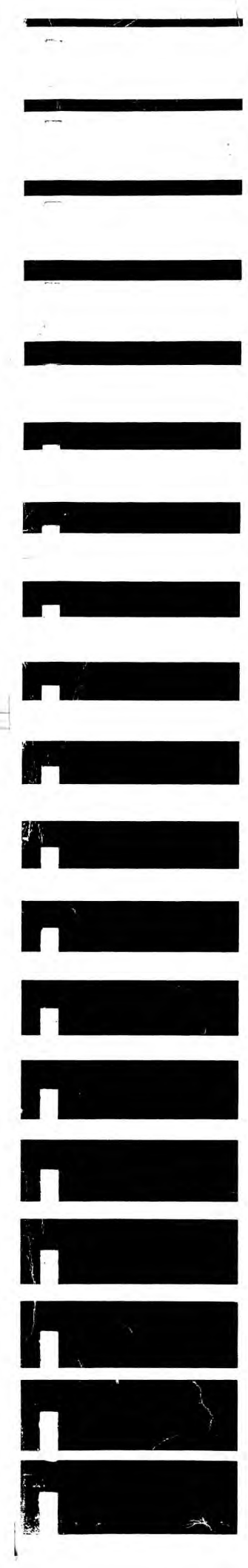

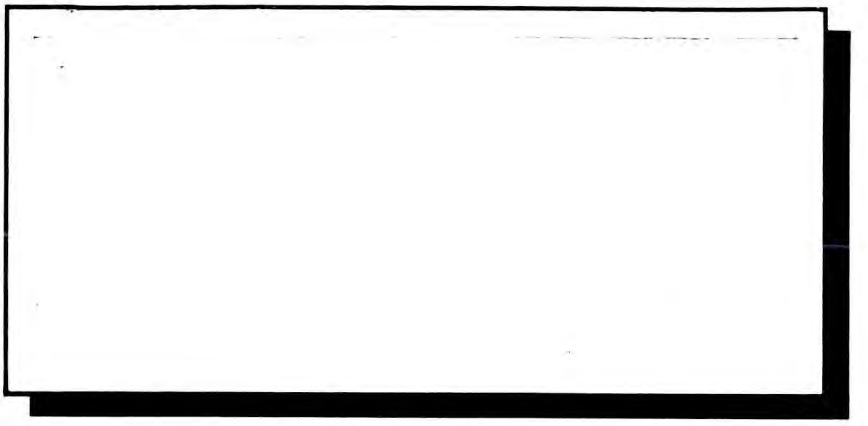

Versar INC.

PHASE II
ENVIRONMENTAL ASSESSMENT

AKERMAN H.W., INC.
1005 PERKINS AVENUE
WAUKESHA, WISCONSIN 53186

Prepared for:

VME Americas, Inc.
1 West Pack Square
Asheville, North Carolina 28810

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Versar Job No. 1871.001

October 1992

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ATTACHMENTS

1.0 INTRODUCTION

Versar, Inc., was retained by VME Americas, Inc., to perform a Phase II site investigation at the Akerman, Inc., facility located at 1005 Perkins Avenue in Waukesha, Wisconsin. The scope of work was designed to evaluate two primary areas of concern identified on the property during previous property assessments. Those two specific areas were the underground storage tanks (USTs) and an area of surface fill containing construction and demolition debris. The scope of work included the following tasks:

- Determine the orientation and fluid level in each UST and the presence or absence of water in each UST.
- Advance two soil borings adjacent to each of the five USTs located on the property. One soil sample collected from each of the borings was to be submitted for laboratory analysis.
- Sample and evaluate the surface fill located on the eastern portion of the property.

This report summarizes the procedures followed during sample collection and discusses the analytical results obtained from laboratory analysis of submitted samples.

2.0 SITE BACKGROUND

2.1 Property Description

The Akerman facility is located at 1005 Perkins Avenue in Waukesha, Wisconsin, as shown in Figure 1. It is further located in Waukesha County, Township 6 North, Range 19 East, Section 2, Northeast quarter.

Beginning in 1981, Akerman utilized the facility for the manufacture of excavation equipment. At the writing of this report, excavation manufacturing operations were being transferred to a plant located on the East Coast.

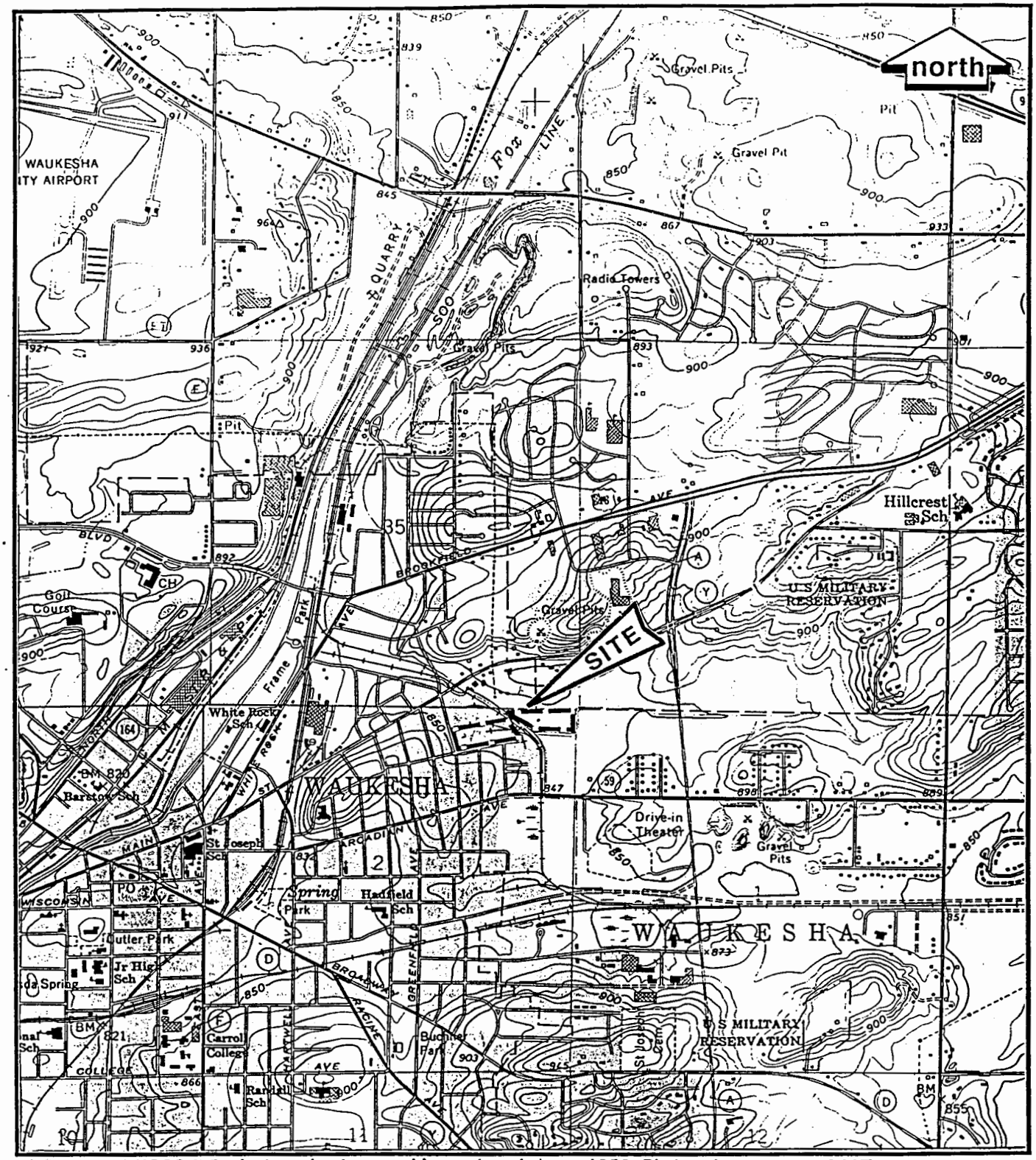
2.2 Area Hydrogeology

Shallow groundwater at the site is expected to flow toward the creek which bisects the property. The geology of the area is composed of the glacial deposits overlying Silurian dolomite. The glacial deposits are present as the New Berlin Formation which is typically composed of an upper unit that is mostly till and a lower sand and gravel unit. The upper unit is interpreted as a basal till deposited during an ice lobe retreat. The lower unit is interpreted as outwash sediment deposited in front of and around the margins of an advancing ice lobe. (Schneider, 1983)

2.3 Property Features

The property is composed of approximately 16 acres which are bisected by an unnamed creek and a railroad easement, as shown in Figure 2. The manufacturing facility is located on the western portion of the property. The eastern portion of the property was used for demonstration of excavation equipment. A storage shed is also located on the eastern portion of the property. Other key features include the five USTs and a fill area. The locations of these features are also indicated in Figure 2.

Underground storage tank information is presented in Table 1. Four of the USTs are located on the north side the manufacturing building. These include two 5,000-gallon fuel oil tanks, an 8,000-gallon hydraulic oil



Waukesha, WI USGS 7.5 minute series topographic quadrangle map, 1959. Photorevised 1971. PhotoInspected 1976. Versar INC.

Dashed line encloses site location. SCALE 1:24000

Quadrangle Location

1 1/2 0 1 Mi.

1000 0 1000 2000 3000 4000 5000 6000 7000 Ft.

1 .5 0 1 Km.

Figure 1.

Site Location Map.

Akerman Excavators, Waukesha, Wisconsin

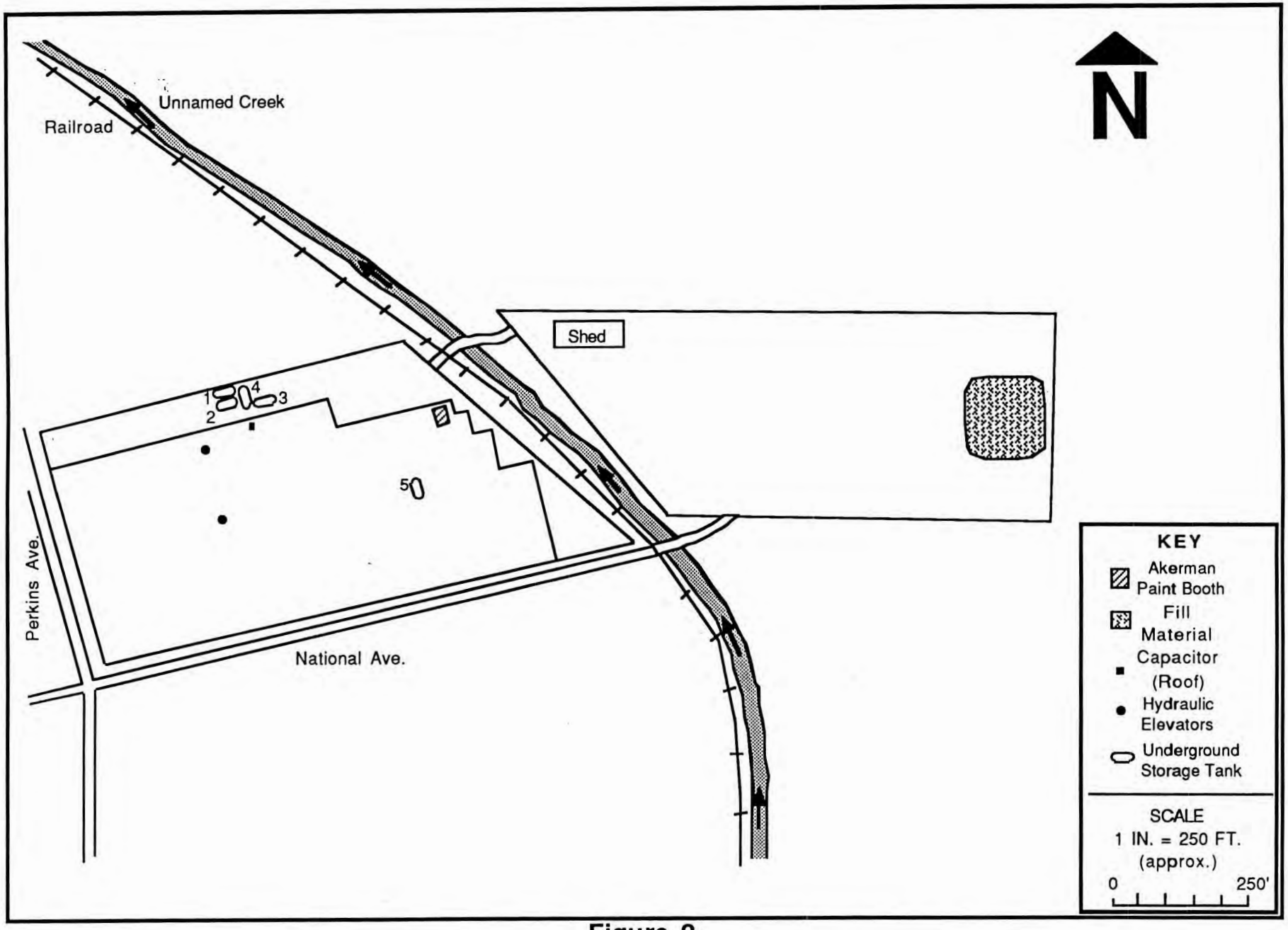


Figure 2.
Site Layout
Akerman H.W., Inc.

Table 1
Underground Storage Tank Information

REGISTRATION NUMBER	LOCATION	CAPACITY (gallons)	CONTENTS	YEAR INSTALLED	STATUS*
67060-418	Outside building north	5,000	Fuel Oil	Unknown	In Use/Part Full
67060-419	Outside building north	8,000	Hydraulic Oil	Unknown	In Use/ Empty
67060-420	Outside building north	5,000	Fuel Oil	Unknown	In Use/Part Full
67060-421	Outside building north	550	Diesel Fuel	Unknown	Abandoned
67060-422	Inside building	10,000	Hydraulic Oil	Unknown	In Use/Part Full

* - During Versar's site visit, July 24 to July 27, 1992.

tank, and a 550-gallon diesel tank. A concrete pad, measuring 24 feet by 82.5 feet, covers all four of these USTs. Documentation provided by Mr. Gert Olsson, Vice President of Manufacturing for Akerman, Inc., indicated that the fuel oil tanks and the hydraulic oil tank were epoxy coated in 1989. The diesel tank was abandoned in-place, and documentation for abandonment appears to be in order. Figure 3 shows the layout of these four USTs. The fifth UST, a 10,000-gallon hydraulic oil tank, is located inside the manufacturing building. According to Mr. Olsson, the hydraulic oil tanks were to be pumped out prior to the relocation of Akerman operations. Information regarding the exact dimensions of the tanks was not available at the time this report was generated.

The fill area is located in the east section of the property. The fill area covers approximately 150 feet by 150 feet. The fill debris consisted of bricks, gravel, cement blocks, scrap metal, and what appeared to be foundry slag.

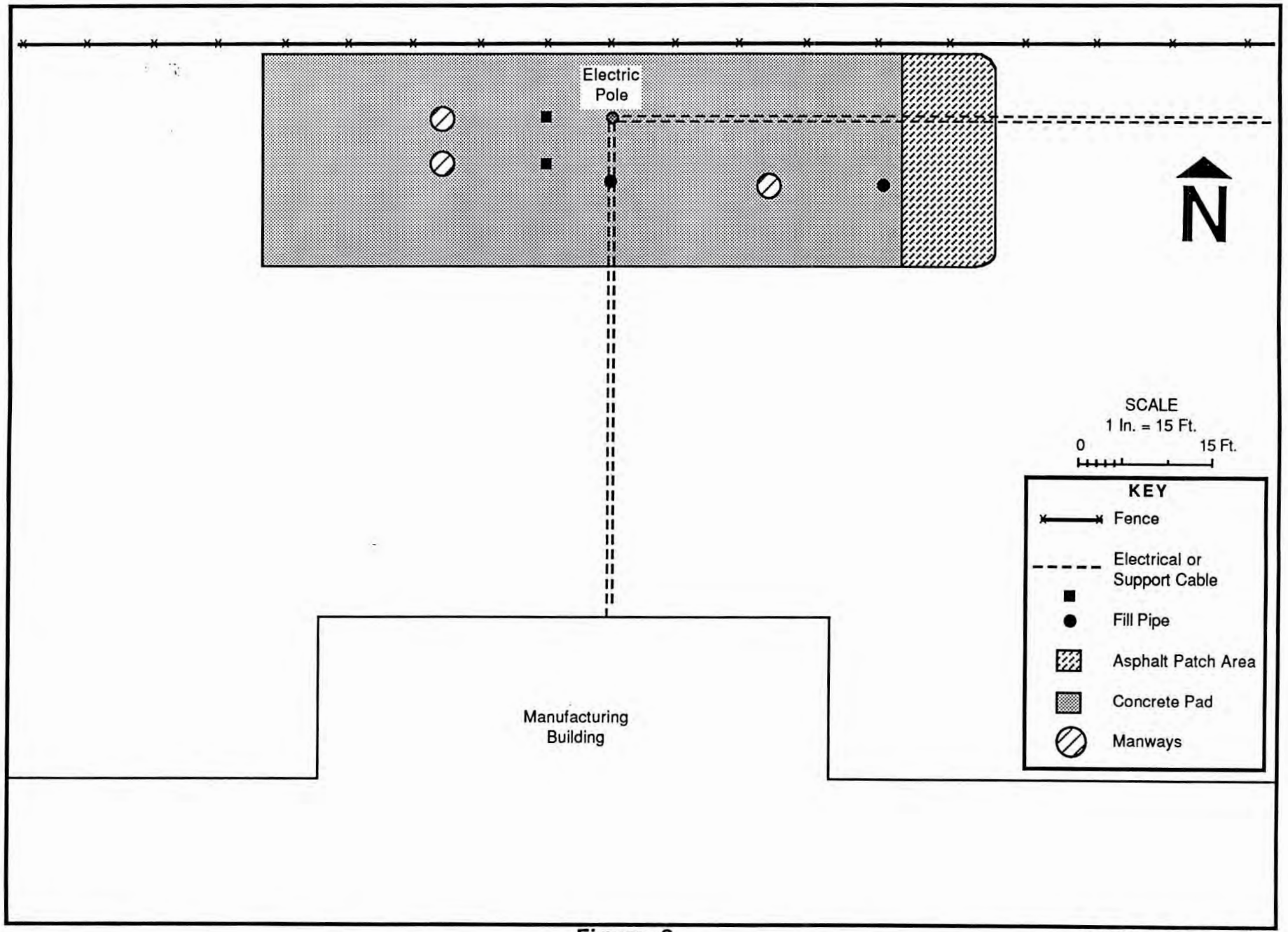


Figure 3.
UST Features Located North of the Manufacturing Building

Versar INC.

3.0 DATA COLLECTION PROCEDURES

3.1 UST Orientation and Fluid Levels

The fluid levels in the USTs were measured by lowering a dedicated polyethylene bailer down the fill pipe. No water was observed in the measured USTs. The total depth and depth to product were measured with a weighted stainless steel tape that was decontaminated between samples with a Liquinox® solution and potable water rinse. The observed orientations, depths to product, and total depths of the measured USTs are presented in Table 2.

3.2 Soil Boring Installation

3.2.1 Soil Boring Locations

Twelve soil borings were advanced on the property. Soil boring locations are presented in Figures 4 and 5. Nine borings were conducted with the purpose of examining soils adjacent to the exterior USTs located on the north side of the manufacturing building. Three borings were conducted with the purpose of examining soils adjacent to the UST located inside the building.

Six borings were placed around the east, south, and west edges of the concrete pad that covered the four exterior USTs. Borings could not be placed at the ends of the USTs located on the north side of the manufacturing building for several reasons: the exact dimensions of the USTs could not be verified; the USTs were located in very close proximity to each other; and, the exact location of pipes leading from the USTs could not be verified. Additionally, the north side of the pad could not be accessed due to overhead power lines, support cables, and the north property boundary (which is marked with a fence). A neighboring building is located approximately 5 feet north of the fence and adjacent to the north property boundary, making drilling along the north side of the concrete pad impractical.

Auger refusal occurred at 4 feet below ground surface (BGS) while drilling VSB-4. The drill rig was then moved approximately 8 feet east of boring

Table 2
UST Orientation and Measured Characteristics

UST DESIGNATION	UST #1*	UST #2*	UST #3*	UST #4*	UST #5*
Orientation	East-West	East-West	East-West	North-South	North-South
Total Depth (Feet BGS)	8.5	8.0	9.9	NA	10.5
Inches of Product in Tank	2.5	3.5	0.5	NA	0.3
Water Present in Tank	No	No	No	NA	No

* - SEE FIGURE 3 FOR THE LOCATION OF THE USTS

NA = Not Available

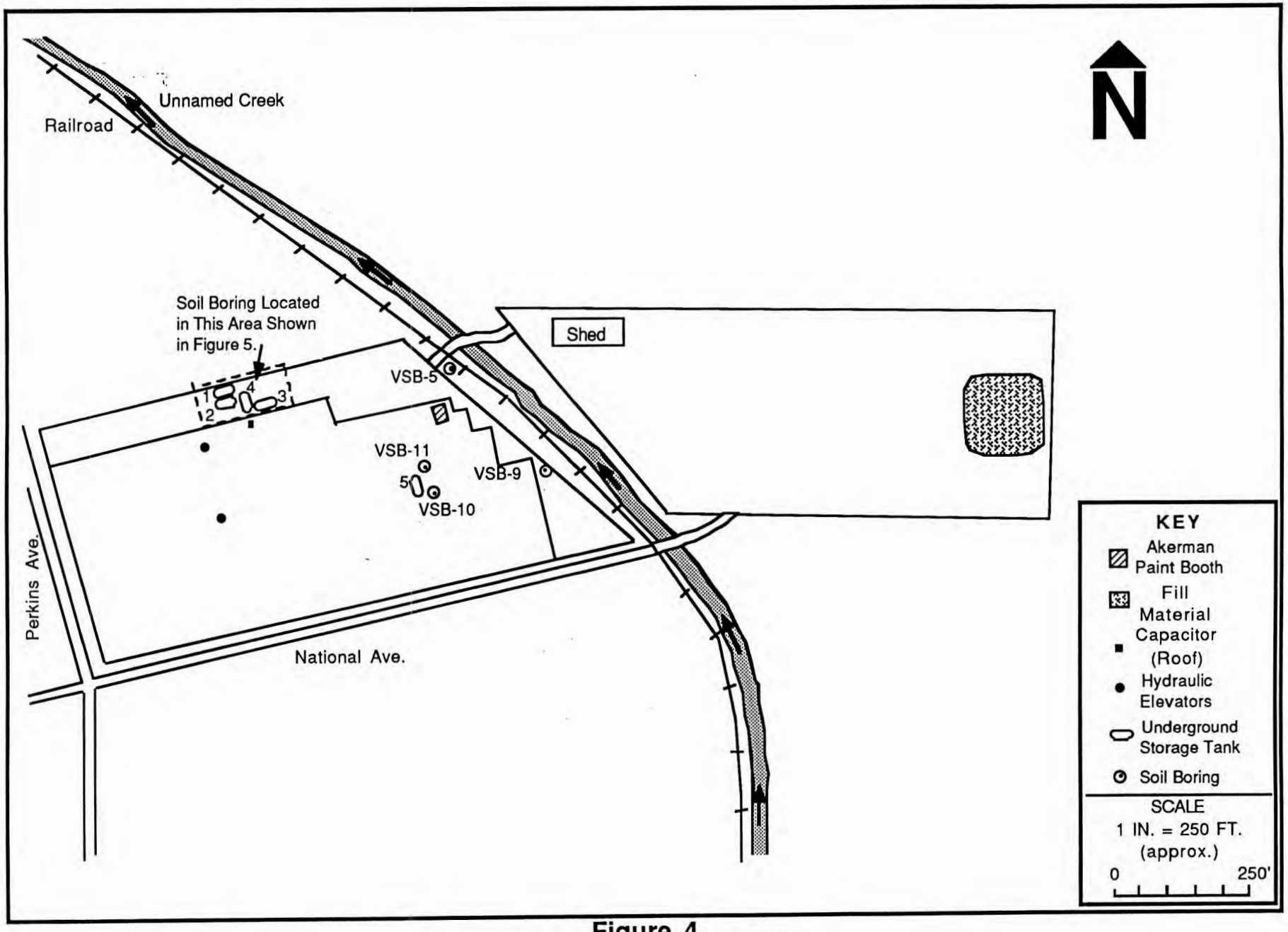


Figure 4.
Soil Boring Locations
Akerman H.W., Inc.

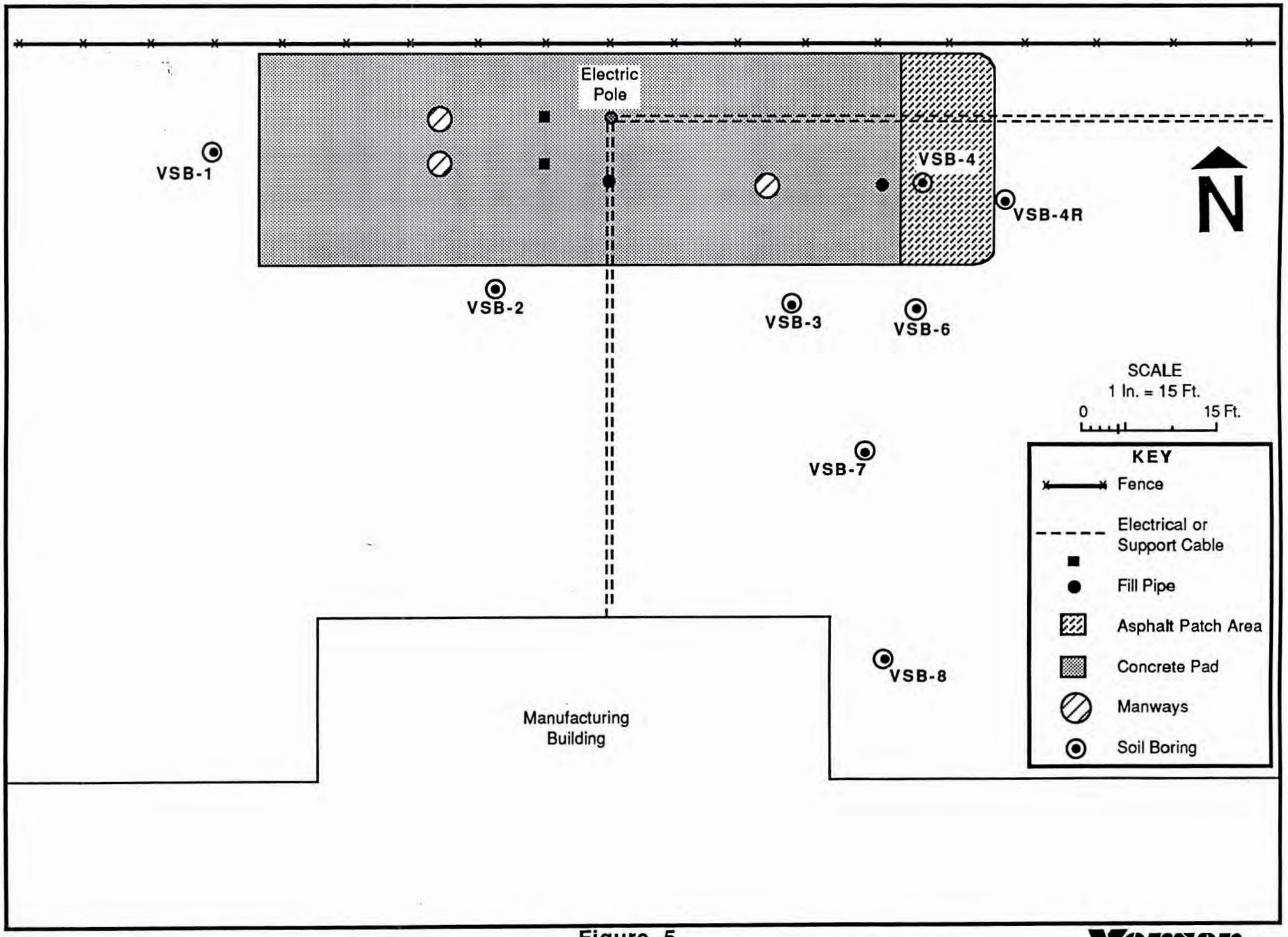


Figure 5.
Soil Boring Locations North of the Manufacturing Building

Versar INC.

VSB-4 and immediately east of an asphalt patch that appeared to have been cut out in the area of VSB-4 and replaced. Because of the presence of the asphalt patch, the second boring attempt in the area of VSB-4 was placed outside of the patch. The boring was labeled VSB-4R and was completed without interruption.

Three additional borings were installed in the area of the USTs located on the north side of the manufacturing building. Borings VSB-7 and VSB-8 were placed in the interpreted downgradient direction of underground pipes leading to the building. Boring VSB-5 was placed in the interpreted downgradient direction of the cement tank pad.

Of the three borings placed in the vicinity of the interior UST, one boring was placed at either end of the UST and slightly in the interpreted downgradient. The third boring was placed outside of the building and in the interpreted downgradient direction from the UST.

3.2.2 Soil Boring Advancement

All borings were advanced between July 24 and 27, 1992. All exterior borings were advanced with 8-inch outside diameter hollow stem augers. For the borings located inside the building, the concrete was first cut out using a concrete coring machine. The borings were then advanced with 6-inch outside diameter hollow stem augers. Borings located in the immediate vicinity of USTs were advanced to at least 12 feet to correlate with the depth of the largest UST, approximately 10.5 feet. The exception to this was VSB-4, as explained previously. All downhole equipment was steam cleaned prior to and between soil boring advancements. All borings were backfilled with bentonite chips.

Borings were sampled with a 2-foot long split-spoon sampler in accordance with ASTM D-1586. The borings were sampled beginning at 1 foot BGS and advancing 1 foot between samples (i.e., from 1 to 3 feet, 4 to 6 feet, 7 to 9 feet, etc.). Split-spoons were screened with an HNu photoionization detector (10.2 eV probe) used to detect the presence of volatile organic vapors. Only three split-spoons registered readings above background:

(1) the sample from 13 to 15 at VSB-3, (2) the sample from 1 to 3 feet BGS at VSB-4, and (3) the sample from 1 to 3 feet BGS at VSB-9. All borings were logged, and copies of the boring logs are presented in Attachment 1. The sampler was decontaminated between samples with a Liquinox® solution and potable water rinse.

Soil was collected from every split-spoon sample for laboratory analysis. Field personnel wore dedicated surgical gloves during sample collection. The soil was tightly packed into laboratory prepared, 4-ounce glass containers. All samples were immediately placed on ice in a cooler.

After all borings were completed, one soil sample from each boring was selected for laboratory analysis, with the exception of VSB-4R. The one sample collected from VSB-4 (1-3 feet BGS) was submitted, and no samples from VSB-4R were submitted. Boring VSB-4R was considered a continuation of VSB-4, and no samples from boring VSB-4R had HNu readings above background.

The depth of the sample selected for laboratory analysis from each boring is presented in Table 3. The samples from VSB-3 and VSB-4 for which the HNu readings were observed to be above background readings were selected for laboratory analysis. For the other exterior borings in the vicinity of the USTs on the north side of the building and for the exterior boring located downgradient of the UST in the building (i.e., VSB-9), the sample collected immediately above or at the water table was selected for laboratory analysis. The sample collected from VSB-9 at 1 to 3 feet BGS had a recorded HNu reading of 1 to 4 ppm. This sample was collected from immediately below the asphalt pavement in sub-base gravel fill. It was judged that any petroleum-related products present in the sub-base gravel fill were likely due to the presence of the asphalt pavement. The sample collected from VSB-9 at 7 to 9 feet BGS was judged to more likely show the effects of any potential product release. For the two interior borings, soil samples that contained a black sandy clay and a black silt were submitted. These samples were collected from near the base of the UST, and appeared to possibly contain petroleum products. All selected soil

Table 3
Boring Samples Selected
for Laboratory Analysis

Soil Boring Designation	Sample Depth (feet)
VSB-1	7 to 9
VSB-2	7 to 9
VSB-3	13 to 15
VSB-4	1 to 3
VSB-5	7 to 9
VSB-6	10 to 12
VSB-7	7 to 9
VSB-8	7 to 9
VSB-9	7 to 9
VSB-10	7 to 9
VSB-11	7 to 9

samples were analyzed for total petroleum hydrocarbons (TPH). The analysis method used for TPH is described in Attachment 2.

3.3 Surface Fill Sampling

The fill area located in the eastern half of the property was sampled at six locations. The area was divided into six approximately-equal sections, and equal amounts of soil were collected from the center of each section. Field personnel wore dedicated nitrile gloves over surgical gloves during the sampling procedures. The upper 2 inches of the soil were removed at the sample location, and the soil from approximately 2 to 5 inches was collected with a decontaminated stainless steel scoop and placed in a stainless steel bowl. After all soil samples were collected, the soil was gently mixed with the scoop and tightly packed into laboratory prepared glass containers with Teflon lids. The composite sample was immediately placed on ice in a cooler, and was analyzed for U.S. EPA's priority pollutants, which consist of purgeable organic compounds, extractable organics, pesticides, and polychlorinated biphenols (PCBs).

4.0 DISCUSSION OF RESULTS

4.1 Site Hydrogeology

Ground water was encountered approximately 7 feet BGS in the soil borings. An exact depth to ground water could not be determined because static water level conditions could not be achieved during the field investigation.

In the area of the four exterior USTs located on the north side of the manufacturing building, the surficial geology is composed of gravel fill to approximately 1 foot BGS. Below the gravel fill, yellowish-brown silty clay extends to approximately 3 feet. The silty clay grades downward to silts and sands with some clay. Sands then extend from approximately 7 feet to 21 feet. The total depth of the deepest sample collected in this area of the site was from 19 to 21 feet. The sand unit grades downward from a fine- to medium-grained, moderately sorted sand to a very poorly sorted sand and gravel.

Boring VSB-5 was advanced, downgradient and eastward from the four exterior USTs. In this boring, fill overlaid black organic-rich clay that extended from approximately 4 feet to 7.5 feet. The organic-rich clay overlaid gray silty clay and clayey silt. The clay and silt extended from 7.5 feet to 10 feet. Pale brown sand and gravel extended below the clay and silt to at least 18 feet.

Boring VSB-9 was advanced south of VSB-5. In this area of the site, olive-gray clay extended from approximately 1.5 feet to 8 feet. Below the clay, pale brown sand and gravels extended to at least 12 feet.

Two borings were installed inside the manufacturing building. In these borings, yellowish-brown fine to medium sand extended from approximately 1 foot to 7.5 feet. Below this, black sandy clay and silt extended to 8.5 feet, and below this, yellowish-brown sands with clays and silts extended to at least 15 feet.

4.2 Product Storage in USTs

Only 2 to 5 inches of product remain in the hydraulic oil tanks. According to Mr. Olsson, these tanks have been pumped of product and will not be used by Akerman, Inc. One of the two heating oil tanks held 2.5 feet and the other contained 3.5 feet of product during field sampling activities and are believed to currently be in use.

According to the Wisconsin Administrative Code (WAC), Department of Industry, Labor, and Human Relations (DILHR), Chapter 10, Section 10.731, an UST is considered abandoned unless product transfers are made to or from the system periodically. Permanent closure of abandoned USTs is required and involves cleaning and removing the USTs in accordance with WAC, DILHR, Chapter 10, Section 10.732. If holes are observed in the removed USTs or if contaminated soils are detected during the UST removal or UST investigation, it is Versar's interpretation of WAC, DILHR, Chapter 10, Section 10.734 that UST owners must notify the Wisconsin Department of Natural Resources (WDNR) and begin corrective action.

4.3 Analytical Results

The chain of custody forms and the results from laboratory analysis are included as Attachment 4.

4.3.1 Soil Boring Results

The results from laboratory analysis of soil samples collected from eleven soil borings are summarized in Table 4. A total petroleum hydrocarbon concentration of 55 ppm was detected in boring VSB-4. This sample was collected from 1 to 3 feet BGS. TPH was not detected above the method detection limit of 4.0 ppm in any other soil samples.

A detection of 55 ppm of TPH indicates that a release may have occurred from one of the USTs located on the north side of the manufacturing building or may have resulted from a small surface spill. It appears that the release may be localized because all samples collected from borings surrounding VSB-4 (i.e. VSB-4R and VSB-6) had HNu readings below background readings. Additionally, a TPH concentration below the method

Table 4
Subsurface Soil Analysis Results

Soil Boring Designation	Sample Depth (feet)	TPH Concentration (ppm)
VSB-1	7 to 9	<4.0
VSB-2	7 to 9	<4.0
VSB-3	13 to 15	<4.0
VSB-4	1 to 3	55
VSB-5	7 to 9	<4.0
VSB-6	10 to 12	<4.0
VSB-7	7 to 9	<4.0
VSB-8	7 to 9	<4.0
VSB-9	7 to 9	<4.0
VSB-10	7 to 9	<4.0
VSB-11	7 to 9	<4.0

detection limit was recorded for the sample collected from VSB-6.

It is Versar's interpretation that owners and operators of USTs are required to immediately report any release of a regulated substance to the WDNR. Additionally, soil contamination detected above 10 ppm is the action level that triggers an investigation to determine the extent of contamination, according to Ms. Sybil Lapinski, WDNR.

4.3.2 Surface Fill Sampling Results

The results from laboratory analysis of the surface fill samples are summarized in Table 5. The analytical methods used are listed in the laboratory results included in Attachment 3.

According to Mr. Tim Mulhood, Division of Environmental Quality of the WDNR, the practical maximum concentration goal of total PCBs allowed in soil is 5 ppm. In some cases, PCB concentrations of up to 25 ppm in soil have been allowed. It is Versar's interpretation that the PCB concentration must be reported to the WDNR, and that a corrective action plan will be required by WDNR.

According to Ms. Pam Mylotta, Environmental Repair Division of the WDNR, compounds that do not naturally occur in soil and are detected above detection limits in soils constitute an environmental concern. It is Versar's interpretation that the compound concentrations detected in the soil must be reported to the WDNR. Under Wisconsin Statute 144.76, a person who possesses a hazardous substance or who causes the discharge of a hazardous substance shall notify the WDNR immediately of any discharge.

Table 5
Surface Fill Analysis Results

Parameter	Concentration
Methylene Chloride	0.025 ppm
2-Chlorophenol	0.55 ppm
2,4-Dichlorophenol	0.50 ppm
4-Nitrophenol	0.52 ppm
Acenaphthene	0.61 ppm
Benzo(B)Fluoranthene	1.2 ppm
Dimethyl Phthalate	1.3 ppm
Di-N-Butyl Phthalate	2.2 ppm
1,2,-Diphenylhydrazine	0.42 ppm
Fluorene	0.59 ppm
Naphthalene	1.5 ppm
Nitrobenzene	1.2 ppm
N-Nitrosodiphenylamine	0.95 ppm
Phenanthrene	1.4 ppm
4,4-DDD	33 ppb
Dieldrin	140 ppb
Endosulfan I	17 ppb
Endosulfan Sulfate	10 ppb
Endrin Aldehyde	27 ppb
Heptachlor Epoxide	330 ppb
PCBs (Aroclor 1248)	42 ppm

ppm = parts per million
ppb = parts per billion

5.0 CONCLUSIONS

Several environmental concerns associated with the property have been identified and are discussed below. Versar recommends strongly that statutory requirements, from both state and federal sources, be reviewed by VME's legal counsel for a determination of compliance, particularly regarding reportable releases.

- Underground Storage Tanks (USTs)

All combustible fuel storage tanks of greater than 60 gallons are regulated by Department of Industrial Health and Labor Relations (DIHLR). Out-of-service USTs are a current and future environmental liability if left in-place and are likely to be out of compliance. It is Versar's interpretation that Wisconsin regulations require a groundwater impact assessment to be submitted to WDNR for releases of TPH at concentrations greater than 10 ppm in the soil. Soil boring VSB-4 is documented as having soil contamination at a concentration level of 55 ppm. If a corrective action plan is needed, this plan would include the removal of all USTs. Through removal of all USTs, clean closure of the USTs would be sought and future liabilities associated with the USTs and associated regulations will be reduced or eliminated. Versar recommends that all USTs that reside on the property and are not longer in service be properly closed, in accordance with Wisconsin regulations.

The soil borings installed in the vicinity of the UST located inside the manufacturing building did not reveal TPH concentration above the method detection limit of 4 ppm. If the interior UST will no longer be in service, Versar recommends that it be properly closed, in accordance with Wisconsin regulations, to eliminate future concerns and to be in compliance. Regarding the currently abandoned 550-gallon UST, abandoning the UST in place does not release the owner of all liabilities associated with the UST. Thus, Versar recommends that the currently abandoned UST also be removed from the property.

- Surface Fill Area

Analyses of the composited soil sample collected from the fill area have identified the presence of a variety of compounds from unknown sources. Additional sampling and testing is necessary to evaluate the extent and nature of the fill material. Because a variety of contaminants were detected in the soil sample collected from the fill area, the fill area poses a potentially significant environmental liability. It is Versar's interpretation that Wisconsin regulations require the reporting of released hazardous substances and the submittal of a corrective action plan. A corrective action plan would include a contamination assessment of the fill area designed to estimate the vertical and horizontal extent and concentration levels of contamination. To minimize liabilities associated with the fill area, the area may need to be removed or remediated to cleanup levels established by the State of Wisconsin.

6.0 REFERENCES

Schneider, 1983. Wisconsinan Stratigraphy and Glacial Sequence in Southeastern Wisconsin, Geoscience Wisconsin, Volume 7, July, pp. 59-85.

ATTACHMENT 1
SOIL BORING LOGS

FIELD BORING LOG

Versar INC. Technical Operations

PROJECT NAME: VME AMERICAS, INC. JOB # : 1871.001

BORING # : VSB-1 LOCATION: WEST SIDE OF TANK PAD - NORTH OF BLDG

START DATE: 7/24/92 END DATE: 7/24/92 TOTAL DEPTH: 15

FIELD GEOLOGIST: J. SMITH-BAGHERI WATER LEVEL DURING DRILLING: 10.2

DRILLING COMPANY: EXPLORATION TECHNOLOGY, INC.

DRILLER: J. BROWN DRILLERS ASSISTANT: J. MARKS

DRILLING METHOD: HOLLOW STEM AUGER-4¼"ID DRILL RIG: CME-55

DEPTH	SAMPLE INTERVAL	SAMPLE NO. AND TYPE	BLOW COUNTS PER 6 INCHES	SAMPLE RECOVERY (FT)	HNU READING	PENETROMETER (TSI)	U.S.C.S. SYMBOL	DESCRIPTION
1								Asphalt cover. Fill material.
2	X	SS-1	4 6	0.3	0.	1.5	CH	1-1.3: Very dark grayish brown dry, soft, some gravel (clay fragments).
3	X		5 3					
4								
5	X	SS-2	4 4	1.2	0 0	1.75 2.0	CL	4-5.2: Yellowish brown (10YR 5/6) silty clay, mottled gray, 10% gravel, moist.
6	X		8 6		0			
7								
8	X	SS-3	9 8	1.0	0 0	NA	SW	7-8: Yellowish brown (10YR 5/4) sand, fine to medium, subangular to subround, 10-20% gravel, wet.
9	X		11 9		0			
10								
11	X	SS-4	9 12	1.2	0 0	NA	SW	10-11.2: Yellowish brown (10YR 5/4) sand, fine to coarse, subround to subangular, 20-30% gravel, wet.
12	X		11 17		0			
13								

FIELD BORING LOG

Versar INC. Technical Operations

PROJECT NAME: [illegible] AMERICAS, INC. JOB # : 1871.001

BORING # : VSB-1 LOCATION: WEST SIDE OF TANK PAD - NORTH OF BLDG

START DATE: 7/24/93 END DATE: 7/24/93 TOTAL DEPTH: 15

FIELD GEOLOGIST: J. SILVIA BAGHERI WATER LEVEL DURING DRILLING: 10.2

DRILLING COMPANY: EXPLORATION TECHNOLOGY, INC.

DRILLER: J. BROWN DRILLERS ASSISTANT: J. PARKS

DRILLING METHOD: HOLLOW STEM AUGER - 4¼" ID DRILL RIG: CME-55

DEPTH	SAMPLE INTERVAL	SAMPLE NO. AND TYPE	BLOW COUNTS PER 6 INCHES	SAMPLE RECOVERY (FT)	HNU READING	PENETROMETER (TSI)	U.S.C.S. SYMBOL	DESCRIPTION
13	X	SS-5	15	1.4	0	NA	SP	13-14.1: Light yellowish brown (10YR6/4) sand, fine, well sorted, 10% gravel.
14	X		10					
			15					
15			20					TOTAL DEPTH: 15 FEET

FIELD BORING LOG

Versar INC. Technical Operations

PROJECT NAME: VME AMERICAS, INC. JOB # : 1871.001

BORING # : VSB-2 LOCATION: SOUTHWEST CORNER TANK PAD - NORTH OF BLDG.

START DATE: 7/24/92 END DATE: 7/24/92 TOTAL DEPTH: 15

FIELD GEOLOGIST: J. SMITH-BAGHERI WATER LEVEL DURING DRILLING: 10.3

DRILLING COMPANY: EXPLORATION TECHNOLOGY, INC.

DRILLER: J. BROWN DRILLERS ASSISTANT: J. MARKS

DRILLING METHOD: HOLLOW STEM AUGER - 4¼" ID DRILL RIG: CME-55

DEPTH	SAMPLE INTERVAL	SAMPLE NO. AND TYPE	BLOW COUNTS PER 6 INCHES	SAMPLE RECOVERY (FT)	HNU READING	PENETROMETER (TSI)	U.S.C.S. SYMBOL	DESCRIPTION
1								0-0.5: Cement 0.5: Fill material, wood.
2	X	SS-1	2 2	1.4	0	2.0 1.5	CL	1-1.4: Very dark grayish (10YR 3/2) silty clay, organic matter, moist.
3	X		4 3			1.0		
4								
5	X	SS-2	9 11	1.5	0	1.5 2.0	CL	4-4.5: As above, black (10YR), cinders.
6	X		10 17				SC	Limestone fragments. 4.5-5.5: Light yellowish brown (10YR 6/4) clayey fine sand, 5-10% gravel.
7								
8	X	SS-3	4 8	1.0	0	NA	SP	7-8: Brownish yellow (10YR 6/4) sand, fine to medium, moderately sorted, 5% gravel, moist.
9	X		9 8					
10								
11	X	SS-4	3 9	1.1	0	NA	SW	10-11.1: Yellowish brown (10YR 5/3) sand, fine to coarse, very poorly sorted, subround to subangular, 20-30% gravel, wet.
12	X		10 11					
13								

FIELD BORING LOG

Versar INC. Technical Operations

PROJECT NAME: VME AMERICAS, INC. JOB # : 1871.001

BORING # : VSB-2 LOCATION: SOUTHWEST CORNER TANK PAD - NORTH OF BLDG.

START DATE: 7/24/92 END DATE: 7/24/92 TOTAL DEPTH: 15

FIELD GEOLOGIST: J. SMITH-BAGHERI WATER LEVEL DURING DRILLING: 10.3

DRILLING COMPANY: EXPLORATION TECHNOLOGY, INC.

DRILLER: J. BROWN DRILLERS ASSISTANT: J. MARKS

DRILLING METHOD: HOLLOW STEM AUGER-4¼" ID DRILL RIG: CME-55

DEPTH	SAMPLE INTERVAL	SAMPLE NO. AND TYPE	BLOW COUNTS PER 6 INCHES	SAMPLE RECOVERY (FT)	HNU READING	PENETROMETER (TSI)	U.S.C.S. SYMBOL	DESCRIPTION
13	X	SS-5	11	1.6	0	NA	SW	13-13.2: Yellowish brown (10YR5/3) sand, fine to medium, well sorted, wet (poss. cave).
14	X		25		0			13.2-13.4: Black, sandy clay, wet.
			37					13.4-13.9: Yellowish brown (10YR5/3) sand, fine to coarse, subround to subangular, 5% gravel, wet.
15			36					13.9-14.1: Shale fragment.
								14.1-14.3: As 13.4-13.9, wet.
								TOTAL DEPTH: 15 FEET.

FIELD BORING LOG

Versar INC. Technical Operations

PROJECT NAME: VME AMERICAS, INC. JOB # : 1871.001

BORING # : VSB-3 LOCATION: SOUTHEAST SIDE OF TANK PAD - NORTH OF BLDG.

START DATE: 7/24/92 END DATE: 7/24/92 TOTAL DEPTH: 15

FIELD GEOLOGIST: J. SMITH-BAGHERI WATER LEVEL DURING DRILLING: 9.5

DRILLING COMPANY: EXPLORATION TECHNOLOGY, INC.

DRILLER: J. BROWN DRILLERS ASSISTANT: J. MARKS

DRILLING METHOD: HOLLOW STEM AUGER - 4½" ID DRILL RIG: CME-55

DEPTH	SAMPLE INTERVAL	SAMPLE NO. AND TYPE	BLOW COUNTS PER 6 INCHES	SAMPLE RECOVERY (FT)	HNU READING	PENETROMETER (TSI)	U.S.C.S. SYMBOL	DESCRIPTION
1								Asphalt cover.
2	X	SS-1	7 4	1.5	0	3.75 2.5	CL	1-1.7: Black silty clay (10YR), (gravel fill), slightly moist, slight petroleum odor.
3	X		6 6			2.5		1.7-2.5: Brown (10YR5/3) silty clay.
4								
5	X	SS-2	9 17	0.2	0	NA	CL	4-4.2: Black (10YR) silty clay, gravel fragments, moist, slight petroleum odor.
6	X		20 16					
7								
8	X	SS-3	3 7	1.0	0	NA	SW	7-7.5: Light yellowish brown (10YR6/4) sand, fine to coarse, moderately sorted, trace gravel, moist.
9	X		8 6					7.5-8: Yellowish brown (10YR5/6) sand, fine to coarse, moderately sorted, trace gravel, moist.
10								
11	X	SS-4	3 6	1.0	0	NA	SW	10-11: As above, grading downward to pale brown (10YR6/3), wet.
12	X		10 14					
13								

FIELD BORING LOG

Versar INC. Technical Operations

PROJECT NAME: VME AMERICAS, INC. JOB # : 1871.001

BORING # : VSB-3 LOCATION: SOUTHEAST SIDE OF TANK PAD - NORTH SIDE BLDG,

START DATE: 7/24/92 END DATE: 7/24/92 TOTAL DEPTH: 15

FIELD GEOLOGIST: J. SMITH-BAGHERI WATER LEVEL DURING DRILLING: 9.5

DRILLING COMPANY: EXPLORATION TECHNOLOGY, INC.

DRILLER: J. BROWN DRILLERS ASSISTANT: J. MARKS

DRILLING METHOD: HOLLOW STEM AUGER-4¼"ID DRILL RIG: CME-55

DEPTH	SAMPLE INTERVAL	SAMPLE NO. AND TYPE	BLOW COUNTS PER 6 INCHES	SAMPLE RECOVERY (FT)	HNU READING	PENETROMETER (TSI)	U.S.C.S. SYMBOL	DESCRIPTION
13	X	SS-5	8 19	1.0	20 30	NA	GW	13-13.2: As above. 13.2-14: Light brownish gray (10YR 6/2) sand and gravel, wet.
14	X		16 19					
15								TOTAL DEPTH: 15 FEET.

FIELD BORING LOG

Versar INC. Technical Operations

PROJECT NAME: VME AMERICAS, INC. JOB # : 1871.001

BORING # : VSB-4 LOCATION: EAST END TANK PAD-2' FROM PAD, NORTH OF BLDG.

START DATE: 7/24/92 END DATE: 7/24/92 TOTAL DEPTH: 4

FIELD GEOLOGIST: J. SMITH-BAGHERI WATER LEVEL DURING DRILLING: _____

DRILLING COMPANY: EXPLORATION TECHNOLOGY, INC.

DRILLER: J. BROWN DRILLERS ASSISTANT: J. MARKS

DRILLING METHOD: HOLLOW STEM AUGER-4½"ID DRILL RIG: CME-55

DEPTH	SAMPLE INTERVAL	SAMPLE NO. AND TYPE	BLOW COUNTS PER 6 INCHES	SAMPLE RECOVERY (FT)	HNU READING	PENETROMETER (TSI)	U.S.C.S. SYMBOL	DESCRIPTION
								Asphalt cover.
1	X	SS-1	7	0.6	10	1.5	CL	1-1.6: Brown (10YR 4/3) silty clay, trace gravel, slightly moist.
2	X		3					Petroleum odor.
3			5					
4								TOTAL DEPTH: 4 FEET

FIELD BORING LOG

Versar INC. Technical Operations

PROJECT NAME: VME AMERICAS, INC. JOB # : 1871.001

BORING # : VSB-4R LOCATION: EAST END TANK PAD - 12' FROM PAD, NORTH OF BLDG.

START DATE: 7/24/92 END DATE: 7/24/92 TOTAL DEPTH: 21

FIELD GEOLOGIST: J. SMITH - BAGHERI WATER LEVEL DURING DRILLING: 13.1

DRILLING COMPANY: EXPLORATION TECHNOLOGY, INC.

DRILLER: J. BROWN DRILLERS ASSISTANT: J. MARKS

DRILLING METHOD: HOLLOW STEM AUGER - 4¼" ID DRILL RIG: CME-55

DEPTH	SAMPLE INTERVAL	SAMPLE NO. AND TYPE	BLOW COUNTS PER 6 INCHES	SAMPLE RECOVERY (FT)	HNU READING	PENETROMETER (TSI)	U.S.C.S. SYMBOL	DESCRIPTION
1								
2								0-4: See log for VSB-4.
3								
4								
5	X	SS-2	21 11 12 13	1.3	0	1.0	CL	4-5.3: Light yellowish brown (10YR 6/4) silty sand, fine, trace gravel, moderately well sorted, slightly moist.
6								
7								
8	X	SS-3	10 8 7 8	0.9	0	NA	SW	7-7.9: Light yellowish brown (10YR 6/4) sand, fine to medium, moderately well sorted, laminations, wet.
9								
10								
11	X	SS-4	6 5 6 8	1.0	0	NA	SP	10-11: Yellowish brown (10YR 5/6) sand, fine to medium, well sorted, grades down to brown (10YR 5/3), wet.
12								
13								

FIELD BORING LOG

Versar INC. Technical Operations

PROJECT NAME: VME AMERICAS, INC. JOB # : 1871-001

BORING # : VSB-4R LOCATION: EAST END TANK PAD - 12' FROM PAD, NORTH OF BLDG

START DATE: 7/24/92 END DATE: 7/24/92 TOTAL DEPTH: 21

FIELD GEOLOGIST: J. SMITH-BAGHERI WATER LEVEL DURING DRILLING: 13.1

DRILLING COMPANY: EXPLORATION TECHNOLOGY, INC.

DRILLER: J. BROWN DRILLERS ASSISTANT: J. MARKS

DRILLING METHOD: HOLLOW STEM AUGER - 4¼" ID DRILL RIG: CME-55

DEPTH	SAMPLE INTERVAL	SAMPLE NO. AND TYPE	BLOW COUNTS PER 6 INCHES	SAMPLE RECOVERY (FT)	HNU READING	PENETROMETER (TSI)	U.S.C.S. SYMBOL	DESCRIPTION
13	X	SS-5	9 16	0.7	0	NA	GW	13-13.7: Grayish brown (10YR5/2) sand and gravel, subangular, very poorly sorted, wet.
14	X		16 45					
15								
16	X	SS-6	35 12	1.1	0	NA	SW	16-17.1: Pale brown (10YR6/3) sand, fine to medium, moderately well sorted, subangular to subround, wet.
17	X		10 10					
18								
19	X	SS-7	41 21	1.2	0	NA	GW	19-20.2: Light brownish gray (10YR6/2) sand (fine to coarse) and gravel, very poorly sorted, wet.
20	X		19 26					
21								TOTAL DEPTH: 21 FEET.

FIELD BORING LOG

Versar INC. Technical Operations

PROJECT NAME: VME AMERICAS, INC. JOB # : 1871.001

BORING # : VSB-5 LOCATION: WEST BANK OF STREAM, NEAR NORTH BRIDGE.

START DATE: 7/24/92 END DATE: 7/24/92 TOTAL DEPTH: 18

FIELD GEOLOGIST: J. SMITH-RAGHERI WATER LEVEL DURING DRILLING: 9.6

DRILLING COMPANY: EXPLORATION TECHNOLOGY, INC.

DRILLER: J. BROWN DRILLERS ASSISTANT: J. MARKS

DRILLING METHOD: HOLLOW STEM AUGER-4¼" ID DRILL RIG: CME-55

DEPTH	SAMPLE INTERVAL	SAMPLE NO. AND TYPE	BLOW COUNTS PER 6 INCHES	SAMPLE RECOVERY (FT)	HNU READING	PENETROMETER (TSI)	U.S.C.S. SYMBOL	DESCRIPTION
1	X	SS-1	6	0.8	0	NA	SW	1-1.4: Dark brown (10YR3/3) sand and gravel, very poorly sorted, wet.
2	X		5					
3	X		3				SP	1.4-1.8: Black (10YR) sand, fine, very well sorted, wet.
4	X		3					
5	X	SS-2	2	1.3	0	NR	OL	4-5.3: Black organic clay, moist.
6	X		1					
7	X		2					
8	X	SS-3	2	1.7	0	2.25	OL	7-7.5: As above.
9	X		4			2.5		7.5-8.7: Gray (10YR6/1) silty clay grading down to clayey silt, moist.
10	X		5			2.0		
11	X	SS-4	6	1.3	0	NR	OL	10-10.2: As above, wet.
12	X		12			NA	GW	10-11.3: Gravel, 20% sand, fine to coarse, subround to angular, very poorly sorted, wet.
13			16					
			16					
			20					

FIELD BORING LOG

Versar INC. Technical Operations

PROJECT NAME: VIIF AMERICAS, INC. JOB # : 1871.001

BORING # : VSB-5 LOCATION: WEST BANK OF STREAM, NEAR NORTH BRIDGE.

START DATE: 7/24/92 END DATE: 7/24/92 TOTAL DEPTH: 18

FIELD GEOLOGIST: J. SMITH-BAGHERI WATER LEVEL DURING DRILLING: 9.6

DRILLING COMPANY: EXPLORATION TECHNOLOGY, INC.

DRILLER: J. BROWN DRILLERS ASSISTANT: J. MARKS

DRILLING METHOD: HOLLOW STEM AUGER-4 1/4" ID DRILL RIG: CME-55

DEPTH	SAMPLE INTERVAL	SAMPLE NO. AND TYPE	BLOW COUNTS PER 6 INCHES	SAMPLE RECOVERY (FT)	HNU READING	PENETROMETER (TSI)	U.S.C.S. SYMBOL	DESCRIPTION
13	X	SS-5	20	2.0	0	NA	GW	Sand and Gravel, very poorly sorted, angular to subrounded, wet.
14	X		9					
15	X		11					
16	X		17					
16	X	SS-6	26	1.5	0	NA	GW	16-17: As above.
17	X		10					17-17.5: Light gray (10YR 6/1) silt, wet.
17	X		9				ML	
18			9					TOTAL DEPTH: 18 FEET.

FIELD BORING LOG

Versar INC. Technical Operations

PROJECT NAME: VME AMERICAS, INC. JOB # : 1871.001

BORING # : VSB-6 LOCATION: SOUTHEAST CORNER OF TANK PAD - NORTH OF BLDG

START DATE: 7/27/92 END DATE: 7/27/92 TOTAL DEPTH: 21

FIELD GEOLOGIST: J. SMITH BAGHERI WATER LEVEL DURING DRILLING: NR

DRILLING COMPANY: EXPLORATION TECHNOLOGY, INC.

DRILLER: J. BROWN DRILLERS ASSISTANT: K. WALTERS

DRILLING METHOD: HOLLOW STEM AUGER - 4¼" ID DRILL RIG: CME-55

DEPTH	SAMPLE INTERVAL	SAMPLE NO. AND TYPE	BLOW COUNTS PER 6 INCHES	SAMPLE RECOVERY (FT)	HNU READING	PENETROMETER (TSI)	U.S.C.S. SYMBOL	DESCRIPTION
1	X	SS-1	8 6	1.0	0	1.5 1.75	CL	1-1.5: Black (10YR) silty clay, slightly moist.
2	X		5 7					1.5-2: Dark grayish brown (10YR 4/2) silty clay, slightly moist.
3								
4	X	SS-2	16 12	1.5	0	2.75 1.5	ML	4-5.5: Yellowish brown (10YR 5/6) fine sandy silt, mottled gray, trace subround to subangular gravel, slightly moist.
5	X		12 10			3.0		
6								
7	X	SS-3	10 12	1.3	0	NA	ML SW	7-8.3: As above grading down to yellowish brown (10YR 5/6) sand, fine to medium, 15% gravel, subround to subangular, moist.
8	X		10 10					
9								
10	X	SS-4	7 11	1.0	0	NA	SW	10-11: Pale brown (10YR 6/3) sand, moderately sorted, fine to medium, some coarse sand, trace gravel, wet.
11	X		10 11					
12								
13								

FIELD BORING LOG

Versar INC. Technical Operations

PROJECT NAME: VME AMERICAS, INC. JOB # : 1871.001

BORING # : VSB-6 LOCATION: SOUTH EAST CORNER OF TANK PAD - NORTH OF BLDG.

START DATE: 7/27/92 END DATE: 7/27/92 TOTAL DEPTH: _____

FIELD GEOLOGIST: J. SMITH-BAGHERI WATER LEVEL DURING DRILLING: NR

DRILLING COMPANY: EXPLORATION TECHNOLOGY, INC.

DRILLER: J. BROWN DRILLERS ASSISTANT: K. WALTERS

DRILLING METHOD: HOLLOW STEM AUGER - 4¼" ID DRILL RIG: CME-55

DEPTH	SAMPLE INTERVAL	SAMPLE NO. AND TYPE	BLOW COUNTS PER 6 INCHES	SAMPLE RECOVERY (FT)	HNU READING	PENETROMETER (TSI)	U.S.C.S. SYMBOL	DESCRIPTION
13	X	SS-5	20 10	0.8	0	NA	GW	13-13.8: Grayish brown (10YR5/2) sand and gravel, very poorly sorted, angular to subrounded, wet.
14	X		17 10					
15								
16	X	SS-6	45 12	1.0	0	NA	GW	16-17: As above.
17	X		14 11					
18								
19	X	SS-7	32 20	2.0	0	NA	SW	19-21: Grayish brown (10YR5/2) sand, fine to medium, trace gravel, subrounded, moderately well sorted.
20	X		21 32					
21								TOTAL DEPTH: 21 FEET.

FIELD BORING LOG

Versar INC. Technical Operations

PROJECT NAME: VME AMERICAS, INC. JOB # : 1871.001

BORING # : VSB-7 LOCATION: SOUTHEAST CORNER TANK PAD-20.5'SOUTH, NORTH OF BLDG.

START DATE: 7/27/92 END DATE: 7/27/92 TOTAL DEPTH: 21

FIELD GEOLOGIST: J. SMITH-BAGHERI WATER LEVEL DURING DRILLING: NR

DRILLING COMPANY: EXPLORATION TECHNOLOGY, INC.

DRILLER: J. BROWN DRILLERS ASSISTANT: K. WALTERS

DRILLING METHOD: HOLLOW STEM AUGER-4¼" ID DRILL RIG: CME-55

DEPTH	SAMPLE INTERVAL	SAMPLE NO. AND TYPE	BLOW COUNTS PER 6 INCHES	SAMPLE RECOVERY (FT)	HNU READING	PENETROMETER (TSI)	U.S.C.S. SYMBOL	DESCRIPTION
1								Asphalt cover.
2	X	SS-1	22 32	1.0	0	NA	GW OL	1-1.5: Gravel fill. 1.5-2: Black (10YR) clay; organic;
3	X		11 5					slightly moist.
4								
5	X	SS-2	21 10	1.3	0	NA	ML	4-5.3: Yellowish brown (10YR5/6) fine sandy silt, trace
6	X		15 13					subrounded gravel, slightly moist.
7								
8	X	SS-3	8 8 7	1.3	0	NA	SW	7-8.3: Yellowish brown (10YR 5/6) sand, fine to medium,
9	X		9 8					trace subrounded gravel, moderately well sorted,
10								wet.
11	X	SS-4	5 5	1.3	0	NA	SM SW	10-10.5: Yellowish brown (10YR5/6) silty sand, wet.
12	X		7 10					10.5-11.5: Grayish brown (10YR5/2) sand, fine to coarse,
13								trace gravel, subrounded to subangular, wet.

FIELD BORING LOG

Versar INC. Technical Operations

PROJECT NAME: VME AMERICAS, INC. JOB # : 1871.001

BORING # : VSB-7 LOCATION: SOUTHEAST CORNER TANK PAD-20.5'SOUTH, NORTH OF BLDG.

START DATE: 7/27/92 END DATE: 7/27/92 TOTAL DEPTH: 21

FIELD GEOLOGIST: J. SMITH-BAGHERI WATER LEVEL DURING DRILLING: NR

DRILLING COMPANY: EXPLORATION TECHNOLOGY, INC.

DRILLER: J. BROWN DRILLERS ASSISTANT: K. WALTERS

DRILLING METHOD: HOLLOW STEM AUGERS-4 1/4" ID DRILL RIG: CME-55

DEPTH	SAMPLE INTERVAL	SAMPLE NO. AND TYPE	BLOW COUNTS PER 6 INCHES	SAMPLE RECOVERY (FT)	HNU READING	PENETROMETER (TSI)	U.S.C.S. SYMBOL	DESCRIPTION
13	X	SS-5	14 14	0.3	0	NA	GW	13-13.3: Grayish brown (10YR 5/2) sand and gravel, very poorly sorted, angular to subrounded, wet.
14	X		25 13					
15								
16	X	SS-6	40 22	0.3	0	NA	GW	16-16.3: As above.
17	X		15 15					
18								
19	X	SS-7	24 12	2.0	0	NA	GW SW	19-19.5: As above 19.5-21: Grayish brown (10YR 5/2) sand, fine to coarse, 20% gravel, angular to subrounded, wet.
20	X		14 22					
21								TOTAL DEPTH: 21 FEET.

FIELD BORING LOG

Versar INC. Technical Operations

PROJECT NAME: VME AMERICAS, INC. JOB # : 1871.001

BORING # : VSB-8 LOCATION: 43' SOUTH OF SOUTHEAST CORNER TANK PAD.

START DATE: 7/27/92 END DATE: 7/27/92 TOTAL DEPTH: 9

FIELD GEOLOGIST: J. SMITH-BAGHERI WATER LEVEL DURING DRILLING: _____

DRILLING COMPANY: EXPLORATION TECHNOLOGY, INC.

DRILLER: J. BROWN DRILLERS ASSISTANT: K. WALTERS

DRILLING METHOD: HOLLOW STEM AUGER - 4¼" ID DRILL RIG: CME-55

DEPTH	SAMPLE INTERVAL	SAMPLE NO. AND TYPE	BLOW COUNTS PER 6 INCHES	SAMPLE RECOVERY (FT)	HNU READING	PENETROMETER (TSI)	U.S.C.S. SYMBOL	DESCRIPTION
1	X	SS-1	8 12	1.0	0.5	NA	GC	1-1.2: Very pale brown (10YR 8/3) clayey gravel fill.
2	X		16 5					1.2-2: Black (10YR) clayey gravel fill.
3								
4	X	SS-2	11 4	1.2	20*	NR	GC CL	4-4.6: As above. 4.6-5.2: Brownish yellow (10YR6/6)
5	X		7 9				SC	fine sandy clay grading downward to clayey sand
6								
7	X	SS-3	7 5	1.3	10*	NA	SM	7-8.3: Brownish yellow (10YR6/6) silty fine sand, trace gravel wet.
8	X		7 16					
9								TOTAL DEPTH: 9 FEET.

*MOISTURE MAY HAVE AFFECTED HNU READING - READINGS NOT RELIABLE.

FIELD BORING LOG

Versar INC. Technical Operations

PROJECT NAME: VME AMERICAS, INC. JOB # : 1871.001

BORING # : VSB-9 LOCATION: EAST SIDE OF BLDG, 150' NORTH OF SOUTHEAST CORNE

START DATE: 7/27/92 END DATE: 7/27/92 TOTAL DEPTH: 12

FIELD GEOLOGIST: J. SMITH-BAGHERI WATER LEVEL DURING DRILLING: 2.5

DRILLING COMPANY: EXPLORATION TECHNOLOGY, INC.

DRILLER: J. BROWN DRILLERS ASSISTANT: K. WALTERS

DRILLING METHOD: HOLLOW STEM AUGER-4¼" ID DRILL RIG: CME-55

DEPTH	SAMPLE INTERVAL	SAMPLE NO. AND TYPE	BLOW COUNTS PER 6 INCHES	SAMPLE RECOVERY (FT)	HNU READING	PENETROMETER (TSI)	U.S.C.S. SYMBOL	DESCRIPTION
1	X	SS-1	10 6	1.0	4 1	NA	GM CH	1-1.5: Gravel fill. 1.5-1.7: Black (10YR) clay, petroleum odor.
2	X		5 4					1.7-2: Olive gray (5Y5/2) sandy clay.
3								
4	X	SS-2	2 4	1.0	0	NR	CH	4-5: Olive gray (5Y4/2) clay, some rust color staining.
5	X		4 6					
6								
7	X	SS-3	5 4	1.5	0	NA	CL	7-8.2: Olive gray (5Y4/2) fine sandy clay, some silt, moist.
8	X		6 12				GW	8.2-8.5: Sand and gravel, moist.
9								
10	X	SS-4	7 10	2.0	0	NA	GW	10-12: As above, wet.
11	X		16 20					
12								TOTAL DEPTH: 12 FEET.
13								

FIELD BORING LOG

Versar INC. Technical Operations

PROJECT NAME: VME AMERICAS, INC. JOB # : 1871-001

BORING # : VSB-10 LOCATION: SOUTH END OF UST LOCATED INSIDE BLDG.

START DATE: 7/27/92 END DATE: 7/27/92 TOTAL DEPTH: 15

FIELD GEOLOGIST: J. SMITH-BAGHERI WATER LEVEL DURING DRILLING: NR

DRILLING COMPANY: EXPLORATION TECHNOLOGY, INC.

DRILLER: J. BROWN DRILLERS ASSISTANT: K. WALTERS

DRILLING METHOD: HOLLOW STEM AUGER-3¼" ID DRILL RIG: D-25

DEPTH	SAMPLE INTERVAL	SAMPLE NO. AND TYPE	BLOW COUNTS PER 6 INCHES	SAMPLE RECOVERY (FT)	HNU READING	PENETROMETER (TSI)	U.S.C.S. SYMBOL	DESCRIPTION
1	X	SS-1	87	1.5	0	NA	SW	1-2.5: Brownish yellow (10YR 6/6) sand, fine to medium, trace gravel, moderately well sorted, dry.
2	X		16					
3	X		16 17					
4								
5	X	SS-2	6 9/12"	0.2	0	NA	SM	4-4.2: Brownish yellow (10YR 6/6) silty sand, fine to medium, dry.
6	X							
7								
8	X	SS-3	26	1.5	0	>5	SM	7-7.6: As above.
9	X		6 9			2.0	CL	7.6-8.3: Black (10YR) fine sandy clay, dry.
10	X		12			2.0		8.3-8.5: Yellowish brown (10YR 5/4) fine sandy clay, dry.
11								
12	X	SS-4	20	2.0	0	NA	SM	10-12: Light yellowish brown (10YR 6/4) silty fine sand grading downward to clayey fine sand, trace gravel, moist.
13	X		25 32 19				SC	

FIELD BORING LOG

Versar INC. Technical Operations

PROJECT NAME: VME AMERICAS, INC. JOB # : 1871-001

BORING # : VSB-10 LOCATION: SOUTH END OF UST LOCATED INSIDE BLDG.

START DATE: 7/27/92 END DATE: 7/27/92 TOTAL DEPTH: 15

FIELD GEOLOGIST: J. SMITH-BAGHERI WATER LEVEL DURING DRILLING: NR

DRILLING COMPANY: EXPLORATION TECHNOLOGY, INC.

DRILLER: J. BROWN DRILLERS ASSISTANT: K. WALTERS

DRILLING METHOD: HOLLOW STEM AUGER-3¼" ID DRILL RIG: D-25

DEPTH	SAMPLE INTERVAL	SAMPLE NO. AND TYPE	BLOW COUNTS PER 6 INCHES	SAMPLE RECOVERY (FT)	HNU READING	PENETROMETER (TSI)	U.S.C.S. SYMBOL	DESCRIPTION
13	X	SS5	20 50/5"	1.5	0	NA	SC	13-14.5: Light yellowish brown (10YR6/4) clayey fine sand; trace gravel, moist.
14	X							
15								TOTAL DEPTH: 15 FEET.
16								

FIELD BORING LOG

Versar INC. Technical Operations

PROJECT NAME: VME AMERICAS, INC. JOB # : 1871.001

BORING # : VSB-11 LOCATION: NORTH END OF UST LOCATED INSIDE BLDG.

START DATE: 7/27/92 END DATE: 7/27/92 TOTAL DEPTH: 12

FIELD GEOLOGIST: J. SMITH-BAGHERI WATER LEVEL DURING DRILLING: _____

DRILLING COMPANY: EXPLORATION TECHNOLOGY, INC.

DRILLER: J. BROWN DRILLERS ASSISTANT: K. WALTERS

DRILLING METHOD: HOLLOW STEM AUGER-3¼" ID DRILL RIG: D-25

DEPTH	SAMPLE INTERVAL	SAMPLE NO. AND TYPE	BLOW COUNTS PER 6 INCHES	SAMPLE RECOVERY (FT)	HNU READING	PENETROMETER (TSI)	U.S.C.S. SYMBOL	DESCRIPTION
1								
2								
3								
4	X	SS-1	50/5"	0.5	0	NA	SM	4-4.5: Very pale brown (10YR7/4) silty sand, trace gravel, dry.
5	X							
6								
7	X	SS-2	NR	2.0	1	1.75	SM	7-7.5: As above.
8	X				1	2.75	ML	7.5-8.5: Black (10YR) silt, dry.
9	X					1.0	CL	8.5-9: Dark yellowish brown (10YR 4/4) grading down to very pale brown (10YR 7/3) silty clay, some fine sand, dry.
10	X	SS-3	NR	0.5	0	NR	CL	10-10.5: As above.
11	X							TOTAL DEPTH: 12 FEET.
12								
13								

ATTACHMENT 2
TPH ANALYSIS METHOD

CHEM-BIO CORPORATION
ENVIRONMENTAL
LABORATORIES

Per your request, I have gathered information relative to CBC's Total Petroleum Hydrocarbon Method.

CBC uses an in-house method, based upon SW-846 Method 3810 (static headspace technique) and ASTM Methods D-3415-79 and D-3328-78 (identification of water-borne oils). This gas chromatography method is based on pattern recognition, comparing both retention time and a given standard pattern to the pattern identified in the sample.

This method was designed to measure the concentrations of lighter petroleum fractions in various matrices. Owing to the variable nature of petroleum fractions, this method cannot be used to identify specific sources or grades of the fractions, but rather is designed to give concentration values based on various boiling-range standards. This analysis is not amenable to heavier fractions such as oils and waxes due to headspace sampling limitations.

TPH samples are normally run with a gasoline standard, and if other materials are present, the appropriate standard is added to the run for positive identification and quantification. Samples with positive TPH values are both quantitated and identified in the laboratory report. Listed below is the complete list of petroleum hydrocarbons for which we are currently calibrated with respect to the TPH method by headspace.

Gasoline	Kerosene
#2 Diesel	Mineral Spirits
#2 Fuel Oil	Stoddard Solvent
Jet Fuel (JP-4)	Paint Thinner
Petroleum Naptha	

CBC can analyze for specific standards at the client's request if free product is available for standard development. Heavier petroleum fractions which are not appropriate for headspace analysis may be amenable to an extraction method followed by direct injection or may be analyzed by method 418.1 for oils by IR detection.

I hope this information has been helpful.

If you have any further questions, please contact me at CBC Environmental Laboratories at 414-764-7005.

ATTACHMENT 3
PERTINENT REGULATIONS

Wisconsin Administrative Code

Department of Industry, Labor, and Human Relations

Chapter 10, Section 10.731 through 10.734

(3) LEAK DETECTION. Any leak detection testing requirement which was required during closure should be complied with prior to placing the tank back in service.

(4) PERMANENT CLOSURE. When an UST system is temporarily closed for more than 12 months, owners and operators shall permanently close the UST system if it does not meet either performance standards in s. ILHR 10.51 for new UST systems or the upgrading requirements in s. ILHR 10.52, except that the spill and overfill equipment requirements of s. ILHR 10.51 (3) or 10.52 (4) do not have to be met. Owners and operators shall permanently close the substandard UST systems at the end of this 12-month period in accordance with ss. ILHR 10.732 to 10.738, unless the department provides an extension of the 12-month temporary closure period. Owners and operators shall complete a site assessment in accordance with s. ILHR 10.734 before such an extension can be applied for.

History: Cr. Register, April, 1991, No. 424, eff. 5-1-91.

ILHR 10.731 Seldom used tanks. Except for oil tanks used for emergency and backup fuel or overflow tanks, UST systems shall be considered to be abandoned and therefore subject to closure in accordance with s. ILHR 10.730 or 10.732 unless product transfers are made to or from the system periodically.

(1) MOTOR FUEL TANKS. Transfers shall be made to and from motor fuel tanks at least once in any 180 day period to be considered in use.

(2) HEATING OIL TANKS. Transfers shall be made to and from heating oil tanks at least once in any one year period to be considered in use.

(3) RECORDS. Inventory records, manifests, or paid receipts for product received will be acceptable to the department as proof that transfers are being made.

(4) LESS FREQUENT TRANSFERS. UST system owners and operators may make written requests to the department for approval for less frequent use if it is justified as a part of the tank's purpose.

History: Cr. Register, April, 1991, No. 424, eff. 5-1-91.

ILHR 10.732 Permanent closure and changes-in-service. (1) NOTIFICATION. At least 15 days before beginning either permanent closure or a change-in-service under sub. (2) or (3) or within another reasonable time period determined by the department, owners and operators shall notify the authorized agent of their intent to permanently close or make the change-in-service, unless such action is in response to corrective action. A site assessment of the excavation zone in accordance with s. ILHR 10.734 shall be performed after notifying the authorized agent but before completion of the permanent closure or a change-in-service.

(2) CLEANING AND REMOVAL. (a) To permanently close a UST system, owners and operators shall empty and clean it by removing all liquids and accumulated sludges and remove it from the ground. Cleaning of the tank shall be performed by a certified cleaner. Removal of tanks and other portions of UST systems shall be performed by a certified remover. Tanks shall be made inert so that the composition of the atmosphere inside the tank is 10% of the lower explosive limit for the stored product prior to bringing the tank aboveground or performing any other work on the tank.

(b) If removal of the tanks from the ground would affect the structural integrity of a building or the fire chief or authorized agent determines a condition of hardship to exist, the tank may be abandoned in place and filled with an inert solid material after emptying and cleaning in accordance with par. (a).

(3) CHANGE-IN-SERVICE. Continued use of an UST system to store a nonregulated substance is considered a change-in-service. Before a change-in-service, owners and operators shall empty and clean the tank by removing all liquid and accumulated sludge and conduct a site assessment in accordance with s. ILHR 10.734. Cleaning of tanks and site assessments shall be performed by persons certified by the department.

Note: The following cleaning and closure procedures may be used as guidance for compliance with this section:

(A) American Petroleum Institute Recommended Practice 1604, "Removal and Disposal of Used Underground Petroleum Storage Tanks";

(B) American Petroleum Institute Publication 2015, "Cleaning Petroleum Storage Tanks";

(C) American Petroleum Institute Recommended Practice 1631, "Interior Lining of Underground Storage Tanks";

(D) The National Institute for Occupational Safety and Health "Criteria for a Recommended Standard...Working in Confined Space";

(E) National Leak Prevention Association Standard 631 "Spill Prevention, Minimum 10 Year Life Extension of Existing Steel Underground Storage Tanks by Lining Without the Addition of Cathodic Protection"; and

(F) Chapter ILHR 31, 'Confined Spaces".

History: Cr. Register, April, 1991, No. 424, eff. 5-1-91.

ILHR 10.734 Site assessment. (1) GENERAL. When a site assessment is required by this chapter, or when directed by the department, owners and operators must measure for the presence of a release where contamination is identified or is most likely to be present at the UST site.

(2) EXCEPTIONS. (a) A site assessment shall not be required for tanks that are closed or undergo a change-in-service if one of the external release detection methods allowed in s. ILHR 10.61 (5) and (6) is operating in accordance with the requirements of s. ILHR 10.61 at the time of closure and indicates that no release has occurred.

(b) A site assessment shall not be required for tanks which are lined if a visual internal inspection is made and no holes and no rust plugs are found during the lining process.

(3) SAMPLING AND MEASUREMENTS. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the method of closure, the nature of the stored substance, the type of backfill, the depth to groundwater, and other factors appropriate for identifying the presence of a release. Site assessments shall be performed by persons certified by the department.

Note: Use of the closure assessment procedures specified in Appendix B will be acceptable to the department as compliance with this subsection.

(4) DETECTION OF RELEASE. If contaminated soils, contaminated groundwater or free product as a liquid or vapor is discovered while as-

sessing the site, or by any other manner, owners and operators must begin corrective action in accordance with Part 6.

History: Cr. Register, April, 1991, No. 424, eff. 5-1-91.

ILHR 10.736 Applicability to previously closed UST systems. (1) GENERAL. When directed by the department, the owner and operator of an UST system permanently closed before December 22, 1988, shall assess the excavation zone and close the UST system in accordance with this part if releases from the UST may, in the judgment of the department, pose a current or potential threat to human health and the environment.

(2) SYSTEMS PREVIOUSLY CLOSED WITHOUT SOLID INERT FILL. (a) The owner and operator of an UST system which was permanently closed before September 1, 1971, without removing the tank from the ground but by filling the tank with water, shall bring the closed system into compliance with s. ILHR 10.732 except that the site assessment specified by s. ILHR 10.734 is not required. Written documentation shall be provided to prove closure with water prior to September 1, 1971. Compliance with this section shall be completed within 3 years after May 1, 1991.

Note: Prior to September 1, 1971, Ch. Ind 8, Flammable and Combustible Liquids Code allowed UST systems to be filled with water when closed or abandoned in place.

(b) Empty or improperly closed or abandoned tanks which do not meet the requirements of par. (a) shall be permanently closed in accordance with all of the provisions of this part.

History: Cr. Register, April, 1991, No. 424, eff. 5-1-91.

ILHR 10.738 Closure records. Owners and operators shall maintain records in accordance with s. ILHR 10.58 that are capable of demonstrating compliance with closure requirements under this part. The results of the excavation zone assessment required in s. ILHR 10.734 shall be maintained for at least 3 years after completion of permanent closure or change-in-service in one of the following ways:

(1) By the owners and operators who took the UST system out of service; or

(2) By the current owners and operators of the UST system site.

History: Cr. Register, April, 1991, No. 424, eff. 5-1-91.

Subchapter VII — Groundwater Protection for Small Farm and Residential Motor Fuel USTs and for Heating Oil USTs

(Farm and Residential Underground Storage Tanks of 1100 Gallons or Less Capacity Used for Storage of Motor Fuel for Noncommercial Purposes; Underground Storage Tanks Used for Storing Heating Oil for Consumptive Use on the Premises Where Stored.)

Part 1 — Program Scope

ILHR 10.74 Scope. This subchapter applies to the following:

(1) Farm and residential underground storage tank systems of 1100 gallons or less capacity used for storing motor fuel for noncommercial purposes; and

retention basin, unless the surface water is contaminated by a hazardous waste.

(2) CORRECTIVE ACTION. (a) If the department determines that a release from a solid waste management unit has occurred the department may, except as provided under par. (b), require the owner or operator of the facility containing the solid waste management unit to take corrective action, including corrective action beyond the facility, if necessary. The department may require an owner or operator to take corrective action regardless of when the hazardous waste or hazardous constituent released was placed in the solid waste management unit. The department may require corrective action by means of an order under s.144.73 or as a condition of licensing or plan approval under s.144.64. An order or condition under this paragraph shall state, with reasonable specificity, the nature of the corrective action required, shall include a description of the property on which the corrective action is to be taken and shall specify a time period for achieving compliance and a time period for the owner or operator to establish proof of financial responsibility for the cost of corrective action.

(b) If an owner or operator who is required under par. (a) to take corrective action on property that is beyond a facility shows that despite making a good faith effort the owner or operator was unable to obtain permission from the owner or occupant to enter that property, the owner or operator need not comply with the requirement with respect to that property.

144.737. Capacity assurance plan revision and review

(1) In this section:

(a) "Board" means the hazardous pollution prevention board created under s. 15.155(5).

(b) "Capacity assurance plan" means the plan submitted under 42 USC 9604(c)(9) for the management of hazardous waste generated in this state.

(2) The department shall do all of the following:

(a) Monitor changes in the generation of hazardous waste in this state and the progress toward meeting the goals in the capacity assurance plan.

(b) Notify the governor and the board of any significant problems that occur or may occur in the ability to manage a type of hazardous waste in this state and of the need to change the goals in the capacity assurance plan.

(c) On or before July 30 of each year in which submission of a revised capacity assurance plan is required by the federal environmental protection agency, complete a draft of a revised capacity assurance plan and provide the draft to the board, the governor and the chief clerk of each house of the legislature for distribution under s. 13.172(2).

(d) Hold a public informational hearing to solicit comments on the draft of the revised capacity assurance plan no later than 45 days after providing the draft under par. (c).

(e) Each year in which submission of a revised capacity assurance plan is required by the federal environmental protection agency, provide its proposed version of the revised capacity assurance plan, no later than 14 days prior to the federal environmental protection agency deadline for submittal, to the board, the governor and the chief clerk of each house of the legislature for distribution under s. 13.172(2).

144.74. Violations and penalties

(1) CIVIL PENALTIES. Any person who violates any provision of ss.144.60 to 144.70 or any rule promulgated or special order, plan approval or term or condition of a license or variance issued under those sections shall forfeit not less than $100 nor more than $25,000 for each violation. Each day of a continuing violation is a separate offense.

(2) CRIMINAL PENALTIES. (a) Any person who wilfully does any of the following shall be fined not less than $100 nor more than $25,000 or imprisoned for not more than one year in the county jail or both:

1. In connection with an application, label, manifest, record, report, license or other document relating to ss.144.60 to 144.70, makes an untrue statement of a material fact or fails to state a material fact with the result that the statements made in the document are misleading.

2. Destroys, alters, conceals or fails to submit a record required to be maintained or submitted under ss. 144.60 to 144.70 or a rule promulgated or special order, plan approval or term or condition of a license or variance issued under any of those sections.

(b) Any person who wilfully does any of the following shall be fined not less than $1,000 nor more than $100,000 or imprisoned for not more than 5 years or both:

1. Transports any hazardous waste to a facility or site that does not have a license as required under s.144.64.

2. Stores, treats, transports or disposes of any hazardous waste without a license required under s.144.64 or in violation of a rule promulgated or special order, plan approval or term or condition of a license or variance issued under that section.

(c) 1. For a 2nd or subsequent violation under par. (a), a person shall be fined not less than $1,000 nor more than $50,000 or imprisoned for not more than one year in the Wisconsin state prisons or both.

2. For a 2nd or subsequent violation under par. (b), a person shall be fined not less than $5,000 nor more than $150,000 or imprisoned for not more than 10 years or both.

(d) Each day of a continuing violation constitutes a separate offense.

(e) If a person commits a violation in connection with an enterprise, as defined under s.946.82(2), the maximum penalties specified in pars. (a), (b) and (c) shall be doubled.

144.75 Household hazardous waste. The department shall establish and administer a grant program to assist municipalities in creating and operating local programs for the collection and disposal of household hazardous waste.

144.76 Hazardous substance spills. (1) DEFINITIONS. As used in this section:

(a) "Discharge" means, but is not limited to, spilling, leaking, pumping, pouring, emitting, emptying or dumping.

(b) [Renumbered]

(c) "Preventive measures" mean the installation or testing of equipment or devices, a designated way of performing a specified operation or the preparation of an emergency response plan.

(2) NOTICE OF DISCHARGE. (a) A person who possesses or controls a hazardous substance or who causes the discharge of a hazardous substance shall notify the department immediately of any discharge not exempted under sub. (9).

(b) Notification received under this section or information obtained in a notification received under this section may not be used against the person making such a notification in any criminal proceedings.

(c) The department shall designate a 24-hour statewide toll free or collect telephone number whereby notice of any hazardous discharge may be made.

(3) RESPONSIBILITY. A person who possesses

or controls a hazardous substance which is discharged or who causes the discharge of a hazardous substance shall take the actions necessary to restore the environment to the extent practicable and minimize the harmful effects from the discharge to the air, lands or waters of this state.

(4) PREVENTION OF DISCHARGE. (a) The department may require that preventive measures be taken by any person possessing or having control over a hazardous substance if the department finds that existing control measures are inadequate to prevent discharges.

(b) The department shall specify necessary preventive measures by order. The order shall be effective 10 days after issuance, unless the person named requests a hearing, in which case no order may become effective until the conclusion of the hearing.

(5) CONTINGENCY PLAN. (a) After consultation with other affected federal, state and local agencies and private organizations, the department shall establish by rule criteria and procedures for the development, establishment and amendment of a contingency plan for the undertaking of emergency actions in response to the discharge of hazardous substances.

(b) The contingency plan shall:

1. Provide for efficient, coordinated and effective action to minimize damage to the air, land and waters of the state caused by the discharge of hazardous substances;

2. Include containment, clean-up and disposal procedures;

3. Provide for restoration of the lands or waters affected to the satisfaction of the department;

4. Assign duties and responsibilities among state departments and agencies, in coordination with federal and local agencies;

5. Provide for the identification, procurement, maintenance and storage of necessary equipment and supplies;

6. Provide for designation of persons trained, prepared and available to provide the necessary services to carry out the plan; and

7. Establish procedures and techniques for identifying, locating, monitoring, containing, removing and disposing of discharged hazardous substances.

(6) HAZARDOUS SUBSTANCES SPILLS: APPROPRIATIONS AND RELATED PROVISIONS. (a) *Contingency plan: activities resulting from discharges.* The department may utilize moneys appropriated under s. 20.370(2)(dv), (dx) and (fq) in implementing and carrying out the contingency plan developed under sub. (5) and to provide for the procurement, maintenance and storage of necessary equipment and supplies, personnel training and expenses incurred in identifying, locating, monitoring, containing, removing and disposing of discharged substances.

(b) *Limitation on equipment expenses.* No more than 25% of the moneys available under the appropriation under s. 20.370(2)(dv), (dx) or (fq) during any fiscal year may be used for the procurement and maintenance of necessary equipment during that fiscal year.

(c) *Reimbursements.* 1. Reimbursements to the department under sub. (7) (b) shall be credited to the environmental fund for environmental repair.

2. Reimbursements to the department under section 311, federal water pollution control act amendments of 1972, P.L. 92-500, shall be credited to the appropriation under s. 20.370 (2) (cm).

(7) REMOVAL OR OTHER EMERGENCY ACTION. (a) In any case where action required under sub. (3) is not being adequately taken or the identity of the person responsible for the discharge is unknown, the department or its authorized representative may identify, locate, monitor, contain, remove or dispose of the hazardous substance or take any other emergency action which it deems appropriate under the circumstances.

(b) The person who possessed or controlled hazardous substance which was discharged or who caused the discharge of a hazardous substance shall reimburse the department for actual and necessary expenses incurred in carrying out its duties under this subsection.

(c) The department, for the protection of public health, safety or welfare, may issue an emergency order or a special order to the person possessing, controlling or responsible for the discharge of hazardous substances to fulfill the duty imposed by sub. (3).

(8) ACCESS TO PROPERTY AND RECORDS. Any officer, employe or authorized representative of the department, upon notice to the owner or occupant, may enter any property, premises or place at any time for the purposes of sub. (7) if the entry is necessary to prevent increased damage to the air, land or waters of the state, or may inspect any record relating to a hazardous substance for the purpose of ascertaining the state of compliance with this section and the management rules promulgated under this section. Notice to the owner or occupant is not required if the delay attendant upon providing it will result in imminent risk to public health or safety or the environment.

(9) EXEMPTIONS. (a) Any person holding a valid permit under ch. 147 is exempted from the reporting and penalty requirements of this section with respect to substances discharged within the limits authorized by the permit.

(b) Law enforcement officers or members of a fire department using hazardous substances in carrying out their responsibility to protect public health, safety and welfare are exempted from the penalty requirements of this section, but shall report to the department any discharges of a hazardous substance occurring within the performance of their duties.

(c) Any person discharging in conformity with a permit or program approved under this chapter is exempted from the reporting and penalty requirements of this section.

(d) Any person applying a registered pesticide according to the label instructions is exempted with respect to the application from the reporting and penalty requirements of this section.

(10) WAIVER. The department may waive compliance with any requirement of this section to the extent necessary to prevent an emergency condition threatening public health, safety or welfare.

(11) ENFORCEMENT EXCLUSIONS. (a) Any person proceeded against for a violation of this section shall not be subject to penalties under s. 144.74 for the same act or omission.

(b) Any person who discharges a hazardous substance, where the responsibilities for such a discharge are prescribed by statute other than ss. 144.60 to 144.74, shall be subject to the penalty under either this section or the other section but not both.

(12) APPLICABILITY. (a) Action by the department under this section is not subject to s. 144.442(4) to (9).

(b) This section applies to all releases of hazardous substances for which a notification must be made under s. 166.20(5)(a)2.

144.77 Abandoned containers. (1) DEFINITION. In this section, "abandoned container" means any container which contains a hazardous substance and is not being monitored and maintained.

(2) APPLICABILITY. (a) This section does not apply to abandoned containers which are located in an approved facility or a nonapproved facility, as defined under s. 144.442 (1).

(b) Action by the department under this section is not subject to s. 144.442 (4) to (9).

(3) CONTINGENCY PLAN. (a) After consultation with other affected federal, state and local agencies and private organizations, the department shall establish by rule criteria and procedures for the development, establishment and amendment of a contingency plan for the taking of emergency actions in relation to abandoned containers.

(b) The contingency plan shall establish procedures and techniques for locating, identifying, removing and disposing of abandoned containers.

(4) REMOVAL OR OTHER EMER-

Code of Federal Regulations

Chapter 40, §761.125

ther, EPA requires the collection and testing of field blanks and replicates.

[52 FR 10705, Apr. 2, 1987; 52 FR 23397, June 19, 1987]

§ 761.125 Requirements for PCB spill cleanup.

(a) *General.* Unless expressly limited, the reporting, disposal, and precleanup sampling requirements in paragraphs (a) (1) through (3) of this section apply to all spills of PCBs at concentrations of 50 ppm or greater which are subject to decontamination requirements under TSCA, including those spills listed under § 761.120(b) which are excluded from the cleanup standards at paragraphs (b) and (c) of this section.

(1) *Reporting requirements.* The reporting in paragraphs (a)(1) (i) through (iv) of this section is required in addition to applicable reporting requirements under the Clean Water Act (CWA) or the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA). For example, under the National Contingency Plan all spills involving 10 pounds or more by weight of PCBs must currently be reported to the National Response Center (1-800-424-8802). The requirements in paragraphs (a)(1) (i) through (iv) of this section are designed to be consistent with existing reporting requirements to the extent possible so as to minimize reporting burdens on governments as well as the regulated community.

(i) Where a spill directly contaminates surface water, sewers, or drinking water supplies, as discussed under § 761.120(d), the responsible party shall notify the appropriate EPA regional office (the Office of Pesticides and Toxic Substances Branch) and obtain guidance for appropriate cleanup measures in the shortest possible time after discovery, but in no case later than 24 hours after discovery.

(ii) Where a spill directly contaminates grazing lands or vegetable gardens, as discussed under § 761.120(d), the responsible party shall notify the appropriate EPA regional office (the Office of Pesticides and Toxic Substances Branch) and proceed with the immediate requirements specified under paragraph (b) or (c) of this section, depending on the source of the spill, in the shortest possible time after discovery, but in no case later than 24 hours after discovery.

(iii) Where a spill exceeds 10 pounds of PCBs by weight and is not addressed in paragraph (a)(1) (i) or (ii) of this section, the responsible party will notify the appropriate EPA regional office (Pesticides and Toxic Substances Branch) and proceed to decontaminate the spill area in accordance with this TSCA policy in the shortest possible time after discovery, but in no case later than 24 hours after discovery.

(iv) Spills of 10 pounds or less, which are not addressed in paragraph (a)(1) (i) or (ii) of this section, must be cleaned up in accordance with this policy (in order to avoid EPA enforcement liability), but notification of EPA is not required.

(2) *Disposal of cleanup debris and materials.* All concentrated soils, solvents, rags, and other materials resulting from the cleanup of PCBs under this policy shall be properly stored, labeled, and disposed of in accordance with the provisions of § 761.60.

(3) *Determination of spill boundaries in the absence of visible traces.* For spills where there are insufficient visible traces yet there is evidence of a leak or spill, the boundaries of the spill are to be determined by using a statistically based sampling scheme.

(b) *Requirements for cleanup of low-concentration spills which involve less than 1 pound of PCBs by weight (less than 270 gallons of untested mineral oil)*—(1) *Decontamination requirements.* Spills of less than 270 gallons of untested mineral oil, low-concentration PCBs, as defined under § 761.123, which involve less than 1 pound of PCBs by weight (e.g., less than 270 gallons of untested mineral oil containing less than 500 ppm PCBs) shall be cleaned in the following manner:

(i) Solid surfaces must be double washed/rinsed (as defined under § 761.123); except that all indoor, residential surfaces other than vault areas must be cleaned to 10 micrograms per 100 square centimeters (10 $\mu g/100\ cm^2$) by standard commercial wipe tests.

(ii) All soil within the spill area (i.e., visible traces of soil and a buffer of 1

lateral foot around the visible traces) must be excavated, and the ground be restored to its original configuration by back-filling with clean soil (i.e., containing less than 1 ppm PCBs).

(iii) Requirements of paragraphs (b)(1) (i) and (ii) of this section must be completed within 48 hours after the responsible party was notified or became aware of the spill.

(2) *Effect of emergency or adverse weather.* Completion of cleanup may be delayed beyond 48 hours in case of circumstances including but not limited to, civil emergency, adverse weather conditions, lack of access to the site, and emergency operating conditions. The occurrence of a spill on a weekend or overtime costs are not acceptable reasons to delay response. Completion of cleanup may be delayed only for the duration of the adverse conditions. If the adverse weather conditions, or time lapse due to other emergency, has left insufficient visible traces, the responsible party must use a statistically based sampling scheme to determine the spill boundaries as required under paragraph (a)(3) of this section.

(3) *Records and certification.* At the completion of cleanup, the responsible party shall document the cleanup with records and certification of decontamination. The records and certification must be maintained for a period of 5 years. The records and certification shall consist of the following:

(i) Identification of the source of the spill (e.g., type of equipment).

(ii) Estimated or actual date and time of the spill occurrence.

(iii) The date and time cleanup was completed or terminated (if cleanup was delayed by emergency or adverse weather: the nature and duration of the delay).

(iv) A brief description of the spill location.

(v) Precleanup sampling data used to establish the spill boundaries if required because of insufficient visible traces, and a brief description of the sampling methodology used to establish the spill boundaries.

(vi) A brief description of the solid surfaces cleaned and of the double wash/rinse method used.

(vii) Approximate depth of soil excavation and the amount of soil removed.

(viii) A certification statement signed by the responsible party stating that the cleanup requirements have been met and that the information contained in the record is true to the best of his/her knowledge.

(ix) While not required for compliance with this policy, the following information would be useful if maintained in the records:

(A) Additional pre- or post-cleanup sampling.

(B) The estimated cost of the cleanup by man-hours, dollars, or both.

(c) *Requirements for cleanup of high-concentration spills and low-concentration spills involving 1 pound or more PCBs by weight (270 gallons or more of untested mineral oil).* Cleanup of low-concentration spills involving 1 lb or more PCBs by weight and of all spills of materials other than low-concentration materials shall be considered complete if all of the immediate requirements, cleanup standards, sampling, and recordkeeping requirements of paragraphs (c) (1) through (5) of this section are met.

(1) *Immediate requirements.* The four actions in paragraphs (c)(1) (i) through (iv) of this section must be taken as quickly as possible and within no more than 24 hours (or within 48 hours for PCB Transformers) after the responsible party was notified or became aware of the spill, except that actions described in paragraphs (c)(1) (ii) through (iv) of this section can be delayed beyond 24 hours if circumstances (e.g., civil emergency, hurricane, tornado, or other similar adverse weather conditions, lack of access due to physical impossibility, or emergency operating conditions) so require for the duration of the adverse conditions. The occurrence of a spill on a weekend or overtime costs are not acceptable reasons to delay response. Owners of spilled PCBs who have delayed cleanup because of these types of circumstances must keep records documenting the fact that circumstances precluded rapid response.

(i) The responsible party shall notify the EPA regional office and the NRC

as required by § 761.125(a)(1) or by other applicable statutes.

(ii) The responsible party shall effectively cordon off or otherwise delineate and restrict an area encompassing any visible traces plus a 3-foot buffer and place clearly visible signs advising persons to avoid the area to minimize the spread of contamination as well as the potential for human exposure.

(iii) The responsible party shall record and document the area of visible contamination, noting the extent of the visible trace areas and the center of the visible trace area. If there are no visible traces, the responsible party shall record this fact and contact the regional office of the EPA for guidance in completing statistical sampling of the spill area to establish spill boundaries.

(iv) The responsible party shall initiate cleanup of all visible traces of the fluid on hard surfaces and initiate removal of all visible traces of the spill on soil and other media, such as gravel, sand, oyster shells, etc.

(v) If there has been a delay in reaching the site and there are insufficient visible traces of PCBs remaining at the spill site, the responsible party must estimate (based on the amount of material missing from the equipment or container) the area of the spill and immediately cordon off the area of suspect contaimination. The responsible party must then utilize a statistically based sampling scheme to identify the boundaries of the spill area as soon as practicable.

(vi) Although this policy requires certain immediate actions, as described in paragraphs (c)(1)(i) through (iv) of this section, EPA is not placing a time limit on completion of the cleanup effort since the time required for completion will vary from case to case. However, EPA expects that decontamination will be achieved promptly in all cases and will consider promptness of completion in determining whether the responsible party made good faith efforts to clean up in accordance with this policy.

(2) *Requirements for decontaminating spills in outdoor electrical substations.* Spills which occur in outdoor electrical substations, as defined under § 761.123, shall be decontaminated in accordance with paragraphs (c)(2)(i and (ii) of this section. Conformanc to the cleanup standards under para graphs (c)(2)(i) and (ii) of this sectio shall be verified by post-cleanup sam pling as specified under § 761.130. A such times as outdoor electrical sut stations are converted to another us the spill site shall be cleaned up to th nonrestricted access requirement under paragraph (c)(4) of this sectio

(i) Contaminated solid surface (both impervious and non-impervious shall be cleaned to a PCB concentr tion of 100 micrograms (μg)/10 square centimeters (cm^2) (as measure by standard wipe tests).

(ii) At the option of the responsibl party, soil contaminated by the spi will be cleaned either to 25 ppm PCB by weight, or to 50 ppm PCBs b weight provided that a label or notic is visibly placed in the area. Upo demonstration by the responsibl party that cleanup to 25 ppm or 5 ppm will jeopardize the integrity the electrical equipment at the subst tion, the EPA regional office may e tablish an alternative cleanup metho or level and place the responsibl party on a reasonably timely schedul for completion of cleanup.

(3) *Requirements for decontamina ing spills in other restricted acces areas.* Spills which occur in restricte access locations other than outdoo electrical substations, as defined und § 761.123, shall be decontaminated i accordance with paragraphs (c)(3) (i through (v) of this section. Conform ance to the cleanup standards in par graphs (c)(3) (i) through (v) of thi section shall be verified by pos cleanup sampling as specified unde § 761.130. At such times as restricte access areas other than outdoor ele trical substations are converted to a other use, the spill site shall b cleaned up to the nonrestricted acces area requirements of paragraph (c)(of this section.

(i) High-contact solid surfaces, as d fined under § 761.163 shall be clean to 10 μg/100 cm^2 (as measured b standard wipe tests).

(ii) Low-contact, indoor, impervio solid surfaces will be decontaminat to 10 μg/100 cm^2.

(iii) At the option of the responsible party, low-contact, indoor, nonimpervious surfaces will be cleaned either to 10 $\mu g/100\ cm^2$ or to 100 $\mu g/100\ cm^2$ and encapsulated. The Regional Administrator, however, retains the authority to disallow the encapsulation option for a particular spill situation upon finding that the uncertainties associated with that option pose special concerns at that site. That is, the Regional Administrator would not permit encapsulation if he/she determined that if the encapsulation failed the failure would create an imminent hazard at the site.

(iv) Low-contact, outdoor surfaces (both impervious and nonimpervious) shall be cleaned to 100 $\mu g/100\ cm^2$.

(v) Soil contaminated by the spill will be cleaned to 25 ppm PCBs by weight.

(4) *Requirements for decontaminating spills in nonrestricted access areas.* Spills which occur in nonrestricted access locations, as defined under § 761.123, shall be decontaminated in accordance with paragraphs (c)(4)(i) through (v) of this section. Conformance to the cleanup standards at paragraphs (c)(4)(i) through (v) of this section shall be verified by postcleanup sampling as specified under § 761.130.

(i) Furnishings, toys, and other easily replaceable household items shall be disposed of in accordance with the provisions of § 761.60 and replaced by the responsible party.

(ii) Indoor solid surfaces and high-contact outdoor solid surfaces, defined as high contact residential/commercial surfaces under § 761.123, shall be cleaned to 10 $\mu g/100\ cm^2$ (as measured by standard wipe tests).

(iii) Indoor vault areas and low-contact, outdoor, impervious solid surfaces shall be decontaminated to 10 $\mu g/100\ cm^2$.

(iv) At the option of the responsible party, low-contact, outdoor, nonimpervious solid surfaces shall be either cleaned to 10 $\mu g/100\ cm^2$ or cleaned to 100 $\mu g/100\ cm^2$ and encapsulated. The Regional Administrator, however, retains the authority to disallow the encapsulation option for a particular spill situation upon finding that the uncertainties associated with that option pose special concerns at that site. That is, the Regional Administrator would not permit encapsulation if he/she determined that if the encapsulation failed the failure would create an imminent hazard at the site.

(v) Soil contaminated by the spill will be decontaminated to 10 ppm PCBs by weight provided that soil is excavated to a minimum depth of 10 inches. The excavated soil will be replaced with clean soil, i.e., containing less than 1 ppm PCBs, and the spill site will be restored (e.g., replacement of turf).

(5) *Records.* The responsible party shall document the cleanup with records of decontamination. The records must be maintained for a period of 5 years. The records and certification shall consist of the following:

(i) Identification of the source of the spill, e.g., type of equipment.

(ii) Estimated or actual date and time of the spill occurrence.

(iii) The date and time cleanup was completed or terminated (if cleanup was delayed by emergency or adverse weather: the nature and duration of the delay).

(iv) A brief description of the spill location and the nature of the materials contaminated. This information should include whether the spill occurred in an outdoor electrical substation, other restricted access location, or in a nonrestricted access area.

(v) Precleanup sampling data used to establish the spill boundaries if required because of insufficient visible traces and a brief description of the sampling methodology used to establish the spill boundaries.

(vi) A brief description of the solid surfaces cleaned.

(vii) Approximate depth of soil excavation and the amount of soil removed.

(viii) Postcleanup verification sampling data and, if not otherwise apparent from the documentation, a brief description of the sampling methodology and analytical technique used.

(ix) While not required for compliance with this policy, information on the estimated cost of cleanup (by man-hours, dollars, or both) would be useful if maintained in the records.

[52 FR 10705, Apr. 2, 1987, as amended at 53 FR 40884, Oct. 19, 1988]

§761.130 Sampling requirements.

Postcleanup sampling is required to verify the level of cleanup under § 761.125(c) (2) through (4). The responsible party may use any statistically valid, reproducible, sampling scheme (either random samples or grid samples) provided that the requirements of paragraphs (a) and (b) of this section are satisfied.

(a) The sampling area is the greater of (1) an area equal to the area cleaned plus an additional 1-foot boundary, or (2) an area 20 percent larger than the original area of contamination.

(b) The sampling scheme must ensure 95 percent confidence against false positives.

(c) The number of samples must be sufficient to ensure that areas of contamination of a radius of 2 feet or more within the sampling area will be detected, except that the minimum number of samples is 3 and the maximum number of samples is 40.

(d) The sampling scheme must include calculation for expected variability due to analytical error.

(e) EPA recommends the use of a sampling scheme developed by the Midwest Research Institute (MRI) for use in EPA enforcement inspections: "Verification of PCB Spill Cleanup by Sampling and Analysis." Guidance for the use of this sampling scheme is available in the MRI report "Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup." Both the MRI sampling scheme and the guidance document are available from the TSCA Assistance Office, Environmental Protection Agency, Rm. E-543, 401 M St. SW., Washington, DC 20460 (202-554-1404). The major advantage of this sampling scheme is that it is designed to characterize the degree of contamination within the entire sampling area with a high degree of confidence while using fewer samples than any other grid or random sampling scheme. This sampling scheme also allows some sites to be characterized on the basis of composite samples.

(f) EPA may, at its discretion, take samples from any spill site. If EPA's sampling indicates that the remainin: concentration level exceeds the re quired level, EPA will require furthe cleanup. For this purpose, the numer. cal level of cleanup required for spill cleaned in accordance witl § 761.125(b) is deemed to be the equi\ alent of numerical cleanup require ments required for cleanups unde. § 761.125(c)(2) through (4). Using it best engineering judgment, EPA ma: sample a statistically valid random o grid sampling technique, or both When using engineering judgment o random "grab" samples, EPA will tak< into account that there are limits o1 the power of a grab sample to disput< statistically based sampling of th< type required of the responsible party EPA headquarters will provide guid ance to the EPA regions on the degre< of certainty associated with variou: grab sample results.

§761.135 Effect of compliance with thi: policy and enforcement.

(a) Although a spill of material con taining 50 ppm or greater PCBs is con sidered improper PCB disposal, thi: policy establishes requirements tha EPA considers to be adequate cleanu] of the spilled PCBs. Cleanup in ac cordance with this policy means com pliance with the procedural as well a: the numerical requirements of thi: policy. Compliance with this policy creates a presumption against both enforcement action for penalties and the need for further cleanup under TSCA. The Agency reserves the right, however, to initiate appropriate action tc compel cleanup where, upon review o1 the records of cleanup or EPA sampling following cleanup, EPA finds that the decontamination levels in the policy have not been achieved. The Agency also reserves the right to seek penalties where the Agency believes that the responsible party has not made a good faith effort to comply with all provisions of this policy, such as prompt notification of EPA of a spill, recordkeeping, etc.

(b) EPA's exercise of enforcement discretion does not preclude enforcement action under other provisions of TSCA or any other Federal statute This includes, even in cases where the

Code of Federal Regulations

Chapter 40, Sections 261.21 through 261.24

(2) The characteristic can be:

(i) Measured by an available standardized test method which is reasonably within the capability of generators of solid waste or private sector laboratories that are available to serve generators of solid waste; or

(ii) Reasonably detected by generators of solid waste through their knowledge of their waste.

§ 261.11 Criteria for listing hazardous waste.

(a) The Administrator shall list a solid waste as a hazardous waste only upon determining that the solid waste meets one of the following criteria:

(1) It exhibits any of the characteristics of hazardous waste identified in Subpart C.

(2) It has been found to be fatal to humans in low doses or, in the absence of data on human toxicity, it has been shown in studies to have an oral LD 50 toxicity (rat) of less than 50 milligrams per kilogram, an inhalation LC 50 toxicity (rat) of less than 2 milligrams per liter, or a dermal LD 50 toxicity (rabbit) of less than 200 milligrams per kilogram or is otherwise capable of causing or significantly contributing to an increase in serious irreversible, or incapacitating reversible, illness. (Waste listed in accordance with these criteria will be designated Acute Hazardous Waste.)

(3) It contains any of the toxic constituents listed in appendix VIII and, after considering the following factors, the Administrator concludes that the waste is capable of posing a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of, or otherwise managed.

[261.11(a)(3) introductory text amended by 55 FR 18726, May 4, 1990; 57 FR 14, January 2, 1992]

(i) The nature of the toxicity presented by the constituent.

(ii) The concentration of the constituent in the waste.

(iii) The potential of the constituent or any toxic degradation product of the constituent to migrate from the waste into the environment under the types of improper management considered in paragraph (a)(3)(vii) of this section.

(iv) The persistence of the constituent or any toxic degradation product of the constituent.

(v) The potential for the constituent or any toxic degradation product of the constituent to degrade into nonharmful constituents and the rate of degradation.

(vi) The degree to which the constituent or any degradation product of the constituent bioaccumulates in ecosystems.

(vii) The plausible types of improper management to which the waste could be subjected.

(viii) The quantities of the waste generated at individual generation sites or on a regional or national basis.

(ix) The nature and severity of the human health and environmental damage that has occurred as a result of the improper management of wastes containing the constituent.

(x) Action taken by other governmental agencies or regulatory programs based on the health or environmental hazard posed by the waste or waste constituent.

(xi) Such other factors as may be appropriate.

Substances will be listed on Appendix VIII only if they have been shown in scientific studies to have toxic, carcinogenic, mutagenic or teratogenic effects on humans or other life forms.

(Wastes listed in accordance with these criteria will be designated Toxic wastes.)

(b) The Administrator may list classes or types of solid waste as hazardous waste if he has reason to believe that individual wastes, within the class or type of waste, typically or frequently are hazardous under the definition of hazardous waste found in section 1004(5) of the Act.

(c) The Administrator will use the criteria for listing specified in this section to establish the exclusion limits referred to in § 261.5(c).

Subpart C—Characteristics of Hazardous Waste

§ 261.20 General.

(a) A solid waste, as defined in § 261.2, which is not excluded from regulation as a hazardous waste under § 261.4(b), is a hazardous waste if it exhibits any of the characteristics identified in this subpart.

[*Comment*: § 262.11 of this chapter sets forth the generator's responsibility to determine whether his waste exhibits one or more of the characteristics identified in this subpart.]

(b) A hazardous waste which is identified by a characteristic in this subpart is assigned every EPA Hazardous Waste Number that is applicable as set forth in this subpart. This number must be in complying with the notification requirements of section 3010 of the Act and all applicable recordkeeping and reporting requirements under parts 262 through 265, 268, and 270 of this chapter.

[261.20(b) revised by 55 FR 22683, June 1, 1990]

(c) For purposes of this subpart, the Administrator will consider a sample obtained using any of the applicable sampling methods specified in Appendix I to be a representative sample within the meaning of Part 260 of this chapter.

[*Comment*: Since the Appendix I sampling methods are not being formally adopted by the Administrator, a person who desires to employ an alternative sampling method is not required to demonstrate the equivalency of his method under the procedures set forth in §§ 260.20 and 260.21.]

§ 261.21 Characteristic of ignitability.

(a) A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

(1) It is a liquid, other than an aqueous solution containing less than 24

percent alcohol by volume and has flash point less than 60°C (140°F), as determined by a Pensky-Martens Closed Cup Tester, using the test method specified in ASTM Standard D-93-79 or D-93-80 (incorporated by reference, see § 260.11), or a Setaflash Closed Cup Tester, using the test method specified in ASTM Standard D-3278-78 (incorporated by reference, see § 260.11), or as determined by an equivalent test method approved by the Administrator under procedures set forth in §§ 260.20 and 260.21.

(2) It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard.

(3) It is an ignitable compressed gas as defined in 49 CFR 173.300 and as determined by the test methods described in that regulation or equivalent test methods approved by the Administrator under §§ 260.20 and 260.21.

(4) It is an oxidizer as defined in 49 CFR 173.151.

(b) A solid waste that exhibits the characteristic of ignitability has the EPA Hazardous Waste Number of D001.

[261.21(b) revised by 55 FR 22683, June 1, 1990]

§ 261.22 Characteristic of corrosivity.

(a) A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:

(1) It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using either an EPA test method or an equivalent test method approved by the Administrator under the procedures set forth in §§ 260.20 and 260.21. The EPA test method for pH is specified as Method 5.2 in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (incorporated by reference, see § 260.11).

(2) It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55°C (130°F) as determined by the test method specified in NACE (National Association of Corrosion Engineers) Standard TM-01-69 as standardized in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (incorporated by reference, see § 260.11) or an equivalent test method approved by the Administrator under the procedures set forth in §§ 260.20 and 260.21.

(b) A solid waste that exhibits the characteristic of corrosivity has the EPA Hazardous Waste Number of D002.

[261.22(b) revised by 55 FR 22683, June 1, 1990]

§ 261.23 Characteristic of reactivity.

(a) A solid waste exhibits the characteristic of reactivity if a representative sample of the waste has *any* of the following properties:

(1) It is normally unstable and readily undergoes violent change without detonating.

(2) It reacts violently with water.

(3) It forms potentially explosive mixtures with water.

(4) When mixed with water, it generates toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(5) It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(6) It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.

(7) It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure.

(8) It is a forbidden explosive as defined in 49 CFR 173.51, or a Class A explosive as defined in 49 CFR 173.53 or a Class B explosive as defined in 49 CFR 173.88.

(b) A solid waste that exhibits the characteristic of reactivity has the EPA Hazardous Waste Number of D003.

[261.23(b) revised by 55 FR 22683, June 1, 1990]

§261.24 Toxicity characteristic.

[261.24 revised by 55 FR 11862, March 29, 1990]

(a) A solid waste exhibits the characteristic of toxicity if, using the test methods described in Appendix II or equivalent methods approved by the Administrator under the procedures set forth in §§260.20 and 260.21, the extract from a representative sample of the waste contains any of the contaminants listed in Table 1 at the concentration equal to or greater than the respective value given in that Table. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering using the methodology outlined in Appendix II, is considered to be the extract for the purpose of this section.

(b) A solid waste that exhibits characteristic of toxicity has the EPA Hazardous Waste Number specified in Table I which corresponds to the toxic contaminant causing it to be hazardous.

[261.24(b) revised by 55 FR 22683, June 1, 1990]

TABLE 1.—MAXIMUM CONCENTRATION OF CONTAMINANTS FOR THE TOXICITY CHARACTERISTIC

EPA HW No.[1]	Contaminant	CAS No.[2]	Regulatory Level (mg/L)
D004	Arsenic	7440-38-2	5.0
D005	Barium	7440-39-3	100.0
D018	Benzene	71-43-2	0.5
D006	Cadmium	7440-43-9	1.0
D019	Carbon tetrachloride.	56-23-5	0.5
D020	Chlordane	57-74-9	0.03
D021	Chlorobenzene	108-90-7	100.0
D022	Chloroform	67-66-3	6.0
D007	Chromium	7440-47-3	5.0.
D023	o-Cresol	95-48-7	[4] 200.0
D024	m-Cresol	108-39-4	[4] 200.0
D025	p-Cresol	106-44-5	[4] 200.0
D026	Cresol		[4] 200.0
D016	2,4-D	94-75-7	10.0
D027	1,4-Dichlorobenzene.	106-46-7	7.5
D028	1,2-Dichloroethane.	107-06-2	0.5
D029	1,1-Dichloroethylene.	75-35-4	0.7
D030	2,4-Dinitrotoluene.	121-14-2	[3] 0.13
D012	Endrin	72-20-8	0.02
D031	Heptachlor (and its epoxide).	76-44-8	0.008
D032	Hexachlorobenzene.	118-74-1	[3] 0.13
D033	Hexachlorobutadiene.	87-68-3	0.5
D034	Hexachloroethane.	67-72-1	3.0
D008	Lead	7439-92-1	5.0
D013	Lindane	58-89-9	0.4
D009	Mercury	7439-97-6	0.2
D014	Methoxychlor	72-43-5	10.0
D035	Methyl ethyl ketone.	78-93-3	200.0
D036	Nitrobenzene	98-95-3	2.0
D037	Pentrachlorophenol.	87-86-5	100.0
D038	Pyridine	110-86-1	[3] 5.0
D010	Selenium	7782-49-2	1.0
D011	Silver	7440-22-4	5.0
D039	Tetrachloroethylene.	127-18-4	0.7
D015	Toxaphene	8001-35-2	0.5
D040	Trichloroethylene.	79-01-6	0.5
D041	2,4,5-Trichiorophenol.	95-95-4	400.0
D042	2,4,6-Trichlorophenol.	88-06-2	2.0
D017	2,4,5-TP (Silvex)	93-72-1	1.0
D043	Vinyl chloride	75-01-4	0.2

[1] Hazardous waste number.
[2] Chemical abstracts service number.
[3] Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level.
[4] If o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 mg/l.

[261.24 table corrected by 55 FR 26986, June 29, 1990]

ATTACHMENT 4
CHAIN-OF-CUSTODIES
AND
LABORATORY ANALYTICAL RESULTS

Versar INC.

CHAIN OF CUSTODY RECORD

E109

PROJECT NO.	PROJECT NAME
	VME (PROJECT MANAGER: MIKE PLACE)

SAMPLERS: (Signature) [signature]

(Printed) JANICE R. SMITH BAGHERI

PARAMETERS — 8475972 — 7-27-92 — 92209

INDUSTRIAL HYGIENE SAMPLE Y / N

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TPH - NO PRES	PARAMETERS	REMARKS MATRIX
VSB-1/SS-3	7/24/92			X	VSB-1	1	X	E04005	SOIL
VSB-2/SS-3	7/24/92			X	VSB-2	1	X	E02366	↓
VSB-3/SS-5	7/24/92			X	VSB-3	1	X	E02367	
VSB-4/SS-1	7/24/92			X	VSB-4	1	X	E02368	
VSB-5/SS-3	7/24/92			X	VSB-5	1	X	E02369	
VSB-6/SS-4	7/27/92			X	VSB-6	1	X	E04006	
VSB-7/SS-3	7/27/92			X	VSB-7	1	X	E04007	
VSB-8/SS-3	7/27/92			X	VSB-8	1	X	E04008	
VSB-9/SS-3	7/27/92			X	VSB-9	1	X	E04009	
VSB-10/SS-3	7/27/92			X	VSB-10	1	X	E04010	
VSB-11/SS-2	7/27/92			X	VSB-11	1	X	E04011	↓

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	7/27/92 8:30 PM	[signature] Stacy Mattila	[signature] Stacy Mattila	7/27/92 8:33	
(Printed) JANICE R. SMITH BAGHERI		(Printed) Stacy Mattila	(Printed) Stacy Mattila		(Printed)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				IMMEDIATELY PLACED ON ICE IN COOLER AFTER SAMPLE COLLECTED.
(Printed)		(Printed)		

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

L104

Versar INC.

CHAIN OF CUSTODY RECORD

PROJECT NO.	PROJECT NAME	PARAMETERS	INDUSTRIAL HYGIENE SAMPLE Y / N
	VME (PROJECT MANAGER: MIKE PLACE)	847592 7-28-92 92210	

SAMPLERS: *(Signature)* [signature]

(Printed) JANICE SMITH-BAGHERI

FIELD SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	GC ACIDS, GC B/N, GC VOC, GC PEST/PCBS	PCBS	TPH						REMARKS: MATRIX	PRES
SOIL-SURF	7/28/92		X		DUMP	3	X				E04004				SOIL	NONE
ELEV-2	7/28/92			X	ELEV-2	1		X			E04005				OIL	NONE
STREAM-UP	7/28/92			X	STREAM	4			X		E04002				WATER	HCl
STREAM-DOWN	7/28/92			X	STREAM	4			X		E04003				WATER	HCl

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
[signature]	7/28/92 1:25	[signature] 7/28/92 1:25	[signature]	[illegible]	[signature]
(Printed) JANICE SMITH-BAGHERI		*(Printed)* WENDY L. BISHOP	*(Printed)* WENDY L. BISHOP		*(Printed)* Stacy Mattila

Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks
[signature]	7/28/92 3:20			HAND DELIVERED TO LAB. IMMEDIATELY PLACED ON ICE AFTER SAMPLE COLLECTED. QA/QC PACKAGE "B" REQUIRED. (RCC)
(Printed) Stacy Mattila		*(Printed)*		

Distribution: Original Plus One Accompanies Shipment (white and yellow); Copy to Coordinator Field Files (pink).

ENVIRONMENTAL LABORATORIES INC.

07/30/92 LABORATORY REPORT PAGE 1

E102 8475972 W31

VERSAR, INC. - MIDWEST REGIONAL OFFICE
1520 KENSINGTON ROADSUITE 115
OAK BROOK ,IL 60521
ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92209-E04005 VSB-1/SOIL/PROJECT: VME
DATE COLLECTED 07/24/92 DATE RECEIVED 07/27/92
PRESERVED: YES TEMPERATURE: ON ICE
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT	UNITS	ANALYZED	METHOD	LIMIT
TOTAL PETROLEUM HYDROCARBONS	<4.0	PPM	07/28/92	IN-HOUSE METHOD	

PLEASE CONTACT CLIENT SERVICES WITH ANY QUESTIONS. WATER SAMPLES ARE DISPOSED OF 30 DAYS AFTER RECEIPT; SOIL SAMPLES WILL BE DISPOSED OF 6 WEEKS AFTER RECEIPT; WASTE SAMPLES (NON-WATER, NON-SOIL) WILL BE RETURNED 6 WEEKS AFTER RECEIPT. N/T = NOT TESTED, N/A = NOT APPLICABLE, N/D = NOT DETECTED.
@ = ELEVATED DETECTION LIMIT DUE TO MATRIX INTERFERENCE. # = ELEVATED DETECTION LIMIT DUE TO SAMPLE CONCENTRATION.
$ = ELEVATED DETECTION LIMIT DUE TO SAMPLE QUANTITY. + = ELEVATED DETECTION LIMIT DUE TO EXTRACT VOLUME.

AIHA ACCREDITED APPROVAL M.J.N

140 East Ryan Road, Oak Creek, WI 53154-4599 • 414-764-7005 • FAX 414-764-0486 • 1-800-422-2195
Client Services Direct Line 414-768-7460 • WI DNR Lab Certification #241283020 • IEPA Lab Certification #100243

ENVIRONMENTAL LABORATORIES INC.

07/30/92 LABORATORY REPORT PAGE 1

E102 8475972 W31

VERSAR, INC. - MIDWEST REGIONAL OFFICE
1520 KENSINGTON ROADSUITE 115
OAK BROOK ,IL 60521
ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92209-E02366 VSB-2/SOIL/PROJECT: VME
DATE COLLECTED 07/24/92 DATE RECEIVED 07/27/92
PRESERVED: YES TEMPERATURE: ON ICE
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT	UNITS	ANALYZED	METHOD	LIMIT
TOTAL PETROLEUM HYDROCARBONS	<4.0	PPM	07/28/92	IN-HOUSE METHOD	

PLEASE CONTACT CLIENT SERVICES WITH ANY QUESTIONS. WATER SAMPLES ARE DISPOSED OF 30 DAYS AFTER RECEIPT; SOIL SAMPLES WILL BE DISPOSED OF 6 WEEKS AFTER RECEIPT; WASTE SAMPLES (NON-WATER, NON-SOIL) WILL BE RETURNED 6 WEEKS AFTER RECEIPT. N/T = NOT TESTED, N/A = NOT APPLICABLE, N/D = NOT DETECTED.
@ = ELEVATED DETECTION LIMIT DUE TO MATRIX INTERFERENCE. # = ELEVATED DETECTION LIMIT DUE TO SAMPLE CONCENTRATION.
$ = ELEVATED DETECTION LIMIT DUE TO SAMPLE QUANTITY. + = ELEVATED DETECTION LIMIT DUE TO EXTRACT VOLUME.

AIHA ACCREDITED APPROVAL M.P.V.

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ENVIRONMENTAL LABORATORIES INC.

07/30/92 LABORATORY REPORT PAGE 1

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ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92209-E02367 VSB-3/SOIL/PROJECT: VME
DATE COLLECTED 07/24/92 DATE RECEIVED 07/27/92
PRESERVED: YES TEMPERATURE: ON ICE
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT	UNITS	ANALYZED	METHOD	LIMIT
TOTAL PETROLEUM HYDROCARBONS	<4.0	PPM	07/28/92	IN-HOUSE METHOD	

PLEASE CONTACT CLIENT SERVICES WITH ANY QUESTIONS. WATER SAMPLES ARE DISPOSED OF 30 DAYS AFTER RECEIPT; SOIL SAMPLES WILL BE DISPOSED OF 6 WEEKS AFTER RECEIPT; WASTE SAMPLES (NON-WATER, NON-SOIL) WILL BE RETURNED 6 WEEKS AFTER RECEIPT. N/T = NOT TESTED, N/A = NOT APPLICABLE, N/D = NOT DETECTED.
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$ = ELEVATED DETECTION LIMIT DUE TO SAMPLE QUANTITY. + = ELEVATED DETECTION LIMIT DUE TO EXTRACT VOLUME.

AIHA ACCREDITED APPROVAL MFH.

140 East Ryan Road, Oak Creek, WI 53154-4599 • 414-764-7005 • FAX 414-764-0486 • 1-800-422-2195
Client Services Direct Line 414-768-7460 • WI DNR Lab Certification #241283020 • IEPA Lab Certification #100243

ENVIRONMENTAL LABORATORIES INC.

07/30/92 LABORATORY REPORT

E102 8475972 W31

VERSAR, INC. - MIDWEST REGIONAL OFFICE
1520 KENSINGTON ROADSUITE 115
OAK BROOK ,IL 60521
ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92209-E02368 VSB-4/SOIL/PROJECT: VME
DATE COLLECTED 07/24/92 DATE RECEIVED 07/27/92
PRESERVED: YES TEMPERATURE: ON ICE
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT	UNITS	ANALYZED	METHOD	LIMIT
TOTAL PETROLEUM HYDROCARBONS	55	PPM	07/28/92	IN-HOUSE METHOD	
	BASED ON SIMILARITIES TO A MINERAL SPIRIT STANDARD				

PLEASE CONTACT CLIENT SERVICES WITH ANY QUESTIONS. WATER SAMPLES ARE DISPOSED OF 30 DAYS AFTER RECEIPT; SOIL SAMPLES WILL BE DISPOSED OF 6 WEEKS AFTER RECEIPT; WASTE SAMPLES (NON-WATER, NON-SOIL) WILL BE RETURNED 6 WEEKS AFTER RECEIPT. N/T = NOT TESTED, N/A = NOT APPLICABLE, N/D = NOT DETECTED.
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AIHA ACCREDITED APPROVAL MJH.

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ENVIRONMENTAL LABORATORIES INC.

07/30/92 LABORATORY REPORT PAGE 1

E102 8475972 W31

VERSAR, INC. - MIDWEST REGIONAL OFFICE
1520 KENSINGTON ROADSUITE 115
OAK BROOK ,IL 60521
ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92209-E02369 VSB-5/SOIL/PROJECT: VME
DATE COLLECTED 07/24/92 DATE RECEIVED 07/27/92
PRESERVED: YES TEMPERATURE: ON ICE
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT	UNITS	ANALYZED	METHOD	LIMIT
TOTAL PETROLEUM HYDROCARBONS	<4.0	PPM	07/28/92	IN-HOUSE METHOD	

PLEASE CONTACT CLIENT SERVICES WITH ANY QUESTIONS. WATER SAMPLES ARE DISPOSED OF 30 DAYS AFTER RECEIPT; SOIL SAMPLES WILL BE DISPOSED OF 6 WEEKS AFTER RECEIPT; WASTE SAMPLES (NON-WATER, NON-SOIL) WILL BE RETURNED 6 WEEKS AFTER RECEIPT. N/T = NOT TESTED, N/A = NOT APPLICABLE, N/D = NOT DETECTED.
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AIHA ACCREDITED APPROVAL M.J.M.

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ENVIRONMENTAL LABORATORIES INC.

07/30/92 LABORATORY REPORT PAGE 1

E102 8475972 W31

VERSAR, INC. - MIDWEST REGIONAL OFFICE
1520 KENSINGTON ROADSUITE 115
OAK BROOK ,IL 60521
ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92209-E04006 VSB-6/SOIL/PROJECT: VME
DATE COLLECTED 07/27/92 DATE RECEIVED 07/27/92
PRESERVED: YES TEMPERATURE: ON ICE
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT	UNITS	ANALYZED	METHOD	LIMIT
TOTAL PETROLEUM HYDROCARBONS	<4.0	PPM	07/28/92	IN-HOUSE METHOD	

PLEASE CONTACT CLIENT SERVICES WITH ANY QUESTIONS. WATER SAMPLES ARE DISPOSED OF 30 DAYS AFTER RECEIPT; SOIL SAMPLES WILL BE DISPOSED OF 6 WEEKS AFTER RECEIPT; WASTE SAMPLES (NON-WATER, NON-SOIL) WILL BE RETURNED 6 WEEKS AFTER RECEIPT. N/T = NOT TESTED, N/A = NOT APPLICABLE, N/D = NOT DETECTED.
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AIHA ACCREDITED APPROVAL M.T.M.

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ENVIRONMENTAL LABORATORIES INC.

07/30/92 LABORATORY REPORT PAGE 1

E102 8475972 W31

VERSAR, INC. - MIDWEST REGIONAL OFFICE
1520 KENSINGTON ROADSUITE 115
OAK BROOK ,IL 60521
ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92209-E04007 VSB-7/SOIL/PROJECT: VME
DATE COLLECTED 07/27/92 DATE RECEIVED 07/27/92
PRESERVED: YES TEMPERATURE: ON ICE
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT	UNITS	ANALYZED	METHOD	LIMIT
TOTAL PETROLEUM HYDROCARBONS	<4.0	PPM	07/28/92	IN-HOUSE METHOD	

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ENVIRONMENTAL LABORATORIES INC.

07/30/92 LABORATORY REPORT PAGE 1

E102 8475972 W31

VERSAR, INC. - MIDWEST REGIONAL OFFICE
1520 KENSINGTON ROADSUITE 115
OAK BROOK ,IL 60521
ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92209-E04008 VSB-8/SOIL/PROJECT: VME
DATE COLLECTED 07/27/92 DATE RECEIVED 07/27/92
PRESERVED: YES TEMPERATURE: ON ICE
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT	UNITS	ANALYZED	METHOD	LIMIT
TOTAL PETROLEUM HYDROCARBONS	<4.0	PPM	07/28/92	IN-HOUSE METHOD	

PLEASE CONTACT CLIENT SERVICES WITH ANY QUESTIONS. WATER SAMPLES ARE DISPOSED OF 30 DAYS AFTER RECEIPT; SOIL SAMPLES WILL BE DISPOSED OF 6 WEEKS AFTER RECEIPT; WASTE SAMPLES (NON-WATER, NON-SOIL) WILL BE RETURNED 6 WEEKS AFTER RECEIPT. N/T = NOT TESTED, N/A = NOT APPLICABLE, N/D = NOT DETECTED.
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ENVIRONMENTAL LABORATORIES INC.

07/30/92 LABORATORY REPORT PAGE 1

E102 8475972 W31

VERSAR, INC. - MIDWEST REGIONAL OFFICE
1520 KENSINGTON ROADSUITE 115
OAK BROOK ,IL 60521
ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92209-E04009 VSB-9/SOIL/PROJECT: VME
DATE COLLECTED 07/27/92 DATE RECEIVED 07/27/92
PRESERVED: YES TEMPERATURE: ON ICE
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT	UNITS	ANALYZED	METHOD	LIMIT
TOTAL PETROLEUM HYDROCARBONS	<4.0	PPM	07/28/92	IN-HOUSE METHOD	

PLEASE CONTACT CLIENT SERVICES WITH ANY QUESTIONS. WATER SAMPLES ARE DISPOSED OF 30 DAYS AFTER RECEIPT; SOIL SAMPLES WILL BE DISPOSED OF 6 WEEKS AFTER RECEIPT; WASTE SAMPLES (NON-WATER, NON-SOIL) WILL BE RETURNED 6 WEEKS AFTER RECEIPT. N/T = NOT TESTED, N/A = NOT APPLICABLE, N/D = NOT DETECTED.
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AIHA ACCREDITED APPROVAL M.T.R.

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ENVIRONMENTAL LABORATORIES INC.

07/30/92 LABORATORY REPORT PAGE 1

E102 8475972 W31

VERSAR, INC. - MIDWEST REGIONAL OFFICE
1520 KENSINGTON ROADSUITE 115
OAK BROOK ,IL 60521
ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92209-E04010 VSB-10/SOIL/PROJECT: VME
DATE COLLECTED 07/27/92 DATE RECEIVED 07/27/92
PRESERVED: YES TEMPERATURE: ON ICE
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT	UNITS	ANALYZED	METHOD	LIMIT
TOTAL PETROLEUM HYDROCARBONS	<4.0	PPM	07/28/92	IN-HOUSE METHOD	

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AIHA ACCREDITED APPROVAL M.P.

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ENVIRONMENTAL LABORATORIES INC.

07/30/92 LABORATORY REPORT PAGE 1

E102 8475972 W31

VERSAR, INC. - MIDWEST REGIONAL OFFICE
1520 KENSINGTON ROADSUITE 115
OAK BROOK ,IL 60521
ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92209-E04011 VSB-11/SOIL/PROJECT: VME
DATE COLLECTED 07/27/92 DATE RECEIVED 07/27/92
PRESERVED: YES TEMPERATURE: ON ICE
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT	UNITS	ANALYZED	METHOD	LIMIT
TOTAL PETROLEUM HYDROCARBONS	<4.0	PPM	07/28/92	IN-HOUSE METHOD	

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ENVIRONMENTAL LABORATORIES INC.

07/30/92 LABORATORY REPORT PAGE 1

E102 8475972 W31
CS/07/* / /

VERSAR, INC. - MIDWEST REGIONAL OFFICE
1520 KENSINGTON ROADSUITE 115
OAK BROOK ,IL 60521
ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92210-E04003 STREAM-DOWN/WATER/PROJECT: VME
DATE COLLECTED 07/28/92 DATE RECEIVED 07/28/92
PRESERVED: YES TEMPERATURE: ON ICE
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT	UNITS	ANALYZED	METHOD	LIMIT
TOTAL PETROLEUM HYDROCARBONS	<4.0	PPM	07/29/92	IN-HOUSE METHOD	

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ENVIRONMENTAL LABORATORIES INC.

07/30/92 LABORATORY REPORT PAGE 1

E102 8475972 W31
CS/07/* / /

VERSAR, INC. - MIDWEST REGIONAL OFFICE
1520 KENSINGTON ROADSUITE 115
OAK BROOK ,IL 60521
ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92210-E04002 STREAM-UP/WATER/PROJECT: VME
DATE COLLECTED 07/28/92 DATE RECEIVED 07/28/92
PRESERVED: YES TEMPERATURE: ON ICE
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT	UNITS	ANALYZED	METHOD	LIMIT
TOTAL PETROLEUM HYDROCARBONS	<4.0	PPM	07/29/92	IN-HOUSE METHOD	

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AIHA ACCREDITED APPROVAL

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ENVIRONMENTAL LABORATORIES INC.

08/04/92 LABORATORY REPORT

E102 8475972 W31
CS/07/* / /

VERSAR, INC. - MIDWEST REGIONAL OFFICE
1520 KENSINGTON ROADSUITE 115
OAK BROOK ,IL 60521
ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92210-E04004 SOIL-SURF/DUMP/PROJECT: VME
DATE COLLECTED 07/28/92 DATE RECEIVED 07/28/92
PRESERVED: YES TEMPERATURE: ON ICE
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT		UNITS	ANALYZED	METHOD	LIMIT
2-CHLOROPHENOL	0.55		PPM	08/04/92	SW846 8040	
2,4-DICHLOROPHENOL	0.50		PPM	08/04/92	SW846 8040	
2,4-DIMETHYLPHENOL	<0.50		PPM	08/04/92	SW846 8040	
4,6-DINITRO-2-METHYLPHENOL	<0.50		PPM	08/04/92	SW846 8040	
2,4-DINITROPHENOL	<0.50		PPM	08/04/92	SW846 8040	
2-NITROPHENOL	<0.50		PPM	08/04/92	SW846 8040	
4-NITROPHENOL	0.52		PPM	08/04/92	SW846 8040	
4-CHLORO-3-METHYLPHENOL	<0.50		PPM	08/04/92	SW846 8040	
PENTACHLOROPHENOL	<0.50		PPM	08/04/92	SW846 8040	
PHENOL	<0.050		PPM	08/04/92	SW846 8040	
2,4,6-TRICHLOROPHENOL	<0.050		PPM	08/04/92	SW846 8040	
ACENAPHTHENE	0.61		PPM	08/04/92	SW846 8100	
ACENAPHTYLENE	<2.0	@	PPM	08/04/92	SW846 8100	
ANTHRACENE	<2.0	@	PPM	08/04/92	SW846 8100	
BENZIDINE	<2.0	@	PPM	08/04/92	SW846 8000(FID)	
BENZO (A) ANTHRACENE	<2.0	@	PPM	08/04/92	SW846 8100	
BENZO (A) PYRENE	<2.0	@	PPM	08/04/92	SW846 8100	
BENZO(B)FLUORANTHENE	1.2		PPM	08/04/92	SW846 8100	
BENZO(G,H,I)PERYLENE	<2.0	@	PPM	08/04/92	SW846 8100	
BENZO(K)FLUORANTHENE	<2.0	@	PPM	08/04/92	SW846 8100	
BIS (2-CHLOROETHOXY) METHA	<2.0	@	PPM	08/04/92	SW846 8110	
BIS (2-CHLOROETHYL) ETHER	<2.0	@	PPM	08/04/92	SW846 8110	
BIS (2-CHLOROISOPROPYL) ET	<2.0	@	PPM	08/04/92	SW846 8110	
BIS (2-ETHYLHEXYL) PHTHALA	<2.0	@	PPM	08/04/92	SW846 8060	
4-BROMOPHENYL PHENYL ETHER	<2.0	@	PPM	08/04/92	SW846 8110	
BUTYL BENZYL PHTHALATE	<2.0	@	PPM	08/04/92	SW846 8060	
2-CHLORONAPHTHALENE	<2.0	@	PPM	08/04/92	SW846 8120	
4-CHLOROPHENYL PHENYL ETHE	<2.0	@	PPM	08/04/92	SW846 8110	
CHRYSENE	<2.0	@	PPM	08/04/92	SW846 8100	

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E102 8475972 W31
CS/07/* / /

VERSAR, INC. - MIDWEST REGIONAL OFFICE
1520 KENSINGTON ROADSUITE 115
OAK BROOK ,IL 60521
ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92210-E04004 SOIL-SURF/DUMP/PROJECT: VME
DATE COLLECTED 07/28/92 DATE RECEIVED 07/28/92
PRESERVED: YES TEMPERATURE: ON ICE
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT		UNITS	ANALYZED	METHOD	LIMIT
DIBENZO(A,H)ANTHRACENE	<2.0	@	PPM	08/04/92	SW846 8100	
1,2-DICHLOROBENZENE	<2.0	@	PPM	08/04/92	SW846 8120	
1,3-DICHLOROBENZENE	<2.0	@	PPM	08/04/92	SW846 8120	
1,4-DICHLOROBENZENE	<2.0	@	PPM	08/04/92	SW846 8120	
3,3'-DICHLOROBENZIDINE	<2.0	@	PPM	08/04/92	SW846 8000(FID)	
DIETHYL PHTHALATE	<2.0	@	PPM	08/04/92	SW846 8060	
DIMETHYL PHTHALATE	1.3		PPM	08/04/92	SW846 8060	
DI-N-BUTYL PHTHALATE	2.2		PPM	08/04/92	SW846 8060	
2,4-DINITROTOLUENE	<2.0	@	PPM	08/04/92	SW846 8090	
2,6-DINITROTOLUENE	<2.0	@	PPM	08/04/92	SW846 8090	
DI-N-OCTYL PHTHALATE	<2.0	@	PPM	08/04/92	SW846 8060	
1,2-DIPHENYLHYDRAZINE	0.42		PPM	08/04/92	SW846 8000(FID)	
FLUORANTHENE	<2.0	@	PPM	08/04/92	SW846 8100	
FLUORENE	0.59		PPM	08/04/92	SW846 8100	
HEXACHLOROBENZENE	<2.0	@	PPM	08/04/92	SW846 8120	
HEXACHLOROBUTADIANE	<2.0	@	PPM	08/04/92	SW846 8120	
HEXACHLOROCYCLOPENTADIENE	<2.0	@	PPM	08/04/92	SW846 8120	
HEXACHLOROETHANE	<2.0	@	PPM	08/04/92	SW846 8120	
INDENO(1,2,3,C,D)PYRENE	<2.0	@	PPM	08/04/92	SW846 8100	
ISOPHORONE	<2.0	@	PPM	08/04/92	SW846 8090	
NAPHTHALENE	1.5		PPM	08/04/92	SW846 8100	
NITROBENZENE	1.2		PPM	08/04/92	SW846 8090	
N-NITROSODIMETHYLAMINE	<2.0	@	PPM	08/04/92	SW846 8070	
N-NITROSO-DI-N-PROPYLAMINE	<2.0	@	PPM	08/04/92	SW846 8070	
N-NITROSODIPHENYLAMINE	0.95		PPM	08/04/92	SW846 8070	
PHENANTHRENE	1.4		PPM	08/04/92	SW846 8100	
PYRENE	<2.0	@	PPM	08/04/92	SW846 8100	
1,2,4-TRICHLOROBENZENE	<2.0	@	PPM	08/04/92	SW846 8120	
ALDRIN	<2.0	@	PPB	08/04/92	SW846 8080	

PLEASE CONTACT CLIENT SERVICES WITH ANY QUESTIONS. WATER SAMPLES ARE DISPOSED OF 30 DAYS AFTER RECEIPT; SOIL SAMPLES WILL BE DISPOSED OF 6 WEEKS AFTER RECEIPT; WASTE SAMPLES (NON-WATER, NON-SOIL) WILL BE RETURNED 6 WEEKS AFTER RECEIPT. N/T = NOT TESTED, N/A = NOT APPLICABLE, N/D = NOT DETECTED.
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E102 8475972 W31
CS/07/* / /

VERSAR, INC. - MIDWEST REGIONAL OFFICE
1520 KENSINGTON ROADSUITE 115
OAK BROOK ,IL 60521
ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92210-E04004 SOIL-SURF/DUMP/PROJECT: VME
DATE COLLECTED 07/28/92 DATE RECEIVED 07/28/92
PRESERVED: YES TEMPERATURE: ON ICE
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT		UNITS	ANALYZED	METHOD	LIMIT
ALPHA-BHC	<2.0	@	PPB	08/04/92	SW846 8080	
BETA-BHC	<2.0	@	PPB	08/04/92	SW846 8080	
GAMMA-BHC (LINDANE)	<2.0	@	PPB	08/04/92	SW846 8080	
DELTA-BHC	<2.0	@	PPB	08/04/92	SW846 8080	
CHLORDANE	<2.0	@	PPB	08/04/92	SW846 8080	
4,4'-DDT	<2.0	@	PPB	08/04/92	SW846 8080	
4,4'-DDE	<2.0	@	PPB	08/04/92	SW846 8080	
4,4'-DDD	33		PPB	08/04/92	SW846 8080	
DIELDRIN	140		PPB	08/04/92	SW846 8080	
ENOOSULFAN I	17		PPB	08/04/92	SW846 8080	
ENDOSULFAN II	<2.0	@	PPB	08/04/92	SW846 8080	
ENDOSULFAN SULFATE	10		PPB	08/04/92	SW846 8080	
ENDRIN	<2.0	@	PPB	08/04/92	SW846 8080	
ENDRIN ALDEHYDE	27		PPB	08/04/92	SW846 8080	
HEPTACHLOR	<2.0	@	PPB	08/04/92	SW846 8080	
HEPTACHLOR EPOXIDE	330		PPB	08/04/92	SW846 8080	
TOXAPHENE	<2.0	@	PPB	08/04/92	SW846 8080	
PCB'S	42		PPM	08/04/92	SW846 8080	
	AROCLOR 1248					
BENZENE	<0.005	@	PPM	07/30/92	SW846 8021	
BROMOFORM	<0.015	@	PPM	07/30/92	SW846 8021	
CARBON TETRACHLORIDE	<0.005	@	PPM	07/30/92	SW846 8021	
CHLOROBENZENE	<0.005	@	PPM	07/30/92	SW846 8021	
CHLORODIBROMOMETHANE	<0.005	@	PPM	07/30/92	SW846 8021	
CHLOROETHANE	<0.025	@	PPM	07/30/92	SW846 8021	
2-CHLOROETHYLVINYL ETHER	<0.025	@	PPM	07/30/92	SW846 8021	
CHLOROFORM	<0.005	@	PPM	07/30/92	SW846 8021	
DICHLOROBROMOMETHANE	<0.005	@	PPM	07/30/92	SW846 8021	
1,1-DICHLOROETHANE	<0.005	@	PPM	07/30/92	SW846 8021	

PLEASE CONTACT CLIENT SERVICES WITH ANY QUESTIONS. WATER SAMPLES ARE DISPOSED OF 30 DAYS AFTER RECEIPT; SOIL SAMPLES WILL BE DISPOSED OF 6 WEEKS AFTER RECEIPT; WASTE SAMPLES (NON-WATER, NON-SOIL) WILL BE RETURNED 6 WEEKS AFTER RECEIPT. N/T = NOT TESTED, N/A = NOT APPLICABLE, N/D = NOT DETECTED.
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ENVIRONMENTAL LABORATORIES INC.

08/04/92 LABORATORY REPORT

E102 8475972 W31
CS/07/* / /

VERSAR, INC. - MIDWEST REGIONAL OFFICE
1520 KENSINGTON ROADSUITE 115
OAK BROOK ,IL 60521
ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92210-E04004 SOIL-SURF/DUMP/PROJECT: VME
DATE COLLECTED 07/28/92 DATE RECEIVED 07/28/92
PRESERVED: YES TEMPERATURE: ON ICE
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT		UNITS	ANALYZED	METHOD	LIMIT
1,2-DICHLOROETHANE	<0.005	@	PPM	07/30/92	SW846 8021	
1,1-DICHLOROETHYLENE	<0.005	@	PPM	07/30/92	SW846 8021	
1,2-DICHLOROPROPANE	<0.005	@	PPM	07/30/92	SW846 8021	
CIS-1,3-DICHLOROPROPENE	<0.015	@	PPM	07/30/92	SW846 8021	
ETHYLBENZENE	<0.005	@	PPM	07/30/92	SW846 8021	
BROMOMETHANE	<0.025	@	PPM	07/30/92	SW846 8021	
CHLOROMETHANE	<0.025	@	PPM	07/30/92	SW846 8021	
METHYLENE CHLORIDE	0.025		PPM	07/30/92	SW846 8021	
1,1,2,2-TETRACHLOROETHANE	<0.005	@	PPM	07/30/92	SW846 8021	
TETRACHLOROETHYLENE	<0.005	@	PPM	07/30/92	SW846 8021	
TOLUENE	<0.005	@	PPM	07/30/92	SW846 8021	
TRANS-1,2-DICHLOROETHENE	<0.005	@	PPM	07/30/92	SW846 8021	
1,1,1-TRICHLOROETHANE	<0.005	@	PPM	07/30/92	SW846 8021	
1,1,2-TRICHLOROETHANE	<0.005	@	PPM	07/30/92	SW846 8021	
TRICHLOROETHYLENE	<0.005	@	PPM	07/30/92	SW846 8021	
TRICHLOROFLUOROMETHANE	<0.005	@	PPM	07/30/92	SW846 8021	
VINYL CHLORIDE	<0.015	@	PPM	07/30/92	SW846 8021	
TRANS-1,3-DICHLOROPROPENE	<0.025	@	PPM	07/30/92	SW846 8021	
GC PESTICIDE EXTRACTION	COMPLETE			07/31/92	SW846 3540	
GC BASE NEUTRAL EXTRACTION	COMPLETE			07/31/92	SW846 3540	
GC ACID EXTRACTION	COMPLETE			07/31/92	SW846 3540	

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ENVIRONMENTAL LABORATORIES INC.

07/30/92 LABORATORY REPORT PAGE 1

E102 8475972 W31
CS/07/* / /

VERSAR, INC. - MIDWEST REGIONAL OFFICE
1520 KENSINGTON ROADSUITE 115
OAK BROOK ,IL 60521
ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92209-E04002 PAINT-RM/PAINT CHIPS/PROJECT: VME
DATE COLLECTED 07/27/92 DATE RECEIVED 07/27/92
PRESERVED: NO TEMPERATURE: ON ICE
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT		UNITS	ANALYZED	METHOD	LIMIT
BENZENE	0.35		PPM	07/28/92	SW846 8021	
BROMOFORM	<0.15	@	PPM	07/30/92	SW846 8021	
CARBON TETRACHLORIDE	<0.050	@	PPM	07/28/92	SW846 8021	
CHLOROBENZENE	<0.050	@	PPM	07/30/92	SW846 8021	
CHLORODIBROMOMETHANE	<0.050	@	PPM	07/30/92	SW846 8021	
CHLOROETHANE	<0.25	@	PPM	07/28/92	SW846 8021	
2-CHLOROETHYLVINYL ETHER	0.15		PPM	07/28/92	SW846 8021	
CHLOROFORM	<0.050	@	PPM	07/28/92	SW846 8021	
DICHLOROBROMOMETHANE	<0.050	@	PPM	07/28/92	SW846 8021	
1,1-DICHLOROETHANE	<0.050	@	PPM	07/28/92	SW846 8021	
1,2-DICHLOROETHANE	<0.050	@	PPM	07/28/92	SW846 8021	
1,1-DICHLOROETHYLENE	<0.050	@	PPM	07/28/92	SW846 8021	
1,2-DICHLOROPROPANE	<0.050	@	PPM	07/28/92	SW846 8021	
CIS-1,3-DICHLOROPROPENE	0.15		PPM	07/28/92	SW846 8021	
ETHYLBENZENE	<0.050	@	PPM	07/30/92	SW846 8021	
BROMOMETHANE	<0.25	@	PPM	07/28/92	SW846 8021	
CHLOROMETHANE	<0.25	@	PPM	07/28/92	SW846 8021	
METHYLENE CHLORIDE	0.80		PPM	07/28/92	SW846 8021	
	CONCENTRATION MAY BE HIGH DUE TO DILUTION FACTOR.					
	BLANK CONCENTRATION = 0.016 PPM					
1,1,2,2-TETRACHLOROETHANE	<0.050	@	PPM	07/30/92	SW846 8021	
TETRACHLOROETHYLENE	0.055		PPM	07/28/92	SW846 8021	
TOLUENE	26		PPM	07/28/92	SW846 8021	
TRANS-1,2-DICHLOROETHENE	<0.050	@	PPM	07/28/92	SW846 8021	
1,1,1-TRICHLOROETHANE	<0.050	@	PPM	07/28/92	SW846 8021	
1,1,2-TRICHLOROETHANE	<0.050	@	PPM	07/28/92	SW846 8021	
TRICHLOROETHYLENE	<0.050	@	PPM	07/28/92	SW846 8021	
TRICHLOROFLUOROMETHANE	<0.050	@	PPM	07/28/92	SW846 8021	
VINYL CHLORIDE	<0.15	@	PPM	07/28/92	SW846 8021	

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ENVIRONMENTAL LABORATORIES INC.

07/31/92 LABORATORY REPORT PAGE 1

E102 8475972 W31
CS/07/* / /

VERSAR, INC. - MIDWEST REGIONAL OFFICE
1520 KENSINGTON ROADSUITE 115
OAK BROOK ,IL 60521
ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92210-E04005 ELEV-2/OIL/PROJECT: VME
DATE COLLECTED 07/28/92 DATE RECEIVED 07/28/92
PRESERVED: YES TEMPERATURE: ON ICE
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT	UNITS	ANALYZED	METHOD	LIMIT
PCB'S - SOLIDS, OIL, WASTE	<1.0	PPM	07/29/92	SW846 8080	
PCB IN WASTE,OIL,SOIL EXT.	COMPLETE		07/29/92	SW846 3580	

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AIHA ACCREDITED APPROVAL

140 East Ryan Road, Oak Creek, WI 53154-4599 • 414-764-7005 • FAX 414-764-0486 • 1-800-422-2195
Client Services Direct Line 414-768-7460 • WI DNR Lab Certification #241283020 • IEPA Lab Certification #100243

ENVIRONMENTAL LABORATORIES INC.

07/29/92 LABORATORY REPORT PAGE 1

E102 8475972 W31

VERSAR, INC. - MIDWEST REGIONAL OFFICE
1520 KENSINGTON ROADSUITE 115
OAK BROOK ,IL 60521
ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92209-E04004 ELEV-HYDRA/OIL/PROJECT: VME
DATE COLLECTED 07/27/92 DATE RECEIVED 07/27/92
PRESERVED: NO TEMPERATURE: ON ICE
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT	UNITS	ANALYZED	METHOD	LIMIT
PCB'S - SOLIDS, OIL, WASTE	<1.0	PPM	07/28/92	SW846 8080	
PCB IN WASTE,OIL,SOIL EXT.	COMPLETE		07/28/92	SW846 3580	

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ENVIRONMENTAL LABORATORIES INC.

08/03/92 LABORATORY REPORT PAGE 1

E102 8475972 W31
CS/07/* / /

VERSAR, INC. - MIDWEST REGIONAL OFFICE
1520 KENSINGTON ROADSUITE 115
OAK BROOK ,IL 60521
ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92209-E04003 ELEV-WIPE/PROJECT: VME
DATE COLLECTED 07/27/92 DATE RECEIVED 07/27/92
PRESERVED: NO TEMPERATURE: N/A
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT	UNITS	ANALYZED	METHOD	LIMIT	
PCB'S		UG/WIPE	07/28/92	SW846 8080		!
	4.0 UG/WIPE AROCLOR 1248/3.0 UG/WIPE AROCLOR 1254 AMENDED RESULT DUE TO SAMPLE RERUN, 8-3-92.					
PCB WIPE EXTRACTION	COMPLETE		07/28/92	SW846 3550		!

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VERSAR, INC. - MIDWEST REGIONAL OFFICE
1520 KENSINGTON ROADSUITE 115
OAK BROOK ,IL 60521
ATTN: M.PLACE/J.SMITH

CHAIN OF CUSTODY

SAMPLE 92209-E04002 PAINT-RM/PAINT CHIPS/PROJECT: VME
DATE COLLECTED 07/27/92 DATE RECEIVED 07/27/92
PRESERVED: NO TEMPERATURE: ON ICE
CONT. INTEGRITY: MEETS STANDARD SAMPLE INTEG: MEETS STANDARD

TEST NAME	RESULT	UNITS	ANALYZED	METHOD	LIMIT
TRANS-1,3-DICHLOROPROPENE	<0.25 @	PPM	07/28/92	SW846 8021	
FLASH POINT (FAHRENHEIT)	>210 CLOSED - CUP	DEG F	07/30/92	SW846 1020	140.0
CADMIUM - TOTAL	0.69	PPM	07/28/92	SW846 6010	
CHROMIUM - TOTAL	28	PPM	07/28/92	SW846 6010	
LEAD - TOTAL	59	PPM	07/28/92	SW846 6010	

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