 | 410 | 6.4 | |
| Casing Stick-up, ft.: | 3.04 | (5) | 1540 | 10.0 | 13.3 | 400 | 6.4 | |
| Static Depth, ft.: | 10.16 | 6 | | | | | | |
| Casing Length, ft: | 19.93 | 7 | | | | | | |
| Column Length, ft.: | 9.77 | 8 | | | | | | |
| Column Vol., gal: | 1.59 | 9 | | | | | | |
| Development/Purge Data | NA | 10 | | | | | | |
| Result: | Clear | Maximum Result | | | 13.4 | 410 | 6.4 | |
| Vol Purged, gal: | 75 | Minimum Result | | | 13.3 | 400 | 6.4 | |
| Method. | 2" cent. | Difference | | | .1 | 2.44 % | <.1 | |

| | | | |
|---|---|---|---|
| Start Time, hrs.: | 1505 | Recovery Rate Data (NA) | Weather Data |
| Stop Time, hrs.: | 1533 | Recovery Rate, gpm: | Ambient Temp., °C: 22 |
| Duration, min: | 28 | Purge Method: | Percent Overcast: 100 |
| Rate, gpm: | 2.66 | Initial Static Depth, ft.: | Precipitation: None |
| Casing Vol. Purged: | 47.17 | Final Static Depth, ft.: | Wind Dir., Est. MPH: NE 10-15 |
| Stabilization Data | NA | Test Time, min.: | Sampling Data |
| Stabilized | (Y) N | Recovery, ft.: | Samples Collected (Y) N |
| Casing Vols. Required: | 5 | Recovery, gal.. | SCDS Attached (Y) N |
| Vol. Interval, gal | 2.0 | Comments: | |
| Method: | 1.8" Sub. | | |
| Start Time, hrs.: | 1536 | | |
| Stop Time, hrs | 1541 | | |
| Duration, min: | 5 | | |
| Vol Purged, gal. | 12 | | |
| Casing Vol. Purged: | 7.55 | | |
| Purge Rate, gpm | 2.4 | | |
| Form Completed by | DAm | Date Completed 7/18/89 | Present On-site S. Rice, J. Ake |

| PRECISION ENVIRONMENTAL | SAMPLE COLLECTION DATA SHEET | Page of |
|---|---|---|

| | | | |
|---|---|---|---|
| Client: | Geotechnical Engineering | Project Title. | GW M[illegible] Falls |
| Address: | 1925 Oakcrest | Project Number. | C[illegible] |
| City, State Zip: | Roseville, MN 55113 | Contact. | Steve Bennett/636-7744 |

| | |
|---|---|
| Sample I.D.: | MW-4 |
| Matrix: | Water |
| Time Collected: | 1602 |
| Date Collected | 7/18/89 |
| Chronology: | 4 |
| Sample Appearance | |
| Color: | None |
| Phases: | None |
| Odor: | None |
| General Appearance: | Clear |
| Ambient Temp., °C: | 22 |
| Percent Overcast: | 100 |
| Precipitation | None |
| Wind Dir., Est. MPH: | NE, 5-10 |

Comments or Diagrams:

MPCA Provided filters

| | |
|---|---|
| Sampling Method #1 | Grab from 1.8" sub .45 micron nalgene |
| Sampling Method #2 | Grab from ss bailer |
| Sampling Method #3 | Grab from 1.8" sub |

| I.D. | Quantity | Dist. | Material | Type | Size | Preparation | Preservative | Method # |
|---|---|---|---|---|---|---|---|---|
| A | 2 | MPCA | PE | B | 1000 | MPCA | $HNO_3$ | 1 |
| B | 2 | MPCA | PE | B | 1000 | MPCA | NaOH | 3 |
| C | 1 | Barr | A | B | 500 | Barr | $HNO_3$ | 1 |
| D | 4 | MPCA | A | B | 3000 | MPCA | None | 2 |
| E | 4 | MPCA | F | SV | 40 | MPCA | None | 2 |
| F | 2 | Barr | A | SV | 40 | Barr | None | C |

| Field Parameters | Result | Method | MDL | Calibration |
|---|---|---|---|---|
| Temp, °C | 19.6 | Beckman | 0.1 | Hg |
| SC, umhos/cm | 400 | YSI | 1 | CT RL |
| pH St'd Units | 6.4 | Beckman | 0.1 | 7, 10 |
| | | | | |

| | | |
|---|---|---|
| Form Completed by DAM | Date Completed: 7/18/89 | Present On-site: S. Price, J. Aiken |

F

MINNESOTA POLLUTION CONTROL AGENCY

BOREHOLE AND SOIL SAMPLING FORM

Site Name: Larson Boats

EPA ID Number: MND062822960

Aid/Cost Code: 830356

Date of Boring: 6/26/89

Location: Little Falls, Minnesota

Number of Samples Obtained: 0

Owner: Genmar Industries

Sampler: Susan Price

Boring Unique Number: MW-1

Sheet: 1 of 2

Weather Conditions: Temp: 89° Wind: 20 SW Precipitation: 0

Clouds: Clear

Soil Boring Description

Drilling Equipment Used: CME 550

Drilling Method: Hollow Stem Auger

Borehole Depth: 10.0 feet

Diameter: 3½" I.D.

Sample Intervals: No sample taken 0-8 feet, well installed.

Sampling Methods: Split-Spoon

Decontamination Procedures: TSP with triple deionized water rinse. Steam cleaned all well screens and riser before installation.

Site Name: Larson Boats

Boring Number: MW-1

Sample Data

| SAMPLE NUMBER | HNU | BLOW COUNTS | DEPTH RANGE | SOIL DESCRIPTION |
|---|---|---|---|---|
| | | | 0-8 | No Sample Taken. |
| | | 31/36/50 | 8-10 | Bedrock, mica schist, weathered greenish gray. |

Boring Depth: 10 feet

Water Level While Drilling: 3.5

Water Level After Drilling: 3.5

Cavein Depth: 7.6

Comments: HNu malfunctioned. Drillers and MPCA personnel to respirators as a precautionary measure. Installed well at 9 feet, used 5 foot screen.

MINNESOTA POLLUTION CONTROL AGENCY

BOREHOLE AND SOIL SAMPLING FORM

Site Name: Larson Boats EPA ID Number: MND062822960

Aid/Cost Code: 830356 Date of Boring: 6/26/89

Location: Little Falls, Minnesota Number of Samples Obtained: 0

Owner: Genmar Industries Sampler: Susan Price

Boring Unique Number: MW-2 Sheet: 1 of 2

Weather Conditions: Temp: 87° Wind: 20 SW Precipitation: 0

Clouds: Clear

Soil Boring Description

Drilling Equipment Used: CME 550

Drilling Method: Hollow Stem Auger

Borehole Depth: 8.0 feet Diameter: 3¼" I.D.

Sample Intervals: 2 foot recovery.

Sampling Methods: Split-Spoon

Decontamination Procedures: TSP with triple deionized water rinse. Steam cleaned all well screens and riser before installation.

Site Name: Larson Boats

Boring Number: MW-2

Sample Data

| SAMPLE NUMBER | HNU | BLOW COUNTS | DEPTH RANGE | SOIL DESCRIPTION |
|---|---|---|---|---|
| | | 5/3/5/20 | 4.5-6.5 | Clayey to silty sand, fine-grained with gravel, gray and brown 4.5-6.0; weathered mica schist bedrock, greenish gray, 6.0-6.5. |
| | | +50 | 6.5-8.0 | Same as above, bedrock. |

Boring Depth: 8.0

Water Level While Drilling: 3.7

Water Level After Drilling: 3.7

Cavein Depth: 4.0

Comments: HNu malfunctioned. Drillers in respirators. Fiberglass waste evident when drilling 10-inch diameter holes for protective posts.

MINNESOTA POLLUTION CONTROL AGENCY

BOREHOLE AND SOIL SAMPLING FORM

Site Name: Larson Boats EPA ID Number: MND062822960

Aid/Cost Code: 830356 Date of Boring: 6/22/89

Location: Little Falls, Minnesota Number of Samples Obtained:

Owner: Genmar Industries Sampler: Susan Price

Boring Unique Number: MW-3 Sheet: 1 of 2

Weather Conditions: Temp: 78° Wind: 10 SW Precipitation: 0

Clouds: Partly

Soil Boring Description

Drilling Equipment Used: CME 550

Drilling Method: Hollow Stem Auger

Borehole Depth: 15.0 feet Diameter: 3¼" I.D.

Sample Intervals: 2-foot recovery.

Sampling Methods: Split-Spoon

Decontamination Procedures: TSP with triple deionized water rinse. Steam cleaned all well screens and riser before installation.

Site Name: Larson Boats

Boring Number: MW-3

Sample Data

| SAMPLE NUMBER | OVA | BLOW COUNTS | DEPTH RANGE | SOIL DESCRIPTION |
|---|---|---|---|---|
| | 0 | 1/1/1/1 | 4-6 | Fill 4-4.5; silty medium-grained sand, grayish brown, 4.5-6.0. |
| | 1 | 5/3/7/15 | 8-10 | Poorly sorted sand and gravel, grayish brown. |
| | 1 | 12/10/8/27 | 13-15 | Same as above 13-14.7; bedrock, greenish gray mica schist 14.7-15.0. |

Boring Depth: 15 feet

Water Level While Drilling: 6.1

Water Level After Drilling: 7.3

Cavein Depth: 7.2/14.4

Comments: Background 5 ppm OVA. Prior to well installation, there was 1 foot of blow-up, spun auger to chase it out.

MINNESOTA POLLUTION CONTROL AGENCY

BOREHOLE AND SOIL SAMPLING FORM

Site Name: Larson Boats EPA ID Number: MND062822960

Aid/Cost Code: 830356 Date of Boring: 6/26/89

Location: Little Falls, Minnesota Number of Samples Obtained: 0

Owner: Genmar Industries Sampler: Susan Price

Boring Unique Number: MW-4 Sheet: 1 of 2

Weather Conditions: Temp: 85° Wind: 10 NW Precipitation: 0

Clouds: Clear

Soil Boring Description

Drilling Equipment Used: CME 550

Drilling Method: Hollow Stem Auger

Borehole Depth: 17.0 feet Diameter: 3¼" I.D.

Sample Intervals: 2-foot recovery.

Sampling Methods: Split-Spoon

Decontamination Procedures: TSP with triple deionized water rinse. Steam cleaned all well screens and riser before installation.

Site Name: Larson Boats

Boring Number: MW-4

Sample Data

| SAMPLE NUMBER | OVA | BLOW COUNTS | DEPTH RANGE | SOIL DESCRIPTION |
|---|---|---|---|---|
| | | | 0-8 | No Sample Taken. |
| | 500 | 2/2/2/1 | 8-9.5 | Silty, fine-grained sand and gravel, light to medium grayish brown. |
| | 35 | 10/50/4/0 | 11-13 | Dark gray poorly sorted coarse sand and gravel. |
| | 4 | 21/16/9/8 | 13-15 | Dark greenish gray to brown silty sand and gravel. |
| | 4 | 9/6/4/10 | 15-17 | Same as above 15-16.5; silty sand, dark gray 16.5-17.0 (weathered bedrock?). |
| | 4 | 11/5/10/12 | 17-19 | Weathered bedrock? |

Boring Depth: 17 feet

Water Level While Drilling: 7.4

Water Level After Drilling: 7.0

Cavein Depth: 7.7

Comments: Downhole OVA at 12 feet was 35 ppm. No soil sample submitted for analysis as shipping samples from soil borings had already occurred. Bedrock was difficult to distinguish.

MINNESOTA POLLUTION CONTROL AGENCY

BOREHOLE AND SOIL SAMPLING FORM

Site Name: Larson Boats EPA ID Number: MND062822960

Aid/Cost Code: 830356 Date of Boring: 6/20/89

Location: Little Falls, Minnesota Number of Samples Obtained: 2

Owner: Genmar Industries Sampler: Susan Price

Boring Unique Number: B-1 Sheet: 1 of 2

Weather Conditions: Temp: 94° Wind: 30 SW Precipitation: 0

Clouds: Clear

Soil Boring Description

Drilling Equipment Used: CME 550

Drilling Method: Hollow Stem Auger

Borehole Depth: 8.5 feet Diameter: 3¼" I.D.

Sample Intervals: 2-foot recovery, continuous

Sampling Methods: Split-Spoon

Decontamination Procedures: TSP with triple deionized water rinse, downhole tools only.

Site Name: Larson Boats

Boring Number: B-1

Sample Data

| SAMPLE NUMBER | HNU | BLOW COUNTS | DEPTH RANGE | SOIL DESCRIPTION |
|---|---|---|---|---|
| SØ2 | 6 | 1/2/2/6 | 1-3 | Woodfill 1-1.5; black organic peat fill with orange paint (?) flecks. |
| | 0 | 4/5/4/2 | 3-5 | Fine-grained silty sand with < 10% gravel, roots. |
| | 0 | 3/4/7/11 | 5-7 | Fine-grained silty sand, gray. |
| SØ3 | 0 | 11/18/42/24 | 7-8.5 | Weathered bedrock, mica schist. |
| | 0 | 9/17/19/24 | 8.5-10 | Same as above. |

Boring Depth: 8.5 feet

Water Level While Drilling: 3.9/5.6/1.9

Water Level After Drilling: 1.9

Cavein Depth: 8.2/9.4/8.4

Comments: Drilling completed on 6/21/89, heavy precipitation occurred the previous night causing the water table to rise.

MINNESOTA POLLUTION CONTROL AGENCY

BOREHOLE AND SOIL SAMPLING FORM

Site Name: Larson Boats EPA ID Number: MND062822960

Aid/Cost Code: 830356 Date of Boring: 6/20/89

Location: Little Falls, Minnesota Number of Samples Obtained: 1

Owner: Genmar Industries Sampler: Susan Price

Boring Unique Number: B-3 Sheet: 1 of 2

Weather Conditions: Temp: 94° Wind: 30 SW Precipitation: 0

Clouds: Clear

Soil Boring Description

Drilling Equipment Used: CME 550

Drilling Method: Hollow Stem Auger

Borehole Depth: 15.0 feet Diameter: 3¼" I.D.

Sample Intervals: 2-foot recovery, continuous

Sampling Methods: Split-Spoon

Decontamination Procedures: TSP with triple deionized water rinse, downhole tools only.

Site Name: Larson Boats

Boring Number: B-3

Sample Data

| SAMPLE NUMBER | OVA | BLOW COUNTS | DEPTH RANGE | SOIL DESCRIPTION |
|---|---|---|---|---|
| SØ1 | 0 | 3/5/5/10 | 1-3 | Fine-grained silty sand < 10% gravel, trace of organics - fill. |
| | 0 | 4/6/4/4 | 3-5 | Same as above. |
| | 0 | 2/8/8/10 | 5-7 | Fine-grained silty sand, medium brown. |
| | 1 | 4/6/10 | 7-8.5 | Poorly sorted gravel with silty sand, medium brown. |
| | 1 | 6/12/20 | 8.5-10 | Same as above 8.5-9.5; weathered bedrock mica schist 9.5-10. |
| | 1 | 12/17/16/16 | 10-12 | Weathered bedrock, mica schist. |
| | 0 | 18/19/14 | 12-13.5 | Same as above. |
| | 0 | 9/18/23 | 13.5-15 | Same as above. |
| | 0 | 12/42/43/50 | 15 | Same as above. |

Boring Depth: 15 feet

Water Level While Drilling: 4.2

Water Level After Drilling: 10.6

Cavein Depth: 4.8/16.4

Comments:

MINNESOTA POLLUTION CONTROL AGENCY

BOREHOLE AND SOIL SAMPLING FORM

Site Name: Larson Boats EPA ID Number: MND062822960

Aid/Cost Code: 830356 Date of Boring: 6/20/89

Location: Little Falls, Minnesota Number of Samples Obtained: 1

Owner: Genmar Industries Sampler: Susan Price

Boring Unique Number: B-4 Sheet: 1 of 2

Weather Conditions: Temp: 95° Wind: 20 SW Precipitation: 0

Clouds: Clear

Soil Boring Description

Drilling Equipment Used: CME 550

Drilling Method: Hollow Stem Auger

Borehole Depth: 12.0 feet Diameter: 3¼" I.D.

Sample Intervals: 2-foot recovery, continuous

Sampling Methods: Split-Spoon

Decontamination Procedures: TSP with triple deionized water rinse, downhole tools only.

Site Name: Larson Boats

Boring Number: B-4

Sample Data

| SAMPLE NUMBER | OVA | BLOW COUNTS | DEPTH RANGE | SOIL DESCRIPTION |
|---|---|---|---|---|
| | 0 | 2/3/3/3 | 1-3 | Silty sand, medium brown with wood debris, plastic and paint chips - fill. |
| | 0 | 2/2/3/2 | 3-5 | Same as above. |
| | 0 | 2/3/8312 | 5-7 | Same as above. |
| | 0 | 6/8/12 | 7-8.5 | Fine-grained silty sand with 20% gravel, medium brown. |
| | 0 | 7/6/7 | 8.5-10 | Poorly sorted, fine-grained silty sand, brown 9-9.2; silt with 10% gravel, gray 9.2-9.5; weathered bedrock, mica schist 9.5-10. |
| | | 21/50+5 | 10-10.5 | Weathered bedrock, mica schist. |
| | | 54/70+4 | 12-13.3 | Bedrock, mica schist. |

Boring Depth: 12 feet

Water Level While Drilling: 5.5

Water Level After Drilling: 3.2

Cavein Depth: 6.9/11.5

Comments: No samples submitted for analysis.

MINNESOTA POLLUTION CONTROL AGENCY

BOREHOLE AND SOIL SAMPLING FORM

Site Name: Larson Boats EPA ID Number: MND062822960

Aid/Cost Code: 830356 Date of Boring: 6/22/89

Location: Little Falls, Minnesota Number of Samples Obtained: 1

Owner: Genmar Industries Sampler: Susan Price

Boring Unique Number: B-5 Sheet: 1 of 2

Weather Conditions: Temp: 75° Wind: 10 SW Precipitation: 0

Clouds: Partly

Soil Boring Description

Drilling Equipment Used: CME 550

Drilling Method: Hollow Stem Auger

Borehole Depth: 10.0 feet Diameter: 3¼" I.D.

Sample Intervals: 2-foot recovery, continuous

Sampling Methods: Split-Spoon

Decontamination Procedures: TSP with triple deionized water rinse, downhole tools only.

Site Name: Larson Boats

Boring Number: B-5

Sample Data

| SAMPLE NUMBER | OVA | BLOW COUNTS | DEPTH RANGE | SOIL DESCRIPTION |
|---|---|---|---|---|
| SØ9 | 0 | 2/2/2/1 | 1-3 | Silty sand, medium to dark brown - fill. |
| | 0 | 1/1/1/2 | 3-5 | Same as above. |
| | 0 | 2/5/8/4 | 5-7 | Poorly sorted silty fine-grained sand, < 10% gravel. |
| | 0 | 4/6/3 | 7-8.5 | Coarse sand and gravel, 7-8.3; greenish gray clay with iron-staining, weathered bedrock (?), 8.3-8.5. |
| | 0 | 2/4/2 | 8.5-10 | Weathered bedrock, mica schist. |
| | 0 | 4/3/4/5 | 10-12 | Weathered bedrock, mica schist. |

Boring Depth: 10 feet

Water Level While Drilling: 6.4

Water Level After Drilling: 6.4

Cavein Depth: 6.7

Comments:

MINNESOTA POLLUTION CONTROL AGENCY

BOREHOLE AND SOIL SAMPLING FORM

Site Name: Larson Boats

EPA ID Number: MND062822960

Aid/Cost Code: 830356

Date of Boring: 6/21/89

Location: Little Falls, Minnesota

Number of Samples Obtained: 1

Owner: Genmar Industries

Sampler: Susan Price

Boring Unique Number: B-6

Sheet: 1 of 2

Weather Conditions: Temp: 85° Wind: 10 SE Precipitation: 0

Clouds: Clear

Soil Boring Description

Drilling Equipment Used: CME 550

Drilling Method: Hollow Stem Auger

Borehole Depth: 10.0 feet

Diameter: 3¼" I.D.

Sample Intervals: 2-foot recovery, continuous

Sampling Methods: Split-Spoon

Decontamination Procedures: TSP with triple deionized water rinse, downhole tools only.

Site Name: Larson Boats

Boring Number: B-6

Sample Data

| SAMPLE NUMBER | OVA | BLOW COUNTS | DEPTH RANGE | SOIL DESCRIPTION |
|---|---|---|---|---|
| SØ7 | 3 | 3/4/4/2 | 1-3 | Fine-grained silty sand, dark brown to black - fill. |
| | 0 | 1/1/1/2 | 3-5 | Same as above. |
| | 0 | 3/6/10/3 | 5-7 | Fine-grained silty sand, < 10% gravel, reddish brown. |
| | 0 | 3/3/4 | 7-8.5 | Silt with gravel, dark greenish gray, iron mottling, possibly weathered bedrock. |
| | 0 | 10/14/19 | 8.5-10 | Weathered bedrock mica schist. |
| | 0 | 6/9/13/18 | 10-12 | Same as above |

Boring Depth: 10 feet

Water Level While Drilling: Dry/5.8

Water Level After Drilling: 5.7

Cavein Depth: 11.9/9.9/9.8

Comments: OVA background at 6 ppm due to rig exhaust.

MINNESOTA POLLUTION CONTROL AGENCY

BOREHOLE AND SOIL SAMPLING FORM

Site Name: Larson Boats EPA ID Number: MND062822960

Aid/Cost Code: 830356 Date of Boring: 6/22/89

Location: Little Falls, Minnesota Number of Samples Obtained: 1

Owner: Genmar Industries Sampler: Susan Price

Boring Unique Number: B-7 Sheet: 1 of 2

Weather Conditions: Temp: 75° Wind: 5 SW Precipitation: 0

Clouds: Partly

Soil Boring Description

Drilling Equipment Used: CME 550

Drilling Method: Hollow Stem Auger

Borehole Depth: 12.0 feet Diameter: 3¼" I.D.

Sample Intervals: 2-foot recovery, continuous

Sampling Methods: Split-Spoon

Decontamination Procedures: TSP with triple deionized water rinse, downhole tools only.

Site Name: Larson Boats

Boring Number: B-7

Sample Data

| SAMPLE NUMBER | OVA | BLOW COUNTS | DEPTH RANGE | SOIL DESCRIPTION |
|---|---|---|---|---|
| SØ8 | 0 | 3/3/4/3 | 1-3 | Fine-grained silty sand, reddish brown to black, < 5% gravel - fill. |
| | 0 | 2/1/1/1 | 3-5 | Silty sand, dark brown. |
| | 0 | 1/1/3/10 | 5-7 | Same as above. |
| | 0 | 7/14/23 | 7-8.5 | Poorly sorted coarse sand, < 10% gravel, brown. |
| | 0 | 11/6/3 | 8.5-10 | Same as above 8.5-9.7; silty sand, gray, 9.7-10. |
| | 0 | 3/8/9/9 | 10-12 | Same as above with < 10% gravel. |
| | 0 | 3/6/12 | 12-13.5 | Weathered bedrock, mica schist, iron staining. |

Boring Depth: 12 feet

Water Level While Drilling: 5.8

Water Level After Drilling: 5.6

Cavein Depth: 6.5/11.9

Comments:

MINNESOTA POLLUTION CONTROL AGENCY

BOREHOLE AND SOIL SAMPLING FORM

Site Name: Larson Boats EPA ID Number: MND062822960

Aid/Cost Code: 830356 Date of Boring: 6/21/89

Location: Little Falls, Minnesota Number of Samples Obtained: 1

Owner: Genmar Industries Sampler: Susan Price

Boring Unique Number: B-8 Sheet: 1 of 2

Weather Conditions: Temp: 71° Wind: 5 SW Precipitation: 0

Clouds: Partly

Soil Boring Description

Drilling Equipment Used: CME 550

Drilling Method: Hollow Stem Auger

Borehole Depth: 8.5 feet Diameter: 3¼" I.D.

Sample Intervals: 2-foot recovery, continuous

Sampling Methods: Split-Spoon

Decontamination Procedures: TSP with triple deionized water rinse, downhole tools only.

Site Name: Larson Boats

Boring Number: B-8

Sample Data

| SAMPLE NUMBER | OVA | BLOW COUNTS | DEPTH RANGE | SOIL DESCRIPTION |
|---|---|---|---|---|
| SØ4 | 1000+ | 4/5/6/4 | 1-3 | Silty medium to fine-grained sand, dark brown, < 10% gravel - fill |
| | 1000+ | 7/6/5/3 | 3-5 | Silty fine-grained sand, < 5% gravel, black - fill, 3-4; poorly sorted fine-grained sand, < 5% gravel, medium brown 4-5. |
| | 1000+ | 2/4/6/9 | 5-7 | Same as above. |
| | 100 | 6/9/27 | 7-8.5 | Weathered bedrock, mica schist. |
| | 100 | 30/42/50+3 | 8.8-10 | Same as above. |

Boring Depth: 8.5 feet

Water Level While Drilling: 4.8

Water Level After Drilling: 5.6

Cavein Depth: 4.9/7.9

MINNESOTA POLLUTION CONTROL AGENCY

BOREHOLE AND SOIL SAMPLING FORM

Site Name: Larson Boats EPA ID Number: MND062822960

Aid/Cost Code: 830356 Date of Boring: 6/21/89

Location: Little Falls, Minnesota Number of Samples Obtained: 1

Owner: Genmar Industries Sampler: Susan Price

Boring Unique Number: B-9 Sheet: 1 of 2

Weather Conditions: Temp: 79° Wind: 10 SW Precipitation: 0

Clouds: Partly

Soil Boring Description

Drilling Equipment Used: CME 550

Drilling Method: Hollow Stem Auger

Borehole Depth: 8.5 feet Diameter: 3¼" I.D.

Sample Intervals: 2-foot recovery, continuous

Sampling Methods: Split-Spoon

Decontamination Procedures: TSP with triple deionized water rinse, downhole tools only.

Site Name: Larson Boats

Boring Number: B-9

Sample Data

| SAMPLE NUMBER | OVA | BLOW COUNTS | DEPTH RANGE | SOIL DESCRIPTION |
|---|---|---|---|---|
| SØ5 | 60 | 5/7/6/4 | 1-3 | Silty medium to fine-grained sand, dark brown - fill. |
| | 100 | 2/3/3/5 | 3-5 | Same as above, 3-4; silty fine to medium-grained sand, medium brown < 10% gravel, 4-5. |
| | 100 | 4/6/7/8 | 5-7 | Same as above, only 2-inch recovery, rock blocked sampler. |
| | 60 | 7/8/9/16 | 7-8.5 | Weathered bedrock, mica schist. |
| | 100 | 6/22/26 | 8.5-10 | Bedrock mica schist. |

Boring Depth: 8.5 feet

Water Level While Drilling: 4.6/4.9

Water Level After Drilling: 3.9

Cavein Depth: 4.8/8.9/8.5

Comments: Composite sample from 1-8.5 feet.
OVA readings downhole: 100 ppm @ 3.0 ft.; 100 ppm @ 5.0 ft.; 200 ppm @ 7.0 ft.

MINNESOTA POLLUTION CONTROL AGENCY

BOREHOLE AND SOIL SAMPLING FORM

Site Name: Larson Boats EPA ID Number: MND062822960

Aid/Cost Code: 830356 Date of Boring: 6/21/89

Location: Little Falls, Minnesota Number of Samples Obtained: 1

Owner: Genmar Industries Sampler: Susan Price

Boring Unique Number: B-10 Sheet: 1 of 2

Weather Conditions: Temp: 71° Wind: 10 SW Precipitation: 0

Clouds: Partly

Soil Boring Description

Drilling Equipment Used: CME 550

Drilling Method: Hollow Stem Auger

Borehole Depth: B-10 Diameter: 3¼" I.D.

Sample Intervals: 2-foot recovery, continuous

Sampling Methods: Split-Spoon

Decontamination Procedures: TSP with triple deionized water rinse, downhole tools only.

Site Name: Larson Boats

Boring Number: B-10

Sample Data

| SAMPLE NUMBER | OVA | BLOW COUNTS | DEPTH RANGE | SOIL DESCRIPTION |
|---|---|---|---|---|
| SØ6 | 3 | 3/4/5/7 | 1-3 | Silty medium to fine-grained sand, <10% gravel, dark brown - fill. |
| | 30 | 3/3/5/6 | 3-5 | Silty fine-grained sand, < 5% gravel, dark brown - fill. |
| | 5 | 9/9/15/13 | 5-7 | Silty fine-grained sand, < 20% gravel, medium brown. |
| | 3 | 13/19/50+5 | 7-8.5 | Weathered bedrock, mica schist 7-8; bedrock 8-8.5. |

Boring Depth: 7.0 feet

Water Level While Drilling: 4.2

Water Level After Drilling: 4.2

Cavein Depth: 5.1

Comments: Composite sample VOHs only, 1-7 feet.

[redacted]

H

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE:

SUBJECT: Review of Region V CLP Data Received for Review on July 17, 1989

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

TO: Data User: MPCA

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

SITE NAME: Larson Boats SMO Case No. 12199

EPA Data Set No. _____ No. of Samples: 9 D.U./Activity Numbers ~~TFA~~/TFA 102

CRL No. _____

SMO Traffic No. EAQ 09, EDH 64-71

CLP Laboratory: PEI Hrs. Required for Review: 4

Following are our findings: The following review covers the analyses of 9 soil samples for BAS organics. Please refer to the narrative and Calibration outlier sheet for data qualifiers.

Wayne Waltsfield
MPCA
11/17/89

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

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

DATA QUALIFIERS

Contractor: PEI

Case 12,99

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

(1) Holding Times: Samples were analyzed within contract holding times. Volatiles were analyzed from 2 to 9 days after sampling

(2) GC/MS tuning & Instrument Performance: GC/MS tuning and mass calibrations were within QC requirements. Pesticide degredation was within the 20% maximum

(3) Calibration: Calibration outliers are noted on the outlier form

(4) Method Blanks: Volatiles method blanks VBlk H3 contained acetone, 2-Butanone and chlorobenzene. VBlk H4 contained acetone and 2-Butanone. Blank VBlk H2 was free of contaminants. Compounds found in associated investigative samples have been qualified as "U" (non-detects). Semi-volatiles method blank SBlk 89 was free of TCL compounds, but did contain 2 TIC compounds; these were qualified by the laboratory "B", possible blank contaminants which present in investigative samples. Pesticide/PCB blank PBlk B8 is free of contaminants.

11/28/89 Methylene Chloride was initially qualified as "B" or "U" in many of the investigative samples due to presence of small peaks at methylene chloride retention times; however, subsequent reviews lead to removal of the qualifications - WM

Reviewed by: WM

Phone:

Date: 11/17/89

DATA QUALIFIERS

Contractor: PEI

Case 12199;

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

(5) Surrogate Recovery: Surrogate compounds for all fractions were within QC limits

(6) Matrix Spike/Matrix Spike Duplicate:

Volatiles: 1,1 Dichloroethene was outside acceptable QC limits for MS recovery and RPD. The RPD for Benzene was slightly above the acceptable limit. No action taken

Semi-volatiles: The RPD for 1,4 Dichlorobenzene was slightly above acceptable QC limits. No action taken

Pesticide/PCB: All MS/MSD compounds were within QC limits.

(8) Internal Standards Performance: Internal standards #1 and #3 were marginally below acceptable range for samples EDH 65 and 68 in the volatile fraction; re-analyses did not correct the problem. Associated compounds in these two samples are qualified as "J", estimated.

Internal Standards for semi-volatiles were within acceptable limits.

Reviewed by: _____

Phone: _____

Date: _____

DATA QUALIFIERS

Contractor: PEI

Case ~~[illegible]~~: 12199

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

(7) Field Duplicates: Samples EDH65 and EDH66 appear to be field duplicates for volatiles only. No compounds were present, except for laboratory solvents or contaminants.

(9) TCL Compound Identification: Compounds appear to be correctly identified and confirmed by the mass spectra

(10) Compound Quantitation and Reported Detection Limits: No Detection limits were provided in this case

(11) Tentatively Identified Compounds: The TICs identified by the laboratory appear to be correctly identified as per the SOW.

(12) System Performance:
Laboratory performance on this case was good.

Reviewed by: _____

Phone: _____

Date: _____

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

CASE/SAS # 12199 CONTRACTOR PEI

| Instrument # H | Init. Cal. | | | ~~Cont.~~ Init. Cal. | | | ~~Cont.~~ Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 6/21/89 | | | 7/3/89 | | | 7/4/89 | | | 6/29/89 | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| Chloromethane | | | | .431 | 34.1 | J | .458 | 31.2 | J | | | | | | |
| Bromomethane | | | | | | | | | | 1.716 | 25.9 | | | | |
| Vinyl Chloride | | | | | | | | | | | | | | | |
| Chloroethane | | | | | | | | | | | | | | | |
| Methylene Chloride | | | | ~~1.241~~ | ~~28.7~~ | | | | | 1.866 | 31.8 | J | | | |
| Acetone | 2.422 | 62.0 | J | .805 | 97.4 | J | .534 | 45.3 | J | 4.143 | 71.1 | J | | | |
| Carbon Disulfide | 11.567 | 30.8 | J | ~~2.688~~ | ~~29.1~~ | | | | | 15.667 | 35.4 | J | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | |
| Trans-1,2-Dichloroethene | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | |
| 2-Butanone | | | | | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | |
| Vinyl Acetate | | | | .533 | 51.4 | J | .575 | 42.2 | J | 1.727 | 49.6 | J | | | |
| Bromodichloromethane | | | | | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | | | | | |
| Trans-1,3-Dichloropropene | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | | .452 | 34.9 | J | | | |
| Dibromochloromethane | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | |
| Benzene | | | | | | | | | | | | | | | |
| cis-1,3-Dichloropropene | | | | | | | | | | | | | | | |
| 2-Chloroethylvinylether | | | | | | | | | | | | | | | |
| Bromoform | | | | | | | | | | .834 | 32.5 | J | | | |
| 4-Methyl-2-Pentanone | | | | | | | | | | | | | | | |
| 2-Hexanone | | | | | | | | | | | | | | | |
| Tetrachloroethene | | | | | | | | | | .412 | 54.6 | J | | | |
| 1,1,2,2-Tetrachloroethane | | | | .604 | 36.3 | J | .649 | 36.4 | J | | | | | | |
| Toluene | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | 1.189 | 26.3 | J | | | |
| Ethylbenzene | | | | | | | | | | | | | | | |
| Styrene | | | | | | | | | | 3.662 | 44.9 | J | | | |
| m-Xylene | | | | | | | | | | 2.162 | 46.1 | J | | | |
| o/p-Xylene | | | | | | | | | | | | | | | |

AFFECTED SAMPLES:

| | | |
|---|---|---|
| YBIKH3 | YBIKH4 | YBIKH2 |
| EDH 64 | EDH 67 MS | EAQ 09 |
| ~~EDH~~ 65 RE | | EDH 65 |
| ~~EDH~~ 66 | | ~~EDH~~ 67 |
| ~~EDH~~ 68 RE | | ~~EDH~~ 68 |
| EDH 70 | | EDH 69 |
| | | EDH 71 |
| | | EDH 67 MSD |

Reviewer's Initials/Date: WR 11/17/89

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

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

CASE/SAS # 12199 CONTRACTOR PSI

| Instrument # N | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 5/22/89 | | | 7/5/89 | | | | | | | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| Phenol | | | | | | | | | | | | | | | |
| bis(-2-Chloroethyl)Ether | | | | | | | | | | | | | | | |
| 2-Chlorophenol | | | | | | | | | | | | | | | |
| 1,3-Dichlorobenzene | | | | | | | | | | | | | | | |
| 1,4-Dichlorobenzene | | | | | | | | | | | | | | | |
| Benzyl Alcohol | | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | | | | | | | | | | | | | | | |
| 2-Methylphenol | | | | | | | | | | | | | | | |
| bis(2-chloroisopropyl)Ether | | | | | | | | | | | | | | | |
| 4-Methylphenol | | | | | | | | | | | | | | | |
| N-Nitroso-Di-n-Propylamine | | | | | | | | | | | | | | | |
| Hexachloroethane | | | | | | | | | | | | | | | |
| Nitrobenzene | | | | | | | | | | | | | | | |
| Isophorone | | | | | | | | | | | | | | | |
| 2-Nitrophenol | | | | | | | | | | | | | | | |
| 2,4-Dimethylphenol | | | | | | | | | | | | | | | |
| Benzoic Acid | | | | .09 | 45.9 | J | | | | | | | | | |
| bis(2-Chloroethoxy)Methane | | | | | | | | | | | | | | | |
| 2,4-Dichlorophenol | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | | | | | | | | | | | | | | | |
| Naphthalene | | | | | | | | | | | | | | | |
| 4-Chloroaniline | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | | | | | | | | | | | | | | | |
| 4-Chloro-3-Methylphenol | | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | | | | | | | | | | | | | | | |
| Hexachlorocyclopentadiene | | | | | | | | | | | | | | | |
| 2,4,6-Trichlorophenol | | | | | | | | | | | | | | | |
| 2,4,5-Trichlorophenol | | | | | | | | | | | | | | | |
| 2-Chloronaphthalene | | | | | | | | | | | | | | | |
| 2-Nitroaniline | | | | | | | | | | | | | | | |
| Dimethyl Phthalate | | | | | | | | | | | | | | | |
| Acenaphthylene | | | | | | | | | | | | | | | |
| 3-Nitroaniline | | | | | | | | | | | | | | | |
| Acenaphthene | | | | | | | | | | | | | | | |
| 2,4-Dinitrophenol | | | | | | | | | | | | | | | |
| 4-Nitrophenol | | | | .13 | 45.6 | J | | | | | | | | | |
| Dibenzofuran | | | | | | | | | | | | | | | |

AFFECTED SAMPLES:

SBIK B9
EAQ 09
EDH 64
EDH 67
EDH 68
EDH 70
EDH 71
EDH 71 MS
EDH 71 MSD

Reviewer Initials/Date: 11/17/89

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

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

CASE/SAS # 12199 CONTRACTOR PEI

| Instrument # | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 5/22 | | | 7/5 | | | | | | | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| 2,4-Dinitrotoluene | | | | | | | | | | | | | | | |
| 2,6-Dinitrotoluene | | | | | | | | | | | | | | | |
| Diethylphthalate | | | | 1.151 | 33.8 | J | | | | | | | | | |
| 4-Chlorophenyl-phenylether | | | | | | | | | | | | | | | |
| Fluorene | | | | | | | | | | | | | | | |
| 4-Nitroaniline | | | | | | | | | | | | | | | |
| 4,6-Dinitro-2-Methylphenol | | | | .155 | 25.9 | J | | | | | | | | | |
| N-Nitrosodiphenylamine | | | | | | | | | | | | | | | |
| 4-Bromophenyl-phenylether | | | | | | | | | | | | | | | |
| Hexachlorobenzene | | | | | | | | | | | | | | | |
| Pentachlorophenol | | | | | | | | | | | | | | | |
| Phenanthrene | | | | | | | | | | | | | | | |
| Anthracene | | | | | | | | | | | | | | | |
| Di-n-Butylphthalate | | | | | | | | | | | | | | | |
| Fluoranthene | | | | | | | | | | | | | | | |
| Pyrene | | | | | | | | | | | | | | | |
| Butylbenzylphthalate | | | | | | | | | | | | | | | |
| Benzo(a)Anthracene | | | | | | | | | | | | | | | |
| bis(2-Ethylhexyl)Phthalate | | | | .708 | 29.4 | J | | | | | | | | | |
| Chrysene | | | | | | | | | | | | | | | |
| Di-n-Octyl Phthalate | | | | | | | | | | | | | | | |
| Benzo(b)Fluoranthene | | | | | | | | | | | | | | | |
| Benzo(k)Fluoranthene | | | | 1.772 | 26.2 | J | | | | | | | | | |
| Benzo(a)Pyrene | | | | | | | | | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | | | | 1.034 | 28.2 | J | | | | | | | | | |
| Dibenz(a,h)Anthracene | | | | .990 | 26.5 | J | | | | | | | | | |
| Benzo(g,h,i) Perylene | | | | | | | | | | | | | | | |
| 3,3' Dichlorobenzidine | | | | .346 | 27.0 | J | | | | | | | | | |

SEE PAGE 1 FOR AFFECTED SAMPLES.

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

Reviewer's Initials/Date: WW 11/17/89

Case: 12199

Contractor: PEI

TENTATIVELY IDENTIFIED COMPOUNDS
WATCH ASSESSMENT

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

CRITERIA

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

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

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

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

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

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

Reviewer's Initials/Date: WW 11/17/89

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

CASE NO: 12199 | SAS NO: (IF APPLICABLE)

# ORGANIC TRAFFIC REPORT

(FOR CLP USE ONLY)

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

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

REGION NO: V
SAMPLING COMPANY ②: MPCA
SAMPLER: (NAME) Meri Lapp

SHIP TO: ③
PEI Associates, Inc.
499 Chester Road
Cincinnati, OH 45246
ATTN: Lori Rutella

SAMPLING DATE: ④
BEGIN: 6/20/89 END: 6/22/89
DATE SHIPPED: 6/22 CARRIER: Fed Ex ⑤
AIRBILL NO: 3302879263

DATE REC'D: 6/23/89 SDG NO: EAQ 09 ⑥
REC'D BY: L. Rutella C00001
LABORATORY CONTRACT NO.: 68-D9-0037
UNIT PRICE: 825.00

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

| CLP SAMPLE NUMBER (FROM LABELS) | Ⓐ SAMPLE DESCRIPTION (FROM BOX 1) 1 2 3 4 5 6 7 | Ⓑ CONCENTRATION L = LOW/MED H = HIGH (SAS) | Ⓒ RAS ANALYSIS: VOLATILE | BASE/NEUT /ACID | PESTICIDE /PCB's | Ⓓ SPECIAL HANDLING | Ⓔ STATION LOCATION | Ⓕ SAMPLE CONDITION ON RECEIPT | Ⓖ HIGH CONC. PHASES (CHECK): SOLID | WATER—MIS LIQUID | NON WATER—MIS LIQUID |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EDH 64 | 4 | L | X | X | X | | B-3 | tag dates didnot match C of C | | | |
| EDH 65 | 4 | L | X | | | | B-1 | all good | | | |
| EDH 66 | 4 | L | X | | | | B-1 | all cold | | | |
| EDH 67 | 4 | L | X | X | X | | B-8 | all tags good | | | |
| EDH 68 | 4 | L | X | X | X | | B-9 | except EDH 64 | | | |
| EDH 69 | 4 | L | X | | | | B-10 | Chain of custody | | | |
| EDH 70 | 4 | L | X | X | X | | B-6 | seals were intact | | | |
| EDH 71 | 4 | L | X | X | X | | B-7 | LAST SAMPLE SDG | | | |
| ~~EAQ 07~~ | 4 | L | X | X | X | | B-5 | ~~LAST SAMPLE SDG~~ LR | | | |
| EAQ 09 —Sampling Complete— | | | | | | | | Sample received | | | |
| LR 6/26/89 | | | | | | | | EAQ 09 - C of C says EAQ 09 | | | |
| | | | | | | | | Lauren Minnich | | | |
| | | | | | | | | was notified | | | |
| | | | | | | | | immediately | | | |
| | | | | | | | | 6/26/89 Lauren | | | |
| | | | | | | | | said EAQ 09 is | | | |
| | | | | | | | | correct ID. | | | |
| | | | | | | | | LR | | | |

EPA Form 2075-7 (8-87)

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

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

EAQ09

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No : 12199 SAS No : SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-01B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EAQ09

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec 11. Date Analyzed: 6/29/89

Column: (pack/cap) CAP Dilution Factor: 1 00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 11. | U |
| 74-83-9 | Bromomethane | 11. | U |
| 75-01-4 | Vinyl Chloride | 11 | U |
| 75-00-3 | Chloroethane | 11 | U |
| 75-09-2 | Methylene Chloride | 10. | B |
| 67-64-1 | Acetone | 11. | U |
| 75-15-0 | Carbon Disulfide | 6. | U |
| 75-35-4 | 1,1-Dichloroethene | 6. | U |
| 75-34-3 | 1,1-Dichloroethane | 6 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 6. | U |
| 67-66-3 | Chloroform | 6 | U |
| 107-06-2 | 1,2-Dichloroethane | 6. | U |
| 78-93-3 | 2-Butanone | 11. | U |
| 71-55-6 | 1,1,1-Trichloroethane | 6. | U |
| 56-23-5 | Carbon Tetrachloride | 6. | U |
| 108-05-4 | Vinyl Acetate | 11 | U |
| 75-27-4 | Bromodichloromethane | 6. | U |
| 78-87-5 | 1,2-Dichloropropane | 6 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6. | U |
| 79-01-6 | Trichloroethene | 6. | U |
| 124-48-1 | Dibromochloromethane | 6. | U |
| 79-00-5 | 1,1,2-Trichloroethane | 6. | U |
| 71-43-2 | Benzene | 6. | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 6. | U |
| 75-25-2 | Bromoform | 6. | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 11. | U |
| 591-78-6 | 2-Hexanone | 11. | U |
| 127-18-4 | Tetrachloroethene | 2. | J |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 6. | U |
| 108-88-3 | Toluene | 4. | J |
| 108-90-7 | Chlorobenzene | 2. | U |
| 100-41-4 | Ethylbenzene | 6. | U |
| 100-42-5 | Styrene | 6. | U |
| 1330-20-7 | Xylene (total) | 6. | U |

N.C. ok 11/28/89

11/17/89

11/27/89

1E

EPA SAMPLE NO

C00075

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EAQ09

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No : 12199 SAS No. . SDG No. EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-01B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EAQ09

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec. 11. Date Analyzed: 6/29/89

Column: (pack/cap) CAP Dilution Factor: 1 00

Number TICs found. 1

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

| | CAS NUMBER | COMPOUND NAME | RT | EST CONC. | Q |
|---|---|---|---|---|---|
| 1. | - - | UNKNOWN (aromatic) | 12.20 | 10. | J |
| 2. | | | | | |
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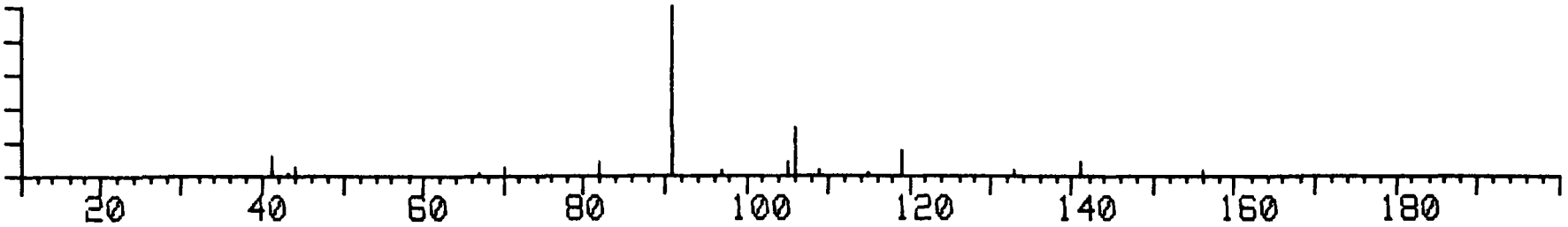
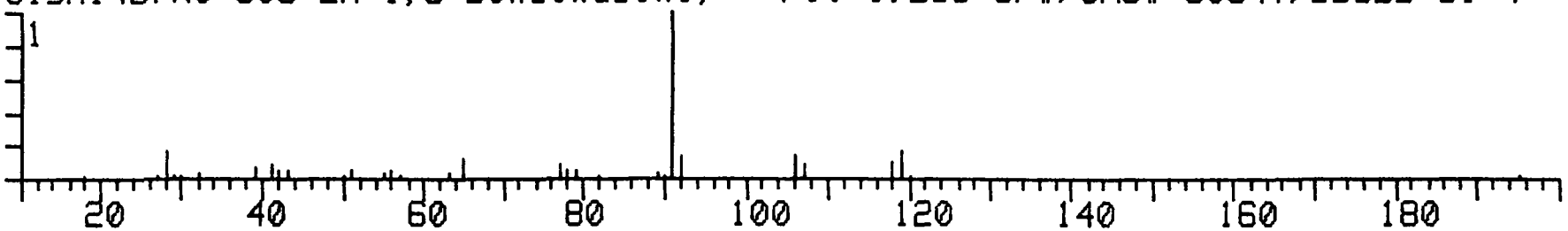
| 30. | | | | | |

NIH/EPA Forward Library Search TIC = 1420
Injection Date: 29-JUN-89 Time: 16:19:09 100% = 716
Filename: SY:EAQ09
Comments:
ID:H 5217 T9-06-154-01B//C:12199:SDG:EAQ09// MATRIX:S

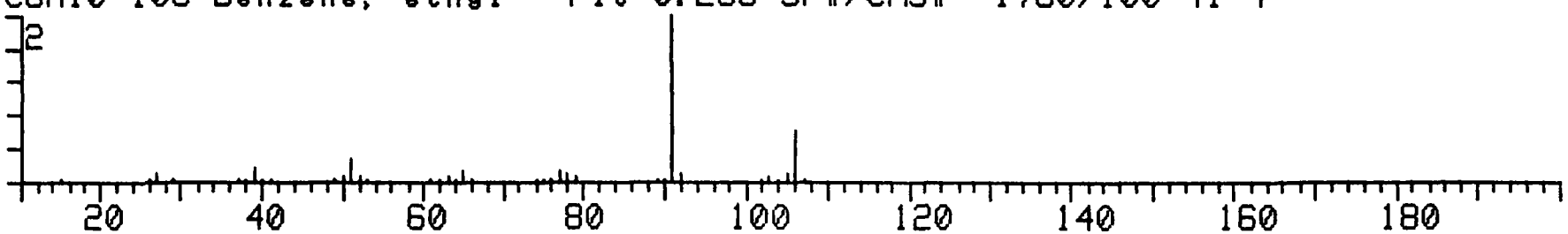
SCANS: 724-724 BKG * 1.00 720



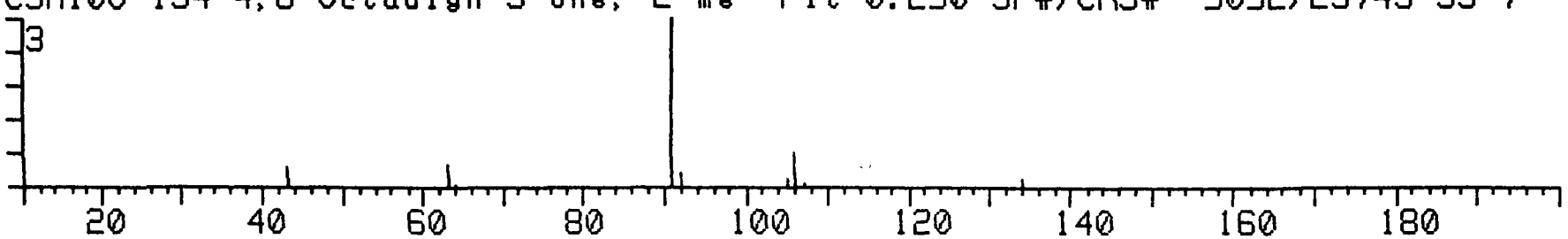

C15H14BrNO 303 2H-1,3-Benzoxazine, Fit 0.298 SP#/CAS# 30847/55955-91-4




C8H10 106 Benzene, ethyl- Fit 0.266 SP#/CAS# 1760/100-41-4




C9H10O 134 4,6-Octadiyn-3-one, 2-me Fit 0.250 SP#/CAS# 5052/29743-33-7




C0004

C00076

1A

# VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

EDH64

Lab Name: PEI  Contract: 68-D9-0037

Lab Code: PEI  Case No.: 12199  SAS No.:  SDG No.: EAQ09

Matrix: (soil/water) SOIL  Lab Sample ID: T9-06-154-02B

Sample wt/vol: 5.0 (g/mL) G  Lab File ID: EDH64RE

Level: (low/med) LOW  Date Received: 6/23/89

% Moisture: not dec. 12.  Date Analyzed: 7/ 3/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 11. | U |
| 74-83-9 | Bromomethane | 11. | U |
| 75-01-4 | Vinyl Chloride | 11. | U |
| 75-00-3 | Chloroethane | 11. | U |
| 75-09-2 | Methylene Chloride | 3. | 5 |
| 67-64-1 | Acetone | 10. | ~~BJ~~ U |
| 75-15-0 | Carbon Disulfide | 6. | U |
| 75-35-4 | 1,1-Dichloroethene | 6. | U |
| 75-34-3 | 1,1-Dichloroethane | 6. | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 6 | U |
| 67-66-3 | Chloroform | 6. | U |
| 107-06-2 | 1,2-Dichloroethane | 6 | U |
| 78-93-3 | 2-Butanone | 2. | ~~BJ~~ U |
| 71-55-6 | 1,1,1-Trichloroethane | 6. | U |
| 56-23-5 | Carbon Tetrachloride | 6. | U |
| 108-05-4 | Vinyl Acetate | 11. | U |
| 75-27-4 | Bromodichloromethane | 6. | U |
| 78-87-5 | 1,2-Dichloropropane | 6. | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6. | U |
| 79-01-6 | Trichloroethene | 6. | U |
| 124-48-1 | Dibromochloromethane | 6. | U |
| 79-00-5 | 1,1,2-Trichloroethane | 6. | U |
| 71-43-2 | Benzene | 6. | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 6. | U |
| 75-25-2 | Bromoform | 6. | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 11. | U |
| 591-78-6 | 2-Hexanone | 11. | U |
| 127-18-4 | Tetrachloroethene | 6. | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 6. | U |
| 108-88-3 | Toluene | 6. | U |
| 108-90-7 | Chlorobenzene | 2. | ~~BJ~~ U |
| 100-41-4 | Ethylbenzene | 6. | U |
| 100-42-5 | Styrene | 6. | U |
| 1330-20-7 | Xylene (total) | 6. | U |

M.C. OK WM 11/28/89

11/17/89 WM

1E

EPA SAMPLE NO

EDH64

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name. PEI  Contract: 68-D9-0037

Lab Code: PEI  Case No.: 12199  SAS No.:  SDG No.: EAQ09

Matrix: (soil/water) SOIL  Lab Sample ID: T9-06-154-02B

Sample wt/vol: 5.0 (g/mL) G  Lab File ID: EDH64RE

Level: (low/med) LOW  Date Received: 6/23/89

% Moisture. not dec 12.  Date Analyzed: 7/ 3/89

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

Number TICs found: 0  CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
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C00046

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

EDH65

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No : 12199 SAS No.: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-03B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EDH65

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec. 19. Date Analyzed: 6/29/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 12. | U |
| 74-83-9 | Bromomethane | 12. | U |
| 75-01-4 | Vinyl Chloride | 12 | U |
| 75-00-3 | Chloroethane | 12 | U |
| 75-09-2 | Methylene Chloride | 11. | ~~B~~ |
| 67-64-1 | Acetone | 12. | U |
| 75-15-0 | Carbon Disulfide | 6. | U |
| 75-35-4 | 1,1-Dichloroethene | 6. | U |
| 75-34-3 | 1,1-Dichloroethane | 6 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 6. | U |
| 67-66-3 | Chloroform | 6. | U |
| 107-06-2 | 1,2-Dichloroethane | 6. | U |
| 78-93-3 | 2-Butanone | 12. | U |
| 71-55-6 | 1,1,1-Trichloroethane | 6. | U |
| 56-23-5 | Carbon Tetrachloride | 6 | U |
| 108-05-4 | Vinyl Acetate | 12. | U |
| 75-27-4 | Bromodichloromethane | 6. | U |
| 78-87-5 | 1,2-Dichloropropane | 6. | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6. | U |
| 79-01-6 | Trichloroethene | 6. | U |
| 124-48-1 | Dibromochloromethane | 6. | U |
| 79-00-5 | 1,1,2-Trichloroethane | 6. | U |
| 71-43-2 | Benzene | 6. | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 6. | U |
| 75-25-2 | Bromoform | 6. | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 12. | U |
| 591-78-6 | 2-Hexanone | 12. | U |
| 127-18-4 | Tetrachloroethene | 6. | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 6. | U |
| 108-88-3 | Toluene | 6. | U |
| 108-90-7 | Chlorobenzene | 6. | U |
| 100-41-4 | Ethylbenzene | 6. | U |
| 100-42-5 | Styrene | 6. | U |
| 1330-20-7 | Xylene (total) | 6. | U |

M.C
CK
11/29/89
w

11/17/89
w

1E 000047 EPA SAMPLE NO

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EDH65

Lab Name. PEI Contract: 68-D9-0037

Lab Code: PEI Case No 12199 SAS No : SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-03B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EDH65

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec. 19. Date Analyzed: 6/29/89

Column: (pack/cap) CAP Dilution Factor: 1 00

Number TICs found 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | | | | |
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C00059

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

EDH66

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No 12199 SAS No.: SDG No : EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-04B

Sample wt/vol: 5.0 (g/mL) G Lab File ID. EDH66RE

Level: (low/med) LOW Date Received: 6/23/89

% Moisture not dec. 15. Date Analyzed: 7/ 3/89

Column: (pack/cap) CAP Dilution Factor: 1 00

| CAS NO | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 12 | U |
| 74-83-9 | Bromomethane | 12. | U |
| 75-01-4 | Vinyl Chloride | 12. | U |
| 75-00-3 | Chloroethane | 12 | U |
| 75-09-2 | Methylene Chloride | 6 | U |
| 67-64-1 | Acetone | 11 | ~~B~~ U |
| 75-15-0 | Carbon Disulfide | 6 | U |
| 75-35-4 | 1,1-Dichloroethene | 6 | U |
| 75-34-3 | 1,1-Dichloroethane | 6. | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 6 | U |
| 67-66-3 | Chloroform | 6 | U |
| 107-06-2 | 1,2-Dichloroethane | 6. | U |
| 78-93-3 | 2-Butanone | 12 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 6. | U |
| 56-23-5 | Carbon Tetrachloride | 6. | U |
| 108-05-4 | Vinyl Acetate | 12. | U |
| 75-27-4 | Bromodichloromethane | 6. | U |
| 78-87-5 | 1,2-Dichloropropane | 6. | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6. | U |
| 79-01-6 | Trichloroethene | 6. | U |
| 124-48-1 | Dibromochloromethane | 6. | U |
| 79-00-5 | 1,1,2-Trichloroethane | 6. | U |
| 71-43-2 | Benzene | 6. | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 6. | U |
| 75-25-2 | Bromoform | 6. | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 12. | U |
| 591-78-6 | 2-Hexanone | 12. | U |
| 127-18-4 | Tetrachloroethene | 6. | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 6. | U |
| 108-88-3 | Toluene | 6. | U |
| 108-90-7 | Chlorobenzene | 6. | U |
| 100-41-4 | Ethylbenzene | 6 | U |
| 100-42-5 | Styrene | 6. | U |
| 1330-20-7 | Xylene (total) | 6. | U |

11/17/89

1E

EPA SAMPLE NO.

EDH66

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name. PEI Contract: 68-D9-0037

Lab Code. PEI Case No 12199 SAS No : SDG No : EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-04B

Sample wt/vol. 5 0 (g/mL) G Lab File ID: EDH66RE

Level. (low/med) LOW Date Received. 6/23/89

% Moisture: not dec 15 Date Analyzed. 7/ 3/89

Column: (pack/cap) CAP Dilution Factor. 1 00

Number TICs found. 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST CONC | Q |
|---|---|---|---|---|
| 1. | | | | |
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C09375

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

EDH67

Lab Name PEI Contract. 68-D9-0037

Lab Code: PEI Case No. 12199 SAS No . SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-05E

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EDH67

Level: (low/med) LOW Date Received. 6/23/89

% Moisture: not dec 16. Date Analyzed: 6/29/89

Column: (pack/cap) CAP Dilution Factor. 1 00

| CAS NO. | COMPOUND | CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 12 | U |
| 74-83-9 | Bromomethane | 12 | U |
| 75-01-4 | Vinyl Chloride | 12. | U |
| 75-00-3 | Chloroethane | 12 | U |
| 75-09-2 | Methylene Chloride | 7. | [redacted] |
| 67-64-1 | Acetone | 14 | BJ |
| 75-15-0 | Carbon Disulfide | 6 | U |
| 75-35-4 | 1,1-Dichloroethene | 6 | U |
| 75-34-3 | 1,1-Dichloroethane | 6 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 6 | U |
| 67-66-3 | Chloroform | 6. | U |
| 107-06-2 | 1,2-Dichloroethane | 6 | U |
| 78-93-3 | 2-Butanone | 12 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 6 | U |
| 56-23-5 | Carbon Tetrachloride | 6. | U |
| 108-05-4 | Vinyl Acetate | 12. | U |
| 75-27-4 | Bromodichloromethane | 6 | U |
| 78-87-5 | 1,2-Dichloropropane | 6. | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6. | U |
| 79-01-6 | Trichloroethene | 6. | U |
| 124-48-1 | Dibromochloromethane | 6. | U |
| 79-00-5 | 1,1,2-Trichloroethane | 6 | U |
| 71-43-2 | Benzene | 6. | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 6. | U |
| 75-25-2 | Bromoform | 6. | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 12. | U |
| 591-78-6 | 2-Hexanone | 12. | U |
| 127-18-4 | Tetrachloroethene | 6. | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 6 | U |
| 108-88-3 | Toluene | 3. | J |
| 108-90-7 | Chlorobenzene | 6. | U |
| 100-41-4 | Ethylbenzene | 6. | U |
| 100-42-5 | Styrene | 6 | U |
| 1330-20-7 | Xylene (total) | .6 | J |

M.C. OK 11/27/89 11/17/89

1E

C0007 EPA SAMPLE NO

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EDH67

Lab Name. PEI Contract: 68-D9-0037

Lab Code: PEI Case No : 12199 SAS No. SDG No EAQ09

Matrix. (soil/water) SOIL Lab Sample ID: T9-06-154-05B

Sample wt/vol. 5 0 (g/mL) G Lab File ID. EDH67

Level: (low/med) LOW Date Received 6/23/89

% Moisture: not dec. 16. Date Analyzed: 6/29/89

Column: (pack/cap) CAP Dilution Factor. 1 00

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC | G |
|---|---|---|---|---|
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

EDH68

Lab Name PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 12199 SAS No.: SDG No : EAQ09

Matrix: (soil/water) SOIL Lab Sample ID. T9-06-154-06B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EDH68

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec. 11. Date Analyzed: 6/29/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS. (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 11 | U |
| 74-83-9 | Bromomethane | 11. | U |
| 75-01-4 | Vinyl Chloride | 11 | U |
| 75-00-3 | Chloroethane | 11 | U |
| 75-09-2 | Methylene Chloride | 6 | U |
| 67-64-1 | Acetone | 11. | U |
| 75-15-0 | Carbon Disulfide | 6 | U |
| 75-35-4 | 1,1-Dichloroethene | 6 | U |
| 75-34-3 | 1,1-Dichloroethane | 6 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 6 | U |
| 67-66-3 | Chloroform | 6 | U |
| 107-06-2 | 1,2-Dichloroethane | 6 | U |
| 78-93-3 | 2-Butanone | 11. | U |
| 71-55-6 | 1,1,1-Trichloroethane | 6. | U |
| 56-23-5 | Carbon Tetrachloride | 6 | U |
| 108-05-4 | Vinyl Acetate | 11. | U |
| 75-27-4 | Bromodichloromethane | 6. | U |
| 78-87-5 | 1,2-Dichloropropane | 6. | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6. | U |
| 79-01-6 | Trichloroethene | 6. | U |
| 124-48-1 | Dibromochloromethane | 6. | U |
| 79-00-5 | 1,1,2-Trichloroethane | 6. | U |
| 71-43-2 | Benzene | 6. | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 6. | U |
| 75-25-2 | Bromoform | 6. | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 11. | U |
| 591-78-6 | 2-Hexanone | 11. | U |
| 127-18-4 | Tetrachloroethene | 6. | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 6. | U |
| 108-88-3 | Toluene | 6. | U |
| 108-90-7 | Chlorobenzene | 6 | U |
| 100-41-4 | Ethylbenzene | 6. | U |
| 100-42-5 | Styrene | 6. | U |
| 1330-20-7 | Xylene (total) | 6. | U |

1E

EPA SAMPLE NO

EDH68

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name PEI Contract 68-D9-0037

Lab Code: PEI Case No.: 12199 SAS No.: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-06B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EDH68

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec. 11. Date Analyzed: 6/29/89

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

Number TICs found 0

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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C00062

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

EDH68 RE

Lab Name. PEI Contract: 68-D9-0037

Lab Code: PEI Case No · 12199 SAS No . SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-06B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EDH68RE

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec. 11. Date Analyzed: 7/ 3/89

Column· (pack/cap) CAP Dilution Factor: 1.00

| CAS NO | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 11 | U |
| 74-83-9 | Bromomethane | 11. | U |
| 75-01-4 | Vinyl Chloride | 11 | U |
| 75-00-3 | Chloroethane | 11 | U |
| 75-09-2 | Methylene Chloride | 6 | U |
| 67-64-1 | Acetone | 14 | ~~B~~ U |
| 75-15-0 | Carbon Disulfide | 6 | U |
| 75-35-4 | 1,1-Dichloroethene | 6 | U |
| 75-34-3 | 1,1-Dichloroethane | 6 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 6 | U |
| 67-66-3 | Chloroform | 6 | U |
| 107-06-2 | 1,2-Dichloroethane | 6 | U |
| 78-93-3 | 2-Butanone | 11. | U |
| 71-55-6 | 1,1,1-Trichloroethane | 6. | U |
| 56-23-5 | Carbon Tetrachloride | 6. | U |
| 108-05-4 | Vinyl Acetate | 11. | U |
| 75-27-4 | Bromodichloromethane | 6. | U |
| 78-87-5 | 1,2-Dichloropropane | 6. | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6. | U |
| 79-01-6 | Trichloroethene | 6. | U |
| 124-48-1 | Dibromochloromethane | 6. | U |
| 79-00-5 | 1,1,2-Trichloroethane | 6. | U |
| 71-43-2 | Benzene | 6. | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 6. | U |
| 75-25-2 | Bromoform | 6. | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 11. | U |
| 591-78-6 | 2-Hexanone | 11. | U |
| 127-18-4 | Tetrachloroethene | 6. | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 6. | U |
| 108-88-3 | Toluene | 6. | U |
| 108-90-7 | Chlorobenzene | 6 | U |
| 100-41-4 | Ethylbenzene | 6. | U |
| 100-42-5 | Styrene | 6. | U |
| 1330-20-7 | Xylene (total) | 6. | U |

11/17/89
WM

1E 000363 EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EDH68 RE

Lab Name PEI Contract. 68-D9-0037

Lab Code PEI Case No. 12199 SAS No.: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-06B

Sample wt/vol: 5.0 (g/mL) G Lab File ID. EDH68RE

Level: (low/med) LOW Date Received. 6/23/89

% Moisture: not dec. 11. Date Analyzed: 7/ 3/89

Column: (pack/cap) CAP Dilution Factor: 1 00

Number TICs found. 0

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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C00369

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

EDH69

Lab Name. PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 12199 SAS No.: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-07B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EDH69

Level: (low/med) LOW Date Received. 6/23/89

% Moisture: not dec. 7. Date Analyzed: 6/29/89

Column: (pack/cap) CAP Dilution Factor: 1 00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 11 | U |
| 74-83-9 | Bromomethane | 11. | U |
| 75-01-4 | Vinyl Chloride | 11. | U |
| 75-00-3 | Chloroethane | 11. | U |
| 75-09-2 | Methylene Chloride | 5. | BJ |
| 67-64-1 | Acetone | 11. | U |
| 75-15-0 | Carbon Disulfide | 5 | U |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5. | U |
| 107-06-2 | 1,2-Dichloroethane | 5. | U |
| 78-93-3 | 2-Butanone | 11. | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5. | U |
| 56-23-5 | Carbon Tetrachloride | 5. | U |
| 108-05-4 | Vinyl Acetate | 11. | U |
| 75-27-4 | Bromodichloromethane | 5 | U |
| 78-87-5 | 1,2-Dichloropropane | 5. | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5. | U |
| 79-01-6 | Trichloroethene | 5. | U |
| 124-48-1 | Dibromochloromethane | 5. | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5. | U |
| 71-43-2 | Benzene | 5. | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 5. | U |
| 75-25-2 | Bromoform | 5. | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 11. | U |
| 591-78-6 | 2-Hexanone | 11. | U |
| 127-18-4 | Tetrachloroethene | 5. | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5. | U |
| 108-88-3 | Toluene | 5. | U |
| 108-90-7 | Chlorobenzene | 5. | U |
| 100-41-4 | Ethylbenzene | 5. | U |
| 100-42-5 | Styrene | 5. | U |
| 1330-20-7 | Xylene (total) | 5. | U |

m.c ac 11/27/89 WK

11/17/89 WK

1E

EPA SAMPLE NO

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EDH69

Lab Name. PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 12199 SAS No.: SDG No : EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-07B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EDH69

Level: (low/med) LOW Date Received. 6/23/89

% Moisture: not dec. 7. Date Analyzed: 6/29/89

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

Number TICs found 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC | Q |
|---|---|---|---|---|
| 1. | | | | |
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C00036

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

EDH70

Lab Name: PEI Contract 68-D9-0037

Lab Code: PEI Case No.: 12199 SAS No.: SDG No: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-08B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EDH70RE

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec. 16. Date Analyzed: 7/ 3/89

Column: (pack/cap) CAP Dilution Factor: 1 00

| CAS NO | COMPOUND | CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 12 | U |
| 74-83-9 | Bromomethane | 12. | U |
| 75-01-4 | Vinyl Chloride | 12 | U |
| 75-00-3 | Chloroethane | 12 | U |
| 75-09-2 | Methylene Chloride | 6 | U |
| 67-64-1 | Acetone | 6 | ~~B~~ U |
| 75-15-0 | Carbon Disulfide | 6 | U |
| 75-35-4 | 1,1-Dichloroethene | 6. | U |
| 75-34-3 | 1,1-Dichloroethane | 6 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 6 | U |
| 67-66-3 | Chloroform | 6 | U |
| 107-06-2 | 1,2-Dichloroethane | 6 | U |
| 78-93-3 | 2-Butanone | 12 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 6. | U |
| 56-23-5 | Carbon Tetrachloride | 6 | U |
| 108-05-4 | Vinyl Acetate | 12 | U |
| 75-27-4 | Bromodichloromethane | 6 | U |
| 78-87-5 | 1,2-Dichloropropane | 6 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6 | U |
| 79-01-6 | Trichloroethene | 6. | U |
| 124-48-1 | Dibromochloromethane | 6. | U |
| 79-00-5 | 1,1,2-Trichloroethane | 6. | U |
| 71-43-2 | Benzene | 6. | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 6. | U |
| 75-25-2 | Bromoform | 6. | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 12. | U |
| 591-78-6 | 2-Hexanone | 12. | U |
| 127-18-4 | Tetrachloroethene | 6. | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 6. | U |
| 108-88-3 | Toluene | 6. | U |
| 108-90-7 | Chlorobenzene | 6. | U |
| 100-41-4 | Ethylbenzene | 6. | U |
| 100-42-5 | Styrene | 6. | U |
| 1330-20-7 | Xylene (total) | 6. | U |

11/17/89
W

1E

COMPANY SAMPLE NO

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EDH70

Lab Name: PEI Contract. 68-D9-0037

Lab Code. PEI Case No.: 12199 SAS No. SDG No.. EAQ09

Matrix. (soil/water) SOIL Lab Sample ID: T9-06-154-08B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EDH70RE

Level: (low/med) LOW Date Received: 6/23/89

% Moisture not dec. 16. Date Analyzed: 7/ 3/89

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

Number TICs found 0

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC | Q |
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| 1. | | | | | |
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C00103

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

EDH71

Lab Name: PEI Contract. 68-D9-0037

Lab Code: PEI Case No.: 12199 SAS No.: SDG No.. EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-09B

Sample wt/vol: 5 0 (g/mL) G Lab File ID: EDH71

Level: (low/med) LOW Date Received 6/23/89

% Moisture. not dec. 11. Date Analyzed: 6/29/89

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

| CAS NO | COMPOUND | CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 11 | U |
| 74-83-9 | Bromomethane | 11. | U |
| 75-01-4 | Vinyl Chloride | 11 | U |
| 75-00-3 | Chloroethane | 11 | U |
| 75-09-2 | Methylene Chloride | 10 | B |
| 67-64-1 | Acetone | 5 | BJ |
| 75-15-0 | Carbon Disulfide | 6 | U |
| 75-35-4 | 1,1-Dichloroethene | 6 | U |
| 75-34-3 | 1,1-Dichloroethane | 6 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 6 | U |
| 67-66-3 | Chloroform | 6 | U |
| 107-06-2 | 1,2-Dichloroethane | 6 | U |
| 78-93-3 | 2-Butanone | 11. | U |
| 71-55-6 | 1,1,1-Trichloroethane | 6 | U |
| 56-23-5 | Carbon Tetrachloride | 6 | U |
| 108-05-4 | Vinyl Acetate | 11 | U |
| 75-27-4 | Bromodichloromethane | 6. | U |
| 78-87-5 | 1,2-Dichloropropane | 6. | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 6. | U |
| 79-01-6 | Trichloroethene | 6. | U |
| 124-48-1 | Dibromochloromethane | 6. | U |
| 79-00-5 | 1,1,2-Trichloroethane | 6. | U |
| 71-43-2 | Benzene | 6. | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 6. | U |
| 75-25-2 | Bromoform | 6. | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 11. | U |
| 591-78-6 | 2-Hexanone | 11. | U |
| 127-18-4 | Tetrachloroethene | 2. | J |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 6. | U |
| 108-88-3 | Toluene | 7. | |
| 108-90-7 | Chlorobenzene | 6. | U |
| 100-41-4 | Ethylbenzene | 6. | U |
| 100-42-5 | Styrene | 6. | U |
| 1330-20-7 | Xylene (total) | 6. | U |

M.C ok 11/27/89

11/17/89

1E C00104 EPA SAMPLE NO

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EDH71

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 12199 SAS No.: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-09B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EDH71

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec. 11. Date Analyzed: 6/29/89

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

Number TICs found 0

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC | Q |
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| 1. | | | | | |
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1A

# VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

VBLKH2

Lab Name: PEI  Contract: 68-D9-0037

Lab Code: PEI  Case No.: 12199  SAS No.:  SDG No.: EAQ09

Matrix: (soil/water) SOIL  Lab Sample ID: VBLKH2

Sample wt/vol: 5.0 (g/mL) G  Lab File ID: VBLKH2

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

% Moisture: not dec. 0.  Date Analyzed: 6/29/89

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

| CAS NO | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10. | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10. | U |
| 75-09-2 | Methylene Chloride | 5. | U |
| 67-64-1 | Acetone | 10 | U |
| 75-15-0 | Carbon Disulfide | 5 | U |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5. | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5 | U |
| 67-66-3 | Chloroform | 5. | U |
| 107-06-2 | 1,2-Dichloroethane | 5. | U |
| 78-93-3 | 2-Butanone | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5. | U |
| 56-23-5 | Carbon Tetrachloride | 5. | U |
| 108-05-4 | Vinyl Acetate | 10. | U |
| 75-27-4 | Bromodichloromethane | 5. | U |
| 78-87-5 | 1,2-Dichloropropane | 5. | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5. | U |
| 79-01-6 | Trichloroethene | 5. | U |
| 124-48-1 | Dibromochloromethane | 5. | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5. | U |
| 71-43-2 | Benzene | 5. | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 5. | U |
| 75-25-2 | Bromoform | 5. | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10. | U |
| 591-78-6 | 2-Hexanone | 10. | U |
| 127-18-4 | Tetrachloroethene | 5. | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5. | U |
| 108-88-3 | Toluene | 5. | U |
| 108-90-7 | Chlorobenzene | 5. | U |
| 100-41-4 | Ethylbenzene | 5. | U |
| 100-42-5 | Styrene | 5. | U |
| 1330-20-7 | Xylene (total) | 5. | U |

1E

EPA SAMPLE NO

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VBLKH2

Lab Name. PEI Contract. 68-D9-0037

Lab Code: PEI Case No 12199 SAS No.: SDG No EAQ09

Matrix: (soil/water) SOIL Lab Sample ID. VBLKH2

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VBLKH2

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

% Moisture not dec. 0. Date Analyzed: 6/29/89

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

Number TICs found 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST CONC. | Q |
|---|---|---|---|---|
| 1. | | | | |
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1A

# VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

VBLKH3

Lab Name: PEI  Contract: 68-D9-0037

Lab Code: PEI  Case No.: 12199  SAS No.:  SDG No.: EAQ09

Matrix: (soil/water) SOIL  Lab Sample ID: VBLKH3

Sample wt/vol: 5.0 (g/mL) G  Lab File ID: VBLKH3

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

% Moisture: not dec. 0.  Date Analyzed: 7/ 3/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS. (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10. | U |
| 74-83-9 | Bromomethane | 10 | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10. | U |
| 75-09-2 | Methylene Chloride | 5. | U |
| 67-64-1 | Acetone | 3 | J |
| 75-15-0 | Carbon Disulfide | 5 | U |
| 75-35-4 | 1,1-Dichloroethene | 5. | U |
| 75-34-3 | 1,1-Dichloroethane | 5 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5. | U |
| 67-66-3 | Chloroform | 5. | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 8. | J |
| 71-55-6 | 1,1,1-Trichloroethane | 5. | U |
| 56-23-5 | Carbon Tetrachloride | 5. | U |
| 108-05-4 | Vinyl Acetate | 10. | U |
| 75-27-4 | Bromodichloromethane | 5. | U |
| 78-87-5 | 1,2-Dichloropropane | 5. | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5. | U |
| 79-01-6 | Trichloroethene | 5. | U |
| 124-48-1 | Dibromochloromethane | 5. | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5. | U |
| 71-43-2 | Benzene | 5. | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 5. | U |
| 75-25-2 | Bromoform | 5. | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10. | U |
| 591-78-6 | 2-Hexanone | 10. | U |
| 127-18-4 | Tetrachloroethene | 5. | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5. | U |
| 108-88-3 | Toluene | 5. | U |
| 108-90-7 | Chlorobenzene | 2. | J |
| 100-41-4 | Ethylbenzene | 5. | U |
| 100-42-5 | Styrene | 5. | U |
| 1330-20-7 | Xylene (total) | 5. | U |

1E C00139 EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VBLKH3

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 12199 SAS No.: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: VBLKH3

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VBLKH3

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

% Moisture: not dec. 0. Date Analyzed: 7/ 3/89

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

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

| | CAS NUMBER | COMPOUND NAME | RT | EST CONC | Q |
|---|---|---|---|---|---|
| 1 | | | | | |
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

VBLKH4

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 12199 SAS No.: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: VBLKH4

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VBLKH4

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

% Moisture: not dec. 0 Date Analyzed: 7/ 4/89

Column: (pack/cap) CAP Dilution Factor: 1 00

| CAS NO | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10 | U |
| 74-83-9 | Bromomethane | 10. | U |
| 75-01-4 | Vinyl Chloride | 10 | U |
| 75-00-3 | Chloroethane | 10. | U |
| 75-09-2 | Methylene Chloride | 5. | U |
| 67-64-1 | Acetone | 10. | J |
| 75-15-0 | Carbon Disulfide | 5 | U |
| 75-35-4 | 1,1-Dichloroethene | 5 | U |
| 75-34-3 | 1,1-Dichloroethane | 5. | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5. | U |
| 67-66-3 | Chloroform | 5. | U |
| 107-06-2 | 1,2-Dichloroethane | 5 | U |
| 78-93-3 | 2-Butanone | 10. | |
| 71-55-6 | 1,1,1-Trichloroethane | 5. | U |
| 56-23-5 | Carbon Tetrachloride | 5. | U |
| 108-05-4 | Vinyl Acetate | 10. | U |
| 75-27-4 | Bromodichloromethane | 5. | U |
| 78-87-5 | 1,2-Dichloropropane | 5. | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5. | U |
| 79-01-6 | Trichloroethene | 5. | U |
| 124-48-1 | Dibromochloromethane | 5. | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5. | U |
| 71-43-2 | Benzene | 5. | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 5. | U |
| 75-25-2 | Bromoform | 5. | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10. | U |
| 591-78-6 | 2-Hexanone | 10. | U |
| 127-18-4 | Tetrachloroethene | 5. | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5. | U |
| 108-88-3 | Toluene | 5. | U |
| 108-90-7 | Chlorobenzene | 5. | U |
| 100-41-4 | Ethylbenzene | 5. | U |
| 100-42-5 | Styrene | 5. | U |
| 1330-20-7 | Xylene (total) | 5. | U |

1E

000285

EPA SAMPLE NO

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VBLKH4

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 12199 SAS No.: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: VBLKH4

Sample wt/vol: 5.0 (g/mL) G Lab File ID: VBLKH4

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

% Moisture: not dec 0. Date Analyzed: 7/ 4/89

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

Number TICs found 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

EAQ09

Lab Name: PEI Contract. 68-D9-0037

Lab Code: PEI Case No.: 12199 SAS No.: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-01A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EAQ09

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec. 11. dec. 0 Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed. 7/ 5/89

GPC Cleanup: (Y/N) Y pH: 8.0 Dilution Factor. 1 00

| CAS NO | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 740. | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 740. | U |
| 95-57-8 | 2-Chlorophenol | 740 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 740 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 740. | U |
| 100-51-6 | Benzyl alcohol | 740. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 740. | U |
| 95-48-7 | 2-Methylphenol | 740. | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 740. | U |
| 106-44-5 | 4-Methylphenol | 740. | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 740. | U |
| 67-72-1 | Hexachloroethane | 740. | U |
| 98-95-3 | Nitrobenzene | 740. | U |
| 78-59-1 | Isophorone | 740 | U |
| 88-75-5 | 2-Nitrophenol | 740. | U |
| 105-67-9 | 2,4-Dimethylphenol | 740 | U |
| 65-85-0 | Benzoic acid | 3600. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 740. | U |
| 120-83-2 | 2,4-Dichlorophenol | 740. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 740. | U |
| 91-20-3 | Naphthalene | 740. | U |
| 106-47-8 | 4-Chloroaniline | 740. | U |
| 87-68-3 | Hexachlorobutadiene | 740. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 740. | U |
| 91-57-6 | 2-Methylnaphthalene | 740. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 740. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 740. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 3600. | U |
| 91-58-7 | 2-Chloronaphthalene | 740. | U |
| 88-74-4 | 2-Nitroaniline | 3600. | U |
| 131-11-3 | Dimethylphthalate | 740. | U |
| 208-96-8 | Acenaphthylene | 740. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 740. | U |

1C

EPA SAMPLE NO

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EAQ09

Lab Name PEI Contract 68-D9-0037

Lab Code: PEI Case No . 12199 SAS No.: SDG No · EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-01A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EAQ09

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec 11 dec. 0. Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/89

GPC Cleanup: (Y/N) Y pH. 8 0 Dilution Factor: 1 00

| CAS NO. | COMPOUND | CONCENTRATION UNITS. (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 3600 | U |
| 83-32-9 | Acenaphthene | 740. | U |
| 51-28-5 | 2,4-Dinitrophenol | 3600 | U |
| 100-02-7 | 4-Nitrophenol | 3600. | U |
| 132-64-9 | Dibenzofuran | 740. | U |
| 121-14-2 | 2,4-Dinitrotoluene | 740. | U |
| 84-66-2 | Diethylphthalate | 740. | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 740 | U |
| 86-73-7 | Fluorene | 740 | U |
| 100-01-6 | 4-Nitroaniline | 3600. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 3600. | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 740. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 740. | U |
| 118-74-1 | Hexachlorobenzene | 740. | U |
| 87-86-5 | Pentachlorophenol | 3600. | U |
| 85-01-8 | Phenanthrene | 740. | U |
| 120-12-7 | Anthracene | 740. | U |
| 84-74-2 | Di-n-butylphthalate | 130. | J |
| 206-44-0 | Fluoranthene | 740. | U |
| 129-00-0 | Pyrene | 740. | U |
| 85-68-7 | Butylbenzylphthalate | 740. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1500. | U |
| 56-55-3 | Benzo(a)anthracene | 740. | U |
| 218-01-9 | Chrysene | 740. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 170. | J |
| 117-84-0 | Di-n-octylphthalate | 740. | U |
| 205-99-2 | Benzo(b)fluoranthene | 740. | U |
| 207-08-9 | Benzo(k)fluoranthene | 740. | U |
| 50-32-8 | Benzo(a)pyrene | 740. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 740 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 740. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 740. | U |

(1) - Cannot be separated from diphenylamine

1F

EPA SAMPLE NO

EAQ09

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-D9-0037

Lab Code. PEI Case No.. 12199 SAS No.. SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-01A

Sample wt/vol. 30.0 (g/mL) G Lab File ID: EAQ09

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec 11 dec 0. Date Extracted: 6/27/89

Extraction. (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/89

GPC Cleanup: (Y/N) Y pH 8 0 Dilution Factor: 1 00

Number TICs found. 3

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC | Q |
|---|---|---|---|---|---|
| 1 | 100-52-7 | Benzaldehyde (ACN)(DOT) | 8 68 | 300 | BJ |
| 2 | - - | UNKNOWN PHTHALATE | 21.85 | 900 | J |
| 3 | - - | UNKNOWN ? | 26.97 | 1000 | BJ |
| 4 | | | | | |
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NIH/EPA Forward Library Search

TIC = 1531

Injection Date: 05-JUL-89 Time: 09:49:02

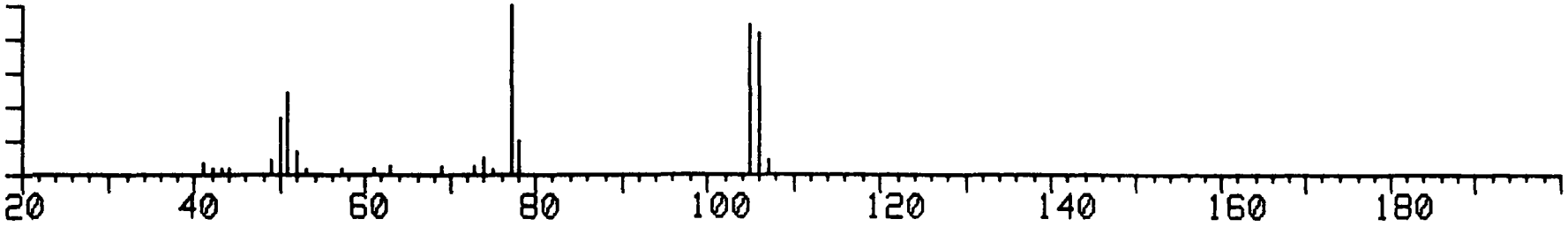
100% = 342

Filename: SY:EAQ09

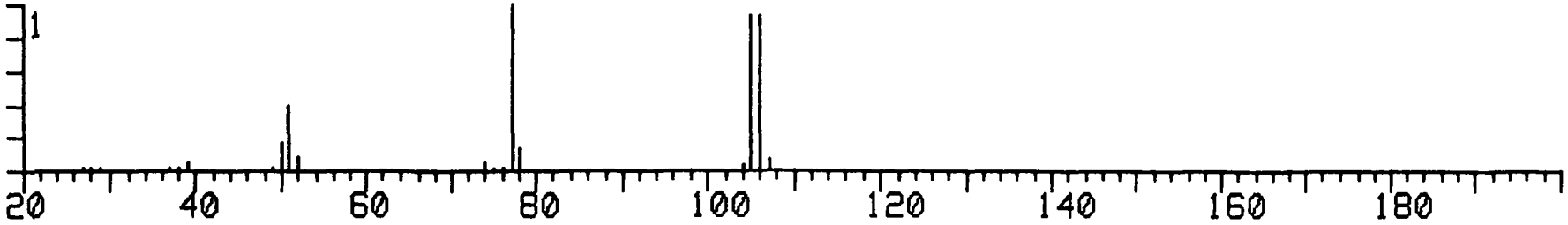
Comments:

ID:N 7845 T9-06-154-01A LOW LEVEL SOIL// MATRIX:SOIL/

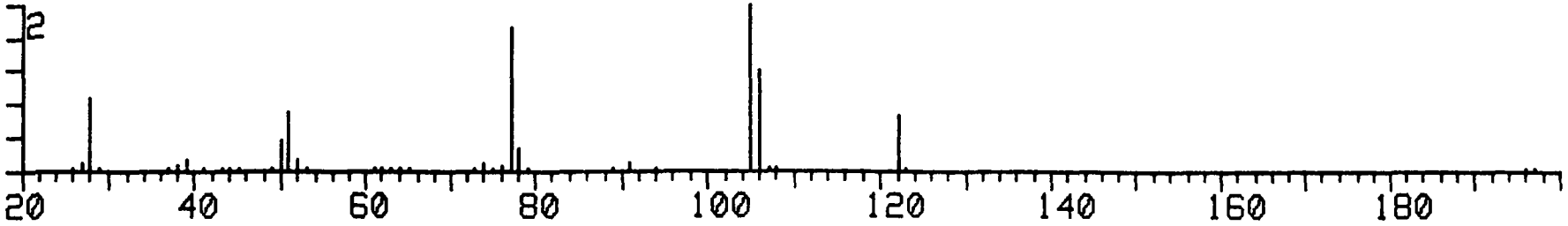
SCANS: 676-676 BKG * 1.00 669



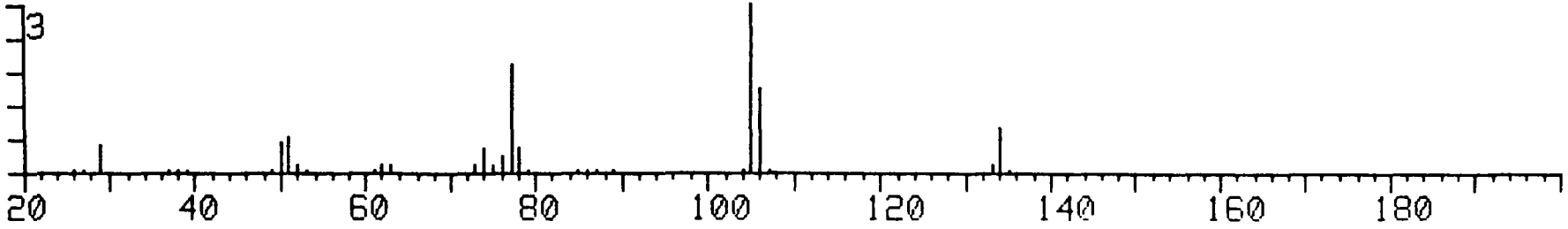

C7H6O 106 Benzaldehyde (ACN)(DOT) Fit 0.663 SP#/CAS# 1722/100-52-7




C14H12O3 228 1,2,4-Trioxolane, 3,5- Fit 0.555 SP#/CAS# 20882/23888-15-5




C8H6O2 134 1,2-Benzenedicarboxaldeh Fit 0.502 SP#/CAS# 4887/643-79-8




C03-740

NIH/EPA Forward Library Search TIC = 5114

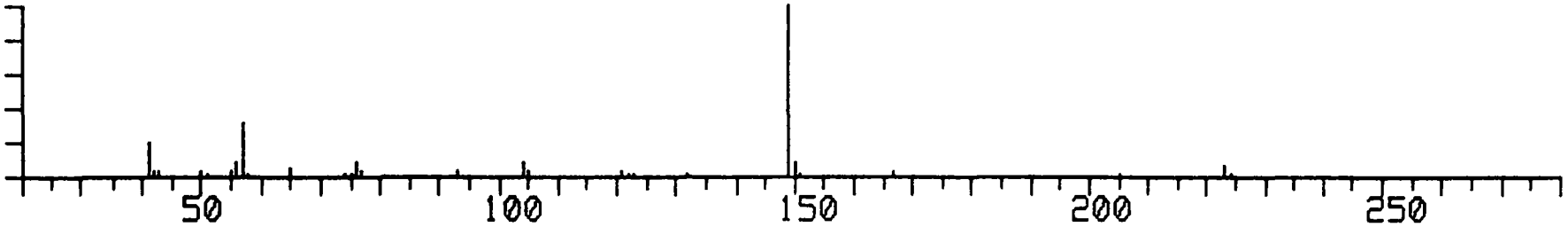
Injection Date: 05-JUL-89 Time: 09:49:02 100% = 2672

Filename: SY:EAQ09

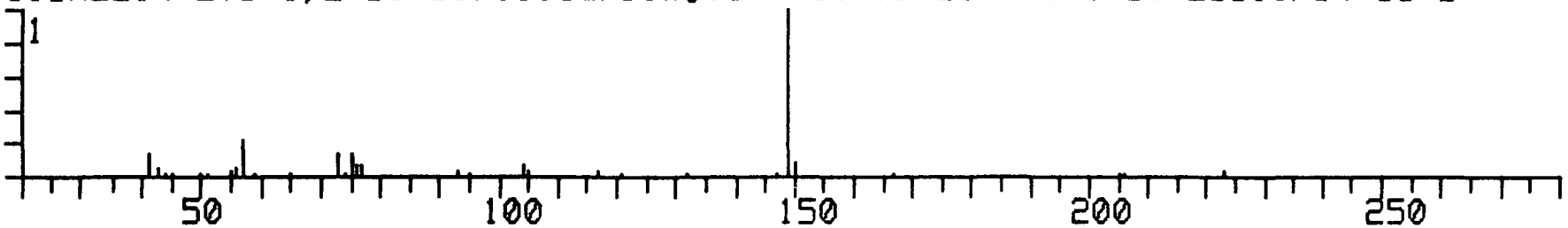
Comments:

ID:N 7845 T9-06-154-01A LOW LEVEL SOIL// MATRIX:SOIL/

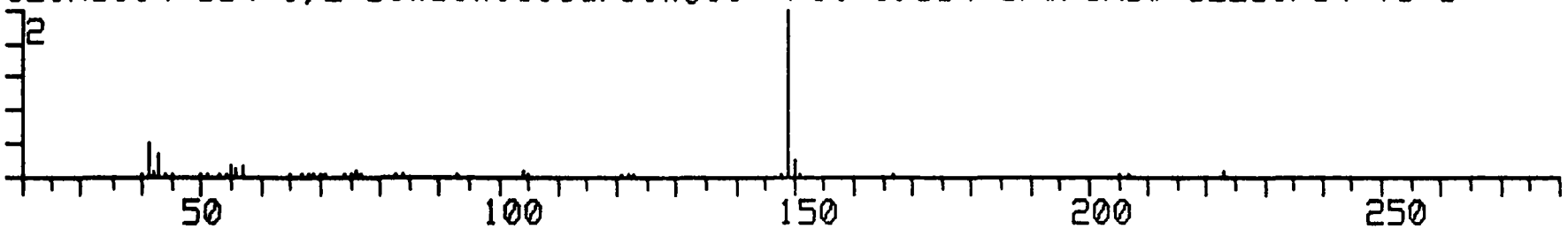
SCANS: 2111-2111 BKG * 1.00 2105



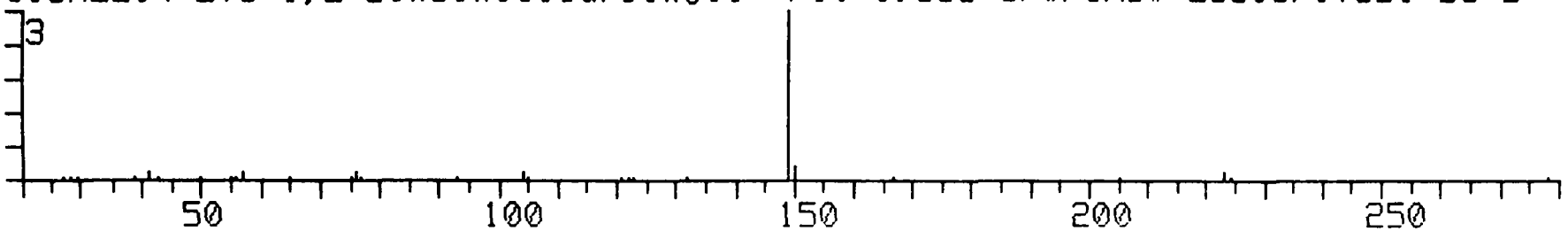

C16H2204 278 1,2-Benzenedicarboxyli Fit 0.720 SP#/CAS# 26901/84-69-5




C20H3004 334 1,2-Benzenedicarboxyli Fit 0.694 SP#/CAS# 32261/84-78-6



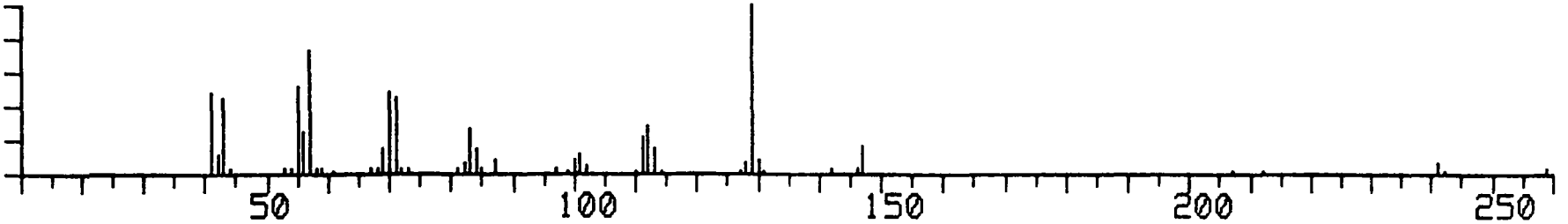

C16H2204 278 1,2-Benzenedicarboxyli Fit 0.693 SP#/CAS# 26906/17851-53-5




C0/21

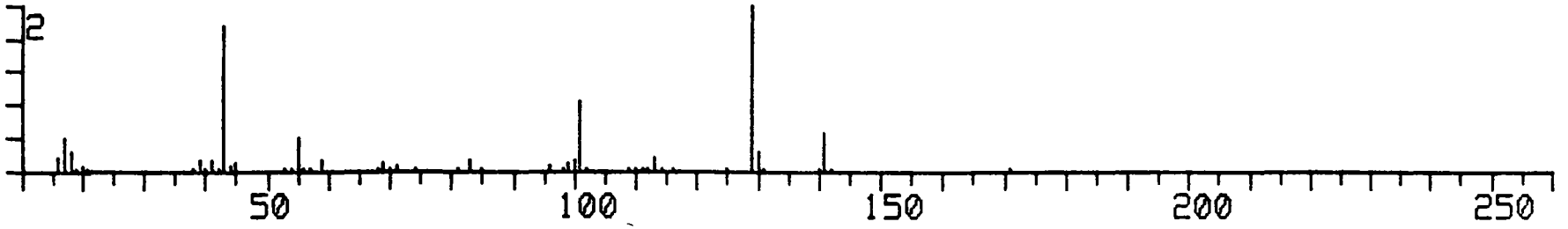
NIH/EPA Forward Library Search TIC = 6102
Injection Date: 05-JUL-89 Time: 09:49:02 100% = 887
Filename: SY:EAQ09
Comments:
ID:N 7845 T9-06-154-01A LOW LEVEL SOIL// MATRIX:SOIL/

SCANS: 2670-2670 BKG * 1.00 2663




C8H15BO3 170 Butyric acid, 3-hydrox Fit 0.346 SP#/CAS# 11558/31767-20-1

C8H12O4 172 Ketone, 2,5-dihydro-2,5 Fit 0.298 SP#/CAS# 11890/13156-18-8




C9H17ClO 176 Nonanoyl chloride Fit 0.269 SP#/CAS# 12544/764-85-2

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

EDH64

Lab Name: PEI Contract. 68-D9-0037

Lab Code: PEI Case No . 12199 SAS No.: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-02A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EDH64

Level: (low/med) LOW Date Received: 6/23/89

% Moisture. not dec. 12. dec. 0. Date Extracted. 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed 7/ 5/89

GPC Cleanup: (Y/N) Y pH. 8 0 Dilution Factor: 1 00

| CAS NO | COMPOUND | CONCENTRATION UNITS. (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 750 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 750 | U |
| 95-57-8 | 2-Chlorophenol | 750 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 750. | U |
| 106-46-7 | 1,4-Dichlorobenzene | 750. | U |
| 100-51-6 | Benzyl alcohol | 750 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 750 | U |
| 95-48-7 | 2-Methylphenol | 750 | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 750. | U |
| 106-44-5 | 4-Methylphenol | 750 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 750. | U |
| 67-72-1 | Hexachloroethane | 750. | U |
| 98-95-3 | Nitrobenzene | 750 | U |
| 78-59-1 | Isophorone | 750 | U |
| 88-75-5 | 2-Nitrophenol | 750. | U |
| 105-67-9 | 2,4-Dimethylphenol | 750. | U |
| 65-85-0 | Benzoic acid | 3600. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 750. | U |
| 120-83-2 | 2,4-Dichlorophenol | 750. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 750. | U |
| 91-20-3 | Naphthalene | 750. | U |
| 106-47-8 | 4-Chloroaniline | 750. | U |
| 87-68-3 | Hexachlorobutadiene | 750. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 750. | U |
| 91-57-6 | 2-Methylnaphthalene | 750 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 750. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 750. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 3600. | U |
| 91-58-7 | 2-Chloronaphthalene | 750. | U |
| 88-74-4 | 2-Nitroaniline | 3600. | U |
| 131-11-3 | Dimethylphthalate | 750. | U |
| 208-96-8 | Acenaphthylene | 750. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 750. | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET 000345

EPA SAMPLE NO

EDH64

Lab Name: PEI Contract 68-D9-0037

Lab Code: PEI Case No. 12199 SAS No. SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-02A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EDH64

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec 12 dec. 0. Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/89

GPC Cleanup (Y/N) Y pH. 8.0 Dilution Factor: 1 00

| CAS NO | COMPOUND | CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 3600. | U |
| 83-32-9 | Acenaphthene | 750. | U |
| 51-28-5 | 2,4-Dinitrophenol | 3600. | U |
| 100-02-7 | 4-Nitrophenol | 3600 | U |
| 132-64-9 | Dibenzofuran | 750 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 750. | U |
| 84-66-2 | Diethylphthalate | 330. | J |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 750 | U |
| 86-73-7 | Fluorene | 750. | U |
| 100-01-6 | 4-Nitroaniline | 3600. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 3600 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 750. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 750 | U |
| 118-74-1 | Hexachlorobenzene | 750. | U |
| 87-86-5 | Pentachlorophenol | 3600. | U |
| 85-01-8 | Phenanthrene | 750. | U |
| 120-12-7 | Anthracene | 750. | U |
| 84-74-2 | Di-n-butylphthalate | 100. | J |
| 206-44-0 | Fluoranthene | 750. | U |
| 129-00-0 | Pyrene | 750. | U |
| 85-68-7 | Butylbenzylphthalate | 750. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1500. | U |
| 56-55-3 | Benzo(a)anthracene | 750. | U |
| 218-01-9 | Chrysene | 750. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 80. | J |
| 117-84-0 | Di-n-octylphthalate | 750. | U |
| 205-99-2 | Benzo(b)fluoranthene | 750. | U |
| 207-08-9 | Benzo(k)fluoranthene | 750. | U |
| 50-32-8 | Benzo(a)pyrene | 750. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 750. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 750. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 750. | U |

(1) - Cannot be separated from diphenylamine

1F

EPA SAMPLE NO

EDH64

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 12199 SAS No.: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-02A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EDH64

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec. 12. dec. 0. Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/89

GPC Cleanup: (Y/N) Y pH: 8.0 Dilution Factor: 1.00

Number TICs found: 3

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC | G |
|---|---|---|---|---|---|
| 1. | 100-52-7 | Benzaldehyde (ACN)(DOT) | 8.72 | 300 | BJ |
| 2. | - - | UNKNOWN PHTHALATE | 21.87 | 300 | J |
| 3. | - - | UNKNOWN ? | 26.98 | 5000 | BJ |
| 4. | | | | | |
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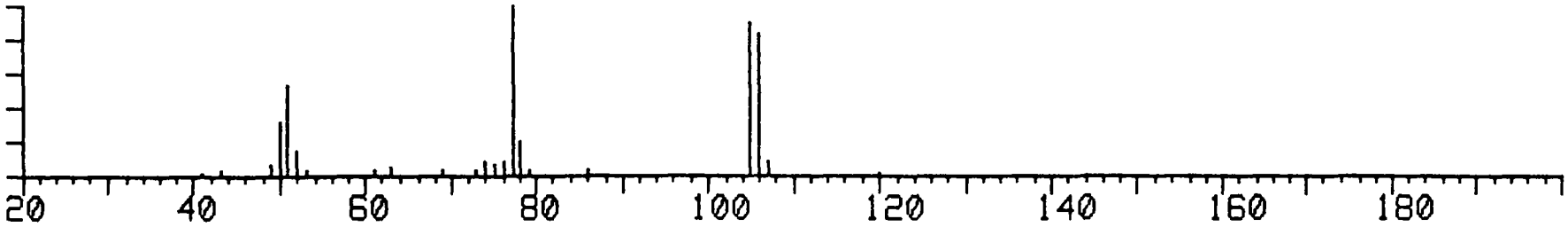
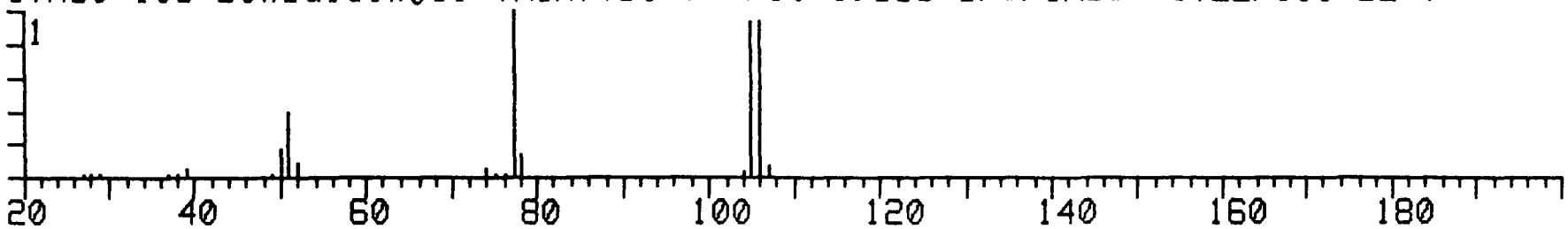
| 30. | | | | | |

NIH/EPA Forward Library Search TIC = 1913
Injection Date: 05-JUL-89 Time: 10:39:08 100% = 423
Filename: SY:EDH64
Comments:
ID:N 7846 T9-06-154-02A LOW LEVEL SOIL// MATRIX:SOIL/

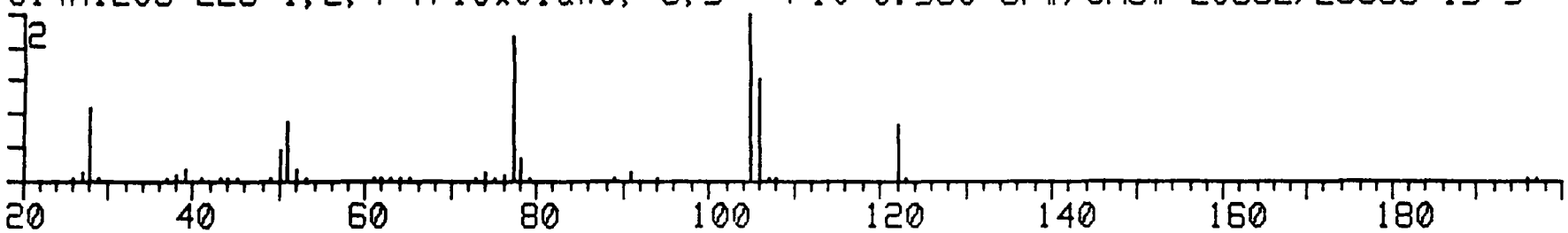
SCANS: 678-678 BKG * 1.00 673



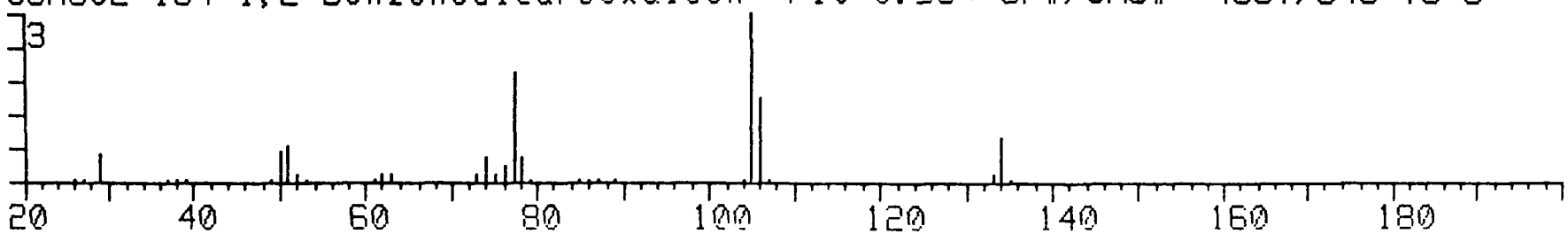

C7H6O 106 Benzaldehyde (ACN)(DOT) Fit 0.689 SP#/CAS# 1722/100-52-7




C14H12O3 228 1,2,4-Trioxolane, 3,5- Fit 0.580 SP#/CAS# 20882/23888-15-5




C8H6O2 134 1,2-Benzenedicarboxaldeh Fit 0.564 SP#/CAS# 4887/643-79-8



NIH/EPA Forward Library Search TIC = 2832

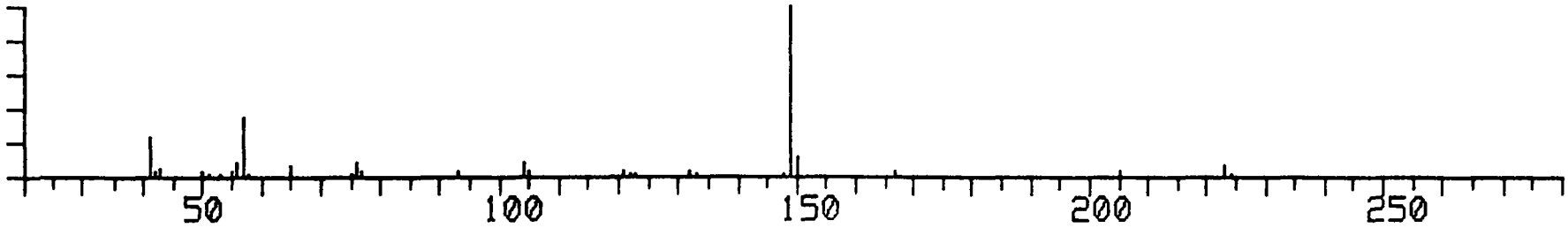
Injection Date: 05-JUL-89 Time: 10:39:08 100% = 1206

Filename: SY:EDH64

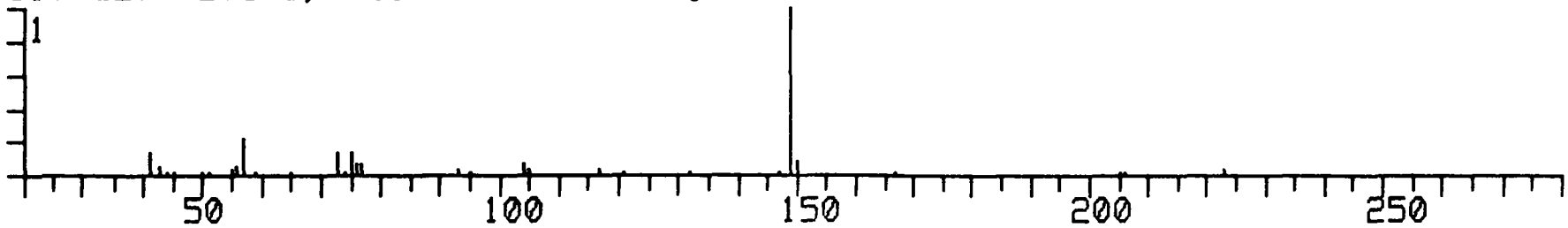
Comments:

ID:N 7846 T9-06-154-02A LOW LEVEL SOIL// MATRIX:SOIL/

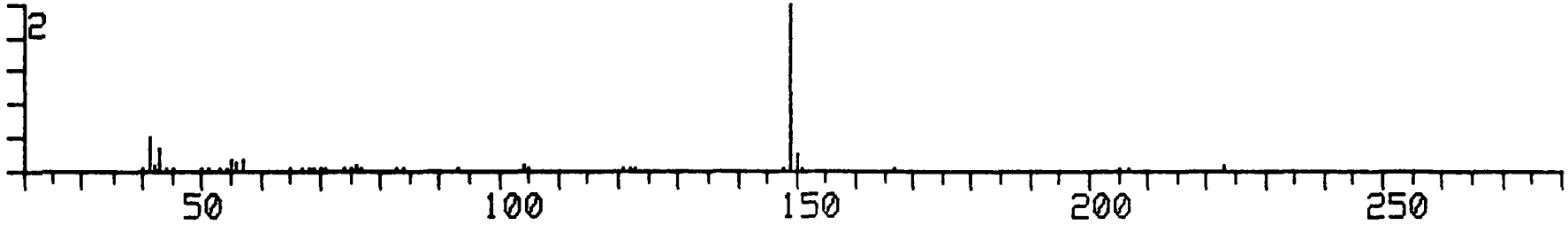
SCANS: 2113-2113 BKG * 1.00 2108




C16H2204 278 1,2-Benzenedicarboxyli Fit 0.716 SP#/CAS# 26901/84-69-5




C20H3004 334 1,2-Benzenedicarboxyli Fit 0.689 SP#/CAS# 32261/84-78-6



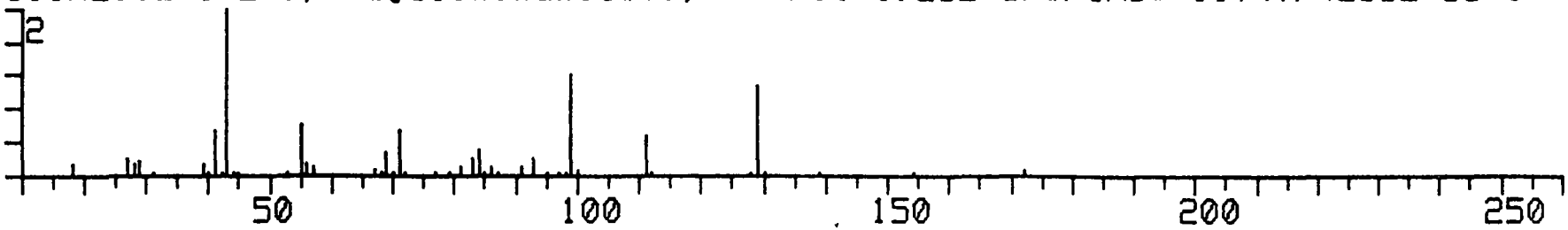

C16H2204 278 1,2-Benzenedicarboxyli Fit 0.684 SP#/CAS# 26906/17851-53-5

NIH/EPA Forward Library Search TIC = 36396
Injection Date: 05-JUL-89 Time: 10:39:08 100% = 5808
Filename: SY:EDH64
Comments:
ID:N 7846 T9-06-154-02A LOW LEVEL SOIL// MATRIX:SOIL/

SCANS: 2672-2672 BKG * 1.00 2665

C8H15BO3 170 Butyric acid, 3-hydrox Fit 0.347 SP#/CAS# 11558/31767-20-1

C10H20O2 172 1,2-Cyclohexanediol, 4 Fit 0.282 SP#/CAS# 11747/42962-98-1




C8H12O4 172 Ketone, 2,5-dihydro-2,5 Fit 0.239 SP#/CAS# 11890/13156-18-8

C00358

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET 000360

EPA SAMPLE NO

EDH67

Lab Name: PEI Contract: 68-D9-0037

Lab Code. PEI Case No : 12199 SAS No : SDG No : EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-05A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EDH67

Level: (low/med) LOW Date Received. 6/23/89

% Moisture. not dec. 16 dec. 0. Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/89

GPC Cleanup (Y/N) Y pH: 8.5 Dilution Factor 1 00

| CAS NO | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 780 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 780. | U |
| 95-57-8 | 2-Chlorophenol | 780 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 780 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 780 | U |
| 100-51-6 | Benzyl alcohol | 780 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 780 | U |
| 95-48-7 | 2-Methylphenol | 780. | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 780 | U |
| 106-44-5 | 4-Methylphenol | 780 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 780. | U |
| 67-72-1 | Hexachloroethane | 780 | U |
| 98-95-3 | Nitrobenzene | 780 | U |
| 78-59-1 | Isophorone | 780. | U |
| 88-75-5 | 2-Nitrophenol | 780. | U |
| 105-67-9 | 2,4-Dimethylphenol | 780. | U |
| 65-85-0 | Benzoic acid | 3800. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 780. | U |
| 120-83-2 | 2,4-Dichlorophenol | 780. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 780. | U |
| 91-20-3 | Naphthalene | 780. | U |
| 106-47-8 | 4-Chloroaniline | 780. | U |
| 87-68-3 | Hexachlorobutadiene | 780. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 780. | U |
| 91-57-6 | 2-Methylnaphthalene | 780. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 780. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 780. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 3800. | U |
| 91-58-7 | 2-Chloronaphthalene | 780. | U |
| 88-74-4 | 2-Nitroaniline | 3800. | U |
| 131-11-3 | Dimethylphthalate | 780. | U |
| 208-96-8 | Acenaphthylene | 780. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 780. | U |

1C

C00001 EPA SAMPLE NO

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EDH67

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No. 12199 SAS No : SDG No : EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-05A

Sample wt/vol: 30 0 (g/mL) G Lab File ID: EDH67

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec 16. dec. 0 Date Extracted: 6/27/89

Extraction (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/89

GPC Cleanup: (Y/N) Y pH. 8.5 Dilution Factor: 1 00

| CAS NO | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 3800. | U |
| 83-32-9 | Acenaphthene | 780 | U |
| 51-28-5 | 2,4-Dinitrophenol | 3800. | U |
| 100-02-7 | 4-Nitrophenol | 3800 | U |
| 132-64-9 | Dibenzofuran | 780. | U |
| 121-14-2 | 2,4-Dinitrotoluene | 780 | U |
| 84-66-2 | Diethylphthalate | 780. | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 780. | U |
| 86-73-7 | Fluorene | 780. | U |
| 100-01-6 | 4-Nitroaniline | 3800 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 3800. | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 780. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 780. | U |
| 118-74-1 | Hexachlorobenzene | 780. | U |
| 87-86-5 | Pentachlorophenol | 3800. | U |
| 85-01-8 | Phenanthrene | 780 | U |
| 120-12-7 | Anthracene | 780. | U |
| 84-74-2 | Di-n-butylphthalate | 780. | U |
| 206-44-0 | Fluoranthene | 780. | U |
| 129-00-0 | Pyrene | 780. | U |
| 85-68-7 | Butylbenzylphthalate | 780. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1600. | U |
| 56-55-3 | Benzo(a)anthracene | 780. | U |
| 218-01-9 | Chrysene | 780. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 120. | J |
| 117-84-0 | Di-n-octylphthalate | 780. | U |
| 205-99-2 | Benzo(b)fluoranthene | 780. | U |
| 207-08-9 | Benzo(k)fluoranthene | 780. | U |
| 50-32-8 | Benzo(a)pyrene | 780. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 780. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 780. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 780. | U |

(1) - Cannot be separated from diphenylamine

1F C00002 EPA SAMPLE NO

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EDH67

Lab Name PEI Contract. 68-D9-0037

Lab Code PEI Case No 12199 SAS No : SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-05A

Sample wt/vol 30.0 (g/mL) G Lab File ID EDH67

Level: (low/med) LOW Date Received: 6/23/89

% Moisture not dec. 16 dec 0. Date Extracted 6/27/89

Extraction. (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/89

GPC Cleanup (Y/N) Y pH. 8.5 Dilution Factor: 1 00

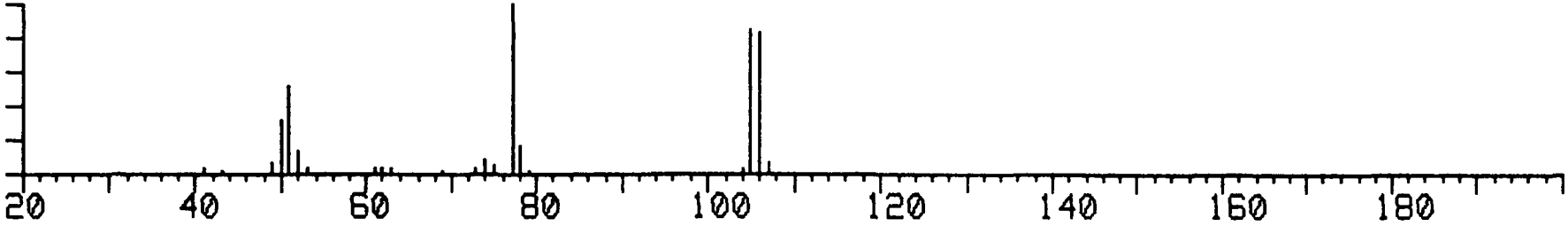
Number TICs found 14

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

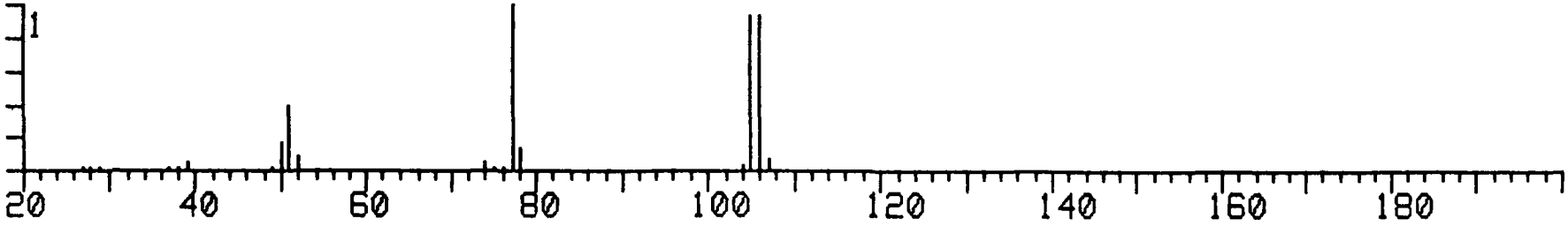
| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC | Q |
|---|---|---|---|---|---|
| 1. | 100-52-7 | Benzaldehyde (ACN)(DOT) | 8 72 | 800 | BJ |
| 2 | - - | UNKNOWN carboxcylic acid | 23.37 | 500 | J |
| 3 | - - | UNKNOWN " " | 23.68 | 1000 | J |
| 4 | - - | UNKNOWN (?) | 23.98 | 400 | J |
| 5 | - - | UNKNOWN AROMATIC | 25.65 | 2000 | J |
| 6 | - - | UNKNOWN (?) | 26.47 | 500 | J |
| 7 | - - | UNKNOWN aromatic | 26 58 | 300 | J |
| 8 | - - | UNKNOWN (?) | 26.65 | 400 | J |
| 9 | 1235-74-1 | 1-Phenanthrenecarboxylic acid | 26 72 | 1000 | J |
| 10. | - - | UNKNOWN Carboxcylic acid | 27.02 | 7000. | BJ |
| 11. | - - | UNKNOWN AROMATIC | 27.30 | 400. | J |
| 12. | - - | UNKNOWN (?) | 27.63 | 600. | J |
| 13. | - - | UNKNOWN (?) | 28.70 | 700 | J |
| 14. | - - | UNKNOWN (?) | 39.07 | 400. | J |
| 15. | | | | | |
| 16 | | | | | |
| 17. | | | | | |
| 18. | | | | | |
| 19. | | | | | |
| 20. | | | | | |
| 21. | | | | | |
| 22. | | | | | |
| 23. | | | | | |
| 24. | | | | | |
| 25. | | | | | |
| 26. | | | | | |
| 27. | | | | | |
| 28. | | | | | |
| 29. | | | | | |
| 30. | | | | | |

NIH/EPA Forward Library Search TIC = 4559
Injection Date: 05-JUL-89 Time: 11:26:05 100% = 1073
Filename: SY:EDH67
Comments:
ID:N 7847 T9-06-154-05A LOW LEVEL SOIL// MATRIX:SOIL/

SCANS: 679-679 BKG * 1.00 673

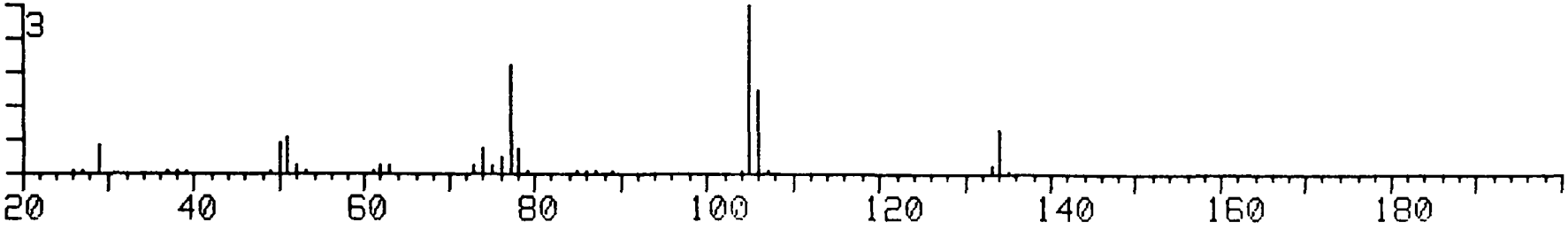



C7H6O 106 Benzaldehyde (ACN)(DOT) Fit 0.785 SP#/CAS# 1722/100-52-7




C14H12O3 228 1,2,4-Trioxolane, 3,5- Fit 0.613 SP#/CAS# 20882/23888-15-5

C8H6O2 134 1,2-Benzenedicarboxaldeh Fit 0.559 SP#/CAS# 4887/643-79-8



NIH/EPA Forward Library Search TIC = 2856

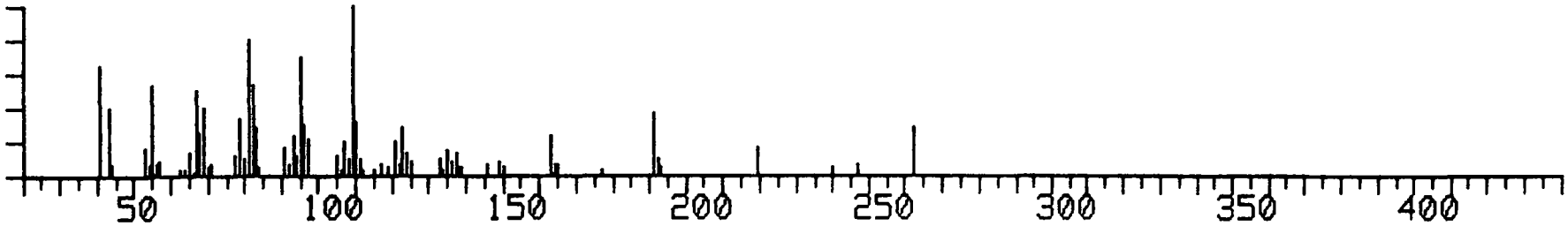
Injection Date: 05-JUL-89 Time: 11:26:05 100% = 241

Filename: SY:EDH67

Comments:

ID:N 7847 T9-06-154-05A LOW LEVEL SOIL// MATRIX:SOIL/

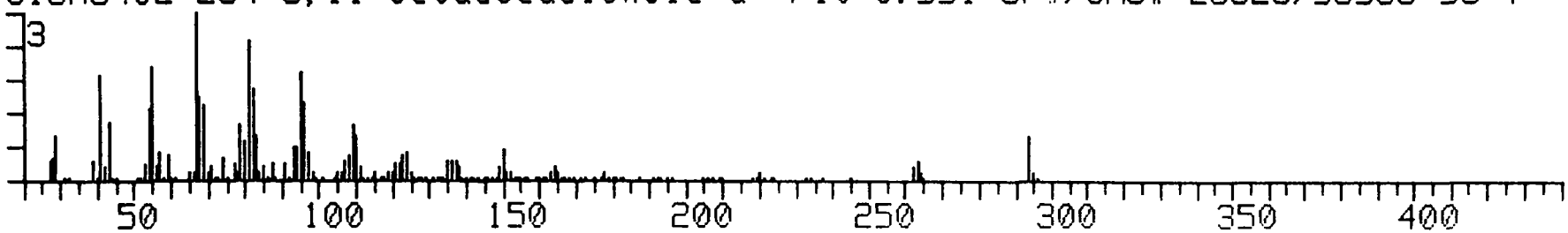
SCANS: 2277-2277 BKG * 1.00 2271




C21H3804 354 9,12-Octadecadienoic a Fit 0.572 SP#/CAS# 33682/2277-28-3

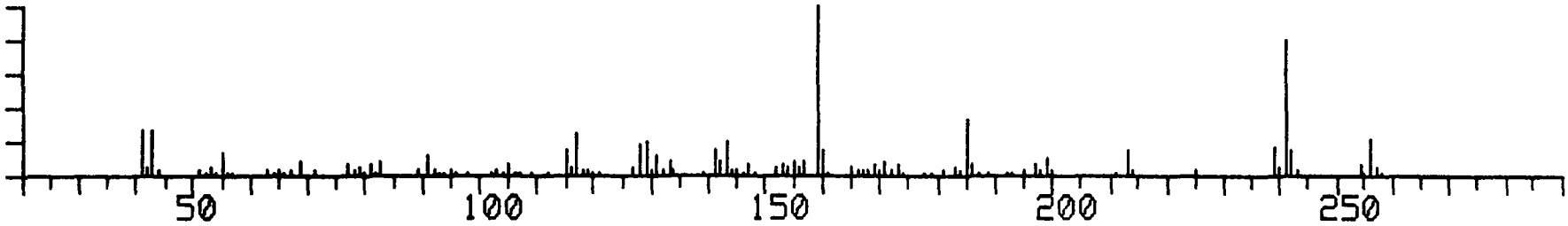
C28H4803 432 Ergost-25-ene-3,5,6-tr Fit 0.553 SP#/CAS# 37888/56143-28-3

C19H3402 294 8,11-Octadecadienoic a Fit 0.551 SP#/CAS# 28629/56599-58-7

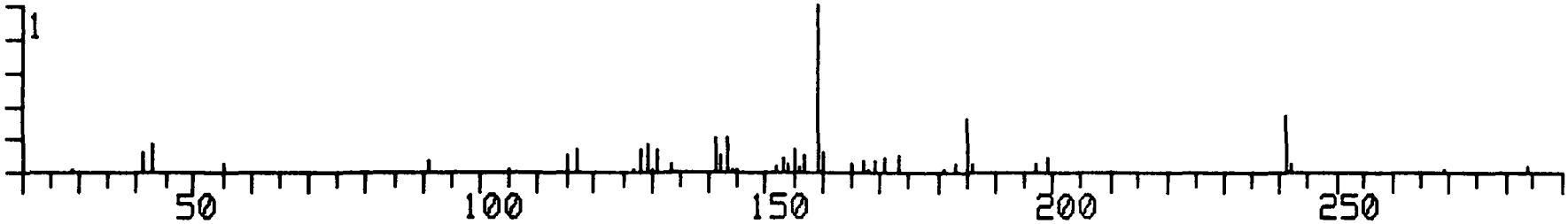


NIH/EPA Forward Library Search TIC = 9893
Injection Date: 05-JUL-89 Time: 11:26:05 100% = 1283
Filename: SY:EDH67
Comments:
ID:N 7847 T9-06-154-05A LOW LEVEL SOIL// MATRIX:SOIL/

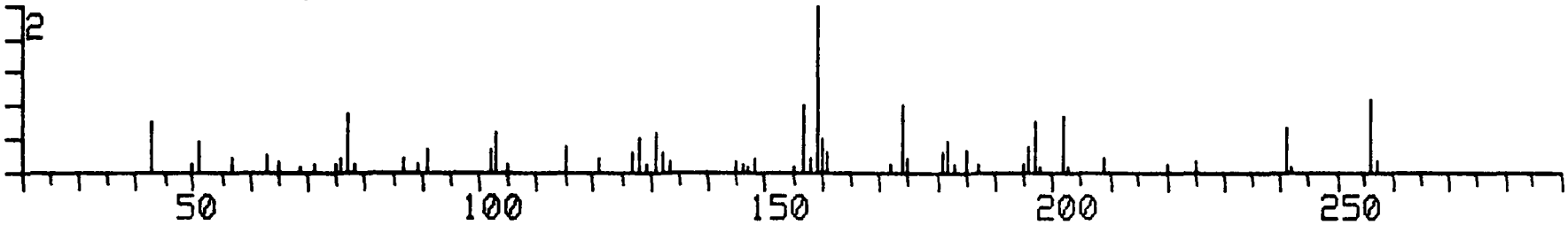
SCANS: 2311-2311 BKG * 1.00 2305




C20H280 284 1-Phenanthrenecarboxald Fit 0.564 SP#/CAS# 27637/24035-50-5

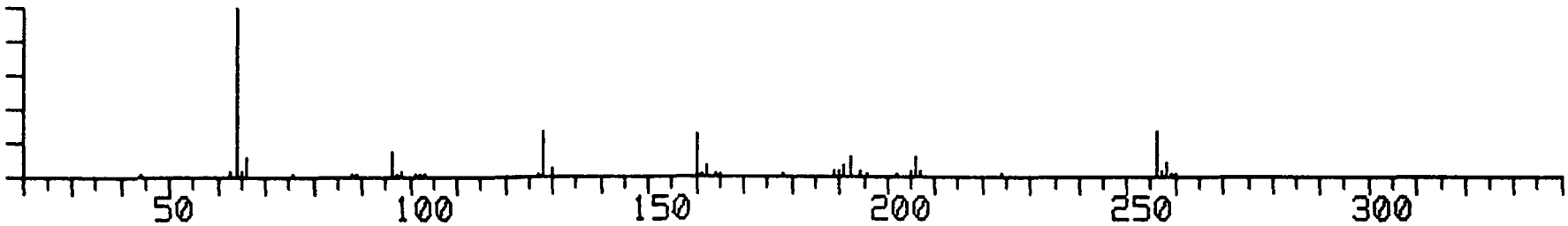



C16H1603 256 2,5-Hexadienoic acid, Fit 0.178 SP#/CAS# 24464/55937-83-2

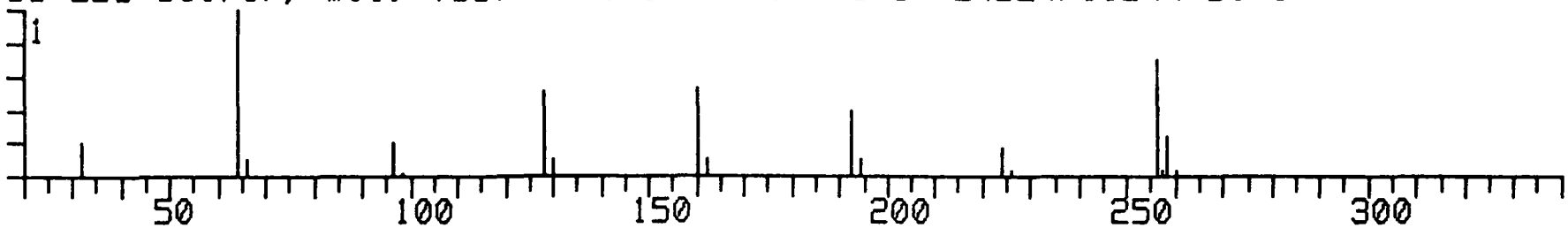


NIH/EPA Forward Library Search TIC = 2950
Injection Date: 05-JUL-89 Time: 11:26:05 100% = 1003
Filename: SY:EDH67
Comments:
ID:N 7847 T9-06-154-05A LOW LEVEL SOIL// MATRIX:SOIL/

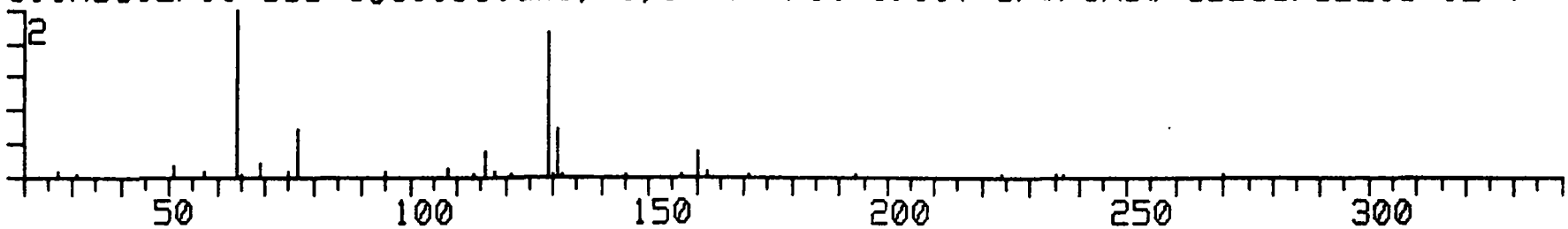
SCANS: 2345-2345 BKG * 1.00 2341



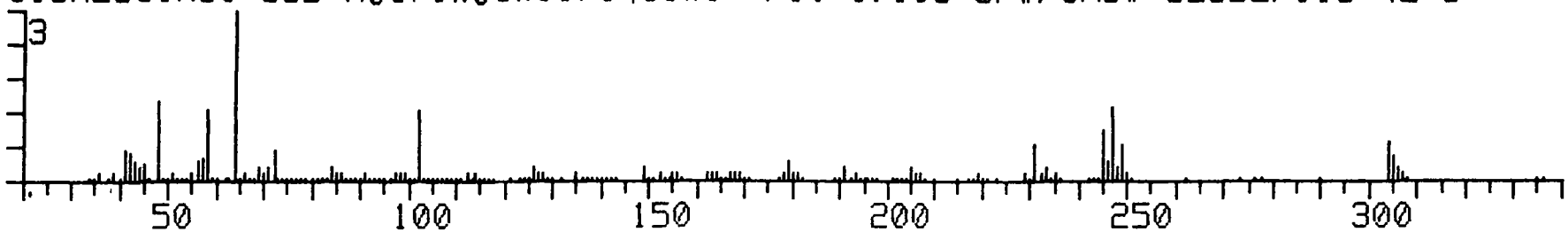

S8 256 Sulfur, mol. (S8) Fit 0.392 SP#/CAS# 24524/10544-50-0




C10H6Cl2F10 386 Cyclobutane, 1,1'-( Fit 0.107 SP#/CAS# 35538/35208-02-7



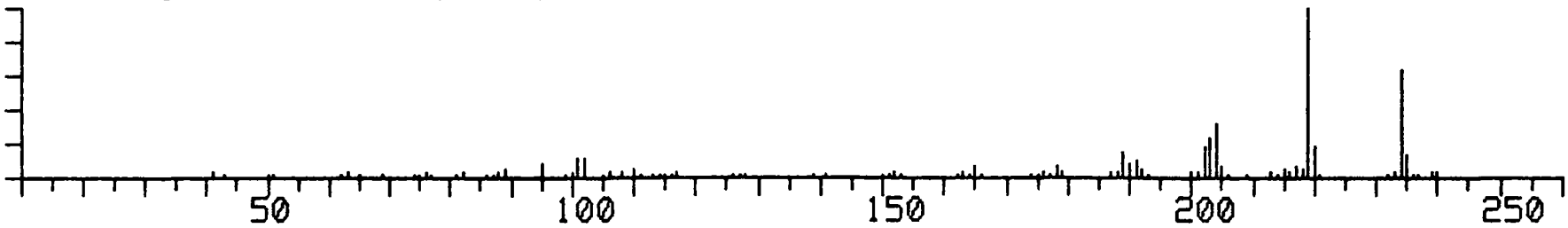

C18H26ClN3O 335 Hydroxychloroquine Fit 0.106 SP#/CAS# 32352/118-42-3



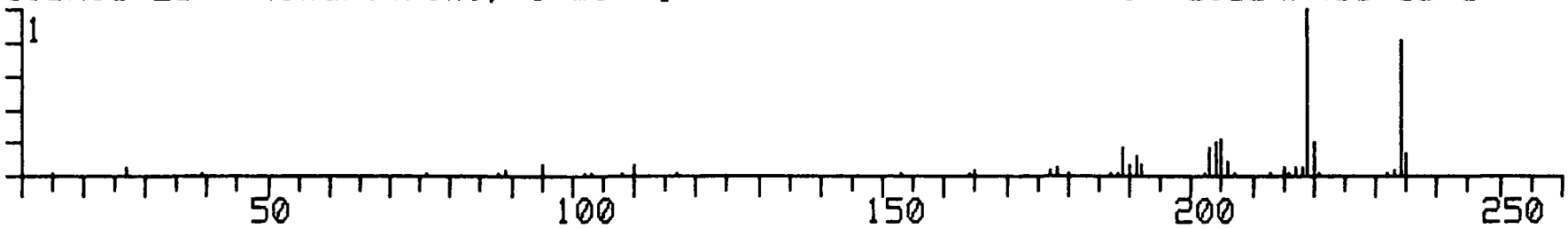

C0033

NIH/EPA Forward Library Search TIC = 11298
Injection Date: 05-JUL-89 Time: 11:26:05 100% = 2416
Filename: SY:EDH67
Comments:
ID:N 7847 T9-06-154-05A LOW LEVEL SOIL// MATRIX:SOIL/

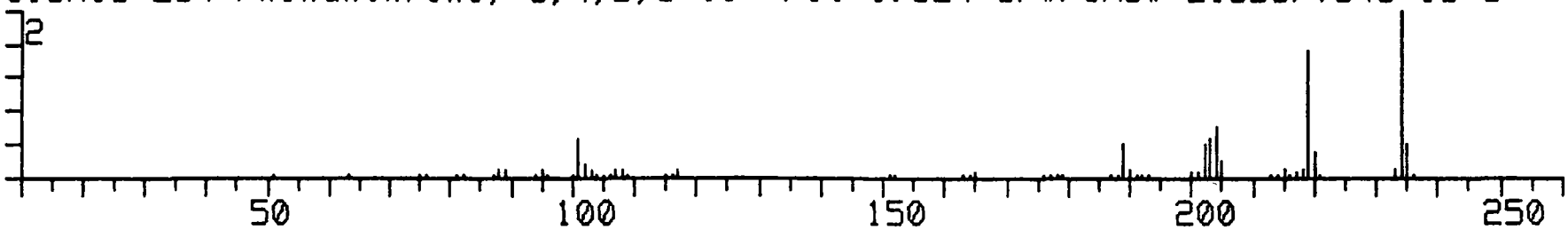
SCANS: 2527-2527 BKG * 1.00 2517



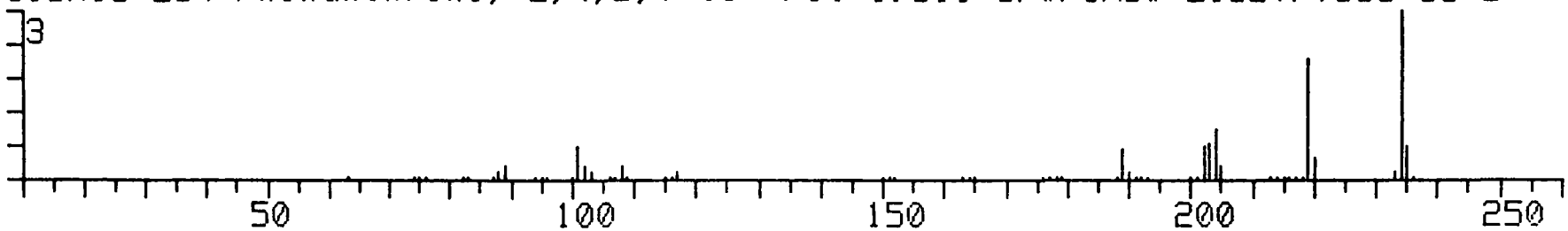

C18H18 234 Phenanthrene, 1-methyl-7 Fit 0.654 SP#/CAS# 21654/483-65-8




C18H18 234 Phenanthrene, 3,4,5,6-te Fit 0.624 SP#/CAS# 21656/7343-06-8

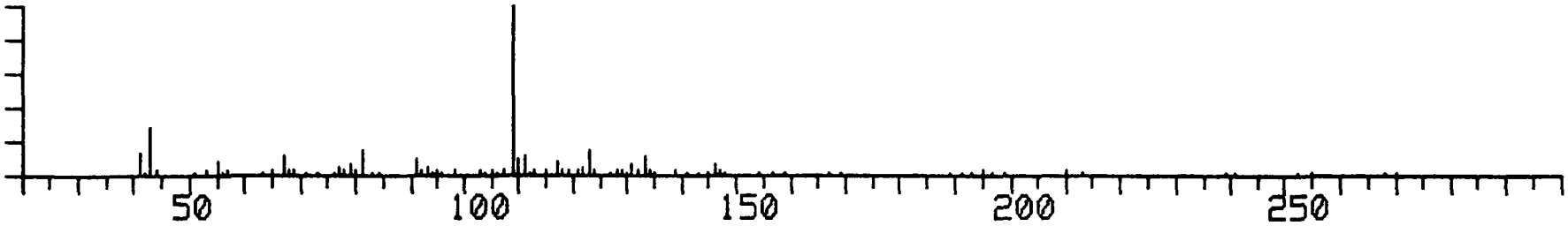



C18H18 234 Phenanthrene, 2,4,5,7-te Fit 0.610 SP#/CAS# 21657/7396-38-5

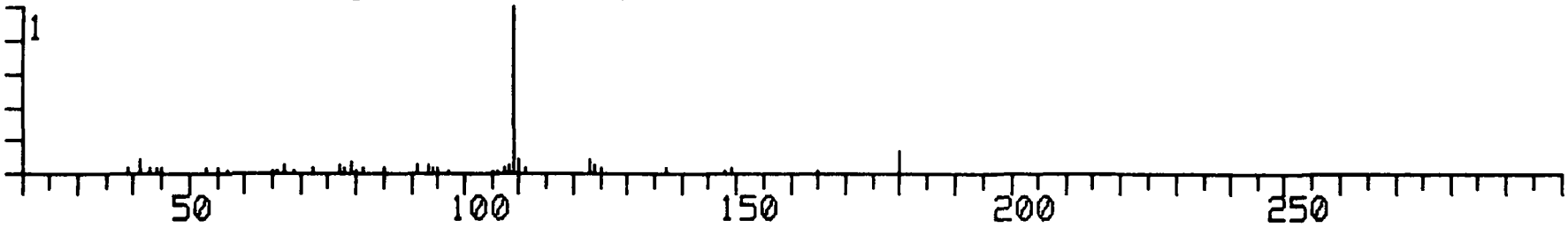


NIH/EPA Forward Library Search TIC = 3422
Injection Date: 05-JUL-89 Time: 11:26:05 100% = 902
Filename: SY:EDH67
Comments:
ID:N 7847 T9-06-154-05A LOW LEVEL SOIL// MATRIX:SOIL/

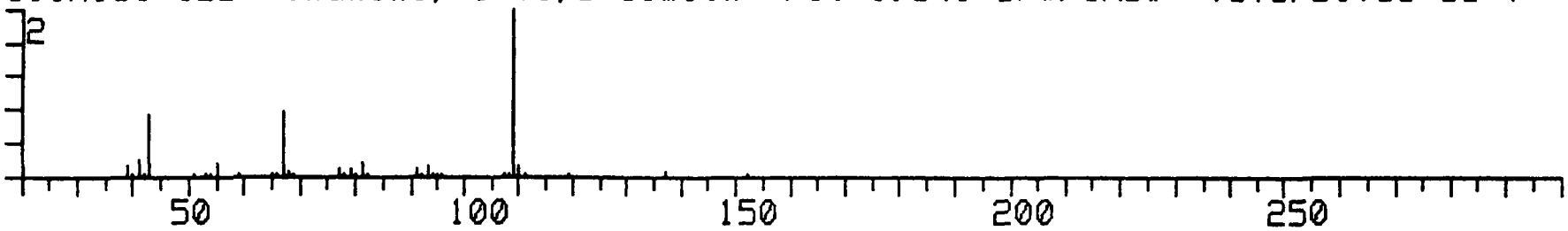
SCANS: 2616-2616 BKG * 1.00 2611



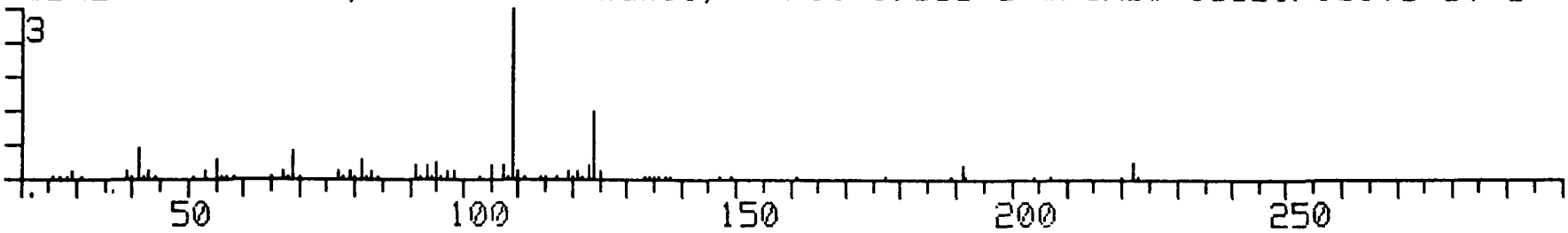

C12H20O 180 Tricyclo[4.3.1.13,8]und Fit 0.369 SP#/CAS# 13138/21898-95-3




C10H16O 152 Ethanone, 1-(1,3-dimeth Fit 0.341 SP#/CAS# 7873/51733-68-7

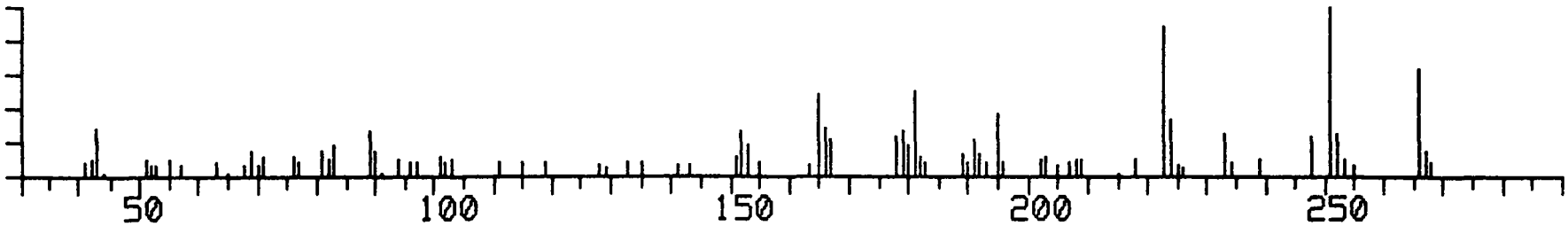



C15H26O 222 1-Naphthalenemethanol, Fit 0.338 SP#/CAS# 19950/19078-37-6

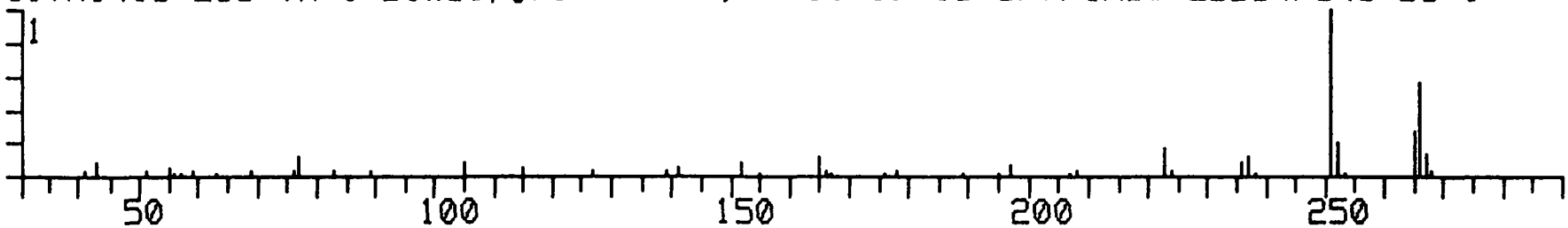


NIH/EPA Reverse Library Search TIC = 1624
Injection Date: 05-JUL-89 Time: 11:26:05 100% = 131
Filename: EDH67
Comments:
ID:N 7847 T9-06-154-05A LOW LEVEL SOIL// MATRIX:SOIL/

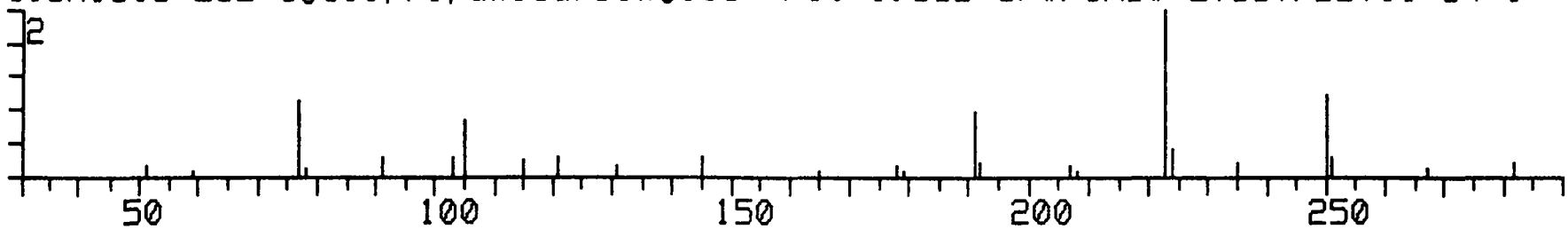
SCANS: 2628-2628 BKG * 1.00 2623



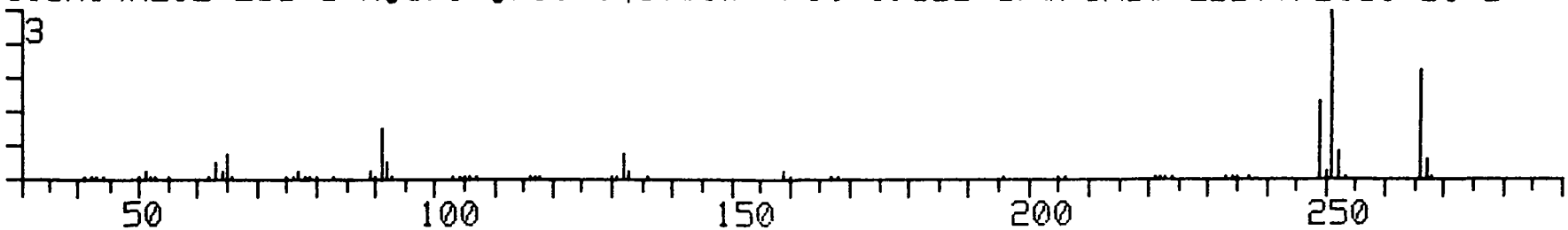

C17H1403 266 7H-1-Benzopyran-7-one, Fit 0.419 SP#/CAS# 25594/643-56-1




C18H1803 282 Cyclopropanecarboxylic Fit 0.365 SP#/CAS# 27337/55700-34-0

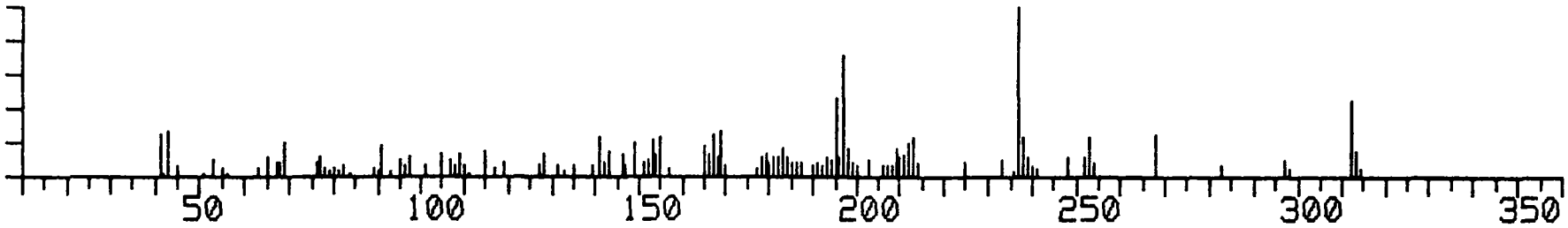



C16H14N2O2 266 6-Hydroxymethaqualon Fit 0.355 SP#/CAS# 25577/5060-51-5

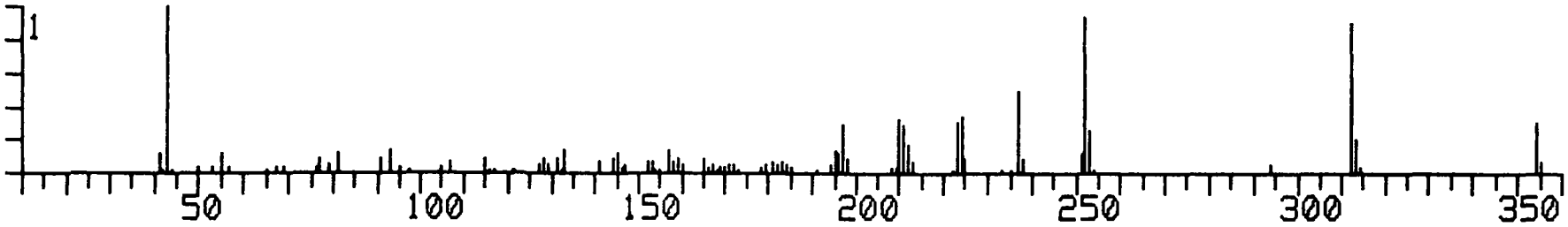


NIH/EPA Forward Library Search TIC = 2067
Injection Date: 05-JUL-89 Time: 11:26:05 100% = 153
Filename: SY:EDH67
Comments:
ID:N 7847 T9-06-154-05A LOW LEVEL SOIL// MATRIX:SOIL/

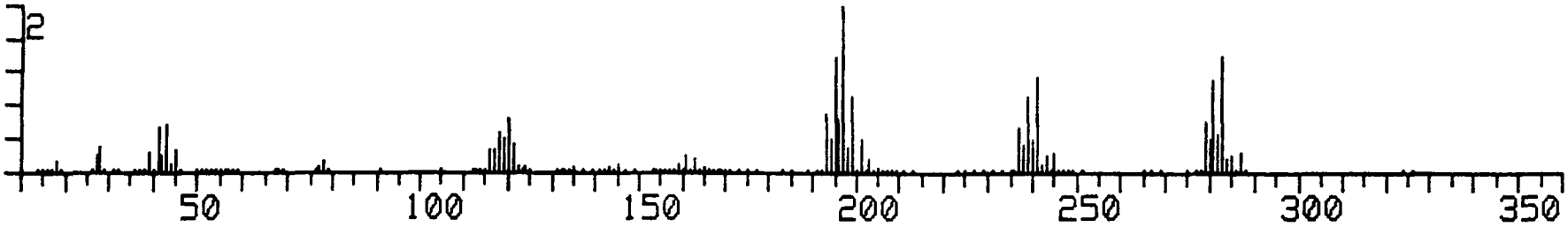
SCANS: 2636-2636 BKG * 1.00 2632



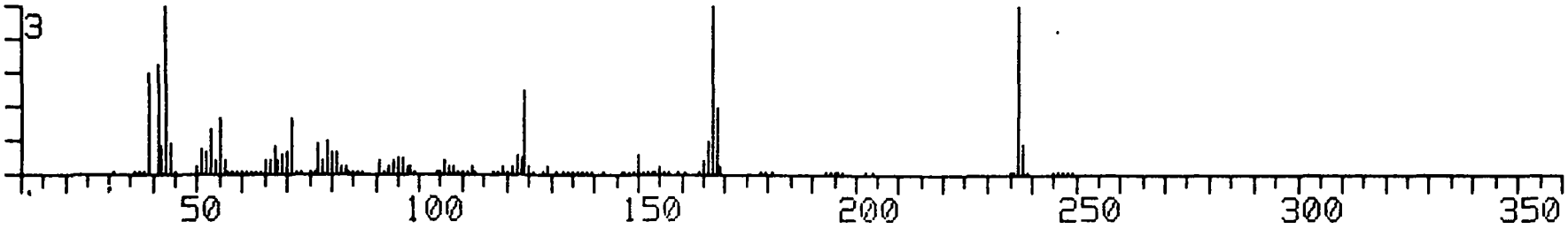

C22H2604 354 Estra-1,3,5(10),9(11)- Fit 0.291 SP#/CAS# 33686/1169-54-6




C15H26Sn 326 Stannane, tris(1-methy Fit 0.122 SP#/CAS# 31508/950-11-8

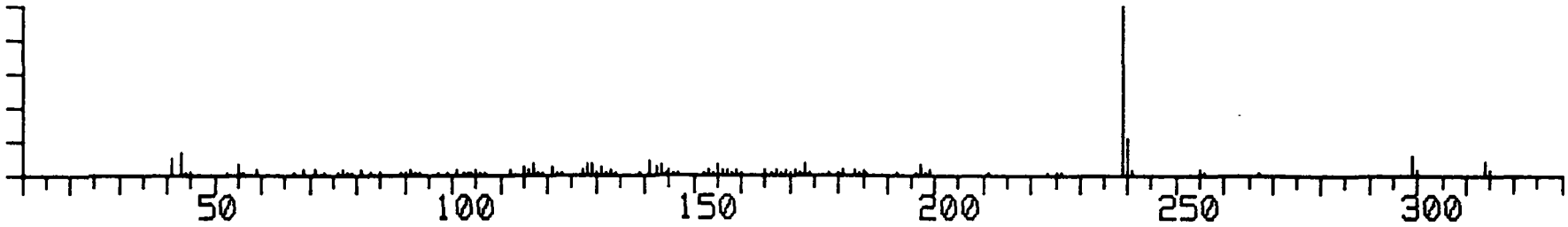



C12H17BrN2O3 316 5-(.beta.-Bromoall Fit 0.109 SP#/CAS# 30673/1216-40-6



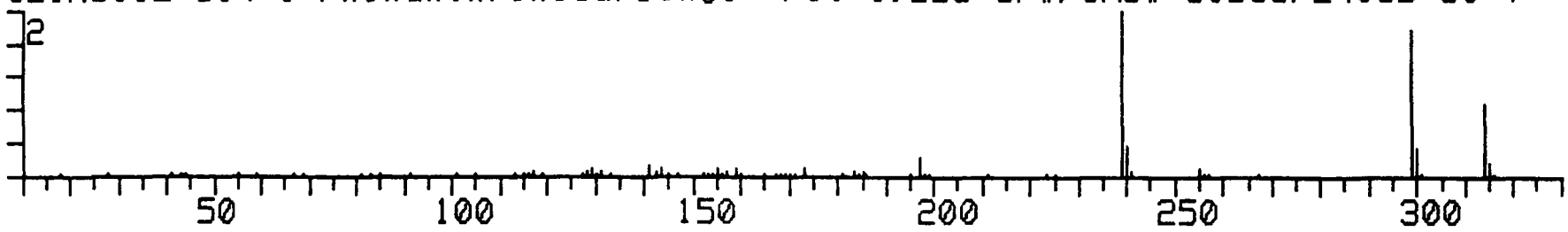
NIH/EPA Forward Library Search TIC = 5501
Injection Date: 05-JUL-89 Time: 11:26:05 100% = 1534
Filename: SY:EDH67
Comments:
ID:N 7847 T9-06-154-05A LOW LEVEL SOIL// MATRIX:SOIL/

SCANS: 2643-2643 BKG * 1.00 2639

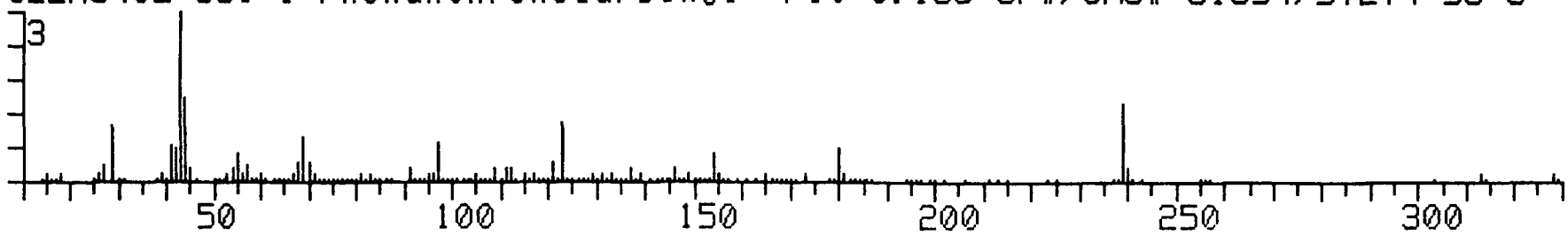



C21H3002 314 1-Phenanthrenecarboxyl Fit 0.720 SP#/CAS# 30576/1235-74-1

C21H3002 314 1-Phenanthrenecarboxyl Fit 0.553 SP#/CAS# 30593/24035-60-7

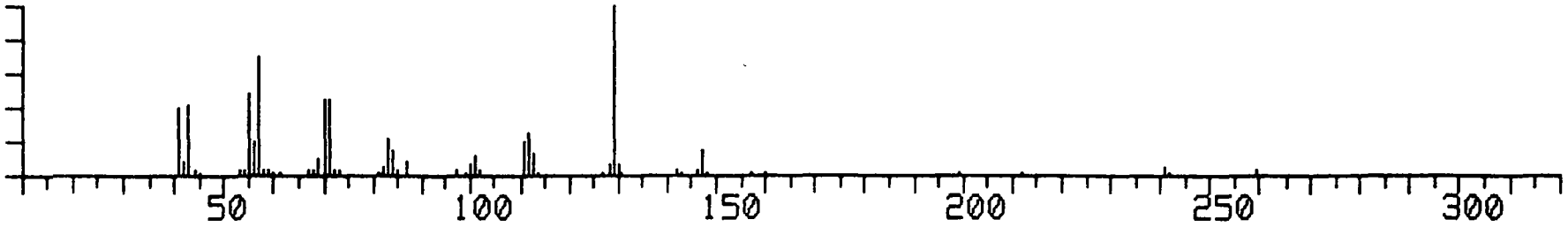



C22H3402 330 1-Phenanthrenecarboxyl Fit 0.196 SP#/CAS# 31954/57274-59-6

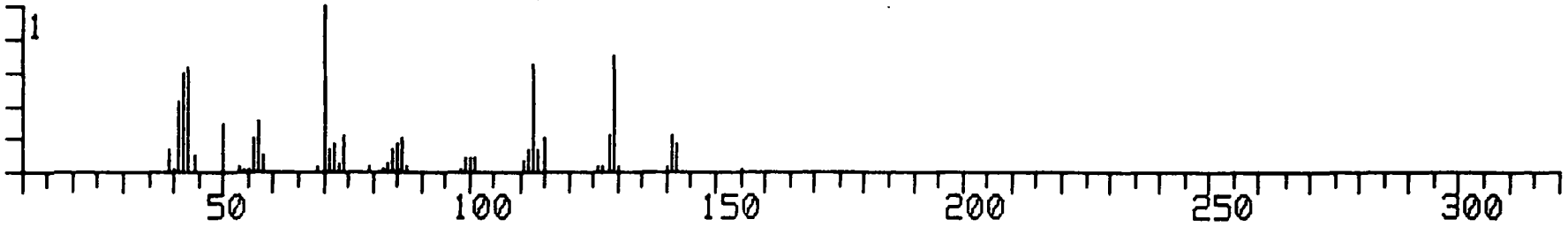


NIH/EPA Forward Library Search TIC = 51288
Injection Date: 05-JUL-89 Time: 11:26:05 100% = 8033
Filename: SY:EDH67
Comments:
ID:N 7847 T9-06-154-05A LOW LEVEL SOIL// MATRIX:SOIL/

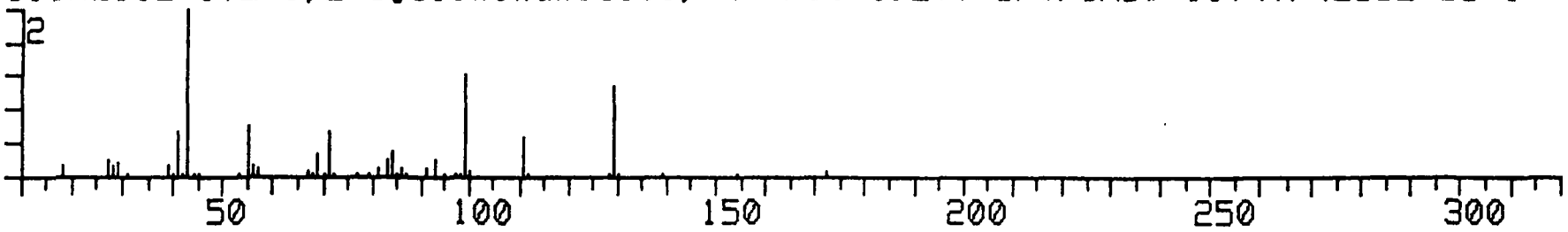
SCANS: 2675-2675 BKG * 1.00 2667



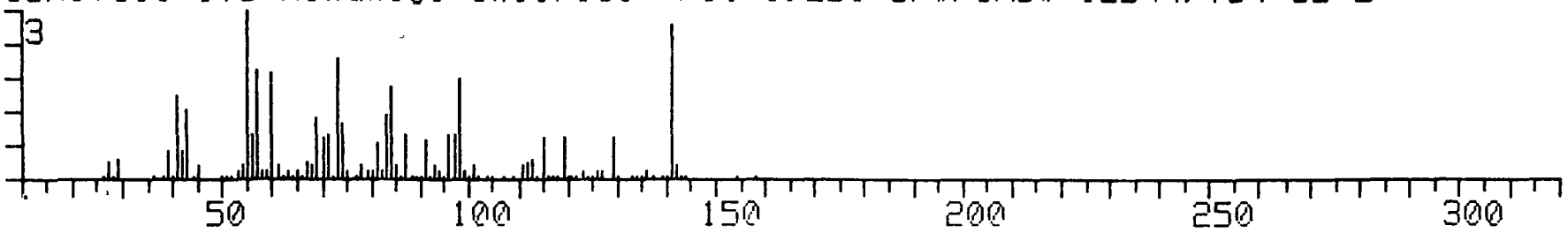

C8H15BO3 170 Butyric acid, 3-hydrox Fit 0.358 SP#/CAS# 11558/31767-20-1




C10H20O2 172 1,2-Cyclohexanediol, 4 Fit 0.277 SP#/CAS# 11747/42962-98-1

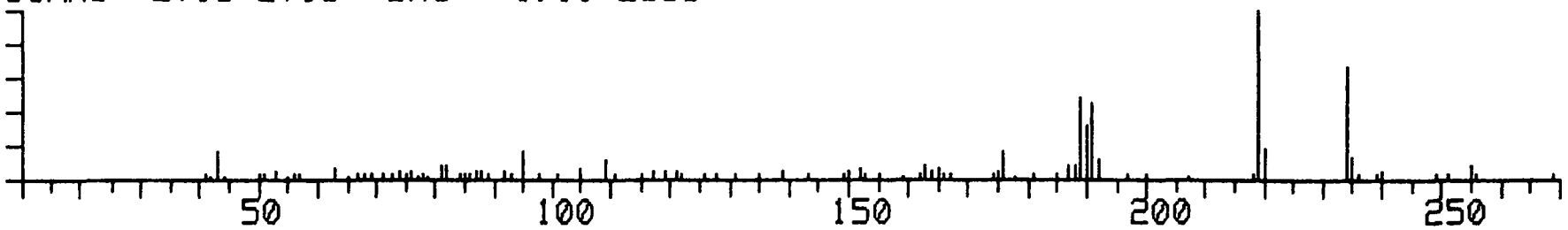



C9H17ClO 176 Nonanoyl chloride Fit 0.251 SP#/CAS# 12544/764-85-2

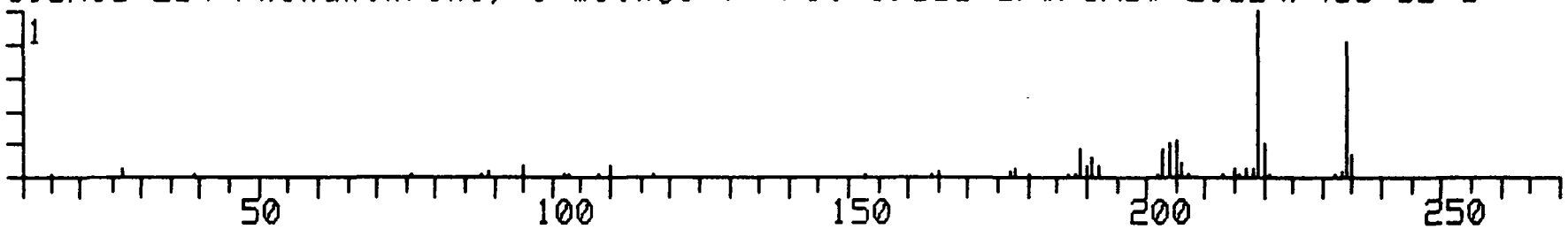


NIH/EPA Forward Library Search TIC = 2381
Injection Date: 05-JUL-89 Time: 11:26:05 100% = 368
Filename: SY:EDH67
Comments:
ID:N 7847 T9-06-154-05A LOW LEVEL SOIL// MATRIX:SOIL/

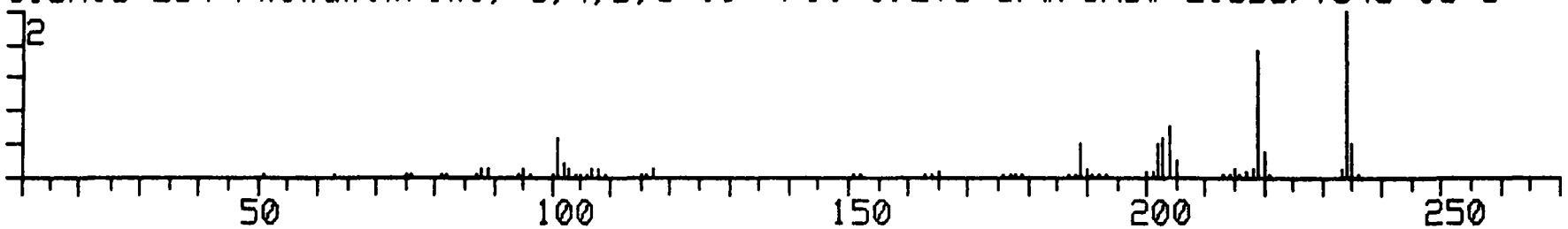
SCANS: 2706-2706 BKG * 1.00 2698



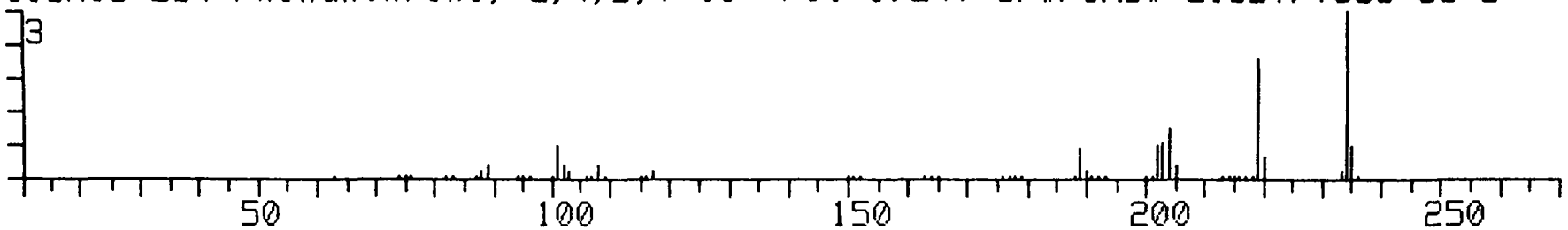

C18H18 234 Phenanthrene, 1-methyl-7 Fit 0.369 SP#/CAS# 21654/483-65-8




C18H18 234 Phenanthrene, 3,4,5,6-te Fit 0.273 SP#/CAS# 21656/7343-06-8

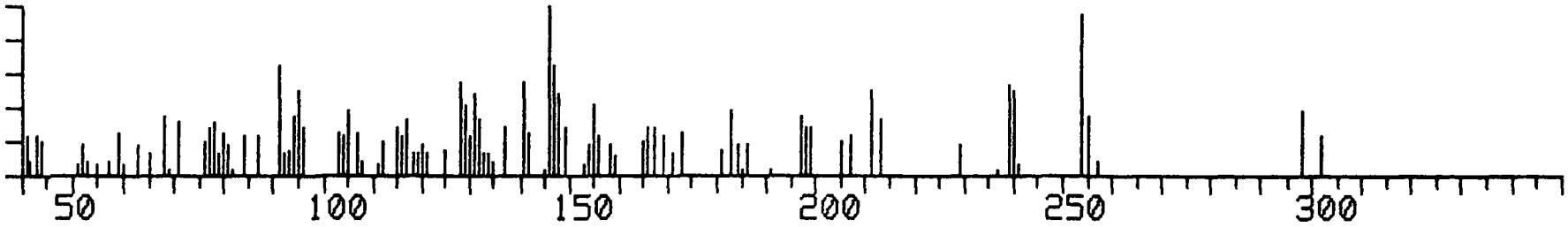



C18H18 234 Phenanthrene, 2,4,5,7-te Fit 0.247 SP#/CAS# 21657/7396-38-5

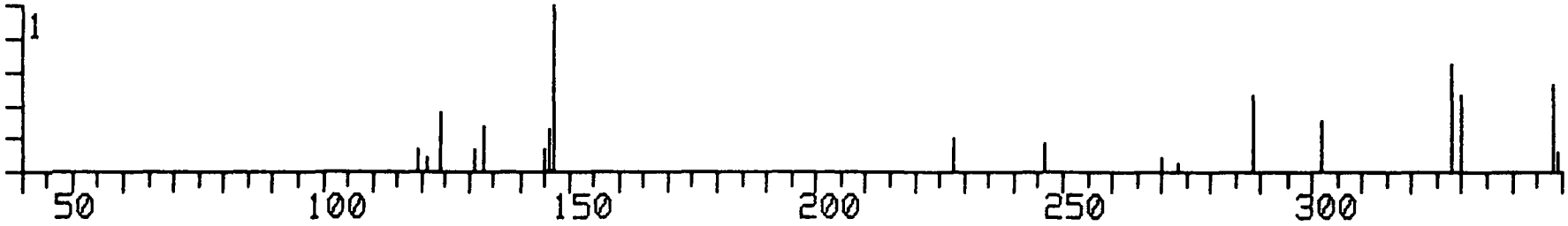


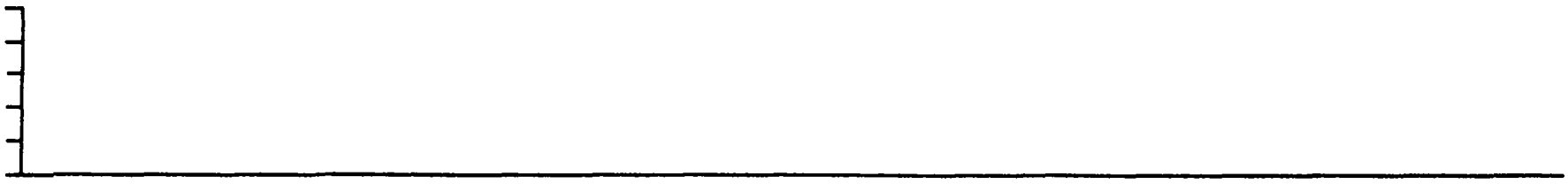
NIH/EPA Reverse Library Search TIC = 955
Injection Date: 05-JUL-89 Time: 11:26:05 100% = 40
Filename: EDH67
Comments:
ID:N 7847 T9-06-154-05A LOW LEVEL SOIL// MATRIX:SOIL/

SCANS: 2743-2743 BKG * 1.00 2738




C21H29F03 348 Androst-4-en-3-one, 1 Fit 0.149 SP#/CAS# 33241/2627-94-3



C00361

[redacted]/E[redacted] F[redacted]ard[redacted]ib[redacted]ry [redacted]earch [redacted] TI[redacted] = 4[redacted]

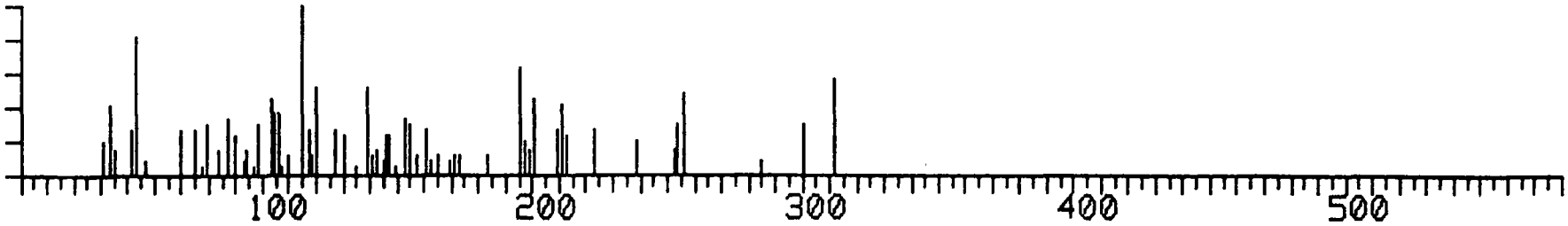
Injection Date: 05-JUL-89 Time: 11:26:05 100% = 27

Filename: SY:EDH67

Comments:

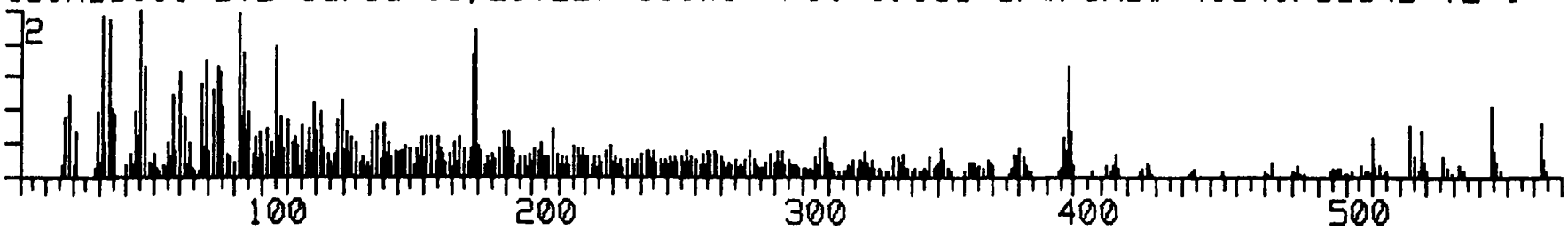
ID:N 7847 T9-06-154-05A LOW LEVEL SOIL// MATRIX:SOIL/

SCANS: 2859-2859 BKG * 1.00 2855




C21H2605 358 Prednisone Fit 0.193 SP#/CAS# 33931/53-03-2

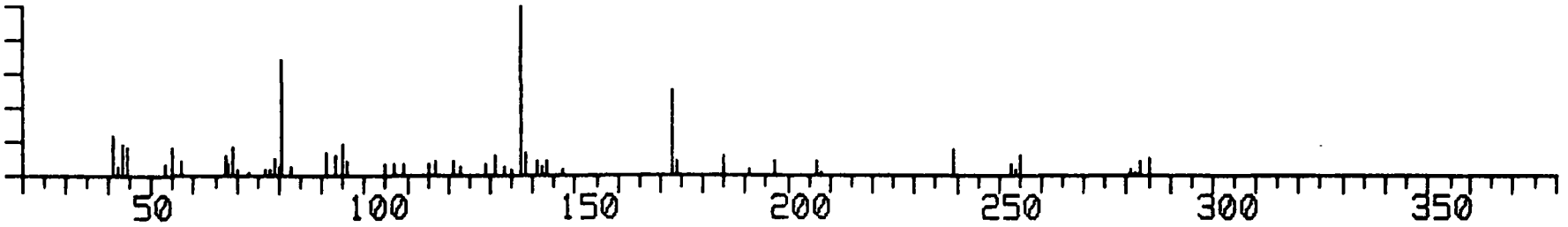
C30H36011 572 Carda-16,20(22)-dieno Fit 0.166 SP#/CAS# 40941/38945-72-1



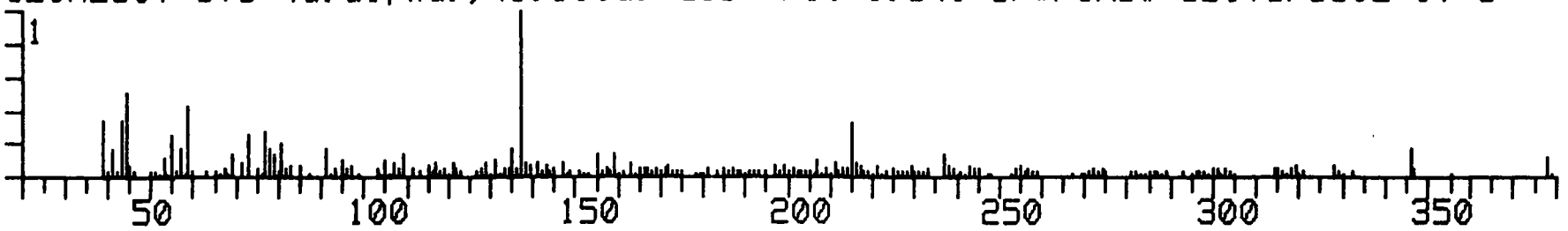
000262

NIH/EPA Forward Library Search TIC = 1130
Injection Date: 05-JUL-89 Time: 11:26:05 100% = 189
Filename: SY:EDH67
Comments:
ID:N 7847 T9-06-154-05A LOW LEVEL SOIL// MATRIX:SOIL/

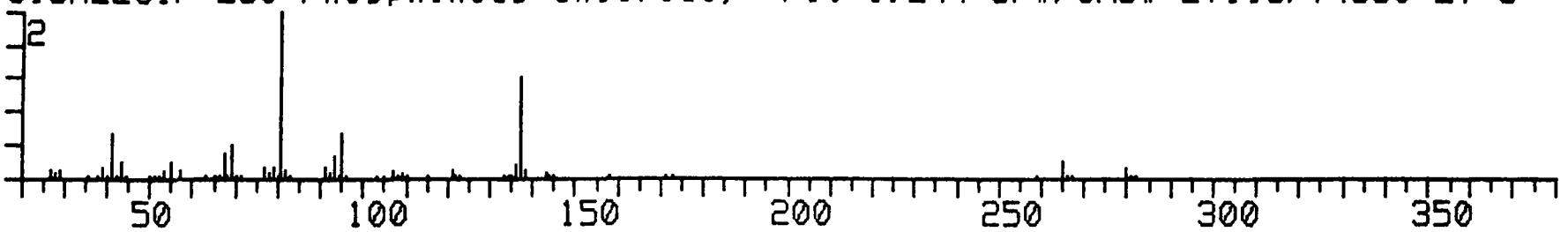
SCANS: 3991-3991 BKG * 1.00 3985



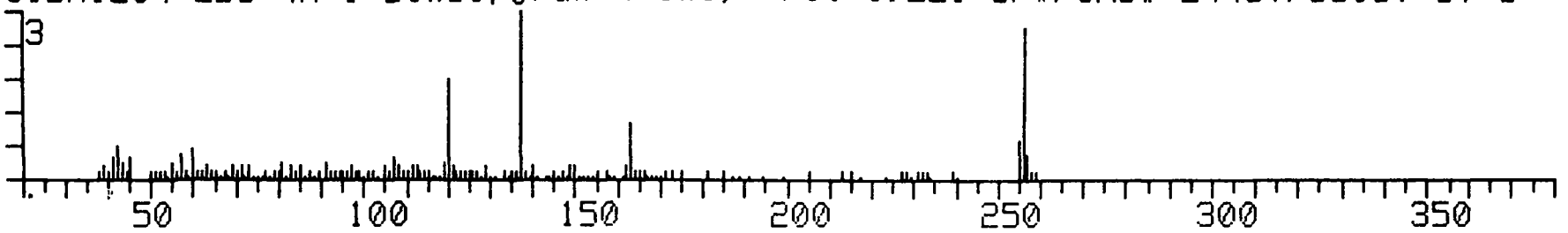

C20H2607 378 4a.alpha.,4b.beta.-Gib Fit 0.341 SP#/CAS# 35176/6902-17-6




C16H22ClP 280 Phosphinous chloride, Fit 0.244 SP#/CAS# 27116/74630-27-6




C15H1204 256 4H-1-Benzopyran-4-one, Fit 0.221 SP#/CAS# 24437/69097-97-8




003

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

EDH68

Lab Name PEI Contract: 68-D9-0037

Lab Code: PEI Case No. 12199 SAS No.: SDG No. EAQ09

Matrix: (soil/water) SOIL Lab Sample ID T9-06-0154-06A

Sample wt/vol. 30 0 (g/mL) G Lab File ID: EDH68

Level: (low/med) LOW Date Received: 6/23/89

% Moisture not dec. 11. dec. 0. Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/89

GPC Cleanup: (Y/N) Y pH. 8.0 Dilution Factor 1 00

| CAS NO | COMPOUND | CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG | G |
|---|---|---|---|
| 108-95-2 | Phenol | 740. | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 740 | U |
| 95-57-8 | 2-Chlorophenol | 740 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 740 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 740. | U |
| 100-51-6 | Benzyl alcohol | 740 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 740 | U |
| 95-48-7 | 2-Methylphenol | 740. | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 740 | U |
| 106-44-5 | 4-Methylphenol | 740. | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 740. | U |
| 67-72-1 | Hexachloroethane | 740. | U |
| 98-95-3 | Nitrobenzene | 740. | U |
| 78-59-1 | Isophorone | 740. | U |
| 88-75-5 | 2-Nitrophenol | 740. | U |
| 105-67-9 | 2,4-Dimethylphenol | 740. | U |
| 65-85-0 | Benzoic acid | 3600. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 740. | U |
| 120-83-2 | 2,4-Dichlorophenol | 740. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 740. | U |
| 91-20-3 | Naphthalene | 740. | U |
| 106-47-8 | 4-Chloroaniline | 740. | U |
| 87-68-3 | Hexachlorobutadiene | 740. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 740. | U |
| 91-57-6 | 2-Methylnaphthalene | 740. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 740. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 740. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 3600. | U |
| 91-58-7 | 2-Chloronaphthalene | 740. | U |
| 88-74-4 | 2-Nitroaniline | 3600. | U |
| 131-11-3 | Dimethylphthalate | 740. | U |
| 208-96-8 | Acenaphthylene | 740. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 740. | U |

1C

EPA SAMPLE NO

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EDH68

Lab Name. PEI Contract. 68-D9-0037

Lab Code. PEI Case No.: 12199 SAS No.: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-0154-06A

Sample wt/vol: 30.0 (g/mL) G Lab File ID. EDH68

Level: (low/med) LOW Date Received. 6/23/89

% Moisture: not dec. 11. dec. 0. Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/89

GPC Cleanup: (Y/N) Y pH: 8.0 Dilution Factor: 1 00

| CAS NO | COMPOUND | CONCENTRATION UNITS. (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 3600. | U |
| 83-32-9 | Acenaphthene | 740 | U |
| 51-28-5 | 2,4-Dinitrophenol | 3600. | U |
| 100-02-7 | 4-Nitrophenol | 3600 | U |
| 132-64-9 | Dibenzofuran | 740 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 740 | U |
| 84-66-2 | Diethylphthalate | 740. | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 740 | U |
| 86-73-7 | Fluorene | 740. | U |
| 100-01-6 | 4-Nitroaniline | 3600. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 3600 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 740. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 740. | U |
| 118-74-1 | Hexachlorobenzene | 740. | U |
| 87-86-5 | Pentachlorophenol | 3600. | U |
| 85-01-8 | Phenanthrene | 740 | U |
| 120-12-7 | Anthracene | 740. | U |
| 84-74-2 | Di-n-butylphthalate | 740. | U |
| 206-44-0 | Fluoranthene | 740. | U |
| 129-00-0 | Pyrene | 740. | U |
| 85-68-7 | Butylbenzylphthalate | 740. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1500. | U |
| 56-55-3 | Benzo(a)anthracene | 740. | U |
| 218-01-9 | Chrysene | 740. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 740. | U |
| 117-84-0 | Di-n-octylphthalate | 740. | U |
| 205-99-2 | Benzo(b)fluoranthene | 740. | U |
| 207-08-9 | Benzo(k)fluoranthene | 740. | U |
| 50-32-8 | Benzo(a)pyrene | 740. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 740. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 740 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 740. | U |

(1) - Cannot be separated from diphenylamine

1F

C00 358 EPA SAMPLE NO ·

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EDH68

Lab Name PEI Contract: 68-D9-0037

Lab Code· PEI Case No : 12199 SAS No . SDG No . EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-0154-06A

Sample wt/vol· 30 0 (g/mL) G Lab File ID: EDH68

Level: (low/med) LOW Date Received: 6/23/89

% Moisture· not dec. 11. dec. 0. Date Extracted· 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/89

GPC Cleanup· (Y/N) Y pH: 8.0 Dilution Factor: 1 00

Number TICs found 3

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | 100-52-7 | Benzaldehyde (ACN)(DOT) | 8.72 | 300. | BJ |
| 2. | - - | UNKNOWN molecular sulfur | 23 98 | 300. | J |
| 3. | - - | UNKNOWN carboxylic acid | 27.00 | 10000 | BJ |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| 8. | | | | | |
| 9. | | | | | |
| 10. | | | | | |
| 11 | | | | | |
| 12. | | | | | |
| 13. | | | | | |
| 14. | | | | | |
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| 16. | | | | | |
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| 19. | | | | | |
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| 25. | | | | | |
| 26. | | | | | |
| 27. | | | | | |
| 28. | | | | | |
| 29. | | | | | |
| 30. | | | | | |

NIH/EPA Forward Library Search TIC 190

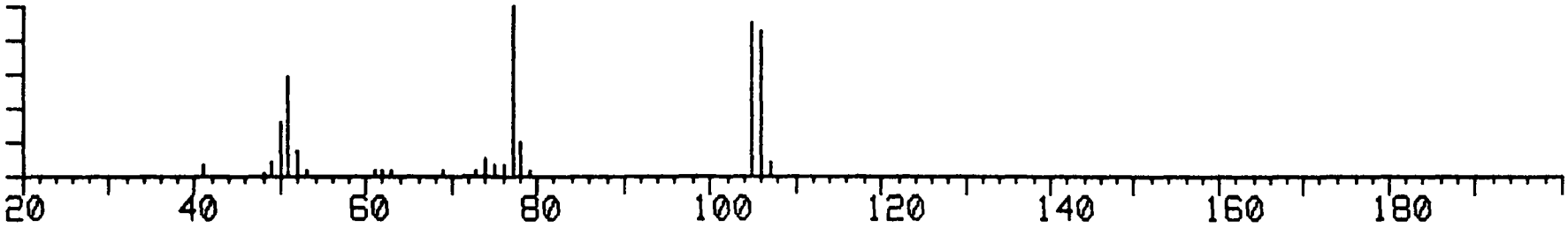
Injection Date: 05-JUL-89 Time: 12:18:13 100% = 416

Filename: SY:EDH68

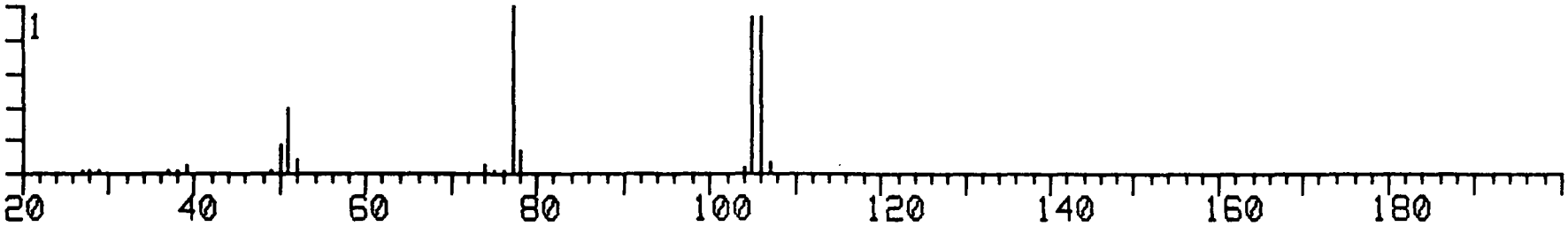
Comments:

ID:N 7848 T9-06-154-06A LOW LEVEL SOIL// MATRIX:SOIL/

SCANS: 679-679 BKG * 1.00 674

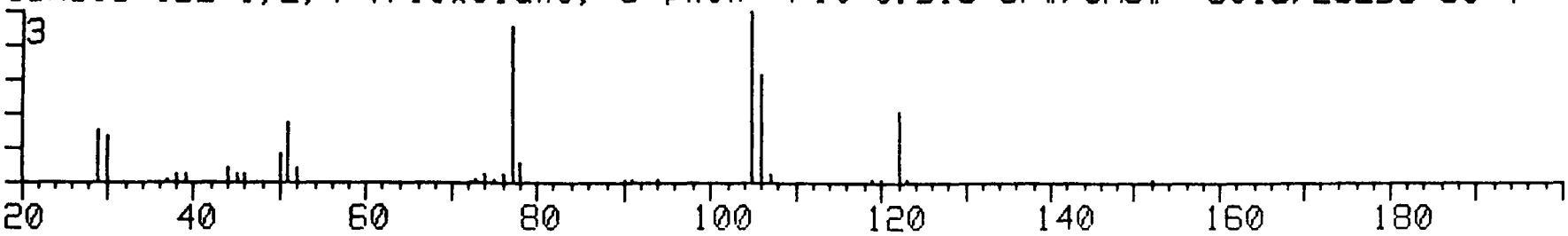



C7H6O 106 Benzaldehyde (ACN)(DOT) Fit 0.673 SP#/CAS# 1722/100-52-7




C14H12O3 228 1,2,4-Trioxolane, 3,5- Fit 0.569 SP#/CAS# 20882/23888-15-5

C8H8O3 152 1,2,4-Trioxolane, 3-phen Fit 0.516 SP#/CAS# 8013/23253-30-7



NIH/EPA Forward Library Search TIC = 2532

Injection Date: 05-JUL-89 Time: 12:18:13 100% = 1097

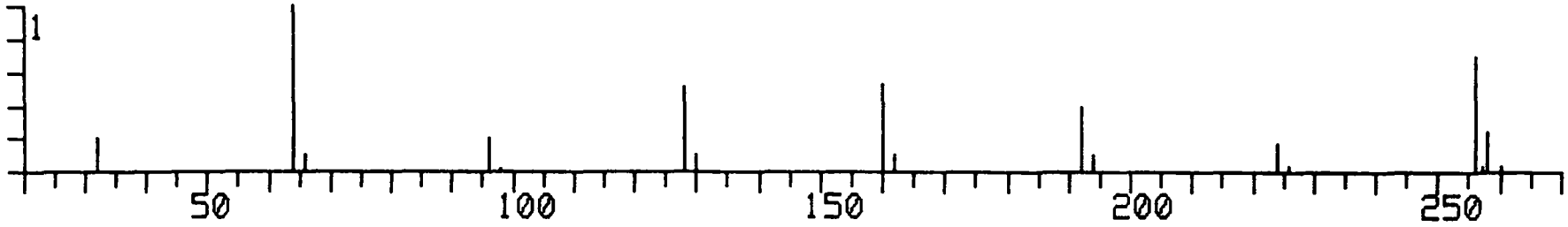
Filename: SY:EDH68

Comments:

ID:N 7848 T9-06-154-06A LOW LEVEL SOIL// MATRIX:SOIL/

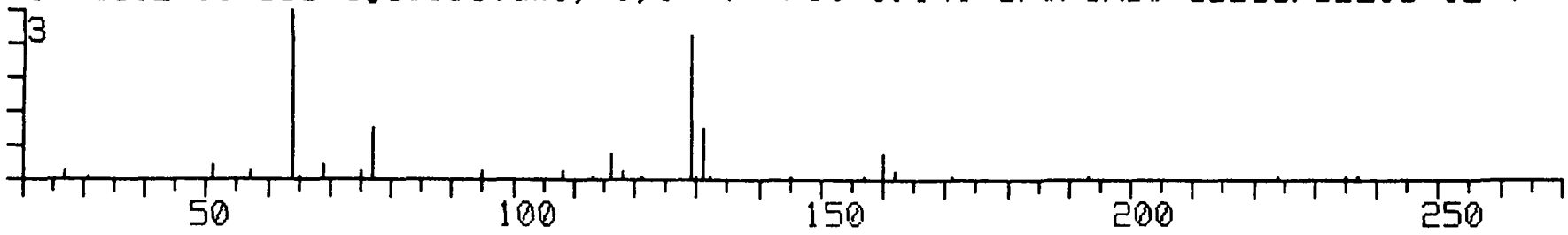
SCANS: 2345-2345 BKG * 1.00 2338

S8 256 Sulfur, mol. (S8) Fit 0.448 SP#/CAS# 24524/10544-50-0




C4H6MnN2S4 265 Maneb (ACN) Fit 0.176 SP#/CAS# 25495/12427-38-2

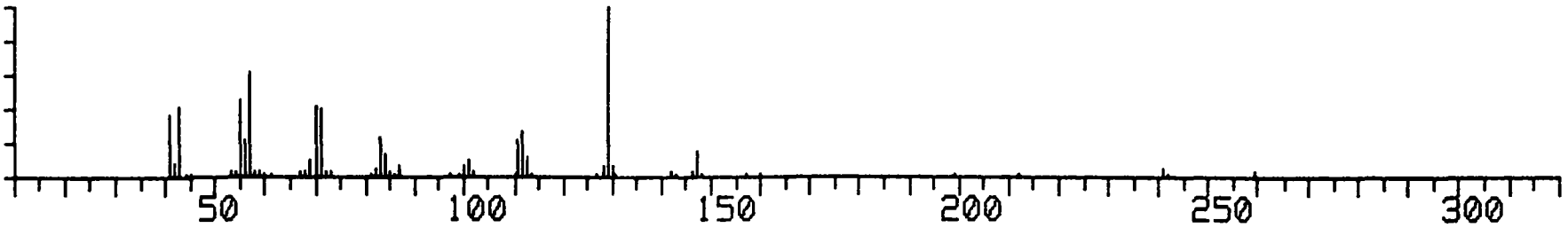
C10H6Cl2F10 386 Cyclobutane, 1,1'-( Fit 0.141 SP#/CAS# 35538/35208-02-7



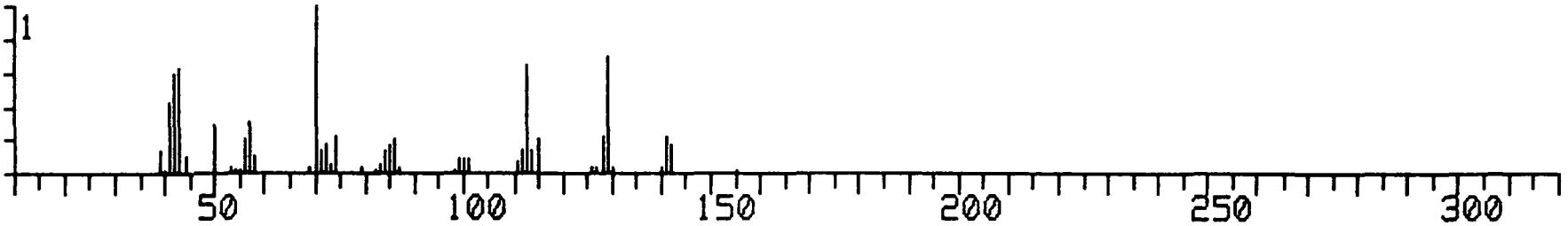

000036

NIH/EPA Forward Library Search TIC = 82547
Injection Date: 05-JUL-89 Time: 12:18:13 100% = 13536
Filename: SY:EDH68
Comments:
ID:N 7848 T9-06-154-06A LOW LEVEL SOIL// MATRIX:SOIL/

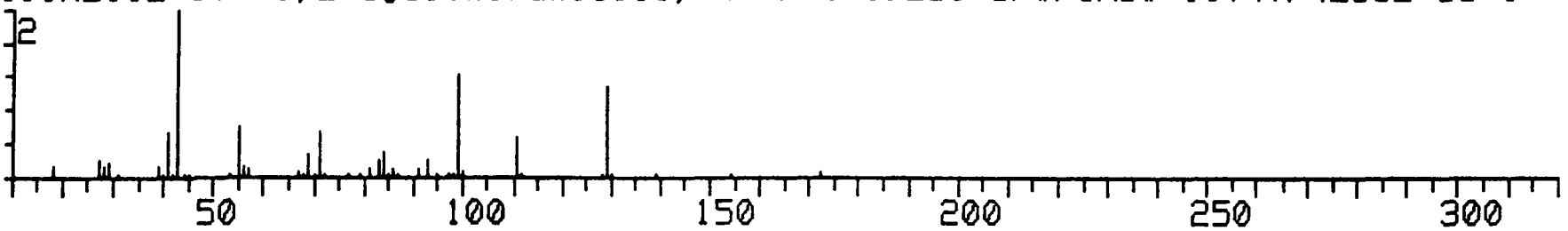
SCANS: 2674-2674 BKG * 1.00 2666



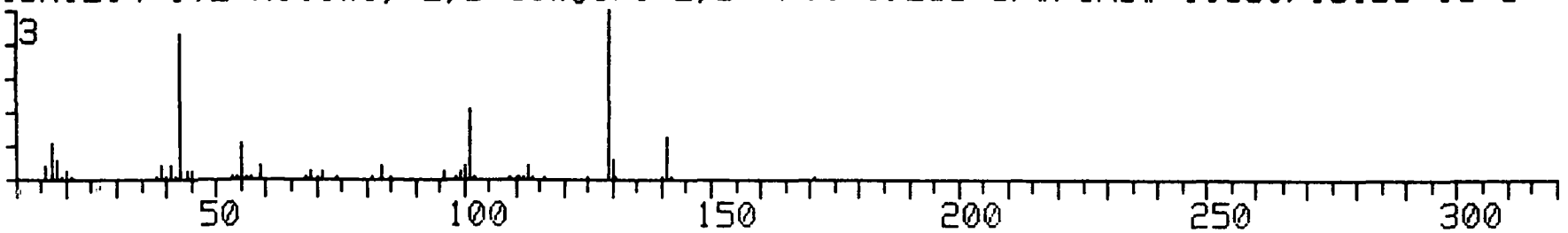

C8H15BO3 170 Butyric acid, 3-hydrox Fit 0.344 SP#/CAS# 11558/31767-20-1




C10H20O2 172 1,2-Cyclohexanediol, 4 Fit 0.280 SP#/CAS# 11747/42962-98-1




C8H12O4 172 Ketone, 2,5-dihydro-2,5 Fit 0.238 SP#/CAS# 11890/13156-18-8



1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

EDH70

Lab Name. PEI Contract. 68-D9-0037

Lab Code: PEI Case No : 12199 SAS No.: SDG No : EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-08A

Sample wt/vol: 30 0 (g/mL) G Lab File ID: EDH70

Level. (low/med) LOW Date Received: 6/23/89

% Moisture: not dec. 16. dec. 0. Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/89

GPC Cleanup. (Y/N) Y pH 8 5 Dilution Factor: 1.00

| CAS NO | COMPOUND | CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 790 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 790 | U |
| 95-57-8 | 2-Chlorophenol | 790 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 790 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 790 | U |
| 100-51-6 | Benzyl alcohol | 790 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 790. | U |
| 95-48-7 | 2-Methylphenol | 790 | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 790. | U |
| 106-44-5 | 4-Methylphenol | 790. | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 790. | U |
| 67-72-1 | Hexachloroethane | 790. | U |
| 98-95-3 | Nitrobenzene | 790. | U |
| 78-59-1 | Isophorone | 790. | U |
| 88-75-5 | 2-Nitrophenol | 790. | U |
| 105-67-9 | 2,4-Dimethylphenol | 790. | U |
| 65-85-0 | Benzoic acid | 3800. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 790. | U |
| 120-83-2 | 2,4-Dichlorophenol | 790. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 790. | U |
| 91-20-3 | Naphthalene | 790. | U |
| 106-47-8 | 4-Chloroaniline | 790. | U |
| 87-68-3 | Hexachlorobutadiene | 790. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 790. | U |
| 91-57-6 | 2-Methylnaphthalene | 790. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 790. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 790. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 3800. | U |
| 91-58-7 | 2-Chloronaphthalene | 790. | U |
| 88-74-4 | 2-Nitroaniline | 3800. | U |
| 131-11-3 | Dimethylphthalate | 790. | U |
| 208-96-8 | Acenaphthylene | 790. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 790. | U |

1C

EPA SAMPLE NO

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EDH70

Lab Name PEI Contract: 68-D9-0037

Lab Code PEI Case No: 12199 SAS No: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-084

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EDH70

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec. 16. dec. 0. Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/89

GPC Cleanup: (Y/N) Y pH: 8.5 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 3800. | U |
| 83-32-9 | Acenaphthene | 790 | U |
| 51-28-5 | 2,4-Dinitrophenol | 3800 | U |
| 100-02-7 | 4-Nitrophenol | 3800. | U |
| 132-64-9 | Dibenzofuran | 790 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 790. | U |
| 84-66-2 | Diethylphthalate | 790 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 790. | U |
| 86-73-7 | Fluorene | 790 | U |
| 100-01-6 | 4-Nitroaniline | 3800 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 3800 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 790 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 790. | U |
| 118-74-1 | Hexachlorobenzene | 790 | U |
| 87-86-5 | Pentachlorophenol | 3800. | U |
| 85-01-8 | Phenanthrene | 790. | U |
| 120-12-7 | Anthracene | 790. | U |
| 84-74-2 | Di-n-butylphthalate | 790. | U |
| 206-44-0 | Fluoranthene | 790. | U |
| 129-00-0 | Pyrene | 790. | U |
| 85-68-7 | Butylbenzylphthalate | 790. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1600. | U |
| 56-55-3 | Benzo(a)anthracene | 790. | U |
| 218-01-9 | Chrysene | 790. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 790. | U |
| 117-84-0 | Di-n-octylphthalate | 790. | U |
| 205-99-2 | Benzo(b)fluoranthene | 790. | U |
| 207-08-9 | Benzo(k)fluoranthene | 790. | U |
| 50-32-8 | Benzo(a)pyrene | 790. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 790. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 790. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 790. | U |

(1) - Cannot be separated from diphenylamine

1F

EPA SAMPLE NO

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EDH70

Lab Name: PEI Contract: 68-D9-0037

Lab Code PEI Case No. 12199 SAS No.: SDG No : EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-08A

Sample wt/vol: 30 0 (g/mL) G Lab File ID. EDH70

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec. 16. dec. 0. Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/89

GPC Cleanup. (Y/N) Y pH. 8 5 Dilution Factor: 1 00

Number TICs found: 2

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC | Q |
|---|---|---|---|---|---|
| 1. | - - | UNKNOWN PHTHALATE | 21.87 | 400 | J |
| 2 | - - | UNKNOWN | 26.98 | 3000 | BJ |
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[redacted]H/[redacted]A F[redacted]wa[redacted] L[redacted]ar[redacted]Se[redacted]h [redacted] T[redacted] = [redacted]74[redacted]

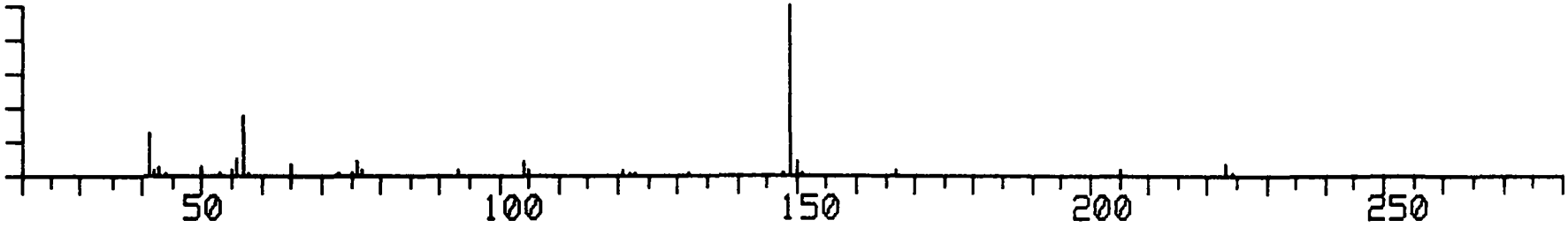
Injection Date: 05-JUL-89 Time: 13:20:31 100% = 1092

Filename: SY:EDH70

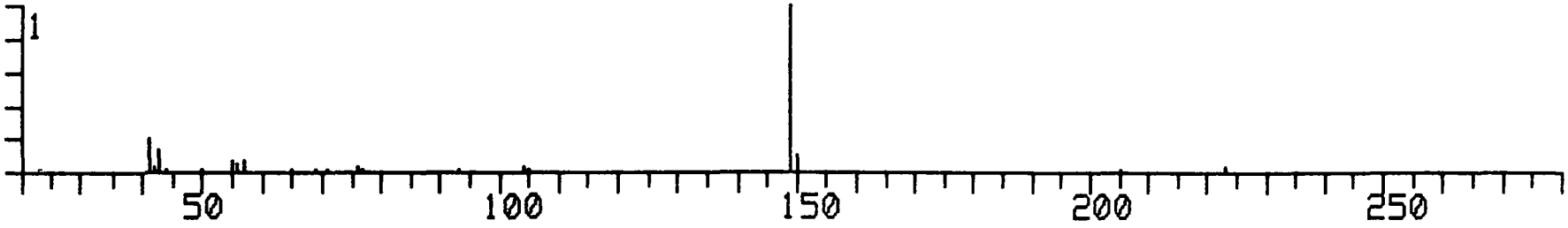
Comments:

ID:N 7849 T9-06-154-08A LOW LEVEL SOIL// MATRIX:SOIL/

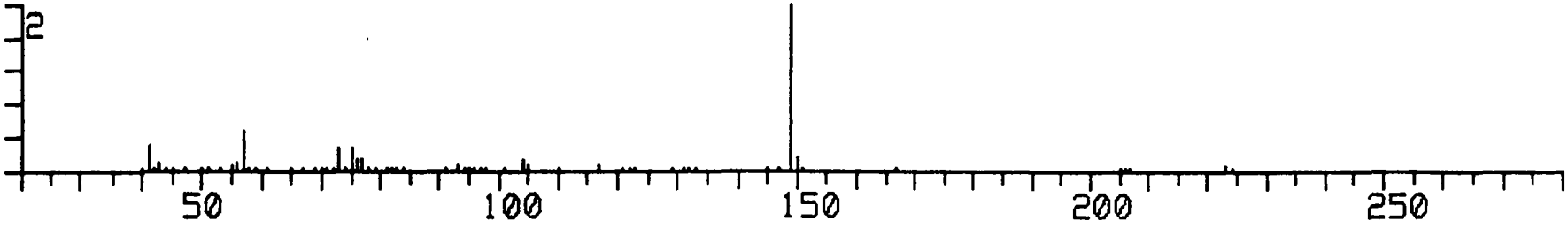
SCANS: 2113-2113 BKG * 1.00 2106



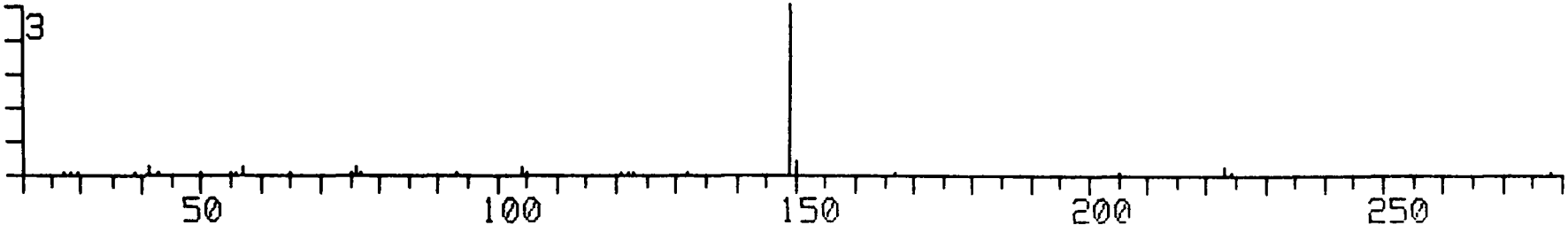

C20H3004 334 1,2-Benzenedicarboxyli Fit 0.706 SP#/CAS# 32261/84-78-6




C16H2204 278 1,2-Benzenedicarboxyli Fit 0.706 SP#/CAS# 26901/84-69-5



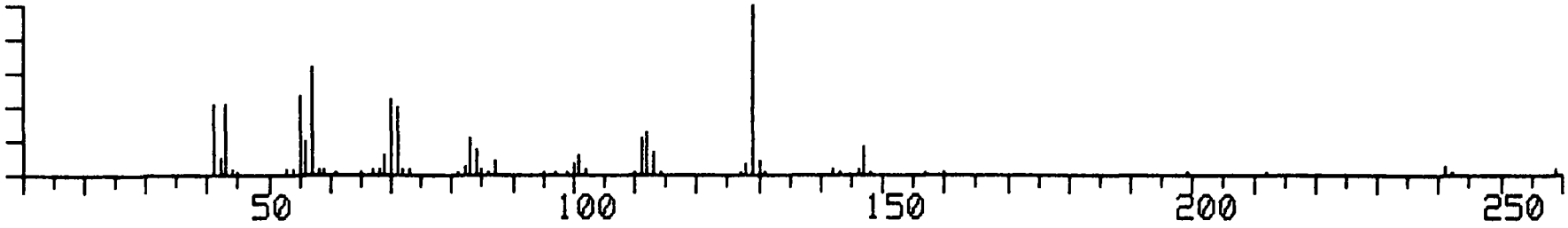

C16H2204 278 1,2-Benzenedicarboxyli Fit 0.652 SP#/CAS# 26906/17851-53-5




C00368

NIH/EPA Forward Library Search TIC = 12728
Injection Date: 05-JUL-89 Time: 13:20:31 100% = 2030
Filename: SY:EDH70
Comments:
ID:N 7849 T9-06-154-08A LOW LEVEL SOIL// MATRIX:SOIL/

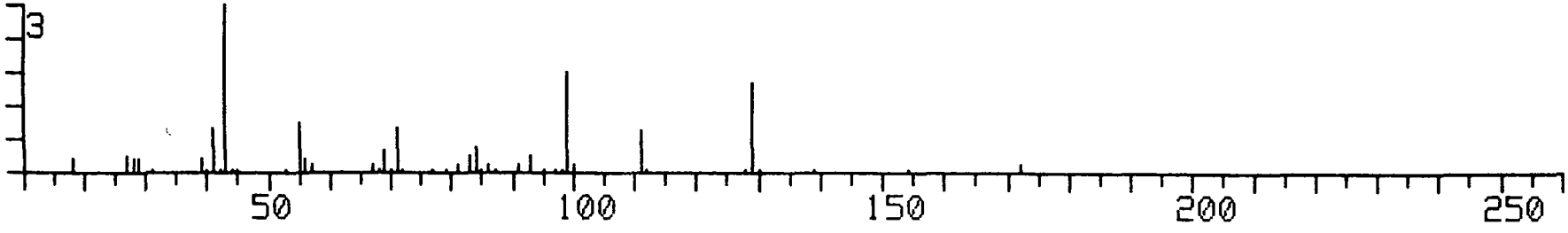
SCANS: 2671-2671 BKG * 1.00 2665




C8H15BO3 170 Butyric acid, 3-hydrox Fit 0.339 SP#/CAS# 11558/31767-20-1

C8H12O4 172 Ketone, 2,5-dihydro-2,5 Fit 0.274 SP#/CAS# 11890/13156-18-8

C10H20O2 172 1,2-Cyclohexanediol, 4 Fit 0.270 SP#/CAS# 11747/42962-98-1



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

EDH71

Lab Name. PEI Contract. 68-D9-0037

Lab Code: PEI Case No · 12199 SAS No.: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-09A

Sample wt/vol· 30.0 (g/mL) G Lab File ID: EDH71

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec 11. dec. 0. Date Extracted: 6/27/89

Extraction. (SepF/Cont/Sonc) SONC Date Analyzed. 7/ 5/89

GPC Cleanup: (Y/N) Y pH: 8.0 Dilution Factor: 1 00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 740. | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 740. | U |
| 95-57-8 | 2-Chlorophenol | 740 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 740 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 740 | U |
| 100-51-6 | Benzyl alcohol | 740. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 740. | U |
| 95-48-7 | 2-Methylphenol | 740 | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 740 | U |
| 106-44-5 | 4-Methylphenol | 740 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 740. | U |
| 67-72-1 | Hexachloroethane | 740. | U |
| 98-95-3 | Nitrobenzene | 740. | U |
| 78-59-1 | Isophorone | 740. | U |
| 88-75-5 | 2-Nitrophenol | 740. | U |
| 105-67-9 | 2,4-Dimethylphenol | 740. | U |
| 65-85-0 | Benzoic acid | 3600. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 740. | U |
| 120-83-2 | 2,4-Dichlorophenol | 740. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 740. | U |
| 91-20-3 | Naphthalene | 740. | U |
| 106-47-8 | 4-Chloroaniline | 740. | U |
| 87-68-3 | Hexachlorobutadiene | 740. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 740. | U |
| 91-57-6 | 2-Methylnaphthalene | 740. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 740. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 740. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 3600. | U |
| 91-58-7 | 2-Chloronaphthalene | 740. | U |
| 88-74-4 | 2-Nitroaniline | 3600. | U |
| 131-11-3 | Dimethylphthalate | 740. | U |
| 208-96-8 | Acenaphthylene | 740. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 740. | U |

1C

EPA SAMPLE NO

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET C0012

EDH71

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No 12199 SAS No.: SDG No EAQ09

Matrix: (soil/water) SOIL Lab Sample ID. T9-06-154-09A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EDH71

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec. 11. dec. 0. Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/89

GPC Cleanup: (Y/N) Y pH. 8.0 Dilution Factor 1 00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 3600 | U |
| 83-32-9 | Acenaphthene | 740. | U |
| 51-28-5 | 2,4-Dinitrophenol | 3600 | U |
| 100-02-7 | 4-Nitrophenol | 3600. | U |
| 132-64-9 | Dibenzofuran | 740. | U |
| 121-14-2 | 2,4-Dinitrotoluene | 740. | U |
| 84-66-2 | Diethylphthalate | 740. | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 740 | U |
| 86-73-7 | Fluorene | 740 | U |
| 100-01-6 | 4-Nitroaniline | 3600. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 3600. | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 740. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 740. | U |
| 118-74-1 | Hexachlorobenzene | 740. | U |
| 87-86-5 | Pentachlorophenol | 3600. | U |
| 85-01-8 | Phenanthrene | 740. | U |
| 120-12-7 | Anthracene | 740. | U |
| 84-74-2 | Di-n-butylphthalate | 740. | U |
| 206-44-0 | Fluoranthene | 740. | U |
| 129-00-0 | Pyrene | 740. | U |
| 85-68-7 | Butylbenzylphthalate | 740. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1500. | U |
| 56-55-3 | Benzo(a)anthracene | 740. | U |
| 218-01-9 | Chrysene | 740. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 740. | U |
| 117-84-0 | Di-n-octylphthalate | 740. | U |
| 205-99-2 | Benzo(b)fluoranthene | 740. | U |
| 207-08-9 | Benzo(k)fluoranthene | 740. | U |
| 50-32-8 | Benzo(a)pyrene | 740. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 740. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 740. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 740. | U |

(1) - Cannot be separated from diphenylamine

1F

C00313 EPA SAMPLE NO

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EDH71

Lab Name PEI Contract: 68-D9-0037

Lab Code: PEI Case No: 12199 SAS No.: SDG No: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID. T9-06-154-09A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EDH71

Level: (low/med) LOW Date Received: 6/23/89

% Moisture. not dec. 11. dec. 0. Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/89

GPC Cleanup: (Y/N) Y pH: 8 0 Dilution Factor: 1.00

Number TICs found 2

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | 100-52-7 | Benzaldehyde (ACN)(DOT) | 8 67 | 400. | BJ |
| 2. | - - | UNKNOWN | 26.97 | 10000. | BJ |
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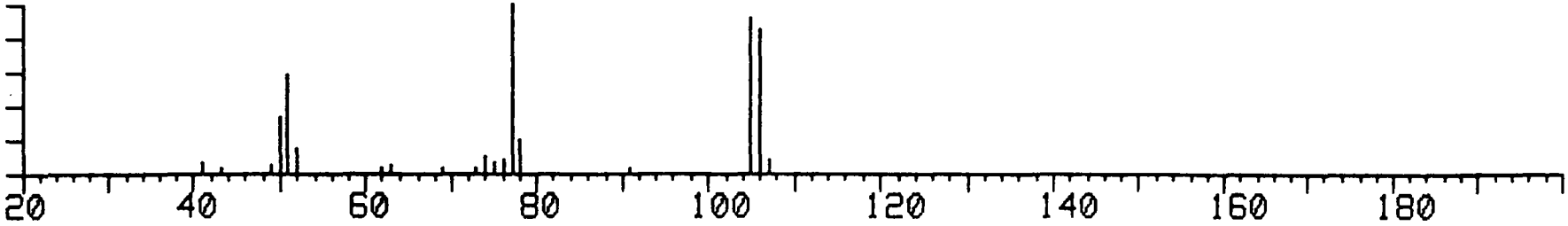
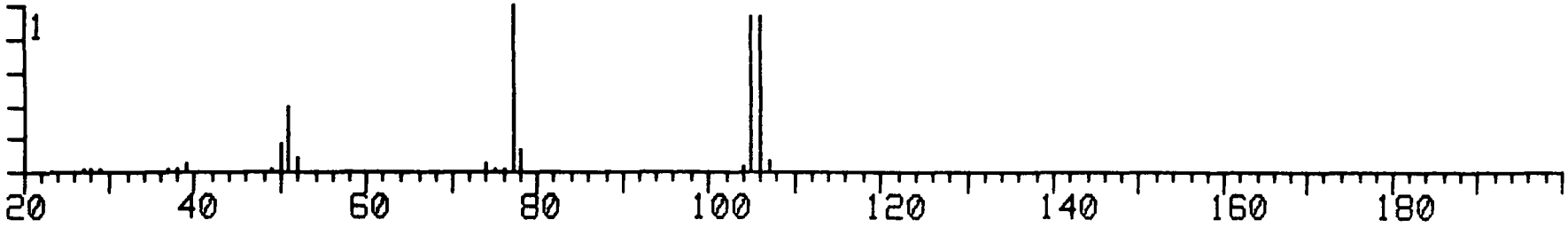
NIH/EPA Forward Library Search TIC = 1854
Injection Date: 05-JUL-89 Time: 14:06:45 100% = 402
Filename: SY:EDH71
Comments:
ID:N 7850 T9-06-154-09A LOW LEVEL SOIL// MATRIX:SOIL/

SCANS: 674-674 BKG * 1.00 669

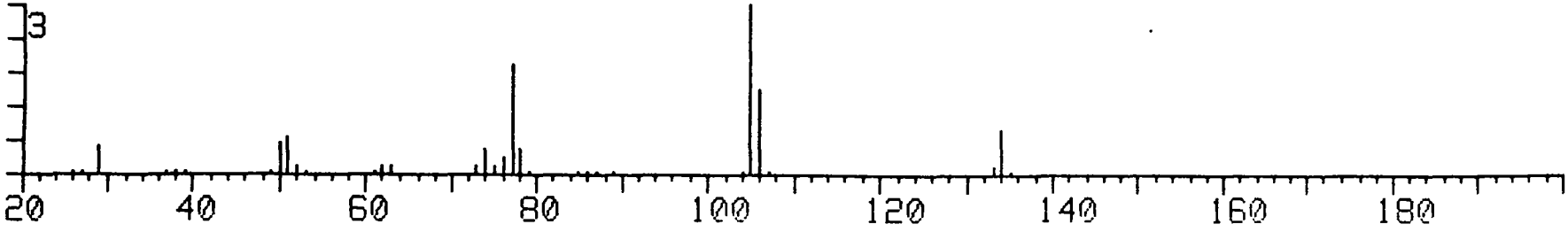



C7H6O 106 Benzaldehyde (ACN)(DOT) Fit 0.700 SP#/CAS# 1722/100-52-7




C14H12O3 228 1,2,4-Trioxolane, 3,5- Fit 0.584 SP#/CAS# 20882/23888-15-5

C8H6O2 134 1,2-Benzenedicarboxaldeh Fit 0.574 SP#/CAS# 4887/643-79-8



NIH/EPA Forward Library Search TIC = 71968

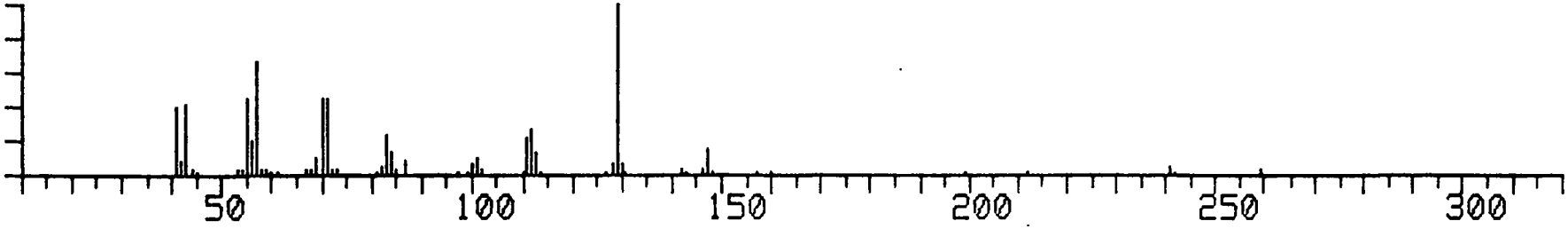
Injection Date: 05-JUL-89 Time: 14:06:45 100% = 11504

Filename: SY:EDH71

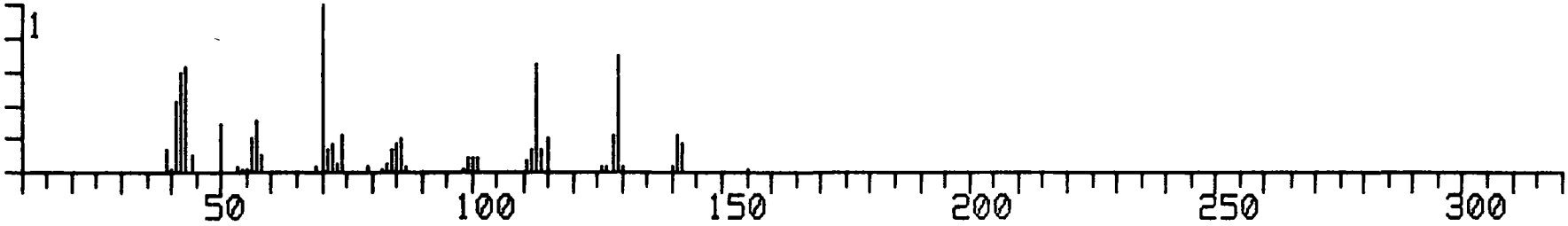
Comments:

ID:N 7850 T9-06-154-09A LOW LEVEL SOIL// MATRIX:SOIL/

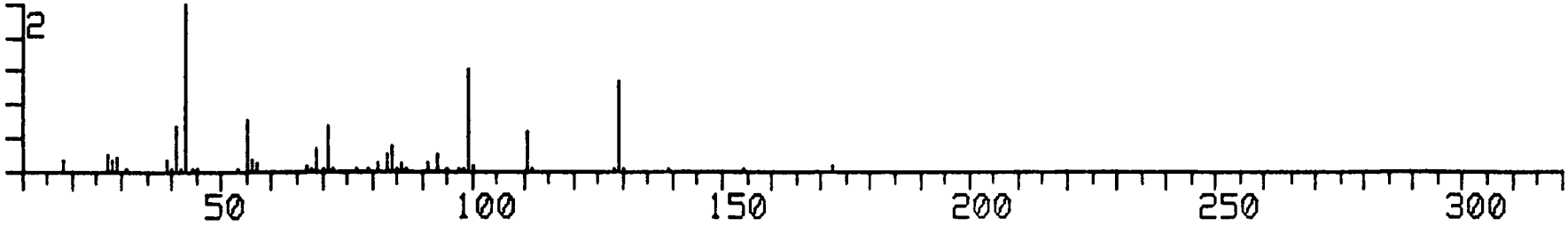
SCANS: 2670-2670 BKG * 1.00 2656



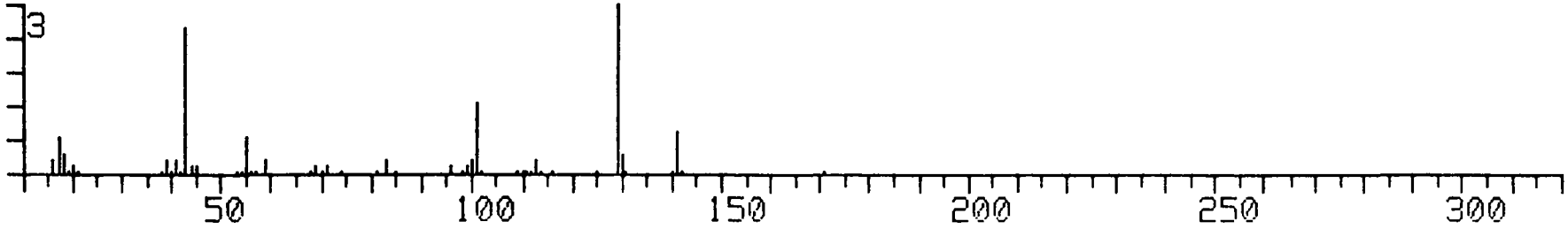

C8H15BO3 170 Butyric acid, 3-hydrox Fit 0.338 SP#/CAS# 11558/31767-20-1




C10H2002 172 1,2-Cyclohexanediol, 4 Fit 0.272 SP#/CAS# 11747/42962-98-1




C8H1204 172 Ketone, 2,5-dihydro-2,5 Fit 0.236 SP#/CAS# 11890/13156-18-8




COPY

1B

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

SBLKB9

Lab Name: PEI Contract. 68-D9-0037

Lab Code: PEI Case No.: 12199 SAS No.: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: SBLKB9

Sample wt/vol: 30 0 (g/mL) G Lab File ID: SBLKB9

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

% Moisture: not dec. 0 dec. 0. Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/89

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1 00

| CAS NO | COMPOUND | CONCENTRATION UNITS. (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 660 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 660 | U |
| 95-57-8 | 2-Chlorophenol | 660 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 660 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 660 | U |
| 100-51-6 | Benzyl alcohol | 660. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 660 | U |
| 95-48-7 | 2-Methylphenol | 660. | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 660 | U |
| 106-44-5 | 4-Methylphenol | 660. | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 660. | U |
| 67-72-1 | Hexachloroethane | 660 | U |
| 98-95-3 | Nitrobenzene | 660 | U |
| 78-59-1 | Isophorone | 660. | U |
| 88-75-5 | 2-Nitrophenol | 660. | U |
| 105-67-9 | 2,4-Dimethylphenol | 660 | U |
| 65-85-0 | Benzoic acid | 3200. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 660. | U |
| 120-83-2 | 2,4-Dichlorophenol | 660. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 660. | U |
| 91-20-3 | Naphthalene | 660. | U |
| 106-47-8 | 4-Chloroaniline | 660. | U |
| 87-68-3 | Hexachlorobutadiene | 660. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 660. | U |
| 91-57-6 | 2-Methylnaphthalene | 660. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 660. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 660. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 3200. | U |
| 91-58-7 | 2-Chloronaphthalene | 660 | U |
| 88-74-4 | 2-Nitroaniline | 3200. | U |
| 131-11-3 | Dimethylphthalate | 660 | U |
| 208-96-8 | Acenaphthylene | 660. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 660. | U |

1C

C00374 EPA SAMPLE NO

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SBLKB9

Lab Name. PEI Contract. 68-D9-0037

Lab Code: PEI Case No : 12199 SAS No. : SDG No . EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: SBLKB9

Sample wt/vol: 30.0 (g/mL) G Lab File ID: SBLKB9

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

% Moisture: not dec. 0. dec 0. Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/89

GPC Cleanup: (Y/N) Y pH 7.0 Dilution Factor. 1 00

| CAS NO | COMPOUND | CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 3200. | U |
| 83-32-9 | Acenaphthene | 660 | U |
| 51-28-5 | 2,4-Dinitrophenol | 3200 | U |
| 100-02-7 | 4-Nitrophenol | 3200 | U |
| 132-64-9 | Dibenzofuran | 660. | U |
| 121-14-2 | 2,4-Dinitrotoluene | 660 | U |
| 84-66-2 | Diethylphthalate | 660 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 660 | U |
| 86-73-7 | Fluorene | 660. | U |
| 100-01-6 | 4-Nitroaniline | 3200 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 3200. | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 660 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 660. | U |
| 118-74-1 | Hexachlorobenzene | 660. | U |
| 87-86-5 | Pentachlorophenol | 3200 | U |
| 85-01-8 | Phenanthrene | 660. | U |
| 120-12-7 | Anthracene | 660 | U |
| 84-74-2 | Di-n-butylphthalate | 660. | U |
| 206-44-0 | Fluoranthene | 660. | U |
| 129-00-0 | Pyrene | 660. | U |
| 85-68-7 | Butylbenzylphthalate | 660. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1300. | U |
| 56-55-3 | Benzo(a)anthracene | 660. | U |
| 218-01-9 | Chrysene | 660. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 660. | U |
| 117-84-0 | Di-n-octylphthalate | 660. | U |
| 205-99-2 | Benzo(b)fluoranthene | 660. | U |
| 207-08-9 | Benzo(k)fluoranthene | 660. | U |
| 50-32-8 | Benzo(a)pyrene | 660. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 660. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 660. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 660. | U |

(1) - Cannot be separated from diphenylamine

1F

C00375 EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SBLKB9

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 12199 SAS No.: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: SBLKB9

Sample wt/vol. 30 0 (g/mL) G Lab File ID: SBLKB9

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

% Moisture: not dec. 0. dec 0 Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 5/89

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

Number TICs found: 2

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | 100-52-7 | Benzaldehyde (ACN)(DOT) | 8 68 | 300. | J |
| 2. | - - | UNKNOWN | 26.98 | 10000. | J |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| 8. | | | | | |
| 9. | | | | | |
| 10. | | | | | |
| 11. | | | | | |
| 12. | | | | | |
| 13. | | | | | |
| 14. | | | | | |
| 15. | | | | | |
| 16. | | | | | |
| 17. | | | | | |
| 18. | | | | | |
| 19. | | | | | |
| 20. | | | | | |
| 21. | | | | | |
| 22. | | | | | |
| 23. | | | | | |
| 24. | | | | | |
| 25. | | | | | |
| 26. | | | | | |
| 27. | | | | | |
| 28. | | | | | |
| 29. | | | | | |
| 30. | | | | | |

NIH/EPA Forward Library Search TIC = 1579

Injection Date: 05-JUL-89 Time: 09:00:19 100% = 372

Filename: SY:SBLKB9

Comments:

ID:N 7844 EPA LOW LEVEL SOIL BLANK 6/27/89// MATRIX:

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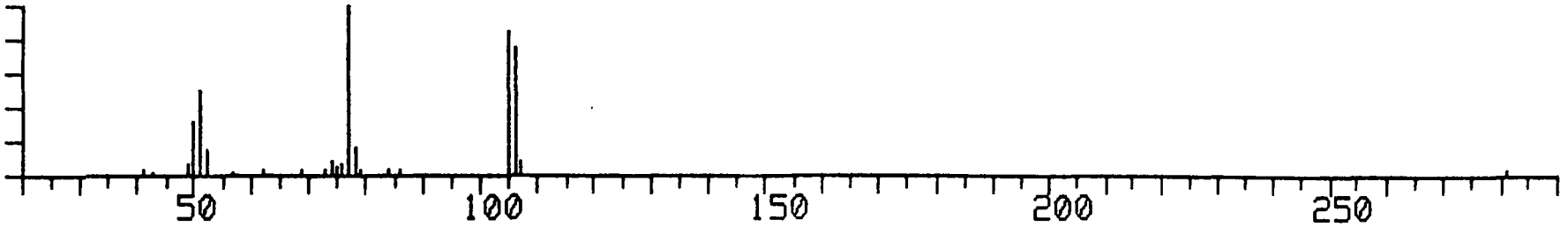
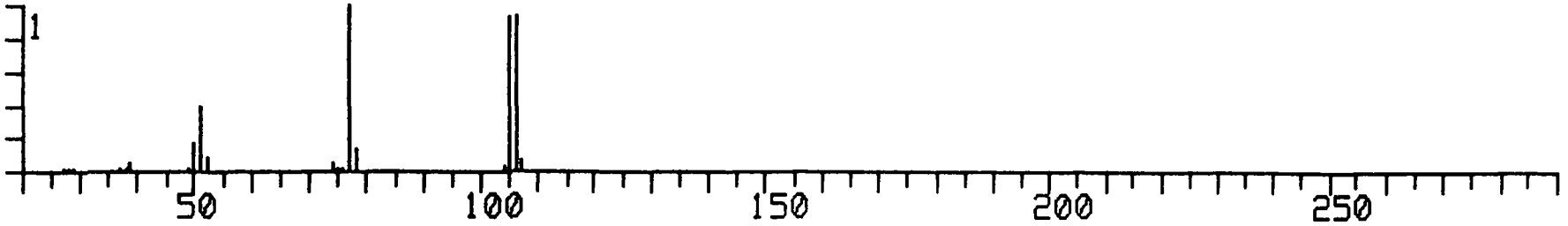
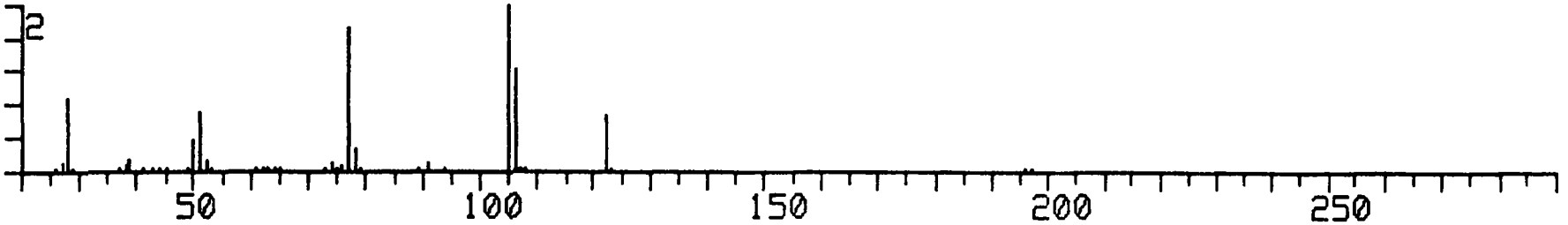


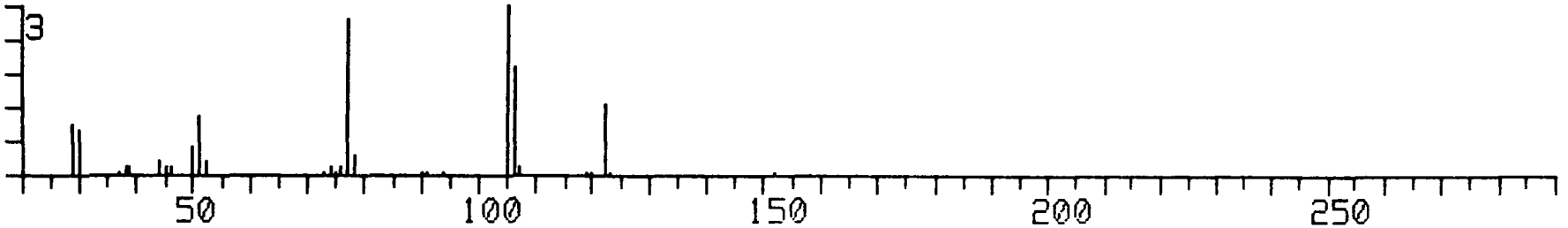

C7H6O 106 Benzaldehyde (ACN)(DOT) Fit 0.754 SP#/CAS# 1722/100-52-7




C14H12O3 228 1,2,4-Trioxolane, 3,5- Fit 0.625 SP#/CAS# 20882/23888-15-5



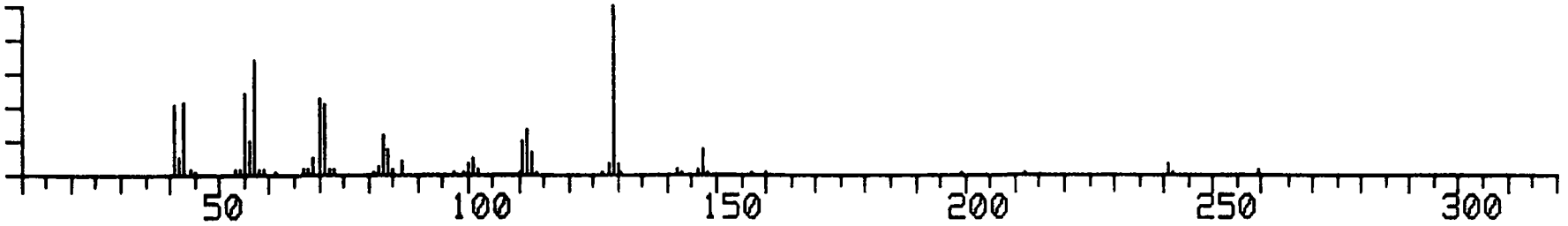

C8H8O3 152 1,2,4-Trioxolane, 3-phen Fit 0.571 SP#/CAS# 8013/23253-30-7



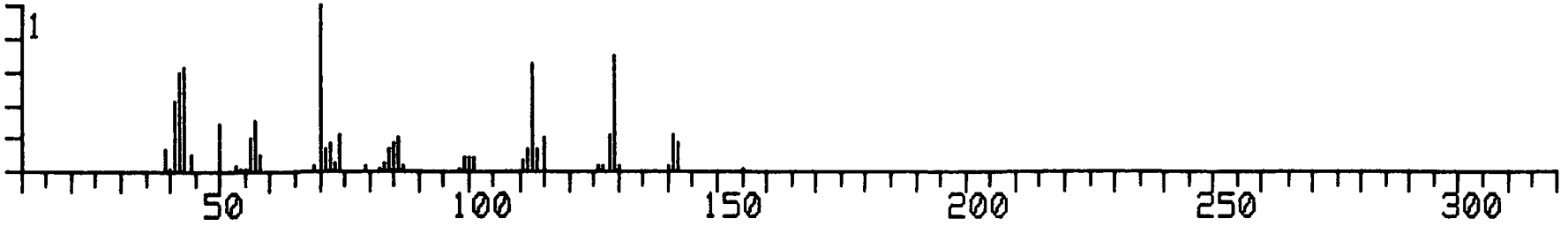

C0-0342

NIH/EPA Forward Library Search TIC = 63192
Injection Date: 05-JUL-89 Time: 09:00:19 100% = 9961
Filename: SY:SBLKB9
Comments:
ID:N 7844 EPA LOW LEVEL SOIL BLANK 6/27/89// MATRIX:

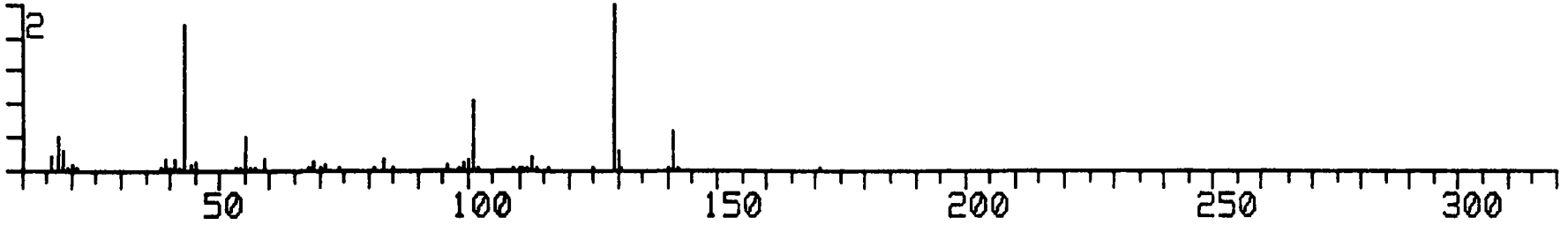
SCANS: 2671-2671 BKG * 1.00 2664



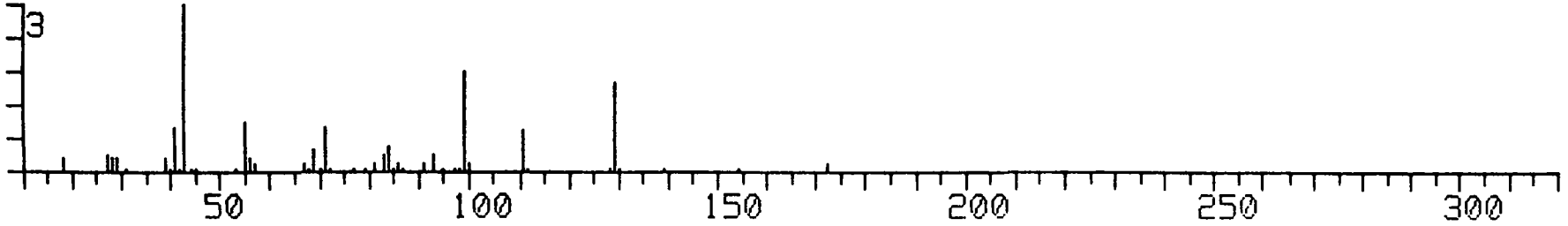

C8H15BO3 170 Butyric acid, 3-hydrox Fit 0.343 SP#/CAS# 11558/31767-20-1




C8H12O4 172 Ketone, 2,5-dihydro-2,5 Fit 0.276 SP#/CAS# 11890/13156-18-8




C10H20O2 172 1,2-Cyclohexanediol, 4 Fit 0.270 SP#/CAS# 11747/42962-98-1




C00353

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EAQ09

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 12199 SAS No.: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-01A

Sample wt/vol: 30. (g/mL) G Lab File ID: EH009

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec. 11. dec. 0. Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 6/89

GPC Cleanup: (Y/N) Y pH: 8.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 18. | U |
| 319-85-7 | beta-BHC | 18. | U |
| 319-86-8 | delta-BHC | 18. | U |
| 58-89-9 | gamma-BHC | 18. | U |
| 76-44-8 | Heptachlor | 18. | U |
| 309-00-2 | Aldrin | 18. | U |
| 1024-57-3 | Heptachlor epoxide | 18. | U |
| 959-98-8 | Endosulfan I | 18. | U |
| 60-57-1 | Dieldrin | 36. | U |
| 72-55-9 | 4,4'-DDE | 36. | U |
| 72-20-8 | Endrin | 36. | U |
| 33213-65-9 | Endosulfan II | 36. | U |
| 72-54-8 | 4,4'-DDD | 36. | U |
| 1031-07-8 | Endosulfan sulfate | 36. | U |
| 50-29-3 | 4,4'-DDT | 36. | U |
| 72-43-5 | Methoxychlor | 180. | U |
| 53494-70-5 | Endrin ketone | 36. | U |
| 5103-71-9 | alpha-Chlordane | 180. | U |
| 5103-74-2 | gamma-Chlordane | 180. | U |
| 8001-35-2 | Toxaphene | 360. | U |
| 12674-11-2 | Aroclor-1016 | 180. | U |
| 11104-28-2 | Aroclor-1221 | 180. | U |
| 11141-16-5 | Aroclor-1232 | 180. | U |
| 53469-21-9 | Aroclor-1242 | 180. | U |
| 12672-29-6 | Aroclor-1248 | 180. | U |
| 11097-69-1 | Aroclor-1254 | 360. | U |
| 11096-82-5 | Aroclor-1260 | 360. | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EDH64

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 12199 SAS No.: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-02A

Sample wt/vol: 30. (g/mL) G Lab File ID: EH064

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec. 12. dec. 0. Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 6/89

GPC Cleanup: (Y/N) Y pH: 8.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 18. | U |
| 319-85-7 | beta-BHC | 18. | U |
| 319-86-8 | delta-BHC | 18. | U |
| 58-89-9 | gamma-BHC | 18. | U |
| 76-44-8 | Heptachlor | 18. | U |
| 309-00-2 | Aldrin | 18. | U |
| 1024-57-3 | Heptachlor epoxide | 18. | U |
| 959-98-8 | Endosulfan I | 18. | U |
| 60-57-1 | Dieldrin | 36. | U |
| 72-55-9 | 4,4'-DDE | 36. | U |
| 72-20-8 | Endrin | 36. | U |
| 33213-65-9 | Endosulfan II | 36. | U |
| 72-54-8 | 4,4'-DDD | 36. | U |
| 1031-07-8 | Endosulfan sulfate | 36. | U |
| 50-29-3 | 4,4'-DDT | 36. | U |
| 72-43-5 | Methoxychlor | 180. | U |
| 53494-70-5 | Endrin ketone | 36. | U |
| 5103-71-9 | alpha-Chlordane | 180. | U |
| 5103-74-2 | gamma-Chlordane | 180. | U |
| 8001-35-2 | Toxaphene | 360. | U |
| 12674-11-2 | Aroclor-1016 | 180. | U |
| 11104-28-2 | Aroclor-1221 | 180. | U |
| 11141-16-5 | Aroclor-1232 | 180. | U |
| 53469-21-9 | Aroclor-1242 | 180. | U |
| 12672-29-6 | Aroclor-1248 | 180. | U |
| 11097-69-1 | Aroclor-1254 | 360. | U |
| 11096-82-5 | Aroclor-1260 | 360. | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EDH67

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 12199 SAS No.: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-05A

Sample wt/vol: 30. (g/mL) G Lab File ID: EH067

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec. 16. dec. 0. Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 6/89

GPC Cleanup: (Y/N) Y pH: 8.5 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 19. | U |
| 319-85-7 | beta-BHC | 19. | U |
| 319-86-8 | delta-BHC | 19. | U |
| 58-89-9 | gamma-BHC | 19. | U |
| 76-44-8 | Heptachlor | 19. | U |
| 309-00-2 | Aldrin | 19. | U |
| 1024-57-3 | Heptachlor epoxide | 19. | U |
| 959-98-8 | Endosulfan I | 19. | U |
| 60-57-1 | Dieldrin | 38. | U |
| 72-55-9 | 4,4'-DDE | 38. | U |
| 72-20-8 | Endrin | 38. | U |
| 33213-65-9 | Endosulfan II | 38. | U |
| 72-54-8 | 4,4'-DDD | 38. | U |
| 1031-07-8 | Endosulfan sulfate | 38. | U |
| 50-29-3 | 4,4'-DDT | 38. | U |
| 72-43-5 | Methoxychlor | 190. | U |
| 53494-70-5 | Endrin ketone | 38. | U |
| 5103-71-9 | alpha-Chlordane | 190. | U |
| 5103-74-2 | gamma-Chlordane | 190. | U |
| 8001-35-2 | Toxaphene | 380. | U |
| 12674-11-2 | Aroclor-1016 | 190. | U |
| 11104-28-2 | Aroclor-1221 | 190. | U |
| 11141-16-5 | Aroclor-1232 | 190. | U |
| 53469-21-9 | Aroclor-1242 | 190. | U |
| 12672-29-6 | Aroclor-1248 | 190. | U |
| 11097-69-1 | Aroclor-1254 | 380. | U |
| 11096-82-5 | Aroclor-1260 | 380. | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EDH68

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 12199 SAS No.: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-06A

Sample wt/vol: 30. (g/mL) G Lab File ID: EH068

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec. 11. dec. 0. Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 6/89

GPC Cleanup: (Y/N) Y pH: 8.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 18. | U |
| 319-85-7 | beta-BHC | 18. | U |
| 319-86-8 | delta-BHC | 18. | U |
| 58-89-9 | gamma-BHC | 18. | U |
| 76-44-8 | Heptachlor | 18. | U |
| 309-00-2 | Aldrin | 18. | U |
| 1024-57-3 | Heptachlor epoxide | 18. | U |
| 959-98-8 | Endosulfan I | 18. | U |
| 60-57-1 | Dieldrin | 36. | U |
| 72-55-9 | 4,4'-DDE | 36. | U |
| 72-20-8 | Endrin | 36. | U |
| 33213-65-9 | Endosulfan II | 36. | U |
| 72-54-8 | 4,4'-DDD | 36. | U |
| 1031-07-8 | Endosulfan sulfate | 36. | U |
| 50-29-3 | 4,4'-DDT | 36. | U |
| 72-43-5 | Methoxychlor | 180. | U |
| 53494-70-5 | Endrin ketone | 36. | U |
| 5103-71-9 | alpha-Chlordane | 180. | U |
| 5103-74-2 | gamma-Chlordane | 180. | U |
| 8001-35-2 | Toxaphene | 360. | U |
| 12674-11-2 | Aroclor-1016 | 180. | U |
| 11104-28-2 | Aroclor-1221 | 180. | U |
| 11141-16-5 | Aroclor-1232 | 180. | U |
| 53469-21-9 | Aroclor-1242 | 180. | U |
| 12672-29-6 | Aroclor-1248 | 180. | U |
| 11097-69-1 | Aroclor-1254 | 360. | U |
| 11096-82-5 | Aroclor-1260 | 360. | U |

C3D134

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EDH70

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 12199 SAS No.: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-08A

Sample wt/vol: 30. (g/mL) G Lab File ID: EH070

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec. 16. dec. 0. Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 6/89

GPC Cleanup: (Y/N) Y pH: 8.5 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 19. | U |
| 319-85-7 | beta-BHC | 19. | U |
| 319-86-8 | delta-BHC | 19. | U |
| 58-89-9 | gamma-BHC | 19. | U |
| 76-44-8 | Heptachlor | 19. | U |
| 309-00-2 | Aldrin | 19. | U |
| 1024-57-3 | Heptachlor epoxide | 19. | U |
| 959-98-8 | Endosulfan I | 19. | U |
| 60-57-1 | Dieldrin | 38. | U |
| 72-55-9 | 4,4'-DDE | 38. | U |
| 72-20-8 | Endrin | 38. | U |
| 33213-65-9 | Endosulfan II | 38. | U |
| 72-54-8 | 4,4'-DDD | 38. | U |
| 1031-07-8 | Endosulfan sulfate | 38. | U |
| 50-29-3 | 4,4'-DDT | 38. | U |
| 72-43-5 | Methoxychlor | 190. | U |
| 53494-70-5 | Endrin ketone | 38. | U |
| 5103-71-9 | alpha-Chlordane | 190. | U |
| 5103-74-2 | gamma-Chlordane | 190. | U |
| 8001-35-2 | Toxaphene | 380. | U |
| 12674-11-2 | Aroclor-1016 | 190. | U |
| 11104-28-2 | Aroclor-1221 | 190. | U |
| 11141-16-5 | Aroclor-1232 | 190. | U |
| 53469-21-9 | Aroclor-1242 | 190. | U |
| 12672-29-6 | Aroclor-1248 | 190. | U |
| 11097-69-1 | Aroclor-1254 | 380. | U |
| 11096-82-5 | Aroclor-1260 | 380. | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EDH71

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 12199 SAS No.: SDG No.: EAQ09

Matrix: (soil/water) SOIL Lab Sample ID: T9-06-154-09A

Sample wt/vol: 30. (g/mL) G Lab File ID: EH071

Level: (low/med) LOW Date Received: 6/23/89

% Moisture: not dec. 11. dec. 0. Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 6/89

GPC Cleanup: (Y/N) Y pH: 8.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 18. | U |
| 319-85-7 | beta-BHC | 18. | U |
| 319-86-8 | delta-BHC | 18. | U |
| 58-89-9 | gamma-BHC | 18. | U |
| 76-44-8 | Heptachlor | 18. | U |
| 309-00-2 | Aldrin | 18. | U |
| 1024-57-3 | Heptachlor epoxide | 18. | U |
| 959-98-8 | Endosulfan I | 18. | U |
| 60-57-1 | Dieldrin | 36. | U |
| 72-55-9 | 4,4'-DDE | 36. | U |
| 72-20-8 | Endrin | 36. | U |
| 33213-65-9 | Endosulfan II | 36. | U |
| 72-54-8 | 4,4'-DDD | 36. | U |
| 1031-07-8 | Endosulfan sulfate | 36. | U |
| 50-29-3 | 4,4'-DDT | 36. | U |
| 72-43-5 | Methoxychlor | 180. | U |
| 53494-70-5 | Endrin ketone | 36. | U |
| 5103-71-9 | alpha-Chlordane | 180. | U |
| 5103-74-2 | gamma-Chlordane | 180. | U |
| 8001-35-2 | Toxaphene | 360. | U |
| 12674-11-2 | Aroclor-1016 | 180. | U |
| 11104-28-2 | Aroclor-1221 | 180. | U |
| 11141-16-5 | Aroclor-1232 | 180. | U |
| 53469-21-9 | Aroclor-1242 | 180. | U |
| 12672-29-6 | Aroclor-1248 | 180. | U |
| 11097-69-1 | Aroclor-1254 | 360. | U |
| 11096-82-5 | Aroclor-1260 | 360. | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLKB8

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 12199 SAS No.: SDG No.: EA009

Matrix: (soil/water) SOIL Lab Sample ID: PBLKB8

Sample wt/vol: 30. (g/mL) G Lab File ID: EHPBB008

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

% Moisture: not dec. 0. dec. 0. Date Extracted: 6/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 7/ 6/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 16. | U |
| 319-85-7 | beta-BHC | 16. | U |
| 319-86-8 | delta-BHC | 16. | U |
| 58-89-9 | gamma-BHC | 16. | U |
| 76-44-8 | Heptachlor | 16. | U |
| 309-00-2 | Aldrin | 16. | U |
| 1024-57-3 | Heptachlor epoxide | 16. | U |
| 959-98-8 | Endosulfan I | 16. | U |
| 60-57-1 | Dieldrin | 32. | U |
| 72-55-9 | 4,4'-DDE | 32. | U |
| 72-20-8 | Endrin | 32. | U |
| 33213-65-9 | Endosulfan II | 32. | U |
| 72-54-8 | 4,4'-DDD | 32. | U |
| 1031-07-8 | Endosulfan sulfate | 32. | U |
| 50-29-3 | 4,4'-DDT | 32. | U |
| 72-43-5 | Methoxychlor | 160. | U |
| 53494-70-5 | Endrin ketone | 32. | U |
| 5103-71-9 | alpha-Chlordane | 160. | U |
| 5103-74-2 | gamma-Chlordane | 160. | U |
| 8001-35-2 | Toxaphene | 320. | U |
| 12674-11-2 | Aroclor-1016 | 160. | U |
| 11104-28-2 | Aroclor-1221 | 160. | U |
| 11141-16-5 | Aroclor-1232 | 160. | U |
| 53469-21-9 | Aroclor-1242 | 160. | U |
| 12672-29-6 | Aroclor-1248 | 160. | U |
| 11097-69-1 | Aroclor-1254 | 320. | U |
| 11096-82-5 | Aroclor-1260 | 320. | U |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE:

SUBJECT: Review of Region V CLP Data Received for Review on Aug 1, 1989

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

TO: Data User: MPCA

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

SITE NAME: Larson Boats SMO Case No. 12199

EPA Data Set No. _____ No. of Samples: 6 D.U./Activity Numbers TFA/TFA 102

CRL No. _____

SMO Traffic No. MECS 61, 64, 65, 67, 68, 82

CLP Laboratory: Chemtech Hrs. Required for Review: 1 1/2

Following are our findings: The following review covers the analyses of 6 Soil samples for RAS metals and Cyanide.

ICP analyses: Antimony, Beryllium, Chromium, Cobalt, Nickel, Vanadium and Zinc qualified "U" due to blank contaminants. Silver qualified as "J" due to low spike recovery.

GFAA analyses: Arsenic qualified "U" due to blank contaminants.

Hg & CN analyses: acceptable

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

W. Gwen Matthews
MPCA
11/17/89

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

EPA FORM 1320-6 (REV. 3-78)

Region V

# INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 12199

SITE Larson Boats

LABORATORY Chemtech

NO. OF SAMPLES/ MATRIX 6 low soil

SDG# MECS 61

REVIEWER (IF NOT ESD) MPOA

SOW# 7/87

REVIEWER'S NAME Wayne Mitchell

DPO: ACTION _____ FYI _____

COMPLETION DATE 11/18/89

## DATA ASSESSMENT SUMMARY

| | | ICP | AA | Hg | CYANIDE |
|---|---|---|---|---|---|
| 1. | HOLDING TIMES | O | O | O | O |
| 2. | CALIBRATIONS | | | | |
| 3. | BLANKS | | | | |
| 4. | ICS | | | | |
| 5. | LCS | | | | |
| 6. | DUPLICATE ANALYSIS | | | | |
| 7. | MATRIX SPIKE | | | | |
| 8. | MSA | | | | |
| 9. | SERIAL DILUTION | | | | |
| 10. | SAMPLE VERIFICATION | | | | |
| 11. | OTHER QC | | | | |
| 12. | OVERALL ASSESSMENT | | | | |

O = Data had no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems, but do not affect data.

ACTION ITEMS: _____

AREAS OF CONCERN: _____

NOTABLE PERFORMANCE: _____

P.O. BOX 818 ALEXANDRIA, VA 22313
703/557-2490 FTS-557-2490

CASE NO. | SAS NO. (IF APPLICABLE)

# INORGANIC TRAFFIC REPORT

(FOR CLP USE ONLY)

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

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

REGION NO: V
SAMPLING COMPANY ②: MPCA
SAMPLER (NAME): Mari Lapp

SHIP TO ③: Chemtech Consulting Group, 2[illegible] W. [illegible] Street, New York, NY 1[illegible]14
ATTN: [illegible]

SAMPLING DATE ④
BEGIN: [illegible] END: [illegible]

DATE SHIPPED: [illegible] CARRIER: Fed. ⑤
AIRBILL NO: 3302279274

DATE REC'D: [illegible] SDG NO ⑥: MECS 61
REC'D BY: [illegible]
LABORATORY CONTRACT NO: —
UNIT PRICE:

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

| CLP SAMPLE NUMBER (FROM LABELS) | Ⓐ SAMPLE DESCRIPTION (FROM BOX 1) 1 2 3 4 5 6 7 | Ⓑ CONCENTRATION L = LOW M = MED H = HIGH (SAS) | Ⓒ RAS ANALYSIS: TOTAL METALS | CYANIDE | DISSOLVED METALS | HIGH ONLY (SAS): SULFIDE | pH | CONDUCTIVITY | OXIDANTS | Ⓓ SPECIAL HANDLING | Ⓔ STATION LOCATION | Ⓕ SAMPLE CONDITION ON RECEIPT | Ⓖ HIGH CONC PHASES (CHECK): SOLID | WATER—MIS LIQUID | NON WATER—MIS LIQUID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MECS 61 | 4 | L | X | X | | | | | | | B-3 | [illegible] | | | |
| MECS 64 | 4 | L | X | X | | | | | | | B-8 | | | | |
| MECS 65 | 4 | L | X | X | | | | | | | B-9 | | | | |
| MECS 67 | 4 | L | X | X | | | | | | | B-6 | | | | |
| MECS 68 | 4 | L | X | X | | | | | | | B-7 | | | | |
| MECS 33 | 4 | L | X | X | | | | Lot sample | | | B-5 | "SDG-FINAL SAMPLE" | | | |
| — Sampling Complete — | | | | | | | | | | | | | | | |

[illegible]2

EPA Form 2075-6 (8-87)

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

# QC EXCEPTION SUMMARY REPORT

CASE # 12199
DATA SET # MECS 61
LAB Q.C. #
DATE:

SITE Larson Boats
LAB Chemtech
REVIEWED BY JM - MPCA

MATRIX: Soil
CONC. : Low

WATER SAMPLE SPK.
WATER SAMPLE DUP.
SOIL SAMPLE SPK. MECS 64S
SOIL SAMPLE DUP. MECS 61D

| | OVERALL CASE QC | | | | | | | | | MATRIX SPECIFIC QC | | | | | | SAMPLE SPECIFIC QC | | FIELD QC | | | REGIONAL QC | | | OTHER/ COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Holding Time | Cal Blanks (mg/kg) | Init Calver | Contin Calver | Prep Blk AQ | Prep Blk SOL (mg/kg) | ICS %R | LCS % AQ | LCS % SOL | Sol Dup RPD | Sol Spk %R | AQ Dup RPD | AQ Spk %R | Ser Dilu AQ | Ser Dilu SOL | GFAA Dup | GFAA Spike | Blank | Dup RPD | Spike %R | Blind Blank | Blind Spike %R | Split Sample RPD | |
| Aluminum | | | | | | | | | | | | | | | | | | | | | | | | |
| Antimony | | 38.0 | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | | 2.2 | | | | | | | | | | | | | | | | | | | | | | |
| Barium | | | | | | | | | | | | | | | | | | | | | | | | |
| Beryllium | | 5.0 | | | | | | | | | | | | | | | | | | | | | | |
| Cadmium | | | | | | | | | | | | | | | | | | | | | | | | |
| Calcium | | | | | | | | | | | | | | | | | | | | | | | | |
| Chromium | | 21.1 | | | | 1.944 | | | | | | | | | | | | | | | | | | |
| Cobalt | | 22.5 | | | | 6.482 | | | | | | | | | | | | | | | | | | |
| Copper | | | | | | | | | | | | | | | | | | | | | | | | |
| Iron | | | | | | | | | | | | | | | | | | | | | | | | |
| Lead | | | | | | | | | | | | | | | | | | | | | | | | |
| Magnesium | | | | | | | | | | | | | | | | | | | | | | | | |
| Manganese | | | | | | | | | | | | | | | | | | | | | | | | |
| Mercury | | | | | | | | | | | | | | | | | | | | | | | | |
| Nickel | | | | | | 6.662 | | | | | | | | | | | | | | | | | | |
| Potassium | | | | | | | | | | | | | | | | | | | | | | | | |
| Selenium | | | | | | | | | | | | | | | | | | | | | | | | |
| Silver | | | | | | | | | | | 50.3 | | | | | | | | | | | | | |
| Sodium | | | | | | | | | | | | | | | | | | | | | | | | |
| Thallium | | | | | | | | | | | | | | | | | | | | | | | | |
| Tin | | | | | | | | | | | | | | | | | | | | | | | | |
| Vanadium | | | | | | 5.77 | | | | | | | | | | | | | | | | | | |
| Zinc | | | | | | 3.62 | | | | | | | | | | | | | | | | | | |
| Cyanide | | | | | | | | | | | | | | | | | | | | | | | | |

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MECS61

Lab Name: Chemtech Consulting Group  Contract: 68-W8-0061

Lab Code: CHEM  Case No.: 12199  SAS No.:  SDG No.: MECS61

Matrix (soil/water): SOIL  Lab Sample ID: 00238-01S

Level (low/med): LOW  Date Received: 06/23/89

% Solids: 87.9

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6940.00 | | | P |
| 7440-36-0 | Antimony | 8.60 | U | | P |
| 7440-38-2 | Arsenic | 1.80 | ~~B~~ | ✓ | F |
| 7440-39-3 | Barium | 253.00 | | | P |
| 7440-41-7 | Beryllium | 0.91 | U | | P |
| 7440-41-7 | Cadmium | 2.50 | [redacted] | | P |
| 7440-70-2 | Calcium | 2270.00 | | | P |
| 7440-47-3 | Chromium | 26.80 | ✓ | * | P |
| 7440-48-4 | Cobalt | 16.90 | ✓ | | P |
| 7440-50-8 | Copper | 23.00 | | * | P |
| 7439-89-6 | Iron | 20200.00 | | | P |
| 7439-92-1 | Lead | 3.40 | | | F |
| 7439-95-4 | Magnesium | 4250.00 | | | P |
| 7439-96-5 | Manganese | 1810.00 | | | P |
| 7439-97-6 | Mercury | 0.11 | U | | CV |
| 7440-02-0 | Nickel | 27.50 | ✓ | | P |
| 7440-09-7 | Potassium | 1340.00 | | | A |
| 7782-49-2 | Selenium | 4.60 | U | W | F |
| 7440-22-4 | Silver | 2.30 | U J | N | P |
| 7440-23-5 | Sodium | 209.00 | B | | P |
| 7440-28-0 | Thallium | 0.91 | U | W | F |
| 7440-62-2 | Vanadium | 33.20 | [redacted] | | P |
| 7440-66-6 | Zinc | 33.70 | | | P |
| | Cyanide | 1.10 | U | | C |

Color Before: GRAY  Clarity Before:  Texture: MEDIUM

Color After: GRAY  Clarity After:  Artifacts:

Comments:

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C02

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MECS64

Lab Name: Chemtech Consulting Group  Contract: 68-W8-0061

Lab Code: CHEM  Case No.: 12199  SAS No.:  SDG No.: MECS61

Matrix (soil/water): SOIL  Lab Sample ID: 00238-02S

Level (low/med): LOW  Date Received: 06/23/89

% Solids: 87.3

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 4020.00 | | | P |
| 7440-36-0 | Antimony | 8.70 | U | | P |
| 7440-38-2 | Arsenic | 3.00 | | | F |
| 7440-39-3 | Barium | 81.80 | | | P |
| 7440-41-7 | Beryllium | 0.92 | U | | P |
| 7440-41-7 | Cadmium | 3.10 | | | P |
| 7440-70-2 | Calcium | 1550.00 | | | P |
| 7440-47-3 | Chromium | 12.40 | | * | P |
| 7440-48-4 | Cobalt | 3.30 | B | | P |
| 7440-50-8 | Copper | 8.60 | | * | P |
| 7439-89-6 | Iron | 9830.00 | | | P |
| 7439-92-1 | Lead | 4.60 | | | F |
| 7439-95-4 | Magnesium | 1610.00 | | | P |
| 7439-96-5 | Manganese | 964.00 | | | P |
| 7439-97-6 | Mercury | 0.11 | U | | CV |
| 7440-02-0 | Nickel | 8.20 | B | | P |
| 7440-09-7 | Potassium | 435.00 | B | | A |
| 7782-49-2 | Selenium | 0.46 | U | | F |
| 7440-22-4 | Silver | 2.30 | U | N | P |
| 7440-23-5 | Sodium | 328.00 | B | | P |
| 7440-28-0 | Thallium | 0.92 | U | W | F |
| 7440-62-2 | Vanadium | 24.60 | | | P |
| 7440-66-6 | Zinc | 35.30 | | | P |
| | Cyanide | 1.10 | U | | C |

11/17/89

Color Before: GRAY  Clarity Before:  Texture: MEDIUM

Color After: GRAY  Clarity After:  Artifacts:

Comments:

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003

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MECS65

Lab Name: Chemtech Consulting Group  Contract: 68-W8-0061

Lab Code: CHEM  Case No.: 12199  SAS No.:  SDG No.: MECS61

Matrix (soil/water): SOIL  Lab Sample ID: 00238-03S

Level (low/med): LOW  Date Received: 06/23/89

% Solids: 90.6

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 9110.00 | | | P |
| 7440-36-0 | Antimony | 9.80 | ~~B~~ | U | P |
| 7440-38-2 | Arsenic | 1.80 | ~~B~~ | U | F |
| 7440-39-3 | Barium | 82.90 | | | P |
| 7440-41-7 | Beryllium | 0.88 | U | | P |
| 7440-41-7 | Cadmium | 4.40 | | | P |
| 7440-70-2 | Calcium | 2200.00 | | | P |
| 7440-47-3 | Chromium | 14.90 | U | * | P |
| 7440-48-4 | Cobalt | 8.80 | ~~B~~ | U | P |
| 7440-50-8 | Copper | 45.90 | | * | P |
| 7439-89-6 | Iron | 19200.00 | | | P |
| 7439-92-1 | Lead | 4.30 | | | F |
| 7439-95-4 | Magnesium | 4880.00 | | | P |
| 7439-96-5 | Manganese | 982.00 | | | P |
| 7439-97-6 | Mercury | 0.11 | U | | CV |
| 7440-02-0 | Nickel | 36.80 | | | P |
| 7440-09-7 | Potassium | 1790.00 | | | A |
| 7782-49-2 | Selenium | 0.44 | U | W | F |
| 7440-22-4 | Silver | 2.20 | U | N | P |
| 7440-23-5 | Sodium | 212.00 | B | | P |
| 7440-28-0 | Thallium | 0.88 | U | W | F |
| 7440-62-2 | Vanadium | 29.00 | U | | P |
| 7440-66-6 | Zinc | 48.10 | | | P |
| | Cyanide | 1.10 | U | | C |

11/17/89

Color Before: GRAY  Clarity Before:  Texture: MEDIUM

Color After: GRAY  Clarity After:  Artifacts:

Comments:

C04

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MECS67

Lab Name: Chemtech Consulting Group  Contract: 68-W8-0061

Lab Code: CHEM  Case No.: 12199  SAS No.:  SDG No.: MECS61

Matrix (soil/water): SOIL  Lab Sample ID: 00238-04S

Level (low/med): LOW  Date Received: 06/23/89

% Solids: 90.6

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 5880.00 | | | P |
| 7440-36-0 | Antimony | 8.40 | U | | P |
| 7440-38-2 | Arsenic | 2.50 | U | | F |
| 7440-39-3 | Barium | 143.00 | | | P |
| 7440-41-7 | Beryllium | 2.80 | U | | P |
| 7440-41-7 | Cadmium | 1.10 | U | | P |
| 7440-70-2 | Calcium | 1470.00 | | | P |
| 7440-47-3 | Chromium | 7.40 | U | * | P |
| 7440-48-4 | Cobalt | 8.00 | ~~B~~ U | | P |
| 7440-50-8 | Copper | 22.10 | | * | P |
| 7439-89-6 | Iron | 12500.00 | | | P |
| 7439-92-1 | Lead | 4.40 | | | F |
| 7439-95-4 | Magnesium | 1880.00 | | | P |
| 7439-96-5 | Manganese | 2070.00 | | | P |
| 7439-97-6 | Mercury | 0.11 | U | | CV |
| 7440-02-0 | Nickel | 21.30 | U | | P |
| 7440-09-7 | Potassium | 728.00 | B | | A |
| 7782-49-2 | Selenium | 0.44 | U | | F |
| 7440-22-4 | Silver | 2.20 | U | N | P |
| 7440-23-5 | Sodium | 244.00 | B | | P |
| 7440-28-0 | Thallium | 0.88 | U | W | F |
| 7440-62-2 | Vanadium | 18.00 | U | | P |
| 7440-66-6 | Zinc | 26.80 | | | P |
| | Cyanide | 1.10 | U | | C |

11/17/89

Color Before: BROWN  Clarity Before:  Texture: MEDIUM

Color After: BROWN  Clarity After:  Artifacts:

Comments:

C05

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MECS68

Lab Name: Chemtech Consulting Group  Contract: 68-W8-0061

Lab Code: CHEM  Case No.: 12199  SAS No.:  SDG No.: MECS61

Matrix (soil/water): SOIL  Lab Sample ID: 00238-05S

Level (low/med): LOW  Date Received: 06/23/89

% Solids: 89.0

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 4720.00 | | | P |
| 7440-36-0 | Antimony | 11.40 | ~~B~~ | U | P |
| 7440-38-2 | Arsenic | 1.40 | ~~B~~ | U | F |
| 7440-39-3 | Barium | 87.40 | | | P |
| 7440-41-7 | Beryllium | 1.40 | U | | P |
| 7440-41-7 | Cadmium | 3.80 | | | P |
| 7440-70-2 | Calcium | 1490.00 | | | P |
| 7440-47-3 | Chromium | 8.20 | U | * | P |
| 7440-48-4 | Cobalt | 5.60 | ~~B~~ | U | P |
| 7440-50-8 | Copper | 8.30 | | * | P |
| 7439-89-6 | Iron | 10000.00 | | | P |
| 7439-92-1 | Lead | 6.40 | | | F |
| 7439-95-4 | Magnesium | 1580.00 | | | P |
| 7439-96-5 | Manganese | 1030.00 | | | P |
| 7439-97-6 | Mercury | 0.11 | U | | CV |
| 7440-02-0 | Nickel | 25.50 | U | | P |
| 7440-09-7 | Potassium | 360.00 | B | | A |
| 7782-49-2 | Selenium | 0.45 | U | | F |
| 7440-22-4 | Silver | 2.20 | U | N | P |
| 7440-23-5 | Sodium | 230.00 | B | | P |
| 7440-28-0 | Thallium | 0.90 | U | W | F |
| 7440-62-2 | Vanadium | 10.30 | ~~B~~ | U | P |
| 7440-66-6 | Zinc | 29.30 | | | P |
| | Cyanide | 1.10 | U | | C |

11/17/89

Color Before: BROWN  Clarity Before:  Texture: MEDIUM

Color After: BROWN  Clarity After:  Artifacts:

Comments:

006

FORM I - IN  7/87

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MECS82

Lab Name: Chemtech Consulting Group  Contract: 68-W8-0061

Lab Code: CHEM  Case No.: 12199  SAS No.:  SDG No.: MECS61

Matrix (soil/water): SOIL  Lab Sample ID: 00238-06S

Level (low/med): LOW  Date Received: 06/23/89

% Solids: 92.7

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 3950.00 | | | P |
| 7440-36-0 | Antimony | 8.20 | U | | P |
| 7440-38-2 | Arsenic | 1.50 | ~~B~~ | U | F |
| 7440-39-3 | Barium | 60.70 | | | P |
| 7440-41-7 | Beryllium | 2.90 | U | | P |
| 7440-41-7 | Cadmium | 3.00 | | | P |
| 7440-70-2 | Calcium | 1250.00 | | | P |
| 7440-47-3 | Chromium | 9.40 | U | * | P |
| 7440-48-4 | Cobalt | 3.90 | ~~B~~ | U | P |
| 7440-50-8 | Copper | 18.70 | | * | P |
| 7439-89-6 | Iron | 9310.00 | | | P |
| 7439-92-1 | Lead | 3.40 | | | F |
| 7439-95-4 | Magnesium | 1560.00 | | | P |
| 7439-96-5 | Manganese | 609.00 | | | P |
| 7439-97-6 | Mercury | 0.11 | U | | CV |
| 7440-02-0 | Nickel | 14.70 | U | | P |
| 7440-09-7 | Potassium | 367.00 | B | | A |
| 7782-49-2 | Selenium | 0.43 | U | | F |
| 7440-22-4 | Silver | 2.20 | U | N | P |
| 7440-23-5 | Sodium | 238.00 | B | | P |
| 7440-28-0 | Thallium | 0.86 | U | W | F |
| 7440-62-2 | Vanadium | 13.40 | U | | P |
| 7440-66-6 | Zinc | 22.90 | | | P |
| | Cyanide | 1.10 | U | | C |

11/17/89

Color Before: BROWN  Clarity Before:  Texture: MEDIUM

Color After: BROWN  Clarity After:  Artifacts:

Comments:

C07

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE:

SUBJECT: Review of Region V CLP Data Received for Review on Aug. 23 1989

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

TO: Data User: MPCA

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

SITE NAME: Larson Boats SMO Case No. 12357

EPA Data Set No. SF 6374 No. of Samples: 7 D.U./Activity Numbers TFA/TFA 102

CRL No. 89 YL 30 S10-S13, DO1, DO2, RO1

SMO Traffic No. EEJ 00-06

CLP Laboratory: PEI Hrs. Required for Review: 4

Following are our findings: The following review covers the analyses of 7 water samples for RAS organics. Please refer to the narrative and calibration outlier sheets for Data qualifiers

Wayne Mattson
MPCA
11/17/89

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

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

EPA FORM 1320-6 (REV. 6-78)

DATA QUALIFIERS

Contractor: PET

Case 12357

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

① Holding Times: The volatiles fractions were analyzed within contract required holding times (except for the diluted sample EEJ03DL). Volatiles were analyzed within 10 days of sampling; samples were indicated as being at 12.5 degrees C. when recieved. No qualifications were taken based on the elevated temperature.
Semivolatiles were extracted and analyzed within contract & technical holding times
Pesticide/PCBs were extracted & analyzed with in contract required & technical holding times

② GC/MS tuning and Instrument Performance: GC/MS tuning and mass spectra were within required QC limits. Pesticide breakdown was within the 20% maximum allowed.

③ Calibration: Calibration outliers are noted on the outlier form.

④ Method Blanks: Volatiles method blank VBLKC8 contained acetone and one TIC identified by the laboratory as "column bleed".

Reviewed by: Wayne Wallsfeld MPCA

Phone: (612) 296 9207

Date: 11/17/89

DATA QUALIFIERS

Contractor: PCI

Case 12357

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

4 (cont.) volatiles blank VBIK N7 contained acetone and methylene chloride. Chlorobenzene was identified in the blank, but inspection of the chromatogram and mass spectra does not conclusively lead to this identification. Acetone and methylene chloride have been qualified as "U" (non-detected) in associated investigative samples.

The semi-volatiles method blanks all contained phthalates and all contained an unknown TIC labeled by the laboratory as "A", an aldol condensate product. Phthalates and this aldol compound have been qualified (when present in associated ~~samples~~ samples) as "U" or "BA"

The Pesticide/PCB blank was free of contaminants.

5 Surrogate Recovery: The volatiles surrogate recoveries were within QC limits.

Semi-volatiles surrogate recovery of Terphenyl-d14 were below QC limits for six samples and MS/MSDs. Recoveries of the acid surrogates in EEJ02 and EEJ02RE were < 10%; associated compounds were qualified as "R" unusable

Reviewed by: _____

Phone: _____

Date: _____

DATA QUALIFIERS

Contractor: PEI

Case 12357

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

(5) cont.) Surrogate recovery of DBC in the Pesticide/PCB fraction was slightly below the advisory QC limit in EEJ10 MS and EEJ04, but below 10% for EEJ03. Results for these fractions have been qualified as "J" (estimated).

(6) Matrix Spike/Matrix Spike Duplicate: MS/MSD Recoveries and RPD's were within QC limits for the Volatiles and Pesticide/PCB fractions. MS/MSD Recoveries were above limits for 4-Nitrophenol, while the MSD recovery for 2,4-Dinitrotoluene was slightly above the QC limit. No qualifications were taken based on these deviations.

(7) Field Duplicates: Samples EEJ03 and EEJ04 were identified as duplicates for this case. Several compounds were identified in the volatiles fraction of EEJ03 and EEJ03 DL which were not found in EEJ04 [2-Butanone, 2-Hexanone, Toluene and Ethylbenzene]. Three TICs were identified in EEJ03 and 1 in EEJ03 DL; no TIC's were found in EEJ04.

Benzoic acid was found in EEJ03 and not in EEJ04.

Reviewed by: _____

Phone: _____

Date: _____

DATA QUALIFIERS

Contractor: PEI

Case 12357

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

7) cont.) No compounds were identified in either of the samples.

8) Internal Standards Performance: Internal Standards were within QC limits for volatiles and semi-volatiles.

9) TCL Compound Identification: Compounds appear to be correctly identified and confirmed by the mass spectra

10) Compound Quantitation and Reported Detection Limits: Detection Limits were not provided with this case.

11) Tentatively Identified Compounds: TIC's appear to be correctly identified by the laboratory as per the SOW.

12) System Performance: Laboratory performance was adequate

13) Other: Sample EEJ05 was identified as a field blank.

The volatiles blank contained 1 TIC. The semi-volatiles blank contained 2 phthalates and 1 TIC which were also

Reviewed by:

Phone:

Date:

DATA QUALIFIERS

Contractor: PEI

Case 12357

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

(13) (cont) found in semi-volatiles method blanks.

No Pesticide/PCBs were found in the blank

Sample EEJ06 was identified as the volatile ~~meth~~ trip blank; no compounds were found in this blank.

Reviewed by:

Phone:

Date:

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

CASE/SAS # 12357 CONTRACTOR PEI

| Instrument # Y | Inj. Cal. | | | ~~Cont.~~ Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 7/28/89 | | | | | | | | | | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| Chloromethane | | | | | | | | | | | | | | | |
| Bromomethane | | | | | | | | | | | | | | | |
| Vinyl Chloride | | | | | | | | | | | | | | | |
| Chloroethane | | | | | | | | | | | | | | | |
| Methylene Chloride | | | | | | | | | | | | | | | |
| Acetone | .855 | 61.7 | J | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | |
| Trans-1,2-Dichloroethene | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | |
| 2-Butanone | | | | | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | |
| Vinyl Acetate | | | | | | | | | | | | | | | |
| Bromodichloromethane | | | | | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | | | | | |
| Trans-1,3-Dichloropropene | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | | | | | |
| Dibromochloromethane | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | |
| Benzene | | | | | | | | | | | | | | | |
| cis-1,3-Dichloropropene | | | | | | | | | | | | | | | |
| 2-Chloroethylvinylether | | | | | | | | | | | | | | | |
| Bromoform | | | | | | | | | | | | | | | |
| 4-Methyl-2-Pentanone | | | | | | | | | | | | | | | |
| 2-Hexanone | | | | | | | | | | | | | | | |
| Tetrachloroethene | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | |
| Styrene | | | | | | | | | | | | | | | |
| m-Xylene | | | | | | | | | | | | | | | |
| o/p-Xylene | | | | | | | | | | | | | | | |

AFFECTED SAMPLES:

| |
|---|
| VBIKC8 |
| EEJ00 |
| EEJ01 |
| EEJ01MS |
| EEJ01MSD |
| EEJ02 |
| EEJ03 |
| EEJ04 |
| EEJ05 |
| EEJ06 |

Reviewer's Initials/Date: 11/17/89

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

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

CASE/SAS # 12357 CONTRACTOR PEI

| Instrument # H | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 8/7/89 | | | 8/10 | | | | | | | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| Chloromethane | | | | | | | | | | | | | | | |
| Bromomethane | | | | 1.921 | 71.2 | | | | | | | | | | |
| Vinyl Chloride | | | | | | | | | | | | | | | |
| Chloroethane | | | | 1.566 | 56.6 | | | | | | | | | | |
| Methylene Chloride | | | | | | | | | | | | | | | |
| Acetone | .627 | 50.2 | | .937 | 49.4 | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | |
| Trans-1,2-Dichloroethene | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | |
| 2-Butanone | | | | .047 | 34.0 | R J | | | | | | | | | |
| 1,2-Dichloroethane | | | | 2.685 | 74.3 | | | | | | | | | | |
| 1,1,1-Trichloroethane | | | | .779 | 35.2 | | | | | | | | | | |
| Carbon Tetrachloride | | | | .736 | 31.0 | | | | | | | | | | |
| Vinyl Acetate | | | | | | | | | | | | | | | |
| Bromodichloromethane | | | | | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | | | | | |
| Trans-1,3-Dichloropropene | | | | .459 | 53.2 | | | | | | | | | | |
| Trichloroethene | .507 | 33.4 | | | | | | | | | | | | | |
| Dibromochloromethane | | | | .596 | 25.2 | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | .412 | 41.0 | | | | | | | | | | |
| Benzene | | | | | | | | | | | | | | | |
| cis-1,3-Dichloropropene | .619 | 32.4 | | .875 | 41.4 | | | | | | | | | | |
| 2-Chloroethylvinylether | | | | | | | | | | | | | | | |
| Bromoform | .261 | 32.4 | | .347 | 32.8 | | | | | | | | | | |
| 4-Methyl-2-Pentanone | | | | .414 | 40.7 | | | | | | | | | | |
| 2-Hexanone | | | | .308 | 98.0 | | | | | | | | | | |
| Tetrachloroethene | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | |
| Styrene | | | | | | | | | | | | | | | |
| m-Xylene | | | | | | | | | | | | | | | |
| o/p-Xylene | | | | | | | | | | | | | | | |

AFFECTED SAMPLES:

VBIKN7
EEJ03DL

Reviewer's Initials/Date: [signature] 11/17/89

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

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

CASE/SAS # C2357 CONTRACTOR REI

| Instrument # J | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 7/28/89 | | | 7/31/89 927 | | | 8/1/89 851 | | | 8/7/89 857 | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| Phenol | | | | | | | | | | | | | | | |
| bis(-2-Chloroethyl)Ether | | | | | | | | | | | | | | | |
| 2-Chlorophenol | | | | | | | | | | | | | | | |
| 1,3-Dichlorobenzene | | | | | | | | | | | | | | | |
| 1,4-Dichlorobenzene | | | | | | | | | | | | | | | |
| Benzyl Alcohol | | | | | | | .278 | 50.0 | J | | | | | | |
| 1,2-Dichlorobenzene | | | | | | | | | | | | | | | |
| 2-Methylphenol | | | | | | | | | | | | | | | |
| bis(2-chloroisopropyl)Ether | | | | | | | 1.323 | 28.8 | J | | | | | | |
| 4-Methylphenol | | | | | | | | | | | | | | | |
| N-Nitroso-Di-n-Propylamine | | | | | | | | | | | | | | | |
| Hexachloroethane | | | | | | | | | | | | | | | |
| Nitrobenzene | | | | | | | | | | | | | | | |
| Isophorone | | | | | | | | | | | | | | | |
| 2-Nitrophenol | | | | | | | | | | | | | | | |
| 2,4-Dimethylphenol | | | | | | | | | | | | | | | |
| Benzoic Acid | | | | | | | | | | | | | | | |
| bis(2-Chloroethoxy)Methane | | | | | | | | | | | | | | | |
| 2,4-Dichlorophenol | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | | | | | | | | | | | | | | | |
| Naphthalene | | | | | | | | | | | | | | | |
| 4-Chloroaniline | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | | | | | | | | | | | | | | | |
| 4-Chloro-3-Methylphenol | | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | | | | | | | | | | .764 | 21.4 | J | | | |
| Hexachlorocyclopentadiene | | | | | | | | | | | | | | | |
| 2,4,6-Trichlorophenol | | | | | | | | | | | | | | | |
| 2,4,5-Trichlorophenol | | | | | | | | | | | | | | | |
| 2-Chloronaphthalene | | | | | | | | | | | | | | | |
| 2-Nitroaniline | | | | | | | .331 | 27.3 | J | | | | | | |
| Dimethyl Phthalate | | | | | | | | | | | | | | | |
| Acenaphthylene | | | | | | | | | | | | | | | |
| 3-Nitroaniline | | | | | | | | | | | | | | | |
| Acenaphthene | | | | | | | | | | | | | | | |
| 2,4-Dinitrophenol | | | | | | | | | | | | | | | |
| 4-Nitrophenol | | | | | | | .132 | 33.3 | J | 1.144 | 27.4 | J | | | |
| Dibenzofuran | | | | | | | | | | | | | | | |

AFFECTED SAMPLES:

| | | |
|---|---|---|
| EEJ03 | SBIK R6 | SBIKI7 |
| | EEJ00 | EEJ02 |
| | EEJ01 | |
| | EEJ01MS | |
| | EEJ01MSD | |
| | EEJ04 | |
| | EEJ05 | |

Reviewer Initials/Date: 4/17/89

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

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

CASE/SAS # 12357 CONTRACTOR PEI

| Instrument # | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 7/28/89 | | | 7/31/89 | | | 8/1/89 | | | 8/7/89 | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| 2,4-Dinitrotoluene | | | | .416 | 30.7 | J | | | | .414 | 30.0 | J | | | |
| 2,6-Dinitrotoluene | | | | | | | | | | | | | | | |
| Diethylphthalate | | | | | | | | | | | | | | | |
| 4-Chlorophenyl-phenylether | | | | | | | | | | | | | | | |
| Fluorene | | | | | | | | | | | | | | | |
| 4-Nitroaniline | .217 | 40.3 | J | .308 | 41.8 | J | | | | .295 | 35.8 | J | | | |
| 4,6-Dinitro-2-Methylphenol | | | | | | | | | | | | | | | |
| N-Nitrosodiphenylamine | | | | | | | | | | | | | | | |
| 4-Bromophenyl-phenylether | | | | | | | | | | | | | | | |
| Hexachlorobenzene | | | | | | | | | | | | | | | |
| Pentachlorophenol | | | | | | | | | | | | | | | |
| Phenanthrene | | | | | | | | | | | | | | | |
| Anthracene | | | | | | | | | | | | | | | |
| Di-n-Butylphthalate | | | | | | | | | | | | | | | |
| Fluoranthene | | | | | | | | | | | | | | | |
| Pyrene | | | | | | | | | | | | | | | |
| Butylbenzylphthalate | | | | | | | | | | | | | | | |
| Benzo(a)Anthracene | | | | | | | | | | | | | | | |
| bis(2-Ethylhexyl)Phthalate | | | | | | | | | | | | | | | |
| Chrysene | | | | | | | | | | | | | | | |
| Di-n-Octyl Phthalate | | | | | | | | | | | | | | | |
| Benzo(b)Fluoranthene | | | | | | | | | | | | | | | |
| Benzo(k)Fluoranthene | | | | | | | | | | | | | | | |
| Benzo(a)Pyrene | | | | | | | | | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | 1.268 | 47.6 | J | | | | 1.932 | 26.5 | J | .638 | 49.7 | J | | | |
| Dibenz(a,h)Anthracene | 1.407 | 48.6 | J | 1.053 | 35.2 | J | 1.008 | 28.4 | J | .675 | 52.0 | J | | | |
| Benzo(g,h,i) Perylene | 1.101 | 76.8 | J | .757 | 31.2 | J | 1.628 | 42.9 | J | .469 | 57.4 | J | | | |

SEE PAGE 1 FOR AFFECTED SAMPLES.

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

Reviewer's Initials/Date: WL 11/17/89

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

CASE/SAS # 12357 CONTRACTOR PEF

| Instrument # | Inj. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 8/11/89 | | | 8/11/89 1428 | | | | | | | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| Phenol | | | | | | | | | | | | | | | |
| bis(-2-Chloroethyl)Ether | | | | | | | | | | | | | | | |
| 2-Chlorophenol | | | | | | | | | | | | | | | |
| 1,3-Dichlorobenzene | | | | | | | | | | | | | | | |
| 1,4-Dichlorobenzene | | | | | | | | | | | | | | | |
| Benzyl Alcohol | | | | .932 | 27.9 | J | | | | | | | | | |
| 1,2-Dichlorobenzene | | | | | | | | | | | | | | | |
| 2-Methylphenol | | | | | | | | | | | | | | | |
| bis(2-chloroisopropyl)Ether | | | | | | | | | | | | | | | |
| 4-Methylphenol | | | | | | | | | | | | | | | |
| N-Nitroso-Di-n-Propylamine | .544 | 42.7 | J | .708 | 30.1 | J | | | | | | | | | |
| Hexachloroethane | | | | | | | | | | | | | | | |
| Nitrobenzene | | | | | | | | | | | | | | | |
| Isophorone | | | | | | | | | | | | | | | |
| 2-Nitrophenol | | | | | | | | | | | | | | | |
| 2,4-Dimethylphenol | | | | | | | | | | | | | | | |
| Benzoic Acid | | | | | | | | | | | | | | | |
| bis(2-Chloroethoxy)Methane | | | | | | | | | | | | | | | |
| 2,4-Dichlorophenol | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | | | | | | | | | | | | | | | |
| Naphthalene | | | | | | | | | | | | | | | |
| 4-Chloroaniline | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | | | | | | | | | | | | | | | |
| 4-Chloro-3-Methylphenol | | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | | | | | | | | | | | | | | | |
| Hexachlorocyclopentadiene | | | | | | | | | | | | | | | |
| 2,4,6-Trichlorophenol | | | | | | | | | | | | | | | |
| 2,4,5-Trichlorophenol | .510 | 31.3 | J | | | | | | | | | | | | |
| 2-Chloronaphthalene | | | | | | | | | | | | | | | |
| 2-Nitroaniline | | | | | | | | | | | | | | | |
| Dimethyl Phthalate | | | | | | | | | | | | | | | |
| Acenaphthylene | | | | | | | | | | | | | | | |
| 3-Nitroaniline | | | | | | | | | | | | | | | |
| Acenaphthene | | | | | | | | | | | | | | | |
| 2,4-Dinitrophenol | | | | | | | | | | | | | | | |
| 4-Nitrophenol | | | | | | | | | | | | | | | |
| Dibenzofuran | | | | | | | | | | | | | | | |

AFFECTED SAMPLES:

EEJ02RE
SBLK M5

Reviewer Initials/Date: WW 11/17/89

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

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

CASE/SAS # 12357 CONTRACTOR REF

| Instrument # | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 8/11/89 | | | 8/11/89 | | | | | | | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| 2,4-Dinitrotoluene | | | | | | | | | | | | | | | |
| 2,6-Dinitrotoluene | .220 | 35.9 | J | .311 | 41.4 | J | | | | | | | | | |
| Diethylphthalate | | | | | | | | | | | | | | | |
| 4-Chlorophenyl-phenylether | | | | | | | | | | | | | | | |
| Fluorene | | | | | | | | | | | | | | | |
| 4-Nitroaniline | .197 | 30.2 | J | .270 | 37.2 | J | | | | | | | | | |
| 4,6-Dinitro-2-Methylphenol | | | | .141 | 563 | J | | | | | | | | | |
| N-Nitrosodiphenylamine | | | | | | | | | | | | | | | |
| 4-Bromophenyl-phenylether | | | | | | | | | | | | | | | |
| Hexachlorobenzene | | | | | | | | | | | | | | | |
| Pentachlorophenol | | | | | | | | | | | | | | | |
| Phenanthrene | | | | | | | | | | | | | | | |
| Anthracene | | | | | | | | | | | | | | | |
| Di-n-Butylphthalate | | | | | | | | | | | | | | | |
| Fluoranthene | | | | | | | | | | | | | | | |
| Pyrene | | | | | | | | | | | | | | | |
| Butylbenzylphthalate | | | | | | | | | | | | | | | |
| Benzo(a)Anthracene | | | | | | | | | | | | | | | |
| bis(2-Ethylhexyl)Phthalate | | | | | | | | | | | | | | | |
| Chrysene | | | | | | | | | | | | | | | |
| Di-n-Octyl Phthalate | | | | | | | | | | | | | | | |
| Benzo(b)Fluoranthene | | | | | | | | | | | | | | | |
| Benzo(k)Fluoranthene | | | | 1.782 | 35.8 | J | | | | | | | | | |
| Benzo(a)Pyrene | | | | | | | | | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | | | | | | | | | | | | | | | |
| Dibenz(a,h)Anthracene | | | | | | | | | | | | | | | |
| Benzo(g,h,i) Perylene | 1.413 | 32.6 | J | | | | | | | | | | | | |

SEE PAGE 1 FOR AFFECTED SAMPLES.

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

Reviewer's Initials/Date: WW 11/17/89

Case: 12357

Contractor: PEI

TENTATIVELY IDENTIFIED COMPOUNDS
WATCH ASSESSMENT

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

CRITERIA

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

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

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

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

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

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

Reviewer's Initials/Date: [illegible] 11/17/89

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

CASE NO: [illegible] SAS NO. (IF APPLICABLE) [illegible]

# ORGANIC TRAFFIC REPORT

(FOR CLP USE ONLY)

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

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

REGION NO. IV
SAMPLING COMPANY ② MPCA
SAMPLER (NAME) Meri Lapp

SHIP TO: ③ PCI Associates, Inc. [illegible]
ATTN: [illegible]

SAMPLING DATE ④
BEGIN [illegible] END [illegible]

DATE SHIPPED [illegible] CARRIER [illegible] ⑤
AIRBILL NO. 3302877440

DATE REC'D. July 20, 1989
SDG NO. EEJ00 ⑥
REC'D BY: Dawn Webber 82500
LABORATORY CONTRACT NO 68-01-7467
UNIT PRICE

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

| CLP SAMPLE NUMBER (FROM LABELS) | Ⓐ SAMPLE DESCRIPTION (FROM BOX 1) 1 2 3 4 5 6 7 | Ⓑ CONCENTRATION L = LOW/MED H = HIGH (SAS) | Ⓒ RAS ANALYSIS: VOLATILE | BASE/NEUT /ACID | PESTICIDE /PCB's | | Ⓓ SPECIAL HANDLING | Ⓔ STATION LOCATION | Ⓕ SAMPLE CONDITION ON RECEIPT | Ⓖ HIGH CONC PHASES (CHECK): SOLID | WATER—MIS LIQUID | NON WATER—MIS LIQUID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EEJ00 | 2 | L | X | X | X | | | MW1 | Seals were | | | |
| EEJ01 | 2 | L | X | X | X | | | MW2 | attached and intact | | | |
| EEJ02 | 2 | L | X | X | X | | | MW3 | on coolers, Samples were | | | |
| EEJ03 | 2 | L | X | X | X | | | MW4 | received at 12.5 degrees | | | |
| EEJ04 | 2 | L | X | X | X | | | MW4 | celcius | | | |
| EEJ05 | 2 | L | X | X | X | | | FB | Tags matched good | | | |
| EEJ06 | 2 | L | X | | | | Last Sample of SDG | TB | expect for note about | | | |
| | — Sampling Complete — | | | | | | | | Sample EEJ04, | | | |
| | | | | | | | | | Tags had drip on | | | |
| | | | | | | | | | them instead of MW4. | | | |
| | | | | | | | | | Samples Were | | | |
| | | | | | | | | | all in good condition | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | July 20 1989 | | | |
| | | | | | | | | | Dawn Webber | | | |
| | | | | | | | | | 9:30AM | | | |

EPA Form 2075-7 (8-87)

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

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EEJ00

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-01B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: EEJ00

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. Date Analyzed: 7/28/89

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

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

1E

EPA SAMPLE NO. 000019

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EEJ00

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-01B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: EEJ00

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. Date Analyzed: 7/28/89

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

Number TICs found: 0

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

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

EPA SAMPLE NO.

EEJ01

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-02B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: EEJ01

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. Date Analyzed: 7/28/89

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

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

11/17/89
WR

1E

EPA SAMPLE NO.

EEJ01

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-02B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: EEJ01

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. Date Analyzed: 7/28/89

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

Number TICs found: 0

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

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

EPA SAMPLE NO.

EEJ02

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-070139-03B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: EEJ02

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. Date Analyzed: 7/28/89

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

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

1E

EPA SAMPLE NO.

EEJ02

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-070139-03B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: EEJ02

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. Date Analyzed: 7/28/89

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

Number TICs found: 1

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | 75-43-4 | METHANE, DICHLOROFLUORO- | 3.12 | 40. | J |
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EEJ03

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: EEJ03

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. Date Analyzed: 7/28/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | 10. | U |
| 74-83-9 | BROMOMETHANE | 10. | U |
| 75-01-4 | VINYL CHLORIDE | 10. | U |
| 75-00-3 | CHLOROETHANE | 10. | U |
| 75-09-2 | METHYLENE CHLORIDE | 6. | |
| 67-64-1 | ACETONE | 45. | ~~B~~ U |
| 75-15-0 | CARBON DISULFIDE | 5. | U |
| 75-35-4 | 1,1-DICHLOROETHENE | 5. | U |
| 75-34-3 | 1,1-DICHLOROETHANE | 5. | U |
| 540-59-0 | 1,2-DICHLOROETHENE (TOTAL) | 5. | U |
| 67-66-3 | CHLOROFORM | 5. | U |
| 107-06-2 | 1,2-DICHLOROETHANE | 5. | U |
| 78-93-3 | 2-BUTANONE | 16. | |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | 5. | U |
| 56-23-5 | CARBON TETRACHLORIDE | 5. | U |
| 108-05-4 | VINYL ACETATE | 10. | U |
| 75-27-4 | BROMODICHLOROMETHANE | 5. | U |
| 78-87-5 | 1,2-DICHLOROPROPANE | 5. | U |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | 5. | U |
| 79-01-6 | TRICHLOROETHENE | 5. | U |
| 124-48-1 | DIBROMOCHLOROMETHANE | 5. | U |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | 5. | U |
| 71-43-2 | BENZENE | 5. | U |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | 5. | U |
| 75-25-2 | BROMOFORM | 5. | U |
| 108-10-1 | 4-METHYL-2-PENTANONE | 10. | U |
| 591-78-6 | 2-HEXANONE | 27. | |
| 127-18-4 | TETRACHLOROETHENE | 5. | U |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | 5. | U |
| 108-88-3 | TOLUENE | 290. | E |
| 108-90-7 | CHLOROBENZENE | 5. | U |
| 100-41-4 | ETHYLBENZENE | 83. | |
| 100-42-5 | STYRENE | 5. | U |
| 1330-20-7 | XYLENE (TOTAL) | 5. | U |

11/17/89

1E

EPA SAMPLE NO.

EEJ03

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: EEJ03

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. Date Analyzed: 7/28/89

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

Number TICs found: 3

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | 75-43-4 | METHANE, DICHLOROFLUORO | 3.10 | 100. | J |
| 2. | - - | UNKNOWN KETONE | 7.80 | 10. | J |
| 3. | 110-43-0 | 2-HEPTANONE | 13.68 | 5. | J |
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EEJ03 DL

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-04B

Sample wt/vol: 1.000 (g/mL) ML Lab File ID: EEJ03DL

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. Date Analyzed: 8/10/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 50. | U |
| 74-83-9 | Bromomethane | 50. | U |
| 75-01-4 | Vinyl Chloride | 50. | U |
| 75-00-3 | Chloroethane | 50. | U |
| 75-09-2 | Methylene Chloride | 16. | ~~B~~ D U |
| 67-64-1 | Acetone | 69. | ~~B~~ U D |
| 75-15-0 | Carbon Disulfide | 25. | U |
| 75-35-4 | 1,1-Dichloroethene | 25. | U |
| 75-34-3 | 1,1-Dichloroethane | 25. | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 25. | U |
| 67-66-3 | Chloroform | 25. | U |
| 107-06-2 | 1,2-Dichloroethane | 25. | U |
| 78-93-3 | 2-Butanone | 50. | U |
| 71-55-6 | 1,1,1-Trichloroethane | 25. | U |
| 56-23-5 | Carbon Tetrachloride | 25. | U |
| 108-05-4 | Vinyl Acetate | 50. | U |
| 75-27-4 | Bromodichloromethane | 25. | U |
| 78-87-5 | 1,2-Dichloropropane | 25. | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 25. | U |
| 79-01-6 | Trichloroethene | 25. | U |
| 124-48-1 | Dibromochloromethane | 25. | U |
| 79-00-5 | 1,1,2-Trichloroethane | 25. | U |
| 71-43-2 | Benzene | 25. | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 25. | U |
| 75-25-2 | Bromoform | 25. | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 50. | U |
| 591-78-6 | 2-Hexanone | 25. | J D |
| 127-18-4 | Tetrachloroethene | 25. | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 25. | U |
| 108-88-3 | Toluene | 200. | D |
| 108-90-7 | Chlorobenzene | 36. | ~~B~~ U D |
| 100-41-4 | Ethylbenzene | 48. | D |
| 100-42-5 | Styrene | 25. | U |
| 1330-20-7 | Xylene (total) | 25. | U |

11/17/89

1E

EPA SAMPLE NO.

EEJ03 DL

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-04B

Sample wt/vol: 1.000 (g/mL) ML Lab File ID: EEJ03DL

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. Date Analyzed: 8/10/89

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

Number TICs found: 1

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | - - | UNKNOWN (aminated alkane) | 4.37 | 600. | J |
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EEJ04

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: EEJ04

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. Date Analyzed: 7/28/89

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

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

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EEJ04

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: EEJ04

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. Date Analyzed: 7/28/89

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

Number TICs found: 0

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

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

EPA SAMPLE NO.

EEJ05

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-06A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: EEJ05

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. Date Analyzed: 7/28/89

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

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

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EEJ05

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-06A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: EEJ05

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. Date Analyzed: 7/28/89

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

Number TICs found: 1

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. - - | UNKNOWN (Siloxane compound) | 6.23 | 5. | J |
| 2. | (possible/probable lab. contaminant) | | | |
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. 690677

EEJ06

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-07B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: EEJ06

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. Date Analyzed: 7/28/89

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

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

1E

EPA SAMPLE NO.

EEJ06

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-07B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: EEJ06

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. Date Analyzed: 7/28/89

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

Number TICs found: 0

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

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

EPA SAMPLE NO.

VBLKC8

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: VBLKC8

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: VBLKC8

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

% Moisture: not dec. 100. Date Analyzed: 7/28/89

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

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

1E

EPA SAMPLE NO.

VBLKC8

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: VBLKC8

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: VBLKC8

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

% Moisture: not dec. 100. Date Analyzed: 7/28/89

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

Number TICs found: 1

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | - - | UNKNOWN COLUMN BLEED | 10.42 | 6. | J |
| 2. | | | | | |
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKN7

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: VBLKN7

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: VBLKN7

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

% Moisture: not dec. 100. Date Analyzed: 8/10/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 10. | U |
| 74-83-9 | Bromomethane | 10. | U |
| 75-01-4 | Vinyl Chloride | 10. | U |
| 75-00-3 | Chloroethane | 10. | U |
| 75-09-2 | Methylene Chloride | 12. | |
| 67-64-1 | Acetone | 9. | J |
| 75-15-0 | Carbon Disulfide | 5. | U |
| 75-35-4 | 1,1-Dichloroethene | 5. | U |
| 75-34-3 | 1,1-Dichloroethane | 5. | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 5. | U |
| 67-66-3 | Chloroform | 5. | U |
| 107-06-2 | 1,2-Dichloroethane | 5. | U |
| 78-93-3 | 2-Butanone | 10. | U |
| 71-55-6 | 1,1,1-Trichloroethane | 5. | U |
| 56-23-5 | Carbon Tetrachloride | 5. | U |
| 108-05-4 | Vinyl Acetate | 10. | U |
| 75-27-4 | Bromodichloromethane | 5. | U |
| 78-87-5 | 1,2-Dichloropropane | 5. | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 5. | U |
| 79-01-6 | Trichloroethene | 5. | U |
| 124-48-1 | Dibromochloromethane | 5. | U |
| 79-00-5 | 1,1,2-Trichloroethane | 5. | U |
| 71-43-2 | Benzene | 5. | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 5. | U |
| 75-25-2 | Bromoform | 5. | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10. | U |
| 591-78-6 | 2-Hexanone | 10. | U |
| 127-18-4 | Tetrachloroethene | 5. | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 5. | U |
| 108-88-3 | Toluene | 5. | U |
| 108-90-7 | Chlorobenzene | 3. | J |
| 100-41-4 | Ethylbenzene | 5. | U |
| 100-42-5 | Styrene | 5. | U |
| 1330-20-7 | Xylene (total) | 5. | U |

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VBLKN7

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: VBLKN7

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: VBLKN7

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

% Moisture: not dec. 100. Date Analyzed: 8/10/89

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

Number TICs found: 0

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EEJ00

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-01A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: EEJ00RE

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec. _____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 1/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10. | U |
| 95-57-8 | 2-Chlorophenol | 10. | U |
| 541-73-1 | 1,3-Dichlorobenzene | 10. | U |
| 106-46-7 | 1,4-Dichlorobenzene | 10. | U |
| 100-51-6 | Benzyl alcohol | 10. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 10. | U |
| 95-48-7 | 2-Methylphenol | 10. | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 10. | U |
| 106-44-5 | 4-Methylphenol | 10. | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10. | U |
| 67-72-1 | Hexachloroethane | 10. | U |
| 98-95-3 | Nitrobenzene | 10. | U |
| 78-59-1 | Isophorone | 10. | U |
| 88-75-5 | 2-Nitrophenol | 10. | U |
| 105-67-9 | 2,4-Dimethylphenol | 10. | U |
| 65-85-0 | Benzoic acid | 50. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10. | U |
| 120-83-2 | 2,4-Dichlorophenol | 10. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10. | U |
| 91-20-3 | Naphthalene | 10. | U |
| 106-47-8 | 4-Chloroaniline | 10. | U |
| 87-68-3 | Hexachlorobutadiene | 10. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10. | U |
| 91-57-6 | 2-Methylnaphthalene | 10. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50. | U |
| 91-58-7 | 2-Chloronaphthalene | 10. | U |
| 88-74-4 | 2-Nitroaniline | 50. | U |
| 131-11-3 | Dimethylphthalate | 10. | U |
| 208-96-8 | Acenaphthylene | 10. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10. | U |

EPA SAMPLE NO. 179

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EEJ00

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-01A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: EEJ00RE

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec. _____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 1/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 50. | U |
| 83-32-9 | Acenaphthene | 10. | U |
| 51-28-5 | 2,4-Dinitrophenol | 50. | U |
| 100-02-7 | 4-Nitrophenol | 50. | U |
| 132-64-9 | Dibenzofuran | 10. | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10. | U |
| 84-66-2 | Diethylphthalate | 10. | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10. | U |
| 86-73-7 | Fluorene | 10. | U |
| 100-01-6 | 4-Nitroaniline | 50. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50. | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10. | U |
| 118-74-1 | Hexachlorobenzene | 10. | U |
| 87-86-5 | Pentachlorophenol | 50. | U |
| 85-01-8 | Phenanthrene | 10. | U |
| 120-12-7 | Anthracene | 10. | U |
| 84-74-2 | Di-n-butylphthalate | 4. | ~~B~~ U |
| 206-44-0 | Fluoranthene | 10. | U |
| 129-00-0 | Pyrene | 10. | U |
| 85-68-7 | Butylbenzylphthalate | 2. | ~~B~~ U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20. | U |
| 56-55-3 | Benzo(a)anthracene | 10. | U |
| 218-01-9 | Chrysene | 10. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 4. | ~~B~~ U |
| 117-84-0 | Di-n-octylphthalate | 10. | U |
| 205-99-2 | Benzo(b)fluoranthene | 10. | U |
| 207-08-9 | Benzo(k)fluoranthene | 10. | U |
| 50-32-8 | Benzo(a)pyrene | 10. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10. | U |

(1) - Cannot be separated from diphenylamine

4/17/8

1F

EPA SAMPLE NO. 060130

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EEJ00

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-01A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: EEJ00RE

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec. _____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 1/89

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

Number TICs found: 3

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | - - | UNKNOWN substituted alkane | 7.77 | 60. | BJ A |
| 2. | - - | UNKNOWN Carboxylic acid | 14.67 | 70. | J |
| 3. | - - | UNKNOWN " " | 26.35 | 8. | J |
| 4. | | | | | |
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EEJ01

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-02A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: EEJ01RE

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec. _____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 1/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10. | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10. | U |
| 95-57-8 | 2-Chlorophenol | 10. | U |
| 541-73-1 | 1,3-Dichlorobenzene | 10. | U |
| 106-46-7 | 1,4-Dichlorobenzene | 10. | U |
| 100-51-6 | Benzyl alcohol | 10. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 10. | U |
| 95-48-7 | 2-Methylphenol | 10. | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 10. | U |
| 106-44-5 | 4-Methylphenol | 10. | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10. | U |
| 67-72-1 | Hexachloroethane | 10. | U |
| 98-95-3 | Nitrobenzene | 10. | U |
| 78-59-1 | Isophorone | 10. | U |
| 88-75-5 | 2-Nitrophenol | 10. | U |
| 105-67-9 | 2,4-Dimethylphenol | 10. | U |
| 65-85-0 | Benzoic acid | 50. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10. | U |
| 120-83-2 | 2,4-Dichlorophenol | 10. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10. | U |
| 91-20-3 | Naphthalene | 10. | U |
| 106-47-8 | 4-Chloroaniline | 10. | U |
| 87-68-3 | Hexachlorobutadiene | 10. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10. | U |
| 91-57-6 | 2-Methylnaphthalene | 10. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50. | U |
| 91-58-7 | 2-Chloronaphthalene | 10. | U |
| 88-74-4 | 2-Nitroaniline | 50. | U |
| 131-11-3 | Dimethylphthalate | 10. | U |
| 208-96-8 | Acenaphthylene | 10. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10. | U |

1C

EPA SAMPLE NO. C00136

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EEJ01

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-02A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: EEJ01RE

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec. _____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 1/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 50. | U |
| 83-32-9 | Acenaphthene | 10. | U |
| 51-28-5 | 2,4-Dinitrophenol | 50. | U |
| 100-02-7 | 4-Nitrophenol | 50. | U |
| 132-64-9 | Dibenzofuran | 10. | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10. | U |
| 84-66-2 | Diethylphthalate | 10. | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10. | U |
| 86-73-7 | Fluorene | 10. | U |
| 100-01-6 | 4-Nitroaniline | 50. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50. | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10. | U |
| 118-74-1 | Hexachlorobenzene | 10. | U |
| 87-86-5 | Pentachlorophenol | 50. | U |
| 85-01-8 | Phenanthrene | 10. | U |
| 120-12-7 | Anthracene | 10. | U |
| 84-74-2 | Di-n-butylphthalate | 3. | ~~BJ~~ U |
| 206-44-0 | Fluoranthene | 10. | U |
| 129-00-0 | Pyrene | 10. | U |
| 85-68-7 | Butylbenzylphthalate | 1. | ~~BJ~~ U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20. | U |
| 56-55-3 | Benzo(a)anthracene | 10. | U |
| 218-01-9 | Chrysene | 10. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 3. | ~~BJ~~ U |
| 117-84-0 | Di-n-octylphthalate | 10. | U |
| 205-99-2 | Benzo(b)fluoranthene | 10. | U |
| 207-08-9 | Benzo(k)fluoranthene | 10. | U |
| 50-32-8 | Benzo(a)pyrene | 10. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10. | U |

11/17/89 [illegible]

(1) - Cannot be separated from diphenylamine

1F

EPA SAMPLE NO. 000137

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EEJ01

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-02A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: EEJ01RE

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec. _____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 1/89

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

Number TICs found: 2

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | - - | UNKNOWN | 7.75 | 50. | BJ A |
| 2. | - - | UNKNOWN subsh alkane | 10.38 | 10. | J A |
| 3. | | | | | |
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EEJ02

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-03A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: EEJ02RE2

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec. _____ Date Extracted: 8/ 4/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 7/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10. | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10. | U |
| 95-57-8 | 2-Chlorophenol | 10. | U |
| 541-73-1 | 1,3-Dichlorobenzene | 10. | U |
| 106-46-7 | 1,4-Dichlorobenzene | 10. | U |
| 100-51-6 | Benzyl alcohol | 10. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 10. | U |
| 95-48-7 | 2-Methylphenol | 10. | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 10. | U |
| 106-44-5 | 4-Methylphenol | 10. | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10. | U |
| 67-72-1 | Hexachloroethane | 10. | U |
| 98-95-3 | Nitrobenzene | 10. | U |
| 78-59-1 | Isophorone | 10. | U |
| 88-75-5 | 2-Nitrophenol | 10. | U |
| 105-67-9 | 2,4-Dimethylphenol | 10. | U |
| 65-85-0 | Benzoic acid | 50. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10. | U |
| 120-83-2 | 2,4-Dichlorophenol | 10. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10. | U |
| 91-20-3 | Naphthalene | 10. | U |
| 106-47-8 | 4-Chloroaniline | 10. | U |
| 87-68-3 | Hexachlorobutadiene | 10. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10. | U |
| 91-57-6 | 2-Methylnaphthalene | 10. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50. | U |
| 91-58-7 | 2-Chloronaphthalene | 10. | U |
| 88-74-4 | 2-Nitroaniline | 50. | U |
| 131-11-3 | Dimethylphthalate | 10. | U |
| 208-96-8 | Acenaphthylene | 10. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10. | U |

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EEJ02

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-03A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: EEJ02RE2

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec. _____ Date Extracted: 8/ 4/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 7/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 50. | U |
| 83-32-9 | Acenaphthene | 10. | U |
| 51-28-5 | 2,4-Dinitrophenol | 50. | U |
| 100-02-7 | 4-Nitrophenol | 50. | U |
| 132-64-9 | Dibenzofuran | 10. | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10. | U |
| 84-66-2 | Diethylphthalate | 10. | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10. | U |
| 86-73-7 | Fluorene | 10. | U |
| 100-01-6 | 4-Nitroaniline | 50. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50. | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10. | U |
| 118-74-1 | Hexachlorobenzene | 10. | U |
| 87-86-5 | Pentachlorophenol | 50. | U |
| 85-01-8 | Phenanthrene | 10. | U |
| 120-12-7 | Anthracene | 10. | U |
| 84-74-2 | Di-n-butylphthalate | 2. | ~~BJ~~ U |
| 206-44-0 | Fluoranthene | 10. | U |
| 129-00-0 | Pyrene | 10. | U |
| 85-68-7 | Butylbenzylphthalate | 1. | BJ |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20. | U |
| 56-55-3 | Benzo(a)anthracene | 10. | U |
| 218-01-9 | Chrysene | 10. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 6. | BJ |
| 117-84-0 | Di-n-octylphthalate | 10. | U |
| 205-99-2 | Benzo(b)fluoranthene | 10. | U |
| 207-08-9 | Benzo(k)fluoranthene | 10. | U |
| 50-32-8 | Benzo(a)pyrene | 10. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10. | U |

(1) - Cannot be separated from diphenylamine

4/17/8 [illegible]

1F

EPA SAMPLE NO.

EEJ02

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-03A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: EEJ02RE2

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec. _____ Date Extracted: 8/ 4/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 7/89

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

Number TICs found 3

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | - - | UNKNOWN | 7.80 | 90. | BJ A |
| 2. | - - | UNKNOWN (?) | 8.15 | 9. | J |
| 3. | - - | UNKNOWN Carbox. acid | 14.75 | 100. | J |
| 4. | | | | | |
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EEJ02 RE

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-03A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: EEJ02RX2

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec. _____ Date Extracted: 8/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/15/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10. | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10. | U |
| 95-57-8 | 2-Chlorophenol | 10. | U |
| 541-73-1 | 1,3-Dichlorobenzene | 10. | U |
| 106-46-7 | 1,4-Dichlorobenzene | 10. | U |
| 100-51-6 | Benzyl alcohol | 10. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 10. | U |
| 95-48-7 | 2-Methylphenol | 10. | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 10. | U |
| 106-44-5 | 4-Methylphenol | 10. | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10. | U |
| 67-72-1 | Hexachloroethane | 10. | U |
| 98-95-3 | Nitrobenzene | 10. | U |
| 78-59-1 | Isophorone | 10. | U |
| 88-75-5 | 2-Nitrophenol | 10. | U |
| 105-67-9 | 2,4-Dimethylphenol | 10. | U |
| 65-85-0 | Benzoic acid | 50. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10. | U |
| 120-83-2 | 2,4-Dichlorophenol | 10. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10. | U |
| 91-20-3 | Naphthalene | 10. | U |
| 106-47-8 | 4-Chloroaniline | 10. | U |
| 87-68-3 | Hexachlorobutadiene | 10. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10. | U |
| 91-57-6 | 2-Methylnaphthalene | 10. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50. | U |
| 91-58-7 | 2-Chloronaphthalene | 10. | U |
| 88-74-4 | 2-Nitroaniline | 50. | U |
| 131-11-3 | Dimethylphthalate | 10. | U |
| 208-96-8 | Acenaphthylene | 10. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10. | U |

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EEJ02 RE

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-03A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: EEJ02RX2

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec. _____ Date Extracted: 8/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/15/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 50. | U |
| 83-32-9 | Acenaphthene | 10. | U |
| 51-28-5 | 2,4-Dinitrophenol | 50. | U |
| 100-02-7 | 4-Nitrophenol | 50. | U |
| 132-64-9 | Dibenzofuran | 10. | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10. | U |
| 84-66-2 | Diethylphthalate | 10. | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10. | U |
| 86-73-7 | Fluorene | 10. | U |
| 100-01-6 | 4-Nitroaniline | 50. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50. | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10. | U |
| 118-74-1 | Hexachlorobenzene | 10. | U |
| 87-86-5 | Pentachlorophenol | 50. | U |
| 85-01-8 | Phenanthrene | 10. | U |
| 120-12-7 | Anthracene | 10. | U |
| 84-74-2 | Di-n-butylphthalate | 10. | U |
| 206-44-0 | Fluoranthene | 10. | U |
| 129-00-0 | Pyrene | 10. | U |
| 85-68-7 | Butylbenzylphthalate | 10. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20. | U |
| 56-55-3 | Benzo(a)anthracene | 10. | U |
| 218-01-9 | Chrysene | 10. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 4. | ~~JB~~ U |
| 117-84-0 | Di-n-octylphthalate | 10. | U |
| 205-99-2 | Benzo(b)fluoranthene | 10. | U |
| 207-08-9 | Benzo(k)fluoranthene | 10. | U |
| 50-32-8 | Benzo(a)pyrene | 10. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10. | U |

(1) - Cannot be separated from diphenylamine

11/17/89 [illegible]

1F

EPA SAMPLE NO.

EEJ02 RE

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-03A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: EEJ02RX2

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec. _____ Date Extracted: 8/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/15/89

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

Number TICs found: 4

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. - - | UNKNOWN (azo-compound) | 7.88 | 9. | J |
| 2. - - | UNKNOWN (~~chlorinated~~ alcohol) | 13.45 | 8. | J |
| 3. - - | UNKNOWN (?) | 27.15 | 10. | J |
| 4. - - | UNKNOWN aromatic | 30.82 | 10. | J |
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: EEJ03

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-04A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: EEJ03

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec. _____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 7/31/89

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 58. | |
| 111-44-4 | bis(2-Chloroethyl)ether | 10. | U |
| 95-57-8 | 2-Chlorophenol | 10. | U |
| 541-73-1 | 1,3-Dichlorobenzene | 10. | U |
| 106-46-7 | 1,4-Dichlorobenzene | 10. | U |
| 100-51-6 | Benzyl alcohol | 10. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 10. | U |
| 95-48-7 | 2-Methylphenol | 10. | |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 10. | U |
| 106-44-5 | 4-Methylphenol | 81. | |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10. | U |
| 67-72-1 | Hexachloroethane | 10. | U |
| 98-95-3 | Nitrobenzene | 10. | U |
| 78-59-1 | Isophorone | 10. | U |
| 88-75-5 | 2-Nitrophenol | 10. | U |
| 105-67-9 | 2,4-Dimethylphenol | 10. | U |
| 65-85-0 | Benzoic acid | 180. | |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10. | U |
| 120-83-2 | 2,4-Dichlorophenol | 10. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10. | U |
| 91-20-3 | Naphthalene | 10. | U |
| 106-47-8 | 4-Chloroaniline | 10. | U |
| 87-68-3 | Hexachlorobutadiene | 10. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10. | U |
| 91-57-6 | 2-Methylnaphthalene | 10. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50. | U |
| 91-58-7 | 2-Chloronaphthalene | 10. | U |
| 88-74-4 | 2-Nitroaniline | 50. | U |
| 131-11-3 | Dimethylphthalate | 10. | U |
| 208-96-8 | Acenaphthylene | 10. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10. | U |

EPA SAMPLE NO. 000244

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EEJ03

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-04A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: EEJ03

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec. _____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 7/31/89

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 50. | U |
| 83-32-9 | Acenaphthene | 10. | U |
| 51-28-5 | 2,4-Dinitrophenol | 50. | U |
| 100-02-7 | 4-Nitrophenol | 50. | U |
| 132-64-9 | Dibenzofuran | 10. | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10. | U |
| 84-66-2 | Diethylphthalate | 10. | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10. | U |
| 86-73-7 | Fluorene | 10. | U |
| 100-01-6 | 4-Nitroaniline | 50. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50. | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10. | U |
| 118-74-1 | Hexachlorobenzene | 10. | U |
| 87-86-5 | Pentachlorophenol | 50. | U |
| 85-01-8 | Phenanthrene | 10. | U |
| 120-12-7 | Anthracene | 10. | U |
| 84-74-2 | Di-n-butylphthalate | 2. | ~~JB~~ U 11/17/8 |
| 206-44-0 | Fluoranthene | 10. | U |
| 129-00-0 | Pyrene | 10. | U |
| 85-68-7 | Butylbenzylphthalate | 10. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20. | U |
| 56-55-3 | Benzo(a)anthracene | 10. | U |
| 218-01-9 | Chrysene | 10. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 1. | ~~JB~~ U |
| 117-84-0 | Di-n-octylphthalate | 10. | U |
| 205-99-2 | Benzo(b)fluoranthene | 10. | U |
| 207-08-9 | Benzo(k)fluoranthene | 10. | U |
| 50-32-8 | Benzo(a)pyrene | 10. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10. | U |

(1) - Cannot be separated from diphenylamine

1F

EPA SAMPLE NO. 00 0 2 1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EEJ03

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-04A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: EEJ03

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec. _____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 7/31/89

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 1.00

Number TICs found: 11

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. - - | UNKNOWN ketone | 7.65 | 20. | J BA |
| 2. - - | UNKNOWN subst. alkene | 7.98 | 100. | J BA |
| 3 - - | UNKNOWN carb. acid | 8.57 | 100. | J BA |
| 4. - - | UNKNOWN " " | 8.95 | 200. | J BA |
| 5. - - | UNKNOWN Ketone or alcohol | 10.43 | 10. | J BA |
| 6. - - | UNKNOWN " " | 11.70 | 20. | J |
| 7. - - | UNKNOWN (?) | 11.83 | 10. | J |
| 8. - - | UNKNOWN carb. acid | 12.70 | 30. | J |
| 9. - - | UNKNOWN AROMATIC | 14.38 | 10. | J |
| 10. - - | UNKNOWN (?) | 14.68 | 20. | J |
| 11. - - | UNKNOWN (terpin) | 15.32 | 9. | J |
| 12. | | | | |
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EEJ04

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-05A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: EEJ04RE

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec. _____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 1/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 40. | |
| 111-44-4 | bis(2-Chloroethyl)ether | 10. | U |
| 95-57-8 | 2-Chlorophenol | 10. | U |
| 541-73-1 | 1,3-Dichlorobenzene | 10. | U |
| 106-46-7 | 1,4-Dichlorobenzene | 10. | U |
| 100-51-6 | Benzyl alcohol | 10. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 10. | U |
| 95-48-7 | 2-Methylphenol | 7. | J |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 10. | U |
| 106-44-5 | 4-Methylphenol | 62. | |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10. | U |
| 67-72-1 | Hexachloroethane | 10. | U |
| 98-95-3 | Nitrobenzene | 10. | U |
| 78-59-1 | Isophorone | 10. | U |
| 88-75-5 | 2-Nitrophenol | 10. | U |
| 105-67-9 | 2,4-Dimethylphenol | 10. | U |
| 65-85-0 | Benzoic acid | 50. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10. | U |
| 120-83-2 | 2,4-Dichlorophenol | 10. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10. | U |
| 91-20-3 | Naphthalene | 10. | U |
| 106-47-8 | 4-Chloroaniline | 10. | U |
| 87-68-3 | Hexachlorobutadiene | 10. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10. | U |
| 91-57-6 | 2-Methylnaphthalene | 10. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50. | U |
| 91-58-7 | 2-Chloronaphthalene | 10. | U |
| 88-74-4 | 2-Nitroaniline | 50. | U |
| 131-11-3 | Dimethylphthalate | 10. | U |
| 208-96-8 | Acenaphthylene | 10. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10. | U |

1C

EPA SAMPLE NO. 000272

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EEJ04

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-05A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: EEJ04RE

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec. _____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 1/89

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

| CAS NO | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 50. | U |
| 83-32-9 | Acenaphthene | 10. | U |
| 51-28-5 | 2,4-Dinitrophenol | 50. | U |
| 100-02-7 | 4-Nitrophenol | 50. | U |
| 132-64-9 | Dibenzofuran | 10. | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10. | U |
| 84-66-2 | Diethylphthalate | 10. | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10. | U |
| 86-73-7 | Fluorene | 10. | U |
| 100-01-6 | 4-Nitroaniline | 50. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50. | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10. | U |
| 118-74-1 | Hexachlorobenzene | 10. | U |
| 87-86-5 | Pentachlorophenol | 50. | U |
| 85-01-8 | Phenanthrene | 10. | U |
| 120-12-7 | Anthracene | 10. | U |
| 84-74-2 | Di-n-butylphthalate | 4. | ~~TBJ~~ U |
| 206-44-0 | Fluoranthene | 10. | U |
| 129-00-0 | Pyrene | 10. | U |
| 85-68-7 | Butylbenzylphthalate | 2. | ~~TBJ~~ U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20. | U |
| 56-55-3 | Benzo(a)anthracene | 10. | U |
| 218-01-9 | Chrysene | 10. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 3. | ~~TBJ~~ U |
| 117-84-0 | Di-n-octylphthalate | 10. | U |
| 205-99-2 | Benzo(b)fluoranthene | 10. | U |
| 207-08-9 | Benzo(k)fluoranthene | 10. | U |
| 50-32-8 | Benzo(a)pyrene | 10. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10. | U |

11/17/89

(1) - Cannot be separated from diphenylamine

1F

CC0273 EPA SAMPLE NO

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EEJ04

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-05A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: EEJ04RE

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec. _____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 1/89

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

Number TICs found: 16

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | - - | UNKNOWN Ketone | 7.65 | 20. | JBA |
| 2. | - - | UNKNOWN Subs. Alkane | 7.92 | 80. | J |
| 3. | - - | UNKNOWN Carb. acid | 8.47 | 100. | J |
| 4. | - - | UNKNOWN " " | 8.78 | 200. | J |
| 5. | - - | UNKNOWN " " | 8.87 | 50. | J |
| 6. | - - | UNKNOWN " " | 9.10 | 10. | J |
| 7. | - - | UNKNOWN (?) | 11.28 | 30. | J |
| 8. | - - | UNKNOWN (?) | 11.68 | 30. | J |
| 9. | - - | UNKNOWN carb. acid | 11.85 | 9. | J |
| 10. | - - | UNKNOWN " " | 12.53 | 40. | J |
| 11. | - - | UNKNOWN " " | 12.70 | 20. | J |
| 12. | - - | UNKNOWN subst phenol | 12.98 | 30. | J |
| 13. | - - | UNKNOWN carb. acid | 14.78 | 60. | J |
| 14. | - - | UNKNOWN carb. acid | 15.97 | 10. | J |
| 15. | - - | UNKNOWN (?) | 26.42 | 9. | J |
| 16. | 85-60-9 | Phenol, 4,4'-butylidenebis[2 | 31.62 | 30. | J |
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EEJ05

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-06A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: EEJ05

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec. _____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 1/89

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10. | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10. | U |
| 95-57-8 | 2-Chlorophenol | 10. | U |
| 541-73-1 | 1,3-Dichlorobenzene | 10. | U |
| 106-46-7 | 1,4-Dichlorobenzene | 10. | U |
| 100-51-6 | Benzyl alcohol | 10. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 10. | U |
| 95-48-7 | 2-Methylphenol | 10. | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 10. | U |
| 106-44-5 | 4-Methylphenol | 10. | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10. | U |
| 67-72-1 | Hexachloroethane | 10. | U |
| 98-95-3 | Nitrobenzene | 10. | U |
| 78-59-1 | Isophorone | 10. | U |
| 88-75-5 | 2-Nitrophenol | 10. | U |
| 105-67-9 | 2,4-Dimethylphenol | 10. | U |
| 65-85-0 | Benzoic acid | 50. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10. | U |
| 120-83-2 | 2,4-Dichlorophenol | 10. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10. | U |
| 91-20-3 | Naphthalene | 10. | U |
| 106-47-8 | 4-Chloroaniline | 10. | U |
| 87-68-3 | Hexachlorobutadiene | 10. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10. | U |
| 91-57-6 | 2-Methylnaphthalene | 10. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50. | U |
| 91-58-7 | 2-Chloronaphthalene | 10. | U |
| 88-74-4 | 2-Nitroaniline | 50. | U |
| 131-11-3 | Dimethylphthalate | 10. | U |
| 208-96-8 | Acenaphthylene | 10. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10. | U |

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

~~000005~~

EEJ05

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-06A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: EEJ05

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec. _____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 1/89

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 50. | U |
| 83-32-9 | Acenaphthene | 10. | U |
| 51-28-5 | 2,4-Dinitrophenol | 50. | U |
| 100-02-7 | 4-Nitrophenol | 50. | U |
| 132-64-9 | Dibenzofuran | 10. | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10. | U |
| 84-66-2 | Diethylphthalate | 10. | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10. | U |
| 86-73-7 | Fluorene | 10. | U |
| 100-01-6 | 4-Nitroaniline | 50. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50. | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10. | U |
| 118-74-1 | Hexachlorobenzene | 10. | U |
| 87-86-5 | Pentachlorophenol | 50. | U |
| 85-01-8 | Phenanthrene | 10. | U |
| 120-12-7 | Anthracene | 10. | U |
| 84-74-2 | Di-n-butylphthalate | 3. | ~~JB~~ U |
| 206-44-0 | Fluoranthene | 10. | U |
| 129-00-0 | Pyrene | 10. | U |
| 85-68-7 | Butylbenzylphthalate | 10. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20. | U |
| 56-55-3 | Benzo(a)anthracene | 10. | U |
| 218-01-9 | Chrysene | 10. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 1.0 | ~~JB~~ U |
| 117-84-0 | Di-n-octylphthalate | 10. | U |
| 205-99-2 | Benzo(b)fluoranthene | 10. | U |
| 207-08-9 | Benzo(k)fluoranthene | 10. | U |
| 50-32-8 | Benzo(a)pyrene | 10. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10. | U |

11/17/8

(1) - Cannot be separated from diphenylamine

1F

EPA SAMPLE NO. 00306

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EEJ05

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-06A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: EEJ05

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec. _____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 1/89

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 1.00

Number TICs found: 1

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. - - | UNKNOWN | 7.80 | 100. | BJ A |
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKR6

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: SBLKR6

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: SBLKE6RE

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

% Moisture: not dec. 100. dec. _____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 1/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10. | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10. | U |
| 95-57-8 | 2-Chlorophenol | 10. | U |
| 541-73-1 | 1,3-Dichlorobenzene | 10. | U |
| 106-46-7 | 1,4-Dichlorobenzene | 10. | U |
| 100-51-6 | Benzyl alcohol | 10. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 10. | U |
| 95-48-7 | 2-Methylphenol | 10. | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 10. | U |
| 106-44-5 | 4-Methylphenol | 10. | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10. | U |
| 67-72-1 | Hexachloroethane | 10. | U |
| 98-95-3 | Nitrobenzene | 10. | U |
| 78-59-1 | Isophorone | 10. | U |
| 88-75-5 | 2-Nitrophenol | 10. | U |
| 105-67-9 | 2,4-Dimethylphenol | 10. | U |
| 65-85-0 | Benzoic acid | 50. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10. | U |
| 120-83-2 | 2,4-Dichlorophenol | 10. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10. | U |
| 91-20-3 | Naphthalene | 10. | U |
| 106-47-8 | 4-Chloroaniline | 10. | U |
| 87-68-3 | Hexachlorobutadiene | 10. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10. | U |
| 91-57-6 | 2-Methylnaphthalene | 10. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50. | U |
| 91-58-7 | 2-Chloronaphthalene | 10. | U |
| 88-74-4 | 2-Nitroaniline | 50. | U |
| 131-11-3 | Dimethylphthalate | 10. | U |
| 208-96-8 | Acenaphthylene | 10. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10. | U |

000439 EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SBLKR6

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: SBLKR6

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: SBLKE6RE

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

% Moisture: not dec. 100. dec. _____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 1/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 50. | U |
| 83-32-9 | Acenaphthene | 10. | U |
| 51-28-5 | 2,4-Dinitrophenol | 50. | U |
| 100-02-7 | 4-Nitrophenol | 50. | U |
| 132-64-9 | Dibenzofuran | 10. | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10. | U |
| 84-66-2 | Diethylphthalate | 10. | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10. | U |
| 86-73-7 | Fluorene | 10. | U |
| 100-01-6 | 4-Nitroaniline | 50. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50. | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10. | U |
| 118-74-1 | Hexachlorobenzene | 10. | U |
| 87-86-5 | Pentachlorophenol | 50. | U |
| 85-01-8 | Phenanthrene | 10. | U |
| 120-12-7 | Anthracene | 10. | U |
| 84-74-2 | Di-n-butylphthalate | 3. | J |
| 206-44-0 | Fluoranthene | 10. | U |
| 129-00-0 | Pyrene | 10. | U |
| 85-68-7 | Butylbenzylphthalate | 1. | J |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20. | U |
| 56-55-3 | Benzo(a)anthracene | 10. | U |
| 218-01-9 | Chrysene | 10. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 1. | J |
| 117-84-0 | Di-n-octylphthalate | 10. | U |
| 205-99-2 | Benzo(b)fluoranthene | 10. | U |
| 207-08-9 | Benzo(k)fluoranthene | 10. | U |
| 50-32-8 | Benzo(a)pyrene | 10. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10. | U |

(1) - Cannot be separated from diphenylamine

1F

000440 EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SBLKR6

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: SBLKR6

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: SBLKE6RE

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

% Moisture: not dec. 100. dec. _____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 1/89

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

Number TICs found: 1

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. - - | UNKNOWN | 7.82 | 100. | J A |
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKI1

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: SBLKI1

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: SBLKI1

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

% Moisture: not dec. 100. dec. _____ Date Extracted: 8/ 4/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 7/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10. | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10. | U |
| 95-57-8 | 2-Chlorophenol | 10. | U |
| 541-73-1 | 1,3-Dichlorobenzene | 10. | U |
| 106-46-7 | 1,4-Dichlorobenzene | 10. | U |
| 100-51-6 | Benzyl alcohol | 10. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 10. | U |
| 95-48-7 | 2-Methylphenol | 10. | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 10. | U |
| 106-44-5 | 4-Methylphenol | 10. | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10. | U |
| 67-72-1 | Hexachloroethane | 10. | U |
| 98-95-3 | Nitrobenzene | 10. | U |
| 78-59-1 | Isophorone | 10. | U |
| 88-75-5 | 2-Nitrophenol | 10. | U |
| 105-67-9 | 2,4-Dimethylphenol | 10. | U |
| 65-85-0 | Benzoic acid | 50. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10. | U |
| 120-83-2 | 2,4-Dichlorophenol | 10. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10. | U |
| 91-20-3 | Naphthalene | 10. | U |
| 106-47-8 | 4-Chloroaniline | 10. | U |
| 87-68-3 | Hexachlorobutadiene | 10. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10. | U |
| 91-57-6 | 2-Methylnaphthalene | 10. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50. | U |
| 91-58-7 | 2-Chloronaphthalene | 10. | U |
| 88-74-4 | 2-Nitroaniline | 50. | U |
| 131-11-3 | Dimethylphthalate | 10. | U |
| 208-96-8 | Acenaphthylene | 10. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10. | U |

1C

000433

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SBLKI1

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: SBLKI1

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: SBLKI1

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

% Moisture: not dec. 100. dec. _____ Date Extracted: 8/ 4/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 7/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 50. | U |
| 83-32-9 | Acenaphthene | 10. | U |
| 51-28-5 | 2,4-Dinitrophenol | 50. | U |
| 100-02-7 | 4-Nitrophenol | 50. | U |
| 132-64-9 | Dibenzofuran | 10. | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10. | U |
| 84-66-2 | Diethylphthalate | 10. | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10. | U |
| 86-73-7 | Fluorene | 10. | U |
| 100-01-6 | 4-Nitroaniline | 50. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50. | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10. | U |
| 118-74-1 | Hexachlorobenzene | 10. | U |
| 87-86-5 | Pentachlorophenol | 50. | U |
| 85-01-8 | Phenanthrene | 10. | U |
| 120-12-7 | Anthracene | 10. | U |
| 84-74-2 | Di-n-butylphthalate | 2. | J |
| 206-44-0 | Fluoranthene | 10. | U |
| 129-00-0 | Pyrene | 10. | U |
| 85-68-7 | Butylbenzylphthalate | 10. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20. | U |
| 56-55-3 | Benzo(a)anthracene | 10. | U |
| 218-01-9 | Chrysene | 10. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 10. | U |
| 117-84-0 | Di-n-octylphthalate | 10. | U |
| 205-99-2 | Benzo(b)fluoranthene | 10. | U |
| 207-08-9 | Benzo(k)fluoranthene | 10. | U |
| 50-32-8 | Benzo(a)pyrene | 10. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10. | U |

(1) - Cannot be separated from diphenylamine

1F

000434

EPA SAMPLE NO.

SBLKI1

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: SBLKI1

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: SBLKI1

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

% Moisture: not dec. 100. dec. _____ Date Extracted: 8/ 4/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 7/89

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

Number TICs found: 1

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | - - | UNKNOWN | 7.83 | 90. | J A |
| 2. | | | | | |
| 3. | | | | | |
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKM5

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: SBLKM5

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: SBLKM5

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

% Moisture: not dec. 100. dec. _____ Date Extracted: 8/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/16/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10. | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10. | U |
| 95-57-8 | 2-Chlorophenol | 10. | U |
| 541-73-1 | 1,3-Dichlorobenzene | 10. | U |
| 106-46-7 | 1,4-Dichlorobenzene | 10. | U |
| 100-51-6 | Benzyl alcohol | 10. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 10. | U |
| 95-48-7 | 2-Methylphenol | 10. | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 10. | U |
| 106-44-5 | 4-Methylphenol | 10. | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10. | U |
| 67-72-1 | Hexachloroethane | 10. | U |
| 98-95-3 | Nitrobenzene | 10. | U |
| 78-59-1 | Isophorone | 10. | U |
| 88-75-5 | 2-Nitrophenol | 10. | U |
| 105-67-9 | 2,4-Dimethylphenol | 10. | U |
| 65-85-0 | Benzoic acid | 50. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10. | U |
| 120-83-2 | 2,4-Dichlorophenol | 10. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10. | U |
| 91-20-3 | Naphthalene | 10. | U |
| 106-47-8 | 4-Chloroaniline | 10. | U |
| 87-68-3 | Hexachlorobutadiene | 10. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10. | U |
| 91-57-6 | 2-Methylnaphthalene | 10. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50. | U |
| 91-58-7 | 2-Chloronaphthalene | 10. | U |
| 88-74-4 | 2-Nitroaniline | 50. | U |
| 131-11-3 | Dimethylphthalate | 10. | U |
| 208-96-8 | Acenaphthylene | 10. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10. | U |

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SBLKM5

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: SBLKM5

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: SBLKM5

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

% Moisture: not dec. 100. dec. _____ Date Extracted: 8/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/16/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 50. | U |
| 83-32-9 | Acenaphthene | 10. | U |
| 51-28-5 | 2,4-Dinitrophenol | 50. | U |
| 100-02-7 | 4-Nitrophenol | 50. | U |
| 132-64-9 | Dibenzofuran | 10. | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10. | U |
| 84-66-2 | Diethylphthalate | 10. | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10. | U |
| 86-73-7 | Fluorene | 10. | U |
| 100-01-6 | 4-Nitroaniline | 50. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50. | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10. | U |
| 118-74-1 | Hexachlorobenzene | 10. | U |
| 87-86-5 | Pentachlorophenol | 50. | U |
| 85-01-8 | Phenanthrene | 10. | U |
| 120-12-7 | Anthracene | 10. | U |
| 84-74-2 | Di-n-butylphthalate | 10. | U |
| 206-44-0 | Fluoranthene | 10. | U |
| 129-00-0 | Pyrene | 10. | U |
| 85-68-7 | Butylbenzylphthalate | 10. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20. | U |
| 56-55-3 | Benzo(a)anthracene | 10. | U |
| 218-01-9 | Chrysene | 10. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 3. | J |
| 117-84-0 | Di-n-octylphthalate | 10. | U |
| 205-99-2 | Benzo(b)fluoranthene | 10. | U |
| 207-08-9 | Benzo(k)fluoranthene | 10. | U |
| 50-32-8 | Benzo(a)pyrene | 10. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10. | U |

(1) - Cannot be separated from diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SBLKM5

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: SBLKM5

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: SBLKM5

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

% Moisture: not dec. 100. dec. _____ Date Extracted: 8/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/16/89

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

Number TICs found: 1

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | - - | UNKNOWN | 7.52 | 20. | J A |
| 2. | | | | | |
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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EEJ00

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-01A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: DNP000

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec._____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 3/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | .050 | U |
| 319-85-7 | beta-BHC | .050 | U |
| 319-86-8 | delta-BHC | .050 | U |
| 58-89-9 | gamma-BHC | .050 | U |
| 76-44-8 | Heptachlor | .050 | U |
| 309-00-2 | Aldrin | .050 | U |
| 1024-57-3 | Heptachlor epoxide | .050 | U |
| 959-98-8 | Endosulfan I | .050 | U |
| 60-57-1 | Dieldrin | .10 | U |
| 72-55-9 | 4,4'-DDE | .10 | U |
| 72-20-8 | Endrin | .10 | U |
| 33213-65-9 | Endosulfan II | .10 | U |
| 72-54-8 | 4,4'-DDD | .10 | U |
| 1031-07-8 | Endosulfan sulfate | .10 | U |
| 50-29-3 | 4,4'-DDT | .10 | U |
| 72-43-5 | Methoxychlor | .50 | U |
| 53494-70-5 | Endrin ketone | .10 | U |
| 5103-71-9 | alpha-Chlordane | .50 | U |
| 5103-74-2 | gamma-Chlordane | .50 | U |
| 8001-35-2 | Toxaphene | 1.0 | U |
| 12674-11-2 | Aroclor-1016 | .50 | U |
| 11104-28-2 | Aroclor-1221 | .50 | U |
| 11141-16-5 | Aroclor-1232 | .50 | U |
| 53469-21-9 | Aroclor-1242 | .50 | U |
| 12672-29-6 | Aroclor-1248 | .50 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |

000502

EPA SAMPLE NO.

EEJ01

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-02A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: DNP001

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec._____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 3/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | .050 | U |
| 319-85-7 | beta-BHC | .050 | U |
| 319-86-8 | delta-BHC | .050 | U |
| 58-89-9 | gamma-BHC | .050 | U |
| 76-44-8 | Heptachlor | .050 | U |
| 309-00-2 | Aldrin | .050 | U |
| 1024-57-3 | Heptachlor epoxide | .050 | U |
| 959-98-8 | Endosulfan I | .050 | U |
| 60-57-1 | Dieldrin | .10 | U |
| 72-55-9 | 4,4'-DDE | .10 | U |
| 72-20-8 | Endrin | .10 | U |
| 33213-65-9 | Endosulfan II | .10 | U |
| 72-54-8 | 4,4'-DDD | .10 | U |
| 1031-07-8 | Endosulfan sulfate | .10 | U |
| 50-29-3 | 4,4'-DDT | .10 | U |
| 72-43-5 | Methoxychlor | .50 | U |
| 53494-70-5 | Endrin ketone | .10 | U |
| 5103-71-9 | alpha-Chlordane | .50 | U |
| 5103-74-2 | gamma-Chlordane | .50 | U |
| 8001-35-2 | Toxaphene | 1.0 | U |
| 12674-11-2 | Aroclor-1016 | .50 | U |
| 11104-28-2 | Aroclor-1221 | .50 | U |
| 11141-16-5 | Aroclor-1232 | .50 | U |
| 53469-21-9 | Aroclor-1242 | .50 | U |
| 12672-29-6 | Aroclor-1248 | .50 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EEJ02

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-03A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: DNP002

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec._____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 3/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | .050 | U |
| 319-85-7 | beta-BHC | .050 | U |
| 319-86-8 | delta-BHC | .050 | U |
| 58-89-9 | gamma-BHC | .050 | U |
| 76-44-8 | Heptachlor | .050 | U |
| 309-00-2 | Aldrin | .050 | U |
| 1024-57-3 | Heptachlor epoxide | .050 | U |
| 959-98-8 | Endosulfan I | .050 | U |
| 60-57-1 | Dieldrin | .10 | U |
| 72-55-9 | 4,4'-DDE | .10 | U |
| 72-20-8 | Endrin | .10 | U |
| 33213-65-9 | Endosulfan II | .10 | U |
| 72-54-8 | 4,4'-DDD | .10 | U |
| 1031-07-8 | Endosulfan sulfate | .10 | U |
| 50-29-3 | 4,4'-DDT | .10 | U |
| 72-43-5 | Methoxychlor | .50 | U |
| 53494-70-5 | Endrin ketone | .10 | U |
| 5103-71-9 | alpha-Chlordane | .50 | U |
| 5103-74-2 | gamma-Chlordane | .50 | U |
| 8001-35-2 | Toxaphene | 1.0 | U |
| 12674-11-2 | Aroclor-1016 | .50 | U |
| 11104-28-2 | Aroclor-1221 | .50 | U |
| 11141-16-5 | Aroclor-1232 | .50 | U |
| 53469-21-9 | Aroclor-1242 | .50 | U |
| 12672-29-6 | Aroclor-1248 | .50 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EEJ03

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-04A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: DNP003

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec._____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 3/89

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | .050 | U |
| 319-85-7 | beta-BHC | .050 | U |
| 319-86-8 | delta-BHC | .050 | U |
| 58-89-9 | gamma-BHC | .050 | U |
| 76-44-8 | Heptachlor | .050 | U |
| 309-00-2 | Aldrin | .050 | U |
| 1024-57-3 | Heptachlor epoxide | .050 | U |
| 959-98-8 | Endosulfan I | .050 | U |
| 60-57-1 | Dieldrin | .10 | U |
| 72-55-9 | 4,4'-DDE | .10 | U |
| 72-20-8 | Endrin | .10 | U |
| 33213-65-9 | Endosulfan II | .10 | U |
| 72-54-8 | 4,4'-DDD | .10 | U |
| 1031-07-8 | Endosulfan sulfate | .10 | U |
| 50-29-3 | 4,4'-DDT | .10 | U |
| 72-43-5 | Methoxychlor | .50 | U |
| 53494-70-5 | Endrin ketone | .10 | U |
| 5103-71-9 | alpha-Chlordane | .50 | U |
| 5103-74-2 | gamma-Chlordane | .50 | U |
| 8001-35-2 | Toxaphene | 1.0 | U |
| 12674-11-2 | Aroclor-1016 | .50 | U |
| 11104-28-2 | Aroclor-1221 | .50 | U |
| 11141-16-5 | Aroclor-1232 | .50 | U |
| 53469-21-9 | Aroclor-1242 | .50 | U |
| 12672-29-6 | Aroclor-1248 | .50 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EEJ04

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-05A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: DNP004

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec._____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 3/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | .050 | U |
| 319-85-7 | beta-BHC | .050 | U |
| 319-86-8 | delta-BHC | .050 | U |
| 58-89-9 | gamma-BHC | .050 | U |
| 76-44-8 | Heptachlor | .050 | U |
| 309-00-2 | Aldrin | .050 | U |
| 1024-57-3 | Heptachlor epoxide | .050 | U |
| 959-98-8 | Endosulfan I | .050 | U |
| 60-57-1 | Dieldrin | .10 | U |
| 72-55-9 | 4,4'-DDE | .10 | U |
| 72-20-8 | Endrin | .10 | U |
| 33213-65-9 | Endosulfan II | .10 | U |
| 72-54-8 | 4,4'-DDD | .10 | U |
| 1031-07-8 | Endosulfan sulfate | .10 | U |
| 50-29-3 | 4,4'-DDT | .10 | U |
| 72-43-5 | Methoxychlor | .50 | U |
| 53494-70-5 | Endrin ketone | .10 | U |
| 5103-71-9 | alpha-Chlordane | .50 | U |
| 5103-74-2 | gamma-Chlordane | .50 | U |
| 8001-35-2 | Toxaphene | 1.0 | U |
| 12674-11-2 | Aroclor-1016 | .50 | U |
| 11104-28-2 | Aroclor-1221 | .50 | U |
| 11141-16-5 | Aroclor-1232 | .50 | U |
| 53469-21-9 | Aroclor-1242 | .50 | U |
| 12672-29-6 | Aroclor-1248 | .50 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EEJ05

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: T9-07-139-06A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: DNP005

Level: (low/med) LOW Date Received: 7/20/89

% Moisture: not dec. 100. dec._____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 3/89

GPC Cleanup: (Y/N) N pH: 8.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | .050 | U |
| 319-85-7 | beta-BHC | .050 | U |
| 319-86-8 | delta-BHC | .050 | U |
| 58-89-9 | gamma-BHC | .050 | U |
| 76-44-8 | Heptachlor | .050 | U |
| 309-00-2 | Aldrin | .050 | U |
| 1024-57-3 | Heptachlor epoxide | .050 | U |
| 959-98-8 | Endosulfan I | .050 | U |
| 60-57-1 | Dieldrin | .10 | U |
| 72-55-9 | 4,4'-DDE | .10 | U |
| 72-20-8 | Endrin | .10 | U |
| 33213-65-9 | Endosulfan II | .10 | U |
| 72-54-8 | 4,4'-DDD | .10 | U |
| 1031-07-8 | Endosulfan sulfate | .10 | U |
| 50-29-3 | 4,4'-DDT | .10 | U |
| 72-43-5 | Methoxychlor | .50 | U |
| 53494-70-5 | Endrin ketone | .10 | U |
| 5103-71-9 | alpha-Chlordane | .50 | U |
| 5103-74-2 | gamma-Chlordane | .50 | U |
| 8001-35-2 | Toxaphene | 1.0 | U |
| 12674-11-2 | Aroclor-1016 | .50 | U |
| 11104-28-2 | Aroclor-1221 | .50 | U |
| 11141-16-5 | Aroclor-1232 | .50 | U |
| 53469-21-9 | Aroclor-1242 | .50 | U |
| 12672-29-6 | Aroclor-1248 | .50 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLKE7

Lab Name: PEI Contract: 68-01-7467

Lab Code: PEI Case No.: 12357 SAS No.: SDG No.: EEJ00

Matrix: (soil/water) WATER Lab Sample ID: PBLKE7

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: DNPBE007

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

% Moisture: not dec. 100. dec._____ Date Extracted: 7/21/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 8/ 3/89

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | .050 | U |
| 319-85-7 | beta-BHC | .050 | U |
| 319-86-8 | delta-BHC | .050 | U |
| 58-89-9 | gamma-BHC | .050 | U |
| 76-44-8 | Heptachlor | .050 | U |
| 309-00-2 | Aldrin | .050 | U |
| 1024-57-3 | Heptachlor epoxide | .050 | U |
| 959-98-8 | Endosulfan I | .050 | U |
| 60-57-1 | Dieldrin | .10 | U |
| 72-55-9 | 4,4'-DDE | .10 | U |
| 72-20-8 | Endrin | .10 | U |
| 33213-65-9 | Endosulfan II | .10 | U |
| 72-54-8 | 4,4'-DDD | .10 | U |
| 1031-07-8 | Endosulfan sulfate | .10 | U |
| 50-29-3 | 4,4'-DDT | .10 | U |
| 72-43-5 | Methoxychlor | .50 | U |
| 53494-70-5 | Endrin ketone | .10 | U |
| 5103-71-9 | alpha-Chlordane | .50 | U |
| 5103-74-2 | gamma-Chlordane | .50 | U |
| 8001-35-2 | Toxaphene | 1.0 | U |
| 12674-11-2 | Aroclor-1016 | .50 | U |
| 11104-28-2 | Aroclor-1221 | .50 | U |
| 11141-16-5 | Aroclor-1232 | .50 | U |
| 53469-21-9 | Aroclor-1242 | .50 | U |
| 12672-29-6 | Aroclor-1248 | .50 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE:

SUBJECT: Review of Region V CLP Data Received for Review on August 21, 1989

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

TO: Data User: MPCA

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

SITE NAME: Larson Boat SMO Case No. 12357

EPA Data Set No. SF 6374 No. of Samples: 6 D.U./Activity Numbers TFA/TFA 102

CRL No. 89 Y/L 30 S10-13, D01, R01, R02

SMO Traffic No. MEAJ 12, 14, 15, 44, 45, MECS 83

CLP Laboratory: RMAL Hrs. Required for Review: 1 1/2

Following are our findings: The following review covers the analyses of 6 water samples for RAS organics and cyanide.

ICP analyses: Copper and Zinc were qualified "U" due to blank contamination. Fe was qualified "J" due to low spike recovery.

GFAA analyses: Lead was qualified "U" due to blank contamination. Arsenic and Thallium were qualified "J" due to low spike recovery.

Cl & Hg analyses: acceptable

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

[signature] MPCA 11/17/89

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

EPA FORM 1320-6 (REV. 3-78)

# QC EXCEPTION SUMMARY REPORT

CASE # 12357
DATA SET # MEAS 12
LAB Q.C.#
DATE: 11/17/89

SITE Larson Boats
LAB RMAL
REVIEWED BY MPCA Wayne [illegible]

MATRIX: Water
CONC. : Low

WATER SAMPLE SPK. MEAS 14 S
WATER SAMPLE DUP. MEAS 12 D
SOIL SAMPLE SPK.
SOIL SAMPLE DUP.

| | OVERALL CASE QC | | | | | | | | | MATRIX SPECIFIC QC | | | | | | SAMPLE SPECIFIC QC | | FIELD QC | | | REGIONAL QC | | | OTHER/ COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Holding Time | Cal Blanks | Init Calver | Contin Calver | Prep Blk AQ | Prep Blk SOL | ICS %R | LCS % AQ | LCS % SOL | Sol Dup RPD | Sol Spk %R | AQ Dup RPD | AQ Spk %R | Ser Diln AQ | Ser Diln SOL | GFAA Dup | GFAA Spike | Blank | Dup RPD | Spike %R | Blind Blank | Blind Spike %R | Split Sample RPD | |
| Aluminum | | | | | | | | | | | | | | | | | | | | | | | | |
| Antimony f | | | | | | | | | | | | | ~~70.0~~ | | | | | | | | | | | |
| Arsenic | | | | | | | | | | | | | 70.0 | | | | | | | | | | | |
| Barium | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.5 Beryllium | | 0.9 | | | | | | | | | | | | | | | | | | | | | | |
| Cadmium | | | | | | | | | | | | | | | | | | | | | | | | |
| Calcium | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 Chromium | | 6.4 | | | | | | | | | | | | | | | | | | | | | | |
| Cobalt | | | | | | | | | | | | | | | | | | | | | | | | |
| 88 Copper f | | | | | 17.6 | | | | | | | | | | | | | | | | | | | |
| Iron f | | | | | | | | | | | | | 54.0 | | | | | | | | | | | |
| 55.5 Lead f | | | | | 3.1 | | | | | | | | | | | | | | | | | | | |
| Magnesium | | | | | | | | | | | | | | | | | | | | | | | | |
| Manganese | | | | | | | | | | | | | | | | | | | | | | | | |
| Mercury | | | | | | | | | | | | | | | | | | | | | | | | |
| Nickel | | | | | | | | | | | | | | | | | | | | | | | | |
| Potassium | | | | | | | | | | | | | | | | | | | | | | | | |
| Selenium | | | | | | | | | | | | | | | | | | | | | | | | |
| Silver | | | | | | | | | | | | | | | | | | | | | | | | |
| Sodium | | | | | | | | | | | | | | | | | | | | | | | | |
| Thallium f | | | | | | | | | | | | | 66.0 | | | | | | | | | | | |
| Tin | | | | | | | | | | | | | | | | | | | | | | | | |
| Vanadium | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 Zinc f | | 1.6 | | | | | | | | | | | | | | | | | | | | | | |
| Cyanide | | | | | | | | | | | | | | | | | | | | | | | | |

Region V

# INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 12357

SITE Larson Boats

LABORATORY RMAL

NO. OF SAMPLES/ MATRIX 6 low water S

SDG# MEAT 12

REVIEWER (IF NOT ESD) MPOA

SOW# 7/87

REVIEWER'S NAME Wayne [illegible]

DPO ACTION _____ FYI _____

COMPLETION DATE 11/7/84

## DATA ASSESSMENT SUMMARY

| | | ICP | AA | Hg | CYANIDE |
|---|---|---|---|---|---|
| 1. | HOLDING TIMES | O | O | O | O |
| 2. | CALIBRATIONS | | | | |
| 3. | BLANKS | | | | |
| 4. | ICS | | | | |
| 5. | LCS | | | | |
| 6. | DUPLICATE ANALYSIS | | | | |
| 7. | MATRIX SPIKE | | | | |
| 8. | MSA | | | | |
| 9. | SERIAL DILUTION | | | | |
| 10. | SAMPLE VERIFICATION | | | | |
| 11. | OTHER QC | | | | |
| 12. | OVERALL ASSESSMENT | | | | |

O = Data had no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems, but do not affect data.

ACTION ITEMS: _____

AREAS OF CONCERN: _____

NOTABLE PERFORMANCE: _____

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

CASE NO: 12357 | SAS NO: (IF APPLICABLE)

# INORGANIC TRAFFIC REPORT

FOR CLP USE ONLY

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

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

REGION NO: V
SAMPLING COMPANY ②: MPCA
SAMPLER: (NAME) Meri Lapp

SHIP TO: ③ Ensco/Rocky Mt. An. 4955 Yarrow Street Arvada, Co 80002
ATTN: Trish De[illegible]

SAMPLING DATE: ④
BEGIN: 7/18/89 END: 7/18/89
DATE SHIPPED: 7/19/89 CARRIER: Fed Ex ⑤
AIRBILL NO: 3302879451

DATE REC'D: 7/20/89 SDG NO: ⑥ MEAJ 12
REC'D BY:
LABORATORY CONTRACT NO. 68-01-7476 UNIT PRICE 00114
Scott Asper 147.00

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

| CLP SAMPLE NUMBER (FROM LABELS) | Ⓐ SAMPLE DESCRIPTION (FROM BOX 1) | Ⓑ CONCENTRATION LOW MED HIGH (SAS) | Ⓒ RAS ANALYSIS: TOTAL METALS | CYANIDE | DISSOLVED METALS | HIGH ONLY (SAS): SULFIDE | CHLORIDE | CONDUCTIVITY | OXIDANTS | Ⓓ SPECIAL HANDLING | Ⓔ STATION LOCATION | Ⓕ SAMPLE CONDITION ON RECEIPT | Ⓖ HIGH CONC. PHASES (CHECK): SOLID | WATER—MIS LIQUID | NON WATER—MIS LIQUID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MEAJ42 | 2 | L | X | X | | | | | | | MW1 | OK | | | |
| MEAJ44 | 2 | L | X | X | | | | | | | MW2 | | | | |
| MEAJ45 | 2 | L | X | X | | | | | | | MW3 | | | | |
| MEBJ44 | 2 | L | X | X | | | | | | | MW4 | | | | |
| MEBJ45 | 2 | L | X | X | | | | | | | MW4 | | | | |
| MECS83 | 2 | L | X | X | | Spiked Sample | | | | | FB | | | | |

— Sampling Complete —

EPA Form 2075-6 (8-87)

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

00002

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEAJ12

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 12357 SAS No.: _____ SDG No.: MEAJ12

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

Level (low/med): LOW Date Received: 07/20/89

% Solids: 0.0

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 30.7 | U | | P |
| 7440-36-0 | Antimony | 24.7 | U | | P |
| 7440-38-2 | Arsenic | 2.0 | U | WN | F |
| 7440-39-3 | Barium | 276 | | | P |
| 7440-41-7 | Beryllium | 0.50 | U | | P |
| 7440-43-9 | Cadmium | 3.6 | U | | P |
| 7440-70-2 | Calcium | 124000 | | | P |
| 7440-47-3 | Chromium | 5.5 | U | | P |
| 7440-48-4 | Cobalt | 10.9 | B | | P |
| 7440-50-8 | Copper | 13.0 | B | U | P |
| 7439-89-6 | Iron | 214 | | | P |
| 7439-92-1 | Lead | 1.6 | B | W U | F |
| 7439-95-4 | Magnesium | 34600 | | | P |
| 7439-96-5 | Manganese | 1770 | | | P |
| 7439-97-6 | Mercury | 1.0 | U | | CV |
| 7440-02-0 | Nickel | 15.2 | B | | P |
| 7440-09-7 | Potassium | 5650 | | | P |
| 7482-49-2 | Selenium | 1.0 | U | N | F |
| 7440-22-4 | Silver | 3.9 | U | | P |
| 7440-23-5 | Sodium | 14700 | | | P |
| 7440-28-0 | Thallium | 20.0 | U | N | F |
| 7440-62-2 | Vanadium | 5.5 | U | | P |
| 7440-66-6 | Zinc | 9.7 | B | | P |
| | Cyanide | 10.0 | U | | AS |

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

THALLIUM RESULTS REPORTED AT A 10X DILUTION

MERCURY RESULTS REPORTED AT A 5X DILUTION

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEAJ14

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 12357 SAS No.: _____ SDG No.: MEAJ12

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

Level (low/med): LOW Date Received: 07/20/89

% Solids: 0.0

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 30.7 | U | | P |
| 7440-36-0 | Antimony | 24.7 | U | | P |
| 7440-38-2 | Arsenic | 11.9 | J | SN | F |
| 7440-39-3 | Barium | 217 | | | P |
| 7440-41-7 | Beryllium | 0.50 | U | | P |
| 7440-43-9 | Cadmium | 3.6 | U | | P |
| 7440-70-2 | Calcium | 91800 | | | P |
| 7440-47-3 | Chromium | 5.5 | U | | P |
| 7440-48-4 | Cobalt | 4.1 | U | | P |
| 7440-50-8 | Copper | 6.0 | U | | P |
| 7439-89-6 | Iron | 4770 | J | | P |
| 7439-92-1 | Lead | 1.0 | U | W | F |
| 7439-95-4 | Magnesium | 20100 | | | P |
| 7439-96-5 | Manganese | 3620 | | | P |
| 7439-97-6 | Mercury | 1.0 | U | | CV |
| 7440-02-0 | Nickel | 5.8 | U | | P |
| 7440-09-7 | Potassium | 5920 | | | P |
| 7482-49-2 | Selenium | 1.0 | U | WN | F |
| 7440-22-4 | Silver | 3.9 | U | | P |
| 7440-23-5 | Sodium | 39600 | | | P |
| 7440-28-0 | Thallium | 20.0 | U | SN | F |
| 7440-62-2 | Vanadium | 5.5 | U | | P |
| 7440-66-6 | Zinc | 3.2 | ~~B~~ | ✓ | P |
| | Cyanide | 10.0 | U | | AS |

Color Before: BROWN Clarity Before: OPAQUE Texture: _____
Color After: BROWN Clarity After: CLOUDY Artifacts: _____

Comments:
THALLIUM RESULTS REPORTED AT A 10X DILUTION
MERCURY RESULTS REPORTED AT A 5X DILUTION

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEAJ15

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 12357 SAS No.: _____ SDG No.: MEAJ12

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

Level (low/med): LOW Date Received: 07/20/89

% Solids: 0.0

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 135 | B | | P |
| 7440-36-0 | Antimony | 24.7 | U | | P |
| 7440-38-2 | Arsenic | 9.2 | B | N | F |
| 7440-39-3 | Barium | 812 | | | P |
| 7440-41-7 | Beryllium | 0.50 | U | | P |
| 7440-43-9 | Cadmium | 3.6 | U | | P |
| 7440-70-2 | Calcium | 105000 | | | P |
| 7440-47-3 | Chromium | 5.5 | U | | P |
| 7440-48-4 | Cobalt | 15.0 | B | | P |
| 7440-50-8 | Copper | 22.3 | ~~B~~ | U | P |
| 7439-89-6 | Iron | 32600 | | | P |
| 7439-92-1 | Lead | 1.3 | ~~B~~ | U | F |
| 7439-95-4 | Magnesium | 22500 | | | P |
| 7439-96-5 | Manganese | 9170 | | | P |
| 7439-97-6 | Mercury | 0.3 | | | CV |
| 7440-02-0 | Nickel | 8.0 | B | | P |
| 7440-09-7 | Potassium | 2580 | B | | P |
| 7482-49-2 | Selenium | 1.0 | U | WN | F |
| 7440-22-4 | Silver | 3.9 | U | | P |
| 7440-23-5 | Sodium | 8340 | | | P |
| 7440-28-0 | Thallium | 2.0 | U | WN | F |
| 7440-62-2 | Vanadium | 5.5 | U | | P |
| 7440-66-6 | Zinc | 4.6 | ~~B~~ | U | P |
| | Cyanide | 10.0 | U | | AS |

Color Before: ORANGE Clarity Before: CLOUDY Texture: _____
Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

00005

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEBJ44

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 12357 SAS No.: _____ SDG No.: MEAJ12

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

Level (low/med): LOW Date Received: 07/20/89

% Solids: 0.0

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 145 | B | | P |
| 7440-36-0 | Antimony | 24.7 | U | | P |
| 7440-38-2 | Arsenic | 8.9 | B | SN | F |
| 7440-39-3 | Barium | 418 | | | P |
| 7440-41-7 | Beryllium | 0.50 | U | | P |
| 7440-43-9 | Cadmium | 3.6 | U | | P |
| 7440-70-2 | Calcium | 109000 | | | P |
| 7440-47-3 | Chromium | 5.5 | U | | P |
| 7440-48-4 | Cobalt | 4.1 | U | | P |
| 7440-50-8 | Copper | 6.0 | U | | P |
| 7439-89-6 | Iron | 35800 | J | | P |
| 7439-92-1 | Lead | 1.0 | U | | F |
| 7439-95-4 | Magnesium | 25500 | | | P |
| 7439-96-5 | Manganese | 4100 | | | P |
| 7439-97-6 | Mercury | 0.2 | U | | CV |
| 7440-02-0 | Nickel | 5.8 | U | | P |
| 7440-09-7 | Potassium | 3990 | B | | P |
| 7482-49-2 | Selenium | 1.0 | U | WN | F |
| 7440-22-4 | Silver | 3.9 | U | | P |
| 7440-23-5 | Sodium | 10100 | | | P |
| 7440-28-0 | Thallium | 2.0 | U | WN | F |
| 7440-62-2 | Vanadium | 5.5 | U | | P |
| 7440-66-6 | Zinc | 3.4 | B | | P |
| | Cyanide | 10.0 | U | | AS |

Color Before: BROWN Clarity Before: CLOUDY Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEBJ45

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 12357 SAS No.: _____ SDG No.: MEAJ12

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

Level (low/med): LOW Date Received: 07/20/89

% Solids: 0.0

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 158 | B | | P |
| 7440-36-0 | Antimony | 24.7 | U | | P |
| 7440-38-2 | Arsenic | 8.2 | B | WN | F |
| 7440-39-3 | Barium | 441 | | | P |
| 7440-41-7 | Beryllium | 0.50 | U | | P |
| 7440-43-9 | Cadmium | 3.6 | U | | P |
| 7440-70-2 | Calcium | 116000 | | | P |
| 7440-47-3 | Chromium | 5.5 | U | | P |
| 7440-48-4 | Cobalt | 4.1 | U | | P |
| 7440-50-8 | Copper | 6.0 | U | | P |
| 7439-89-6 | Iron | 37600 | | | P |
| 7439-92-1 | Lead | 1.0 | U | | F |
| 7439-95-4 | Magnesium | 27400 | | | P |
| 7439-96-5 | Manganese | 4290 | | | P |
| 7439-97-6 | Mercury | 0.2 | U | | CV |
| 7440-02-0 | Nickel | 5.8 | U | | P |
| 7440-09-7 | Potassium | 4250 | B | | P |
| 7482-49-2 | Selenium | 1.0 | U | WN | F |
| 7440-22-4 | Silver | 3.9 | U | | P |
| 7440-23-5 | Sodium | 10700 | | | P |
| 7440-28-0 | Thallium | 2.0 | U | WN | F |
| 7440-62-2 | Vanadium | 5.5 | U | | P |
| 7440-66-6 | Zinc | 7.5 | B | | P |
| | Cyanide | 10.0 | U | | AS |

Color Before: BROWN Clarity Before: CLOUDY Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

Field Blank
MECS83

Lab Name: ROCKY MOUNTAIN ANALYTICAL Contract: 68-01-7476

Lab Code: ENSECO Case No.: 12357 SAS No.: _____ SDG No.: MEAJ12

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

Level (low/med): LOW Date Received: 07/20/89

% Solids: 0.0

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 30.7 | U | | P |
| 7440-36-0 | Antimony | 24.7 | U | | P |
| 7440-38-2 | Arsenic | 2.0 | U | WN | F |
| 7440-39-3 | Barium | 2.7 | U | | P |
| 7440-41-7 | Beryllium | 0.50 | U | | P |
| 7440-43-9 | Cadmium | 3.6 | U | | P |
| 7440-70-2 | Calcium | 273 | B | | P |
| 7440-47-3 | Chromium | 5.5 | U | | P |
| 7440-48-4 | Cobalt | 4.1 | U | | P |
| 7440-50-8 | Copper | 6.0 | U | | P |
| 7439-89-6 | Iron | 22.3 | U | | P |
| 7439-92-1 | Lead | 1.0 | U | | F |
| 7439-95-4 | Magnesium | 122 | U | | P |
| 7439-96-5 | Manganese | 7.8 | U | | P |
| 7439-97-6 | Mercury | 0.2 | U | | CV |
| 7440-02-0 | Nickel | 5.8 | U | | P |
| 7440-09-7 | Potassium | 161 | U | | P |
| 7482-49-2 | Selenium | 1.0 | U | N | F |
| 7440-22-4 | Silver | 3.9 | U | | P |
| 7440-23-5 | Sodium | 1700 | U | | P |
| 7440-28-0 | Thallium | 2.0 | U | N | F |
| 7440-62-2 | Vanadium | 5.5 | U | | P |
| 7440-66-6 | Zinc | 5.9 | B | | P |
| | Cyanide | 10.0 | U | | AS |

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
SAMPLE IS A FIELD BLANK