BROWNFIELD REDEVELOPMENT ASSESSMENT REPORT

FOR

HASTINGS STREET PROPERTY

6450 HASTINGS STREET

Latitude: 42.37116
Longitude: 83.061729

DETROIT, MICHIGAN
HB211

MISFN0507821

SEPTEMBER 21, 2001

REPORT PREPARED BY: Teresa Ducsay DATE: 9/21/01

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REVIEWED AND APPROVED BY: George Carpenter DATE: 9/21/01

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EXECUTIVE SUMMARY

The Michigan Department of Environmental Quality (MDEQ) Pre-Remedial Group was contracted via a cooperative agreement with the United States Environmental Protection Agency to conduct Brownfield Redevelopment Assessments (BFRA). A BFRA of the Hastings Street property was conducted on April 17, 2001. The field sampling event included the collection of seventeen surficial soil samples and twelve soil boring samples.

Analysis of the surficial soil and soil boring samples detected the presence of arsenic, benzo(a)pyrene, carbon tetrachloride, dibenzo(a,h)anthracene, lead, phenanthrene, and xylenes at concentrations greater than the Generic Residential Cleanup Criteria of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). The MDEQ has determined that the property meets the definition of a facility as defined in Part 201 of the NREPA.

Based on the findings of the BFRA, the following issues should be addressed before, or during, the redevelopment of the Hastings Street property:

- Action should be taken to abate the potential threat caused by the presence of contaminants of concern in the soils by mitigation of these contaminants or restricting access to the contaminated areas.

- Elevated concentrations of xylenes (total) detected in soil boring sample SB5D should be further investigated to determine the horizontal and vertical extent of the contamination, identify the potential source, and to determine whether mitigation is warranted.

- If the property is redeveloped without removal of contaminated soils, appropriate control measures need to be implemented to protect construction workers and future occupants.

INTRODUCTION

The MDEQ Pre-Remedial Group was contracted via a cooperative agreement with the EPA to conduct BFRAs. A brownfield is a property, or a portion thereof, that has actual or perceived contamination and an active potential for redevelopment or reuse.

BFRAs are intended to provide information on abandoned properties where potential environmental contamination may be acting as an impediment to future redevelopment activities. MDEQ Pre-Remedial Group staff conduct environmental investigations to determine the types and locations of past and present industrial activities, potential environmental migration pathways of concern, types and concentrations of potential contaminants, and the need for remedial and/or removal actions on the property.

The MDEQ conducted a BFRA of the Hastings Street property in accordance with the cooperative agreement with the EPA. The BFRA included file and information searches, a reconnaissance inspection of the property, including the collection of surficial soil and soil boring samples.

PROPERTY BACKGROUND

Property Description

The Hastings Street property is located at 6540 Hastings Street, Section 31, T1S., R12E, Wayne County, Detroit, Michigan. The property is approximately 2.2 acres and is a triangular shape parcel. The Hastings Street property is barren with no vegetative cover or buildings. See Figure 1 for the Property Location Map.

Property History

The Hastings Street property information was obtained from the Letter Report dated November 15, 1999 prepared by Ecology and Environment (E&E). According to the Letter Report, the property was used by a former fishing line manufacturer and later was a furniture warehouse, but has been abandoned for approximately fifteen years. Also, according to the Letter Report, drums and small containers of chemicals and paint products were found by the Detroit Fire Department after extinguishing a fire at the property on June 8, 1999. Prior to demolition, the property had consisted of a collapsed warehouse, a garage, the remains of a small brick building, and a building destroyed by the fire where drums were located. On June 10, 1999, the EPA tasked E&E to conduct an

emergency response at the Hastings Street property. At the time of the emergency response, E&E estimated that the property contained the following:

Quantity	Type of Container
171	55-gallon drums
1	35-gallon drum
2	30-gallon drums
127	5-gallon drums
32	1-gallon containers
51	1-quart containers
2	compressed gas cylinders

Removal of the waste is quantified in the report and included caustic soda, chlorinated oil, liquid acid, waste paint, sulfuric acid, sodium hydroxide solids, oil/grease, and beverage mix labeled as belonging to Faygo Beverages. During a property visit on January 23, 2001, it was discovered that the buildings had been demolition and removed by a contractor hired by the city of Detroit.

Several Sanborn Maps of the area were obtained and reveal the following historical information of the parcel:

1884 Sanborn Map list Gale Sulky Harrow Mfg. Co., which had a paint shop, painting and wood working building, iron blackening building, lumber piles, and a railroad spur.

1897 Sanborn Map list American Harrow Co., which had painting, shipping, and iron working buildings, a warehouse, and two railroad spurs. Also, the 1907 Polk's telephone directory for Detroit had the American Harrow Co. listed as the manufacturers of harrows, manure spreaders, cultivators, and bean harvesters.

1921 Sanborn Map list Goodyear Rubber Co. Owner and a 'Plant Vacant' marking with several buildings, which cover most of the parcel, and a railroad spur.

1950, 1953, and 1957 Sanborn Maps list the property as 'STGE of Various Products' with a large 'L' shaped building, a triangular building, and a railroad spur.

1961 and 1977 Sanborn Maps list the property as 'STGE of Various Products' along with a tire warehouse in the large 'L' shaped building, a triangular building, and a railroad spur.

1988 and 1991 Sanborn Maps list the property as 'STGE of Various Products' along with 'Vacant', a large 'L' shaped building, a triangular building, a tire warehouse, and a railroad spur.

PROCEDURES AND RESULTS

A reconnaissance inspection of the Hastings Street property and surrounding area was conducted on January 23, 2001 to make observations to aid in characterizing the property. The reconnaissance inspection included a walk-through of the property to determine appropriate health and safety requirements for conducting on-site activities. Areas of concern and potential sampling locations were also determined during this reconnaissance inspection. The sampling investigation of the Hastings Street property was performed on April 17, 2001. Prior to conducting the sampling activities, the investigation team performed a reconnaissance walk-through of the property to determine any additional health and safety requirements and to determine the sampling locations. During the sampling investigation, the investigation team surveyed all sampling locations with a global positioning system.

Reconnaissance Inspection Observations

During the reconnaissance inspection of the Hastings Street property on January 23, 2001, it was discovered that all the buildings had been removed from the property. The city of Detroit had contracted to have the buildings demolished. The property was relatively flat and barren with no vegetative cover. The property is bordered to the south by active railroad tracks, to the north and east by industrial and commercial operations, and to the west by Hastings Street. See Figure 2 for a Property Features map.

Photographs taken of the Hastings Street property and samples collected from the property during the BFRA are provided in Appendix A.

Sampling Procedures and Results

On April 17, 2001 the investigation team collected seventeen surficial soil samples and twelve soil boring samples from suspected areas of contamination at the Hastings Street property. These samples were collected by the investigation team to determine the levels of EPA Target Compound List compounds (organic compounds) and Target Analyte List analytes (inorganic compounds) which may be present at the property.

Standard MDEQ collection and decontamination procedures, as outlined in the work plan, were adhered to during the collection of all samples. All samples were packaged and shipped in accordance with EPA and MDEQ required procedures. All EPA and MDEQ quality assurance/quality control procedures were followed. Laboratory analytical data for all the sample analyses are provided in Appendix B. Appendix C contains the Part 201 of the NREPA Generic Cleanup Criteria and Screening Levels.

Surficial Soil Samples

The intent of the surficial soil sampling was to characterize any potential contaminated surficial soil areas, to determine the potential for possible contaminant migration from potential source areas, and the potential health and safety concerns including threats posed to nearby residential populations, future workers, or resources associated with the surficial soils at the property. Seventeen surficial soil samples were collected, but a background sample was not selected because the surface area of the property had been disturbed during the building demolition.

All surficial soil samples were collected using stainless steel trowels according to the procedures outlined in the work plan. See Figure 3 for a map showing surficial soil sample locations. A description of the surficial soil sample locations and the sample characteristics are contained in Table 1. Table 2 contains a summary of the surficial soil sample analytical results with comparisons to applicable Generic Cleanup Criteria exceedences of Part 201 of the NREPA.

Analysis of the surficial soil samples collected during the BFRA investigation of the Hastings Street property detected elevated levels of organic and inorganic compounds above the Part 201 of the NREPA Generic Cleanup Criteria. Arsenic, benzo(a)pyrene, dibenzo(a,h)anthracene, and lead were detected at concentrations that exceed the Part 201 of the NREPA residential direct contact criteria. Lead was detected at concentrations that exceed the Part 201 of the NREPA commercial III and commercial IV direct contact criteria. Carbon tetrachloride was detected at concentrations that exceeded the Part 201 of the NREPA residential and commercial I soil volatilization to indoor air inhalation criteria. Phenanthrene was detected at concentrations that exceeded the Part 201 of the NREPA residential and commercial I soil infinite source volatile soil inhalation criteria (VSIC), finite VSIC for 5 meter source thickness, and finite VSIC for 2 meter source thickness. Also, phenanthrene was detected at concentrations that exceeded the Part 201 of the NREPA industrial and commercial II, III, and IV infinite source VSIC. Manganese was detected at concentrations that exceeded the Part 201 of the NREPA industrial and commercial II, III, and IV particulate soil inhalation criteria.

Soil Boring Samples

The intent of the soil boring sampling was to characterize any potential contamination in the deep soils on the property, to determine if any downward migration of possible contamination had occurred from probable source areas, and to determine the potential health and safety concerns including threats posed to nearby residential populations, future workers, or resources associated with the deep soils at the property. Twelve soil boring samples were collected, but a background sample was not selected because the property had been disturbed during the building demolition and removal. An additional volatile organic compound (VOC) sample was collected from a deeper depth at soil boring sample location SB5 due to elevated photoionization detector readings obtain during the sampling process. It was labeled as SB5D.

All soil boring samples were collected utilizing a Geoprobe rig or a stainless steel hand auger according to the procedures outlined in the work plan. See Figure 4 for a map showing soil boring sample locations. A description of the soil boring sample locations and the sample characteristics is contained in Table 3. Table 4 contains a summary of the soil boring sample analytical results with comparisons to background concentrations and lists the Generic Cleanup Criteria exceedences of Part 201 of the NREPA.

Analysis of the soil boring samples collected during the BFRA investigation of the Hastings Street property detected elevated levels of organic and inorganic compounds above the Part 201 of the NREPA Generic Cleanup Criteria. Arsenic, benzo(a)pyrene, and xylenes (total) were detected at concentrations that exceed the Part 201 of the NREPA residential direct contact criteria. Xylenes (total) were detected at concentrations that exceed the Part 201 of the NREPA industrial and commercial II, III, and IV direct contact criteria. Xylenes (total) were detected at concentrations that exceeded the Part 201 of the NREPA residential and commercial I soil saturation concentration screening levels. Xylenes (total) were detected at concentrations that exceeded the Part 201 of the NREPA residential and commercial I and industrial and commercial II, III, and IV soil volatilization to indoor air inhalation criteria.

DISCUSSION

Analysis of the surficial soil and soil boring samples collected during the BFRA of the Hastings Street property detected the presence of organic and inorganic contaminants. These contaminants of concern were detected at concentrations greater than the Generic Residential and Commercial I Cleanup Criteria of Part 201 of the NREPA. The concentrations of lead, phenanthrene, manganese, and xylenes (total) were found to be greater than the Generic Industrial and Commercial II, III, IV Cleanup Criteria of Part 201 of the NREPA. Because these contaminants were detected at concentrations in excess of the Generic Residential Cleanup Criteria, the Hastings Street property qualifies as a facility under Part 201 of the NREPA.

Arsenic was detected in 13 out the 17 surficial soil sample locations at concentrations greater than the Part 201 of the NREPA residential direct contact criteria. These concentrations of arsenic ranged from 8.1 to 11.8 parts per million (ppm). A background may be substituted if higher than the calculated cleanup criteria, but a surficial soil background sample was not selected because the surface area of the property had been disturbed during the building demolition. Arsenic was detected in 7 out the 12 soil boring sample locations at concentrations greater than the Part 201 of the NREPA residential direct contact criteria. These concentrations of arsenic ranged from 8 to 14.8 ppm. A background may be substituted if higher than the calculated cleanup criteria, but a soil boring background sample was not selected because the property had been disturbed during the building demolition and removal. Lead was detected in 2 of the 17 surficial soil samples at concentrations that exceed the Part 201 of the NREPA residential, commercial III, and commercial IV direct contact criteria. Lead was detected in surficial soil sample SS1 at 589 ppm and in SS7 at 407 ppm. Benzo(a)pyrene was detected in 6 out the 17 surficial soil samples at concentrations greater than the Part 201 of the NREPA residential direct contact criteria. These concentrations of benzo(a)pyrene ranged from 2900 to 6400 ppm. Dibenzo(a,h)anthracene was detected in one of the surficial soil samples, SS16, at a concentration of 2100 ppm, which exceeds the Part 201 of the NREPA residential direct contact criteria. Carbon tetrachloride was detected in one of the surficial soil samples, SS8, at a concentration of 260 parts per billion (ppb), which exceeds the Part 201 of the NREPA residential and commercial I soil volatilization to indoor air inhalation criteria. Xylenes (total) were detected in soil boring sample SB5D at a concentration of 192,000 ppb. This concentration of xylenes (total) exceeds the Part 201 of the NREPA residential and industrial direct contact criteria, soil volatilization to indoor air inhalation criteria, and soil saturation concentration screening levels. Several other VOCs were detected in soil boring samples SB5 and SB5D, but at concentrations less than the Generic Residential Cleanup Criteria of Part 201 of the NREPA. The horizontal and vertical extent of the xylenes (total) detected in SB5D should be determined and the potential source of the contamination identified.

Based on the findings of the BFRA investigation, the following issues should be addressed before or during the redevelopment of the Hastings Street property:

- Action should be taken to abate the potential threat caused by the presence of contaminants of concern in the soils by mitigation of these contaminants or restricting access to the contaminated areas.

- Elevated concentrations of xylenes (total) detected in sample SB5D should be further investigated to determine the horizontal and vertical extent of the contamination, identify the potential source, and to determine whether mitigation is warranted.

- If the property is redeveloped without removal of contaminated soils, appropriate control measures need to be implemented to protect construction workers and future occupants.

- The contaminants of concern should be considered with respect to responsibilities that may exist under Part 201 of the NREPA. The nature of any response activity that may be required is dependent on the intended use of the property and the party's liability under Part 201 of the NREPA. A person who is liable for the contamination is required to achieve cleanup of the property consistent with the cleanup criteria. The relevant criteria are a function of the intended property use, such as residential, commercial, or industrial. A non-liable developer is not required to implement a cleanup to achieve the appropriate cleanup criteria. However, a non-liable party must comply with the "due care" provisions specified in section 7a obligations of Part 201 of the NREPA. These obligations include not exacerbating the existing contamination, exercising due care to assure there are not unacceptable exposures, and taking reasonable precautions against the reasonable foreseeable activities of third parties.

BIBLIOGRAPHY

1. Ecology & Environment, Inc., Letter Report for Hastings Street, Detroit, Wayne County Michigan, November 16, 1999..

2. Michigan Department of Environmental Quality (MDEQ), Environmental Response Division (ERD), Southeast MI District Office Site Files, 6540 Hastings Street.

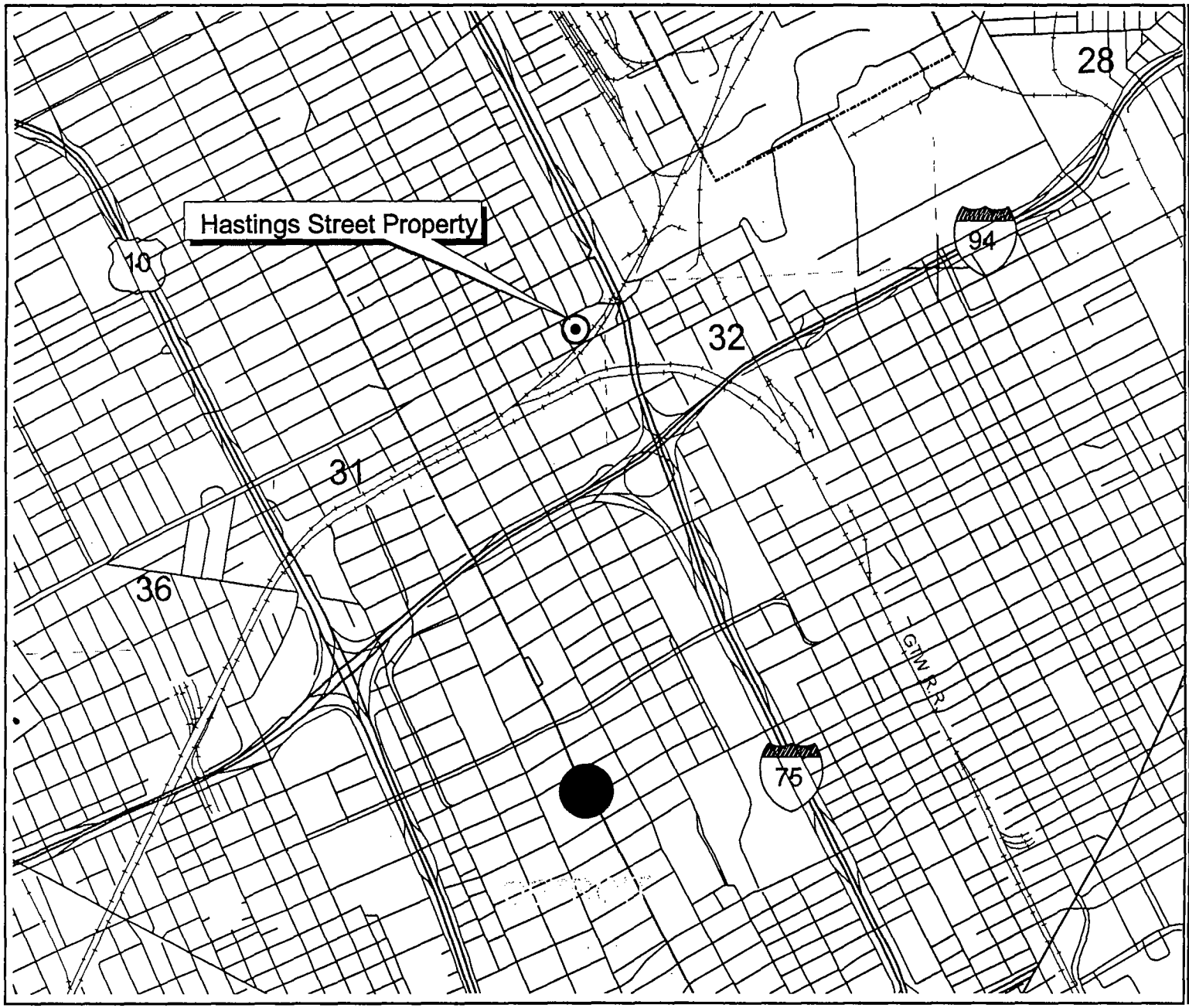
3. MDEQ, ERD, Superfund Section, Pre-Remedial Site Files, 6540 Hastings Street.

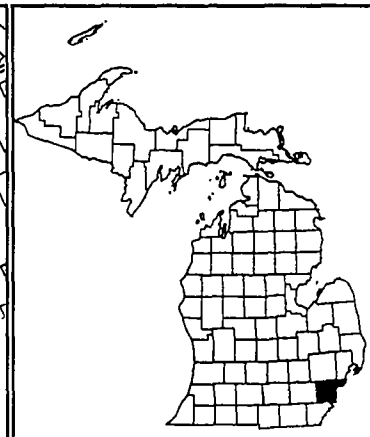
4. U.S. Geological Survey, 7.5 minute quadrangle topographic map; Detroit, 1968, Photorevised 1973 and 1980, Highland Park, 1968, Photorevised 1983.

5. U.S. Environmental Protection Agency, Pollution Report for Hastings Street Emergency Response Site, Detroit, Wayne County, Michigan; No. 1, June 21, 1999, No. 2, June 30, 1999, No. 3, September 17, 1999 and No. 4, October 8, 1999.

FIGURES

Figure 1
Property Location



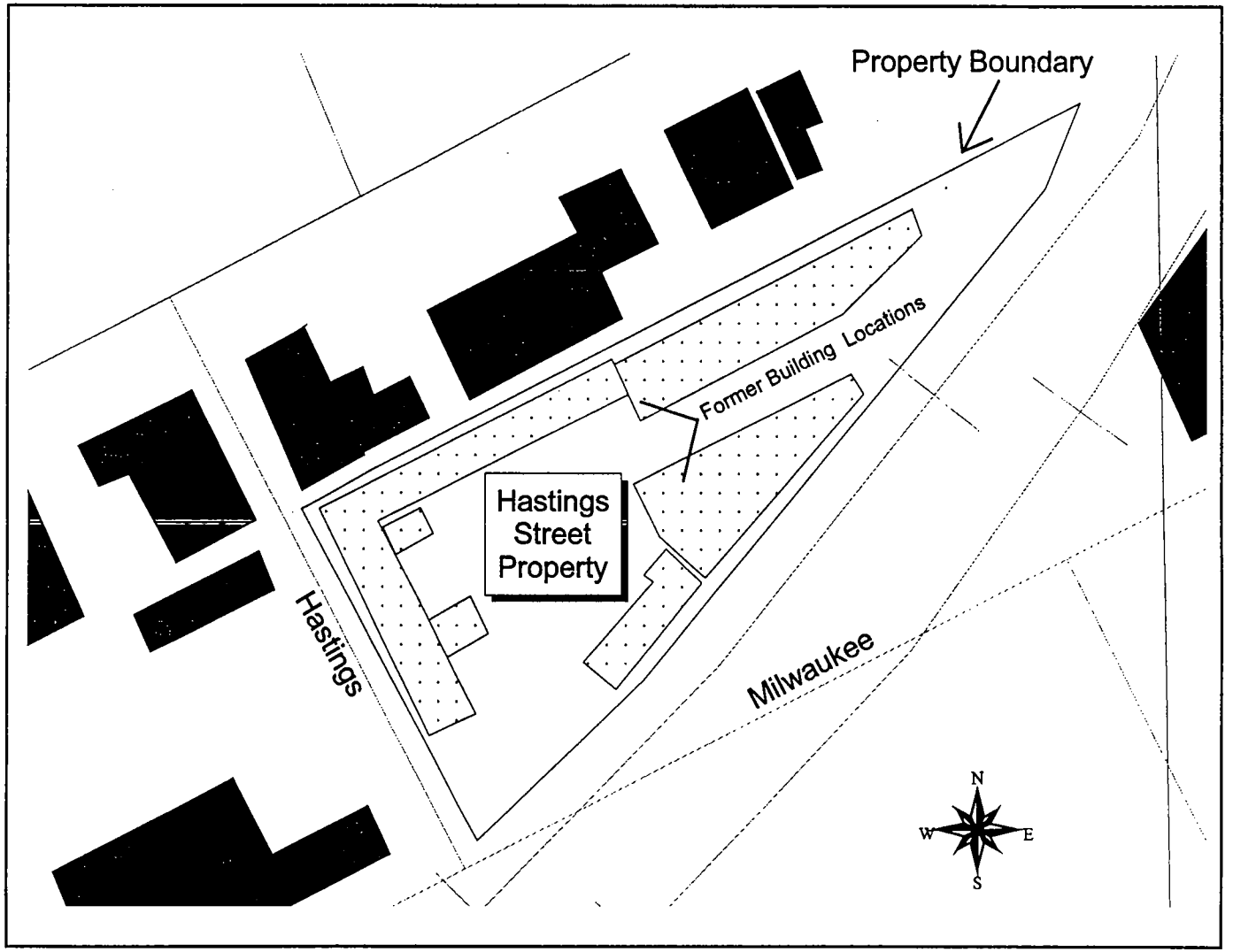


HASTINGS STREET
6540 HASTINGS ST.
DETROIT, MI
WAYNE COUNTY

Directions to Property:
From Lansing take I-69 east to I-696 Take I-696 east to I-75. Take I-75 south to Grand Blvd. exit. Go west on Grand Blvd. to Hastings St. Go south on Hastings St. to site at 6540 Hastings St. Detroit, MI .

Source: MIRIS Base / State Plane - NAD27 / Compiled by: TAD

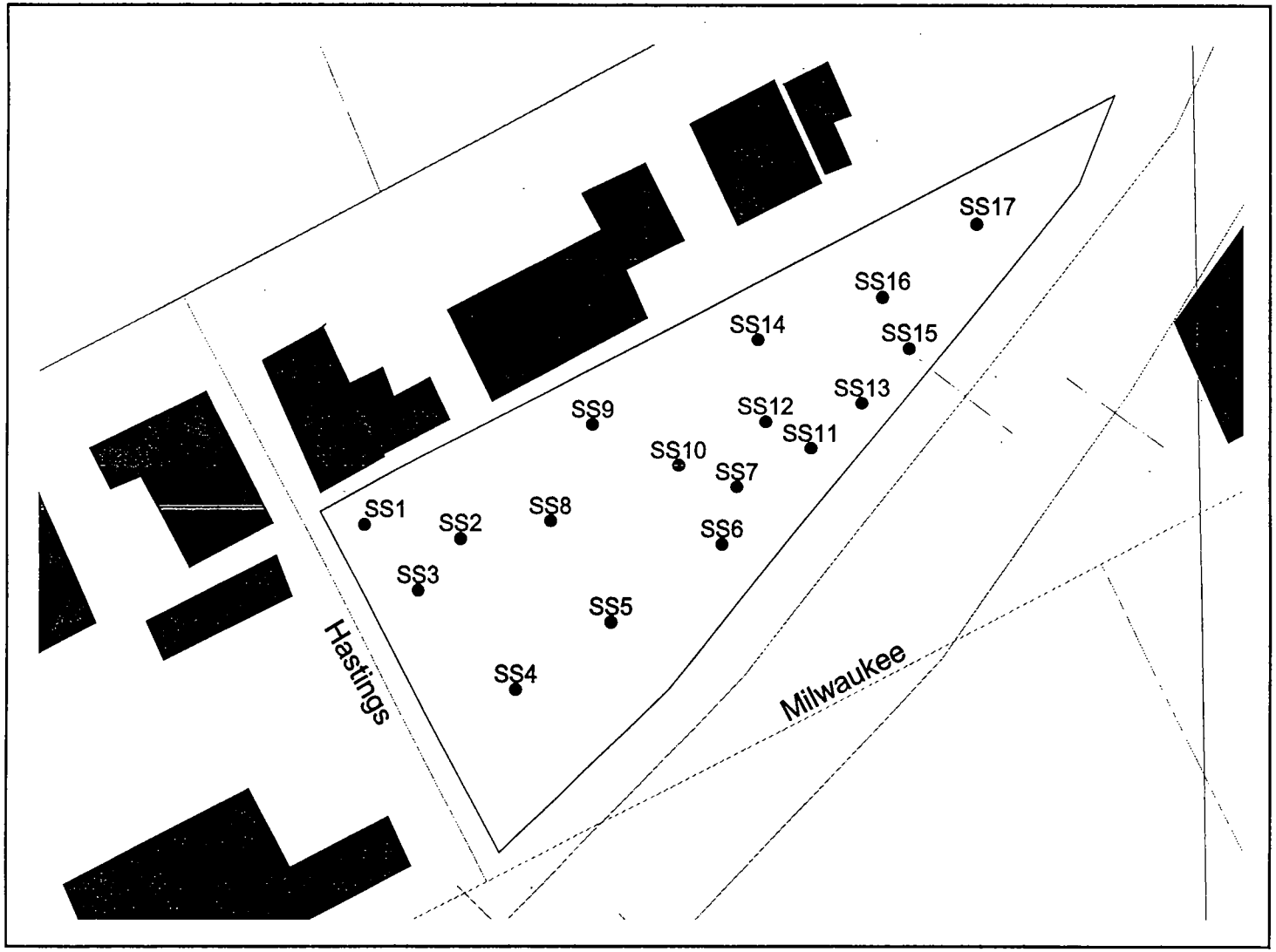
Figure 2
Property Features



100 0 100 200 300 Feet

Hastings Street Property
Source: MIRIS Base
State Plane - NAD27
Compiled by: TAD

Figure 3
Surficial Soil Sample Locations



LEGEND

• SS-1 -Surficial Soil 1

Hastings Street Property
Source: MIRIS Base
State Plane - NAD27
Compiled by: TAD

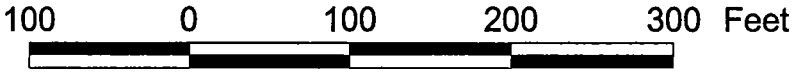
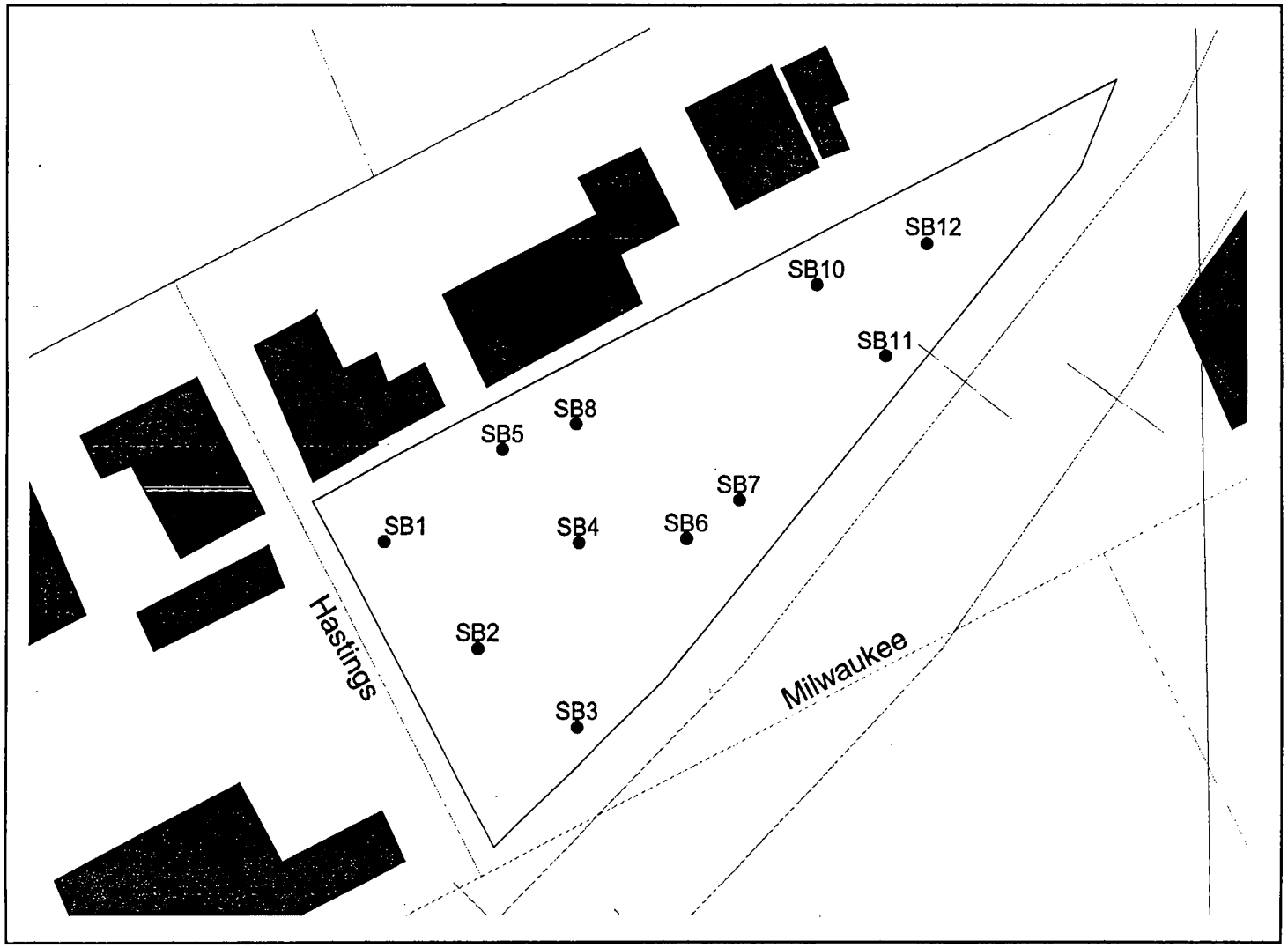


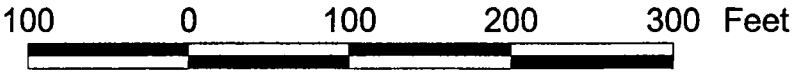
Figure 4
Soil Boring Sample Locations



Legend

●SB-1 -Soil Boring 1

Hastings Street Property
Source: MIRIS Base
State Plane - NAD27
Compiled by: TAD



TABLES

TABLE 1
SURFICIAL SOIL SAMPLE DESCRIPTIONS

SAMPLE NUMBER	UNIT THICKNES	LITHOLOGICAL DESCRIPTION	SAMPLE DESIGNATION
SS1 Location: See GPS map	0-6"	Dark brown, fine sand with tan and red streaks. Pieces of fine gravel cement, red brick, coal, and concrete.	Shallow, grab sample (0-6 in.)
SS2 Location: See GPS map	0-6"	Dark brown clay with fine sand, red brick chunks, some small pockets of tan clay, some chunks of coal and burnt material.	Shallow, grab sample (0-6 in.)
SS3 Location: See GPS map	0-6"	Dark brown clay, fine sand, some fine gravel with streaks of tan and black; area was a little drier; red brick, cement chunks, and concrete.	Shallow, grab sample (0-6 in.)
SS4 Location: See GPS map	0-6"	Moist, dark brown clay with fine sand, some streaks of tan in clay, med. to fine gravel and red brick chunks.	Shallow, grab sample (0-6 in.)
SS5 Location: See GPS map	0-6"	Dark brown clay, fine sand and silt; reddish brown and tan streaks; many chunks of red brick.	Shallow, grab sample (0-6 in.)
SS6 Location: See GPS map	0-6"	Brown clay with med. gravel, rust color (orange) with tan streaks through clay; red brick chunks; many chunks of slag and coal.	Shallow, grab sample (0-6 in.)
SS7 Location: See GPS map	0-6"	Dark brown clay with streaks of tan and rust, med. to fine gravel, saturated. Water in the bottom of hole.	Shallow, grab sample (0-6 in.)

TABLE 1 (cont.)
SURFICIAL SOIL SAMPLE DESCRIPTIONS

SAMPLE NUMBER	UNIT THICKNESS	LITHOLOGICAL DESCRIPTION	SAMPLE DESIGNATION
SS8 Location: See GPS map	0-6"	Dark brown clay with streaks of red and tan; fine sand, moist; pieces of red brick, cement, and concrete.	Shallow, grab sample (0-6 in.)
SS9 Location: See GPS map	0-6"	Dark brown clay with fine sand and med. gravel; many chunks of red brick, drier sample. Some dry, light brown, med. to fine sand on surface.	Shallow, grab sample (0-6 in.)
SS10 Location: See GPS map	0-8"	Dark brown clay with some small gravel; red brick chunks, cement, and concrete. Water was present at the bottom of the hole, although sample was not collected in water.	Shallow, grab sample (0-8 in.)
SS11 Location: See GPS map	0-8"	Mottled, very moist, black and dark brown clay, fine sand, and some fine gravel. Area indicates grading had occurred – brick chunks and black chunks that appear to be asphalt.	Shallow, grab sample (0-8 in.)
SS12 Location: See GPS map	0-6"	Dark brown clay with black streaks; small to fine gravel; moist, many chunks of coal and slag.	Shallow, grab sample (0-6 in.)
SS13 Location: See GPS map	0–8"	Clay with fine sand, med. to small pieces of gravel, moist, brown and black streaks; concrete bricks, asphalt, and some slag.	Shallow, grab sample (0-8 in.)
SS14 Location: See GPS map	0-4"	Dark brown clay with fine gravel. This area seemed to be drier with a higher content of gravel. Small pieces of red brick, asphalt, and slag.	Shallow, grab sample (0-4 in.)

TABLE 1 (cont.)
SURFICIAL SOIL SAMPLE DESCRIPTIONS

SAMPLE NUMBER	UNIT THICKNESS	LITHOLOGICAL DESCRIPTION	SAMPLE DESIGNATION
SS15 Location: See GPS map	0-4"	Moist, gray, variegated clay with some black, fine gravel.	Shallow, grab sample (0-4 in.)
SS16 Location: See GPS map	0-6"	Clay with fine gravel or coarse sand, chunks of red brick, concrete, slag, and asphalt.	Shallow, grab sample (0-6 in.)
SS17 Location: See GPS map	0-4" 4+"	Moist, brownish gray, silty clay. Coarse gravel with silty clay.	Shallow, grab sample (0-4 in.)

A total of seventeen (17) surficial soil samples were collected during the brownfield investigation.

Table 2
Surficial Soil Sample Summary

Sample	Contaminants	Sample Concentration		Background Concentration	Part 201 Generic Cleanup Criteria & Screening Level Exceedances
SS1					
	Inorganic	***mg/Kg***		***mg/Kg***	***Criteria Number***
	Arsenic	12			19
	Lead	590	J		19, 28, 29
SS2					
	Inorganic	***mg/Kg***		***mg/Kg***	***Criteria Number***
	Arsenic	8.6			19
SS3					
	Inorganic	***mg/Kg***		***mg/Kg***	***Criteria Number***
	Arsenic	8.1			19
SS4					
	Inorganic	***mg/Kg***		***mg/Kg***	***Criteria Number***
	Arsenic	8.6			19
SS5					
	Inorganic	***mg/Kg***		***mg/Kg***	***Criteria Number***
	Arsenic	8.4			19
SS6					
	Inorganic	***mg/Kg***		***mg/Kg***	***Criteria Number***
	Arsenic	9			19
SS7					
	Inorganic	***mg/Kg***		***mg/Kg***	***Criteria Number***
	Arsenic	11			19
	Lead	410	J		19, 28, 29
	Semivolatile	***ug/Kg***		***ug/Kg***	***Criteria Number***
	Benzo(a)pyrene	3300	J		19

Table 2
Surficial Soil Sample Summary

Sample	Contaminants	Sample Concentration	Background Concentration	Part 201 Generic Cleanup Criteria & Screening Level Exceedances
SS8				
	Volatile	***ug/Kg***	***ug/Kg***	***Criteria Number***
	Carbon Tetrachloride	260		14
SS9				
	Inorganic	***mg/Kg***	***mg/Kg***	***Criteria Number***
	Arsenic	8.3		19
	Semivolatile	***ug/Kg***	***ug/Kg***	***Criteria Number***
	Benzo(a)pyrene	3700		19
SS10				
	Inorganic	***mg/Kg***	***mg/Kg***	***Criteria Number***
	Arsenic	8.1		19
	Semivolatile	***ug/Kg***	***ug/Kg***	***Criteria Number***
	Benzo(a)pyrene	2900		19
SS11				
	Inorganic	***mg/Kg***	***mg/Kg***	***Criteria Number***
	Arsenic	9.4		19
SS12				
	Inorganic	***mg/Kg***	***mg/Kg***	***Criteria Number***
	Arsenic	10		19
	Semivolatile	***ug/Kg***	***ug/Kg***	***Criteria Number***
	Benzo(a)pyrene	3000		19
SS13				
	Inorganic	***mg/Kg***	***mg/Kg***	***Criteria Number***
	Arsenic	9.9		19

Table 2
Surficial Soil Sample Summary

Sample	Contaminants	Sample Concentration		Background Concentration	Part 201 Generic Cleanup Criteria & Screening Level Exceedances
SS14					
	Inorganic	***mg/Kg***		***mg/Kg***	***Criteria Number***
	Arsenic	11			19
	Semivolatile	***ug/Kg***		***ug/Kg***	***Criteria Number***
	Benzo(a)pyrene	6100			19
	Phenanthrene	11000			15
SS15					
	No contaminants detected above applicable criteria.				
SS16					
	Semivolatile	***ug/Kg***		***ug/Kg***	***Criteria Number***
	Benzo(a)pyrene	9400			19
	Dibenzo(a,h)anthracene	2100	J		19
	Phenanthrene	32000			15, 16, 17, 23
SS17					
	Inorganic	***mg/Kg***		***mg/Kg***	***Criteria Number***
	Manganese	2700	J		26

ug/Kg = micrograms per kilogram (parts per billion)

mg/Kg = milligrams per kilogram (parts per million)

Report Generated on Aug. 15, 2001 by Lab Results Database. All sample results rounded to two significant digits for comparison to the Part 201 Generic Cleanup Criteria and Screening Levels.

The number in the Part 201 Generic Cleanup Criteria and Screening Level Exceedances refers to the respective Part 201 Generic Cleanup Criteria or Screening Levels. The Part 201 Generic Cleanup Criteria and Screening Levels dated June 7, 2000 are contained in Appendix C.

14 - Residential and Commercial I Soil Volatilization to Indoor Air Inhalation Criteria.
15 - Residential and Commercial I Finite Source Volatile Soil Inhalation Criteria (VSIC).
16 - Residential and Commercial I Infinite Source VSIC for 5 Meter Source Thickness.
19 - Residential and Commercial I Direct Contact Criteria.
23 - Industrial and Commercial II, III, IV Infinite Source VSIC.
26 - Industrial and Commercial II, III, IV Particulate Soil Inhalation Criteria.
28 - Commercial III Direct Contact Criteria.
29 - Commercial IV Direct Contact Criteria.

J - This flag indicates an estimated value.

A total of seventeen (17) surficial soil samples were collected during the brownfield investigation.

TABLE 3
SOIL BORING SAMPLE DESCRIPTIONS

BORING NUMBER	SPOON INTERVAL	UNIT THICKNESS	LITHOLOGICAL DESCRIPTION	SAMPLE DESIGNATION
SB1 Location: See GPS map	Core: 0-4' Recovery: ~33"	0-7"	Very moist, brown, silty clay with trace gravel.	Deep grab sample Sample 4-6' of 4-8' core VOA taken from 12" of 4-8' core
		7-12"	Broken, red brick.	
		12-29"	Moist, brown, silty clay with trace gravel.	
		29-33"	Moist, brown, silty clay and gravel.	
	Core: 4-8' Recovery: ~46"	0-46"	Moist, brown, silty clay with trace gravel.	
SB2 Location: See GPS map	Hand Auger: 0-3'	0-5"	Very moist, brown, silty clay with some debris and gravel.	Deep, grab sample Sample 18-36" of 0-3' hand auger sample VOA taken from 22" of 0-3' hand auger sample
		5-8"	Wet, dark gray, silty sand and gravel with slag, concrete, and broken brick.	
		8-20"	Very moist, brown, silty clay with some debris.	
		20-36"	Moist, variegated, silty clay.	
SB3 Location: See GPS map	Core: 0–4' Recovery: ~34"	0-2"	Moist, brown, silty clay with debris.	Deep, grab sample Sample 4-6' of 4-8' core VOA taken from 10" of 4-8' core
		2-6"	Moist to very moist, dark brown, sandy clay with trace gravel.	
		6-11"	Moist, black, silty sand and ash material with some charred wood.	
		11-13"	Broken, red brick.	
		13-19"	Moist, black, sandy to silty clay with some debris (brick, etc.).	
		19-34"	Moist, variegated, silty clay.	
	Core: 4–8' Recovery: ~46"	0-46"	Moist, variegated, silty clay.	

TABLE 3 (cont.)
SOIL BORING SAMPLE DESCRIPTIONS

BORING NUMBER	SPOON INTERVAL	UNIT THICKNESS	LITHOLOGICAL DESCRIPTION	SAMPLE DESIGNATION
SB4 Location: See GPS map	Hand Auger: 0-3'	0-4" 4-10" 10-14" 14-20" 20-36"	Very moist, brown, silty clay with some debris and gravel. Very moist, black, sandy/silty clay with some debris and gravel. Red brick. Moist, black, silty sand and gravel with some slag. Moist, variegated, silty clay.	Deep, grab sample Sample 18-36" of 0-3' hand auger sample VOA taken from 20" of 0-3' hand auger sample
SB5 Location: See GPS map	Core: 0-4' Recovery: ~33" Core: 4-8' Recovery: ~46"	0-11" 11-15" 15-33" 0-46"	Moist to very moist, grayish brown, silty clay with some gravel and debris. Crushed red brick. Note: PID reading = 0.5 Moist, variegated, silty clay, slight odor. Note: PID reading = 26.5 Same as above; petroleum sheen on soils in bottom 1' of core, strong odor. Note: PID reading = 28.5 - 640	Deep, grab sample Sample 5-7' of 4-8' core VOA taken from 16" of 0-4' core (SB5) Another VOA collected from 38" of 4-8' core (SB5D)
SB6 Location: See GPS map	Hand Auger: 0-3'	0-7" 7-18" 18-36"	Very moist, brown, silty clay with some debris and gravel. Very moist, black, silty sand and gravel with slag. Moist, variegated, silty clay with occasional wet, sandy clay seams.	Deep, grab sample Sample 18-36" of 0-3' hand auger sample VOA taken from 24" of 0-3' hand auger sample

TABLE 2 (cont.)
SOIL BORING SAMPLE DESCRIPTIONS

BORING NUMBER	SPOON INTERVAL	UNIT THICKNESS	LITHOLOGICAL DESCRIPTION	SAMPLE DESIGNATION
SB7 Location: See GPS map	Hand Auger: 0-3'	0-30" 30-36"	Moist, gray to brown, silty clay. Moist, brown clay with gray streaks.	Deep, grab sample Sample 30-36" of 0-3' hand auger sample VOA taken from 30-31" of 0-3' hand auger sample
SB8 Location: See GPS map	Core: 0-4' Recovery: ~29" Core: 4-8' Recovery: ~46"	0-2" 2-5" 5-11" 11-18" 18-25" 25-29" 0-46"	Moist, brown, silty clay with a trace of sand and gravel. Crushed, orange brick. Moist, mixed black and brown, silty clay. Moist, brown, silty clay. Moist, dark brown, silty clay with some fine sand. Moist, variegated, silty clay. Moist, variegated, silty clay.	Deep, grab sample Sample 4-6' of 4-8' core VOA taken from 9" of 4-8' core
SB9 Location: See GPS map	Hand Auger: 0-3'	0-8" 8-21" 21-36"	Very moist, brown, silty clay with debris and gravel. Very moist, gray, clayey/silty sand with some gravel and debris. Moist, variegated, silty clay.	Deep, grab sample Sample 18-36" of 0-3' hand auger sample VOA taken from 23" of 0-3' hand auger sample

TABLE 3 (cont.)
SOIL BORING SAMPLE DESCRIPTIONS

BORING NUMBER	SPOON INTERVAL	UNIT THICKNESS	LITHOLOGICAL DESCRIPTION	SAMPLE DESIGNATION
SB10 Location: See GPS map	Core: 0-4' Recovery: ~16" Core: 4-8' Recovery: ~40"	0-16" 0-3" 3-40"	Moist to very moist, mixed brown/dark brown/black, clayey fill material with brick, concrete, gravel, etc. Same as above. Moist, variegated, silty clay with trace sand and gravel. Very moist, sandy clay seam from 20-22" of core.	Deep, grab sample Sample 4-6' of 4-8' core VOA taken from 21" of 4-8' core
SB11 Location: See GPS map	Core: 0-4' Recovery: ~39" Core: 4-8' Recovery: ~36"	0-2" 2-4" 4-10" 10-24" 24-39" 0-6" 6-36"	Very moist, brown, silty clay. Broken brick and concrete. Moist, brown, silty clay with trace gravel. Moist, gray, silty clay. Moist, black, silty clay with very moist to wet seam at 35". Moist, black, silty clay. Moist, variegated, silty clay with trace gravel.	Deep, grab sample Sample 2-4' of 4-8' core VOA taken from 35" of 0-4' core
SB12 Location: See GPS map	Core: 0-4' Recovery: ~29" Core: 4-8' Recovery: ~46"	0-4" 4-10" 10-29" 0-5" 5-46"	Moist, brown, silty clay with some debris (brick, concrete). Broken concrete. Moist, dark brown, silty clay with trace sand and gravel. Same as above. Moist, variegated, silty clay with small (less than ¼") wet lenses at 20" and 27".	Deep, grab sample Sample 5-7' of 4-8' core VOA taken from 20" of 4-8' core

A total of twelve (12) soil-boring samples were collected during the brownfield investigation.

Table 4
Soil Boring Sample Summary

Sample	Contaminants	Sample Concentration		Background Concentration	Part 201 Generic Cleanup Criteria & Screening Level Exceedances
SB1					
	Inorganic	***mg/Kg***		***mg/Kg***	***Criteria Number***
	Arsenic	8.6			19
SB2					
	Inorganic	***mg/Kg***		***mg/Kg***	***Criteria Number***
	Arsenic	9.8			19
	Semivolatile	***ug/Kg***		***ug/Kg***	***Criteria Number***
	Benzo(a)pyrene	4100			19
SB3					
	Inorganic	***mg/Kg***		***mg/Kg***	***Criteria Number***
	Arsenic	10	J		19
SB4					
	Inorganic	***mg/Kg***		***mg/Kg***	***Criteria Number***
	Arsenic	15	J		19
SB5					
	No contaminants detected above applicable criteria.				
SB5D					
	Volatile	***ug/Kg***		***ug/Kg***	***Criteria Number***
	Xylenes, Total	190000			14, 19, 20, 22, 27, 28, 29
SB6					
	No contaminants detected above applicable criteria.				
SB7					
	No contaminants detected above applicable criteria.				

Table 4
Soil Boring Sample Summary

Sample	Contaminants	Sample Concentration		Background Concentration	Part 201 Generic Cleanup Criteria & Screening Level Exceedances
SB8					
	Inorganic	***mg/Kg***		***mg/Kg***	***Criteria Number***
	Arsenic	8.5	J		19
SB9					
	No contaminants detected above applicable criteria.				
SB10					
	Inorganic	***mg/Kg***		***mg/Kg***	***Criteria Number***
	Arsenic	8	J		19
SB11					
	No contaminants detected above applicable criteria.				
SB12					
	Inorganic	***mg/Kg***		***mg/Kg***	***Criteria Number***
	Arsenic	9.6	J		19

ug/Kg = micrograms per kilogram (parts per billion)

mg/Kg = milligrams per kilogram (parts per million)

Report Generated on Aug. 15, 2001 by Lab Results Database. All sample results rounded to two significant digits for comparison to the Part 201 Generic Cleanup Criteria and Screening Levels.

The number in the Part 201 Generic Cleanup Criteria and Screening Level Exceedances refers to the respective Part 201Generic Cleanup Criteria or Screening Levels. The Part 201 Generic Cleanup Criteria and Screening Levels dated June 7, 2000 are contained in Appendix C.

14 - Residential and Commercial I Soil Volatilization to Indoor Air Inhalation Criteria.
19 - Residential and Commercial I Direct Contact Criteria.
20 - Residential and Commercial I Soil Saturation Concentration Screening Levels.
22 - Industrial and Commercial II, III, IV Soil Volatilization to Indoor Air Inhalation Criteria.
27 - Industrial and Commercial II Direct Contact Criteria.
28 - Commercial III Direct Contact Criteria.
29 - Commercial IV Direct Contact Criteria.

J - This flag indicates an estimated value.

A total of twelve (12) soil boring samples were collected during the brownfield investigation.

APPENDIX A

BFRA PROPERTY PHOTOGRAPHS

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 4/17/01

TIME: 1705

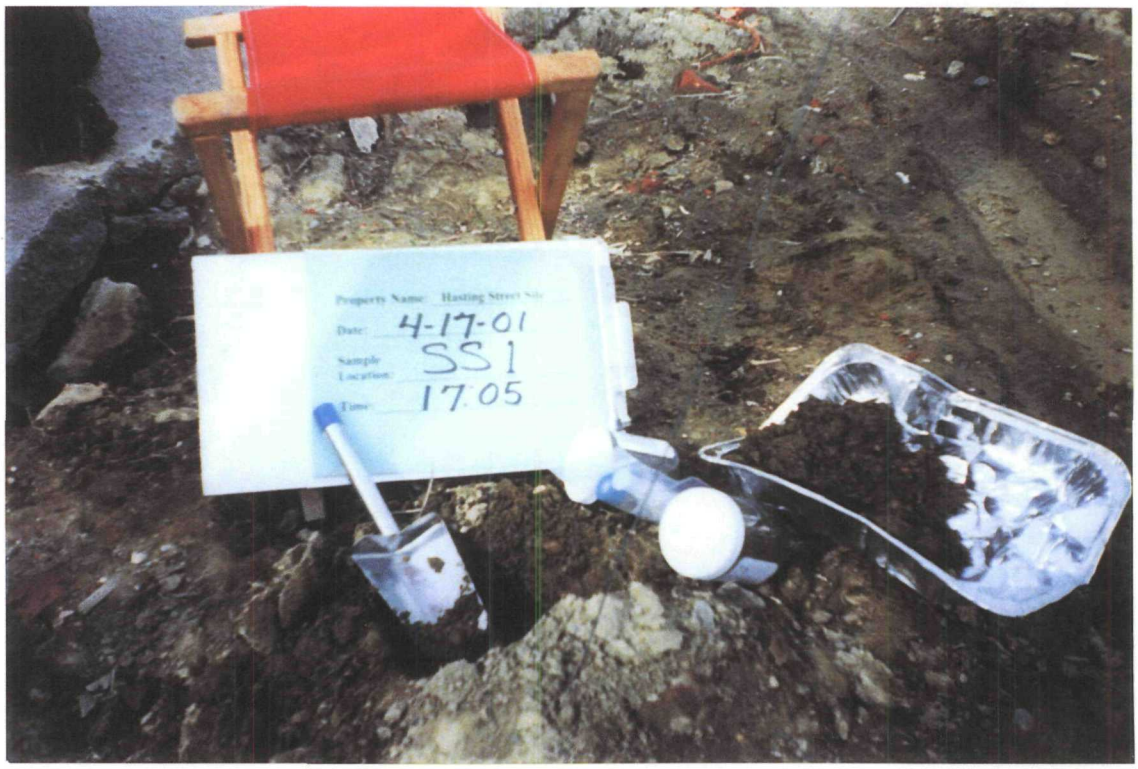
DIRECTION OF PHOTOGRAPH: NE

WEATHER CONDITIONS: Cold, windy

TEMPERATURE: 45 F

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-1



DESCRIPTION:
Surficial Soil Sample (SS1) Location

DATE: 4/17/01

TIME: 1705

DIRECTION OF PHOTOGRAPH: NE

WEATHER CONDITIONS: Cold, windy

TEMPERATURE: 45 F

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-1

DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 04/17/01

TIME: 1655

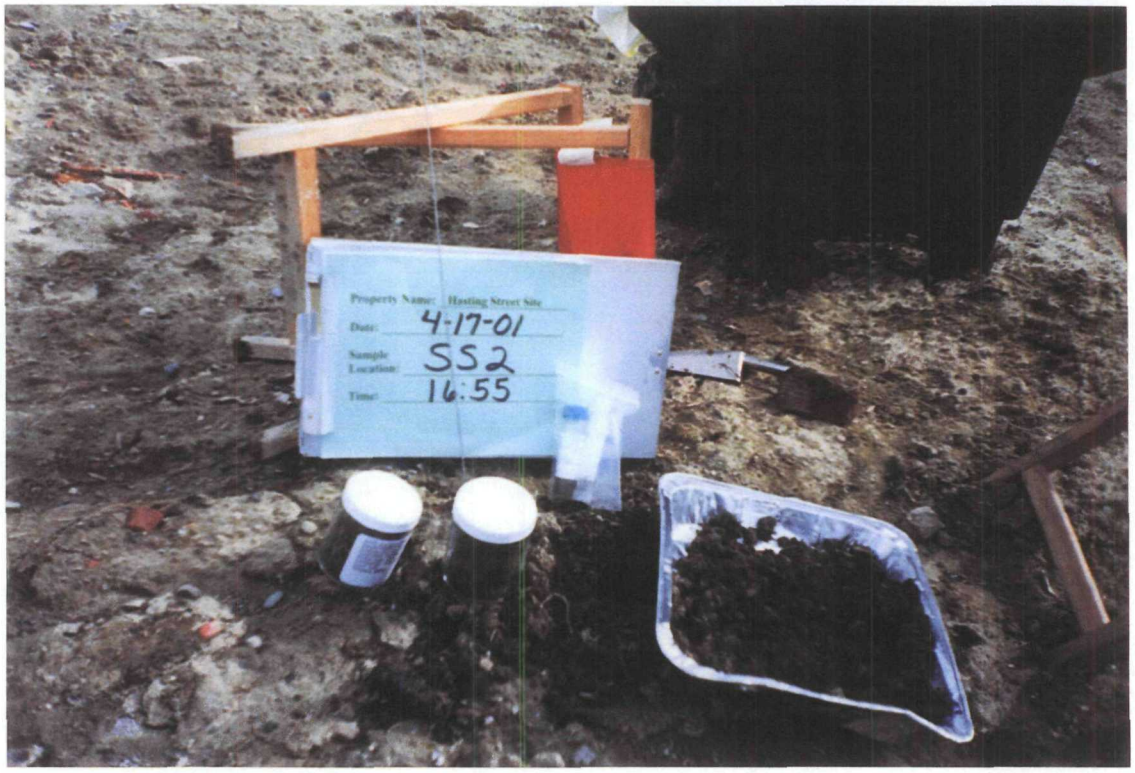
DIRECTION OF PHOTOGRAPH: SE

WEATHER CONDITIONS: Cold, windy

TEMPERATURE: 45 F

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-2



DESCRIPTION:
Surficial Soil Sample (SS2) Location

DATE: 04/17/01

TIME: 1655

DIRECTION OF PHOTOGRAPH: SE

WEATHER CONDITIONS: Cold, windy

TEMPERATURE: 45 F

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-2

DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 04/17/01

TIME: 1715

DIRECTION OF PHOTOGRAPH: SE

WEATHER CONDITIONS: Cold, windy

TEMPERATURE: 45 F

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-3

DESCRIPTION: Surficial Soil Sample (SS3) Location

DATE: 04/17/01

TIME: 1715

DIRECTION OF PHOTOGRAPH: SE

WEATHER CONDITIONS: Cold, windy

TEMPERATURE: 45 F

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-3

DESCRIPTION: Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 04/17/01

TIME: 1640

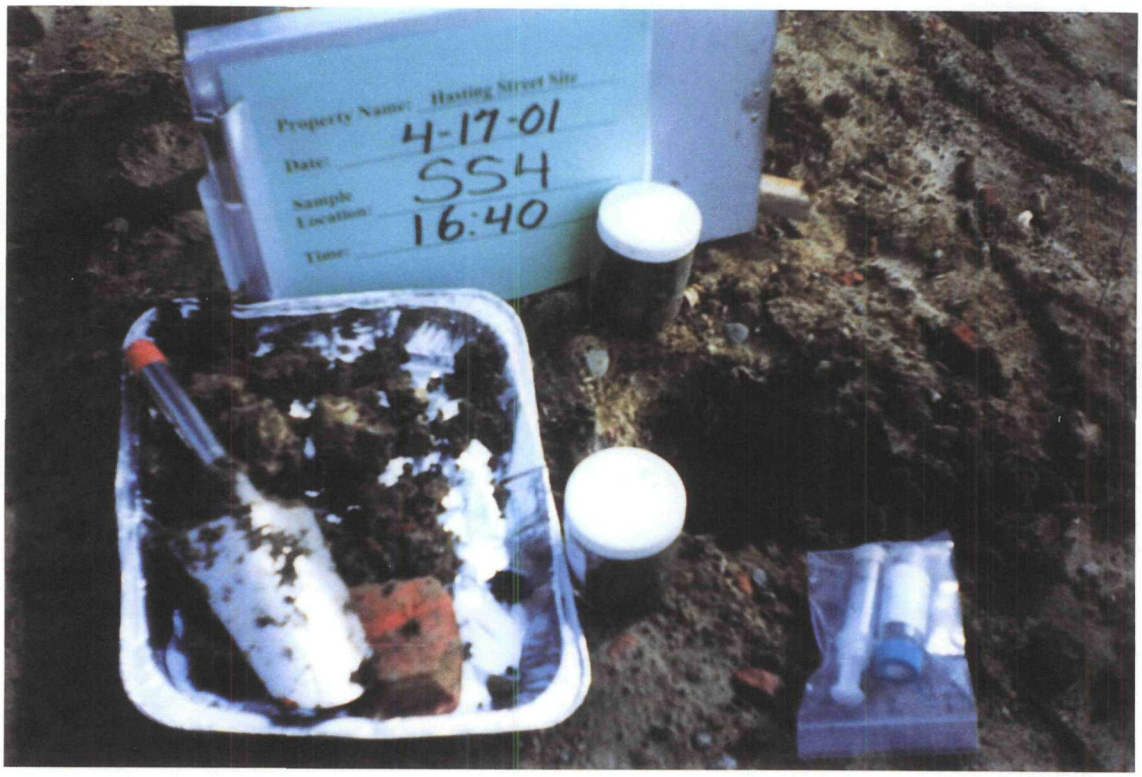
DIRECTION OF PHOTOGRAPH: SW

WEATHER CONDITIONS: Cold, windy

TEMPERATURE: 45 F

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-4



DESCRIPTION:
Surficial Soil Sample (SS4) Location

DATE: 04/17/01

TIME: 1640

DIRECTION OF PHOTOGRAPH: SW

WEATHER CONDITIONS: Cold, windy

TEMPERATURE: 45 F

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-4

DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 04/17/01

TIME: 1630

DIRECTION OF PHOTOGRAPH: SE

WEATHER CONDITIONS: Cold, windy

TEMPERATURE: 45 F

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-5

DESCRIPTION:
Surficial Soil Sample (SS5) Location

DATE: 04/17/01

TIME: 1630

DIRECTION OF PHOTOGRAPH: SE

WEATHER CONDITIONS: Cold, windy

TEMPERATURE: 45 F

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-5

DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 04/17/01

TIME: 1510

DIRECTION OF PHOTOGRAPH: SE

WEATHER CONDITIONS: Cold, windy

TEMPERATURE: 45 F

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-6

DESCRIPTION:
Surficial Soil Sample (SS6) Location

DATE: 04/17/01

TIME: 1510

DIRECTION OF PHOTOGRAPH: SE

WEATHER CONDITIONS: Cold, windy

TEMPERATURE: 45 F

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-6

DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 04/17/01

TIME: 1500

DIRECTION OF PHOTOGRAPH: SE

WEATHER CONDITIONS: Cold, windy

TEMPERATURE: 45

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-7

DESCRIPTION:
Surficial Soil Sample (SS7) Location

DATE: 04/17/01

TIME: 1500

DIRECTION OF PHOTOGRAPH: SE

WEATHER CONDITIONS: Cold, windy

TEMPERATURE: 45

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-7

DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 04/17/01

TIME: 1600

DIRECTION OF PHOTOGRAPH: SW

WEATHER CONDITIONS: Partly sunny, windy, cold

TEMPERATURE: 45

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-8

DESCRIPTION:
Surficial Soil Sample (SS8) Location

DATE: 04/17/01

TIME: 1600

DIRECTION OF PHOTOGRAPH: SW

WEATHER CONDITIONS: Partly sunny, windy, cold

TEMPERATURE: 45

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-8

DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 04/17/01

TIME: 1545

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Cold, windy

TEMPERATURE: 45

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-9

DESCRIPTION: Surficial Soil Sample (SS9) Location

DATE: 04/17/01

TIME: 1545

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Cold, windy

TEMPERATURE: 45

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-9

DESCRIPTION: Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 04/17/01

TIME: 1525

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Cold, windy

TEMPERATURE: 45

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-10

DESCRIPTION:
Surficial Soil Sample (SS10) Location

DATE: 04/17/01

TIME: 1525

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Cold, windy

TEMPERATURE: 45

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-10

DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 4/17/01

TIME: 1340

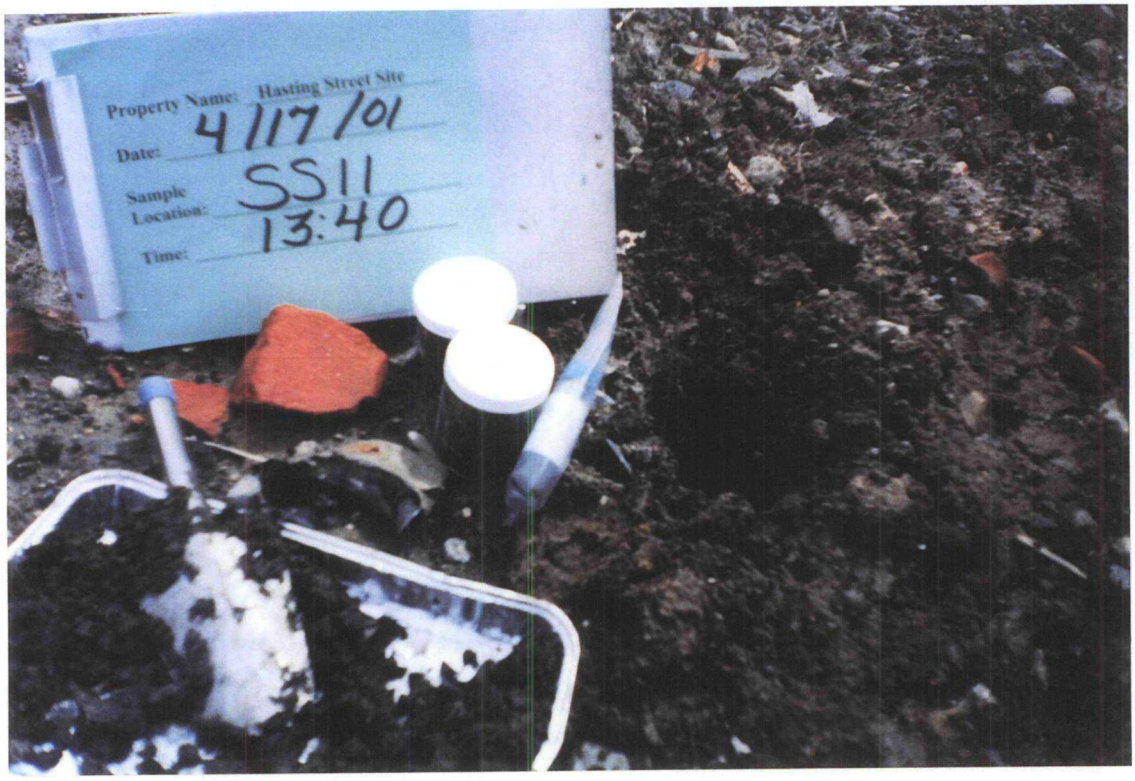
DIRECTION OF PHOTOGRAPH: SE

WEATHER CONDITIONS: Windy

TEMPERATURE: 50

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-11



DESCRIPTION: Surficial Soil Sample (SS11) Location

DATE: 4/17/01

TIME: 1340

DIRECTION OF PHOTOGRAPH: SE

WEATHER CONDITIONS: Windy

TEMPERATURE: 50

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-11

DESCRIPTION: Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 4/17/01

TIME: 1440

DIRECTION OF PHOTOGRAPH: SE

WEATHER CONDITIONS: Cold, windy, partly sunny

TEMPERATURE: 45

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-12

DESCRIPTION: Surficial Soil Sample (SS12) Location

DATE: 4/17/01

TIME: 1440

DIRECTION OF PHOTOGRAPH: SE

WEATHER CONDITIONS: Cold, windy, partly sunny

TEMPERATURE: 45

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-12

DESCRIPTION: Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 4/17/01

TIME: 1400

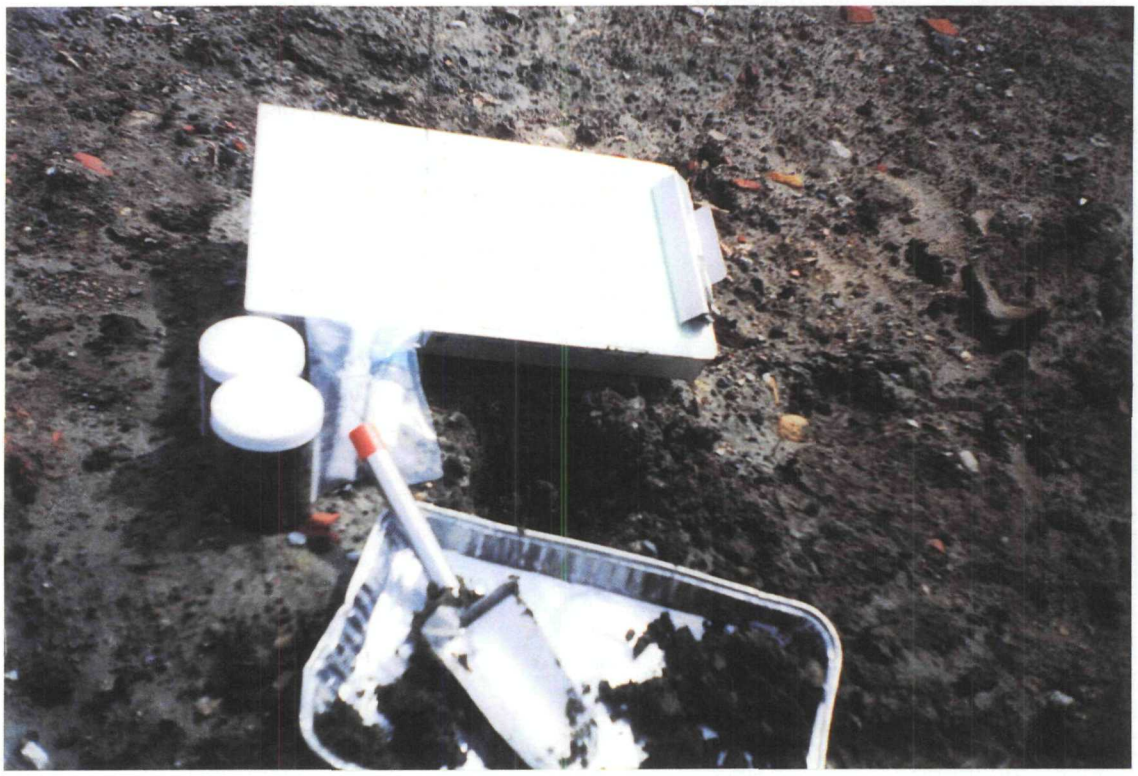
DIRECTION OF PHOTOGRAPH: SE

WEATHER CONDITIONS: Windy

TEMPERATURE: 45

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-13



DESCRIPTION:
Surficial Soil Sample (SS13) Location

DATE: 4/17/01

TIME: 1400

DIRECTION OF PHOTOGRAPH: SE

WEATHER CONDITIONS: Windy

TEMPERATURE: 45

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-13

DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 4/17/01

TIME: 1425

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Cold, windy

TEMPERATURE: 45 F

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-14

DESCRIPTION: Surficial Soil Sample (SS14) Location

DATE: 4/17/01

TIME: 1425

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Cold, windy

TEMPERATURE: 45 F

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-14

DESCRIPTION: Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 04/17/01

TIME: 1405

DIRECTION OF PHOTOGRAPH:

WEATHER CONDITIONS: Mostly cloudy

TEMPERATURE: 40 F

PHOTOGRAPH BY: Spielberg

SAMPLE ID: SS-15

DESCRIPTION: Surficial Soil Sample (SS15) Location

DATE: 04/17/01

TIME: 1405

DIRECTION OF PHOTOGRAPH:

WEATHER CONDITIONS: Mostly cloudy

TEMPERATURE: 40 F

PHOTOGRAPH BY: Spielberg

SAMPLE ID: SS-15

DESCRIPTION: Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 04/17/01

TIME: 1410

DIRECTION OF PHOTOGRAPH: SE

WEATHER CONDITIONS: Cold, very windy

TEMPERATURE: 45 F

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-16

DESCRIPTION:
Surficial Soil Sample (SS16) Location

DATE: 04/17/01

TIME: 1410

DIRECTION OF PHOTOGRAPH: SE

WEATHER CONDITIONS: Cold, very windy

TEMPERATURE: 45 F

PHOTOGRAPH BY: Krajcovic

SAMPLE ID: SS-16

DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 04/17/01

TIME: 1440

DIRECTION OF PHOTOGRAPH:

WEATHER CONDITIONS: Partly sunny, windy

TEMPERATURE: 40 F

PHOTOGRAPH BY: Spielberg

SAMPLE ID: SS-17

DESCRIPTION: Surficial Soil Sample (SS17) Location

DATE: 04/17/01

TIME: 1440

DIRECTION OF PHOTOGRAPH:

WEATHER CONDITIONS: Partly sunny, windy

TEMPERATURE: 40 F

PHOTOGRAPH BY: Spielberg

SAMPLE ID: SS-17

DESCRIPTION: Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 04/17/01

TIME: 1400

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Partly sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-1

DESCRIPTION:
Soil Boring Sample (SB1) Location.

DATE: 04/17/01

TIME: 1400

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Partly sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-1

DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 04/17/01

TIME: 1755

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-2

DESCRIPTION:
Soil Boring Sample (SB2) Location.

DATE: 04/17/01

TIME: 1755

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-2

DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 04/17/01

TIME: 1630

DIRECTION OF PHOTOGRAPH: W

WEATHER CONDITIONS: Mostly sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-3

DESCRIPTION: Soil Boring Sample (SB3) Location.

DATE: 04/17/01

TIME: 1630

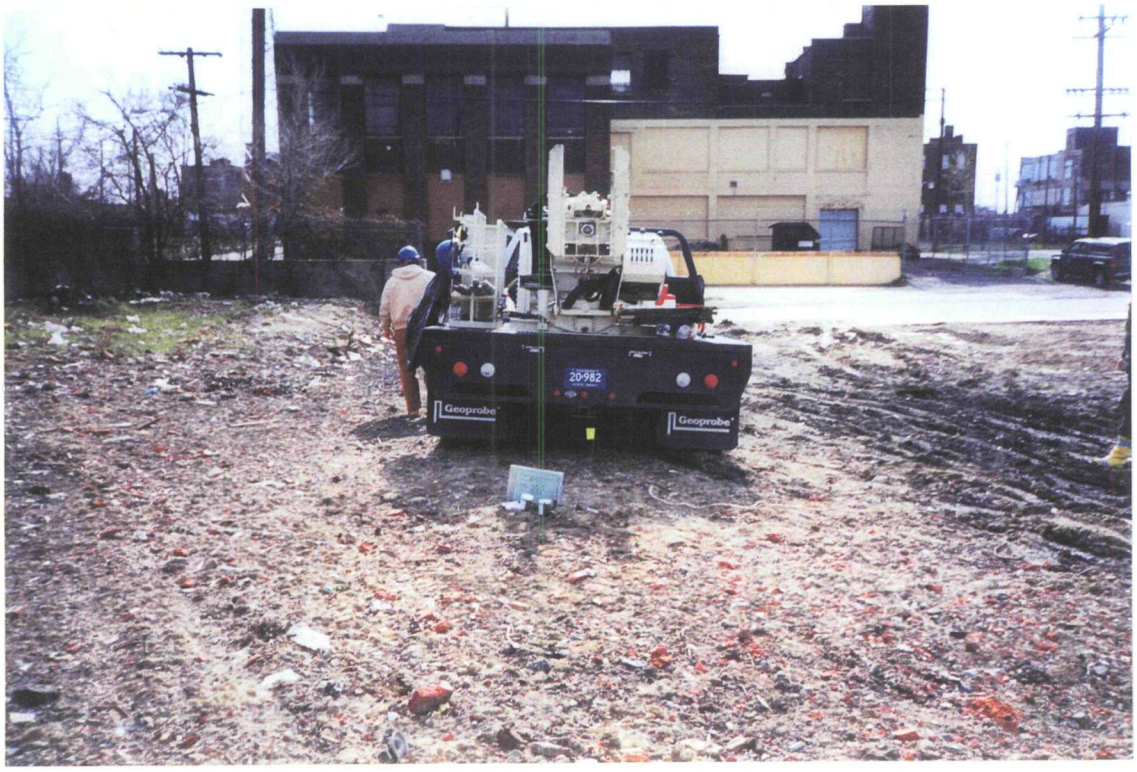
DIRECTION OF PHOTOGRAPH: W

WEATHER CONDITIONS: Mostly sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-3



DESCRIPTION: Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 4/17/01

TIME: 1655

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-4

DESCRIPTION:
Soil Boring Sample (SB4) Location.

DATE: 4/17/01

TIME: 1655

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-4

DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 4/17/01

TIME: 1430/1435

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Partly sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-5/5D

DESCRIPTION: Soil Boring Sample (SB5) Location.

DATE: 4/17/01

TIME: 1430/1435

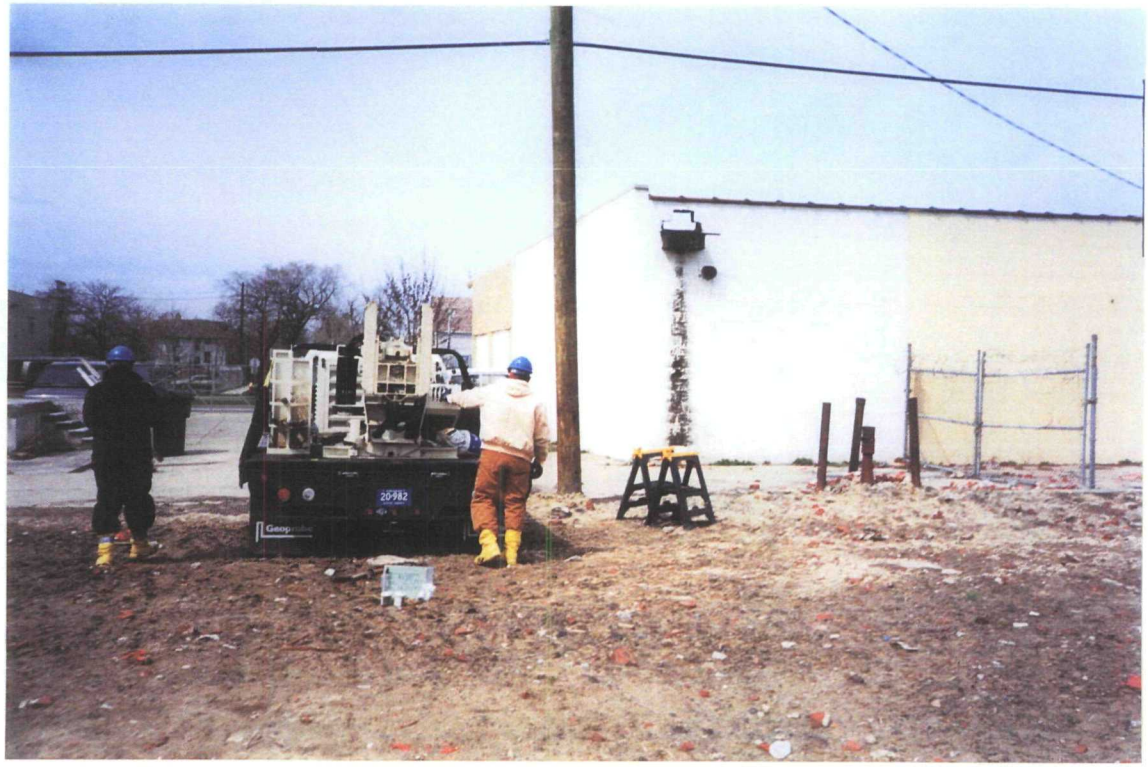
DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Partly sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-5/5D



DESCRIPTION: Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 4/17/01

TIME: 1715

DIRECTION OF PHOTOGRAPH: S

WEATHER CONDITIONS: Sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-6

DESCRIPTION:
Soil Boring Sample (SB6) Location.

DATE: 4/17/01

TIME: 1715

DIRECTION OF PHOTOGRAPH: S

WEATHER CONDITIONS: Sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-6

DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 04/17/01

TIME: 1740

DIRECTION OF PHOTOGRAPH:

WEATHER CONDITIONS: Cloudy, breezy

TEMPERATURE: 40 F

PHOTOGRAPH BY: Spielberg

SAMPLE ID: SB-7

DESCRIPTION:
Soil Boring Sample (SB7) Location.

DATE: 04/17/01

TIME: 1740

DIRECTION OF PHOTOGRAPH:

WEATHER CONDITIONS: Cloudy, breezy

TEMPERATURE: 40 F

PHOTOGRAPH BY: Spielberg

SAMPLE ID: SB-7

DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 4/17/01

TIME: 1500

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Partly sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-8

DESCRIPTION:
Soil Boring Sample (SB8) Location.

DATE: 4/17/01

TIME: 1500

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Partly sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-8

DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 4/17/01

TIME: 1730

DIRECTION OF PHOTOGRAPH: S

WEATHER CONDITIONS: Sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-9

DESCRIPTION:
Soil Boring Sample (SB9) Location.

DATE: 4/17/01

TIME: 1730

DIRECTION OF PHOTOGRAPH: S

WEATHER CONDITIONS: Sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-9

DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 4/17/01

TIME: 1520

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Mostly sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-10

DESCRIPTION:
Soil Boring Sample (SB10) Location.

DATE: 4/17/01

TIME: 1520

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Mostly sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-10

DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 04/17/01

TIME: 1600

DIRECTION OF PHOTOGRAPH: NE

WEATHER CONDITIONS: Mostly sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-11

DESCRIPTION:
Soil Boring Sample (SB11) Location.

DATE: 04/17/01

TIME: 1600

DIRECTION OF PHOTOGRAPH: NE

WEATHER CONDITIONS: Mostly sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-11

DESCRIPTION:
Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 04/17/01

TIME: 1540

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Mostly sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-12

DESCRIPTION: Soil Boring Sample (SB12) Location.

DATE: 04/17/01

TIME: 1540

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Mostly sunny

TEMPERATURE: 45 F

PHOTOGRAPH BY: Walczak

SAMPLE ID: SB-12

DESCRIPTION: Long view of sample location.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Hastings Street Property

DATE: 04/17/01

TIME:

DIRECTION OF PHOTOGRAPH:

WEATHER CONDITIONS:

TEMPERATURE:

PHOTOGRAPH BY:

SAMPLE ID:

DESCRIPTION:
Long view of property.

DATE: 04/17/01

TIME:

DIRECTION OF PHOTOGRAPH:

WEATHER CONDITIONS:

TEMPERATURE:

PHOTOGRAPH BY:

SAMPLE ID:

DESCRIPTION:
Long view of property.

Appendix B
Chemical Analysis of BFRA Data

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V
SUPERFUND DIVISION

DATE: _____

SUBJECT: Electronic (Level 2) Review of Data

Received for Review on 05-09-01

FROM: Stephen L. Ostrodka, Chief (SMF-4J)
Superfund Field Services Section

TO: Data User: MDEQ

The following data has been electronically reviewed by CADRE. No review of the raw data, laboratory narrative, laboratory forms or chain-of-custody forms was performed.

SITE NAME: 6540 Hasting Street (MI)

CASE NUMBER: 29167 SDG NUMBER: E0AX0

Number and Type of Samples: 1 Water

Sample Numbers: E0AX0

Laboratory: COMPUCHEM Hrs. for Review: _____

Following are our findings:

RECEIVED
MAY 16 2001
ERD-SUPERFUND

CC: Cecilia Moore
Region 5 TPO
Mail Code: SM-5J

Case Number : 29167 SDG Number: E0AX0
Si Name: 6540 Hasting Street Laboratory: COMPUCHEM

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

One (1) preserved water sample, numbered *E0AX0,* was collected on *April 17, 2001*. The lab received the sample on *April 18, 2001* in good condition. All samples were analyzed for the full list of organic analytes. All were analyzed according to CLP SOW *OLM04.2* 5/99.

Level 2 - Assembled By: Allison Harvey/IITRI-ESAT
Date: May 11, 2001

Case Number : 29167 SDG Number: E0AX0
S: Name: 6540 Hasting Street Laboratory: COMPUCHEM

1. HOLDING TIME

No problems found for this qualification.

2. GC/MS TUNING AND GC INSTRUMENT PERFORMANCE

No problems found for this qualification.

3. CALIBRATION

CALIBRATION CRITERIA

Volatile

	Primary	Expanded
Minimum RRF	0.05	0.05
Maximum %RSD (initial calibration)	30	30
Maximum %D (continuing calibration)	25	25
C ›ration time period	12	

Semivolatile

	Primary	Expanded
Minimum RRF	0.05	0.05
Maximum %RSD (initial calibration)	30	30
Maximum %D (continuing calibration)	25	25
Calibration time period	12	

Pesticide

Maximum %RSD (initial calibration) - TCL analytes	20
- surrogates	30
Maximum RPD (continuing calibration)	25
INDA/INDB percent resolution	90
Continuing calibration sequence time	12

DC-21: The following volatile samples are associated with an initial ›alibration percent relative standard deviation (%RSD) outside

Case Number : 29167 SDG Number: E0AX0
S: Name: 6540 Hasting Street Laboratory: COMPUCHEM

primary criteria.
Hits are qualified "J" and non-detects are flagged "UJ".

Acetone
E0AX0, VBLKEU

DC-22: The following volatile samples are associated with a continuing calibration whose corresponding initial calibration has percent relative standard deviation (%RSD) outside primary criteria.
Hits are qualified "J" and non-detects are flagged "UJ".

Acetone
VBLKAW, VHBLKZP

DC-23: The following volatile samples are associated with a continuing calibration percent difference (%D) outside primary criteria.
Hits are qualified "J" and non-detects are qualified "UJ".

2-Hexanone
VBLKAW, VHBLKZP

L 97: The following semivolatile samples are associated with a continuing calibration whose corresponding initial calibration has relative response factors (RRFs) outside primary criteria.
Hits are flagged "J" and non-detects are qualified "R".

Atrazine
E0AX0, SBLKAS

DC-99: The following semivolatile samples are associated with a continuing calibration relative response factor (RRF50) outside primary criteria.
Hits are flagged "J" and non-detects are qualified "R".

Atrazine
E0AX0, SBLKAS

DC-100: The following semivolatile samples are associated with a continuing calibration percent difference (%D) outside primary criteria.
Hits are qualified "J" and non-detects are qualified "UJ".

4-Nitroaniline

Case Number : 29167 SDG Number: E0AX0
Si Name: 6540 Hasting Street Laboratory: COMPUCHEM

E0AX0, SBLKAS

DC-190: The following pesticide samples are not qualified for initial calibration due to missing calibration information.
Manual review of the data is required.

E0AX0, PBLKAX

DC-197: The following pesticide samples are not qualified for continuing calibration because of missing continuing calibration information.
Manual review of the data is required.

E0AX0, PBLKAX

4. BLANKS

LABORATORY BLANKS CRITERIA

Volatile

Method Blank Contamination Threshold Multipliers

	First	Expanded
Common contaminant compounds	10.00	10.00
Other compounds	5.00	5.00

Semivolatile

Method Blank Contamination Threshold Multipliers

	First	Expanded
Common contaminant compounds	10.00	10.00
Other compounds	5.00	5.00

DC-72: The blank associated with the following sample was qualified "R" during a previous qualification. Hits and non-detects are

Case Number : 29167 SDG Number: E0AX0
Si Name: 6540 Hasting Street Laboratory: COMPUCHEM

not flagged.

E0AX0
Atrazine

DC-200: The following volatile samples have analyte concentrations reported below the CRQL and less than or equal to ten times (10X) the associated method blank concentration. Reported sample concentrations have been elevated to the CRQL.
Hits are qualified "U" and non-detects are not flagged.

Methylene Chloride
E0AX0

DC-206: The following semivolatile samples have analyte concentrations reported below the CRQL and less than or equal to ten times (10X) the associated method blank concentration. Reported sample concentrations have been elevated to the CRQL.
Hits are qualified "U" and non-detects are not flagged.

bis(2-Ethylhexyl)phthalate
E0AX0

5. SYSTEM MONITORING COMPOUND AND SURROGATE RECOVERY

No problems found for this qualification.

6. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No problems found for this qualification.

7. FIELD BLANK AND FIELD DUPLICATE

Sample *E0AX0* is a field blank. No samples are field duplicates. Results are not qualified based upon the results of the field blank or field duplicates.

8. INTERNAL STANDARDS

No problems found for this qualification.

9. COMPOUND IDENTIFICATION

Case Number : 29167 SDG Number: E0AX0
Sj Name: 6540 Hasting Street Laboratory: COMPUCHEM

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

10. COMPOUND QUANTITATION AND REPORTED DETECTION LIMITS

CONTRACT REQUIRED SAMPLE QUANTITY

	Water	Low Soil	Med Soil
VOA	5.0 (ML)	5.0 (G)	4.0 (G)
BNA	1000.0 (ML)	30.0 (G)	1.0 (G)
PES	1000.0 (ML)	30.0 (G)	

DC-45: The following volatile samples have analyte concentrations below the quantitation limit (CRQL). All results below the CRQL are qualified "J".

E0AX0
Methylene Chloride

VBLKAW
Methylene Chloride , 1,2,4-Trichlorobenzene

VBLKEU
Methylene Chloride , Xylenes (total), 1,3-Dichlorobenzene , 1,4-Dichlorobenzene
1,2-Dichlorobenzene , 1,2-Dibromo-3-chloropropane , 1,2,4-Trichlorobenzene

VHBLKZP
Chloroform, Toluene

DC-110: The following semivolatile samples have analyte concentrations below the quantitation limit (CRQL). All results below the CRQL are qualified "J".

SBLKAS
bis(2-Ethylhexyl)phthalate

11. SYSTEM PERFORMANCE

Case Number : 29167 SDG Number: E0AX0
Site Name: 6540 Hasting Street Laboratory: COMPUCHEM

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

12. ADDITIONAL INFORMATION

Level 2 - Assembled By: Allison Harvey/IITRI-ESAT
Date: May 11, 2001

CADRE Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The anlayte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the action limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
N	The analysis indicates the present of an analyte for which there is presumptive evidence to make a tentative identification.
NJ	The analysis indicates the present of an analyte for which there is presumptive evidence to make a tentative identification and the associated numerical value represents its approximate concentration.
R	The data are unusable. (The compound may or may not be present)

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX0

Site : 6540 HASTING STREET

Lab. : LIBRTY

Reviewer :

Date :

Number of Soil Samples : 0

Number of Water Samples : 1

Sample Number :	E0AX0		VBLKAW		VBLKEU		VHBLKZP			
Sampling Location :	FB1									
Matrix :	Water		Water		Water		Water			
Units :	ug/L		ug/L		ug/L		ug/L			
Date Sampled :	04/17/2001									
Time Sampled :	14:05									
%Moisture :	N/A		N/A		N/A		N/A			
pH :										
Dilution Factor :	1.0		1.0		1.0		1.0			
Volatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Dichlorodifluoromethane	10	U	10	U	10	U	10	U		
Chloromethane	10	U	10	U	10	U	10	U		
Vinyl Chloride	10	U	10	U	10	U	10	U		
Bromomethane	10	U	10	U	10	U	10	U		
Chloroethane	10	U	10	U	10	U	10	U		
Trichlorofluoromethane	10	U	10	U	10	U	10	U		
1,1-Dichloroethene	10	U	10	U	10	U	10	U		
1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	U	10	U	10	U		
Acetone	10	UJ	10	UJ	10	UJ	11	J		
Carbon Disulfide	10	U	10	U	10	U	10	U		
Methyl Acetate	10	U	10	U	10	U	10	U		
Methylene Chloride	10	U	1	J	3	J	18			
trans-1,2-Dichloroethene	10	U	10	U	10	U	10	U		
Methyl tert-Butyl Ether	10	U	10	U	10	U	10	U		
1,1-Dichloroethane	10	U	10	U	10	U	10	U		
cis-1,2-Dichloroethene	10	U	10	U	10	U	10	U		
2-Butanone	10	U	10	U	10	U	10	U		
Chloroform	10	U	10	U	10	U	3	J		
1,1,1-Trichloroethane	10	U	10	U	10	U	10	U		
Cyclohexane	10	U	10	U	10	U	10	U		
Carbon Tetrachloride	10	U	10	U	10	U	10	U		
Benzene	10	U	10	U	10	U	10	U		
1,2-Dichloroethane	10	U	10	U	10	U	10	U		
Trichloroethene	10	U	10	U	10	U	10	U		
Methylcyclohexane	10	U	10	U	10	U	10	U		
1,2-Dichloropropane	10	U	10	U	10	U	10	U		
Bromodichloromethane	10	U	10	U	10	U	10	U		
cis-1,3-Dichloropropene	10	U	10	U	10	U	10	U		
4-Methyl-2-pentanone	10	U	10	U	10	U	10	U		
Toluene	10	U	10	U	10	U	1	J		
trans-1,3-Dichloropropene	10	U	10	U	10	U	10	U		
1,1,2-Trichloroethane	10	U	10	U	10	U	10	U		
Tetrachloroethene	10	U	10	U	10	U	10	U		

DISCLAIMER: This package has been electronically assessed as an added service to our customer. It has not been either validated or approved by Region 5 and any subsequent use by the data user is strictly at the risk of the data user. Region 5 assumes no responsibility for use of unvalidated data.

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX0
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :

Sample Number :	E0AX0		VBLKAW		VBLKEU		VHBLKZP			
Sampling Location :	FB1									
Matrix :	Water		Water		Water		Water			
Units :	ug/L		ug/L		ug/L		ug/L			
Date Sampled :	04/17/2001									
Time Sampled :	14:05									
%Moisture :	N/A		N/A		N/A		N/A			
pH :										
Dilution Factor :	1.0		1.0		1.0		1.0			
Volatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2-Hexanone	10	U	10	UJ	10	U	10	UJ		
Dibromochloromethane	10	U	10	U	10	U	10	U		
1,2-Dibromoethane	10	U	10	U	10	U	10	U		
Chlorobenzene	10	U	10	U	10	U	10	U		
Ethylbenzene	10	U	10	U	10	U	10	U		
Xylenes (total)	10	U	10	U	2	J	10	U		
Styrene	10	U	10	U	10	U	10	U		
Bromoform	10	U	10	U	10	U	10	U		
Isopropylbenzene	10	U	10	U	10	U	10	U		
1,1,2,2-Tetrachloroethane	10	U	10	U	10	U	10	U		
1,3-Dichlorobenzene	10	U	10	U	2	J	10	U		
1,4-Dichlorobenzene	10	U	10	U	3	J	10	U		
1,2-Dichlorobenzene	10	U	10	U	3	J	10	U		
1,2-Dibromo-3-chloropropane	10	U	10	U	2	J	10	U		
1,2,4-Trichlorobenzene	10	U	2	J	7	J	10	U		

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX0
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Number of Soil Samples : 0
Number of Water Samples : 1

Sample Number :	E0AX0		SBLKAS							
Sampling Location :	FB1									
Matrix :	Water		Water							
Units :	ug/L		ug/L							
Date Sampled :	04/17/2001									
Time Sampled :	14:05									
%Moisture :	N/A		N/A							
pH :										
Dilution Factor :	1.0		1.0							
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	10	U	10	U						
Phenol	10	U	10	U						
bis-(2-Chloroethyl) ether	10	U	10	U						
2-Chlorophenol	10	U	10	U						
2-Methylphenol	10	U	10	U						
2,2'-oxybis(1-Chloropropane)	10	U	10	U						
Acetophenone	10	U	10	U						
4-Methylphenol	10	U	10	U						
N-Nitroso-di-n-propylamine	10	U	10	U						
Hexachloroethane	10	U	10	U						
Nitrobenzene	10	U	10	U						
Isophorone	10	U	10	U						
2-Nitrophenol	10	U	10	U						
2,4-Dimethylphenol	10	U	10	U						
[illegible]'2-Chloroethoxy)methane	10	U	10	U						
[illegible]ichlorophenol	10	U	10	U						
Naphthalene	10	U	10	U						
4-Chloroaniline	10	U	10	U						
Hexachlorobutadiene	10	U	10	U						
Caprolactam	10	U	10	U						
4-Chloro-3-methylphenol	10	U	10	U						
2-Methylnaphthalene	10	U	10	U						
Hexachlorocyclopentadiene	10	U	10	U						
2,4,6-Trichlorophenol	10	U	10	U						
2,4,5-Trichlorophenol	25	U	25	U						
1,1'-Biphenyl	10	U	10	U						
2-Chloronaphthalene	10	U	10	U						
2-Nitroaniline	25	U	25	U						
Dimethylphthalate	10	U	10	U						
2,6-Dinitrotoluene	10	U	10	U						
Acenaphthylene	10	U	10	U						
3-Nitroaniline	25	U	25	U						
Acenaphthene	10	U	10	U						

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Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX0
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
:

Sample Number :	E0AX0		SBLKAS							
Sampling Location :	FB1									
Matrix :	Water		Water							
Units :	ug/L		ug/L							
Date Sampled :	04/17/2001									
Time Sampled :	14:05									
%Moisture :	N/A		N/A							
pH :										
Dilution Factor :	1.0		1.0							
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	25	U	25	U						
4-Nitrophenol	25	U	25	U						
Dibenzofuran	10	U	10	U						
2,4-Dinitrotoluene	10	U	10	U						
Diethylphthalate	10	U	10	U						
Fluorene	10	U	10	U						
4-Chlorophenyl-phenyl ether	10	U	10	U						
4-Nitroaniline	25	UJ	25	UJ						
4,6-Dinitro-2-methylphenol	25	U	25	U						
N-Nitrosodiphenylamine	10	U	10	U						
4-Bromophenyl-phenylether	10	U	10	U						
Hexachlorobenzene	10	U	10	U						
Atrazine	10	R	10	R						
Pentachlorophenol	25	U	25	U						
Phenanthrene	10	U	10	U						
Anthracene	10	U	10	U						
Carbazole	10	U	10	U						
Di-n-butylphthalate	10	U	10	U						
Fluoranthene	10	U	10	U						
Pyrene	10	U	10	U						
Butylbenzylphthalate	10	U	10	U						
3,3'-Dichlorobenzidine	10	U	10	U						
Benzo(a)anthracene	10	U	10	U						
Chrysene	10	U	10	U						
bis(2-Ethylhexyl)phthalate	10	U	2	J						
Di-n-octylphthalate	10	U	10	U						
Benzo(b)fluoranthene	10	U	10	U						
Benzo(k)fluoranthene	10	U	10	U						
Benzo(a)pyrene	10	U	10	U						
Indeno(1,2,3-cd)pyrene	10	U	10	U						
Dibenzo(a,h)anthracene	10	U	10	U						
Benzo(g,h,i)perylene	10	U	10	U						

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX0

Site : 6540 HASTING STREET

Lab. : LIBRTY

Reviewer :

:

Number of Soil Samples : 0

Number of Water Samples : 1

Sample Number :	E0AX0		PBLKAX							
Sampling Location :	FB1									
Matrix :	Water		Water							
Units :	ug/L		ug/L							
Date Sampled :	04/17/2001									
Time Sampled :	14:05									
%Moisture :	N/A		N/A							
pH :										
Dilution Factor :	1.0		1.0							
Pesticide/PCB Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
alpha-BHC	0.050	U	0.050	U						
beta-BHC	0.050	U	0.050	U						
delta-BHC	0.050	U	0.050	U						
gamma-BHC (Lindane)	0.050	U	0.050	U						
Heptachlor	0.050	U	0.050	U						
Aldrin	0.050	U	0.050	U						
Heptachlor epoxide	0.050	U	0.050	U						
Endosulfan I	0.050	U	0.050	U						
Dieldrin	0.10	U	0.10	U						
4,4'-DDE	0.10	U	0.10	U						
Endrin	0.10	U	0.10	U						
Endosulfan II	0.10	U	0.10	U						
4,4'-DDD	0.10	U	0.10	U						
Endosulfan sulfate	0.10	U	0.10	U						
4,4'-DDT	0.10	U	0.10	U						
Methoxychlor	0.50	U	0.50	U						
Endrin ketone	0.10	U	0.10	U						
Endrin aldehyde	0.10	U	0.10	U						
alpha-Chlordane	0.050	U	0.050	U						
gamma-Chlordane	0.050	U	0.050	U						
Toxaphene	5.0	U	5.0	U						
Aroclor-1016	1.0	U	1.0	U						
Aroclor-1221	2.0	U	2.0	U						
Aroclor-1232	1.0	U	1.0	U						
Aroclor-1242	1.0	U	1.0	U						
Aroclor-1248	1.0	U	1.0	U						
Aroclor-1254	1.0	U	1.0	U						
Aroclor-1260	1.0	U	1.0	U						

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Regional Transmittal Form

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE:

SUBJECT: Review of Data
Received for Review on 5-9-01

FROM: Stephen L. Ostrodka, Chief (SMF-4J)
Superfund Field Services Section

TO: Data User: MDEQ

We have reviewed the data for the following case:

SITE NAME: 6540 Hasting St. (MI)

CASE NUMBER: 29167 SDG NUMBER: EDAXO

Number and Type of Samples: 1 (Water)

Sample Numbers: EDAXO

Laboratory: CompuChem Hrs for Review:

Following are our findings:

CC: Cecilia Moore
Region 5 TPO
Mail Code: SM-5J

LIBERTY ANALYTICAL
501 Madison Avenue
Cary, NC 27513

ORIGINAL

SAMPLE DELIVERY GROUP(SDG) TRAFFIC REPORT(TR) COVER SHEET

SDG Number E0AX0

Laboratory Name COMPUCHEM

Laboratory Code LIBRTY

Contract No. 68W99070

Case No. 29167

Analysis Price $ 467.00

SDG turnaround 21 DAY

EPA Sample Numbers in SDG (Listed in Numerical order):

1) E0AX0	7)	13)	19)
2)	8)	14)	20)
3)	9)	15)	21)
4)	10)	16)	22)
5)	11)	17)	23)
6)	12)	18)	24)

MS 4/18/01

E0AX0	E0AX0
First Sample in SDG	Last Sample in SDG
04/18/01	04/18/01
First Sample Receipt Date	Last Sample Receipt Date

Note: There are a maximum of 20 **field** samples (excluding PE samples) in an SDG. Attach TRs to this form in alphanumeric order (the order listed above on this form).

Signature: Melissa Stein Date: 04/18/01

USEPA Contract Laboratory Program
Organic Traffic Report

9:50

Case No:	29167
DAS No:	
SDG No:	E0AX0, E0AX1, E0AZ3 L

Date Shipped: 4/17/01	Date Received/Received by: 4/18/01 Alice Evans	Sampler (Signature): Teresa Ducsay	
Carrier Name: UPS	Lab Contract No: 68W19070 Unit Price: 467	Relinquished By: Teresa Ducsay	Date / Time: 4/17/01 18:30
Airbill: 1Z5490W42210061202	Transfer To:	Relinquished By:	Received By:
Shipped to: Liberty Analytical 501 Madison Avenue Cary NC 27513 (919) 379-4080	Date Received/Received By:	Relinquished By:	Date / Time: 4/18/01 0950
	Lab Contract No: Price:	Relinquished By:	Received By: Alice Evans
			Date / Time:
			Received By:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
E0AX0	Field QC/ Teresa Ducsay	/G	BNA/P/PCB (21), VOA (21)	5-02 (Ice Only), 5-03 (Ice Only), 5-05 (HCL), 5-06 (HCL) (4)	FB1	4/17/01 14:05	ME0AX0	Good SDG Final Sample
E0AZ1	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-041 (Ice Only) (1)	SB1	4/17/01 14:00	ME0AZ1	
E0AZ2	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-043 (Ice Only) (1)	SB2	4/17/01 17:55	ME0AZ2	(Sample not in Cooler) SDG Final Sample
E0AZ3	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-045 (Ice Only) (1)	SB3	4/17/01 16:30	ME0AZ3	Good
E0AZ4	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-047 (Ice Only) (1)	SB4	4/17/01 16:55	ME0AZ4	
E0AZ5	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-049 (Ice Only) (1)	SB5	4/17/01 14:30	ME0AZ5	SDG Final Sample.
E0AZ6	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-051 (Ice Only) (1)	SB6	4/17/01 17:15	ME0AZ6	
E0AZ7	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-053 (Ice Only) (1)	SB7	4/17/01 17:40	ME0AZ7	
E0AZ8	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-055 (Ice Only) (1)	SB8	4/17/01 15:00	ME0AZ8	
E0AZ9	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-057 (Ice Only) (1)	SB9	4/17/01 17:30	ME0AZ9	

Rec. 4/20/01

LABORATORY COPY

ORIGINAL

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC: E0AZ3	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt: 4°	Chain of Custody Seal Number: 25631, 25632
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G		Custody Seal Intact? Y / Shipment Iced? Y

BNA/P/PCB = CLP SVOA/Pest/PCB - water, BNA/PS/PCB = CLP SVOA/Pest/PCB - soil, VOA = CLP Volatiles - water

PR provides p[illegible]ary results. Requests for preliminary results will increase analytical costs.

Send Copy to: [illegible]ract Laboratory Analytical Services Support, 2000 Edmund Halley Dr., Reston, VA. 20191-3436 Phone 703/264-9348 Fax 703/264-9222

TR Number: 5-591003426-041601-0003

CompuChem

a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

MAY 09 2001

SDG NARRATIVE
CASE #29167
SDG #E0AX0
CONTRACT # 68W99070

SAMPLE IDENTIFICATIONS: E0AX0

The one water sample listed above was received intact, at 4 degrees C, with proper documentation, in sealed shipping containers, on April 18, 2001. The sample was scheduled for volatile, semivolatile, and pesticide-PCB analysis. The sample was prepared and analyzed following Contract Laboratory Protocol(CLP) Statement of Work(SOW), document OLM04.2. This portion of the SDG narrative deals with the volatile fraction only. All pertinent Quality Assurance Notices are included in the narrative section, and all pertinent Laboratory Notices for Case # 29167, SDG # E0AX0 are included in the sample data sections. Temperature blanks were not received in all coolers, however the procedure is outlined for temperature measurement in a notice included in the narrative section of this SDG.
Analysis holding time requirements were met for this sample, and the pH was less than 2.0. The pH results are tabulated in the sheets following this narrative.
No Target Compound List(TCL) analytes were identified above the Contract Required Quantitation Limit(CRQL).

Other than laboratory artifact peaks, no reportable Tentatively Identified Compounds(TICs) were present in this sample.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG.

The system monitoring compounds (SMCs) met recovery criteria in the analysis of this sample, and all of the internal standards met retention time and response criteria in the analysis of this sample.

The associated method blanks met all quality control criteria, and did not contain any target analytes above the CRQL.
The asssociated storage blank met all QC criteria, and did not contain any TCL analytes above the CRQL with the exception of acetone and methylene chloride. Levels were however less than 5X and 2.5X the CRQL as allowed for these common laboratory solvents.

No duplicate matrix spikes were generated at the request of the client.

Manual quantitations were performed on the process files in some of the the associated initial, and continuing calibration(s). The reasons have been coded with explanations provided in the notice included in the narrative section of this SDG.

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

Roy Sutton
Case Reviewer
May 08, 2001

ALKANE NARRATIVE REPORT
Report date : 05/08/2001
SDG: E0AX0

.ent Sample ID: E0AX0 Lab Sample ID: E0AX0-1 File ID: E0AX0-1A51

Compound	RT	Est. Conc.	Q
Straight-Chain Alkane	5.64	14.26	J

Client Sample ID: VHBLKZP Lab Sample ID: WG9752-4 File ID: WG9752-4A51

Compound	RT	Est. Conc.	Q
Straight-Chain Alkane	5.65	45.85	J

COMPUCHEM
A division of Liberty Analytical Corporation
501 Madison Ave.
Cary, NC 27513

SDG NARRATIVE

CASE # 29167
SDG # E0AX0
CONTRACT #68W99070

SAMPLE IDENTIFICATIONS: E0AX0

This portion of the SDG narrative deals with the semivolatile fraction for the sample above only. For the receiving information associated with these samples, please refer to the volatile SDG narrative.

All pertinent Quality Assurance notices are included in the narrative section and all pertinent Laboratory notices are included in the sample data sections.

SEMIVOLATILE
The semivolatile fractions were extracted and analyzed within the required holding time. No Target Compound List (TCL) analytes were detected with concentrations above the Contract Required Quantitation Limit (CRQL) in the sample.

One Tentatively Identified Compounds (TIC) were detected in the sample. This TIC was assessed as trichloropropene.

QC SUMMARY
All decafluorotriphenylphosphine (DFTPP) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG.

The surrogates met recovery criteria for the semivolatile fractions. The internal standards met area response and retention time criteria. The associated blanks met Quality Control criteria.

The sample was identified as a field blank, therefore, duplicate matrix spikes were not prepared or analyzed with this SDG.

In the analyses of the Initial and Continuing Calibration standards, manual quantitations were performed. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

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

following signature:

Patricia B. Hopkins
Data Analyst II
08 May 2001

Note: This report is paginated for reference and accountability in numerical sequence.

MAY 03 2001

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V
SUPERFUND DIVISION

DATE: _____

SUBJECT: Electronic (Level 2) Review of Data

Received for Review on 5-01-01

FROM: Stephen L. Ostrodka, Chief (SMF-4J)
Superfund Field Services Section

TO: Data User: MDEQ

The following data has been electronically reviewed by CADRE. No review of the raw data, laboratory narrative, laboratory forms or chain-of-custody forms was performed.

SITE NAME: 6540 HASTING STREET (MI)

CASE NUMBER: 29167 SDG NUMBER: E0AZ3

Number and Type of Samples: 9 SOILS

Sample Numbers: E0AZ2, E0AZ3, E0AZ6 - E0AZ9, E0B00 - E0B02

Laboratory: COMPUCHEM Hrs. for Review: _____

Following are our findings:

RECEIVED
MAY - 8 2001
ERD-SUPERFUND

CC: Cecilia Moore
Region 5 TPO
Mail Code: SM-5J

Case Number : 29167 SDG Number: E0AZ3
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

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

Nine (9) soil samples, numbered *E0AZ2, E0AZ3, E0AZ6* through *E0AZ9,* and *E0B00* through *E0B02,* were collected on *April 17, 2001*. The lab received the samples on *April 18, 2001* in good condition. All samples were analyzed for the semivolatile and pesticide/pcb lists of organic analytes. All were analyzed according to CLP SOW *OLM04.2* 5/99.

Level 2 - Assembled By: Allison Harvey/IITRI-ESAT
Date: May 2, 2001

Case Number : 29167 SDG Number: E0AZ3
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

1. HOLDING TIME

No problems found for this qualification.

2. GC/MS TUNING AND GC INSTRUMENT PERFORMANCE

No problems found for this qualification.

3. CALIBRATION

CALIBRATION CRITERIA

Semivolatile

	Primary	Expanded
Minimum RRF	0.05	0.05
Maximum %RSD (initial calibration)	30	30
Maximum %D (continuing calibration)	25	25
Calibration time period	12	

Pesticide

Maximum %RSD (initial calibration) - TCL analytes 20
- surrogates 30
Maximum RPD (continuing calibration) 25
INDA/INDB percent resolution 90
Continuing calibration sequence time 12

DC-99: The following semivolatile samples are associated with a continuing calibration relative response factor (RRF50) outside primary criteria.
Hits are flagged "J" and non-detects are qualified "R".

2,4-Dinitrophenol
E0AZ3, E0AZ3MS, E0AZ3MSD, E0AZ6, E0AZ7, SBLKBJ

Atrazine
E0AZ2, E0AZ2DL, E0AZ3, E0AZ3MS, E0AZ3MSD, E0AZ6

Case Number : 29167 SDG Number: E0AZ3
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

E0AZ7, E0AZ8, E0AZ9, E0B00, E0B01, E0B02
SBLKBJ

DC-100: The following semivolatile samples are associated with a continuing calibration percent difference (%D) outside primary criteria.
Hits are qualified "J" and non-detects are qualified "UJ".

2,2'-oxybis(1-Chloropropane)
E0AZ2, E0AZ2DL, E0AZ8, E0AZ9, E0B00, E0B01
E0B02

4-Chloroaniline
E0AZ3, E0AZ3MS, E0AZ3MSD, E0AZ6, E0AZ7, SBLKBJ

Hexachlorobutadiene
E0AZ2, E0AZ2DL, E0AZ3, E0AZ3MS, E0AZ3MSD, E0AZ6
E0AZ7, E0AZ8, E0AZ9, E0B00, E0B01, E0B02
SBLKBJ

Caprolactam
E0AZ3, E0AZ3MS, E0AZ3MSD, E0AZ6, E0AZ7, SBLKBJ

Hexachlorocyclopentadiene
E0AZ2, E0AZ2DL, E0AZ3, E0AZ3MS, E0AZ3MSD, E0AZ6
E0AZ7, E0AZ8, E0AZ9, E0B00, E0B01, E0B02
SBLKBJ

4,6-Dinitro-2-methylphenol
E0AZ3, E0AZ3MS, E0AZ3MSD, E0AZ6, E0AZ7, SBLKBJ

Pentachlorophenol
E0AZ3, E0AZ3MS, E0AZ3MSD, E0AZ6, E0AZ7, SBLKBJ

Di-n-octylphthalate
E0AZ2, E0AZ2DL, E0AZ8, E0AZ9, E0B00, E0B01
E0B02

DC-190: The following pesticide samples are not qualified for initial calibration due to missing calibration information.
Manual review of the data is required.

Case Number : 29167 SDG Number: E0AZ3
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

E0AZ2, E0AZ2DL, E0AZ3, E0AZ3MS, E0AZ3MSD, E0AZ6
E0AZ7, E0AZ8, E0AZ9, E0B00, E0B01, E0B01DL
E0B02, PBLKBK

DC-197: The following pesticide samples are not qualified for continuing calibration because of missing continuing calibration information.
Manual review of the data is required.

E0AZ2, E0AZ2DL, E0AZ3, E0AZ3MS, E0AZ3MSD, E0AZ6
E0AZ7, E0AZ8, E0AZ9, E0B00, E0B01, E0B01DL
E0B02, PBLKBK

4. BLANKS

DC-72: The blank associated with the following sample was qualified "R" during a previous qualification. Hits and non-detects are not flagged.

E0AZ2
2,4-Dinitrophenol, Atrazine

E0AZ2DL
2,4-Dinitrophenol, Atrazine

E0AZ3
2,4-Dinitrophenol, Atrazine

E0AZ3MS
2,4-Dinitrophenol, Atrazine

E0AZ3MSD
2,4-Dinitrophenol, Atrazine

E0AZ6
2,4-Dinitrophenol, Atrazine

E0AZ7
2,4-Dinitrophenol, Atrazine

E0AZ8
2,4-Dinitrophenol, Atrazine

Case Number : 29167 SDG Number: E0AZ3
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

E0AZ9
2,4-Dinitrophenol, Atrazine

E0B00
2,4-Dinitrophenol, Atrazine

E0B01
2,4-Dinitrophenol, Atrazine

E0B02
2,4-Dinitrophenol, Atrazine

5. SYSTEM MONITORING COMPOUND AND SURROGATE RECOVERY

SMC/SURROGATE CRITERIA

Pesticide

Percent Recovery Limits

	--- Water ---		---- Soil ---	
	Lower	Upper	Lower	Upper
Tetrachloro-m-xylene	30.0	150.0	30.0	150.0
Decachlorobiphenyl	30.0	150.0	30.0	150.0

DC-174: The following pesticide samples have surrogate percent recoveries which exceed the upper limit of the criteria window.
Hits are qualified "J" and non-detects are not flagged.

E0AZ2, E0AZ2DL, E0B01, E0B01DL, E0B02

6. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No problems found for this qualification.

7. FIELD BLANK AND FIELD DUPLICATE

No samples were identified as either field blanks or field duplicates. Results are not qualified based upon the results of the field blank or field duplicates.

Level 2 - Assembled By: Allison Harvey/IITRI-ESAT
Date: May 2, 2001

Case Number : 29167 SDG Number: E0AZ3
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

8. INTERNAL STANDARDS

No problems found for this qualification.

9. COMPOUND IDENTIFICATION

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

10. COMPOUND QUANTITATION AND REPORTED DETECTION LIMITS

CONTRACT REQUIRED SAMPLE QUANTITY

	Water	Low Soil	Med Soil
BNA	1000.0 (ML)	30.0 (G)	1.0 (G)
PES	1000.0 (ML)	30.0 (G)	

DC-110: The following semivolatile samples have analyte concentrations below the quantitation limit (CRQL). All results below the CRQL are qualified "J".

E0AZ2
Isophorone, Naphthalene, 2-Methylnaphthalene, 1,1'-Biphenyl
Dimethylphthalate, Acenaphthylene, Acenaphthene, Dibenzofuran
bis(2-Ethylhexyl)phthalate

E0AZ2DL
Isophorone, Naphthalene, 2-Methylnaphthalene, Dimethylphthalate
Acenaphthylene, Acenaphthene, Dibenzofuran, Fluorene
Carbazole, bis(2-Ethylhexyl)phthalate, Dibenz(a,h)anthracene

E0AZ3
bis(2-Ethylhexyl)phthalate

E0AZ6
bis(2-Ethylhexyl)phthalate

E0AZ7
bis(2-Ethylhexyl)phthalate

Case Number : 29167 SDG Number: E0AZ3
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

E0AZ8
bis(2-Ethylhexyl)phthalate

E0AZ9
Phenanthrene, Fluoranthene, Pyrene, Benzo(a)anthracene
Chrysene, bis(2-Ethylhexyl)phthalate, Benzo(b)fluoranthene, Benzo(k)fluoranthene
Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene

E0B00
Phenanthrene, Fluoranthene, Pyrene, Chrysene
Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene

E0B01
Naphthalene, 2-Methylnaphthalene, Acenaphthene, Dibenzofuran
Fluorene, Carbazole, Dibenz(a,h)anthracene

E0B02
bis(2-Ethylhexyl)phthalate

DC-158: The following pesticide samples have analyte concentrations below the quantitation limit (CRQL). All results below the CRQL are qualified "J".

E0AZ2
Heptachlor epoxide, Dieldrin

E0AZ2DL
4,4'-DDE, 4,4'-DDT, Endrin ketone

E0AZ3MS
Endrin ketone

E0AZ3MSD
Endrin ketone, Endrin aldehyde

E0AZ6
gamma-Chlordane

E0AZ7
Endrin aldehyde

E0AZ8

Case Number : 29167 SDG Number: E0AZ3
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

Endosulfan II

E0AZ9
beta-BHC, 4,4'-DDE, Endrin aldehyde, Aroclor-1254

E0B00
beta-BHC, gamma-BHC (Lindane), Endosulfan I, 4,4'-DDE
Endrin aldehyde

E0B01
Heptachlor, Heptachlor epoxide, Endosulfan I, Dieldrin
4,4'-DDE, 4,4'-DDD, Endrin aldehyde

E0B01DL
beta-BHC, Endosulfan I, 4,4'-DDE, gamma-Chlordane

DC-422: The following pesticide samples have analytes for which the percent difference between column results exceeds primary criteria.
Professional judgement should be used to qualify the data.

E0AZ2
beta-BHC, Heptachlor epoxide, Dieldrin, 4,4'-DDE
Endrin, 4,4'-DDD, Methoxychlor, Endrin ketone
Endrin aldehyde

E0AZ2DL
4,4'-DDE, Endrin ketone

E0AZ3MSD
Endrin aldehyde

E0AZ6
gamma-Chlordane

E0AZ7
Endrin aldehyde

E0AZ8
Endosulfan II

E0AZ9

Case Number : 29167 SDG Number: E0AZ3
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

beta-BHC, Endrin aldehyde, Aroclor-1254

E0B00
beta-BHC, gamma-BHC (Lindane), Endosulfan I, 4,4'-DDT

E0B01
Heptachlor, Heptachlor epoxide, Endosulfan I, Dieldrin
4,4'-DDE, 4,4'-DDD, Endrin aldehyde, gamma-Chlordane
Aroclor-1260

E0B01DL
beta-BHC, Endosulfan I, 4,4'-DDE, Endrin ketone
gamma-Chlordane, Aroclor-1260

11. SYSTEM PERFORMANCE

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

12. ADDITIONAL INFORMATION

CADRE Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for, but was not detected above the reported sampl quantitation limit.
J	The anlayte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the action limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
N	The analysis indicates the present of an analyte for which there is presumptive evidence to make a tentative identification.
NJ	The analysis indicates the present of an analyte for which there is presumptive evidence to make a tentative identification and the associated numerical value represents its approximate concentration.
R	The data are unusable. (The compound may or may not be present)

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AZ3
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Number of Soil Samples : 9
Number of Water Samples : 0

Sample Number :	E0AZ2		E0AZ2DL		E0AZ3		E0AZ3MS		E0AZ3MSD	
Sampling Location :	SB2		SB2		SB3		SB3		SB3	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :	17:55		17:55		16:30		16:30		16:30	
%Moisture :	21		21		18		18		18	
pH :	8.4		8.4		8.0		8.0		8.0	
Dilution Factor :	2.0		4.0		1.0		1.0		1.0	
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	840	U	1700	U	400	U	400	U	400	U
Phenol	840	U	1700	U	400	U	1800		1600	
bis-(2-Chloroethyl) ether	840	U	1700	U	400	U	400	U	400	U
2-Chlorophenol	840	U	1700	U	400	U	1900		1600	
2-Methylphenol	840	U	1700	U	400	U	400	U	400	U
2,2'-oxybis(1-Chloropropane)	840	UJ	1700	UJ	400	U	400	U	400	U
Acetophenone	840	U	1700	U	400	U	400	U	400	U
4-Methylphenol	840	U	1700	U	400	U	400	U	400	U
N-Nitroso-di-n-propylamine	840	U	1700	U	400	U	2100		1800	
Hexachloroethane	840	U	1700	U	400	U	400	U	400	U
Nitrobenzene	840	U	1700	U	400	U	400	U	400	U
Isophorone	730	J	450	J	400	U	400	U	400	U
2-Nitrophenol	840	U	1700	U	400	U	400	U	400	U
2,4-Dimethylphenol	840	U	1700	U	400	U	400	U	400	U
bis(2-Chloroethoxy)methane	840	U	1700	U	400	U	400	U	400	U
2,4-Dichlorophenol	840	U	1700	U	400	U	400	U	400	U
Naphthalene	790	J	680	J	400	U	400	U	400	U
4-Chloroaniline	840	U	1700	U	400	UJ	400	UJ	400	UJ
Hexachlorobutadiene	840	UJ	1700	UJ	400	UJ	400	UJ	400	UJ
Caprolactam	840	U	1700	U	400	UJ	400	UJ	400	UJ
4-Chloro-3-methylphenol	840	U	1700	U	400	U	2300		1900	
2-Methylnaphthalene	630	J	470	J	400	U	400	U	400	U
Hexachlorocyclopentadiene	840	UJ	1700	UJ	400	UJ	400	UJ	400	UJ
2,4,6-Trichlorophenol	840	U	1700	U	400	U	400	U	400	U
2,4,5-Trichlorophenol	2100	U	4200	U	1000	U	1000	U	1000	U
1,1'-Biphenyl	110	J	1700	U	400	U	400	U	400	U
2-Chloronaphthalene	840	U	1700	U	400	U	400	U	400	U
2-Nitroaniline	2100	U	4200	U	1000	U	1000	U	1000	U
Dimethylphthalate	630	J	540	J	400	U	400	U	400	U
2,6-Dinitrotoluene	840	U	1700	U	400	U	400	U	400	U
Acenaphthylene	270	J	220	J	400	U	400	U	400	U
3-Nitroaniline	2100	U	4200	U	1000	U	1000	U	1000	U
Acenaphthene	650	J	520	J	400	U	1200		1100	

DISCLAIMER: This package has been electronically assessed as an added service to our customer. It has not been either validated or approved by Region 5 and any subsequent use by the data user is strictly at the risk of the data user. Region 5 assumes no responsibility for use of unvalidated data.

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AZ3
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0AZ2		E0AZ2DL		E0AZ3		E0AZ3MS		E0AZ3MSD	
Sampling Location :	SB2		SB2		SB3		SB3		SB3	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :	17:55		17:55		16:30		16:30		16:30	
%Moisture :	21		21		18		18		18	
pH :	8.4		8.4		8.0		8.0		8.0	
Dilution Factor :	2.0		4.0		1.0		1.0		1.0	
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	2100	U	4200	U	1000	R	1000	R	1000	R
4-Nitrophenol	2100	U	4200	U	1000	U	1800		1500	
Dibenzofuran	730	J	600	J	400	U	400	U	400	U
2,4-Dinitrotoluene	840	U	1700	U	400	U	1800		1500	
Diethylphthalate	840	U	1700	U	400	U	400	U	400	U
Fluorene	920		760	J	400	U	400	U	400	U
4-Chlorophenyl-phenyl ether	840	U	1700	U	400	U	400	U	400	U
4-Nitroaniline	2100	U	4200	U	1000	U	1000	U	1000	U
4,6-Dinitro-2-methylphenol	2100	U	4200	U	1000	UJ	1000	UJ	1000	UJ
N-Nitrosodiphenylamine	840	U	1700	U	400	U	400	U	400	U
4-Bromophenyl-phenylether	840	U	1700	U	400	U	400	U	400	U
Hexachlorobenzene	840	U	1700	U	400	U	400	U	400	U
Atrazine	840	R	1700	R	400	R	400	R	400	R
Pentachlorophenol	2100	U	4200	U	1000	UJ	1700	J	1300	J
Phenanthrene	8400		8000		400	U	400	U	400	U
Anthracene	1900		1700		400	U	400	U	400	U
Carbazole	910		840	J	400	U	400	U	400	U
Di-n-butylphthalate	840	U	1700	U	400	U	400	U	400	U
Fluoranthene	9000		9500		400	U	400	U	400	U
Pyrene	8100		6300		400	U	1400		1400	
Butylbenzylphthalate	840	U	1700	U	400	U	400	U	400	U
3,3'-Dichlorobenzidine	840	U	1700	U	400	U	400	U	400	U
Benzo(a)anthracene	3900		3800		400	U	400	U	400	U
Chrysene	4900		3800		400	U	400	U	400	U
bis(2-Ethylhexyl)phthalate	670	J	640	J	58	J	400	U	400	U
Di-n-octylphthalate	840	UJ	1700	UJ	400	U	400	U	400	U
Benzo(b)fluoranthene	3300		3500		400	U	400	U	400	U
Benzo(k)fluoranthene	5200		3800		400	U	400	U	400	U
Benzo(a)pyrene	4100		3700		400	U	400	U	400	U
Indeno(1,2,3-cd)pyrene	2900		2500		400	U	400	U	400	U
Dibenzo(a,h)anthracene	1200		1000	J	400	U	400	U	400	U
Benzo(g,h,i)perylene	1900		1800		400	U	400	U	400	U

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AZ3
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0AZ6		E0AZ7		E0AZ8		E0AZ9		E0B00	
Sampling Location :	SB6		SB7		SB8		SB9		SB10	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :	17:15		17:40		15:00		17:30		15:20	
%Moisture :	17		20		13		18		21	
pH :	8.2		8.2		8.0		7.9		8.2	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	400	U	410	U	380	U	400	U	420	U
Phenol	400	U	410	U	380	U	400	U	420	U
bis-(2-Chloroethyl) ether	400	U	410	U	380	U	400	U	420	U
2-Chlorophenol	400	U	410	U	380	U	400	U	420	U
2-Methylphenol	400	U	410	U	380	U	400	U	420	U
2,2'-oxybis(1-Chloropropane)	400	U	410	U	380	UJ	400	UJ	420	UJ
Acetophenone	400	U	410	U	380	U	400	U	420	U
4-Methylphenol	400	U	410	U	380	U	400	U	420	U
N-Nitroso-di-n-propylamine	400	U	410	U	380	U	400	U	420	U
Hexachloroethane	400	U	410	U	380	U	400	U	420	U
Nitrobenzene	400	U	410	U	380	U	400	U	420	U
Isophorone	400	U	410	U	380	U	400	U	420	U
2-Nitrophenol	400	U	410	U	380	U	400	U	420	U
2,4-Dimethylphenol	400	U	410	U	380	U	400	U	420	U
bis(2-Chloroethoxy)methane	400	U	410	U	380	U	400	U	420	U
2,4-Dichlorophenol	400	U	410	U	380	U	400	U	420	U
Naphthalene	400	U	410	U	380	U	400	U	420	U
4-Chloroaniline	400	UJ	410	UJ	380	U	400	U	420	U
Hexachlorobutadiene	400	UJ	410	UJ	380	UJ	400	UJ	420	UJ
Caprolactam	400	UJ	410	UJ	380	U	400	U	420	U
4-Chloro-3-methylphenol	400	U	410	U	380	U	400	U	420	U
2-Methylnaphthalene	400	U	410	U	380	U	400	U	420	U
Hexachlorocyclopentadiene	400	UJ	410	UJ	380	UJ	400	UJ	420	UJ
2,4,6-Trichlorophenol	400	U	410	U	380	U	400	U	420	U
2,4,5-Trichlorophenol	1000	U	1000	U	950	U	1000	U	1100	U
1,1'-Biphenyl	400	U	410	U	380	U	400	U	420	U
2-Chloronaphthalene	400	U	410	U	380	U	400	U	420	U
2-Nitroaniline	1000	U	1000	U	950	U	1000	U	1100	U
Dimethylphthalate	400	U	410	U	380	U	400	U	420	U
2,6-Dinitrotoluene	400	U	410	U	380	U	400	U	420	U
Acenaphthylene	400	U	410	U	380	U	400	U	420	U
3-Nitroaniline	1000	U	1000	U	950	U	1000	U	1100	U
Acenaphthene	400	U	410	U	380	U	400	U	420	U

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AZ3
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0AZ6		E0AZ7		E0AZ8		E0AZ9		E0B00	
Sampling Location :	SB6		SB7		SB8		SB9		SB10	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :	17:15		17:40		15:00		17:30		15:20	
%Moisture :	17		20		13		18		21	
pH :	8.2		8.2		8.0		7.9		8.2	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	1000	R	1000	R	950	U	1000	U	1100	U
4-Nitrophenol	1000	U	1000	U	950	U	1000	U	1100	U
Dibenzofuran	400	U	410	U	380	U	400	U	420	U
2,4-Dinitrotoluene	400	U	410	U	380	U	400	U	420	U
Diethylphthalate	400	U	410	U	380	U	400	U	420	U
Fluorene	400	U	410	U	380	U	400	U	420	U
4-Chlorophenyl-phenyl ether	400	U	410	U	380	U	400	U	420	U
4-Nitroaniline	1000	U	1000	U	950	U	1000	U	1100	U
4,6-Dinitro-2-methylphenol	1000	UJ	1000	UJ	950	U	1000	U	1100	U
N-Nitrosodiphenylamine	400	U	410	U	380	U	400	U	420	U
4-Bromophenyl-phenylether	400	U	410	U	380	U	400	U	420	U
Hexachlorobenzene	400	U	410	U	380	U	400	U	420	U
Atrazine	400	R	410	R	380	R	400	R	420	R
Pentachlorophenol	1000	UJ	1000	UJ	950	U	1000	U	1100	U
Phenanthrene	400	U	410	U	380	U	110	J	89	J
Anthracene	400	U	410	U	380	U	400	U	420	U
Carbazole	400	U	410	U	380	U	400	U	420	U
Di-n-butylphthalate	400	U	410	U	380	U	400	U	420	U
Fluoranthene	400	U	410	U	380	U	170	J	130	J
Pyrene	400	U	410	U	380	U	110	J	81	J
Butylbenzylphthalate	400	U	410	U	380	U	400	U	420	U
3,3'-Dichlorobenzidine	400	U	410	U	380	U	400	U	420	U
Benzo(a)anthracene	400	U	410	U	380	U	55	J	420	U
Chrysene	400	U	410	U	380	U	67	J	54	J
bis(2-Ethylhexyl)phthalate	47	J	73	J	150	J	170	J	420	U
Di-n-octylphthalate	400	U	410	U	380	UJ	400	UJ	420	UJ
Benzo(b)fluoranthene	400	U	410	U	380	U	59	J	42	J
Benzo(k)fluoranthene	400	U	410	U	380	U	72	J	52	J
Benzo(a)pyrene	400	U	410	U	380	U	66	J	47	J
Indeno(1,2,3-cd)pyrene	400	U	410	U	380	U	49	J	420	U
Dibenzo(a,h)anthracene	400	U	410	U	380	U	400	U	420	U
Benzo(g,h,i)perylene	400	U	410	U	380	U	400	U	420	U

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AZ3
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0B01		E0B02		SBLKBJ					
Sampling Location :	SB11		SB12							
Matrix :	Soil		Soil		Soil					
Units :	ug/Kg		ug/Kg		ug/Kg					
Date Sampled :	04/17/2001		04/17/2001							
Time Sampled :	16:00		15:40							
%Moisture :	19		21		N/A					
pH :	7.9		8.2							
Dilution Factor :	1.0		1.0		1.0					
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	410	U	420	U	330	U				
Phenol	410	U	420	U	330	U				
bis-(2-Chloroethyl) ether	410	U	420	U	330	U				
2-Chlorophenol	410	U	420	U	330	U				
2-Methylphenol	410	U	420	U	330	U				
2,2'-oxybis(1-Chloropropane)	410	UJ	420	UJ	330	U				
Acetophenone	410	U	420	U	330	U				
4-Methylphenol	410	U	420	U	330	U				
N-Nitroso-di-n-propylamine	410	U	420	U	330	U				
Hexachloroethane	410	U	420	U	330	U				
Nitrobenzene	410	U	420	U	330	U				
Isophorone	410	U	420	U	330	U				
2-Nitrophenol	410	U	420	U	330	U				
2,4-Dimethylphenol	410	U	420	U	330	U				
bis(2-Chloroethoxy)methane	410	U	420	U	330	U				
2,4-Dichlorophenol	410	U	420	U	330	U				
Naphthalene	55	J	420	U	330	U				
4-Chloroaniline	410	U	420	U	330	UJ				
Hexachlorobutadiene	410	UJ	420	UJ	330	UJ				
Caprolactam	410	U	420	U	330	UJ				
4-Chloro-3-methylphenol	410	U	420	U	330	U				
2-Methylnaphthalene	61	J	420	U	330	U				
Hexachlorocyclopentadiene	410	UJ	420	UJ	330	UJ				
2,4,6-Trichlorophenol	410	U	420	U	330	U				
2,4,5-Trichlorophenol	1000	U	1100	U	830	U				
1,1'-Biphenyl	410	U	420	U	330	U				
2-Chloronaphthalene	410	U	420	U	330	U				
2-Nitroaniline	1000	U	1100	U	830	U				
Dimethylphthalate	410	U	420	U	330	U				
2,6-Dinitrotoluene	410	U	420	U	330	U				
Acenaphthylene	410	U	420	U	330	U				
3-Nitroaniline	1000	U	1100	U	830	U				
Acenaphthene	310	J	420	U	330	U				

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AZ3
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0B01		E0B02		SBLKBJ					
Sampling Location :	SB11		SB12							
Matrix :	Soil		Soil		Soil					
Units :	ug/Kg		ug/Kg		ug/Kg					
Date Sampled :	04/17/2001		04/17/2001							
Time Sampled :	16:00		15:40							
%Moisture :	19		21		N/A					
pH :	7.9		8.2							
Dilution Factor :	1.0		1.0		1.0					
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	1000	U	1100	U	830	R				
4-Nitrophenol	1000	U	1100	U	830	U				
Dibenzofuran	170	J	420	U	330	U				
2,4-Dinitrotoluene	410	U	420	U	330	U				
Diethylphthalate	410	U	420	U	330	U				
Fluorene	350	J	420	U	330	U				
4-Chlorophenyl-phenyl ether	410	U	420	U	330	U				
4-Nitroaniline	1000	U	1100	U	830	U				
4,6-Dinitro-2-methylphenol	1000	U	1100	U	830	UJ				
N-Nitrosodiphenylamine	410	U	420	U	330	U				
4-Bromophenyl-phenylether	410	U	420	U	330	U				
Hexachlorobenzene	410	U	420	U	330	U				
Atrazine	410	R	420	R	330	R				
Pentachlorophenol	1000	U	1100	U	830	UJ				
Phenanthrene	2600		420	U	330	U				
Anthracene	770		420	U	330	U				
Carbazole	160	J	420	U	330	U				
Di-n-butylphthalate	410	U	420	U	330	U				
Fluoranthene	3000		420	U	330	U				
Pyrene	2700		420	U	330	U				
Butylbenzylphthalate	410	U	420	U	330	U				
3,3'-Dichlorobenzidine	410	U	420	U	330	U				
Benzo(a)anthracene	1200		420	U	330	U				
Chrysene	1400		420	U	330	U				
bis(2-Ethylhexyl)phthalate	410	U	180	J	330	U				
Di-n-octylphthalate	410	UJ	420	UJ	330	U				
Benzo(b)fluoranthene	1000		420	U	330	U				
Benzo(k)fluoranthene	1500		420	U	330	U				
Benzo(a)pyrene	1400		420	U	330	U				
Indeno(1,2,3-cd)pyrene	910		420	U	330	U				
Dibenzo(a,h)anthracene	370	J	420	U	330	U				
Benzo(g,h,i)perylene	610		420	U	330	U				

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AZ3
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Number of Soil Samples : 9
Number of Water Samples : 0

Sample Number :	E0AZ2		E0AZ2DL		E0AZ3		E0AZ3MS		E0AZ3MSD	
Sampling Location :	SB2		SB2		SB3		SB3		SB3	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :	17:55		17:55		16:30		16:30		16:30	
%Moisture :	21		21		18		18		18	
pH :	8.4		8.4		8.0		8.0		8.0	
Dilution Factor :	1.0		10.0		1.0		1.0		1.0	
Pesticide/PCB Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
alpha-BHC	2.2	U	22	U	2.1	U	2.1	U	2.1	U
beta-BHC	4.3	J	22	U	2.1	U	2.1	U	2.1	U
delta-BHC	2.2	U	22	U	2.1	U	2.1	U	2.1	U
gamma-BHC (Lindane)	2.2	U	22	U	2.1	U	11		11	
Heptachlor	2.2	U	22	U	2.1	U	12		11	
Aldrin	2.2	U	22	U	2.1	U	11		11	
Heptachlor epoxide	1.1	J	22	U	2.1	U	2.1	U	2.1	U
Endosulfan I	2.2	U	22	U	2.1	U	2.1	U	2.1	U
Dieldrin	1.8	J	42	U	4.0	U	23		23	
4,4'-DDE	18	J	13	J	4.0	U	4.0	U	4.0	U
Endrin	8.4	J	42	U	4.0	U	24		24	
Endosulfan II	4.2	U	42	U	4.0	U	4.0	U	4.0	U
4,4'-DDD	8.5	J	42	U	4.0	U	4.0	U	4.0	U
Endosulfan sulfate	4.2	U	42	U	4.0	U	4.0	U	4.0	U
4,4'-DDT	36	J	40	J	4.0	U	22		22	
Methoxychlor	50	J	220	U	21	U	21	U	21	U
Endrin ketone	28	J	23	J	4.0	U	2.4	J	2.5	J
Endrin aldehyde	5.9	J	42	U	4.0	U	4.0	U	0.84	J
alpha-Chlordane	2.2	U	22	U	2.1	U	2.1	U	2.1	U
gamma-Chlordane	2.2	U	22	U	2.1	U	2.1	U	2.1	U
Toxaphene	220	U	2200	U	210	U	210	U	210	U
Aroclor-1016	42	U	420	U	40	U	40	U	40	U
Aroclor-1221	85	U	850	U	82	U	82	U	82	U
Aroclor-1232	42	U	420	U	40	U	40	U	40	U
Aroclor-1242	42	U	420	U	40	U	40	U	40	U
Aroclor-1248	42	U	420	U	40	U	40	U	40	U
Aroclor-1254	42	U	420	U	40	U	40	U	40	U
Aroclor-1260	42	U	420	U	40	U	40	U	40	U

DISCLAIMER: This package has been electronically assessed as an added service to our customer. It has not been either validated or approved by Region 5 and any subsequent use by the data user is strictly at the risk of the data user. Region 5 assumes no responsibility for use of unvalidated data.

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AZ3
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0AZ6		E0AZ7		E0AZ8		E0AZ9		E0B00	
Sampling Location :	SB6		SB7		SB8		SB9		SB10	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :	17:15		17:40		15:00		17:30		15:20	
%Moisture :	17		20		13		18		21	
pH :	8.2		8.2		8.0		7.9		8.2	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
Pesticide/PCB Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
alpha-BHC	2.1	U	2.1	U	2.0	U	2.1	U	2.2	U
beta-BHC	2.1	U	2.1	U	2.0	U	1.9	J	2.1	J
delta-BHC	2.1	U	2.1	U	2.0	U	2.1	U	2.2	U
gamma-BHC (Lindane)	2.1	U	2.1	U	2.0	U	2.1	U	0.52	J
Heptachlor	2.1	U	2.1	U	2.0	U	2.1	U	2.2	U
Aldrin	2.1	U	2.1	U	2.0	U	2.1	U	2.2	U
Heptachlor epoxide	2.1	U	2.1	U	2.0	U	2.1	U	2.2	U
Endosulfan I	2.1	U	2.1	U	2.0	U	2.1	U	0.68	J
Dieldrin	4.0	U	4.1	U	3.8	U	4.0	U	4.2	U
4,4'-DDE	4.0	U	4.1	U	3.8	U	2.7	J	4.0	J
Endrin	4.0	U	4.1	U	3.8	U	4.0	U	4.2	U
Endosulfan II	4.0	U	4.1	U	1.3	J	4.0	U	4.2	U
4,4'-DDD	4.0	U	4.1	U	3.8	U	4.0	U	4.2	U
Endosulfan sulfate	4.0	U	4.1	U	3.8	U	4.0	U	4.2	U
4,4'-DDT	4.0	U	4.1	U	3.8	U	4.0	U	6.0	
Methoxychlor	20	U	21	U	20	U	21	U	22	U
Endrin ketone	4.0	U	4.1	U	3.8	U	4.0	U	4.2	U
Endrin aldehyde	4.0	U	0.82	J	3.8	U	0.76	J	0.77	J
alpha-Chlordane	2.1	U	2.1	U	2.0	U	2.1	U	2.2	U
gamma-Chlordane	0.49	J	2.1	U	2.0	U	2.1	U	2.2	U
Toxaphene	200	U	210	U	200	U	210	U	220	U
Aroclor-1016	40	U	41	U	38	U	40	U	42	U
Aroclor-1221	81	U	84	U	77	U	82	U	85	U
Aroclor-1232	40	U	41	U	38	U	40	U	42	U
Aroclor-1242	40	U	41	U	38	U	40	U	42	U
Aroclor-1248	40	U	41	U	38	U	40	U	42	U
Aroclor-1254	40	U	41	U	38	U	6.4	J	42	U
Aroclor-1260	40	U	41	U	38	U	40	U	42	U

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AZ3
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0B01		E0B01DL		E0B02		PBLKBK			
Sampling Location :	SB11		SB11		SB12					
Matrix :	Soil		Soil		Soil		Soil			
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg			
Date Sampled :	04/17/2001		04/17/2001		04/17/2001					
Time Sampled :	16:00		16:00		15:40					
%Moisture :	19		19		21		N/A			
pH :	7.9		7.9		8.2					
Dilution Factor :	1.0		5.0		1.0		1.0			
Pesticide/PCB Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
alpha-BHC	2.1	U	10	U	2.2	U	1.7	U		
beta-BHC	2.1	U	4.3	J	2.2	U	1.7	U		
delta-BHC	2.1	U	10	U	2.2	U	1.7	U		
gamma-BHC (Lindane)	2.1	U	10	U	2.2	U	1.7	U		
Heptachlor	0.99	J	10	U	2.2	U	1.7	U		
Aldrin	2.1	U	10	U	2.2	U	1.7	U		
Heptachlor epoxide	1.4	J	10	U	2.2	U	1.7	U		
Endosulfan I	1.0	J	3.1	J	2.2	U	1.7	U		
Dieldrin	2.6	J	20	U	4.2	U	3.3	U		
4,4'-DDE	1.7	J	6.7	J	4.2	U	3.3	U		
Endrin	4.1	U	20	U	4.2	U	3.3	U		
Endosulfan II	4.1	U	20	U	4.2	U	3.3	U		
4,4'-DDD	4.0	J	20	U	4.2	U	3.3	U		
Endosulfan sulfate	4.1	U	20	U	4.2	U	3.3	U		
4,4'-DDT	4.1	U	20	U	4.2	U	3.3	U		
Methoxychlor	21	U	100	U	22	U	17	U		
Endrin ketone	29	J	24	J	4.2	U	3.3	U		
Endrin aldehyde	3.2	J	20	U	4.2	U	3.3	U		
alpha-Chlordane	2.1	U	10	U	2.2	U	1.7	U		
gamma-Chlordane	10	J	5.8	J	2.2	U	1.7	U		
Toxaphene	210	U	1000	U	220	U	170	U		
Aroclor-1016	41	U	200	U	42	U	33	U		
Aroclor-1221	83	U	410	U	85	U	67	U		
Aroclor-1232	41	U	200	U	42	U	33	U		
Aroclor-1242	41	U	200	U	42	U	33	U		
Aroclor-1248	41	U	200	U	42	U	33	U		
Aroclor-1254	41	U	200	U	42	U	33	U		
Aroclor-1260	110	J	220	J	42	U	33	U		

Regional Transmittal Form

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE:

SUBJECT: Review of Data
Received for Review on 5-1-01

FROM: Stephen L. Ostrodka, Chief (SMF-4J)
Superfund Field Services Section

TO: Data User: MDEQ

We have reviewed the data for the following case:

SITE NAME: 6540 Hasting St. (MI)

CASE NUMBER: 29167 SDG NUMBER: E0AZ3

Number and Type of Samples: 9 (Soil)

Sample Numbers: E0AZ2-3, E0AZ6-9, E0B00-2

Laboratory: ComPuchEm Hrs for Review:

Following are our findings:

CC: Cecilia Moore
Region 5 TPO
Mail Code: SM-5J

Contract Laboratory Program

Organic Traffic Report

9:50

Case No:	29167
DAS No:	
SDG No:	E0AX0, E0AX1, E0AZ3

L

Date Shipped: 4/17/01	Date Received/Received by: 4/18/01 Alice Evans	Sampler (Signature): Teresa Ducsay	
Carrier Name: UPS	Lab Contract No: 68W99020 Unit Price: 467		
Airbill: 1Z5490W42210061202		Relinquished By: Teresa Ducsay	Date / Time: 4/17/01 18:30
Shipped to: Liberty Analytical, 501 Madison Avenue, Cary NC 27513, (919) 379-4080	Transfer To:	Relinquished By:	Date / Time: 4/18/01 0950
	Date Received/Received By:		Received By: Alice Evans
	Lab Contract No: Price:	Relinquished By:	Date / Time:
			Received By:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
E0AX0	Field QC/ Teresa Ducsay	/G	BNA/P/PCB (21), VOA (21)	5-02 (Ice Only), 5-03 (Ice Only), 5-05 (HCL), 5-06 (HCL) (4)	FB1	4/17/01 14:05	ME0AX0	Good SDG Final San
E0AZ1	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-041 (Ice Only) (1)	SB1	4/17/01 14:00	ME0AZ1	
E0AZ2	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-043 (Ice Only) (1)	SB2	4/17/01 17:55	ME0AZ2	(Sample not in Cooler) SDG Final Sample Good
E0AZ3	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-045 (Ice Only) (1)	SB3	4/17/01 16:30	ME0AZ3	
E0AZ4	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-047 (Ice Only) (1)	SB4	4/17/01 16:55	ME0AZ4	
E0AZ5	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-049 (Ice Only) (1)	SB5	4/17/01 14:30	ME0AZ5	SDG Final Sampl
E0AZ6	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-051 (Ice Only) (1)	SB6	4/17/01 17:15	ME0AZ6	
E0AZ7	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-053 (Ice Only) (1)	SB7	4/17/01 17:40	ME0AZ7	
E0AZ8	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-055 (Ice Only) (1)	SB8	4/17/01 15:00	ME0AZ8	
E0AZ9	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-057 (Ice Only) (1)	SB9	4/17/01 17:30	ME0AZ9	

Rec. 4/20/01

LABORATORY COPY

COPY

ORIGINAL DOCUMENTS INCLUDED IN CSF- E0AX

SIGNATURE MS DATE 4/18/01

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC: E0AZ3	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt: 4°	Chain of Custody Seal Number: 25631, 25632
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G		Custody Seal Intact? Y / Shipment Iced? Y

BNA/P/PCB = CLP SVOA/Pest/PCB - water, BNA/PS/PCB = CLP SVOA/Pest/PCB - soil, VOA = CLP Volatiles - water

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Contract Laboratory Analytical Services Support, 2000 Edmund Halley Dr., Reston, VA 20191-3436 Phone 703/264-9348 Fax 703/264-9222

TR Number: 5-591003426-041601-0003

USEPA Contract Laboratory Program
Organic Traffic Report

950

Case No:	29167
DAS No:	
SDG No:	EOAZ3

L

15

Date Shipped: 4/17/01	Date Received/Received by: 4/18/01 Alice Evans	Sampler (Signature): Teresa Ducsay	
Carrier Name: UPS	Lab Contract No: 68W9907D Unit Price: $467		
Airbill: 1Z5490W42210061202		Relinquished By: Teresa Ducsay	Date / Time: 4/17/01 18:30
Shipped to: Liberty Analytical 501 Madison Avenue Cary NC 27513 (919) 379-4080	Transfer To:	Relinquished By:	Date / Time: 4/18/01 0950
	Date Received/Received By:		Received By: Alice Evans
	Lab Contract No: Price:	Relinquished By:	Date / Time:
			Received By:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
E0B00	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-059 (Ice Only) (1)	SB10	4/17/01 15:20	ME0B00	Good
E0B01	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-061 (Ice Only) (1)	SB11	4/17/01 16:00	ME0B01	
E0B02	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-063 (Ice Only) (1)	SB12	4/17/01 15:40	ME0B02	

LABORATORY COPY

ORIGINAL

Shipment for Case Complete?Y	Sample(s) to be used for laboratory QC: EOAZ3	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt: 40	Chain of Custody Seal Number: 25631, 25632
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G		Custody Seal Intact? Y / Shipment Iced? Y

BNA/P/PCB = CLP SVOA/Pest/PCB - water, BNA/PS/PCB = CLP SVOA/Pest/PCB - soil, VOA = CLP Volatiles - water

PR provides preliminary results. Requests for preliminary resuls will increase analytical costs.

Send Copy to: Contract Laboratory Analytical Services Support, 2000 Edmund Halley Dr., Reston, VA. 20191-3436 Phone 703/264-9348 Fax 703/264-9222

TR Number: 5-591003426-041601-0003

CompuChem
a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

MAY 01 2001

SDG NARRATIVE

CASE # 29167
SDG # E0AZ3
CONTRACT # 68W99070

SAMPLE IDENTIFICATIONS: E0AZ2, E0AZ3, E0AZ6, E0AZ7, E0AZ8, E0AZ9, E0B00, E0B01, E0B02

The nine (9) soil samples listed above were received intact, properly refrigerated at 4°C, in sealed shipping containers, on April 18 through 20, 2001. No temperature blank was received with these samples. An IR gun was used to determine the temperature. E0AZ2 was listed on the chain-of-custody (COC), but was not in the cooler. The Agency was contacted, and the sample was received on April 20, 2001. All other proper documentation was received. The samples were scheduled for the requested analyses of the semivolatile and pesticide/PCB fractions. The samples were prepared and analyzed following the current EPA Contract Laboratory Program (CLP) Statement of Work (SOW), Document OLM04.2. The pH values of these soil samples ranged from 7.9 to 8.4, and the percent moistures ranged from 13 to 21. This portion of the SDG narrative deals with the semivolatile fractions only. All pertinent Quality Assurance Notices are included in the narrative section, and all pertinent Laboratory Notices for Case # 29167, SDG E0AZ2 are included in the sample data sections.

Semivolatiles

Extraction and analysis holding time requirements were met for all of these samples.

There were several Target Compound List (TCL) analytes identified above the Contract Required Quantitation Limit (CRQL) in two (2) of these samples. Tentatively Identified Compounds (TICs) were found in all of these samples. The TICs found in these samples could be characterized as acid esters, alcohols, alkanes, amides, ketones, polyaromatic hydrocarbons (PAHs), and unknowns.

The Tentatively Identified Compounds (TICs) found in E0AZ3 and E0B00 were assessed as blank contaminants, and therefore may not be sample constituents.

In E0AZ2 and E0B01, a TIC was identified as benzo(k)fluoranthene, a TCL analyte. This TIC was not at the correct retention time for the TCL analyte, which was reported as a hit for the sample. The TIC has been left with that assessment name because the contract specifically states that TICs above 85% purity should be assessed as the CAS assessment (exempting alkanes), [page D-46/SVOA; section 11.1.2.5.6]. Manual quantitations were performed on one or more of the process files associated with this SDG, including samples E0AZ2, E0AZ7, E0AZ8, E0AZ9, E0B00, and E0B01. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

Due to the viscosity of the sample extract, E0AZ2 was initially analyzed at a 2x dilution. In the initial 2x diluted analysis of E0AZ2, the on-column amounts of phenanthrene, fluoranthene, and pyrene exceeded the instrument's analytical range as defined by the highest concentration level of the Initial Calibration. The sample was reanalyzed at a 4x dilution in order to bring the on-column amounts into range. We have reported and billed for both analyses of E0AZ2.

All decafluorotriphenylphosphine (DFTPP) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG.

With the exceptions of E0AZ3, E0AZ6, E0AZ9, and E0B00, all of the surrogates met recovery criteria in the analyses of these samples. The advisory surrogate, 1,2-dichlorobenzene-d4, failed quality control criteria in these four (4) samples. All of the internal standards met response and retention time criteria in the analyses of these samples. The associated method blank met all quality control criteria. TICs were found in this method blank. E0AZ3 was used as the original to prepare the duplicate matrix spikes as The associated duplicate matrix spikes met all advisory accuracy and precision criteria.

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

Paul T. Frankson
Manager, GC/MS SVOA
April 30, 2001

ALKANE NARRATIVE REPORT
Report date : 04/30/2001
SDG: E0AZ3

Client Sample ID: E0AZ9 Lab Sample ID: E0AZ3-5 File ID: E0AZ3-5A70

Compound	RT	Est. Conc.	Q
Straight-Chain Alkane	17.49	85.09	J

CompuChem

a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE

CASE #29167
SDG #E0AZ3
CONTRACT #68W99070

SAMPLE IDENTIFICATIONS: E0AZ3, E0AZ6, E0AZ7, E0AZ8, E0AZ9, E0B00, E0B01, E0B02, E0AZ2

The nine soil samples listed above were scheduled for the requested analyses of the pesticide fractions.

Extraction and analysis holding time requirements were met for all of these samples. The following samples confirmed target compounds above the reporting limits: E0AZ2 and E0B01. Each of these samples was analyzed at a billable dilution as well as neat due to target compounds that exceeded the calibration range on one column. No target analytes were present above the reporting limits in the remaining samples.

The surrogates were outside the advisory recovery limits for the following samples due to matrix interference and/or dilution: E0B01, E0B01DL, E0B02, E0AZ2DL and E0AZ2. All surrogates met retention time criteria in the analyses of these samples. The associated method blank met all quality control criteria. The associated duplicate matrix spikes were extracted on sample E0AZ3 and met advisory limits.

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

Katrina L. Travis
GC/HPLC Manager
April 30, 2001

DATA REPORTING QUALIFIERS

On the Form I, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. Up to five qualifiers may be reported on Form I for each compound. The qualifiers used are:

U : This flag indicates the compound was analyzed for but not detected. The Contract Required Quantitation Limit (CRQL), or reporting limit, will be adjusted to reflect any dilution and, for soils, the percent moisture.

J : This flag indicates an estimated value. The flag is used as detailed below:

1. When estimating a concentration for tentatively identified compounds (TICs) where a response factor of 1.0 is assumed for the TIC analyte,

2. When the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the CRQL (or Reporting Limit) but greater than zero, and

3. When the retention time data indicate the presence of a compound that meets the pesticide/Aroclor or other GC or HPLC identification criteria, and the result is less than the CRQL (or Reporting Limit) but greater than zero. For example, if the CRQL (or Reporting Limit) is 10 µg/L, but a concentration of 3 µg/L is calculated, it is reported as 3J.

N : This flag indicates presumptive evidence of a compound. This flag is only used for TICs, where the identification is based on a mass spectral library search. For generic characterization of a TIC such as 'chlorinated hydrocarbon', the N flag is not used.

P : In the EPA's Contract Laboratory Program (CLP), this flag is used for a pesticide/Aroclor target analyte, when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form I and flagged with a P.
For SW-846 GC and HPLC analyses, when the Relative Percent Difference (RPD) is greater than 40% and there is no evidence of chromatographic anomalies or interferences, then the higher of the two values is reported and flagged with a P. When the RPD is equal to or less than 40%, our policy is to also report the higher of the two values, although the choice could be a project specific issue.

DATA REPORTING QUALIFIERS (continued)

C : This flag applies to GC or HPLC results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, this flag is not applied; a laboratory-defined flag is used instead (see the X/Y/Z qualifier.)

B : This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. This flag is used for a TIC as well as for a positively identified target compound. The combination of flags BU or UB is not an allowable policy. Blank contaminants are flagged B only when they are detected in the sample.

E : This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis. If one or more compounds have a response greater than the upper level of the calibration range, the sample or extract will be diluted and reanalyzed. All such compounds with a response greater than the upper level of the calibration range will have the concentration flagged with an E on Form I for the original analysis.

D : If a sample or extract is reanalyzed at a higher dilution factor, for example when the concentration of an analyte exceeds the upper calibration range, the DL suffix is appended to the sample number on Form I for the more diluted sample, and **all** reported concentrations on that Form I are flagged with the D flag. This flag alerts data users that any discrepancies between the reported concentrations may be due to dilution of the sample or extract.

NOTE 1: The D flag is not applied to compounds which are not detected in the sample analysis i.e. compounds reported with the CRQL (or Reporting Limit) and the U flag.

NOTE 2: Separate Form Is are used for reporting the original analysis (Client Sample No. XXXXX) and the more diluted sample analysis (Client Sample No. XXXXXDL) i.e. the results from both analyses <u>are not combined</u> on a single Form I.

A : This flag indicates that a TIC is a suspected aldol-condensation product.

X/Y/Z : Other specific flags may be required to properly define the results. If used, the flags will be fully described in the SDG Narrative. The laboratory-defined flags are limited to X, Y and Z.

MAY 03 2001

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V
SUPERFUND DIVISION

DATE: _____

SUBJECT: Electronic (Level 2) Review of Data

Received for Review on 5-01-01

FROM: Stephen L. Ostrodka, Chief (SMF-4J)
Superfund Field Services Section

TO: Data User: MDEQ

The following data has been electronically reviewed by CADRE. No review of the raw data, laboratory narrative, laboratory forms or chain-of-custody forms was performed.

SITE NAME: 6540 HASTING STREET (MI)

CASE NUMBER: 29167 SDG NUMBER: E0AX1

Number and Type of Samples: 20 SOILS

Sample Numbers: E0AX1 - E0AX9, E0AY0 - E0AY7, E0AZ1, E0AZ4, E0AZ5

Laboratory: COMPUCHEM Hrs. for Review: _____

Following are our findings:

CC: Cecilia Moore
Region 5 TPO
Mail Code: SM-5J

RECEIVED
MAY - 8 2001
ERD-SUPERFUND

Case Number : 29167 SDG Number: E0AX1
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

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

Twenty (20) soil samples, numbered *E0AX1* through *E0AX9, E0AY0* through *E0AY7, E0AZ1, E0AZ4* and *E0AZ5* were collected on *April 17, 2001*. The lab received the samples on *April 18, 2001* in good condition. All samples were analyzed for the semivolatile and pesticide/pcb lists of organic analytes. All were analyzed according to CLP SOW *OLM04.2* 5/99.

Level 2 - Assembled By: Allison Harvey/IITRI-ESAT
Date: May 3, 2001

Case Number : 29167 SDG Number: E0AX1
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

1. HOLDING TIME

HOLDING TIME CRITERIA

Semivolatile

	--- Extraction ---		---- Analysis ----	
	Primary	Expanded	Primary	Expanded
Water	7	14	40	60
Soil	14	28	40	60

Pesticide

	--- Extraction ---		---- Analysis ----	
	Primary	Expanded	Primary	Expanded
Water	7	14	40	60
Soil	14	28	40	60

DC-73: The sampling date was not found for the following semivolatile samples. This information is located on the Traffic Report and must be entered manually by the user. All holding times have been calculated using validated time of sample receipt (VTSR). Holding times are technical. No flags for hits and non-detects.

E0AX5

DC-107: The following semivolatile soil samples are outside expanded extraction holding time criteria. Hits are qualified "J" and non-detects are qualified "R".

E0AX7, E0AX7DL

DC-160: The sampling date was not found for the following pesticide samples. This information is located on the Traffic Report and must be entered manually by the user. All holding times have been calculated using validated time of sample receipt (VTSR). All holding times are technical. No flags for hits and non-detects.

Case Number : 29167 SDG Number: E0AX1
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

E0AX5

DC-164: The following pesticide soil samples are outside expanded extraction holding time criteria.
Hits are qualified "J" and non-detects are qualified "R".

E0AX7

2. GC/MS TUNING AND GC INSTRUMENT PERFORMANCE

No problems found for this qualification.

3. CALIBRATION

CALIBRATION CRITERIA

Semivolatile

	Primary	Expanded
Minimum RRF	0.05	0.05
Maximum %RSD (initial calibration)	30	30
Maximum %D (continuing calibration)	25	25
Calibration time period	12	

Pesticide

Maximum %RSD (initial calibration) - TCL analytes	20
- surrogates	30
Maximum RPD (continuing calibration)	25
INDA/INDB percent resolution	90
Continuing calibration sequence time	12

DC-97: The following semivolatile samples are associated with a continuing calibration whose corresponding initial calibration has relative response factors (RRFs) outside primary criteria.
Hits are flagged "J" and non-detects are qualified "R".

Atrazine
E0AX1, E0AX2, E0AX3, E0AX3MS, E0AX3MSD, E0AX4

Case Number : 29167 SDG Number: E0AX1
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

E0AX4DL, E0AX5, E0AX6, E0AX7, E0AX7DL, E0AX8
E0AX9, E0AX9DL, E0AY0, E0AY0DL, E0AY1, E0AY2
E0AY3, E0AY4, E0AY4DL, E0AY5, E0AY6, E0AY6DL
E0AY7, E0AZ1, E0AZ4, E0AZ5, SBLKZF

DC-99: The following semivolatile samples are associated with a continuing calibration relative response factor (RRF50) outside primary criteria.
Hits are flagged "J" and non-detects are qualified "R".

Atrazine
E0AX1, E0AX2, E0AX3, E0AX3MS, E0AX3MSD, E0AX4
E0AX4DL, E0AX5, E0AX6, E0AX7, E0AX7DL, E0AX8
E0AX9, E0AX9DL, E0AY0, E0AY0DL, E0AY1, E0AY2
E0AY3, E0AY4, E0AY4DL, E0AY5, E0AY6, E0AY6DL
E0AY7, E0AZ1, E0AZ4, E0AZ5, SBLKZF

DC-100: The following semivolatile samples are associated with a continuing calibration percent difference (%D) outside primary criteria.
Hits are qualified "J" and non-detects are qualified "UJ".

Hexachlorocyclopentadiene
E0AX3MSD, E0AX4DL, E0AX7DL, E0AX9DL, E0AY0DL, E0AY2
E0AY3, E0AY4, E0AY4DL, E0AY5, E0AY6, E0AY6DL
E0AY7, E0AZ1, E0AZ4, E0AZ5

2,4-Dinitrophenol
E0AX3MSD, E0AX4DL, E0AX7DL, E0AX9DL, E0AY0DL, E0AY2
E0AY3, E0AY4, E0AY4DL, E0AY5, E0AY6, E0AY6DL
E0AY7, E0AZ1, E0AZ4, E0AZ5

4-Nitroaniline
E0AX3MSD, E0AX4, E0AX4DL, E0AX5, E0AX6, E0AX7
E0AX7DL, E0AX8, E0AX9, E0AX9DL, E0AY0, E0AY0DL
E0AY1, E0AY2, E0AY3, E0AY4, E0AY4DL, E0AY5
E0AY6, E0AY6DL, E0AY7, E0AZ1, E0AZ4, E0AZ5

DC-190: The following pesticide samples are not qualified for initial calibration due to missing calibration information.
Manual review of the data is required.

E0AX1, E0AX2, E0AX3, E0AX3MS, E0AX3MSD, E0AX4
E0AX5, E0AX6, E0AX7, E0AX8, E0AX9, E0AX9DL

Case Number : 29167 SDG Number: E0AX1
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

E0AY0, E0AY0DL, E0AY1, E0AY2, E0AY2DL, E0AY3
E0AY4, E0AY4DL, E0AY5, E0AY6, E0AY7, E0AZ1
E0AZ4, E0AZ5, PBLKAG

DC-197: The following pesticide samples are not qualified for continuing calibration because of missing continuing calibration information.
Manual review of the data is required.

E0AX1, E0AX2, E0AX3, E0AX3MS, E0AX3MSD, E0AX4
E0AX5, E0AX6, E0AX7, E0AX8, E0AX9, E0AX9DL
E0AY0, E0AY0DL, E0AY1, E0AY2, E0AY2DL, E0AY3
E0AY4, E0AY4DL, E0AY5, E0AY6, E0AY7, E0AZ1
E0AZ4, E0AZ5, PBLKAG

4. BLANKS

LABORATORY BLANKS CRITERIA

Semivolatile

Method Blank Contamination Threshold Multipliers

	First	Expanded
Common contaminant compounds	10.00	10.00
Other compounds	5.00	5.00

DC-72: The blank associated with the following sample was qualified "R" during a previous qualification. Hits and non-detects are not flagged.

E0AX1
Atrazine

E0AX2
Atrazine

E0AX3
Atrazine

Case Number : 29167 SDG Number: E0AX1
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

E0AX3MS
Atrazine

E0AX3MSD
Atrazine

E0AX4
Atrazine

E0AX4DL
Atrazine

E0AX5
Atrazine

E0AX6
Atrazine

E0AX7
Atrazine

E0AX7DL
Atrazine

E0AX8
Atrazine

E0AX9
Atrazine

E0AX9DL
Atrazine

E0AY0
Atrazine

E0AY0DL
Atrazine

E0AY1
Atrazine

E0AY2
Atrazine

Case Number : 29167 SDG Number: E0AX1
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

E0AY3
Atrazine

E0AY4
Atrazine

E0AY4DL
Atrazine

E0AY5
Atrazine

E0AY6
Atrazine

E0AY6DL
Atrazine

E0AY7
Atrazine

E0AZ1
Atrazine

E0AZ4
Atrazine

E0AZ5
Atrazine

DC-202: The following semivolatile samples have analyte concentrations reported above the CRQL and less than or equal to ten times (10X) the associated method blank concentration.
Hits are qualified "U" and non-detects are not flagged.

E0AX5
bis(2-Ethylhexyl)phthalate

E0AX7
bis(2-Ethylhexyl)phthalate

E0AY0
bis(2-Ethylhexyl)phthalate

Case Number : 29167 SDG Number: E0AX1
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

E0AY0DL
bis(2-Ethylhexyl)phthalate

E0AY6
bis(2-Ethylhexyl)phthalate

E0AY7
bis(2-Ethylhexyl)phthalate

E0AZ1
bis(2-Ethylhexyl)phthalate

E0AZ4
bis(2-Ethylhexyl)phthalate

DC-206: The following semivolatile samples have analyte concentrations reported below the CRQL and less than or equal to ten times (10X) the associated method blank concentration. Reported sample concentrations have been elevated to the CRQL.
Hits are qualified "U" and non-detects are not flagged.

bis(2-Ethylhexyl)phthalate
E0AX1, E0AX2, E0AX3, E0AX3MS, E0AX3MSD, E0AX4
E0AX4DL, E0AX6, E0AX7DL, E0AX8, E0AX9, E0AX9DL
E0AY1, E0AY2, E0AY3, E0AY4, E0AY4DL, E0AY5
E0AY6DL, E0AZ5

5. SYSTEM MONITORING COMPOUND AND SURROGATE RECOVERY

SMC/SURROGATE CRITERIA

Pesticide

Percent Recovery Limits

	--- Water ---		---- Soil ---	
	Lower	Upper	Lower	Upper
Tetrachloro-m-xylene	30.0	150.0	30.0	150.0
Decachlorobiphenyl	30.0	150.0	30.0	150.0

Level 2 - Assembled By: Allison Harvey/IITRI-ESAT
Date: May 3, 2001

Case Number : 29167 SDG Number: E0AX1
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

DC-174: The following pesticide samples have surrogate percent recoveries which exceed the upper limit of the criteria window. Hits are qualified "J" and non-detects are not flagged.

E0AX9, E0AX9DL, E0AY0, E0AY0DL, E0AY2, E0AY2DL
E0AY4, E0AY4DL

DC-177: The following pesticide samples have surrogate percent recoveries outside the lower limit of the criteria window, but greater than 10%. Hits are qualified "J" and non-detects are qualified "UJ".

E0AX4

6. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MATRIX SPIKE CRITERIA

Pesticide

Percent Recovery Limits & RPD

	Water			Soil		
	Lower	Upper	RPD	Lower	Upper	RPD
gamma-BHC (Lindane)	56.0	123.0	15.0	46.0	127.0	50.0
Heptachlor	40.0	131.0	20.0	35.0	130.0	31.0
Aldrin	40.0	120.0	22.0	34.0	132.0	43.0
Dieldrin	52.0	126.0	18.0	31.0	134.0	38.0
Endrin	56.0	121.0	21.0	42.0	139.0	45.0
4,4'-DDT	38.0	127.0	27.0	23.0	134.0	50.0

DC-169: The relative percent difference (RPD) between the following pesticide matrix spike and matrix spike duplicate recoveries is outside criteria. Results for the outlier compounds in the unspiked sample E0XA3 are estimated, "J" and non-detects are estimated, "UJ".

E0AX3MS
Heptachlor, 4,4'-DDT

Case Number : 29167 SDG Number: E0AX1
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

E0AX3MSD
Heptachlor, 4,4'-DDT

7. FIELD BLANK AND FIELD DUPLICATE

No sample was a field blank. Sample *E0AX2* is a field duplicate of Sample *E0AZ4*. Sample *E0AY3* is a field duplicate of Sample *E0AZ1*. Sample *E0AY7* is a field duplicate of Sample *E0AY2*. Results are not qualified based upon the results of the field blank or field duplicates.

8. INTERNAL STANDARDS

No problems found for this qualification.

9. COMPOUND IDENTIFICATION

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

10. COMPOUND QUANTITATION AND REPORTED DETECTION LIMITS

CONTRACT REQUIRED SAMPLE QUANTITY

	Water	Low Soil	Med Soil
BNA	1000.0 (ML)	30.0 (G)	1.0 (G)
PES	1000.0 (ML)	30.0 (G)	

DC-110: The following semivolatile samples have analyte concentrations below the quantitation limit (CRQL). All results below the CRQL are qualified "J".

E0AX1
Phenanthrene, Anthracene, Carbazole, Benzo(a)anthracene
Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene
Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene

E0AX2
Naphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene
Dibenzofuran, Fluorene, Carbazole,
Dibenz(a,h)anthracene, Benzo(g,h,i)perylene

Case Number : 29167 SDG Number: E0AX1
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

E0AX3
Fluoranthene, Pyrene, Benzo(g,h,i)perylene

E0AX3MS
Fluoranthene

E0AX3MSD
Phenanthrene, Fluoranthene

E0AX4
Naphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene
Dibenzofuran, Fluorene, Carbazole

E0AX4DL
Naphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene
Dibenzofuran, Fluorene, Anthracene, Carbazole
Dibenz(a,h)anthracene, Benzo(g,h,i)perylene

E0AX5
Isophorone, Naphthalene, 2-Methylnaphthalene, Acenaphthylene
Acenaphthene, Dibenzofuran, Fluorene, Carbazole
Di-n-butylphthalate, Dibenz(a,h)anthracene, Benzo(g,h,i)perylene

E0AX6
Naphthalene, 2-Methylnaphthalene, Acenaphthene, Dibenzofuran
Carbazole, Dibenz(a,h)anthracene, Benzo(g,h,i)perylene

E0AX7
4-Methylphenol, 2-Methylnaphthalene, 1,1'-Biphenyl , Acenaphthylene
Butylbenzylphthalate

E0AX7DL
Naphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene
Dibenzofuran, Fluorene, Carbazole,
Dibenz(a,h)anthracene, Benzo(g,h,i)perylene

E0AX8
Naphthalene, Acenaphthylene, Dibenzofuran, Fluorene
Anthracene, Carbazole, Benzo(a)anthracene, Chrysene
Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene
Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzo(g,h,i)perylene

E0AX9
2,4-Dimethylphenol, 2-Methylnaphthalene, 1,1'-Biphenyl , Acenaphthylene

Case Number : 29167 SDG Number: E0AX1
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

Di-n-butylphthalate

E0AX9DL
Naphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene
Dibenzofuran, Fluorene, Carbazole,
Dibenz(a,h)anthracene, Benzo(g,h,i)perylene

E0AY0
Naphthalene, 2-Methylnaphthalene, 1,1'-Biphenyl , Acenaphthylene
Acenaphthene, Dibenzofuran, Fluorene, Pentachlorophenol
Di-n-octylphthalate

E0AY0DL
Naphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene
Dibenzofuran, Fluorene, Anthracene, Carbazole
Dibenz(a,h)anthracene

E0AY1
Naphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene
Dibenzofuran, Fluorene, Carbazole, Di-n-butylphthalate
Dibenz(a,h)anthracene, Benzo(g,h,i)perylene

E0AY2
Naphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene
Dibenzofuran, Fluorene, Anthracene, Carbazole
Dibenz(a,h)anthracene, Benzo(g,h,i)perylene

E0AY3
Naphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene
Dibenzofuran, Fluorene, Anthracene, Carbazole
Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzo(g,h,i)perylene

E0AY4
Naphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene
Dibenzofuran, Fluorene, Carbazole, Di-n-butylphthalate
Benzo(g,h,i)perylene

E0AY4DL
Naphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene
Dibenzofuran, Fluorene, Carbazole,
Dibenz(a,h)anthracene, Benzo(g,h,i)perylene

E0AY5
Phenanthrene, Anthracene, Pyrene, Benzo(a)anthracene

Case Number : 29167 SDG Number: E0AX1
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene
Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene

E0AY6
Phenol, 4-Methylphenol, 2,4-Dimethylphenol, Caprolactam
2,4,5-Trichlorophenol, 1,1'-Biphenyl , Acenaphthylene

E0AY6DL
Naphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene
Dibenzofuran, Fluorene, Carbazole,
Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzo(g,h,i)perylene

E0AY7
Naphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene
Dibenzofuran, Fluorene, Carbazole, Dibenz(a,h)anthracene

E0AZ1
Benzo(g,h,i)perylene

E0AZ4
Naphthalene, 2-Methylnaphthalene, Acenaphthylene, Phenanthrene
Anthracene, Pyrene, Benzo(a)anthracene, Chrysene
Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene
Dibenz(a,h)anthracene

E0AZ5
Naphthalene, 2-Methylnaphthalene, Phenanthrene, Pyrene

SBLKZF
bis(2-Ethylhexyl)phthalate

DC-158: The following pesticide samples have analyte concentrations below the quantitation limit (CRQL). All results below the CRQL are qualified "J".

E0AX1
gamma-Chlordane

E0AX2
beta-BHC, 4,4'-DDE, 4,4'-DDT

E0AX3
4,4'-DDD

Case Number : 29167 SDG Number: E0AX1
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

E0AX3MS
4,4'-DDD, Endrin ketone

E0AX3MSD
4,4'-DDD, Endrin ketone

E0AX4
Endrin ketone, Endrin aldehyde

E0AX5
beta-BHC, 4,4'-DDE, Endrin ketone

E0AX6
beta-BHC

E0AX7
4,4'-DDE, Endrin ketone, Endrin aldehyde

E0AX8
gamma-Chlordane

E0AX9DL
Heptachlor, 4,4'-DDD

E0AY0
beta-BHC, 4,4'-DDE, 4,4'-DDD, Endrin ketone
Endrin aldehyde

E0AY0DL
beta-BHC, 4,4'-DDD, Endosulfan sulfate, 4,4'-DDT
Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

E0AY1
Heptachlor, Endrin ketone, gamma-Chlordane

E0AY2
Heptachlor, Endrin aldehyde, gamma-Chlordane

E0AY2DL
beta-BHC, 4,4'-DDD, Methoxychlor, Endrin ketone
Endrin aldehyde, gamma-Chlordane

E0AY3
Endosulfan I, 4,4'-DDE, 4,4'-DDT, Endrin aldehyde

Level 2 - Assembled By: Allison Harvey/IITRI-ESAT
Date: May 3, 2001

Case Number : 29167 SDG Number: E0AX1
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

gamma-Chlordane

E0AY4
gamma-BHC (Lindane), Endrin, 4,4'-DDD, Endosulfan sulfate

E0AY4DL
Endrin, 4,4'-DDT, Methoxychlor, Endrin ketone
Endrin aldehyde, gamma-Chlordane

E0AY5
4,4'-DDT

E0AY6
beta-BHC, Heptachlor epoxide, Endrin ketone, Endrin aldehyde
gamma-Chlordane

E0AY7
4,4'-DDD, Endrin aldehyde, gamma-Chlordane

E0AZ4
4,4'-DDE, gamma-Chlordane

E0AZ5
Endosulfan I

DC-422: The following pesticide samples have analytes for which the percent difference between column results exceeds primary criteria.
Professional judgement should be used to qualify the data.

E0AX1
4,4'-DDT, gamma-Chlordane

E0AX2
beta-BHC, 4,4'-DDT

E0AX3MS
Endrin ketone

E0AX3MSD
Endrin, Endrin ketone

E0AX5

Case Number : 29167 SDG Number: E0AX1
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

beta-BHC, Endrin ketone

E0AX6
beta-BHC

E0AX7
beta-BHC, 4,4'-DDT, Endrin ketone, Endrin aldehyde

E0AX8
beta-BHC, 4,4'-DDT, gamma-Chlordane

E0AX9
beta-BHC, Endrin, 4,4'-DDD, Endrin ketone
alpha-Chlordane

E0AX9DL
4,4'-DDD

E0AY0
beta-BHC, 4,4'-DDD, Endrin ketone, Endrin aldehyde

E0AY0DL
beta-BHC, 4,4'-DDD, Endosulfan sulfate, 4,4'-DDT
Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

E0AY1
beta-BHC, Heptachlor, 4,4'-DDT, Endrin ketone
Endrin aldehyde, gamma-Chlordane

E0AY2
beta-BHC, Heptachlor, Endrin, 4,4'-DDT
Endrin ketone, Endrin aldehyde, gamma-Chlordane

E0AY2DL
beta-BHC, 4,4'-DDD, Methoxychlor, Endrin ketone
Endrin aldehyde, gamma-Chlordane

E0AY3
Endosulfan I, Endrin aldehyde, gamma-Chlordane

E0AY4
beta-BHC, gamma-BHC (Lindane), Heptachlor, Endrin
4,4'-DDD, Endosulfan sulfate, 4,4'-DDT, Endrin aldehyde
gamma-Chlordane

Level 2 - Assembled By: Allison Harvey/IITRI-ESAT
Date: May 3, 2001

Case Number : 29167 SDG Number: E0AX1
Site Name: 6540 HASTING STREET (MI) Laboratory: COMPUCHEM

E0AY4DL
Endrin, 4,4'-DDT, Methoxychlor, Endrin ketone
Endrin aldehyde, gamma-Chlordane

E0AY6
beta-BHC, 4,4'-DDT, Endrin ketone, Endrin aldehyde
alpha-Chlordane, gamma-Chlordane

E0AY7
beta-BHC, 4,4'-DDD, Endrin aldehyde, gamma-Chlordane

E0AZ4
gamma-Chlordane

E0AZ5
Endosulfan I

11. SYSTEM PERFORMANCE

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

12. ADDITIONAL INFORMATION

CADRE Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The anlayte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the action limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
N	The analysis indicates the present of an analyte for which there is presumptive evidence to make a tentative identification.
NJ	The analysis indicates the present of an analyte for which there is presumptive evidence to make a tentative identification and the associated numerical value represents its approximate concentration.
R	The data are unusable. (The compound may or may not be present)

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX1
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Number of Soil Samples : 20
Number of Water Samples : 0

Sample Number :	E0AX1		E0AX2		E0AX3		E0AX3MS		E0AX3MSD	
Sampling Location :	SS1		SS2		SS3		SS3		SS3	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :	17:05		16:55		17:15		17:15		17:15	
%Moisture :	16		16		13		13		13	
pH :	8.1		7.8		8.1		8.1		8.1	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	390	U	390	U	380	U	380	U	380	U
Phenol	390	U	390	U	380	U	1900		1700	
bis-(2-Chloroethyl) ether	390	U	390	U	380	U	380	U	380	U
2-Chlorophenol	390	U	390	U	380	U	1900		1800	
2-Methylphenol	390	U	390	U	380	U	380	U	380	U
2,2'-oxybis(1-Chloropropane)	390	U	390	U	380	U	380	U	380	U
Acetophenone	390	U	390	U	380	U	380	U	380	U
4-Methylphenol	390	U	390	U	380	U	380	U	380	U
N-Nitroso-di-n-propylamine	390	U	390	U	380	U	1400		1400	
Hexachloroethane	390	U	390	U	380	U	380	U	380	U
Nitrobenzene	390	U	390	U	380	U	380	U	380	U
Isophorone	390	U	390	U	380	U	380	U	380	U
2-Nitrophenol	390	U	390	U	380	U	380	U	380	U
2,4-Dimethylphenol	390	U	390	U	380	U	380	U	380	U
bis(2-Chloroethoxy)methane	390	U	390	U	380	U	380	U	380	U
2,4-Dichlorophenol	390	U	390	U	380	U	380	U	380	U
Naphthalene	390	U	130	J	380	U	380	U	380	U
4-Chloroaniline	390	U	390	U	380	U	380	U	380	U
Hexachlorobutadiene	390	U	390	U	380	U	380	U	380	U
Caprolactam	390	U	390	U	380	U	380	U	380	U
4-Chloro-3-methylphenol	390	U	390	U	380	U	1700		1700	
2-Methylnaphthalene	390	U	82	J	380	U	380	U	380	U
Hexachlorocyclopentadiene	390	U	390	U	380	U	380	U	380	UJ
2,4,6-Trichlorophenol	390	U	390	U	380	U	380	U	380	U
2,4,5-Trichlorophenol	990	U	990	U	950	U	950	U	950	U
1,1'-Biphenyl	390	U	390	U	380	U	380	U	380	U
2-Chloronaphthalene	390	U	390	U	380	U	380	U	380	U
2-Nitroaniline	990	U	990	U	950	U	950	U	950	U
Dimethylphthalate	390	U	390	U	380	U	380	U	380	U
2,6-Dinitrotoluene	390	U	390	U	380	U	380	U	380	U
Acenaphthylene	390	U	140	J	380	U	380	U	380	U
3-Nitroaniline	990	U	990	U	950	U	950	U	950	U
Acenaphthene	390	U	140	J	380	U	1500		1600	

DISCLAIMER: This package has been electronically assessed as an added service to our customer. It has not been either validated or approved by Region 5 and any subsequent use by the data user is strictly at the risk of the data user. Region 5 assumes no responsibility for use of unvalidated data.

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX1
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0AX1		E0AX2		E0AX3		E0AX3MS		E0AX3MSD	
Sampling Location :	SS1		SS2		SS3		SS3		SS3	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :	17:05		16:55		17:15		17:15		17:15	
%Moisture :	16		16		13		13		13	
pH :	8.1		7.8		8.1		8.1		8.1	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	990	U	990	U	950	U	950	U	950	UJ
4-Nitrophenol	990	U	990	U	950	U	1900		2100	
Dibenzofuran	390	U	140	J	380	U	380	U	380	U
2,4-Dinitrotoluene	390	U	390	U	380	U	1500		1500	
Diethylphthalate	390	U	390	U	380	U	380	U	380	U
Fluorene	390	U	200	J	380	U	380	U	380	U
4-Chlorophenyl-phenyl ether	390	U	390	U	380	U	380	U	380	U
4-Nitroaniline	990	U	990	U	950	U	950	U	950	UJ
4,6-Dinitro-2-methylphenol	990	U	990	U	950	U	950	U	950	U
N-Nitrosodiphenylamine	390	U	390	U	380	U	380	U	380	U
4-Bromophenyl-phenylether	390	U	390	U	380	U	380	U	380	U
Hexachlorobenzene	390	U	390	U	380	U	380	U	380	U
Atrazine	390	R	390	R	380	R	380	R	380	R
Pentachlorophenol	990	U	990	U	950	U	1600		2000	
Phenanthrene	320	J	1800		380	U	380	U	48	J
Anthracene	78	J	490		380	U	380	U	380	U
Carbazole	47	J	250	J	380	U	380	U	380	U
Di-n-butylphthalate	390	U	390	U	380	U	380	U	380	U
Fluoranthene	480		2600		47	J	47	J	71	J
Pyrene	390		2200		40	J	1500		1700	
Butylbenzylphthalate	390	U	390	U	380	U	380	U	380	U
3,3'-Dichlorobenzidine	390	U	390	U	380	U	380	U	380	U
Benzo(a)anthracene	210	J	1300		380	U	380	U	380	U
Chrysene	220	J	1200		380	U	380	U	380	U
bis(2-Ethylhexyl)phthalate	390	U	390	U	380	U	380	U	380	U
Di-n-octylphthalate	390	U	390	U	380	U	380	U	380	U
Benzo(b)fluoranthene	210	J	1200		380	U	380	U	380	U
Benzo(k)fluoranthene	160	J	810		380	U	380	U	380	U
Benzo(a)pyrene	180	J	1100		380	U	380	U	380	U
Indeno(1,2,3-cd)pyrene	110	J	670		380	U	380	U	380	U
Dibenzo(a,h)anthracene	52	J	280	J	380	U	380	U	380	U
Benzo(g,h,i)perylene	390	U	270	J	100	J	380	U	380	U

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX1
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0AX4		E0AX4DL		E0AX5		E0AX6		E0AX7	
Sampling Location :	SS4		SS4		SS5		SS6		SS7	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	04/17/2001		04/17/2001				04/17/2001		04/17/2000	
Time Sampled :	16:40		16:40				15:10		15:00	
%Moisture :	19		19		16		17		17	
pH :	8.0		8.0		8.1		8.2		8.0	
Dilution Factor :	1.0		2.0		1.0		1.0		1.0	
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	410	U	810	U	390	U	400	U	400	R
Phenol	410	U	810	U	390	U	400	U	400	R
bis-(2-Chloroethyl) ether	410	U	810	U	390	U	400	U	400	R
2-Chlorophenol	410	U	810	U	390	U	400	U	400	R
2-Methylphenol	410	U	810	U	390	U	400	U	400	R
2,2'-oxybis(1-Chloropropane)	410	U	810	U	390	U	400	U	400	R
Acetophenone	410	U	810	U	390	U	400	U	400	R
4-Methylphenol	410	U	810	U	390	U	400	U	60	J
N-Nitroso-di-n-propylamine	410	U	810	U	390	U	400	U	400	R
Hexachloroethane	410	U	810	U	390	U	400	U	400	R
Nitrobenzene	410	U	810	U	390	U	400	U	400	R
Isophorone	410	U	810	U	110	J	400	U	400	R
2-Nitrophenol	410	U	810	U	390	U	400	U	400	R
2,4-Dimethylphenol	410	U	810	U	390	U	400	U	400	R
bis(2-Chloroethoxy)methane	410	U	810	U	390	U	400	U	400	R
2,4-Dichlorophenol	410	U	810	U	390	U	400	U	400	R
Naphthalene	180	J	200	J	140	J	120	J	680	J
4-Chloroaniline	410	U	810	U	390	U	400	U	400	R
Hexachlorobutadiene	410	U	810	U	390	U	400	U	400	R
Caprolactam	410	U	810	U	390	U	400	U	400	R
4-Chloro-3-methylphenol	410	U	810	U	390	U	400	U	400	R
2-Methylnaphthalene	140	J	170	J	95	J	110	J	390	J
Hexachlorocyclopentadiene	410	U	810	UJ	390	U	400	U	400	R
2,4,6-Trichlorophenol	410	U	810	U	390	U	400	U	400	R
2,4,5-Trichlorophenol	1000	U	2000	U	990	U	1000	U	1000	R
1,1'-Biphenyl	410	U	810	U	390	U	400	U	92	J
2-Chloronaphthalene	410	U	810	U	390	U	400	U	400	R
2-Nitroaniline	1000	U	2000	U	990	U	1000	U	1000	R
Dimethylphthalate	410	U	810	U	390	U	400	U	400	R
2,6-Dinitrotoluene	410	U	810	U	390	U	400	U	400	R
Acenaphthylene	160	J	190	J	64	J	400	U	380	J
3-Nitroaniline	1000	U	2000	U	990	U	1000	U	1000	R
Acenaphthene	190	J	230	J	140	J	340	J	560	J

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX1
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0AX4		E0AX4DL		E0AX5		E0AX6		E0AX7	
Sampling Location :	SS4		SS4		SS5		SS6		SS7	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	04/17/2001		04/17/2001				04/17/2001		04/17/2000	
Time Sampled :	16:40		16:40				15:10		15:00	
%Moisture :	19		19		16		17		17	
pH :	8.0		8.0		8.1		8.2		8.0	
Dilution Factor :	1.0		2.0		1.0		1.0		1.0	
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	1000	U	2000	UJ	990	U	1000	U	1000	R
4-Nitrophenol	1000	U	2000	U	990	U	1000	U	1000	R
Dibenzofuran	190	J	230	J	140	J	280	J	600	J
2,4-Dinitrotoluene	410	U	810	U	390	U	400	U	400	R
Diethylphthalate	410	U	810	U	390	U	400	U	400	R
Fluorene	270	J	330	J	160	J	430		830	J
4-Chlorophenyl-phenyl ether	410	U	810	U	390	U	400	U	400	R
4-Nitroaniline	1000	UJ	2000	UJ	990	UJ	1000	UJ	1000	R
4,6-Dinitro-2-methylphenol	1000	U	2000	U	990	U	1000	U	1000	R
N-Nitrosodiphenylamine	410	U	810	U	390	U	400	U	400	R
4-Bromophenyl-phenylether	410	U	810	U	390	U	400	U	400	R
Hexachlorobenzene	410	U	810	U	390	U	400	U	400	R
Atrazine	410	R	810	R	390	R	400	R	400	R
Pentachlorophenol	1000	U	2000	U	990	U	1000	U	1000	R
Phenanthrene	2600		3100		1800		3000		6500	J
Anthracene	670		730	J	460		860		1700	J
Carbazole	290	J	330	J	150	J	340	J	920	J
Di-n-butylphthalate	410	U	810	U	40	J	400	U	400	R
Fluoranthene	3800		4400		2700		2600		7100	J
Pyrene	3600		4200		2300		2100		6800	J
Butylbenzylphthalate	410	U	810	U	390	U	400	U	47	J
3,3'-Dichlorobenzidine	410	U	810	U	390	U	400	U	400	R
Benzo(a)anthracene	1800		2000		1300		950		3500	J
Chrysene	1700		2000		1300		840		3100	J
bis(2-Ethylhexyl)phthalate	410	U	810	U	430	U	400	U	820	U
Di-n-octylphthalate	410	U	810	U	390	U	400	U	400	R
Benzo(b)fluoranthene	1700		2000		1200		660		3500	J
Benzo(k)fluoranthene	1300		1400		650		650		1700	J
Benzo(a)pyrene	1500		1800		880		710		2900	J
Indeno(1,2,3-cd)pyrene	990		1000		470		440		1900	J
Dibenzo(a,h)anthracene	460		510	J	270	J	200	J	690	J
Benzo(g,h,i)perylene	470		560	J	340	J	260	J	1300	J

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX1
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0AX7DL		E0AX8		E0AX9		E0AX9DL		E0AY0	
Sampling Location :	SS7		SS8		SS9		SS9		SS10	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	04/17/2000		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :	15:00		16:00		15:45		15:45		15:25	
%Moisture :	17		15		14		14		18	
pH :	8.0		8.0		8.1		8.1		8.1	
Dilution Factor :	4.0		1.0		1.0		4.0		1.0	
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	1600	R	390	U	380	U	1500	U	400	U
Phenol	1600	R	390	U	380	U	1500	U	400	U
bis-(2-Chloroethyl) ether	1600	R	390	U	380	U	1500	U	400	U
2-Chlorophenol	1600	R	390	U	380	U	1500	U	400	U
2-Methylphenol	1600	R	390	U	380	U	1500	U	400	U
2,2'-oxybis(1-Chloropropane)	1600	R	390	U	380	U	1500	U	400	U
Acetophenone	1600	R	390	U	380	U	1500	U	400	U
4-Methylphenol	1600	R	390	U	680		1500	U	400	U
N-Nitroso-di-n-propylamine	1600	R	390	U	380	U	1500	U	400	U
Hexachloroethane	1600	R	390	U	380	U	1500	U	400	U
Nitrobenzene	1600	R	390	U	380	U	1500	U	400	U
Isophorone	1600	R	390	U	380	U	1500	U	400	U
2-Nitrophenol	1600	R	390	U	380	U	1500	U	400	U
2,4-Dimethylphenol	1600	R	390	U	39	J	1500	U	400	U
bis(2-Chloroethoxy)methane	1600	R	390	U	380	U	1500	U	400	U
2,4-Dichlorophenol	1600	R	390	U	380	U	1500	U	400	U
Naphthalene	760	J	57	J	570		640	J	190	J
4-Chloroaniline	1600	R	390	U	380	U	1500	U	400	U
Hexachlorobutadiene	1600	R	390	U	380	U	1500	U	400	U
Caprolactam	1600	R	390	U	380	U	1500	U	400	U
4-Chloro-3-methylphenol	1600	R	390	U	380	U	1500	U	400	U
2-Methylnaphthalene	440	J	390	U	330	J	350	J	150	J
Hexachlorocyclopentadiene	1600	R	390	U	380	U	1500	UJ	400	U
2,4,6-Trichlorophenol	1600	R	390	U	380	U	1500	U	400	U
2,4,5-Trichlorophenol	4000	R	980	U	970	U	3900	U	1000	U
1,1'-Biphenyl	1600	R	390	U	76	J	1500	U	45	J
2-Chloronaphthalene	1600	R	390	U	380	U	1500	U	400	U
2-Nitroaniline	4000	R	980	U	970	U	3900	U	1000	U
Dimethylphthalate	1600	R	390	U	380	U	1500	U	400	U
2,6-Dinitrotoluene	1600	R	390	U	380	U	1500	U	400	U
Acenaphthylene	440	J	70	J	370	J	420	J	240	J
3-Nitroaniline	4000	R	980	U	970	U	3900	U	1000	U
Acenaphthene	650	J	390	U	470		570	J	290	J

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX1
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0AX7DL		E0AX8		E0AX9		E0AX9DL		E0AY0	
Sampling Location :	SS7		SS8		SS9		SS9		SS10	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	04/17/2000		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :	15:00		16:00		15:45		15:45		15:25	
%Moisture :	17		15		14		14		18	
pH :	8.0		8.0		8.1		8.1		8.1	
Dilution Factor :	4.0		1.0		1.0		4.0		1.0	
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	4000	R	980	U	970	U	3900	UJ	1000	U
4-Nitrophenol	4000	R	980	U	970	U	3900	U	1000	U
Dibenzofuran	710	J	57	J	540		650	J	260	J
2,4-Dinitrotoluene	1600	R	390	U	380	U	1500	U	400	U
Diethylphthalate	1600	R	390	U	380	U	1500	U	400	U
Fluorene	950	J	82	J	760		880	J	380	J
4-Chlorophenyl-phenyl ether	1600	R	390	U	380	U	1500	U	400	U
4-Nitroaniline	4000	R	980	UJ	970	UJ	3900	UJ	1000	UJ
4,6-Dinitro-2-methylphenol	4000	R	980	U	970	U	3900	U	1000	U
N-Nitrosodiphenylamine	1600	R	390	U	380	U	1500	U	400	U
4-Bromophenyl-phenylether	1600	R	390	U	380	U	1500	U	400	U
Hexachlorobenzene	1600	R	390	U	380	U	1500	U	400	U
Atrazine	1600	R	390	R	380	R	1500	R	400	R
Pentachlorophenol	4000	R	980	U	970	U	3900	U	110	J
Phenanthrene	7700	J	750		7500		7900		4000	
Anthracene	2000	J	180	J	1800		1900		1200	
Carbazole	960	J	91	J	1100		1100	J	440	
Di-n-butylphthalate	1600	R	390	U	70	J	1500	U	400	U
Fluoranthene	8500	J	850		8400		11000		5600	
Pyrene	7600	J	730		7100		8600		5600	
Butylbenzylphthalate	1600	R	390	U	380	U	1500	U	400	U
3,3'-Dichlorobenzidine	1600	R	390	U	380	U	1500	U	400	U
Benzo(a)anthracene	3800	J	370	J	4000		4200		3100	
Chrysene	3500	J	350	J	3600		4000		2800	
bis(2-Ethylhexyl)phthalate	1600	U	390	U	380	U	1500	U	1400	U
Di-n-octylphthalate	1600	R	390	U	380	U	1500	U	48	J
Benzo(b)fluoranthene	2900	J	320	J	4400		3200		3800	
Benzo(k)fluoranthene	3100	J	260	J	1700		3600		1500	
Benzo(a)pyrene	3300	J	300	J	3300		3700		2800	
Indeno(1,2,3-cd)pyrene	1900	J	200	J	2200		2500		1900	
Dibenzo(a,h)anthracene	930	J	86	J	760		1000	J	700	
Benzo(g,h,i)perylene	1500	J	150	J	770		890	J	1900	

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX1
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0AY0DL		E0AY1		E0AY2		E0AY3		E0AY4	
Sampling Location :	SS10		SS11		SS12		SS13		SS14	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :	15:25		13:40		14:40		14:00		14:25	
%Moisture :	18		21		15		15		17	
pH :	8.1		7.9		8.0		8.0		8.1	
Dilution Factor :	3.0		1.0		4.0		1.0		3.0	
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	1200	U	420	U	1600	U	390	U	1200	U
Phenol	1200	U	420	U	1600	U	390	U	1200	U
bis-(2-Chloroethyl) ether	1200	U	420	U	1600	U	390	U	1200	U
2-Chlorophenol	1200	U	420	U	1600	U	390	U	1200	U
2-Methylphenol	1200	U	420	U	1600	U	390	U	1200	U
2,2'-oxybis(1-Chloropropane)	1200	U	420	U	1600	U	390	U	1200	U
Acetophenone	1200	U	420	U	1600	U	390	U	1200	U
4-Methylphenol	1200	U	420	U	1600	U	390	U	1200	U
N-Nitroso-di-n-propylamine	1200	U	420	U	1600	U	390	U	1200	U
Hexachloroethane	1200	U	420	U	1600	U	390	U	1200	U
Nitrobenzene	1200	U	420	U	1600	U	390	U	1200	U
Isophorone	1200	U	420	U	1600	U	390	U	1200	U
2-Nitrophenol	1200	U	420	U	1600	U	390	U	1200	U
2,4-Dimethylphenol	1200	U	420	U	1600	U	390	U	1200	U
bis(2-Chloroethoxy)methane	1200	U	420	U	1600	U	390	U	1200	U
2,4-Dichlorophenol	1200	U	420	U	1600	U	390	U	1200	U
Naphthalene	200	J	150	J	360	J	50	J	760	J
4-Chloroaniline	1200	U	420	U	1600	U	390	U	1200	U
Hexachlorobutadiene	1200	U	420	U	1600	U	390	U	1200	U
Caprolactam	1200	U	420	U	1600	U	390	U	1200	U
4-Chloro-3-methylphenol	1200	U	420	U	1600	U	390	U	1200	U
2-Methylnaphthalene	160	J	130	J	220	J	48	J	470	J
Hexachlorocyclopentadiene	1200	UJ	420	U	1600	UJ	390	UJ	1200	UJ
2,4,6-Trichlorophenol	1200	U	420	U	1600	U	390	U	1200	U
2,4,5-Trichlorophenol	3000	U	1100	U	3900	U	980	U	3000	U
1,1'-Biphenyl	1200	U	420	U	1600	U	390	U	1200	U
2-Chloronaphthalene	1200	U	420	U	1600	U	390	U	1200	U
2-Nitroaniline	3000	U	1100	U	3900	U	980	U	3000	U
Dimethylphthalate	1200	U	420	U	1600	U	390	U	1200	U
2,6-Dinitrotoluene	1200	U	420	U	1600	U	390	U	1200	U
Acenaphthylene	250	J	73	J	270	J	58	J	230	J
3-Nitroaniline	3000	U	1100	U	3900	U	980	U	3000	U
Acenaphthene	310	J	180	J	340	J	58	J	1100	J

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX1
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0AY0DL		E0AY1		E0AY2		E0AY3		E0AY4	
Sampling Location :	SS10		SS11		SS12		SS13		SS14	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :	15:25		13:40		14:40		14:00		14:25	
%Moisture :	18		21		15		15		17	
pH :	8.1		7.9		8.0		8.0		8.1	
Dilution Factor :	3.0		1.0		4.0		1.0		3.0	
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	3000	UJ	1100	U	3900	UJ	980	UJ	3000	UJ
4-Nitrophenol	3000	U	1100	U	3900	U	980	U	3000	U
Dibenzofuran	290	J	140	J	340	J	48	J	680	J
2,4-Dinitrotoluene	1200	U	420	U	1600	U	390	U	1200	U
Diethylphthalate	1200	U	420	U	1600	U	390	U	1200	U
Fluorene	400	J	220	J	570	J	82	J	1100	J
4-Chlorophenyl-phenyl ether	1200	U	420	U	1600	U	390	U	1200	U
4-Nitroaniline	3000	UJ	1100	UJ	3900	UJ	980	UJ	3000	UJ
4,6-Dinitro-2-methylphenol	3000	U	1100	U	3900	U	980	U	3000	U
N-Nitrosodiphenylamine	1200	U	420	U	1600	U	390	U	1200	U
4-Bromophenyl-phenylether	1200	U	420	U	1600	U	390	U	1200	U
Hexachlorobenzene	1200	U	420	U	1600	U	390	U	1200	U
Atrazine	1200	R	420	R	1600	R	390	R	1200	R
Pentachlorophenol	3000	U	1100	U	3900	U	980	U	3000	U
Phenanthrene	4100		1800		5600		740		11000	
Anthracene	1200	J	460		1200	J	200	J	2500	
Carbazole	430	J	210	J	640	J	85	J	1100	J
Di-n-butylphthalate	1200	U	55	J	1600	U	390	U	120	J
Fluoranthene	6300		2500		8300		1300		14000	
Pyrene	5700		2200		6400		1100		11000	
Butylbenzylphthalate	1200	U	420	U	1600	U	390	U	1200	U
3,3'-Dichlorobenzidine	1200	U	420	U	1600	U	390	U	1200	U
Benzo(a)anthracene	3100		1100		3400		620		5900	
Chrysene	3100		1000		4300		560		5900	
bis(2-Ethylhexyl)phthalate	1600	U	420	U	1600	U	390	U	1200	U
Di-n-octylphthalate	1200	U	420	U	1600	U	390	U	1200	U
Benzo(b)fluoranthene	3100		1000		4400		440		6400	
Benzo(k)fluoranthene	2400		760		2100		560		3800	
Benzo(a)pyrene	2900		910		3000		500		5600	
Indeno(1,2,3-cd)pyrene	1700		620		1900		300	J	3800	
Dibenzo(a,h)anthracene	840	J	210	J	820	J	140	J	1300	
Benzo(g,h,i)perylene	2100		190	J	800	J	300	J	640	J

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX1
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0AY4DL		E0AY5		E0AY6		E0AY6DL		E0AY7	
Sampling Location :	SS14		SS15		SS16		SS16		SS17	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :	14:25				14:10		14:10		14:40	
%Moisture :	17		14		17		17		14	
pH :	8.1		8.2		8.2		8.2		8.9	
Dilution Factor :	6.0		1.0		3.0		15.0		1.0	
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	2400	U	380	U	1200	U	6000	U	380	U
Phenol	2400	U	380	U	150	J	6000	U	380	U
bis-(2-Chloroethyl) ether	2400	U	380	U	1200	U	6000	U	380	U
2-Chlorophenol	2400	U	380	U	1200	U	6000	U	380	U
2-Methylphenol	2400	U	380	U	1200	U	6000	U	380	U
2,2'-oxybis(1-Chloropropane)	2400	U	380	U	1200	U	6000	U	380	U
Acetophenone	2400	U	380	U	1200	U	6000	U	380	U
4-Methylphenol	2400	U	380	U	310	J	6000	U	380	U
N-Nitroso-di-n-propylamine	2400	U	380	U	1200	U	6000	U	380	U
Hexachloroethane	2400	U	380	U	1200	U	6000	U	380	U
Nitrobenzene	2400	U	380	U	1200	U	6000	U	380	U
Isophorone	2400	U	380	U	1200	U	6000	U	380	U
2-Nitrophenol	2400	U	380	U	1200	U	6000	U	380	U
2,4-Dimethylphenol	2400	U	380	U	210	J	6000	U	380	U
bis(2-Chloroethoxy)methane	2400	U	380	U	1200	U	6000	U	380	U
2,4-Dichlorophenol	2400	U	380	U	1200	U	6000	U	380	U
Naphthalene	880	J	380	U	4000		4300	J	110	J
4-Chloroaniline	2400	U	380	U	1200	U	6000	U	380	U
Hexachlorobutadiene	2400	U	380	U	1200	U	6000	U	380	U
Caprolactam	2400	U	380	U	220	J	6000	U	380	U
4-Chloro-3-methylphenol	2400	U	380	U	1200	U	6000	U	380	U
2-Methylnaphthalene	520	J	380	U	2100		2100	J	91	J
Hexachlorocyclopentadiene	2400	UJ	380	UJ	1200	UJ	6000	UJ	380	UJ
2,4,6-Trichlorophenol	2400	U	380	U	1200	U	6000	U	380	U
2,4,5-Trichlorophenol	6000	U	970	U	130	J	15000	U	970	U
1,1'-Biphenyl	2400	U	380	U	460	J	6000	U	380	U
2-Chloronaphthalene	2400	U	380	U	1200	U	6000	U	380	U
2-Nitroaniline	6000	U	970	U	3000	U	15000	U	970	U
Dimethylphthalate	2400	U	380	U	1200	U	6000	U	380	U
2,6-Dinitrotoluene	2400	U	380	U	1200	U	6000	U	380	U
Acenaphthylene	260	J	380	U	1000	J	1200	J	98	J
3-Nitroaniline	6000	U	970	U	3000	U	15000	U	970	U
Acenaphthene	1200	J	380	U	2100		2300	J	130	J

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX1
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0AY4DL		E0AY5		E0AY6		E0AY6DL		E0AY7	
Sampling Location :	SS14		SS15		SS16		SS16		SS17	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :	14:25				14:10		14:10		14:40	
%Moisture :	17		14		17		17		14	
pH :	8.1		8.2		8.2		8.2		8.9	
Dilution Factor :	6.0		1.0		3.0		15.0		1.0	
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	6000	UJ	970	UJ	3000	UJ	15000	UJ	970	UJ
4-Nitrophenol	6000	U	970	U	3000	U	15000	U	970	U
Dibenzofuran	800	J	380	U	2900		2900	J	98	J
2,4-Dinitrotoluene	2400	U	380	U	1200	U	6000	U	380	U
Diethylphthalate	2400	U	380	U	1200	U	6000	U	380	U
Fluorene	1300	J	380	U	3800		4000	J	170	J
4-Chlorophenyl-phenyl ether	2400	U	380	U	1200	U	6000	U	380	U
4-Nitroaniline	6000	UJ	970	UJ	3000	UJ	15000	UJ	970	UJ
4,6-Dinitro-2-methylphenol	6000	U	970	U	3000	U	15000	U	970	U
N-Nitrosodiphenylamine	2400	U	380	U	1200	U	6000	U	380	U
4-Bromophenyl-phenylether	2400	U	380	U	1200	U	6000	U	380	U
Hexachlorobenzene	2400	U	380	U	1200	U	6000	U	380	U
Atrazine	2400	R	380	R	1200	R	6000	R	380	R
Pentachlorophenol	6000	U	970	U	3000	U	15000	U	970	U
Phenanthrene	11000		210	J	29000		32000		1500	
Anthracene	2700		56	J	7200		6800		400	
Carbazole	1200	J	380	U	3700		3600	J	180	J
Di-n-butylphthalate	2400	U	380	U	1200	U	6000	U	380	U
Fluoranthene	15000		380		22000		26000		2300	
Pyrene	13000		340	J	21000		21000		2100	
Butylbenzylphthalate	2400	U	380	U	1200	U	6000	U	380	U
3,3'-Dichlorobenzidine	2400	U	380	U	1200	U	6000	U	380	U
Benzo(a)anthracene	6700		180	J	10000		10000		1100	
Chrysene	6400		180	J	9000		8900		1100	
bis(2-Ethylhexyl)phthalate	2400	U	380	U	1500	U	6000	U	610	U
Di-n-octylphthalate	2400	U	380	U	1200	U	6000	U	380	U
Benzo(b)fluoranthene	6700		160	J	10000		8500		920	
Benzo(k)fluoranthene	4500		160	J	4000		7900		980	
Benzo(a)pyrene	6100		160	J	8200		9400		990	
Indeno(1,2,3-cd)pyrene	4300		98	J	5300		5300	J	680	
Dibenzo(a,h)anthracene	1500	J	380	U	1800		2100	J	230	J
Benzo(g,h,i)perylene	760	J	440		1300		1600	J	810	

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX1
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0AZ1		E0AZ4		E0AZ5		SBLKZF			
Sampling Location :	SB1		SB4		SB5					
Matrix :	Soil		Soil		Soil		Soil			
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg			
Date Sampled :	04/17/2001		04/17/2001		04/17/2001					
Time Sampled :	14:00		16:55		14:30					
%Moisture :	10		18		12		N/A			
pH :	8.2		8.4		7.9					
Dilution Factor :	1.0		1.0		1.0		1.0			
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	370	U	400	U	380	U	330	U		
Phenol	370	U	400	U	380	U	330	U		
bis-(2-Chloroethyl) ether	370	U	400	U	380	U	330	U		
2-Chlorophenol	370	U	400	U	380	U	330	U		
2-Methylphenol	370	U	400	U	380	U	330	U		
2,2'-oxybis(1-Chloropropane)	370	U	400	U	380	U	330	U		
Acetophenone	370	U	400	U	380	U	330	U		
4-Methylphenol	370	U	400	U	380	U	330	U		
N-Nitroso-di-n-propylamine	370	U	400	U	380	U	330	U		
Hexachloroethane	370	U	400	U	380	U	330	U		
Nitrobenzene	370	U	400	U	380	U	330	U		
Isophorone	370	U	400	U	380	U	330	U		
2-Nitrophenol	370	U	400	U	380	U	330	U		
2,4-Dimethylphenol	370	U	400	U	380	U	330	U		
bis(2-Chloroethoxy)methane	370	U	400	U	380	U	330	U		
2,4-Dichlorophenol	370	U	400	U	380	U	330	U		
Naphthalene	370	U	41	J	180	J	330	U		
4-Chloroaniline	370	U	400	U	380	U	330	U		
Hexachlorobutadiene	370	U	400	U	380	U	330	U		
Caprolactam	370	U	400	U	380	U	330	U		
4-Chloro-3-methylphenol	370	U	400	U	380	U	330	U		
2-Methylnaphthalene	370	U	45	J	190	J	330	U		
Hexachlorocyclopentadiene	370	UJ	400	UJ	380	UJ	330	U		
2,4,6-Trichlorophenol	370	U	400	U	380	U	330	U		
2,4,5-Trichlorophenol	920	U	1000	U	940	U	830	U		
1,1'-Biphenyl	370	U	400	U	380	U	330	U		
2-Chloronaphthalene	370	U	400	U	380	U	330	U		
2-Nitroaniline	920	U	1000	U	940	U	830	U		
Dimethylphthalate	370	U	400	U	380	U	330	U		
2,6-Dinitrotoluene	370	U	400	U	380	U	330	U		
Acenaphthylene	370	U	49	J	380	U	330	U		
3-Nitroaniline	920	U	1000	U	940	U	830	U		
Acenaphthene	370	U	400	U	380	U	330	U		

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX1
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0AZ1		E0AZ4		E0AZ5		SBLKZF			
Sampling Location :	SB1		SB4		SB5					
Matrix :	Soil		Soil		Soil		Soil			
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg			
Date Sampled :	04/17/2001		04/17/2001		04/17/2001					
Time Sampled :	14:00		16:55		14:30					
%Moisture :	10		18		12		N/A			
pH :	8.2		8.4		7.9					
Dilution Factor :	1.0		1.0		1.0		1.0			
Semivolatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	920	UJ	1000	UJ	940	UJ	830	U		
4-Nitrophenol	920	U	1000	U	940	U	830	U		
Dibenzofuran	370	U	400	U	380	U	330	U		
2,4-Dinitrotoluene	370	U	400	U	380	U	330	U		
Diethylphthalate	370	U	400	U	380	U	330	U		
Fluorene	370	U	400	U	380	U	330	U		
4-Chlorophenyl-phenyl ether	370	U	400	U	380	U	330	U		
4-Nitroaniline	920	UJ	1000	UJ	940	UJ	830	U		
4,6-Dinitro-2-methylphenol	920	U	1000	U	940	U	830	U		
N-Nitrosodiphenylamine	370	U	400	U	380	U	330	U		
4-Bromophenyl-phenylether	370	U	400	U	380	U	330	U		
Hexachlorobenzene	370	U	400	U	380	U	330	U		
Atrazine	370	R	400	R	380	R	330	R		
Pentachlorophenol	920	U	1000	U	940	U	830	U		
Phenanthrene	370	U	280	J	56	J	330	U		
Anthracene	370	U	74	J	380	U	330	U		
Carbazole	370	U	400	U	380	U	330	U		
Di-n-butylphthalate	370	U	400	U	380	U	330	U		
Fluoranthene	370	U	410		380	U	330	U		
Pyrene	370	U	360	J	49	J	330	U		
Butylbenzylphthalate	370	U	400	U	380	U	330	U		
3,3'-Dichlorobenzidine	370	U	400	U	380	U	330	U		
Benzo(a)anthracene	370	U	200	J	380	U	330	U		
Chrysene	370	U	200	J	380	U	330	U		
bis(2-Ethylhexyl)phthalate	460	U	510	U	380	U	190	J		
Di-n-octylphthalate	370	U	400	U	380	U	330	U		
Benzo(b)fluoranthene	370	U	200	J	380	U	330	U		
Benzo(k)fluoranthene	370	U	140	J	380	U	330	U		
Benzo(a)pyrene	370	U	170	J	380	U	330	U		
Indeno(1,2,3-cd)pyrene	370	U	110	J	380	U	330	U		
Dibenzo(a,h)anthracene	370	U	48	J	380	U	330	U		
Benzo(g,h,i)perylene	80	J	400	U	380	U	330	U		

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX1
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Number of Soil Samples : 20
Number of Water Samples : 0

Sample Number :	E0AX1		E0AX2		E0AX3		E0AX3MS		E0AX3MSD	
Sampling Location :	SS1		SS2		SS3		SS3		SS3	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :	17:05		16:55		17:15		17:15		17:15	
%Moisture :	16		16		13		13		13	
pH :	8.1		7.8		8.1		8.1		8.1	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
Pesticide/PCB Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
alpha-BHC	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
beta-BHC	2.0	U	1.3	J	2.0	U	2.0	U	2.0	U
delta-BHC	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
gamma-BHC (Lindane)	2.0	U	2.0	U	2.0	U	9.7		13	
Heptachlor	2.0	U	2.0	U	2.0	UJ	10		14	
Aldrin	2.0	U	2.0	U	2.0	U	11		14	
Heptachlor epoxide	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Endosulfan I	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Dieldrin	3.9	U	3.9	U	3.8	U	21		29	
4,4'-DDE	4.3		2.7	J	22		7.1		24	
Endrin	3.9	U	3.9	U	3.8	U	21		28	
Endosulfan II	3.9	U	3.9	U	3.8	U	3.8	U	3.8	U
4,4'-DDD	3.9	U	3.9	U	1.5	J	1.1	J	1.6	J
Endosulfan sulfate	3.9	U	3.9	U	3.8	U	3.8	U	3.8	U
4,4'-DDT	6.4		3.8	J	14	J	29		53	
Methoxychlor	20	U	20	U	20	U	20	U	20	U
Endrin ketone	3.9	U	3.9	U	3.8	U	1.9	J	2.6	J
Endrin aldehyde	3.9	U	3.9	U	3.8	U	3.8	U	3.8	U
alpha-Chlordane	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
gamma-Chlordane	0.57	J	2.0	U	2.0	U	2.0	U	2.0	U
Toxaphene	200	U	200	U	200	U	200	U	200	U
Aroclor-1016	39	U	39	U	38	U	38	U	38	U
Aroclor-1221	80	U	80	U	77	U	77	U	77	U
Aroclor-1232	39	U	39	U	38	U	38	U	38	U
Aroclor-1242	39	U	39	U	38	U	38	U	38	U
Aroclor-1248	39	U	39	U	38	U	38	U	38	U
Aroclor-1254	39	U	39	U	38	U	38	U	38	U
Aroclor-1260	39	U	39	U	38	U	38	U	38	U

DISCLAIMER: This package has been electronically assessed as an added service to our customer. It has not been either validated or approved by Region 5 and any subsequent use by the data user is strictly at the risk of the data user. Region 5 assumes no responsibility for use of unvalidated data.

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX1
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0AX4		E0AX5		E0AX6		E0AX7		E0AX8	
Sampling Location :	SS4		SS5		SS6		SS7		SS8	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	04/17/2001				04/17/2001		04/17/2000		04/17/2001	
Time Sampled :	16:40				15:10		15:00		16:00	
%Moisture :	19		16		17		17		15	
pH :	8.0		8.1		8.2		8.0		8.0	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
Pesticide/PCB Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
alpha-BHC	2.1	UJ	2.0	U	2.1	U	2.1	R	2.0	U
beta-BHC	2.1	UJ	0.72	J	1.1	J	5.2	J	2.4	
delta-BHC	2.1	UJ	2.0	U	2.1	U	2.1	R	2.0	U
gamma-BHC (Lindane)	2.1	UJ	2.0	U	2.1	U	2.1	R	2.0	U
Heptachlor	2.1	UJ	2.0	U	2.1	U	2.1	R	2.0	U
Aldrin	2.1	UJ	2.0	U	2.1	U	2.1	R	2.0	U
Heptachlor epoxide	2.1	UJ	2.0	U	2.1	U	2.1	R	2.0	U
Endosulfan I	2.1	UJ	2.0	U	2.1	U	2.1	R	2.0	U
Dieldrin	4.1	UJ	3.9	U	4.0	U	4.0	R	3.9	U
4,4'-DDE	4.1	UJ	2.9	J	4.0	U	2.8	J	13	
Endrin	4.1	UJ	3.9	U	4.0	U	4.0	R	3.9	U
Endosulfan II	4.1	UJ	3.9	U	4.0	U	4.0	R	3.9	U
4,4'-DDD	4.1	UJ	3.9	U	4.0	U	4.0	R	3.9	U
Endosulfan sulfate	4.1	UJ	3.9	U	4.0	U	4.0	R	3.9	U
4,4'-DDT	4.1	UJ	6.5		4.0	U	5.4	J	11	
Methoxychlor	21	UJ	20	U	20	U	20	R	20	U
Endrin ketone	1.7	J	0.87	J	4.0	U	1.2	J	3.9	U
Endrin aldehyde	1.2	J	3.9	U	4.0	U	1.3	J	3.9	U
alpha-Chlordane	2.1	UJ	2.0	U	2.1	U	2.1	R	2.0	U
gamma-Chlordane	2.1	UJ	2.0	U	2.1	U	2.1	R	0.46	J
Toxaphene	210	UJ	200	U	200	U	200	R	200	U
Aroclor-1016	41	UJ	39	U	40	U	40	R	39	U
Aroclor-1221	83	UJ	80	U	81	U	81	R	79	U
Aroclor-1232	41	UJ	39	U	40	U	40	R	39	U
Aroclor-1242	41	UJ	39	U	40	U	40	R	39	U
Aroclor-1248	41	UJ	39	U	40	U	40	R	39	U
Aroclor-1254	41	UJ	39	U	40	U	40	R	39	U
Aroclor-1260	41	UJ	39	U	40	U	40	R	39	U

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX1
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0AX9		E0AX9DL		E0AY0		E0AY0DL		E0AY1	
Sampling Location :	SS9		SS9		SS10		SS10		SS11	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :	15:45		15:45		15:25		15:25		13:40	
%Moisture :	14		14		18		18		21	
pH :	8.1		8.1		8.1		8.1		7.9	
Dilution Factor :	1.0		2.0		1.0		2.0		1.0	
Pesticide/PCB Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
alpha-BHC	2.0	U	4.0	U	2.1	U	4.2	U	2.2	U
beta-BHC	7.2	J	4.0	U	1.9	J	3.2	J	4.3	
delta-BHC	2.0	U	4.0	U	2.1	U	4.2	U	2.2	U
gamma-BHC (Lindane)	2.0	U	4.0	U	2.1	U	4.2	U	2.2	U
Heptachlor	2.0	U	2.4	J	2.1	U	4.2	U	1.8	J
Aldrin	2.0	U	4.0	U	2.1	U	4.2	U	2.2	U
Heptachlor epoxide	2.0	U	4.0	U	2.1	U	4.2	U	2.2	U
Endosulfan I	2.0	U	4.0	U	2.1	U	4.2	U	2.2	U
Dieldrin	3.8	U	7.7	U	4.0	U	8.1	U	4.2	U
4,4'-DDE	3.8	U	7.7	U	2.9	J	8.1	U	7.0	
Endrin	6.1	J	7.7	U	4.0	U	8.1	U	4.2	U
Endosulfan II	3.8	U	7.7	U	4.0	U	8.1	U	4.2	U
4,4'-DDD	4.8	J	6.8	J	1.9	J	1.1	J	4.2	U
Endosulfan sulfate	3.8	U	7.7	U	4.0	U	0.64	J	4.2	U
4,4'-DDT	11	J	12	J	6.0	J	6.2	J	7.3	
Methoxychlor	20	U	40	U	21	U	41	U	22	U
Endrin ketone	8.7	J	7.7	U	1.3	J	8.1	U	1.4	J
Endrin aldehyde	3.8	U	7.7	U	0.93	J	1.1	J	4.8	
alpha-Chlordane	3.0	J	4.0	U	2.1	U	1.3	J	2.2	U
gamma-Chlordane	2.0	U	4.0	U	2.1	U	0.63	J	1.9	J
Toxaphene	200	U	400	U	210	U	410	U	220	U
Aroclor-1016	38	U	77	U	40	U	80	U	42	U
Aroclor-1221	78	U	160	U	82	U	160	U	85	U
Aroclor-1232	38	U	77	U	40	U	80	U	42	U
Aroclor-1242	38	U	77	U	40	U	80	U	42	U
Aroclor-1248	38	U	77	U	40	U	80	U	42	U
Aroclor-1254	38	U	77	U	40	U	80	U	42	U
Aroclor-1260	38	U	77	U	40	U	80	U	42	U

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX1
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0AY2		E0AY2DL		E0AY3		E0AY4		E0AY4DL	
Sampling Location :	SS12		SS12		SS13		SS14		SS14	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :	14:40		14:40		14:00		14:25		14:25	
%Moisture :	15		15		15		17		17	
pH :	8.0		8.0		8.0		8.1		8.1	
Dilution Factor :	1.0		5.0		1.0		1.0		5.0	
Pesticide/PCB Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
alpha-BHC	2.0	U	10	U	2.0	U	2.1	U	10	U
beta-BHC	2.5	J	6.2	J	2.0	U	7.4	J	13	J
delta-BHC	2.0	U	10	U	2.0	U	2.1	U	10	U
gamma-BHC (Lindane)	2.0	U	10	U	2.0	U	0.61	J	10	U
Heptachlor	0.95	J	10	U	2.0	U	4.2	J	10	U
Aldrin	2.0	U	10	U	2.0	U	2.1	U	10	U
Heptachlor epoxide	2.0	U	10	U	2.0	U	2.1	U	10	U
Endosulfan I	2.0	U	10	U	0.49	J	2.1	U	10	U
Dieldrin	3.9	U	19	U	3.9	U	4.0	U	20	U
4,4'-DDE	5.1	J	19	U	2.2	J	4.0	U	20	U
Endrin	5.4	J	19	U	3.9	U	3.6	J	8.3	J
Endosulfan II	3.9	U	19	U	3.9	U	4.0	U	20	U
4,4'-DDD	3.9	U	1.2	J	3.9	U	3.2	J	20	U
Endosulfan sulfate	3.9	U	19	U	3.9	U	1.4	J	20	U
4,4'-DDT	6.0	J	19	U	2.6	J	5.7	J	7.0	J
Methoxychlor	20	U	15	J	20	U	20	U	13	J
Endrin ketone	5.6	J	3.1	J	3.9	U	4.0	U	7.1	J
Endrin aldehyde	1.2	J	2.5	J	0.82	J	11	J	13	J
alpha-Chlordane	2.0	U	10	U	2.0	U	2.1	U	10	U
gamma-Chlordane	0.78	J	0.74	J	0.62	J	2.4	J	0.79	J
Toxaphene	200	U	1000	U	200	U	200	U	1000	U
Aroclor-1016	39	U	190	U	39	U	40	U	200	U
Aroclor-1221	79	U	390	U	79	U	81	U	400	U
Aroclor-1232	39	U	190	U	39	U	40	U	200	U
Aroclor-1242	39	U	190	U	39	U	40	U	200	U
Aroclor-1248	39	U	190	U	39	U	40	U	200	U
Aroclor-1254	39	U	190	U	39	U	40	U	200	U
Aroclor-1260	39	U	190	U	39	U	40	U	200	U

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX1
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0AY5		E0AY6		E0AY7		E0AZ1		E0AZ4	
Sampling Location :	SS15		SS16		SS17		SB1		SB4	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :			14:10		14:40		14:00		16:55	
%Moisture :	14		17		14		10		18	
pH :	8.2		8.2		8.9		8.2		8.4	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
Pesticide/PCB Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
alpha-BHC	2.0	U	2.1	U	2.0	U	1.9	U	2.1	U
beta-BHC	2.0	U	2.0	J	2.1		1.9	U	2.1	U
delta-BHC	2.0	U	2.1	U	2.0	U	1.9	U	2.1	U
gamma-BHC (Lindane)	2.0	U	2.1	U	2.0	U	1.9	U	2.1	U
Heptachlor	2.0	U	2.1	U	2.0	U	1.9	U	2.1	U
Aldrin	2.0	U	2.1	U	2.0	U	1.9	U	2.1	U
Heptachlor epoxide	2.0	U	0.71	J	2.0	U	1.9	U	2.1	U
Endosulfan I	2.0	U	2.1	U	2.0	U	1.9	U	2.1	U
Dieldrin	3.8	U	4.0	U	3.8	U	3.7	U	4.0	U
4,4'-DDE	3.8	U	4.9		12		3.7	U	1.7	J
Endrin	3.8	U	4.0	U	3.8	U	3.7	U	4.0	U
Endosulfan II	3.8	U	4.0	U	3.8	U	3.7	U	4.0	U
4,4'-DDD	3.8	U	4.0	U	1.3	J	3.7	U	4.0	U
Endosulfan sulfate	3.8	U	4.0	U	3.8	U	3.7	U	4.0	U
4,4'-DDT	2.2	J	7.5		20		3.7	U	4.1	
Methoxychlor	20	U	20	U	20	U	19	U	21	U
Endrin ketone	3.8	U	1.4	J	3.8	U	3.7	U	4.0	U
Endrin aldehyde	3.8	U	1.8	J	1.1	J	3.7	U	4.0	U
alpha-Chlordane	2.0	U	3.3		2.0	U	1.9	U	2.1	U
gamma-Chlordane	2.0	U	1.9	J	0.75	J	1.9	U	0.46	J
Toxaphene	200	U	200	U	200	U	190	U	210	U
Aroclor-1016	38	U	40	U	38	U	37	U	40	U
Aroclor-1221	78	U	81	U	78	U	74	U	82	U
Aroclor-1232	38	U	40	U	38	U	37	U	40	U
Aroclor-1242	38	U	40	U	38	U	37	U	40	U
Aroclor-1248	38	U	40	U	38	U	37	U	40	U
Aroclor-1254	38	U	40	U	38	U	37	U	40	U
Aroclor-1260	38	U	40	U	38	U	37	U	40	U

Analytical Results (Qualified Data)

Case #: 29167 SDG : E0AX1
Site : 6540 HASTING STREET
Lab. : LIBRTY
Reviewer :
Date :

Sample Number :	E0AZ5		PBLKAG							
Sampling Location :	SB5									
Matrix :	Soil		Soil							
Units :	ug/Kg		ug/Kg							
Date Sampled :	04/17/2001									
Time Sampled :	14:30									
%Moisture :	12		N/A							
pH :	7.9									
Dilution Factor :	1.0		1.0							
Pesticide/PCB Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
alpha-BHC	1.9	U	1.7	U						
beta-BHC	1.9	U	1.7	U						
delta-BHC	1.9	U	1.7	U						
gamma-BHC (Lindane)	1.9	U	1.7	U						
Heptachlor	1.9	U	1.7	U						
Aldrin	1.9	U	1.7	U						
Heptachlor epoxide	1.9	U	1.7	U						
Endosulfan I	0.43	J	1.7	U						
Dieldrin	3.8	U	3.3	U						
4,4'-DDE	3.8	U	3.3	U						
Endrin	3.8	U	3.3	U						
Endosulfan II	3.8	U	3.3	U						
4,4'-DDD	3.8	U	3.3	U						
Endosulfan sulfate	3.8	U	3.3	U						
4,4'-DDT	3.8	U	3.3	U						
Methoxychlor	19	U	17	U						
Endrin ketone	3.8	U	3.3	U						
Endrin aldehyde	3.8	U	3.3	U						
alpha-Chlordane	1.9	U	1.7	U						
gamma-Chlordane	1.9	U	1.7	U						
Toxaphene	190	U	170	U						
Aroclor-1016	38	U	33	U						
Aroclor-1221	76	U	67	U						
Aroclor-1232	38	U	33	U						
Aroclor-1242	38	U	33	U						
Aroclor-1248	38	U	33	U						
Aroclor-1254	38	U	33	U						
Aroclor-1260	38	U	33	U						

Regional Transmittal Form

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE:

SUBJECT: Review of Data
Received for Review on 5-1-01

FROM: Stephen L. Ostrodka, Chief (SMF-4J)
Superfund Field Services Section

TO: Data User: MDEQ

We have reviewed the data for the following case:

SITE NAME: 6540 Hasting St. (MI)

CASE NUMBER: 29167 SDG NUMBER: EOAX1

Number and Type of Samples: 20 (Soils)

Sample Numbers: EOAX1-9, EOAY0-7, EOAZ1, EOAZ4-5

Laboratory: Compuchem Hrs for Review:

Following are our findings:

CC: Cecilia Moore
Region 5 TPO
Mail Code: SM-5J

USEPA Contract Laboratory Program
Organic Traffic Report

9:50

Case No:	29167
DAS No:	
SDG No:	E0AX0; E0AX1, E0AZ3

Date Shipped: 4/17/01 Carrier Name: UPS Airbill: 1Z5490W42210061202 Shipped to: Liberty Analytical 501 Madison Avenue Cary NC 27513 (919) 379-4080	Date Received/Received by: 4/18/01 Alice Evans Lab Contract No: 68W99020 Unit Price: 467 Transfer To: Date Received/Received By: Lab Contract No: Price:	Sampler (Signature): Teresa Ducsay Relinquished By: Teresa Ducsay Relinquished By: Relinquished By:	Date / Time: 4/17/01 18:30 Date / Time: 4/18/01 0950 Date / Time:
			Received By: Received By: Alice Evans Received By:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
E0AX0	Field QC/ Teresa Ducsay	/G	BNA/P/PCB (21), VOA (21)	5-02 (Ice Only), 5-03 (Ice Only), 5-05 (HCL), 5-06 (HCL) (4)	FB1	4/17/01 14:05	ME0AX0	Good SDG Final Sa
E0AZ1	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-041 (Ice Only) (1)	SB1	4/17/01 14:00	ME0AZ1	
E0AZ2 Rec. 4/20/01	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-043 (Ice Only) (1)	SB2	4/17/01 17:55	ME0AZ2	(sample not in cooler) SDG Final Sampl Good
E0AZ3	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-045 (Ice Only) (1)	SB3	4/17/01 16:30	ME0AZ3	
E0AZ4	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-04[illegible] (Ice Only) (1)	SB4	4/17/01 16:55 4/17/01 [illegible]	ME0AZ[illegible]	
E0AZ5	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-049 (Ice Only) (1)	SB5	4/17/01 14:30	ME0AZ5	SDG Final Sampl
E0AZ6	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-051 (Ice Only) (1)	SB6	4/17/01 17:15	ME0AZ6	
E0AZ7	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-053 (Ice Only) (1)	SB7	4/17/01 17:40	ME0AZ7	
E0AZ8	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-055 (Ice Only) (1)	SB8	4/17/01 15:00	ME0AZ8	
E0AZ9	Subsurface Soil (>12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-057 (Ice Only) (1)	SB9	4/17/01 17:30	ME0AZ9	

LABORATORY COPY

COPY
ORIGINAL DOCUMENTS INCLUDED IN CSF- E0AX
SIGNATURE [signature] DATE 4/18/01

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC: E0AZ3	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt: 4°	Chain of Custody Seal Number: 25631, 25632
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G		Custody Seal Intact? Y Shipment Iced? Y

BNA/P/PCB = CLP SVOA/Pest/PCB - water, BNA/PS/PCB = CLP SVOA/Pest/PCB - soil, VOA = CLP Volatiles - water

PR provides preliminary results. Requests for preliminary resuls will increase analytical costs.
Send Copy to: Contract Laboratory Analytical Services Support, 2000 Edmund Halley Dr., Reston, VA. 20191-3436 Phone 703/264-9348 Fax 703/264-9222

TR Number: 5-591003426-041601-0003

USEPA Contract Laboratory Program
Organic Traffic Report

9:50

Case No:	29167
DAS No:	
SDG No:	E0AX1

L

Date Shipped: 4/17/01	Date Received/Received by: 4/18/01 Alice Evans	Sampler (Signature): Teresa Ducsay	
Carrier Name: UPS	Lab Contract No: 68W79070 Unit Price: $46.7	Relinquished By: Teresa Ducsay	Date / Time: 4/17/01 18:10	Received By:
Airbill: 1Z5490W42210061211	Transfer To:	Relinquished By:	Date / Time: 4/18/01 0950	Received By: Alice Evans
Shipped to: Liberty Analytical, 501 Madison Avenue, Cary NC 27513, (919) 379-4080	Date Received/Received By:	Relinquished By:	Date / Time:	Received By:
	Lab Contract No: Price:			

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
E0AX1	Surface Soil (0"-12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-07 (Ice Only) (1)	SS1	4/17/01 17:05	ME0AX1	Good
E0AX2	Surface Soil (0"-12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-09 (Ice Only) (1)	SS2	4/17/01 16:55	ME0AX2	
E0AX3	Surface Soil (0"-12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-011 (Ice Only) (1)	SS3	4/17/01 17:15	ME0AX3	
E0AX4	Surface Soil (0"-12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-013 (Ice Only) (1)	SS4	4/17/01 16:40	ME0AX4	
E0AX5	Surface Soil (0"-12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-01[illegible] (Ice Only) (1)	SS5	4/1[illegible]/01 16:3[illegible]	ME[illegible]	
E0AX6	Surface Soil (0"-12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-017 (Ice Only) (1)	SS6	4/17/01 15:10	ME0AX6	
E0AX7	Surface Soil (0"-12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-019 (Ice Only) (1)	SS7	4/17/01 15:00	ME0AX7	
E0AX8	Surface Soil (0"-12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-021 (Ice Only) (1)	SS8	4/17/01 16:00	ME0AX8	
E0AX9	Surface Soil (0"-12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-023 (Ice Only) (1)	SS9	4/17/01 15:45	ME0AX9	
E0AY0	Surface Soil (0"-12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-025 (Ice Only) (1)	SS10	4/17/01 15:25	ME0AY0	

LABORATORY COPY

ORIGINAL

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: E0AX3	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt: 4°	Chain of Custody Seal Number: 25633, 25634
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G		Custody Seal Intact? Y Shipment Iced? Y
BNA/PS/PCB = CLP SVOA/Pest/PCB - soil				

PR provides preliminary results. Requests for preliminary resuls will increase analytical costs.
Send Copy to: Contract Laboratory Analytical Services Support, 2000 Edmund Halley Dr., Reston, VA. 20191-3436 Phone 703/264-9348 Fax 703/264-9222

19

USEPA Contract Laboratory Program
Organic Traffic Report

9:50

Case No:	29167
DAS No:	
SDG No:	EOAX1

L

20

Date Shipped: 4/17/01	Date Received/Received by: 4/18/01 Alice Evans	Sampler (Signature): Teresa Ducsay	
Carrier Name: UPS	Lab Contract No: 68W99070 Unit Price: 467		
Airbill: 1Z5490W42210061211		Relinquished By: Teresa Ducsay	Date/Time: 4/17/01 18:10 / Received By:
Shipped to: Liberty Analytical, 501 Madison Avenue, Cary NC 27513, (919) 379-4080	Transfer To:	Relinquished By:	Date/Time: 4/18/01 0950 / Received By: Alice Evans
	Date Received/Received By:	Relinquished By:	Date / Time: / Received By:
	Lab Contract No: Price:		

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
E0AY1	Surface Soil (0"-12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-027 (Ice Only) (1)	SS11	4/17/01 13:40	ME0AY1	Good
E0AY2	Surface Soil (0"-12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-029 (Ice Only) (1)	SS12	4/17/01 14:40	ME0AY2	
E0AY3	Surface Soil (0"-12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-031 (Ice Only) (1)	SS13	4/17/01 14:00	ME0AY3	
E0AY4	Surface Soil (0"-12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-033 (Ice Only) (1)	SS14	4/17/01 14:25	ME0AY4	
E0AY5	Surface Soil (0"-12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-035 (Ice Only) (1)	SS15	4/17/01 14:0[illegible]	ME0AY[illegible]	
E0AY6	Surface Soil (0"-12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-037 (Ice Only) (1)	SS16	4/17/01 14:10	ME0AY6	
E0AY7	Surface Soil (0"-12")/ Teresa Ducsay	/G	BNA/PS/PCB (21)	5-039 (Ice Only) (1)	SS17	4/17/01 14:40	ME0AY7	

LABORATORY COPY

ORIGINAL

Shipment for Case Complete?N	Sample(s) to be used for laboratory QC: EOAX3	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt: 4°	Chain of Custody Seal Number: 25633, 25634
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G		Custody Seal Intact? Y / Shipment Iced? Y
BNA/PS/PCB = CLP SVOA/Pest/PCB - soil				

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Contract Laboratory Analytical Services Support, 2000 Edmund Halley Dr., Reston, VA. 20191-3436 Phone 703/264-9348 Fax 703/264-9222

COMPUCHEM
A division of Liberty Analytical Corporation
501 Madison Ave.
Cary, NC 27513

SDG NARRATIVE

CASE #29167
SDG #E0AX1
CONTRACT #68W99070

SAMPLE IDENTIFICATIONS:

E0AX1 E0AX2 E0AX3 E0AX4 E0AX5 E0AX6 E0AX7 E0AX8 E0AX9 E0AY0
E0AY1 E0AY2 E0AY3 E0AY4 E0AY5 E0AY6 E0AY7 E0AZ1 E0AZ4 E0AZ5

The twenty (20) soil samples listed above were received intact, properly refrigerated, with proper documentation, in a sealed shipping container, on April 18, 2001. The temperature of the samples at the time of receipt was 4°C. The samples were scheduled for the requested analyses of the semivolatile and pesticide/PCB fractions. These samples were analyzed following the current EPA Contract for the Laboratory Program, Document number OLM04.2.

All pertinent Quality Assurance notices are included in the narrative section and all pertinent Laboratory notices are included in the sample data sections.

SEMIVOLATILE
The semivolatile fractions were extracted and analyzed within the required holding time. The percent moisture values for the samples ranged from 10% to 21% and the pH values ranged from 7.8 to 8.9.

One to nineteen Target Compound List (TCL) analytes were detected with concentrations above the Contract Required Quantitation Limit (CRQL) in eighteen of the samples. These analytes were fluoranthene, phenanthrene, anthracene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene, bis(2-ethylhexyl)phthalate, fluorene, naphthalene, acenaphthene, dibenzofuran, carbazole, 4-methylphenol and 2-methylnaphthalene.

Three to thirty-one Tentatively Identified Compounds (TIC) were detected in the samples. Many of these TICs were assessed as unknowns, substituted naphthalene, PAHs, amides, thiophenes, acid esters, hexadecanoic acid, substituted benzenes, carboxylic acids, benzeneacetic acid and phthalates. Other TICs were detected and assessed as unknown alkanes in some of the samples. The TICs that were characterized as alkanes have been summarized on the Alkane Narrative Report that is located in the narrative section of the data package. The TIC spectra for the alkanes are located in the data section for the individual samples.

In the analyses of E0AX4, E0AX6, E0AX7, E0AX8, E0AX9, E0AY0, E0AY2, E0AY4 and E0AY6, one or more TICs were assessed as TCL analytes. However, the retention times of these

TICs did not compare well to the analyte retention times in the associated Continuing Calibration standard. In accordance with the EPA CLP Statement of Work, Document number OLM04.2, TICs at or above 85% purity should be assessed as the compound [page D-46/SVOA; section 11.1.2.5.6].

In the initial undiluted analyses of E0AX4, E0AX7, E0AX9 and E0AY0, the on-column amounts of one or more analytes exceeded the instrument's analytical range as defined by the highest concentration level of the Initial Calibration. The samples were reanalyzed diluted in order to bring the on-column amounts into range. The undiluted and diluted analyses of the samples have been reported and billed for.

Due to the results of a screen analysis, E0AY2 was analyzed at a 4x dilution. The screen Reconstructed Ion Chromatogram (RIC) and quantitation report is included in the section denoted as 'Screening Records', which is part of the 'Miscellaneous Data' section of the CSF package.

Due to the appearance of the sample extracts, E0AY4 and E0AY6 were initially analyzed at 3x dilutions. In these initial diluted analyses, the on-column amounts of one or more analytes exceeded the instrument's analytical range as defined by the highest concentration level of the Initial Calibration. The samples were reanalyzed at higher dilutions in order to bring the on-column amounts into range. The two diluted analyses of the two samples have been reported and billed for.

QC SUMMARY

All decafluorotriphenylphosphine (DFTPP) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG.

The surrogates met recovery criteria for the semivolatile fractions, with some exceptions. The recoveries of the advisory surrogate 1,2-dichlorobenzene-d4 were flagged as outliers in E0AX2, E0AX6 and E0AX8.

The internal standards met area response and retention time criteria.

E0AX3 was used as the original to prepare the duplicate matrix spikes as requested. The duplicate matrix spikes met accuracy and precision criteria.

The associated blanks met Quality Control criteria.

In the analyses of the Initial and Continuing Calibration standards and all of the samples except E0AX3 and E0AZ1, manual quantitations were performed. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

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

following signature:

Patricia B. Hopkins
Data Analyst II
27 April 2001

Note: This report is paginated for reference and accountability in numerical sequence.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: May 14, 2001

SUBJECT: Review of Data
Received for Review on May 10, 2001

FROM: Stephen L. Ostrodka, Chief (SMF-4J)
Superfund Field Services Section

TO: Data User: MDEQ

The data in this case has not been validated.
We have compiled the CADRE files into a narrative format for the following case:

SITE NAME: 6540 Hasting St.

CASE NUMBER: 29167 SDG NUMBER: ME0AX0

Number and Type of Samples: 20 soils

Sample Numbers: ME0AX0-9; ME0AY0-7

Laboratory: Chemtech Hrs. for Review: 2

Following are our findings:

CC: Cecilia Moore
Region 5 TPO
Mail Code: SM-5J

RECEIVED
MAY 17 2001
ERD-SUPERFUND

Case Number : 29167
Site Name: 6540 Hasting St.

SDG Number: ME0AX0
Laboratory: Chemtech

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

NUMBER (##) MATRIX samples numbered ##, were collected on DATE. The lab received the samples on DATE in good condition. All samples were analyze for metals and cyanide. All samples were analyzed using CLP SOW ILM04.1 analysis procedures.

Mercury analysis was performed using a Cold Vapor AA Technique. Cyanide analysis was performed using the MIDI Distillation procedure. The remaining inorganic analyses were performed using an Inductively Coupled Plasma-Atomic Emission Spectrometric procedure.

Assembled By: ESAT
Date: May 14, 2001

Case Number : 29167
Site Name: 6540 Hasting St.

SDG Number: ME0AX0
Laboratory: Chemtech

1. HOLDING TIME:

Holding Time Report

SDG NO: ME0AX0

HOLDING TIME CRITERIA

Inorganic

	-- Holding Time --		------- pH -------	
	Primary	Expanded	Primary	Expanded
Metals	180	0	2.0	0.0
Mercury	28	0	2.0	0.0
Cyanide	14	0	12.0	0.0

DC-271: The following inorganic samples had no sampling date. Qualification was performed using the Verified Time of Sample Receipt (VTSR). Hits and non-detects are not flagged.

ME0AX5, ME0AY5

DC-275: The inorganic cyanide samples exceeded holding time criteria > 14 days. Results are biased low. The cyanide results greater than the IDL are estimated "J" due to unknown bias; the results below the IDL are unusable "R".

ME0AX0, ME0AY4

DC-280: The following inorganic soil samples were reviewed for holding time violations using criteria developed for water samples.

ME0AX1, ME0AX2, ME0AX3, ME0AX3D, ME0AX3S, ME0AX4
ME0AX5, ME0AX6, ME0AX7, ME0AX8, ME0AX9, ME0AY0
ME0AY1, ME0AY2, ME0AY3, ME0AY4, ME0AY5, ME0AY6
ME0AY7, ME0AZ1, ME0AZ2

2. CALIBRATIONS:

Calibration Report

SDG NO: ME0AX0

CALIBRATION CRITERIA

Inorganic

Assembled By: ESAT
Date: May 14, 2001

Case Number : 29167
Site Name: 6540 Hasting St.

SDG Number: ME0AX0
Laboratory: Chemtech

Percent Recovery Limits

	--- Primary ---		-- Expanded ---	
	Low	High	Low	High
Cyanide	85.00	115.00	70.00	130.00
AA	90.00	110.00	75.00	125.00
ICP	90.00	110.00	75.00	125.00
Mercury	80.00	120.00	65.00	135.00

No problems found for this qualification.

CRDL Standards Report

SDG NO: ME0AX0

DC-373: The following inorganic samples are associated with a CRDL standard with low percent recovery.

Selenium
ME0AX0, ME0AX3, ME0AY4, ME0AY5, ME0AY6, ME0AY7
ME0AZ1, ME0AZ2, PBW04

Thallium
ME0AX0, ME0AX1, ME0AX2, ME0AX3, ME0AX4, ME0AX5
ME0AX6, ME0AX7, ME0AX8, ME0AX9, ME0AY0, ME0AY1
ME0AY2, ME0AY3, ME0AY4, ME0AY5, ME0AY6, ME0AY7
ME0AZ1, ME0AZ2, PBS04, PBW04

DC-374: The following inorganic samples are associated with a CRDL standard with high percent recovery.
Hits and non-detects are flagged .

Copper
ME0AX0, ME0AX1, ME0AX2, ME0AX3, ME0AX4, ME0AX5
ME0AX6, ME0AX7, ME0AX8, ME0AX9, ME0AY0, ME0AY1
ME0AY2, ME0AY3, ME0AY4, ME0AY5, ME0AY6, ME0AY7
ME0AZ1, ME0AZ2, PBS04, PBW04

Lead
ME0AX0, ME0AX1, ME0AX2, ME0AX3, ME0AX4, ME0AX5
ME0AX6, ME0AX7, ME0AX8, ME0AX9, ME0AY0, ME0AY1
ME0AY2, ME0AY3, ME0AY4, ME0AY5, ME0AY6, ME0AY7
ME0AZ1, ME0AZ2, PBS04, PBW04

Mercury
ME0AX1, ME0AX2, ME0AX3, ME0AX4, ME0AX5, ME0AX6
ME0AX7, ME0AX8, ME0AX9, ME0AY0, ME0AY1, ME0AY2
ME0AY3, ME0AY4, ME0AY5, ME0AY6, ME0AY7, ME0AZ1
ME0AZ2, PBS02

Selenium
ME0AX0, ME0AX1, ME0AX2, ME0AX3, ME0AX4, ME0AX5
ME0AX6, ME0AX7, ME0AX8, ME0AX9, ME0AY0, ME0AY1
ME0AY2, ME0AY3, ME0AY4, ME0AY5, ME0AY6, ME0AY7
ME0AZ1, ME0AZ2, PBS04, PBW04

Zinc
ME0AX0, ME0AX1, ME0AX2, ME0AX3, ME0AX4, ME0AX5

Assembled By: ESAT
Date: May 14, 2001

Case Number : 29167
Site Name: 6540 Hasting St.

SDG Number: ME0AX0
Laboratory: Chemtech

ME0AX6, ME0AX7, ME0AX8, ME0AX9, ME0AY0, ME0AY1
ME0AY2, ME0AY3, ME0AY4, ME0AY5, ME0AY6, ME0AY7
ME0AZ1, ME0AZ2, PBS04, PBW04

3. BLANKS:

Laboratory Blanks Report

SDG NO: ME0AX0

LABORATORY BLANKS CRITERIA

DC-283: The following inorganic samples are associated with a blank analyte with negative concentration whose absolute value is greater than the instrument detection limit (IDL). Professional judgement should be used to qualify the data.

ME0AX0
Potassium, Zinc

ME0AX1
Arsenic

ME0AX2
Arsenic

ME0AX3
Lead, Potassium

ME0AX3D
Lead, Potassium

ME0AX3S
Lead

ME0AX4
Arsenic

ME0AX5
Arsenic

ME0AX6
Arsenic

ME0AX7
Arsenic, Potassium

ME0AX8
Arsenic, Potassium

ME0AX9
Arsenic, Potassium

ME0AY0
Arsenic, Potassium

ME0AY1
Arsenic, Potassium

Assembled By: ESAT
Date: May 14, 2001

ME0AY2
Arsenic, Potassium

ME0AY3
Arsenic, Potassium

ME0AY4
Potassium, Zinc

ME0AY5
Potassium

ME0AY6
Potassium

ME0AY7
Lead, Potassium

ME0AZ1
Lead, Potassium

ME0AZ2
Potassium

DC-284: The following inorganic samples are associated with a blank concentration which is greater than the instrument detection limit (IDL). The sample concentration is also greater than the IDL and less than five times the blank concentration. Hits are qualified "J"; non-detects are not flagged.

Aluminum
ME0AX0

Barium
ME0AX0

Cadmium
ME0AX3, ME0AX3D, ME0AX4, ME0AX5, ME0AX6, ME0AX8
ME0AY0, ME0AY5, ME0AZ1

Calcium
ME0AX0

Magnesium
ME0AX0

Manganese
ME0AX0, ME0AX3A

Silver
ME0AX2, ME0AX9, ME0AY0, ME0AY6, ME0AY7, ME0AZ2

DC-338: During review of the following inorganic samples, the reported IDL/default CRDL value was used for cyanide.

ME0AX0, ME0AX1, ME0AX2, ME0AX3, ME0AX3D, ME0AX3S
ME0AX4, ME0AX5, ME0AX6, ME0AX7, ME0AX8, ME0AX9
ME0AY0, ME0AY1, ME0AY2, ME0AY3, ME0AY4, ME0AY5
ME0AY6, ME0AY7, ME0AZ1, ME0AZ2

4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE AND LAB CONTROL SAMPLE:

Assembled By: ESAT
Date: May 14, 2001

Case Number : 29167
Site Name: 6540 Hasting St.

SDG Number: ME0AX0
Laboratory: Chemtech

Matrix Spike Report

SDG NO: ME0AX0

MATRIX SPIKE CRITERIA

Inorganic

Percent Recovery Limits

Upper	125.0
Lower	75.0
Extreme lower	30.0

DC-267: The following inorganic samples are associated with a matrix spike recovery which is high (>125%)
Hits are qualified "J" and non-detects are not flagged.

Selenium
ME0AX1, ME0AX3A

DC-268: The following inorganic samples are associated with a matrix spike recovery which is low (30-74 %) indicating that sample results may be biased low.
Hits are qualified "J" and non-detects are qualified "UJ".

Antimony
ME0AX1, ME0AX2, ME0AX3, ME0AX3A, ME0AX3D, ME0AX4
ME0AX5, ME0AX6, ME0AX7, ME0AX8, ME0AX9, ME0AY0
ME0AY1, ME0AY2, ME0AY3, ME0AY4, ME0AY5, ME0AY6
ME0AY7, ME0AZ1, ME0AZ2

Manganese
ME0AX1, ME0AX2, ME0AX3, ME0AX3A, ME0AX3D, ME0AX4
ME0AX5, ME0AX6, ME0AX7, ME0AX8, ME0AX9, ME0AY0
ME0AY1, ME0AY2, ME0AY3, ME0AY4, ME0AY5, ME0AY6
ME0AY7, ME0AZ1, ME0AZ2

Silver
ME0AX1, ME0AX2, ME0AX3, ME0AX3D, ME0AX4, ME0AX5
ME0AX6, ME0AX7, ME0AX8, ME0AX9, ME0AY0, ME0AY1
ME0AY2, ME0AY3, ME0AY4, ME0AY5, ME0AY6, ME0AY7
ME0AZ1, ME0AZ2

DC-269: The following inorganic samples are associated with a matrix spike recovery which is extremely low (<30 %) indicating that sa mple results may be biased low.
Hits are qualified "J" and non-detects are qualified "R".

Mercury
ME0AX1, ME0AX2, ME0AX3, ME0AX3D, ME0AX4, ME0AX5
ME0AX6, ME0AX7, ME0AX8, ME0AX9, ME0AY0, ME0AY1
ME0AY2, ME0AY3, ME0AY4, ME0AY5, ME0AY6, ME0AY7
ME0AZ1, ME0AZ2

Assembled By: ESAT
Date: May 14, 2001

Case Number : 29167
Site Name: 6540 Hasting St.

SDG Number: ME0AX0
Laboratory: Chemtech

LCS Report

SDG NO: ME0AX0

No problems found for this qualification.

5. LABORATORY AND FIELD DUPLICATE

Duplicates Report

SDG NO: ME0AX0

DC-256: The following inorganic samples are associated with duplicate results which did not meet relative percent difference (RPD) criteria.
Hits are qualified "J" and non-detects are qualified "UJ".

Lead
ME0AX1, ME0AX2, ME0AX3, ME0AX3S, ME0AX4, ME0AX5
ME0AX6, ME0AX7, ME0AX8, ME0AX9, ME0AY0, ME0AY1
ME0AY2, ME0AY3, ME0AY4, ME0AY5, ME0AY6, ME0AY7
ME0AZ1, ME0AZ2

6. ICP ANALYSIS

ICS Report

SDG NO: ME0AX0

DC-312: The following inorganic samples have elements other than Al, Ca, Fe, and Mg at concentrations higher than 10 ppm that may cause potential interference.
Hits are flagged "J" and non-detects are qualified "UJ".

Manganese
ME0AY7

DC-313: The results >IDL are obvserved for elements which are not present in the ICS, the possibility of false positives exists. The hits are qualified as estimated (J).

Sodium
ME0AX3, ME0AX6, ME0AZ1

Serial Dilution Report

SDG NO: ME0AX0

Assembled By: ESAT
Date: May 14, 2001

Case Number : 29167
Site Name: 6540 Hasting St.

SDG Number: ME0AX0
Laboratory: Chemtech

DC-294: The analyte concentration is high (>50 X the IDL) and serial dilution percent difference is not in criteria (>10%). Hits are qualified "J" and non-detects are qualified "UJ".

Potassium
ME0AX1, ME0AX2, ME0AX3, ME0AX3D, ME0AX4, ME0AX5
ME0AX6, ME0AX7, ME0AX8, ME0AX9, ME0AY0, ME0AY1
ME0AY2, ME0AY3, ME0AY4, ME0AY5, ME0AY6, ME0AY7
ME0AZ1, ME0AZ2

7. GFAA ANALYSIS

Furnace AA QC Report

SDG NO: ME0AX0

No problems found for this qualification.

8. SAMPLE RESULTS

All data, except those qualified above, are acceptable.

Sample Result Verification Report

SDG NO: ME0AX0

No problems found for this qualification.

Assembled By: ESAT
Date: May 14, 2001

CADRE Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the action limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The data are unusable. (The compound may or may not be present)

Analytical Results (Qualified Data)

Case #: 29167 SDG : ME0AX0

Site : 6540 HASTING STREET

Lab. : CHEMED

Reviewer :

Date :

Number of Soil Samples : 19

Number of Water Samples : 1

Sample Number :	ME0AX1		ME0AX2		ME0AX3		ME0AX4		ME0AX5	
Sampling Location :	SS1		SS2		SS3		SS4		SS5	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001			
Time Sampled :	17:05		16:55		17:15		16:40			
%Solids :	82.3		82.9		88.9		84.8		84.8	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	10400		10700		6810		5690		7080	
ANTIMONY	2.4	UJ	2.3	UJ	2.2	UJ	2.3	UJ	2.3	UJ
ARSENIC	11.8		8.6		8.1		8.6		8.4	
BARIUM	340		115		42.9		108		74.8	
BERYLLIUM	0.77		0.61		0.45		0.47		0.49	
CADMIUM	2.6		1.2		0.52	J	0.73	J	0.59	J
CALCIUM	25200		39200		48400		33500		45000	
CHROMIUM	30.5		22.0		14.4		15.1		15.7	
COBALT	9.4		8.8		7.9		6.6		6.7	
COPPER	200		119		15.0		32.2		30.9	
IRON	23100		20300		17700		14100		16900	
LEAD	589	J	155	J	19.6	J	134	J	86.3	J
MAGNESIUM	8170		13800		14700		10600		16000	
MANGANESE	386	J	387	J	388	J	351	J	301	J
MERCURY	0.72	J	0.59	J	0.16	J	0.67	J	0.16	J
NICKEL	26.9		27.9		18.0		17.3		18.7	
POTASSIUM	1490	J	2140	J	1140	J	834	J	1300	J
SELENIUM	1.2	J	1.1	U	1.1	U	1.1	U	1.1	U
SILVER	8.8	J	2.1	J	0.45	UJ	0.46	UJ	0.47	UJ
SODIUM	486		276		102	J	187		201	
THALLIUM	1.7	U	1.6	U	1.6	U	1.6	U	1.6	U
VANADIUM	30.2		29.4		23.2		18.2		21.2	
ZINC	492		233		62.2		147		239	
CYANIDE	0.27	U	0.27	U	0.25	U	0.26	U	0.27	U

DISCLAIMER: This package has been electronically assessed as an added service to our customer. It has not been either validated or approved by Region 5 and any subsequent use by the data user is strictly at the risk of the data user. Region 5 assumes no responsibility for use of unvalidated data.

Analytical Results (Qualified Data)

Case #: 29167 SDG : ME0AX0
Site : 6540 HASTING STREET
Lab. : CHEMED
Reviewer :
Date :

Sample Number :	ME0AX6		ME0AX7		ME0AX8		ME0AX9		ME0AY0	
Sampling Location :	SS6		SS7		SS8		SS9		SS10	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :	15:10		15:00		16:00		15:45		15:25	
%Solids :	81.5		80.3		85.3		84.5		81.1	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	11100		8300		7070		5190		8360	
ANTIMONY	2.4	UJ	2.5	UJ	2.3	UJ	2.3	UJ	2.4	UJ
ARSENIC	9.0		11.0		7.3		8.3		8.1	
BARIUM	84.7		252		41.7		126		118	
BERYLLIUM	0.67		0.67		0.43		0.49		0.59	
CADMIUM	0.53	J	2.4		0.35	J	1.1		0.81	J
CALCIUM	20400		29600		51200		27900		35200	
CHROMIUM	20.8		28.9		14.0		15.1		18.4	
COBALT	11.0		8.1		6.8		6.5		7.6	
COPPER	33.1		123		15.8		143		56.3	
IRON	23600		20900		16100		14500		18900	
LEAD	55.9	J	407	J	17.2	J	244	J	123	J
MAGNESIUM	8320		7530		18300		7530		15600	
MANGANESE	381	J	352	J	339	J	301	J	321	J
MERCURY	0.12	R	0.95	J	0.11	J	1.2	J	0.36	J
NICKEL	24.3		26.6		17.0		29.0		22.4	
POTASSIUM	1690	J	1170	J	1100	J	630	J	1300	J
SELENIUM	1.2	U	1.2	U	1.1	U	1.1	U	1.2	U
SILVER	0.49	UJ	5.6	J	0.46	UJ	0.64	J	0.78	J
SODIUM	115	J	388		188		244		258	
THALLIUM	1.7	U	1.7	U	1.6	U	1.6	U	1.7	U
VANADIUM	32.4		23.5		21.2		19.1		24.0	
ZINC	100		602		54.1		323		179	
CYANIDE	0.27	U	0.34		0.42		0.27	U	0.27	U

Analytical Results (Qualified Data)

Case #: 29167 SDG : ME0AX0
Site : 6540 HASTING STREET
Lab. : CHEMED
Reviewer :
Date :

Sample Number :	ME0AY1		ME0AY2		ME0AY3		ME0AY4		ME0AY5	
Sampling Location :	SS11		SS12		SS13		SS14		SS15	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001			
Time Sampled :	13:40		14:40		14:00		14:25			
%Solids :	79.9		83.8		83.7		85.3		85.3	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	6690		6150		7940		7210		7330	
ANTIMONY	2.5	UJ	2.5	J	2.4	UJ	2.3	UJ	2.3	UJ
ARSENIC	9.4		10.2		9.9		11.0		6.0	
BARIUM	125		151		104		255		84.2	
BERYLLIUM	0.51		0.72		0.60		1.0		0.49	
CADMIUM	1.2		1.3		0.84		1.7		0.62	J
CALCIUM	30800		29400		26800		17200		44000	
CHROMIUM	24.8		18.7		20.2		17.0		17.8	
COBALT	6.2		6.8		7.9		7.2		14.2	
COPPER	61.7		92.4		51.6		150		26.4	
IRON	19100		14400		18500		15000		17400	
LEAD	345	J	351	J	229	J	404	J	85.6	J
MAGNESIUM	9310		7760		10900		5470		13900	
MANGANESE	383	J	401	J	347	J	222	J	407	J
MERCURY	0.43	J	0.80	J	0.85	J	0.64	J	0.68	J
NICKEL	17.4		21.5		19.9		21.6		21.9	
POTASSIUM	1300	J	954	J	1380	J	1220	J	1660	J
SELENIUM	1.2	U	1.1	U	1.1	U	1.1	U	1.1	U
SILVER	0.49	UJ	4.1	J	0.48	UJ	15.6	J	0.46	UJ
SODIUM	819		363		254		288		189	
THALLIUM	1.7	U	1.6	U	1.6	U	1.6	U	1.6	U
VANADIUM	17.7		18.4		23.5		20.4		20.9	
ZINC	1850		286		182		468		99.8	
CYANIDE	0.28	U	0.27		0.27	U	0.26	R	0.26	U

Analytical Results (Qualified Data)

Case #: 29167 SDG : ME0AX0
Site : 6540 HASTING STREET
Lab. : CHEMED
Reviewer :
Date :

Sample Number :	ME0AY6		ME0AY7		ME0AZ1		ME0AZ2		ME0AX3D	
Sampling Location :	SS16		SS17		SB1		SB2		SS3	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :	14:10		14:40		14:00		17:55		17:15	
%Solids :	83.0		88.0		88.9		78.9		88.7	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	5750		5290		6500		7810		8370	
ANTIMONY	2.4	UJ	2.2	UJ	2.2	UJ	2.5	UJ	2.2	UJ
ARSENIC	6.6		4.4		8.6		9.8		6.5	
BARIUM	256		151		37.7		176		40.1	
BERYLLIUM	0.43		0.42		0.42		0.58		0.47	
CADMIUM	1.1		1.1		0.32	J	0.89		0.45	J
CALCIUM	37400		34100		56700		46100		41000	
CHROMIUM	16.3		69.9		13.3		19.0		15.8	
COBALT	6.1		6.9		8.6		7.7		7.3	
COPPER	74.7		79.2		15.0		43.9		15.2	
IRON	14800		18200		17100		18100		17300	
LEAD	384	J	289	J	8.2	J	177	J	12.6	
MAGNESIUM	12000		7830		22000		14600		15800	
MANGANESE	295	J	2660	J	321	J	379	J	319	J
MERCURY	0.34	J	0.43	J	0.10	R	0.39	J	0.11	J
NICKEL	20.0		18.0		17.6		19.8		17.7	
POTASSIUM	1030	J	688	J	1450	J	1480	J	1540	J
SELENIUM	1.2	U	1.1	U	1.1	U	1.2	U	1.1	U
SILVER	1.5	J	2.6	J	0.44	UJ	1.1	J	0.45	UJ
SODIUM	355		221		126	J	248		129	
THALLIUM	1.7		1.5	U	1.5	U	1.7	U	1.6	U
VANADIUM	17.3		31.3		20.2		24.1		24.6	
ZINC	215		224		44.4		190		58.6	
CYANIDE	0.27	U	0.26		0.25	U	0.29	U	0.25	U

Analytical Results (Qualified Data)

Case #: 29167 SDG : ME0AX0
Site : 6540 HASTING STREET
Lab. :
Reviewer :
Date :

Sample Number :	ME0AX3S									
Sampling Location :	SS3									
Matrix :	Soil									
Units :	mg/Kg									
Date Sampled :	04/17/2001									
Time Sampled :	17:15									
%Solids :	88.9									
Dilution Factor :	1.0									
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM										
ANTIMONY	61.6									
ARSENIC	15.7									
BARIUM	417									
BERYLLIUM	11.3									
CADMIUM	10.7									
CALCIUM										
CHROMIUM	56.9									
COBALT	111									
COPPER	65.7									
IRON										
LEAD	17.8	J								
MAGNESIUM										
MANGANESE	447									
MERCURY	0.11	U								
NICKEL	117									
POTASSIUM										
SELENIUM	3.1									
SILVER	6.6									
SODIUM										
THALLIUM	12.1									
VANADIUM	130									
ZINC	159									
CYANIDE	5.8									

Analytical Results (Qualified Data)

Case #: 29167 SDG : ME0AX0
Site : 6540 HASTING STREET
Lab. : CHEMED
Reviewer :
Date :

Sample Number :	ME0AX0									
Sampling Location :	FB1									
Matrix :	Water									
Units :	ug/L									
Date Sampled :	04/17/2001									
Time Sampled :	14:05									
%Solids :	0.0									
Dilution Factor :	1.0									
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	31.5	J								
ANTIMONY	10.0	U								
ARSENIC	5.5	U								
BARIUM	0.56	J								
BERYLLIUM	0.10	U								
CADMIUM	0.40	U								
CALCIUM	70.2	J								
CHROMIUM	1.0	U								
COBALT	1.1	U								
COPPER	2.4									
IRON	137									
LEAD	1.5	U								
MAGNESIUM	15.0	J								
MANGANESE	0.46	J								
MERCURY	0.20	U								
NICKEL	1.6	U								
POTASSIUM	19.9	U								
SELENIUM	4.8	U								
SILVER	2.0	U								
SODIUM	258	U								
THALLIUM	6.9	U								
VANADIUM	1.4	U								
ZINC	10.6									
CYANIDE	5.3	J								

USEPA Contract Laboratory Program
Inorganic Traffic Report

Case No: 29167
DAS No:
SDG No: ME0AX0 ~~ME0AX0~~ SP 4/18/01

L

Date Shipped: 4/17/01 **Carrier Name:** UPS **Airbill:** 1Z5490W42210061220 **Shipped to:** Chemtech Consulting Group (CHEMED) Raritan Center 205 Campus Plaza 1 Edison NJ 08837 (732) 225-4111	**Date Received/Received by:** 4/18/01 Sunny. Patel **Lab Contract No:** 68-W00-088 **Unit Price:** **Transfer To:** **Date Received/Received By:** **Lab Contract No:** **Price:**	**Sampler (Signature):** Teresa Ducsay		
		Relinquished By: T. Ducsay	**Date / Time:** 4/17/01 17:45	**Received By:**
		Relinquished By:	**Date / Time:**	**Received By:**
		Relinquished By: UPS	**Date / Time:** 4/18/01 10:00	**Received By:** Sunny. Patel.

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
ME0AX1	Surface Soil (0"-12")/ Teresa Ducsay	/G	TM/CN (21)	5-08 (Ice Only) (1)	SS1	4/17/01 17:05	E0AX1	
ME0AX2	Surface Soil (0"-12")/ Teresa Ducsay	/G	TM/CN (21)	5-010 (Ice Only) (1)	SS2	4/17/01 16:55	E0AX2	
ME0AX3	Surface Soil (0"-12")/ Teresa Ducsay	/G	TM/CN (21)	5-012 (Ice Only) (1)	SS3	4/17/01 17:15	E0AX3	
ME0AX4	Surface Soil (0"-12")/ Teresa Ducsay	/G	TM/CN (21)	5-014 (Ice Only) (1)	SS4	4/17/01 16:40	E0AX4	
ME0AX5	Surface Soil (0"-12")/ Teresa Ducsay	/G	TM/CN (21)	5-016 (Ice Only) (1)	SS5	4/17/01 16:3[illegible]	E0AX5	
ME0AX6	Surface Soil (0"-12")/ Teresa Ducsay	/G	TM/CN (21)	5-018 (Ice Only) (1)	SS6	4/17/01 15:10	E0AX6	
ME0AX7	Surface Soil (0"-12")/ Teresa Ducsay	/G	TM/CN (21)	5-020 (Ice Only) (1)	SS7	4/17/01 15:00	E0AX7	
ME0AX8	Surface Soil (0"-12")/ Teresa Ducsay	/G	TM/CN (21)	5-022 (Ice Only) (1)	SS8	4/17/01 16:00	E0AX8	
ME0AX9	Surface Soil (0"-12")/ Teresa Ducsay	/G	TM/CN (21)	5-024 (Ice Only) (1)	SS9	4/17/01 15:45	E0AX9	
ME0AY0	Surface Soil (0"-12")/ Teresa Ducsay	/G	TM/CN (21)	5-026 (Ice Only) (1)	SS10	4/17/01 15:25	E0AY0	

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LABORATORY COPY

Shipment for Case Complete?N	Sample(s) to be used for laboratory QC: ME0AX3	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt: 4.0C	Chain of Custody Seal Number: 25637, 25638
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G		**Custody Seal Intact?** Yes **Shipment Iced?** Yes

TM/CN = CLP Total Metals/Cyanide - soil

PR provides preliminary results. Requests for preliminary resuls will increase analytical costs.
Send Copy to: Contract Laboratory Analytical Services Support, 2000 Edmund Halley Dr., Reston, VA. 20191-3436 Phone 703/264-9348 Fax 703/264-9222

USEPA Contract Laboratory Program
Inorganic Traffic Report

Case No: 29167
DAS No:
SDG No: MEOAXD

L

Date Shipped: 4/17/01 **Carrier Name:** UPS **Airbill:** 1Z5490W42210061220 **Shipped to:** Chemtech Consulting Group (CHEMED) Raritan Center 205 Campus Plaza 1 Edison NJ 08837 (732) 225-4111	**Date Received/Received by:** 4/18/01 Sunny Patel **Lab Contract No:** 68-W00-058 **Unit Price:** **Transfer To:** **Date Received/Received By:** **Lab Contract No:** **Price:**	**Sampler (Signature):** Teresa Ducsay **Relinquished By:** Teresa Ducsay **Date / Time:** 4/17/01 17:45 **Received By:** **Relinquished By:** **Date / Time:** **Received By:** **Relinquished By:** UPS **Date / Time:** 4/18/01 10:00 **Received By:** Sunny Patel.	

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
ME0AY1	Surface Soil (0"-12")/ Teresa Ducsay	/G	TM/CN (21)	5-028 (Ice Only) (1)	SS11	4/17/01 13:40	E0AY1	
ME0AY2	Surface Soil (0"-12")/ Teresa Ducsay	/G	TM/CN (21)	5-030 (Ice Only) (1)	SS12	4/17/01 14:40	E0AY2	
ME0AY3	Surface Soil (0"-12")/ Teresa Ducsay	/G	TM/CN (21)	5-032 (Ice Only) (1)	SS13	4/17/01 14:00	E0AY3	
ME0AY4	Surface Soil (0"-12")/ Teresa Ducsay	/G	TM/CN (21)	5-034 (Ice Only) (1)	SS14	4/17/01 14:25	E0AY4	
ME0AY5	Surface Soil (0"-12")/ Teresa Ducsay	/G	TM/CN (21)	5-036 (Ice Only) (1)	SS15	4/17/01 14:0[illegible]	E0AY5	
ME0AY6	Surface Soil (0"-12")/ Teresa Ducsay	/G	TM/CN (21)	5-038 (Ice Only) (1)	SS16	4/17/01 14:10	E0AY6	
ME0AY7	Surface Soil (0"-12")/ Teresa Ducsay	/G	TM/CN (21)	5-040 (Ice Only) (1)	SS17	4/17/01 14:40	E0AY7	

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LABORATORY COPY

Shipment for Case Complete?N	Sample(s) to be used for laboratory QC: ME0AX3	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt: 4.0C	Chain of Custody Seal Number: 25637, 25638
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Custody Seal Intact?** Yes	**Shipment Iced?** Yes

TM/CN = CLP Total Metals/Cyanide - soil

PR provides preliminary results. Requests for preliminary resuls will increase analytical costs.
Send Copy to: Contract Laboratory Analytical Services Support, 2000 Edmund Halley Dr., Reston, VA. 20191-3436 Phone 703/264-9348 Fax 703/264-9222

USEPA Contract Laboratory Program
Inorganic Traffic Report

Case No: 29167
DAS No:
SDG No: ME0AX0 ME0AX0

L

Date Shipped: 4/17/01 Carrier Name: UPS Airbill: 1Z5490W42210061248 Shipped to: Chemtech Consulting Group (CHEMED) Raritan Center 205 Campus Plaza 1 Edison NJ 08837 (732) 225-4111	Date Received/Received by: 4/18/01 Sunny Patel Lab Contract No: 68-W00-088 Unit Price: Transfer To: Date Received/Received By: Lab Contract No: Price:	Sampler (Signature): 68 4/18/01 Teresa Ducsay Relinquished By: Teresa Ducsay Relinquished By: Relinquished By: UPS	Date / Time: 4/17/01 18:00 Date / Time: Date / Time: 4/18/01 10:00
			Received By: Received By: Received By: Sunny Patel

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
ME0AX0	Field QC/ Teresa Ducsay	/G	CN (21), TM (21)	5-01 (NaOH), 5-04 (HNO3) (2)	FB1	4/17/01 14:05	E0AX0	
ME0AZ1	Subsurface Soil (>12")/ Teresa Ducsay	/G	TM/CN (21)	5-042 (Ice Only) (1)	SB1	4/17/01 14:00	E0AZ1	
ME0AZ2	Subsurface Soil (>12")/ Teresa Ducsay	/G	TM/CN (21)	5-044 (Ice Only) (1)	SB2	4/17/01 17:55	E0AZ2	
ME0AZ3	Subsurface Soil (>12")/ Teresa Ducsay	/G	TM/CN (21)	5-046 (Ice Only) (1)	SB3	4/17/01 16:30	E0AZ3	
ME0AZ4	Subsurface Soil (>12")/ Teresa Ducsay	/G	TM/CN (21)	5-048 (Ice Only) (1)	SB4	4/17/01 16:55	E0AZ4	
ME0AZ5	Subsurface Soil (>12")/ Teresa Ducsay	/G	TM/CN (21)	5-050 (Ice Only) (1)	SB5	4/17/01 14:30	E0AZ5	
ME0AZ6	Subsurface Soil (>12")/ Teresa Ducsay	/G	TM/CN (21)	5-052 (Ice Only) (1)	SB6	4/17/01 17:15	E0AZ6	
ME0AZ7	Subsurface Soil (>12")/ Teresa Ducsay	/G	TM/CN (21)	5-054 (Ice Only) (1)	SB7	4/17/01 17:40	E0AZ7	
ME0AZ8	Subsurface Soil (>12")/ Teresa Ducsay	/G	TM/CN (21)	5-056 (Ice Only) (1)	SB8	4/17/01 15:00	E0AZ8	
ME0AZ9	Subsurface Soil (>12")/ Teresa Ducsay	/G	TM/CN (21)	5-058 (Ice Only) (1)	SB9	4/17/01 17:30	E0AZ9	

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LABORATORY COPY

4/17/01 14:30 to 4/17/01

Copy
Original Documents are included in CSF ME0AZ3

Signature

4/18/01
Date

Samples ME0AZ3 To ME0AZ9 is in SDG# ME0AZ3. Original T.R. is in SDG# ME0AZ3.

Shipment for Case Complete?	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt:	Chain of Custody Seal Number:
	ME0AZ3		4oC	25635, 25636

Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Custody Seal Intact? Yes	Shipment Iced? Yes

CN = CLP Cyanide - water, TM = CLP Total Metals - water, TM/CN = CLP Total Metals/Cyanide - soil

PR provides preliminary results. Requests for preliminary resuls will increase analytical costs.
Send Copy to: Contract Laboratory Analytical Services Support, 2000 Edmund Halley Dr., Reston, VA. 20191-3436 Phone 703/264-9348 Fax 703/264-9222

TR Number: 5-504[illegible]

MAY 1 0 2001

CHEMTECH

SDG NARRATIVE

USEPA
SDG # ME0AX0
Case # 29167
Contract # 68-W00088
LAB CODE: CHEMED
Chemtech Project # L3983R

A. Number of Samples and Date of Receipt
1 Aqueous plus 19 Soil samples were delivered to the laboratory intact on 04/18/01.

B. Parameters
Tests requested were Cyanide & Metals. This data package contains results for Cyanide & Metals.

C. Cooler Temp
Indicator Bottle: Presence/Absence
Cooler Temp: 4.0

D. Detail Documentation (related to Sample Handling Shipping, Analytical Problem, Temp of Cooler etc):
1. Sample tags were listed in TR but we did not received them.
2. No concentration was listed on TR.
3. Received extra sample EOAZZ.
4. Sample ME0AX0 was reanalyzed for verification purposes and we found negative results. Further investigation show we had a spot on the distillation set up that another sample previously run had results very high. This cause contamination on the field QC sample

E. Corrective Action taken for above:
1. Region 5 does not require tags with the data.
2. Use Low for all Samples.
3. Tranship to Librty as per Region.
4. Both results are reported. 2ND run is out of hold times.

F. Analytical Techniques:
The analysis of Metals & Mercury is based on ILM4.0 and Cyanide by Method 335.

G. QA/ QC
Calibrations met requirements. Blank analyses did not indicate the presence of contamination. Interference Check Sample, Laboratory Control Sample were within Control Limits. Spike Sample recovery met requirements except Followings: Antimony, Lead, Manganese, Mercury, Selenium and Silver. Serial Dilution met requirements except for Copper, Potassium and Sodium. Duplicate analyses met requirements except for Aluminum, Arsenic, Lead, Mercury, Potassium and Sodium.

I certify that the data package is in compliance with the terms and conditions of the contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature.

Signature Mildred V. Reyes Name: Mildred V. Reyes

Date 5/9/01 Title: QA/QC

002
5/9/01
MM

MAY 1 0 2001

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: May 10, 2001

SUBJECT: Review of Data
Received for Review on May 8, 2001

FROM: Stephen L. Ostrodka, Chief (SMF-4J)
Superfund Field Services Section

TO: Data User: MDEQ

The data in this case has not been validated.
We have compiled the CADRE files into a narrative format for the following case:

SITE NAME: 6540 Hasting St.

CASE NUMBER: 29167 **SDG NUMBER:** ME0AZ3

Number and Type of Samples: 12 soils

Sample Numbers: ME0AZ3-9; ME0B00-2

Laboratory: Chemtech Hrs. for Review: 2

Following are our findings:

CC: Cecilia Moore
Region 5 TPO
Mail Code: SM-5J

RECEIVED
MAY 1 6 2001
ERD-SUPERFUND

Case Number : 29167
Site Name: 6540 Hasting St.

SDG Number: ME0AZ3
Laboratory: Chemtech

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

NUMBER (##) MATRIX samples numbered ##, were collected on DATE. The lab received the samples on DATE in good condition. All samples were analyzed for metals and cyanide. All samples were analyzed using CLP SOW ILM04.1 analysis procedures.

Mercury analysis was performed using a Cold Vapor AA Technique. Cyanide analysis was performed using the MIDI Distillation procedure. The remaining inorganic analyses were performed using an Inductively Coupled Plasma-Atomic Emission Spectrometric procedure.

Assembled By: ESAT
Date: May 10, 2001

Case Number : 29167
Site Name: 6540 Hasting St.

SDG Number: ME0AZ3
Laboratory: Chemtech

.. **HOLDING TIME:**

Holding Time Report

SDG NO: ME0AZ3

HOLDING TIME CRITERIA

Inorganic

	-- Holding Time --		------- pH -------	
	Primary	Expanded	Primary	Expanded
Metals	180	0	2.0	0.0
Mercury	28	0	2.0	0.0
Cyanide	14	0	12.0	0.0

DC-280: The following inorganic soil samples were reviewed for holding time violations using criteria developed for water samples.

ME0AZ3, ME0AZ3D, ME0AZ3S, ME0AZ4, ME0AZ5, ME0AZ6
ME0AZ7, ME0AZ8, ME0AZ9, ME0B00, ME0B01, ME0B02

2. **CALIBRATIONS:**

Calibration Report

SDG NO: ME0AZ3

CALIBRATION CRITERIA

Inorganic

Percent Recovery Limits

	--- Primary ---		-- Expanded ---	
	Low	High	Low	High
Cyanide	85.00	115.00	70.00	130.00
AA	90.00	110.00	75.00	125.00
ICP	90.00	110.00	75.00	125.00
Mercury	80.00	120.00	65.00	135.00

No problems found for this qualification.

Assembled By: ESAT
Date: May 10, 2001

Case Number : 29167
Site Name: 6540 Hasting St.

SDG Number: ME0AZ3
Laboratory: Chemtech

CRDL Standards Report

SDG NO: ME0AZ3

DC-373: The following inorganic samples are associated with a CRDL standard with low percent recovery.

Arsenic
ME0AZ3, ME0AZ4, ME0AZ5, ME0AZ6, ME0AZ7, ME0AZ8
ME0AZ9, ME0B00, ME0B01, ME0B02, PBS03

Copper
ME0AZ7, ME0AZ8, ME0AZ9, ME0B00, ME0B01, ME0B02

Selenium
ME0AZ3, ME0AZ4, ME0AZ5, ME0AZ6, PBS03

Silver
ME0AZ7, ME0AZ8, ME0AZ9, ME0B00, ME0B01, ME0B02

DC-374: The following inorganic samples are associated with a CRDL standard with high percent recovery.
Hits and non-detects are flagged .

Arsenic
ME0AZ3, ME0AZ4, ME0AZ5, ME0AZ6, ME0AZ7, ME0AZ8
ME0AZ9, ME0B00, ME0B01, ME0B02, PBS03

Thallium
ME0AZ3, ME0AZ4, ME0AZ5, ME0AZ6, ME0AZ7, ME0AZ8
ME0AZ9, ME0B00, ME0B01, ME0B02, PBS03

3. BLANKS:

Laboratory Blanks Report

SDG NO: ME0AZ3

LABORATORY BLANKS CRITERIA

DC-283: The following inorganic samples are associated with a blank analyte with negative concentration whose absolute value is greater than the instrument detection limit (IDL). Professional judgement should be used to qualify the data.

ME0AZ3
Barium, Beryllium, Chromium, Cobalt
Manganese, Potassium, Sodium, Zinc

ME0AZ3A
Manganese

ME0AZ3D
Barium, Beryllium, Chromium, Cobalt

Assembled By: ESAT
Date: May 10, 2001

Manganese, Potassium, Sodium, Zinc

ME0AZ3S
Barium, Beryllium, Chromium, Cobalt
Manganese, Zinc

ME0AZ4
Barium, Beryllium, Chromium, Cobalt
Manganese, Potassium, Sodium, Zinc

ME0AZ5
Barium, Beryllium, Chromium, Cobalt
Manganese, Potassium, Sodium, Zinc

ME0AZ6
Barium, Beryllium, Chromium, Cobalt
Manganese, Potassium, Sodium, Zinc

ME0AZ7
Barium, Beryllium, Chromium, Cobalt
Copper, Manganese, Potassium, Sodium

ME0AZ8
Barium, Beryllium, Chromium, Cobalt
Copper, Manganese, Potassium, Sodium

ME0AZ9
Barium, Beryllium, Chromium, Cobalt
Copper, Manganese, Potassium, Sodium

ME0B00
Barium, Beryllium, Chromium, Cobalt
Copper, Manganese, Potassium, Sodium

ME0B01
Barium, Beryllium, Chromium, Cobalt
Copper, Manganese, Potassium, Sodium

ME0B02
Barium, Beryllium, Chromium, Cobalt
Copper, Manganese, Potassium, Sodium

DC-284: The following inorganic samples are associated with a blank concentration which is greater than the instrument detection limit (IDL). The sample concentration is also greater than the IDL and less than five times the blank concentration. Hits are qualified "J"; non-detects are not flagged.

Copper
ME0AZ3, ME0AZ3D, ME0AZ4, ME0AZ5, ME0AZ6

DC-338: During review of the following inorganic samples, the reported IDL/default CRDL value was used for cyanide.

ME0AZ3, ME0AZ3D, ME0AZ3S, ME0AZ4, ME0AZ5, ME0AZ6
ME0AZ7, ME0AZ8, ME0AZ9, ME0B00, ME0B01, ME0B02

4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE AND LAB CONTROL SAMPLE:

Matrix Spike Report

Assembled By: ESAT
Date: May 10, 2001

Case Number : 29167
Site Name: 6540 Hasting St.

SDG Number: ME0AZ3
Laboratory: Chemtech

SDG NO: ME0AZ3

||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

No problems found for this qualification.

6. ICP ANALYSIS

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ICS Report

SDG NO: ME0AZ3

||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

No problems found for this qualification.

||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Serial Dilution Report

SDG NO: ME0AZ3

||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

DC-294: The analyte concentration is high (>50 X the IDL) and serial dilution percent difference is not in criteria (>10%). Hits are qualified "J" and non-detects are qualified "UJ".

Chromium
ME0AZ3, ME0AZ3D, ME0AZ3S, ME0AZ4, ME0AZ5, ME0AZ6
ME0AZ7, ME0AZ8, ME0AZ9, ME0B00, ME0B01, ME0B02

Potassium
ME0AZ3, ME0AZ3D, ME0AZ4, ME0AZ5, ME0AZ6, ME0AZ7
ME0AZ8, ME0AZ9, ME0B00, ME0B01, ME0B02

7. GFAA ANALYSIS

||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Furnace AA QC Report

SDG NO: ME0AZ3

||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

No problems found for this qualification.

8. SAMPLE RESULTS

All data, except those qualified above, are acceptable.

||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Sample Result Verification Report

Assembled By: ESAT
Date: May 10, 2001

Case Number : 29167
Site Name: 6540 Hasting St.

SDG Number: ME0AZ3
Laboratory: Chemtech

SDG NO: ME0AZ3

No problems found for this qualification.

Assembled By: ESAT
Date: May 10, 2001

CADRE Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the action limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The data are unusable. (The compound may or may not be present)

Analytical Results (Qualified Data)

Case #: 29167
SDG : ME0AZ3
Site : 6540 HASTING STREET
Lab. : CHEMED
Reviewer :
Date :

Number of Soil Samples : 10
Number of Water Samples : 0

Sample Number :	ME0AZ3		ME0AZ4		ME0AZ5		ME0AZ6		ME0AZ7	
Sampling Location :	SB3		SB4		SB5		SB6		SB7	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :	16:30		16:55		14:30		17:15		17:40	
%Solids :	81.7		81.1		88.5		83.7		79.3	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	8950		8610		6050		6270		9450	
ANTIMONY	2.4	UJ	2.5	UJ	2.2	UJ	2.3	UJ	2.5	UJ
ARSENIC	10.1	J	14.8	J	6.4	J	4.8	J	6.0	J
BARIUM	46.2		71.1		38.5		37.3		62.7	
BERYLLIUM	0.52		0.70		0.36		0.37		0.68	
CADMIUM	0.13		0.42		0.18		0.090	U	0.34	
CALCIUM	29600		8530		64400		10000		4620	
CHROMIUM	17.0	J	14.3	J	11.8	J	11.3	J	16.0	J
COBALT	9.2		10.3		7.1		5.1		8.5	
COPPER	16.7	J	17.7	J	12.3	J	10.7	J	16.3	
IRON	23400		19000		14900		12300		15400	
LEAD	10.4	J	36.9	J	66.0	J	9.9	J	21.5	J
MAGNESIUM	15900		4510		17600		6230		3650	
MANGANESE	369	J	323	J	345	J	170	J	249	J
MERCURY	0.12	U	0.25		0.11	U	0.14		0.21	
NICKEL	23.0		18.0		16.6		13.9		22.5	
POTASSIUM	1070	J	932	J	1170	J	635	J	844	J
SELENIUM	1.2	U	1.2	U	1.1	U	1.1	U	1.2	U
SILVER	0.48	UJ	0.49	UJ	0.44	UJ	0.47	UJ	0.50	UJ
SODIUM	62.5	U	63.6	U	57.1	U	60.4	U	64.4	U
THALLIUM	1.7	U	1.7	U	1.5	U	1.6	U	1.7	U
VANADIUM	29.7		27.9		20.0		17.3		23.5	
ZINC	50.7		80.5		40.6		36.3		66.3	
CYANIDE	7.8		13.7		6.5		6.3		17.9	

DISCLAIMER: This package has been electronically assessed as an added service to our customer. It has not been either validated or approved by Region 5 and any subsequent use by the data user is strictly at the risk of the data user. Region 5 assumes no responsibility for use of unvalidated data.

Analytical Results (Qualified Data)

Case #: 29167 SDG : ME0AZ3
Site : 6540 HASTING STREET
Lab. : CHEMED
Reviewer :
Date :

Sample Number :	ME0AZ8		ME0AZ9		ME0B00		ME0B01		ME0B02	
Sampling Location :	SB8		SB9		SB10		SB11		SB12	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :	04/17/2001		04/17/2001		04/17/2001		04/17/2001		04/17/2001	
Time Sampled :	15:00		17:30		15:20		16:00		15:40	
%Solids :	88.3		78.9		77.1		84.0		77.7	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	4700		7850		14000		6110		15500	
ANTIMONY	2.2	UJ	2.5	UJ	2.5	UJ	2.3	UJ	2.5	UJ
ARSENIC	8.5	J	3.9	J	8.0	J	6.5	J	9.6	J
BARIUM	29.7		78.9		94.9		65.6		78.5	
BERYLLIUM	0.33		0.49		0.68		0.41		0.78	
CADMIUM	0.16		0.46		0.24		0.26		0.13	
CALCIUM	49700		4340		12100		26000		6990	
CHROMIUM	9.4	J	13.3	J	24.9	J	12.2	J	26.6	J
COBALT	6.8		8.2		11.8		4.7		14.0	
COPPER	11.7		14.0		18.4		28.7		19.4	
IRON	13900		14300		25900		13100		29600	
LEAD	12.5	J	40.3	J	86.0	J	121	J	12.4	J
MAGNESIUM	16100		2620		9880		6890		6600	
MANGANESE	298	J	609	J	865	J	168	J	215	J
MERCURY	0.11	U	0.13	U	0.12	U	0.31		0.12	U
NICKEL	14.6		16.2		32.8		11.8		33.6	
POTASSIUM	806	J	835	J	1700	J	1030	J	1940	J
SELENIUM	1.1	U	1.2	U	1.2	U	1.1	U	1.2	U
SILVER	0.44	UJ	0.51	UJ	0.50	UJ	0.47	UJ	0.51	UJ
SODIUM	56.7	U	65.4	U	65.0	U	144		65.7	U
THALLIUM	1.5	U	1.7	U	1.7	U	1.6	U	1.8	U
VANADIUM	18.4		20.5		33.5		17.7		39.0	
ZINC	34.9		90.7		78.7		114		67.6	
CYANIDE	2.2		8.3		10.7		8.8		6.2	

Analytical Results (Qualified Data)

Case #: 29167
SDG : ME0AZ3
Site : 6540 HASTING STREET
Lab. : CHEMED
Reviewer :
Date :

Sample Number :	ME0AZ3D		ME0AZ3S							
Sampling Location :	SB3		SB3							
Matrix :	Soil		Soil							
Units :	mg/Kg		mg/Kg							
Date Sampled :	04/17/2001		04/17/2001							
Time Sampled :	16:30		16:30							
%Solids :	81.8		81.7							
Dilution Factor :	1.0		2.0							
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	9670									
ANTIMONY	2.4	UJ	74.4							
ARSENIC	10.6	J	13.9							
BARIUM	47.8		466							
BERYLLIUM	0.54		12.3							
CADMIUM	0.14		12.1							
CALCIUM	26200									
CHROMIUM	17.9	J	58.6	J						
COBALT	9.4		121							
COPPER	16.5	J	65.9							
IRON	23700									
LEAD	10.9	J	13.0							
MAGNESIUM	14300									
MANGANESE	363	J	387							
MERCURY	0.12	U	0.62							
NICKEL	23.6		134							
POTASSIUM	1240	J								
SELENIUM	1.2	U	1.8							
SILVER	0.48	UJ	7.3							
SODIUM	62.5	U								
THALLIUM	1.7	U	12.3							
VANADIUM	30.3		138							
ZINC	52.1		152							
CYANIDE	7.8		14.8							

USEPA Contract Laboratory Program
Inorganic Traffic Report

Case No: 29167
DAS No:
SDG No: ME0AZ3

L

Date Shipped: 4/17/01 Carrier Name: UPS Airbill: 1Z5490W42210061248 Shipped to: Chemtech Consulting Group (CHEMED) Raritan Center 205 Campus Plaza 1 Edison NJ 08837 (732) 225-4111	Date Received/Received by: 04/18/01 Sunny Patel Lab Contract No: 68-W00-088 Unit Price: Transfer To: Date Received/Received By: Lab Contract No: Price:	Sampler (Signature): Teresa Ducsay Relinquished By: Teresa Ducsay Relinquished By: Relinquished By: UPS	Date / Time: 4/17/01 18:00 Date / Time: Date / Time: 4/18/01 10:00
			Received By: Received By: Received By: Sunny Patel

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
ME0AX0	Field QC/ Teresa Ducsay	/G	CN (21), TM (21)	5-01 (NaOH), 5-04 (HNO3) (2)	FB1	4/17/01 14:05	E0AX0	
ME0AZ1	Subsurface Soil (>12")/ Teresa Ducsay	/G	TM/CN (21)	5-042 (Ice Only) (1)	SB1	4/17/01 14:00	E0AZ1	
ME0AZ2	Subsurface Soil (>12")/ Teresa Ducsay	/G	TM/CN (21)	5-044 (Ice Only) (1)	SB2	4/17/01 17:55	E0AZ2	
ME0AZ3	Subsurface Soil (>12")/ Teresa Ducsay	/G	TM/CN (21)	5-046 (Ice Only) (1)	SB3	4/17/01 16:30	E0AZ3	
ME0AZ4	Subsurface Soil (>12")/ Teresa Ducsay	/G	TM/CN (21)	[illegible] (Ice Only) (1)	SB4	4/17/01 16:55	E0AZ4	
ME0AZ5	Subsurface Soil (>12")/ Teresa Ducsay	[illegible]	[illegible]	[illegible] (Ice Only) (1)	SB5	4/17/01 14:30	E0AZ5	
ME0AZ6	Subsurface Soil (>12")/ Teresa Ducsay	/G	TM/CN (21)	5-052 (Ice Only) (1)	SB6	4/17/01 17:15	E0AZ6	
ME0AZ7	Subsurface Soil (>12")/ Teresa Ducsay	/G	TM/CN (21)	5-054 (Ice Only) (1)	SB7	4/17/01 17:40	E0AZ7	
ME0AZ8	Subsurface Soil (>12")/ Teresa Ducsay	/G	TM/CN (21)	5-056 (Ice Only) (1)	SB8	4/17/01 15:00	E0AZ8	
ME0AZ9	Subsurface Soil (>12")/ Teresa Ducsay	/G	TM/CN (21)	5-058 (Ice Only) (1)	SB9	4/17/01 17:30	E0AZ9	

LABORATORY COPY

4/17/01 14:30 to 4/17/01

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Samples ME0AX0 TO ME0AZ2 is in SDG # ME0AX0.

Shipment for Case Complete?:	Sample(s) to be used for laboratory QC: ME0AZ3	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt: 4.0c	Chain of Custody Seal Number: 25635, 25636
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G		Custody Seal Intact? Yes Shipment Iced? Yes

CN = CLP Cyanide - water, TM = CLP Total Metals - water, TM/CN = CLP Total Metals/Cyanide - soil

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Contract Laboratory Analytical Services Support, 2000 Edmund Halley Dr., Reston, VA. 20191-3436 Phone 703/264-9348 Fax 703/264-9222

TR Number: 5-591003426-041601-0002

USEPA Contract Laboratory Program
Inorganic Traffic Report

Case No: 29167
DAS No:
SDG No: ME0AZ3

L

Date Shipped: 4/17/01 Carrier Name: UPS Airbill: 1Z5490W42210061248 Shipped to: Chemtech Consulting Group (CHEMED) Raritan Center 205 Campus Plaza 1 Edison NJ 08837 (732) 225-4111	Date Received/Received by: 04/18/01 Sunny Patel. Lab Contract No: 68-W00-088 Unit Price: Transfer To: Date Received/Received By: Lab Contract No: Price:	Sampler (Signature): Teresa Ducsay Relinquished By: Teresa Ducsay Relinquished By: Relinquished By: UPS	Date / Time: 4/17/01 18:00 Date / Time: Date / Time: 4/18/01 10:00
			Received By: Received By: Received By: Sunny Patel.

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
ME0B00	Subsurface Soil (>12")/ Teresa Ducsay	/G	TM/CN (21)	5-060 (Ice Only) (1)	SB10	4/17/01 15:20	E0B00	
ME0B01	Subsurface Soil (>12")/ Teresa Ducsay	/G	TM/CN (21)	5-062 (Ice Only) (1)	SB11	4/17/01 16:00	E0B01	
ME0B02	Subsurface Soil (>12")/ Teresa Ducsay	/G	TM/CN (21)	5-064 (Ice Only) (1)	SB12	4/17/01 15:40	E0B02	

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LABORATORY COPY

Shipment for Case Complete?Y	Sample(s) to be used for laboratory QC: ME0AZ3	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt: 4.0C	Chain of Custody Seal Number: 25635, 25636
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G		Custody Seal Intact? Yes / Shipment Iced? Yes
CN = CLP Cyanide - water, TM = CLP Total Metals - water, TM/CN = CLP Total Metals/Cyanide - soil				

PR provides preliminary results. Requests for preliminary resuls will increase analytical costs.
Send Copy to: Contract Laboratory Analytical Services Support, 2000 Edmund Halley Dr., Reston, VA. 20191-3436 Phone 703/264-9348 Fax 703/264-9222

TR Number: 5-591003426-041601-0002

MAY 0 8 2001

CHEMTECH

SDG NARRATIVE

USEPA
SDG # ME0AZ3
Case # 29167
Contract # 68-W00088
LAB CODE: CHEMED
Chemtech Project # L3984R

A. Number of Samples and Date of Receipt
10 Soil samples were delivered to the laboratory intact on 04/18/01.

B. Parameters
Tests requested were Cyanide & Metals. This data package contains results for Cyanide & Metals.

C. Cooler Temp
Indicator Bottle: **Presence**/Absence
Cooler Temp: 4.0

D. Detail Documentation (related to Sample Handling Shipping, Analytical Problem, Temp of Cooler etc):
1. Sample tags were listed in TR but we did not received them.
2. No concentration was listed on TR.
3. Received extra sample EOAZ~~X~~.2 MR 5/7/01

E. Corrective Action taken for above:
1. Region 5 does not require tags with the data.
2. Use Low for all Samples.
3. Tranship to Librty as per Region.

F. Analytical Techniques:
The analysis of Metals & Mercury is based on ILM4.0 and Cyanide by Method 335.

G. QA/ QC
Calibrations met requirements. Blank analyses did not indicate the presence of contamination. Interference Check Sample, Laboratory Control Sample were within Control Limits. Spike Sample recovery met requirements except Followings: Antimony, Arsenic, Lead, Manganese and Silver. Serial Dilution met requirements except for the followings: Cadmium, Chromium, Copper and Potassium. Duplicate analyses met requirements.

I certify that the data package is in compliance with the terms and conditions of the contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature.

Signature Mildred V. Reyes Name: Mildred V. Reyes

Date 5/7/01 Title: QA/QC

002
MR 5/7/01

MAY 08 2001

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: CHEMTECH EDISON Contract: 68-W00-088

Lab Code: CHEMED Case No.: 29167 SAS No.: SDG No.: ME0AZ3

SOW No.: ILM04.1

EPA SAMPLE NO.	Lab Sample ID.
ME0AZ3	L3984-01S
ME0AZ3D	L3984-03S2
ME0AZ3S	L3984-02MS
ME0AZ4	L3984-04S
ME0AZ5	L3984-05S
ME0AZ6	L3984-06S
ME0AZ7	L3984-07S
ME0AZ8	L3984-08S
ME0AZ9	L3984-09S
ME0B00	L3984-10S
ME0B01	L3984-11S
ME0B02	L3984-12S

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

Comments:
The "E" qualifiers on Form I and IX for Chromium and Potassium indicate chemical or physical interference effects, which were suspected during those elements' analyses only.

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

001

Signature: _____

Name: THOMAS J MANGUSO Title: LAB MANAGER Date: 5/7/01

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY (517) 335-9800

P.O. Box 30270
Lansing, MI 48909

Report To: Environmental Response Div.
300 S. Washington Square
Lansing, MI 48933

Attn: TERESA DUCSAY
Total: $1,950.00

Lab Work Order # 0104143
Work Site ID: HASTINGS STREET
Matrix: Sediment\Soil
Received: 4/18/2001
Reported: 4/30/2001
Client: ER_SUPER
Number of Samples: 13

This is an original report: Lauri C Utter II Date: 4/30/01

RECEIVED
MAY 1 2001
ERD-SUPERFUND

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104143-01ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/24/2001 by JRS	Sample ID:	SB-1
Total Solids:	89%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		280	49.9
74-87-3	Chloromethane	ND		280	49.9
75-01-4	Vinyl chloride	ND		56	49.9
74-83-9	Bromomethane	ND		280	49.9
75-00-3	Chloroethane	ND		280	49.9
75-69-4	Trichlorofluoromethane	ND		280	49.9
67-64-1	Acetone	ND		840	49.9
60-29-7	Diethyl ether	ND		280	49.9
75-35-4	1,1-Dichloroethylene	ND		56	49.9
74-88-4	Methyl iodide	ND		110	49.9
107-13-1	Acrylonitrile	ND		280	49.9
75-09-2	Methylene chloride	ND		280	49.9
75-15-0	Carbon disulfide	ND		280	49.9
156-60-5	trans-1,2-Dichloroethylene	ND		56	49.9
1634-04-4	Methyltertbutylether (MTBE)	ND		280	49.9
75-34-3	1,1-Dichloroethane	ND		56	49.9
78-93-3	2-Butanone (MEK)	ND		280	49.9
156-59-2	cis-1,2-Dichloroethylene	ND		56	49.9
67-66-3	Chloroform	ND		56	49.9
74-97-5	Bromochloromethane	ND		110	49.9
71-55-6	1,1,1-Trichloroethane	ND		56	49.9
107-06-2	1,2-Dichloroethane	ND		56	49.9
71-43-2	Benzene	ND		56	49.9
56-23-5	Carbon tetrachloride	ND		56	49.9
78-87-5	1,2-Dichloropropane	ND		56	49.9
79-01-6	Trichloroethylene	ND		56	49.9
74-95-3	Dibromomethane	ND		110	49.9
75-27-4	Bromodichloromethane	ND		110	49.9
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		280	49.9
10061-01-5	cis-1,3-Dichloropropene	ND		56	49.9
10061-02-6	trans-1,3-Dichloropropene	ND		56	49.9
108-88-3	Toluene	ND		56	49.9
79-00-5	1,1,2-Trichloroethane	ND		56	49.9
591-78-6	2-Hexanone	ND		280	49.9
124-48-1	Dibromochloromethane	ND		110	49.9

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
106-93-4	1,2-Dibromoethane	ND		56	49.9
127-18-4	Tetrachloroethene	ND		56	49.9
108-90-7	Chlorobenzene	ND		56	49.9
630-20-6	1,1,1,2-Tetrachloroethane	ND		110	49.9
100-41-4	Ethylbenzene	ND		56	49.9
108383,106423	m & p-Xylene	ND		110	49.9
75-25-2	Bromoform	ND		110	49.9
100-42-5	Styrene	ND		56	49.9
95-47-6	o-Xylene	ND		56	49.9
79-34-5	1,1,2,2-Tetrachloroethane	ND		110	49.9
96-18-4	1,2,3-Trichloropropane	ND		110	49.9
110-57-6	trans-1,4-Dichloro-2-butene	ND		110	49.9
98-82-8	Isopropylbenzene	ND		110	49.9
108-86-1	Bromobenzene	ND		110	49.9
103-65-1	n-Propylbenzene	ND		110	49.9
108-67-8	1,3,5-Trimethylbenzene	ND		110	49.9
98-06-6	tert-Butylbenzene	ND		280	49.9
95-63-6	1,2,4-Trimethylbenzene	ND		110	49.9
135-98-8	sec-Butylbenzene	ND		280	49.9
541-73-1	1,3-Dichlorobenzene	ND		110	49.9
106-46-7	1,4-Dichlorobenzene	ND		110	49.9
99-87-6	p-Isopropyl toluene	ND		280	49.9
95-50-1	1,2-Dichlorobenzene	ND		110	49.9
104-51-8	n-Butylbenzene	ND		280	49.9
67-72-1	Hexachloroethane	ND		110	49.9
96-12-8	1,2-Dibromo-3-chloropropane	ND		280	49.9
120-82-1	1,2,4-Trichlorobenzene	ND		280	49.9
91-20-3	Naphthalene	ND		280	49.9
87-61-6	1,2,3-Trichlorobenzene	ND		280	49.9
91-57-6	2-Methylnaphthalene	ND		280	49.9

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104143-02ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/23/2001 by JRS	Sample ID:	SB-2
Total Solids:	81%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		300	48.9
74-87-3	Chloromethane	ND		300	48.9
75-01-4	Vinyl chloride	ND		60	48.9
74-83-9	Bromomethane	ND		300	48.9
75-00-3	Chloroethane	ND		300	48.9
75-69-4	Trichlorofluoromethane	ND		300	48.9
67-64-1	Acetone	ND		910	48.9
60-29-7	Diethyl ether	ND		300	48.9
75-35-4	1,1-Dichloroethylene	ND		60	48.9
74-88-4	Methyl iodide	ND		120	48.9
107-13-1	Acrylonitrile	ND		300	48.9
75-09-2	Methylene chloride	ND		300	48.9
75-15-0	Carbon disulfide	ND		300	48.9
156-60-5	trans-1,2-Dichloroethylene	ND		60	48.9
1634-04-4	Methyltertbutylether (MTBE)	ND		300	48.9
75-34-3	1,1-Dichloroethane	ND		60	48.9
78-93-3	2-Butanone (MEK)	ND		300	48.9
156-59-2	cis-1,2-Dichloroethylene	ND		60	48.9
67-66-3	Chloroform	ND		60	48.9
74-97-5	Bromochloromethane	ND		120	48.9
71-55-6	1,1,1-Trichloroethane	ND		60	48.9
107-06-2	1,2-Dichloroethane	ND		60	48.9
71-43-2	Benzene	ND		60	48.9
56-23-5	Carbon tetrachloride	ND		60	48.9
78-87-5	1,2-Dichloropropane	ND		60	48.9
79-01-6	Trichloroethylene	ND		60	48.9
74-95-3	Dibromomethane	ND		120	48.9
75-27-4	Bromodichloromethane	ND		120	48.9
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		300	48.9
10061-01-5	cis-1,3-Dichloropropene	ND		60	48.9
10061-02-6	trans-1,3-Dichloropropene	ND		60	48.9
108-88-3	Toluene	60		60	48.9
79-00-5	1,1,2-Trichloroethane	ND		60	48.9
591-78-6	2-Hexanone	ND		300	48.9
124-48-1	Dibromochloromethane	ND		120	48.9
106-93-4	1,2-Dibromoethane	ND		60	48.9

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		60	48.9
108-90-7	Chlorobenzene	ND		60	48.9
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	48.9
100-41-4	Ethylbenzene	ND		60	48.9
108383,106423	m & p-Xylene	ND		120	48.9
75-25-2	Bromoform	ND		120	48.9
100-42-5	Styrene	ND		60	48.9
95-47-6	o-Xylene	ND		60	48.9
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	48.9
96-18-4	1,2,3-Trichloropropane	ND		120	48.9
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	48.9
98-82-8	Isopropylbenzene	ND		120	48.9
108-86-1	Bromobenzene	ND		120	48.9
103-65-1	n-Propylbenzene	ND		120	48.9
108-67-8	1,3,5-Trimethylbenzene	ND		120	48.9
98-06-6	tert-Butylbenzene	ND		300	48.9
95-63-6	1,2,4-Trimethylbenzene	ND		120	48.9
135-98-8	sec-Butylbenzene	ND		300	48.9
541-73-1	1,3-Dichlorobenzene	ND		120	48.9
106-46-7	1,4-Dichlorobenzene	ND		120	48.9
99-87-6	p-Isopropyl toluene	ND		300	48.9
95-50-1	1,2-Dichlorobenzene	ND		120	48.9
104-51-8	n-Butylbenzene	ND		300	48.9
67-72-1	Hexachloroethane	ND		120	48.9
96-12-8	1,2-Dibromo-3-chloropropane	ND		300	48.9
120-82-1	1,2,4-Trichlorobenzene	ND		300	48.9
91-20-3	Naphthalene	ND		300	48.9
87-61-6	1,2,3-Trichlorobenzene	ND		300	48.9
91-57-6	2-Methylnaphthalene	ND		300	48.9

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104143-03ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/23/2001 by JRS	Sample ID:	SB-3
Total Solids:	81%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		310	50.2
74-87-3	Chloromethane	ND		310	50.2
75-01-4	Vinyl chloride	ND		62	50.2
74-83-9	Bromomethane	ND		310	50.2
75-00-3	Chloroethane	ND		310	50.2
75-69-4	Trichlorofluoromethane	ND		310	50.2
67-64-1	Acetone	ND		930	50.2
60-29-7	Diethyl ether	ND		310	50.2
75-35-4	1,1-Dichloroethylene	ND		62	50.2
74-88-4	Methyl iodide	ND		120	50.2
107-13-1	Acrylonitrile	ND		310	50.2
75-09-2	Methylene chloride	ND		310	50.2
75-15-0	Carbon disulfide	ND		310	50.2
156-60-5	trans-1,2-Dichloroethylene	ND		62	50.2
1634-04-4	Methyltertbutylether (MTBE)	ND		310	50.2
75-34-3	1,1-Dichloroethane	ND		62	50.2
78-93-3	2-Butanone (MEK)	ND		310	50.2
156-59-2	cis-1,2-Dichloroethylene	ND		62	50.2
67-66-3	Chloroform	ND		62	50.2
74-97-5	Bromochloromethane	ND		120	50.2
71-55-6	1,1,1-Trichloroethane	ND		62	50.2
107-06-2	1,2-Dichloroethane	ND		62	50.2
71-43-2	Benzene	ND		62	50.2
56-23-5	Carbon tetrachloride	ND		62	50.2
78-87-5	1,2-Dichloropropane	ND		62	50.2
79-01-6	Trichloroethylene	ND		62	50.2
74-95-3	Dibromomethane	ND		120	50.2
75-27-4	Bromodichloromethane	ND		120	50.2
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		310	50.2
10061-01-5	cis-1,3-Dichloropropene	ND		62	50.2
10061-02-6	trans-1,3-Dichloropropene	ND		62	50.2
108-88-3	Toluene	ND		62	50.2
79-00-5	1,1,2-Trichloroethane	ND		62	50.2
591-78-6	2-Hexanone	ND		310	50.2
124-48-1	Dibromochloromethane	ND		120	50.2
106-93-4	1,2-Dibromoethane	ND		62	50.2

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		62	50.2
108-90-7	Chlorobenzene	ND		62	50.2
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	50.2
100-41-4	Ethylbenzene	ND		62	50.2
108383,106423	m & p-Xylene	ND		120	50.2
75-25-2	Bromoform	ND		120	50.2
100-42-5	Styrene	ND		62	50.2
95-47-6	o-Xylene	ND		62	50.2
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	50.2
96-18-4	1,2,3-Trichloropropane	ND		120	50.2
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	50.2
98-82-8	Isopropylbenzene	ND		120	50.2
108-86-1	Bromobenzene	ND		120	50.2
103-65-1	n-Propylbenzene	ND		120	50.2
108-67-8	1,3,5-Trimethylbenzene	ND		120	50.2
98-06-6	tert-Butylbenzene	ND		310	50.2
95-63-6	1,2,4-Trimethylbenzene	ND		120	50.2
135-98-8	sec-Butylbenzene	ND		310	50.2
541-73-1	1,3-Dichlorobenzene	ND		120	50.2
106-46-7	1,4-Dichlorobenzene	ND		120	50.2
99-87-6	p-Isopropyl toluene	ND		310	50.2
95-50-1	1,2-Dichlorobenzene	ND		120	50.2
104-51-8	n-Butylbenzene	ND		310	50.2
67-72-1	Hexachloroethane	ND		120	50.2
96-12-8	1,2-Dibromo-3-chloropropane	ND		310	50.2
120-82-1	1,2,4-Trichlorobenzene	ND		310	50.2
91-20-3	Naphthalene	ND		310	50.2
87-61-6	1,2,3-Trichlorobenzene	ND		310	50.2
91-57-6	2-Methylnaphthalene	ND		310	50.2

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104143-04ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/23/2001 by JRS	Sample ID:	SB-4
Total Solids:	84%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		300	50.4
74-87-3	Chloromethane	ND		300	50.4
75-01-4	Vinyl chloride	ND		60	50.4
74-83-9	Bromomethane	ND		300	50.4
75-00-3	Chloroethane	ND		300	50.4
75-69-4	Trichlorofluoromethane	ND		300	50.4
67-64-1	Acetone	ND		900	50.4
60-29-7	Diethyl ether	ND		300	50.4
75-35-4	1,1-Dichloroethylene	ND		60	50.4
74-88-4	Methyl iodide	ND		120	50.4
107-13-1	Acrylonitrile	ND		300	50.4
75-09-2	Methylene chloride	ND		300	50.4
75-15-0	Carbon disulfide	ND		300	50.4
156-60-5	trans-1,2-Dichloroethylene	ND		60	50.4
1634-04-4	Methyltertbutylether (MTBE)	ND		300	50.4
75-34-3	1,1-Dichloroethane	ND		60	50.4
78-93-3	2-Butanone (MEK)	ND		300	50.4
156-59-2	cis-1,2-Dichloroethylene	ND		60	50.4
67-66-3	Chloroform	ND		60	50.4
74-97-5	Bromochloromethane	ND		120	50.4
71-55-6	1,1,1-Trichloroethane	ND		60	50.4
107-06-2	1,2-Dichloroethane	ND		60	50.4
71-43-2	Benzene	ND		60	50.4
56-23-5	Carbon tetrachloride	ND		60	50.4
78-87-5	1,2-Dichloropropane	ND		60	50.4
79-01-6	Trichloroethylene	ND		60	50.4
74-95-3	Dibromomethane	ND		120	50.4
75-27-4	Bromodichloromethane	ND		120	50.4
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		300	50.4
10061-01-5	cis-1,3-Dichloropropene	ND		60	50.4
10061-02-6	trans-1,3-Dichloropropene	ND		60	50.4
108-88-3	Toluene	ND		60	50.4
79-00-5	1,1,2-Trichloroethane	ND		60	50.4
591-78-6	2-Hexanone	ND		300	50.4
124-48-1	Dibromochloromethane	ND		120	50.4
106-93-4	1,2-Dibromoethane	ND		60	50.4

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		60	50.4
108-90-7	Chlorobenzene	ND		60	50.4
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	50.4
100-41-4	Ethylbenzene	ND		60	50.4
108383,106423	m & p-Xylene	ND		120	50.4
75-25-2	Bromoform	ND		120	50.4
100-42-5	Styrene	ND		60	50.4
95-47-6	o-Xylene	ND		60	50.4
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	50.4
96-18-4	1,2,3-Trichloropropane	ND		120	50.4
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	50.4
98-82-8	Isopropylbenzene	ND		120	50.4
108-86-1	Bromobenzene	ND		120	50.4
103-65-1	n-Propylbenzene	ND		120	50.4
108-67-8	1,3,5-Trimethylbenzene	ND		120	50.4
98-06-6	tert-Butylbenzene	ND		300	50.4
95-63-6	1,2,4-Trimethylbenzene	ND		120	50.4
135-98-8	sec-Butylbenzene	ND		300	50.4
541-73-1	1,3-Dichlorobenzene	ND		120	50.4
106-46-7	1,4-Dichlorobenzene	ND		120	50.4
99-87-6	p-Isopropyl toluene	ND		300	50.4
95-50-1	1,2-Dichlorobenzene	ND		120	50.4
104-51-8	n-Butylbenzene	ND		300	50.4
67-72-1	Hexachloroethane	ND		120	50.4
96-12-8	1,2-Dibromo-3-chloropropane	ND		300	50.4
120-82-1	1,2,4-Trichlorobenzene	ND		300	50.4
91-20-3	Naphthalene	ND		300	50.4
87-61-6	1,2,3-Trichlorobenzene	ND		300	50.4
91-57-6	2-Methylnaphthalene	ND		300	50.4

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104143-05ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/23/2001 by JRS	Sample ID:	SB-5
Total Solids:	83%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		300	50.5
74-87-3	Chloromethane	ND		300	50.5
75-01-4	Vinyl chloride	ND		61	50.5
74-83-9	Bromomethane	ND		300	50.5
75-00-3	Chloroethane	ND		300	50.5
75-69-4	Trichlorofluoromethane	ND		300	50.5
67-64-1	Acetone	ND		910	50.5
60-29-7	Diethyl ether	ND		300	50.5
75-35-4	1,1-Dichloroethylene	ND		61	50.5
74-88-4	Methyl iodide	ND		120	50.5
107-13-1	Acrylonitrile	ND		300	50.5
75-09-2	Methylene chloride	ND		300	50.5
75-15-0	Carbon disulfide	ND		300	50.5
156-60-5	trans-1,2-Dichloroethylene	ND		61	50.5
1634-04-4	Methyltertbutylether (MTBE)	ND		300	50.5
75-34-3	1,1-Dichloroethane	ND		61	50.5
78-93-3	2-Butanone (MEK)	ND		300	50.5
156-59-2	cis-1,2-Dichloroethylene	ND		61	50.5
67-66-3	Chloroform	ND		61	50.5
74-97-5	Bromochloromethane	ND		120	50.5
71-55-6	1,1,1-Trichloroethane	ND		61	50.5
107-06-2	1,2-Dichloroethane	ND		61	50.5
71-43-2	Benzene	ND		61	50.5
56-23-5	Carbon tetrachloride	ND		61	50.5
78-87-5	1,2-Dichloropropane	ND		61	50.5
79-01-6	Trichloroethylene	ND		61	50.5
74-95-3	Dibromomethane	ND		120	50.5
75-27-4	Bromodichloromethane	ND		120	50.5
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		300	50.5
10061-01-5	cis-1,3-Dichloropropene	ND		61	50.5
10061-02-6	trans-1,3-Dichloropropene	ND		61	50.5
108-88-3	Toluene	11000		61	50.5
79-00-5	1,1,2-Trichloroethane	ND		61	50.5
591-78-6	2-Hexanone	ND		300	50.5
124-48-1	Dibromochloromethane	ND		120	50.5
106-93-4	1,2-Dibromoethane	ND		61	50.5

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104143-05ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/23/2001 by JRS	Sample ID:	SB-5
Total Solids:	83%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		300	50.5
74-87-3	Chloromethane	ND		300	50.5
75-01-4	Vinyl chloride	ND		61	50.5
74-83-9	Bromomethane	ND		300	50.5
75-00-3	Chloroethane	ND		300	50.5
75-69-4	Trichlorofluoromethane	ND		300	50.5
67-64-1	Acetone	ND		910	50.5
60-29-7	Diethyl ether	ND		300	50.5
75-35-4	1,1-Dichloroethylene	ND		61	50.5
74-88-4	Methyl iodide	ND		120	50.5
107-13-1	Acrylonitrile	ND		300	50.5
75-09-2	Methylene chloride	ND		300	50.5
75-15-0	Carbon disulfide	ND		300	50.5
156-60-5	trans-1,2-Dichloroethylene	ND		61	50.5
1634-04-4	Methyltertbutylether (MTBE)	ND		300	50.5
75-34-3	1,1-Dichloroethane	ND		61	50.5
78-93-3	2-Butanone (MEK)	ND		300	50.5
156-59-2	cis-1,2-Dichloroethylene	ND		61	50.5
67-66-3	Chloroform	ND		61	50.5
74-97-5	Bromochloromethane	ND		120	50.5
71-55-6	1,1,1-Trichloroethane	ND		61	50.5
107-06-2	1,2-Dichloroethane	ND		61	50.5
71-43-2	Benzene	ND		61	50.5
56-23-5	Carbon tetrachloride	ND		61	50.5
78-87-5	1,2-Dichloropropane	ND		61	50.5
79-01-6	Trichloroethylene	ND		61	50.5
74-95-3	Dibromomethane	ND		120	50.5
75-27-4	Bromodichloromethane	ND		120	50.5
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		300	50.5
10061-01-5	cis-1,3-Dichloropropene	ND		61	50.5
10061-02-6	trans-1,3-Dichloropropene	ND		61	50.5
108-88-3	Toluene	11000		61	50.5
79-00-5	1,1,2-Trichloroethane	ND		61	50.5
591-78-6	2-Hexanone	ND		300	50.5
124-48-1	Dibromochloromethane	ND		120	50.5
106-93-4	1,2-Dibromoethane	ND		61	50.5

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		61	50.5
108-90-7	Chlorobenzene	ND		61	50.5
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	50.5
100-41-4	Ethylbenzene	6000		61	50.5
108383,106423	m & p-Xylene	56000		2400	1010
75-25-2	Bromoform	ND		120	50.5
100-42-5	Styrene	ND		61	50.5
95-47-6	o-Xylene	20000		1200	1010
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	50.5
96-18-4	1,2,3-Trichloropropane	ND		120	50.5
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	50.5
98-82-8	Isopropylbenzene	3400	J	120	50.5
108-86-1	Bromobenzene	ND		120	50.5
103-65-1	n-Propylbenzene	3900	J	120	50.5
108-67-8	1,3,5-Trimethylbenzene	35000		2400	1010
98-06-6	tert-Butylbenzene	ND		300	50.5
95-63-6	1,2,4-Trimethylbenzene	50000		2400	1010
135-98-8	sec-Butylbenzene	2600	J	300	50.5
541-73-1	1,3-Dichlorobenzene	ND		120	50.5
106-46-7	1,4-Dichlorobenzene	ND		120	50.5
99-87-6	p-Isopropyl toluene	6200	J	300	50.5
95-50-1	1,2-Dichlorobenzene	ND		120	50.5
104-51-8	n-Butylbenzene	ND		300	50.5
67-72-1	Hexachloroethane	ND		120	50.5
96-12-8	1,2-Dibromo-3-chloropropane	ND		300	50.5
120-82-1	1,2,4-Trichlorobenzene	ND		300	50.5
91-20-3	Naphthalene	590	J	300	50.5
87-61-6	1,2,3-Trichlorobenzene	ND		300	50.5
91-57-6	2-Methylnaphthalene	680	J	300	50.5

Unidentified peaks.

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104143-06ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/24/2001 by JRS	Sample ID:	SB-6
Total Solids:	81%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		290	46.9
74-87-3	Chloromethane	ND		290	46.9
75-01-4	Vinyl chloride	ND		58	46.9
74-83-9	Bromomethane	ND		290	46.9
75-00-3	Chloroethane	ND		290	46.9
75-69-4	Trichlorofluoromethane	ND		290	46.9
67-64-1	Acetone	ND		870	46.9
60-29-7	Diethyl ether	ND		290	46.9
75-35-4	1,1-Dichloroethylene	ND		58	46.9
74-88-4	Methyl iodide	ND		120	46.9
107-13-1	Acrylonitrile	ND		290	46.9
75-09-2	Methylene chloride	ND		290	46.9
75-15-0	Carbon disulfide	ND		290	46.9
156-60-5	trans-1,2-Dichloroethylene	ND		58	46.9
1634-04-4	Methyltertbutylether (MTBE)	ND		290	46.9
75-34-3	1,1-Dichloroethane	ND		58	46.9
78-93-3	2-Butanone (MEK)	ND		290	46.9
156-59-2	cis-1,2-Dichloroethylene	ND		58	46.9
67-66-3	Chloroform	ND		58	46.9
74-97-5	Bromochloromethane	ND		120	46.9
71-55-6	1,1,1-Trichloroethane	ND		58	46.9
107-06-2	1,2-Dichloroethane	ND		58	46.9
71-43-2	Benzene	ND		58	46.9
56-23-5	Carbon tetrachloride	ND		58	46.9
78-87-5	1,2-Dichloropropane	ND		58	46.9
79-01-6	Trichloroethylene	ND		58	46.9
74-95-3	Dibromomethane	ND		120	46.9
75-27-4	Bromodichloromethane	ND		120	46.9
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		290	46.9
10061-01-5	cis-1,3-Dichloropropene	ND		58	46.9
10061-02-6	trans-1,3-Dichloropropene	ND		58	46.9
108-88-3	Toluene	ND		58	46.9
79-00-5	1,1,2-Trichloroethane	ND		58	46.9
591-78-6	2-Hexanone	ND		290	46.9
124-48-1	Dibromochloromethane	ND		120	46.9
106-93-4	1,2-Dibromoethane	ND		58	46.9

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		58	46.9
108-90-7	Chlorobenzene	ND		58	46.9
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	46.9
100-41-4	Ethylbenzene	ND		58	46.9
108383,106423	m & p-Xylene	ND		120	46.9
75-25-2	Bromoform	ND		120	46.9
100-42-5	Styrene	ND		58	46.9
95-47-6	o-Xylene	ND		58	46.9
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	46.9
96-18-4	1,2,3-Trichloropropane	ND		120	46.9
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	46.9
98-82-8	Isopropylbenzene	ND		120	46.9
108-86-1	Bromobenzene	ND		120	46.9
103-65-1	n-Propylbenzene	ND		120	46.9
108-67-8	1,3,5-Trimethylbenzene	ND		120	46.9
98-06-6	tert-Butylbenzene	ND		290	46.9
95-63-6	1,2,4-Trimethylbenzene	ND		120	46.9
135-98-8	sec-Butylbenzene	ND		290	46.9
541-73-1	1,3-Dichlorobenzene	ND		120	46.9
106-46-7	1,4-Dichlorobenzene	ND		120	46.9
99-87-6	p-Isopropyl toluene	ND		290	46.9
95-50-1	1,2-Dichlorobenzene	ND		120	46.9
104-51-8	n-Butylbenzene	ND		290	46.9
67-72-1	Hexachloroethane	ND		120	46.9
96-12-8	1,2-Dibromo-3-chloropropane	ND		290	46.9
120-82-1	1,2,4-Trichlorobenzene	ND		290	46.9
91-20-3	Naphthalene	ND		290	46.9
87-61-6	1,2,3-Trichlorobenzene	ND		290	46.9
91-57-6	2-Methylnaphthalene	ND		290	46.9

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104143-07ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/23/2001 by JRS	Sample ID:	SB-7
Total Solids:	83%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		300	49.0
74-87-3	Chloromethane	ND		300	49.0
75-01-4	Vinyl chloride	ND		59	49.0
74-83-9	Bromomethane	ND		300	49.0
75-00-3	Chloroethane	ND		300	49.0
75-69-4	Trichlorofluoromethane	ND		300	49.0
67-64-1	Acetone	ND		890	49.0
60-29-7	Diethyl ether	ND		300	49.0
75-35-4	1,1-Dichloroethylene	ND		59	49.0
74-88-4	Methyl iodide	ND		120	49.0
107-13-1	Acrylonitrile	ND		300	49.0
75-09-2	Methylene chloride	ND		300	49.0
75-15-0	Carbon disulfide	ND		300	49.0
156-60-5	trans-1,2-Dichloroethylene	ND		59	49.0
1634-04-4	Methyltertbutylether (MTBE)	ND		300	49.0
75-34-3	1,1-Dichloroethane	ND		59	49.0
78-93-3	2-Butanone (MEK)	ND		300	49.0
156-59-2	cis-1,2-Dichloroethylene	ND		59	49.0
67-66-3	Chloroform	ND		59	49.0
74-97-5	Bromochloromethane	ND		120	49.0
71-55-6	1,1,1-Trichloroethane	ND		59	49.0
107-06-2	1,2-Dichloroethane	ND		59	49.0
71-43-2	Benzene	ND		59	49.0
56-23-5	Carbon tetrachloride	ND		59	49.0
78-87-5	1,2-Dichloropropane	ND		59	49.0
79-01-6	Trichloroethylene	ND		59	49.0
74-95-3	Dibromomethane	ND		120	49.0
75-27-4	Bromodichloromethane	ND		120	49.0
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		300	49.0
10061-01-5	cis-1,3-Dichloropropene	ND		59	49.0
10061-02-6	trans-1,3-Dichloropropene	ND		59	49.0
108-88-3	Toluene	ND		59	49.0
79-00-5	1,1,2-Trichloroethane	ND		59	49.0
591-78-6	2-Hexanone	ND		300	49.0
124-48-1	Dibromochloromethane	ND		120	49.0
106-93-4	1,2-Dibromoethane	ND		59	49.0

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		59	49.0
108-90-7	Chlorobenzene	ND		59	49.0
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	49.0
100-41-4	Ethylbenzene	ND		59	49.0
108383,106423	m & p-Xylene	ND		120	49.0
75-25-2	Bromoform	ND		120	49.0
100-42-5	Styrene	ND		59	49.0
95-47-6	o-Xylene	ND		59	49.0
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	49.0
96-18-4	1,2,3-Trichloropropane	ND		120	49.0
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	49.0
98-82-8	Isopropylbenzene	ND		120	49.0
108-86-1	Bromobenzene	ND		120	49.0
103-65-1	n-Propylbenzene	ND		120	49.0
108-67-8	1,3,5-Trimethylbenzene	ND		120	49.0
98-06-6	tert-Butylbenzene	ND		300	49.0
95-63-6	1,2,4-Trimethylbenzene	ND		120	49.0
135-98-8	sec-Butylbenzene	ND		300	49.0
541-73-1	1,3-Dichlorobenzene	ND		120	49.0
106-46-7	1,4-Dichlorobenzene	ND		120	49.0
99-87-6	p-Isopropyl toluene	ND		300	49.0
95-50-1	1,2-Dichlorobenzene	ND		120	49.0
104-51-8	n-Butylbenzene	ND		300	49.0
67-72-1	Hexachloroethane	ND		120	49.0
96-12-8	1,2-Dibromo-3-chloropropane	ND		300	49.0
120-82-1	1,2,4-Trichlorobenzene	ND		300	49.0
91-20-3	Naphthalene	ND		300	49.0
87-61-6	1,2,3-Trichlorobenzene	ND		300	49.0
91-57-6	2-Methylnaphthalene	ND		300	49.0

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104143-08ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/23/2001 by JRS	Sample ID:	SB-8
Total Solids:	86%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		300	51.8
74-87-3	Chloromethane	ND		300	51.8
75-01-4	Vinyl chloride	ND		60	51.8
74-83-9	Bromomethane	ND		300	51.8
75-00-3	Chloroethane	ND		300	51.8
75-69-4	Trichlorofluoromethane	ND		300	51.8
67-64-1	Acetone	ND		900	51.8
60-29-7	Diethyl ether	ND		300	51.8
75-35-4	1,1-Dichloroethylene	ND		60	51.8
74-88-4	Methyl iodide	ND		120	51.8
107-13-1	Acrylonitrile	ND		300	51.8
75-09-2	Methylene chloride	ND		300	51.8
75-15-0	Carbon disulfide	ND		300	51.8
156-60-5	trans-1,2-Dichloroethylene	ND		60	51.8
1634-04-4	Methyltertbutylether (MTBE)	ND		300	51.8
75-34-3	1,1-Dichloroethane	ND		60	51.8
78-93-3	2-Butanone (MEK)	ND		300	51.8
156-59-2	cis-1,2-Dichloroethylene	ND		60	51.8
67-66-3	Chloroform	ND		60	51.8
74-97-5	Bromochloromethane	ND		120	51.8
71-55-6	1,1,1-Trichloroethane	ND		60	51.8
107-06-2	1,2-Dichloroethane	ND		60	51.8
71-43-2	Benzene	ND		60	51.8
56-23-5	Carbon tetrachloride	ND		60	51.8
78-87-5	1,2-Dichloropropane	ND		60	51.8
79-01-6	Trichloroethylene	120		60	51.8
74-95-3	Dibromomethane	ND		120	51.8
75-27-4	Bromodichloromethane	ND		120	51.8
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		300	51.8
10061-01-5	cis-1,3-Dichloropropene	ND		60	51.8
10061-02-6	trans-1,3-Dichloropropene	ND		60	51.8
108-88-3	Toluene	ND		60	51.8
79-00-5	1,1,2-Trichloroethane	ND		60	51.8
591-78-6	2-Hexanone	ND		300	51.8
124-48-1	Dibromochloromethane	ND		120	51.8
106-93-4	1,2-Dibromoethane	ND		60	51.8

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		60	51.8
108-90-7	Chlorobenzene	ND		60	51.8
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	51.8
100-41-4	Ethylbenzene	ND		60	51.8
108383,106423	m & p-Xylene	ND		120	51.8
75-25-2	Bromoform	ND		120	51.8
100-42-5	Styrene	ND		60	51.8
95-47-6	o-Xylene	ND		60	51.8
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	51.8
96-18-4	1,2,3-Trichloropropane	ND		120	51.8
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	51.8
98-82-8	Isopropylbenzene	ND		120	51.8
108-86-1	Bromobenzene	ND		120	51.8
103-65-1	n-Propylbenzene	ND		120	51.8
108-67-8	1,3,5-Trimethylbenzene	ND		120	51.8
98-06-6	tert-Butylbenzene	ND		300	51.8
95-63-6	1,2,4-Trimethylbenzene	ND		120	51.8
135-98-8	sec-Butylbenzene	ND		300	51.8
541-73-1	1,3-Dichlorobenzene	ND		120	51.8
106-46-7	1,4-Dichlorobenzene	ND		120	51.8
99-87-6	p-Isopropyl toluene	ND		300	51.8
95-50-1	1,2-Dichlorobenzene	ND		120	51.8
104-51-8	n-Butylbenzene	ND		300	51.8
67-72-1	Hexachloroethane	ND		120	51.8
96-12-8	1,2-Dibromo-3-chloropropane	ND		300	51.8
120-82-1	1,2,4-Trichlorobenzene	ND		300	51.8
91-20-3	Naphthalene	ND		300	51.8
87-61-6	1,2,3-Trichlorobenzene	ND		300	51.8
91-57-6	2-Methylnaphthalene	ND		300	51.8

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104143-09ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/23/2001 by JRS	Sample ID:	SB-9
Total Solids:	84%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		300	49.6
74-87-3	Chloromethane	ND		300	49.6
75-01-4	Vinyl chloride	ND		59	49.6
74-83-9	Bromomethane	ND		300	49.6
75-00-3	Chloroethane	ND		300	49.6
75-69-4	Trichlorofluoromethane	ND		300	49.6
67-64-1	Acetone	ND		890	49.6
60-29-7	Diethyl ether	ND		300	49.6
75-35-4	1,1-Dichloroethylene	ND		59	49.6
74-88-4	Methyl iodide	ND		120	49.6
107-13-1	Acrylonitrile	ND		300	49.6
75-09-2	Methylene chloride	ND		300	49.6
75-15-0	Carbon disulfide	ND		300	49.6
156-60-5	trans-1,2-Dichloroethylene	ND		59	49.6
1634-04-4	Methyltertbutylether (MTBE)	ND		300	49.6
75-34-3	1,1-Dichloroethane	ND		59	49.6
78-93-3	2-Butanone (MEK)	ND		300	49.6
156-59-2	cis-1,2-Dichloroethylene	ND		59	49.6
67-66-3	Chloroform	ND		59	49.6
74-97-5	Bromochloromethane	ND		120	49.6
71-55-6	1,1,1-Trichloroethane	ND		59	49.6
107-06-2	1,2-Dichloroethane	ND		59	49.6
71-43-2	Benzene	ND		59	49.6
56-23-5	Carbon tetrachloride	ND		59	49.6
78-87-5	1,2-Dichloropropane	ND		59	49.6
79-01-6	Trichloroethylene	ND		59	49.6
74-95-3	Dibromomethane	ND		120	49.6
75-27-4	Bromodichloromethane	ND		120	49.6
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		300	49.6
10061-01-5	cis-1,3-Dichloropropene	ND		59	49.6
10061-02-6	trans-1,3-Dichloropropene	ND		59	49.6
108-88-3	Toluene	ND		59	49.6
79-00-5	1,1,2-Trichloroethane	ND		59	49.6
591-78-6	2-Hexanone	ND		300	49.6
124-48-1	Dibromochloromethane	ND		120	49.6
106-93-4	1,2-Dibromoethane	ND		59	49.6

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		59	49.6
108-90-7	Chlorobenzene	ND		59	49.6
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	49.6
100-41-4	Ethylbenzene	ND		59	49.6
108383,106423	m & p-Xylene	ND		120	49.6
75-25-2	Bromoform	ND		120	49.6
100-42-5	Styrene	ND		59	49.6
95-47-6	o-Xylene	ND		59	49.6
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	49.6
96-18-4	1,2,3-Trichloropropane	ND		120	49.6
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	49.6
98-82-8	Isopropylbenzene	ND		120	49.6
108-86-1	Bromobenzene	ND		120	49.6
103-65-1	n-Propylbenzene	ND		120	49.6
108-67-8	1,3,5-Trimethylbenzene	ND		120	49.6
98-06-6	tert-Butylbenzene	ND		300	49.6
95-63-6	1,2,4-Trimethylbenzene	ND		120	49.6
135-98-8	sec-Butylbenzene	ND		300	49.6
541-73-1	1,3-Dichlorobenzene	ND		120	49.6
106-46-7	1,4-Dichlorobenzene	ND		120	49.6
99-87-6	p-Isopropyl toluene	ND		300	49.6
95-50-1	1,2-Dichlorobenzene	ND		120	49.6
104-51-8	n-Butylbenzene	ND		300	49.6
67-72-1	Hexachloroethane	ND		120	49.6
96-12-8	1,2-Dibromo-3-chloropropane	ND		300	49.6
120-82-1	1,2,4-Trichlorobenzene	ND		300	49.6
91-20-3	Naphthalene	ND		300	49.6
87-61-6	1,2,3-Trichlorobenzene	ND		300	49.6
91-57-6	2-Methylnaphthalene	ND		300	49.6

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104143-10ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/23/2001 by JRS	Sample ID:	SB-10
Total Solids:	81%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		320	52.1
74-87-3	Chloromethane	ND		320	52.1
75-01-4	Vinyl chloride	ND		64	52.1
74-83-9	Bromomethane	ND		320	52.1
75-00-3	Chloroethane	ND		320	52.1
75-69-4	Trichlorofluoromethane	ND		320	52.1
67-64-1	Acetone	ND		960	52.1
60-29-7	Diethyl ether	ND		320	52.1
75-35-4	1,1-Dichloroethylene	ND		64	52.1
74-88-4	Methyl iodide	ND		130	52.1
107-13-1	Acrylonitrile	ND		320	52.1
75-09-2	Methylene chloride	ND		320	52.1
75-15-0	Carbon disulfide	ND		320	52.1
156-60-5	trans-1,2-Dichloroethylene	ND		64	52.1
1634-04-4	Methyltertbutylether (MTBE)	ND		320	52.1
75-34-3	1,1-Dichloroethane	ND		64	52.1
78-93-3	2-Butanone (MEK)	ND		320	52.1
156-59-2	cis-1,2-Dichloroethylene	ND		64	52.1
67-66-3	Chloroform	ND		64	52.1
74-97-5	Bromochloromethane	ND		130	52.1
71-55-6	1,1,1-Trichloroethane	ND		64	52.1
107-06-2	1,2-Dichloroethane	ND		64	52.1
71-43-2	Benzene	ND		64	52.1
56-23-5	Carbon tetrachloride	ND		64	52.1
78-87-5	1,2-Dichloropropane	ND		64	52.1
79-01-6	Trichloroethylene	ND		64	52.1
74-95-3	Dibromomethane	ND		130	52.1
75-27-4	Bromodichloromethane	ND		130	52.1
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		320	52.1
10061-01-5	cis-1,3-Dichloropropene	ND		64	52.1
10061-02-6	trans-1,3-Dichloropropene	ND		64	52.1
108-88-3	Toluene	ND		64	52.1
79-00-5	1,1,2-Trichloroethane	ND		64	52.1
591-78-6	2-Hexanone	ND		320	52.1
124-48-1	Dibromochloromethane	ND		130	52.1
106-93-4	1,2-Dibromoethane	ND		64	52.1

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		64	52.1
108-90-7	Chlorobenzene	ND		64	52.1
630-20-6	1,1,1,2-Tetrachloroethane	ND		130	52.1
100-41-4	Ethylbenzene	ND		64	52.1
108383,106423	m & p-Xylene	ND		130	52.1
75-25-2	Bromoform	ND		130	52.1
100-42-5	Styrene	ND		64	52.1
95-47-6	o-Xylene	ND		64	52.1
79-34-5	1,1,2,2-Tetrachloroethane	ND		130	52.1
96-18-4	1,2,3-Trichloropropane	ND		130	52.1
110-57-6	trans-1,4-Dichloro-2-butene	ND		130	52.1
98-82-8	Isopropylbenzene	ND		130	52.1
108-86-1	Bromobenzene	ND		130	52.1
103-65-1	n-Propylbenzene	ND		130	52.1
108-67-8	1,3,5-Trimethylbenzene	ND		130	52.1
98-06-6	tert-Butylbenzene	ND		320	52.1
95-63-6	1,2,4-Trimethylbenzene	ND		130	52.1
135-98-8	sec-Butylbenzene	ND		320	52.1
541-73-1	1,3-Dichlorobenzene	ND		130	52.1
106-46-7	1,4-Dichlorobenzene	ND		130	52.1
99-87-6	p-Isopropyl toluene	ND		320	52.1
95-50-1	1,2-Dichlorobenzene	ND		130	52.1
104-51-8	n-Butylbenzene	ND		320	52.1
67-72-1	Hexachloroethane	ND		130	52.1
96-12-8	1,2-Dibromo-3-chloropropane	ND		320	52.1
120-82-1	1,2,4-Trichlorobenzene	ND		320	52.1
91-20-3	Naphthalene	ND		320	52.1
87-61-6	1,2,3-Trichlorobenzene	ND		320	52.1
91-57-6	2-Methylnaphthalene	ND		320	52.1

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104143-11ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/23/2001 by JRS	Sample ID:	SB-11
Total Solids:	88%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		290	50.6
74-87-3	Chloromethane	ND		290	50.6
75-01-4	Vinyl chloride	ND		58	50.6
74-83-9	Bromomethane	ND		290	50.6
75-00-3	Chloroethane	ND		290	50.6
75-69-4	Trichlorofluoromethane	ND		290	50.6
67-64-1	Acetone	ND		860	50.6
60-29-7	Diethyl ether	ND		290	50.6
75-35-4	1,1-Dichloroethylene	ND		58	50.6
74-88-4	Methyl iodide	ND		120	50.6
107-13-1	Acrylonitrile	ND		290	50.6
75-09-2	Methylene chloride	ND		290	50.6
75-15-0	Carbon disulfide	ND		290	50.6
156-60-5	trans-1,2-Dichloroethylene	ND		58	50.6
1634-04-4	Methyltertbutylether (MTBE)	ND		290	50.6
75-34-3	1,1-Dichloroethane	ND		58	50.6
78-93-3	2-Butanone (MEK)	ND		290	50.6
156-59-2	cis-1,2-Dichloroethylene	ND		58	50.6
67-66-3	Chloroform	ND		58	50.6
74-97-5	Bromochloromethane	ND		120	50.6
71-55-6	1,1,1-Trichloroethane	ND		58	50.6
107-06-2	1,2-Dichloroethane	ND		58	50.6
71-43-2	Benzene	ND		58	50.6
56-23-5	Carbon tetrachloride	ND		58	50.6
78-87-5	1,2-Dichloropropane	ND		58	50.6
79-01-6	Trichloroethylene	ND		58	50.6
74-95-3	Dibromomethane	ND		120	50.6
75-27-4	Bromodichloromethane	ND		120	50.6
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		290	50.6
10061-01-5	cis-1,3-Dichloropropene	ND		58	50.6
10061-02-6	trans-1,3-Dichloropropene	ND		58	50.6
108-88-3	Toluene	ND		58	50.6
79-00-5	1,1,2-Trichloroethane	ND		58	50.6
591-78-6	2-Hexanone	ND		290	50.6
124-48-1	Dibromochloromethane	ND		120	50.6
106-93-4	1,2-Dibromoethane	ND		58	50.6

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		58	50.6
108-90-7	Chlorobenzene	ND		58	50.6
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	50.6
100-41-4	Ethylbenzene	ND		58	50.6
108383,106423	m & p-Xylene	ND		120	50.6
75-25-2	Bromoform	ND		120	50.6
100-42-5	Styrene	ND		58	50.6
95-47-6	o-Xylene	ND		58	50.6
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	50.6
96-18-4	1,2,3-Trichloropropane	ND		120	50.6
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	50.6
98-82-8	Isopropylbenzene	ND		120	50.6
108-86-1	Bromobenzene	ND		120	50.6
103-65-1	n-Propylbenzene	ND		120	50.6
108-67-8	1,3,5-Trimethylbenzene	ND		120	50.6
98-06-6	tert-Butylbenzene	ND		290	50.6
95-63-6	1,2,4-Trimethylbenzene	ND		120	50.6
135-98-8	sec-Butylbenzene	ND		290	50.6
541-73-1	1,3-Dichlorobenzene	ND		120	50.6
106-46-7	1,4-Dichlorobenzene	ND		120	50.6
99-87-6	p-Isopropyl toluene	ND		290	50.6
95-50-1	1,2-Dichlorobenzene	ND		120	50.6
104-51-8	n-Butylbenzene	ND		290	50.6
67-72-1	Hexachloroethane	ND		120	50.6
96-12-8	1,2-Dibromo-3-chloropropane	ND		290	50.6
120-82-1	1,2,4-Trichlorobenzene	ND		290	50.6
91-20-3	Naphthalene	ND		290	50.6
87-61-6	1,2,3-Trichlorobenzene	ND		290	50.6
91-57-6	2-Methylnaphthalene	ND		290	50.6

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104143-12ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/23/2001 by JRS	Sample ID:	SB-12
Total Solids:	79%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		310	49.0
74-87-3	Chloromethane	ND		310	49.0
75-01-4	Vinyl chloride	ND		62	49.0
74-83-9	Bromomethane	ND		310	49.0
75-00-3	Chloroethane	ND		310	49.0
75-69-4	Trichlorofluoromethane	ND		310	49.0
67-64-1	Acetone	ND		930	49.0
60-29-7	Diethyl ether	ND		310	49.0
75-35-4	1,1-Dichloroethylene	ND		62	49.0
74-88-4	Methyl iodide	ND		120	49.0
107-13-1	Acrylonitrile	ND		310	49.0
75-09-2	Methylene chloride	ND		310	49.0
75-15-0	Carbon disulfide	ND		310	49.0
156-60-5	trans-1,2-Dichloroethylene	ND		62	49.0
1634-04-4	Methyltertbutylether (MTBE)	ND		310	49.0
75-34-3	1,1-Dichloroethane	ND		62	49.0
78-93-3	2-Butanone (MEK)	ND		310	49.0
156-59-2	cis-1,2-Dichloroethylene	ND		62	49.0
67-66-3	Chloroform	ND		62	49.0
74-97-5	Bromochloromethane	ND		120	49.0
71-55-6	1,1,1-Trichloroethane	ND		62	49.0
107-06-2	1,2-Dichloroethane	ND		62	49.0
71-43-2	Benzene	ND		62	49.0
56-23-5	Carbon tetrachloride	ND		62	49.0
78-87-5	1,2-Dichloropropane	ND		62	49.0
79-01-6	Trichloroethylene	ND		62	49.0
74-95-3	Dibromomethane	ND		120	49.0
75-27-4	Bromodichloromethane	ND		120	49.0
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		310	49.0
10061-01-5	cis-1,3-Dichloropropene	ND		62	49.0
10061-02-6	trans-1,3-Dichloropropene	ND		62	49.0
108-88-3	Toluene	ND		62	49.0
79-00-5	1,1,2-Trichloroethane	ND		62	49.0
591-78-6	2-Hexanone	ND		310	49.0
124-48-1	Dibromochloromethane	ND		120	49.0
106-93-4	1,2-Dibromoethane	ND		62	49.0

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		62	49.0
108-90-7	Chlorobenzene	ND		62	49.0
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	49.0
100-41-4	Ethylbenzene	ND		62	49.0
108383,106423	m & p-Xylene	ND		120	49.0
75-25-2	Bromoform	ND		120	49.0
100-42-5	Styrene	ND		62	49.0
95-47-6	o-Xylene	ND		62	49.0
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	49.0
96-18-4	1,2,3-Trichloropropane	ND		120	49.0
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	49.0
98-82-8	Isopropylbenzene	ND		120	49.0
108-86-1	Bromobenzene	ND		120	49.0
103-65-1	n-Propylbenzene	ND		120	49.0
108-67-8	1,3,5-Trimethylbenzene	ND		120	49.0
98-06-6	tert-Butylbenzene	ND		310	49.0
95-63-6	1,2,4-Trimethylbenzene	ND		120	49.0
135-98-8	sec-Butylbenzene	ND		310	49.0
541-73-1	1,3-Dichlorobenzene	ND		120	49.0
106-46-7	1,4-Dichlorobenzene	ND		120	49.0
99-87-6	p-Isopropyl toluene	ND		310	49.0
95-50-1	1,2-Dichlorobenzene	ND		120	49.0
104-51-8	n-Butylbenzene	ND		310	49.0
67-72-1	Hexachloroethane	ND		120	49.0
96-12-8	1,2-Dibromo-3-chloropropane	ND		310	49.0
120-82-1	1,2,4-Trichlorobenzene	ND		310	49.0
91-20-3	Naphthalene	ND		310	49.0
87-61-6	1,2,3-Trichlorobenzene	ND		310	49.0
91-57-6	2-Methylnaphthalene	ND		310	49.0

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104143-13ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/24/2001 by JRS	Sample ID:	SB-5D
Total Solids:	90%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		280	49.5
74-87-3	Chloromethane	ND		280	49.5
75-01-4	Vinyl chloride	ND		55	49.5
74-83-9	Bromomethane	ND		280	49.5
75-00-3	Chloroethane	ND		280	49.5
75-69-4	Trichlorofluoromethane	ND		280	49.5
67-64-1	Acetone	ND		820	49.5
60-29-7	Diethyl ether	ND		280	49.5
75-35-4	1,1-Dichloroethylene	ND		55	49.5
74-88-4	Methyl iodide	ND		110	49.5
107-13-1	Acrylonitrile	ND		280	49.5
75-09-2	Methylene chloride	ND		280	49.5
75-15-0	Carbon disulfide	ND		280	49.5
156-60-5	trans-1,2-Dichloroethylene	ND		55	49.5
1634-04-4	Methyltertbutylether (MTBE)	ND		280	49.5
75-34-3	1,1-Dichloroethane	ND		55	49.5
78-93-3	2-Butanone (MEK)	ND		280	49.5
156-59-2	cis-1,2-Dichloroethylene	ND		55	49.5
67-66-3	Chloroform	ND		55	49.5
74-97-5	Bromochloromethane	ND		110	49.5
71-55-6	1,1,1-Trichloroethane	ND		55	49.5
107-06-2	1,2-Dichloroethane	ND		55	49.5
71-43-2	Benzene	710		55	49.5
56-23-5	Carbon tetrachloride	ND		55	49.5
78-87-5	1,2-Dichloropropane	ND		55	49.5
79-01-6	Trichloroethylene	ND		55	49.5
74-95-3	Dibromomethane	ND		110	49.5
75-27-4	Bromodichloromethane	ND		110	49.5
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		280	49.5
10061-01-5	cis-1,3-Dichloropropene	ND		55	49.5
10061-02-6	trans-1,3-Dichloropropene	ND		55	49.5
108-88-3	Toluene	38000		2900	2600
79-00-5	1,1,2-Trichloroethane	ND		55	49.5
591-78-6	2-Hexanone	ND		280	49.5
124-48-1	Dibromochloromethane	ND		110	49.5
106-93-4	1,2-Dibromoethane	ND		55	49.5

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		55	49.5
108-90-7	Chlorobenzene	ND		55	49.5
630-20-6	1,1,1,2-Tetrachloroethane	ND		110	49.5
100-41-4	Ethylbenzene	20000		2900	2600
108383,106423	m & p-Xylene	150000		5800	2600
75-25-2	Bromoform	ND		110	49.5
100-42-5	Styrene	ND		55	49.5
95-47-6	o-Xylene	42000		2900	2600
79-34-5	1,1,2,2-Tetrachloroethane	ND		110	49.5
96-18-4	1,2,3-Trichloropropane	ND		110	49.5
110-57-6	trans-1,4-Dichloro-2-butene	ND		110	49.5
98-82-8	Isopropylbenzene	6000	J	110	49.5
108-86-1	Bromobenzene	ND		110	49.5
103-65-1	n-Propylbenzene	7400	J	110	49.5
108-67-8	1,3,5-Trimethylbenzene	31000		5800	2600
98-06-6	tert-Butylbenzene	ND		280	49.5
95-63-6	1,2,4-Trimethylbenzene	63000		5800	2600
135-98-8	sec-Butylbenzene	2000	J	280	49.5
541-73-1	1,3-Dichlorobenzene	ND		110	49.5
106-46-7	1,4-Dichlorobenzene	ND		110	49.5
99-87-6	p-Isopropyl toluene	150000		14000	2600
95-50-1	1,2-Dichlorobenzene	ND		110	49.5
104-51-8	n-Butylbenzene	2600	J	280	49.5
67-72-1	Hexachloroethane	ND		110	49.5
96-12-8	1,2-Dibromo-3-chloropropane	ND		280	49.5
120-82-1	1,2,4-Trichlorobenzene	ND		280	49.5
91-20-3	Naphthalene	450	J	280	49.5
87-61-6	1,2,3-Trichlorobenzene	ND		280	49.5
91-57-6	2-Methylnaphthalene	330	J	280	49.5

Unidentified peaks.

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY	PROCEDURE	NO: PD-13/Ver. 2
	LABORATORY SERVICES SECTION	DATE REV.:12/99

SUBJECT: Laboratory Result Remark Codes

EFFECTIVE DATE: December1999

A	value reported is the mean of two or more determinations.
C	value calculated from other independent parameters.
J	estimated value or value not accurate.
K	actual value is known to be less than the value given, i.e., substance, if present, is below detection limit.
L	actual value is known to be greater than the value given.
T	value reported is less than criteria of detection.
W	value observed is less than lowest value reportable under "T" code.
DL	sample analyzed using a dilution(s).
DM	dilution required due to matrix problems.
HT	recommended laboratory holding time was exceeded before analysis.
LH	QC indicated possible low recovery. Actual level may be higher.
LL	QC indicated possible high recovery. Actual level may be lower.
MM	analytical method or matrix is not within SOP of this laboratory.
NC	no confirmation by a second technique.
NH	non-homogeneous sample made analysis of a representative sample questionable.
PI	possible interference may have affected the accuracy of the laboratory result.
QC	quality control problems exist.
RB	reagent blank. The level of reagent blank contamination is reported in the comment column and may be subtracted from the analyte value by the user.
ST	recommended sample collection/preservation technique not used.
ACC	laboratory accident resulted in no obtainable value.
FCN	free cyanide was not analyzed due to low level of total cyanide.
INT	interference encountered during analysis resulted in no obtainable value.
IST	improper sample collection/preservation. Sample not suitable for analysis.
NAV	requested analysis not available.
QNS	quantity not sufficient to perform requested analysis.
STR	settleable residue was not analyzed due to low suspended solids.

Approved by:

Bob H. Avery 11/30/99

Bob Avery, Laboratory Director Date

DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

Goldenrod

LAB ORDER # 01-04-143

MATRIX=SEDIMENT/SOIL/SOLIDS

SUBMITTER DIVISION	DISTRICT OR OFFICE	MDEQ PROJECT MANAGER & PHONE	ACCEPT HT CODES? YES / NO
ERD	SUPERFUND	Teresa Ducsay 373-4809	

LOCATION SAMPLED / SITE ID NUMBER	INDEX	PCA	PROJECT	PH
Hastings Street	46538	-31351	-454660	-02

COLLECTED BY: Teresa Ducsay PHONE: 373-4809

ADDITIONAL REPORT TO ATTENTION OF

AT (ADDRESS) (If different than above office)

OVERFLOW CONTRACT LAB (Required for ERD & CMI)
1ST CHOICE: 2ND CHOICE:

PRIMARY CONTACT & PHONE:

**** SAFETY INFORMATION REQUIRED ****
SEE BACK OF FORM

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE COLLECTED DATE	SAMPLE COLLECTED TIME	COMMENTS
1	SB-1	4-17-01	14:00	
2	SB-2		17:55	
3	SB-3		16:30	
4	SB-4		16:55	
5	SB-5		14:30	
6	SB-6		17:15	
7	SB-7		17:40	
8	SB-8		15:00	
9	SB-9		17:30	
10	SB-10		15:20	

ORGANIC

VOA VOLATILES *(MeOH/8260)

Full List	~~1 2 3 4 5 6 7 8 9 10~~
BTEX/MTBE only	1 2 3 4 5 6 7 8 9 10

OS PESTICIDES/PCBS (8081/8082)

Pesticides & PCBs	1 2 3 4 5 6 7 8 9 10
Pesticides only	1 2 3 4 5 6 7 8 9 10
PCBs only	1 2 3 4 5 6 7 8 9 10

BNA BASE NEUTRAL & ACIDS (8270)

BNAs	1 2 3 4 5 6 7 8 9 10
PNAs only	1 2 3 4 5 6 7 8 9 10
BNs only	1 2 3 4 5 6 7 8 9 10

SPECIAL REQUESTS

Library Search (Qualitative)

Volatiles	1 2 3 4 5 6 7 8 9 10
Semivolatiles	1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

GS

COD	1 2 3 4 5 6 7 8 9 10
KJEL N, Tot. P	1 2 3 4 5 6 7 8 9 10
Phenolics	1 2 3 4 5 6 7 8 9 10
Total CN	1 2 3 4 5 6 7 8 9 10
% Total Solids	1 2 3 4 5 6 7 8 9 10
_____	1 2 3 4 5 6 7 8 9 10
_____	1 2 3 4 5 6 7 8 9 10

INORGANIC

MS

MICH TEN METALS (As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn)	1 2 3 4 5 6 7 8 9 10
Fe Co Li Mn	1 2 3 4 5 6 7 8 9 10
Al Be Mo Ti V	1 2 3 4 5 6 7 8 9 10
Sr - Strontium	1 2 3 4 5 6 7 8 9 10
Ni - Nickel	1 2 3 4 5 6 7 8 9 10
Tl - Thallium	1 2 3 4 5 6 7 8 9 10
Ca Mg Na K	1 2 3 4 5 6 7 8 9 10
% Total Solids	1 2 3 4 5 6 7 8 9 10
_____	1 2 3 4 5 6 7 8 9 10
_____	1 2 3 4 5 6 7 8 9 10
_____	1 2 3 4 5 6 7 8 9 10

*MeOH Preservative Tracking Number FL -

Chain-of-Custody

	RELEASED BY / AFFILIATION	RECEIVED BY / AFFILIATION	DATE & TIME
Print Name & Affiliation	Cropper	Dawn Hartig	Date: 4/18/01
Signature		D Hartig	Time: 815
Print Name & Affiliation		Print Name & Affiliation	Date:
Signature		Signature	Time:

See Safety Section "Back of Form"

Revised February 2001

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

SAFETY INFORMATION
(MUST BE COMPLETED PRIOR TO SAMPLE SUBMITTAL)

1	Are samples expected to contain cyanide (CN)? If yes, at what level? _____	YES	NO
2	Are samples expected to be flamable?	YES	NO
3	Are samples expected to be acidic (pH ≤ 5)?	YES	NO
4	Are samples expected to be caustic (pH > 8)?	YES	NO
5	Are samples expected to be a Biohazard?	YES	NO
6	Are samples expected to be reactive with water or acid?	YES	NO
7	Are samples expected to be radioactive?	YES	NO
8	Are samples expected to contain dioxin?	YES	NO
9	Are samples expected to be explosive?	YES	NO
10	List additional suspected hazard information.		

_____

_____

_____

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DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

Goldenrod

LAB ORDER # 01-64-143

MATRIX=SEDIMENT/SOIL/SOLIDS

SUBMITTER DIVISION	DISTRICT OR OFFICE	MDEQ PROJECT MANAGER & PHONE	ACCEPT HT CODES? YES / NO
ERD	SUPERFUND	Teresa Ducsay 373-4809	

LOCATION SAMPLED / SITE ID NUMBER	INDEX	PCA	PROJECT	PH
Hastings Street	46538	-31351	-454660	-02

COLLECTED BY	PHONE
Teresa Ducsay	373-4809

ADDITIONAL REPORT TO ATTENTION OF

AT (ADDRESS) (If different than above office)

OVERFLOW CONTRACT LAB (Required for ERD & CMI)
1ST CHOICE: 2ND CHOICE:

PRIMARY CONTACT & PHONE:

**** SAFETY INFORMATION REQUIRED ****
SEE BACK OF FORM

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE COLLECTED DATE	TIME	COMMENTS
1	SB-11	4/17/01	16:00	
2	SB-12	"	15:40	
3	SB-5D	"	14:35	ODOR
4				
5				
6				
7				
8				
9				
10				

ORGANIC

VOA VOLATILES *(MeOH/8260)
Full List 1 2 3 4 5 6 7 8 9 10
BTEX/MTBE only 1 2 3 4 5 6 7 8 9 10

OS PESTICIDES/PCBS (8081/8082)
Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10
Pesticides only 1 2 3 4 5 6 7 8 9 10
PCBs only 1 2 3 4 5 6 7 8 9 10

BNA BASE NEUTRAL & ACIDS (8270)
BNAs 1 2 3 4 5 6 7 8 9 10
PNAs only 1 2 3 4 5 6 7 8 9 10
BNs only 1 2 3 4 5 6 7 8 9 10

SPECIAL REQUESTS
Library Search (Qualitative)
Volatiles 1 2 3 4 5 6 7 8 9 10
Semivolatiles 1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

GS
COD 1 2 3 4 5 6 7 8 9 10
KJEL N, Tot. P 1 2 3 4 5 6 7 8 9 10
Phenolics 1 2 3 4 5 6 7 8 9 10
Total CN 1 2 3 4 5 6 7 8 9 10
% Total Solids 1 2 3 4 5 6 7 8 9 10
_____ 1 2 3 4 5 6 7 8 9 10
_____ 1 2 3 4 5 6 7 8 9 10

INORGANIC

MS
MICH TEN METALS 1 2 3 4 5 6 7 8 9 10
(As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn)
Fe Co Li Mn 1 2 3 4 5 6 7 8 9 10
Al Be Mo Ti V 1 2 3 4 5 6 7 8 9 10
Sr - Strontium 1 2 3 4 5 6 7 8 9 10
Ni - Nickel 1 2 3 4 5 6 7 8 9 10
Tl - Thallium 1 2 3 4 5 6 7 8 9 10
Ca Mg Na K 1 2 3 4 5 6 7 8 9 10

% Total Solids 1 2 3 4 5 6 7 8 9 10
_____ 1 2 3 4 5 6 7 8 9 10
_____ 1 2 3 4 5 6 7 8 9 10
_____ 1 2 3 4 5 6 7 8 9 10

*MeOH Preservative Tracking Number FL -

Chain-of-Custody	RELEASED BY / AFFILIATION	RECEIVED BY / AFFILIATION	DATE & TIME
	Print Name & Affiliation: dropped	Print Name & Affiliation: Dawn Hartig	Date: 4/18/01
	Signature	Signature: D Hartig	Time: 8:15
	Print Name & Affiliation	Print Name & Affiliation	Date:
	Signature	Signature	Time:

See Safety Section "Back of Form"

Revised February 2001

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

SAFETY INFORMATION
(MUST BE COMPLETED PRIOR TO SAMPLE SUBMITTAL)

1	Are samples expected to contain cyanide (CN)? If yes, at what level? _____	YES	NO
2	Are samples expected to be flamable?	YES	NO
3	Are samples expected to be acidic (pH ≤ 5)?	YES	NO
4	Are samples expected to be caustic (pH > 8)?	YES	NO
5	Are samples expected to be a Biohazard?	YES	NO
6	Are samples expected to be reactive with water or acid?	YES	NO
7	Are samples expected to be radioactive?	YES	NO
8	Are samples expected to contain dioxin?	YES	NO
9	Are samples expected to be explosive?	YES	NO

10 List additional suspected hazard information.

_____

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY (517) 335-9800

P.O. Box 30270
Lansing, MI 48909

Report To: Environmental Response Div.
300 S. Washington Square
Lansing, MI 48933

Attn: TERESA DUCSAY
Total: $2,550.00

Lab Work Order # 0104144
Work Site ID: HASTINGS STREET
Matrix: Sediment\Soil
Received: 4/18/2001 **Reported:** 4/30/2001
Client: ER_SUPER **Number of Samples:** 17

This is an original report: Laura C Utter II Date: 4/30/01

RECEIVED
MAY 1 2001
EPD-SUPERFUND

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104144-01ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/24/2001 by JRS	Sample ID:	SS-1
Total Solids:	86%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		300	51.3
74-87-3	Chloromethane	ND		300	51.3
75-01-4	Vinyl chloride	ND		60	51.3
74-83-9	Bromomethane	ND		300	51.3
75-00-3	Chloroethane	ND		300	51.3
75-69-4	Trichlorofluoromethane	ND		300	51.3
67-64-1	Acetone	ND		890	51.3
60-29-7	Diethyl ether	ND		300	51.3
75-35-4	1,1-Dichloroethylene	ND		60	51.3
74-88-4	Methyl iodide	ND		120	51.3
107-13-1	Acrylonitrile	ND		300	51.3
75-09-2	Methylene chloride	ND		300	51.3
75-15-0	Carbon disulfide	ND		300	51.3
156-60-5	trans-1,2-Dichloroethylene	ND		60	51.3
1634-04-4	Methyltertbutylether (MTBE)	ND		300	51.3
75-34-3	1,1-Dichloroethane	ND		60	51.3
78-93-3	2-Butanone (MEK)	ND		300	51.3
156-59-2	cis-1,2-Dichloroethylene	ND		60	51.3
67-66-3	Chloroform	ND		60	51.3
74-97-5	Bromochloromethane	ND		120	51.3
71-55-6	1,1,1-Trichloroethane	ND		60	51.3
107-06-2	1,2-Dichloroethane	ND		60	51.3
71-43-2	Benzene	ND		60	51.3
56-23-5	Carbon tetrachloride	ND		60	51.3
78-87-5	1,2-Dichloropropane	ND		60	51.3
79-01-6	Trichloroethylene	240		60	51.3
74-95-3	Dibromomethane	ND		120	51.3
75-27-4	Bromodichloromethane	ND		120	51.3
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		300	51.3
10061-01-5	cis-1,3-Dichloropropene	ND		60	51.3
10061-02-6	trans-1,3-Dichloropropene	ND		60	51.3
108-88-3	Toluene	ND		60	51.3
79-00-5	1,1,2-Trichloroethane	ND		60	51.3
591-78-6	2-Hexanone	ND		300	51.3
124-48-1	Dibromochloromethane	ND		120	51.3

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
106-93-4	1,2-Dibromoethane	ND		60	51.3
127-18-4	Tetrachloroethene	ND		60	51.3
108-90-7	Chlorobenzene	ND		60	51.3
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	51.3
100-41-4	Ethylbenzene	ND		60	51.3
108383,106423	m & p-Xylene	ND		120	51.3
75-25-2	Bromoform	ND		120	51.3
100-42-5	Styrene	ND		60	51.3
95-47-6	o-Xylene	ND		60	51.3
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	51.3
96-18-4	1,2,3-Trichloropropane	ND		120	51.3
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	51.3
98-82-8	Isopropylbenzene	ND		120	51.3
108-86-1	Bromobenzene	ND		120	51.3
103-65-1	n-Propylbenzene	ND		120	51.3
108-67-8	1,3,5-Trimethylbenzene	ND		120	51.3
98-06-6	tert-Butylbenzene	ND		300	51.3
95-63-6	1,2,4-Trimethylbenzene	ND		120	51.3
135-98-8	sec-Butylbenzene	ND		300	51.3
541-73-1	1,3-Dichlorobenzene	ND		120	51.3
106-46-7	1,4-Dichlorobenzene	ND		120	51.3
99-87-6	p-Isopropyl toluene	ND		300	51.3
95-50-1	1,2-Dichlorobenzene	ND		120	51.3
104-51-8	n-Butylbenzene	ND		300	51.3
67-72-1	Hexachloroethane	ND		120	51.3
96-12-8	1,2-Dibromo-3-chloropropane	ND		300	51.3
120-82-1	1,2,4-Trichlorobenzene	ND		300	51.3
91-20-3	Naphthalene	ND		300	51.3
87-61-6	1,2,3-Trichlorobenzene	ND		300	51.3
91-57-6	2-Methylnaphthalene	ND		300	51.3

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104144-02ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/24/2001 by JRS	Sample ID:	SS-2
Total Solids:	83%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		310	52.1
74-87-3	Chloromethane	ND		310	52.1
75-01-4	Vinyl chloride	ND		63	52.1
74-83-9	Bromomethane	ND		310	52.1
75-00-3	Chloroethane	ND		310	52.1
75-69-4	Trichlorofluoromethane	ND		310	52.1
67-64-1	Acetone	ND		940	52.1
60-29-7	Diethyl ether	ND		310	52.1
75-35-4	1,1-Dichloroethylene	ND		63	52.1
74-88-4	Methyl iodide	ND		130	52.1
107-13-1	Acrylonitrile	ND		310	52.1
75-09-2	Methylene chloride	ND		310	52.1
75-15-0	Carbon disulfide	ND		310	52.1
156-60-5	trans-1,2-Dichloroethylene	ND		63	52.1
1634-04-4	Methyltertbutylether (MTBE)	ND		310	52.1
75-34-3	1,1-Dichloroethane	ND		63	52.1
78-93-3	2-Butanone (MEK)	ND		310	52.1
156-59-2	cis-1,2-Dichloroethylene	ND		63	52.1
67-66-3	Chloroform	ND		63	52.1
74-97-5	Bromochloromethane	ND		130	52.1
71-55-6	1,1,1-Trichloroethane	ND		63	52.1
107-06-2	1,2-Dichloroethane	ND		63	52.1
71-43-2	Benzene	ND		63	52.1
56-23-5	Carbon tetrachloride	ND		63	52.1
78-87-5	1,2-Dichloropropane	ND		63	52.1
79-01-6	Trichloroethylene	120		63	52.1
74-95-3	Dibromomethane	ND		130	52.1
75-27-4	Bromodichloromethane	ND		130	52.1
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		310	52.1
10061-01-5	cis-1,3-Dichloropropene	ND		63	52.1
10061-02-6	trans-1,3-Dichloropropene	ND		63	52.1
108-88-3	Toluene	ND		63	52.1
79-00-5	1,1,2-Trichloroethane	ND		63	52.1
591-78-6	2-Hexanone	ND		310	52.1
124-48-1	Dibromochloromethane	ND		130	52.1
106-93-4	1,2-Dibromoethane	ND		63	52.1

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		63	52.1
108-90-7	Chlorobenzene	ND		63	52.1
630-20-6	1,1,1,2-Tetrachloroethane	ND		130	52.1
100-41-4	Ethylbenzene	ND		63	52.1
108383,106423	m & p-Xylene	ND		130	52.1
75-25-2	Bromoform	ND		130	52.1
100-42-5	Styrene	ND		63	52.1
95-47-6	o-Xylene	ND		63	52.1
79-34-5	1,1,2,2-Tetrachloroethane	ND		130	52.1
96-18-4	1,2,3-Trichloropropane	ND		130	52.1
110-57-6	trans-1,4-Dichloro-2-butene	ND		130	52.1
98-82-8	Isopropylbenzene	ND		130	52.1
108-86-1	Bromobenzene	ND		130	52.1
103-65-1	n-Propylbenzene	ND		130	52.1
108-67-8	1,3,5-Trimethylbenzene	ND		130	52.1
98-06-6	tert-Butylbenzene	ND		310	52.1
95-63-6	1,2,4-Trimethylbenzene	ND		130	52.1
135-98-8	sec-Butylbenzene	ND		310	52.1
541-73-1	1,3-Dichlorobenzene	ND		130	52.1
106-46-7	1,4-Dichlorobenzene	ND		130	52.1
99-87-6	p-Isopropyl toluene	ND		310	52.1
95-50-1	1,2-Dichlorobenzene	ND		130	52.1
104-51-8	n-Butylbenzene	ND		310	52.1
67-72-1	Hexachloroethane	ND		130	52.1
96-12-8	1,2-Dibromo-3-chloropropane	ND		310	52.1
120-82-1	1,2,4-Trichlorobenzene	ND		310	52.1
91-20-3	Naphthalene	ND		310	52.1
87-61-6	1,2,3-Trichlorobenzene	ND		310	52.1
91-57-6	2-Methylnaphthalene	ND		310	52.1

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104144-03ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/24/2001 by JRS	Sample ID:	SS-3
Total Solids:	86%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		290	49.7
74-87-3	Chloromethane	ND		290	49.7
75-01-4	Vinyl chloride	ND		58	49.7
74-83-9	Bromomethane	ND		290	49.7
75-00-3	Chloroethane	ND		290	49.7
75-69-4	Trichlorofluoromethane	ND		290	49.7
67-64-1	Acetone	ND		870	49.7
60-29-7	Diethyl ether	ND		290	49.7
75-35-4	1,1-Dichloroethylene	ND		58	49.7
74-88-4	Methyl iodide	ND		120	49.7
107-13-1	Acrylonitrile	ND		290	49.7
75-09-2	Methylene chloride	ND		290	49.7
75-15-0	Carbon disulfide	ND		290	49.7
156-60-5	trans-1,2-Dichloroethylene	ND		58	49.7
1634-04-4	Methyltertbutylether (MTBE)	ND		290	49.7
75-34-3	1,1-Dichloroethane	ND		58	49.7
78-93-3	2-Butanone (MEK)	ND		290	49.7
156-59-2	cis-1,2-Dichloroethylene	ND		58	49.7
67-66-3	Chloroform	ND		58	49.7
74-97-5	Bromochloromethane	ND		120	49.7
71-55-6	1,1,1-Trichloroethane	ND		58	49.7
107-06-2	1,2-Dichloroethane	ND		58	49.7
71-43-2	Benzene	ND		58	49.7
56-23-5	Carbon tetrachloride	ND		58	49.7
78-87-5	1,2-Dichloropropane	ND		58	49.7
79-01-6	Trichloroethylene	ND		58	49.7
74-95-3	Dibromomethane	ND		120	49.7
75-27-4	Bromodichloromethane	ND		120	49.7
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		290	49.7
10061-01-5	cis-1,3-Dichloropropene	ND		58	49.7
10061-02-6	trans-1,3-Dichloropropene	ND		58	49.7
108-88-3	Toluene	ND		58	49.7
79-00-5	1,1,2-Trichloroethane	ND		58	49.7
591-78-6	2-Hexanone	ND		290	49.7
124-48-1	Dibromochloromethane	ND		120	49.7
106-93-4	1,2-Dibromoethane	ND		58	49.7

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		58	49.7
108-90-7	Chlorobenzene	ND		58	49.7
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	49.7
100-41-4	Ethylbenzene	ND		58	49.7
108383,106423	m & p-Xylene	ND		120	49.7
75-25-2	Bromoform	ND		120	49.7
100-42-5	Styrene	ND		58	49.7
95-47-6	o-Xylene	ND		58	49.7
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	49.7
96-18-4	1,2,3-Trichloropropane	ND		120	49.7
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	49.7
98-82-8	Isopropylbenzene	ND		120	49.7
108-86-1	Bromobenzene	ND		120	49.7
103-65-1	n-Propylbenzene	ND		120	49.7
108-67-8	1,3,5-Trimethylbenzene	ND		120	49.7
98-06-6	tert-Butylbenzene	ND		290	49.7
95-63-6	1,2,4-Trimethylbenzene	ND		120	49.7
135-98-8	sec-Butylbenzene	ND		290	49.7
541-73-1	1,3-Dichlorobenzene	ND		120	49.7
106-46-7	1,4-Dichlorobenzene	ND		120	49.7
99-87-6	p-Isopropyl toluene	ND		290	49.7
95-50-1	1,2-Dichlorobenzene	ND		120	49.7
104-51-8	n-Butylbenzene	ND		290	49.7
67-72-1	Hexachloroethane	ND		120	49.7
96-12-8	1,2-Dibromo-3-chloropropane	ND		290	49.7
120-82-1	1,2,4-Trichlorobenzene	ND		290	49.7
91-20-3	Naphthalene	ND		290	49.7
87-61-6	1,2,3-Trichlorobenzene	ND		290	49.7
91-57-6	2-Methylnaphthalene	ND		290	49.7

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104144-04ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/24/2001 by JRS	Sample ID:	SS-4
Total Solids:	84%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		310	51.4
74-87-3	Chloromethane	ND		310	51.4
75-01-4	Vinyl chloride	ND		61	51.4
74-83-9	Bromomethane	ND		310	51.4
75-00-3	Chloroethane	ND		310	51.4
75-69-4	Trichlorofluoromethane	ND		310	51.4
67-64-1	Acetone	ND		920	51.4
60-29-7	Diethyl ether	ND		310	51.4
75-35-4	1,1-Dichloroethylene	ND		61	51.4
74-88-4	Methyl iodide	ND		120	51.4
107-13-1	Acrylonitrile	ND		310	51.4
75-09-2	Methylene chloride	ND		310	51.4
75-15-0	Carbon disulfide	ND		310	51.4
156-60-5	trans-1,2-Dichloroethylene	ND		61	51.4
1634-04-4	Methyltertbutylether (MTBE)	ND		310	51.4
75-34-3	1,1-Dichloroethane	ND		61	51.4
78-93-3	2-Butanone (MEK)	ND		310	51.4
156-59-2	cis-1,2-Dichloroethylene	ND		61	51.4
67-66-3	Chloroform	ND		61	51.4
74-97-5	Bromochloromethane	ND		120	51.4
71-55-6	1,1,1-Trichloroethane	ND		61	51.4
107-06-2	1,2-Dichloroethane	ND		61	51.4
71-43-2	Benzene	ND		61	51.4
56-23-5	Carbon tetrachloride	ND		61	51.4
78-87-5	1,2-Dichloropropane	ND		61	51.4
79-01-6	Trichloroethylene	ND		61	51.4
74-95-3	Dibromomethane	ND		120	51.4
75-27-4	Bromodichloromethane	ND		120	51.4
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		310	51.4
10061-01-5	cis-1,3-Dichloropropene	ND		61	51.4
10061-02-6	trans-1,3-Dichloropropene	ND		61	51.4
108-88-3	Toluene	ND		61	51.4
79-00-5	1,1,2-Trichloroethane	ND		61	51.4
591-78-6	2-Hexanone	ND		310	51.4
124-48-1	Dibromochloromethane	ND		120	51.4
106-93-4	1,2-Dibromoethane	ND		61	51.4

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		61	51.4
108-90-7	Chlorobenzene	ND		61	51.4
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	51.4
100-41-4	Ethylbenzene	ND		61	51.4
108383,106423	m & p-Xylene	ND		120	51.4
75-25-2	Bromoform	ND		120	51.4
100-42-5	Styrene	ND		61	51.4
95-47-6	o-Xylene	ND		61	51.4
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	51.4
96-18-4	1,2,3-Trichloropropane	ND		120	51.4
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	51.4
98-82-8	Isopropylbenzene	ND		120	51.4
108-86-1	Bromobenzene	ND		120	51.4
103-65-1	n-Propylbenzene	ND		120	51.4
108-67-8	1,3,5-Trimethylbenzene	ND		120	51.4
98-06-6	tert-Butylbenzene	ND		310	51.4
95-63-6	1,2,4-Trimethylbenzene	ND		120	51.4
135-98-8	sec-Butylbenzene	ND		310	51.4
541-73-1	1,3-Dichlorobenzene	ND		120	51.4
106-46-7	1,4-Dichlorobenzene	ND		120	51.4
99-87-6	p-Isopropyl toluene	ND		310	51.4
95-50-1	1,2-Dichlorobenzene	ND		120	51.4
104-51-8	n-Butylbenzene	ND		310	51.4
67-72-1	Hexachloroethane	ND		120	51.4
96-12-8	1,2-Dibromo-3-chloropropane	ND		310	51.4
120-82-1	1,2,4-Trichlorobenzene	ND		310	51.4
91-20-3	Naphthalene	ND		310	51.4
87-61-6	1,2,3-Trichlorobenzene	ND		310	51.4
91-57-6	2-Methylnaphthalene	ND		310	51.4

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104144-05ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/25/2001 by JRS	Sample ID:	SS-5
Total Solids:	84%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		290	48.0
74-87-3	Chloromethane	ND		290	48.0
75-01-4	Vinyl chloride	ND		57	48.0
74-83-9	Bromomethane	ND		290	48.0
75-00-3	Chloroethane	ND		290	48.0
75-69-4	Trichlorofluoromethane	ND		290	48.0
67-64-1	Acetone	ND		860	48.0
60-29-7	Diethyl ether	ND		290	48.0
75-35-4	1,1-Dichloroethylene	ND		57	48.0
74-88-4	Methyl iodide	ND		110	48.0
107-13-1	Acrylonitrile	ND		290	48.0
75-09-2	Methylene chloride	ND		290	48.0
75-15-0	Carbon disulfide	ND		290	48.0
156-60-5	trans-1,2-Dichloroethylene	ND		57	48.0
1634-04-4	Methyltertbutylether (MTBE)	ND		290	48.0
75-34-3	1,1-Dichloroethane	ND		57	48.0
78-93-3	2-Butanone (MEK)	ND		290	48.0
156-59-2	cis-1,2-Dichloroethylene	ND		57	48.0
67-66-3	Chloroform	ND		57	48.0
74-97-5	Bromochloromethane	ND		110	48.0
71-55-6	1,1,1-Trichloroethane	ND		57	48.0
107-06-2	1,2-Dichloroethane	ND		57	48.0
71-43-2	Benzene	ND		57	48.0
56-23-5	Carbon tetrachloride	ND		57	48.0
78-87-5	1,2-Dichloropropane	ND		57	48.0
79-01-6	Trichloroethylene	ND		57	48.0
74-95-3	Dibromomethane	ND		110	48.0
75-27-4	Bromodichloromethane	ND		110	48.0
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		290	48.0
10061-01-5	cis-1,3-Dichloropropene	ND		57	48.0
10061-02-6	trans-1,3-Dichloropropene	ND		57	48.0
108-88-3	Toluene	58		57	48.0
79-00-5	1,1,2-Trichloroethane	ND		57	48.0
591-78-6	2-Hexanone	ND		290	48.0
124-48-1	Dibromochloromethane	ND		110	48.0
106-93-4	1,2-Dibromoethane	ND		57	48.0

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		57	48.0
108-90-7	Chlorobenzene	ND		57	48.0
630-20-6	1,1,1,2-Tetrachloroethane	ND		110	48.0
100-41-4	Ethylbenzene	ND		57	48.0
108383,106423	m & p-Xylene	ND		110	48.0
75-25-2	Bromoform	ND		110	48.0
100-42-5	Styrene	ND		57	48.0
95-47-6	o-Xylene	ND		57	48.0
79-34-5	1,1,2,2-Tetrachloroethane	ND		110	48.0
96-18-4	1,2,3-Trichloropropane	ND		110	48.0
110-57-6	trans-1,4-Dichloro-2-butene	ND		110	48.0
98-82-8	Isopropylbenzene	ND		110	48.0
108-86-1	Bromobenzene	ND		110	48.0
103-65-1	n-Propylbenzene	ND		110	48.0
108-67-8	1,3,5-Trimethylbenzene	ND		110	48.0
98-06-6	tert-Butylbenzene	ND		290	48.0
95-63-6	1,2,4-Trimethylbenzene	ND		110	48.0
135-98-8	sec-Butylbenzene	ND		290	48.0
541-73-1	1,3-Dichlorobenzene	ND		110	48.0
106-46-7	1,4-Dichlorobenzene	ND		110	48.0
99-87-6	p-Isopropyl toluene	ND		290	48.0
95-50-1	1,2-Dichlorobenzene	ND		110	48.0
104-51-8	n-Butylbenzene	ND		290	48.0
67-72-1	Hexachloroethane	ND		110	48.0
96-12-8	1,2-Dibromo-3-chloropropane	ND		290	48.0
120-82-1	1,2,4-Trichlorobenzene	ND		290	48.0
91-20-3	Naphthalene	290		290	48.0
87-61-6	1,2,3-Trichlorobenzene	ND		290	48.0
91-57-6	2-Methylnaphthalene	430		290	48.0

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104144-06ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/25/2001 by JRS	Sample ID:	SS-6
Total Solids:	81%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		300	49.0
74-87-3	Chloromethane	ND		300	49.0
75-01-4	Vinyl chloride	ND		60	49.0
74-83-9	Bromomethane	ND		300	49.0
75-00-3	Chloroethane	ND		300	49.0
75-69-4	Trichlorofluoromethane	ND		300	49.0
67-64-1	Acetone	ND		910	49.0
60-29-7	Diethyl ether	ND		300	49.0
75-35-4	1,1-Dichloroethylene	ND		60	49.0
74-88-4	Methyl iodide	ND		120	49.0
107-13-1	Acrylonitrile	ND		300	49.0
75-09-2	Methylene chloride	ND		300	49.0
75-15-0	Carbon disulfide	ND		300	49.0
156-60-5	trans-1,2-Dichloroethylene	ND		60	49.0
1634-04-4	Methyltertbutylether (MTBE)	ND		300	49.0
75-34-3	1,1-Dichloroethane	ND		60	49.0
78-93-3	2-Butanone (MEK)	ND		300	49.0
156-59-2	cis-1,2-Dichloroethylene	ND		60	49.0
67-66-3	Chloroform	ND		60	49.0
74-97-5	Bromochloromethane	ND		120	49.0
71-55-6	1,1,1-Trichloroethane	ND		60	49.0
107-06-2	1,2-Dichloroethane	ND		60	49.0
71-43-2	Benzene	ND		60	49.0
56-23-5	Carbon tetrachloride	ND		60	49.0
78-87-5	1,2-Dichloropropane	ND		60	49.0
79-01-6	Trichloroethylene	ND		60	49.0
74-95-3	Dibromomethane	ND		120	49.0
75-27-4	Bromodichloromethane	ND		120	49.0
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		300	49.0
10061-01-5	cis-1,3-Dichloropropene	ND		60	49.0
10061-02-6	trans-1,3-Dichloropropene	ND		60	49.0
108-88-3	Toluene	ND		60	49.0
79-00-5	1,1,2-Trichloroethane	ND		60	49.0
591-78-6	2-Hexanone	ND		300	49.0
124-48-1	Dibromochloromethane	ND		120	49.0
106-93-4	1,2-Dibromoethane	ND		60	49.0

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		60	49.0
108-90-7	Chlorobenzene	ND		60	49.0
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	49.0
100-41-4	Ethylbenzene	ND		60	49.0
108383,106423	m & p-Xylene	ND		120	49.0
75-25-2	Bromoform	ND		120	49.0
100-42-5	Styrene	ND		60	49.0
95-47-6	o-Xylene	ND		60	49.0
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	49.0
96-18-4	1,2,3-Trichloropropane	ND		120	49.0
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	49.0
98-82-8	Isopropylbenzene	ND		120	49.0
108-86-1	Bromobenzene	ND		120	49.0
103-65-1	n-Propylbenzene	ND		120	49.0
108-67-8	1,3,5-Trimethylbenzene	ND		120	49.0
98-06-6	tert-Butylbenzene	ND		300	49.0
95-63-6	1,2,4-Trimethylbenzene	ND		120	49.0
135-98-8	sec-Butylbenzene	ND		300	49.0
541-73-1	1,3-Dichlorobenzene	ND		120	49.0
106-46-7	1,4-Dichlorobenzene	ND		120	49.0
99-87-6	p-Isopropyl toluene	ND		300	49.0
95-50-1	1,2-Dichlorobenzene	ND		120	49.0
104-51-8	n-Butylbenzene	ND		300	49.0
67-72-1	Hexachloroethane	ND		120	49.0
96-12-8	1,2-Dibromo-3-chloropropane	ND		300	49.0
120-82-1	1,2,4-Trichlorobenzene	ND		300	49.0
91-20-3	Naphthalene	ND		300	49.0
87-61-6	1,2,3-Trichlorobenzene	ND		300	49.0
91-57-6	2-Methylnaphthalene	ND		300	49.0

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104144-07ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/25/2001 by JRS	Sample ID:	SS-7
Total Solids:	81%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		300	49.1
74-87-3	Chloromethane	ND		300	49.1
75-01-4	Vinyl chloride	ND		61	49.1
74-83-9	Bromomethane	ND		300	49.1
75-00-3	Chloroethane	ND		300	49.1
75-69-4	Trichlorofluoromethane	ND		300	49.1
67-64-1	Acetone	ND		910	49.1
60-29-7	Diethyl ether	ND		300	49.1
75-35-4	1,1-Dichloroethylene	ND		61	49.1
74-88-4	Methyl iodide	ND		120	49.1
107-13-1	Acrylonitrile	ND		300	49.1
75-09-2	Methylene chloride	ND		300	49.1
75-15-0	Carbon disulfide	ND		300	49.1
156-60-5	trans-1,2-Dichloroethylene	ND		61	49.1
1634-04-4	Methyltertbutylether (MTBE)	ND		300	49.1
75-34-3	1,1-Dichloroethane	ND		61	49.1
78-93-3	2-Butanone (MEK)	ND		300	49.1
156-59-2	cis-1,2-Dichloroethylene	ND		61	49.1
67-66-3	Chloroform	ND		61	49.1
74-97-5	Bromochloromethane	ND		120	49.1
71-55-6	1,1,1-Trichloroethane	ND		61	49.1
107-06-2	1,2-Dichloroethane	ND		61	49.1
71-43-2	Benzene	ND		61	49.1
56-23-5	Carbon tetrachloride	ND		61	49.1
78-87-5	1,2-Dichloropropane	ND		61	49.1
79-01-6	Trichloroethylene	370		61	49.1
74-95-3	Dibromomethane	ND		120	49.1
75-27-4	Bromodichloromethane	ND		120	49.1
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		300	49.1
10061-01-5	cis-1,3-Dichloropropene	ND		61	49.1
10061-02-6	trans-1,3-Dichloropropene	ND		61	49.1
108-88-3	Toluene	ND		61	49.1
79-00-5	1,1,2-Trichloroethane	ND		61	49.1
591-78-6	2-Hexanone	ND		300	49.1
124-48-1	Dibromochloromethane	ND		120	49.1
106-93-4	1,2-Dibromoethane	ND		61	49.1

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		61	49.1
108-90-7	Chlorobenzene	ND		61	49.1
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	49.1
100-41-4	Ethylbenzene	ND		61	49.1
108383,106423	m & p-Xylene	ND		120	49.1
75-25-2	Bromoform	ND		120	49.1
100-42-5	Styrene	ND		61	49.1
95-47-6	o-Xylene	ND		61	49.1
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	49.1
96-18-4	1,2,3-Trichloropropane	ND		120	49.1
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	49.1
98-82-8	Isopropylbenzene	ND		120	49.1
108-86-1	Bromobenzene	ND		120	49.1
103-65-1	n-Propylbenzene	ND		120	49.1
108-67-8	1,3,5-Trimethylbenzene	ND		120	49.1
98-06-6	tert-Butylbenzene	ND		300	49.1
95-63-6	1,2,4-Trimethylbenzene	ND		120	49.1
135-98-8	sec-Butylbenzene	ND		300	49.1
541-73-1	1,3-Dichlorobenzene	ND		120	49.1
106-46-7	1,4-Dichlorobenzene	ND		120	49.1
99-87-6	p-Isopropyl toluene	ND		300	49.1
95-50-1	1,2-Dichlorobenzene	ND		120	49.1
104-51-8	n-Butylbenzene	ND		300	49.1
67-72-1	Hexachloroethane	ND		120	49.1
96-12-8	1,2-Dibromo-3-chloropropane	ND		300	49.1
120-82-1	1,2,4-Trichlorobenzene	ND		300	49.1
91-20-3	Naphthalene	ND		300	49.1
87-61-6	1,2,3-Trichlorobenzene	ND		300	49.1
91-57-6	2-Methylnaphthalene	ND		300	49.1

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104144-08ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/25/2001 by JRS	Sample ID:	SS-8
Total Solids:	86%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		260	44.8
74-87-3	Chloromethane	ND		260	44.8
75-01-4	Vinyl chloride	ND		52	44.8
74-83-9	Bromomethane	ND		260	44.8
75-00-3	Chloroethane	ND		260	44.8
75-69-4	Trichlorofluoromethane	ND		260	44.8
67-64-1	Acetone	ND		780	44.8
60-29-7	Diethyl ether	ND		260	44.8
75-35-4	1,1-Dichloroethylene	ND		52	44.8
74-88-4	Methyl iodide	ND		100	44.8
107-13-1	Acrylonitrile	ND		260	44.8
75-09-2	Methylene chloride	ND		260	44.8
75-15-0	Carbon disulfide	ND		260	44.8
156-60-5	trans-1,2-Dichloroethylene	ND		52	44.8
1634-04-4	Methyltertbutylether (MTBE)	ND		260	44.8
75-34-3	1,1-Dichloroethane	ND		52	44.8
78-93-3	2-Butanone (MEK)	ND		260	44.8
156-59-2	cis-1,2-Dichloroethylene	ND		52	44.8
67-66-3	Chloroform	ND		52	44.8
74-97-5	Bromochloromethane	ND		100	44.8
71-55-6	1,1,1-Trichloroethane	ND		52	44.8
107-06-2	1,2-Dichloroethane	ND		52	44.8
71-43-2	Benzene	ND		52	44.8
56-23-5	Carbon tetrachloride	260		52	44.8
78-87-5	1,2-Dichloropropane	ND		52	44.8
79-01-6	Trichloroethylene	ND		52	44.8
74-95-3	Dibromomethane	ND		100	44.8
75-27-4	Bromodichloromethane	ND		100	44.8
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		260	44.8
10061-01-5	cis-1,3-Dichloropropene	ND		52	44.8
10061-02-6	trans-1,3-Dichloropropene	ND		52	44.8
108-88-3	Toluene	ND		52	44.8
79-00-5	1,1,2-Trichloroethane	ND		52	44.8
591-78-6	2-Hexanone	ND		260	44.8
124-48-1	Dibromochloromethane	ND		100	44.8
106-93-4	1,2-Dibromoethane	ND		52	44.8

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		52	44.8
108-90-7	Chlorobenzene	ND		52	44.8
630-20-6	1,1,1,2-Tetrachloroethane	ND		100	44.8
100-41-4	Ethylbenzene	ND		52	44.8
108383,106423	m & p-Xylene	ND		100	44.8
75-25-2	Bromoform	ND		100	44.8
100-42-5	Styrene	ND		52	44.8
95-47-6	o-Xylene	ND		52	44.8
79-34-5	1,1,2,2-Tetrachloroethane	ND		100	44.8
96-18-4	1,2,3-Trichloropropane	ND		100	44.8
110-57-6	trans-1,4-Dichloro-2-butene	ND		100	44.8
98-82-8	Isopropylbenzene	ND		100	44.8
108-86-1	Bromobenzene	ND		100	44.8
103-65-1	n-Propylbenzene	ND		100	44.8
108-67-8	1,3,5-Trimethylbenzene	ND		100	44.8
98-06-6	tert-Butylbenzene	ND		260	44.8
95-63-6	1,2,4-Trimethylbenzene	ND		100	44.8
135-98-8	sec-Butylbenzene	ND		260	44.8
541-73-1	1,3-Dichlorobenzene	ND		100	44.8
106-46-7	1,4-Dichlorobenzene	ND		100	44.8
99-87-6	p-Isopropyl toluene	ND		260	44.8
95-50-1	1,2-Dichlorobenzene	ND		100	44.8
104-51-8	n-Butylbenzene	ND		260	44.8
67-72-1	Hexachloroethane	ND		100	44.8
96-12-8	1,2-Dibromo-3-chloropropane	ND		260	44.8
120-82-1	1,2,4-Trichlorobenzene	ND		260	44.8
91-20-3	Naphthalene	ND		260	44.8
87-61-6	1,2,3-Trichlorobenzene	ND		260	44.8
91-57-6	2-Methylnaphthalene	ND		260	44.8

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104144-09ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/25/2001 by JRS	Sample ID:	SS-9
Total Solids:	86%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		300	51.7
74-87-3	Chloromethane	ND		300	51.7
75-01-4	Vinyl chloride	ND		60	51.7
74-83-9	Bromomethane	ND		300	51.7
75-00-3	Chloroethane	ND		300	51.7
75-69-4	Trichlorofluoromethane	ND		300	51.7
67-64-1	Acetone	ND		900	51.7
60-29-7	Diethyl ether	ND		300	51.7
75-35-4	1,1-Dichloroethylene	ND		60	51.7
74-88-4	Methyl iodide	ND		120	51.7
107-13-1	Acrylonitrile	ND		300	51.7
75-09-2	Methylene chloride	ND		300	51.7
75-15-0	Carbon disulfide	ND		300	51.7
156-60-5	trans-1,2-Dichloroethylene	ND		60	51.7
1634-04-4	Methyltertbutylether (MTBE)	ND		300	51.7
75-34-3	1,1-Dichloroethane	ND		60	51.7
78-93-3	2-Butanone (MEK)	ND		300	51.7
156-59-2	cis-1,2-Dichloroethylene	ND		60	51.7
67-66-3	Chloroform	ND		60	51.7
74-97-5	Bromochloromethane	ND		120	51.7
71-55-6	1,1,1-Trichloroethane	ND		60	51.7
107-06-2	1,2-Dichloroethane	ND		60	51.7
71-43-2	Benzene	ND		60	51.7
56-23-5	Carbon tetrachloride	ND		60	51.7
78-87-5	1,2-Dichloropropane	ND		60	51.7
79-01-6	Trichloroethylene	2700		60	51.7
74-95-3	Dibromomethane	ND		120	51.7
75-27-4	Bromodichloromethane	ND		120	51.7
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		300	51.7
10061-01-5	cis-1,3-Dichloropropene	ND		60	51.7
10061-02-6	trans-1,3-Dichloropropene	ND		60	51.7
108-88-3	Toluene	ND		60	51.7
79-00-5	1,1,2-Trichloroethane	ND		60	51.7
591-78-6	2-Hexanone	ND		300	51.7
124-48-1	Dibromochloromethane	ND		120	51.7
106-93-4	1,2-Dibromoethane	ND		60	51.7

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		60	51.7
108-90-7	Chlorobenzene	ND		60	51.7
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	51.7
100-41-4	Ethylbenzene	ND		60	51.7
108383,106423	m & p-Xylene	ND		120	51.7
75-25-2	Bromoform	ND		120	51.7
100-42-5	Styrene	ND		60	51.7
95-47-6	o-Xylene	62		60	51.7
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	51.7
96-18-4	1,2,3-Trichloropropane	ND		120	51.7
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	51.7
98-82-8	Isopropylbenzene	ND		120	51.7
108-86-1	Bromobenzene	ND		120	51.7
103-65-1	n-Propylbenzene	ND		120	51.7
108-67-8	1,3,5-Trimethylbenzene	ND		120	51.7
98-06-6	tert-Butylbenzene	ND		300	51.7
95-63-6	1,2,4-Trimethylbenzene	ND		120	51.7
135-98-8	sec-Butylbenzene	ND		300	51.7
541-73-1	1,3-Dichlorobenzene	ND		120	51.7
106-46-7	1,4-Dichlorobenzene	ND		120	51.7
99-87-6	p-Isopropyl toluene	ND		300	51.7
95-50-1	1,2-Dichlorobenzene	ND		120	51.7
104-51-8	n-Butylbenzene	ND		300	51.7
67-72-1	Hexachloroethane	ND		120	51.7
96-12-8	1,2-Dibromo-3-chloropropane	ND		300	51.7
120-82-1	1,2,4-Trichlorobenzene	ND		300	51.7
91-20-3	Naphthalene	450		300	51.7
87-61-6	1,2,3-Trichlorobenzene	ND		300	51.7
91-57-6	2-Methylnaphthalene	ND		300	51.7

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104144-10ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/25/2001 by JRS	Sample ID:	SS-10
Total Solids:	82%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		290	47.9
74-87-3	Chloromethane	ND		290	47.9
75-01-4	Vinyl chloride	ND		58	47.9
74-83-9	Bromomethane	ND		290	47.9
75-00-3	Chloroethane	ND		290	47.9
75-69-4	Trichlorofluoromethane	ND		290	47.9
67-64-1	Acetone	ND		880	47.9
60-29-7	Diethyl ether	ND		290	47.9
75-35-4	1,1-Dichloroethylene	ND		58	47.9
74-88-4	Methyl iodide	ND		120	47.9
107-13-1	Acrylonitrile	ND		290	47.9
75-09-2	Methylene chloride	ND		290	47.9
75-15-0	Carbon disulfide	ND		290	47.9
156-60-5	trans-1,2-Dichloroethylene	ND		58	47.9
1634-04-4	Methyltertbutylether (MTBE)	ND		290	47.9
75-34-3	1,1-Dichloroethane	ND		58	47.9
78-93-3	2-Butanone (MEK)	ND		290	47.9
156-59-2	cis-1,2-Dichloroethylene	ND		58	47.9
67-66-3	Chloroform	ND		58	47.9
74-97-5	Bromochloromethane	ND		120	47.9
71-55-6	1,1,1-Trichloroethane	ND		58	47.9
107-06-2	1,2-Dichloroethane	ND		58	47.9
71-43-2	Benzene	ND		58	47.9
56-23-5	Carbon tetrachloride	59		58	47.9
78-87-5	1,2-Dichloropropane	ND		58	47.9
79-01-6	Trichloroethylene	290		58	47.9
74-95-3	Dibromomethane	ND		120	47.9
75-27-4	Bromodichloromethane	ND		120	47.9
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		290	47.9
10061-01-5	cis-1,3-Dichloropropene	ND		58	47.9
10061-02-6	trans-1,3-Dichloropropene	ND		58	47.9
108-88-3	Toluene	ND		58	47.9
79-00-5	1,1,2-Trichloroethane	ND		58	47.9
591-78-6	2-Hexanone	ND		290	47.9
124-48-1	Dibromochloromethane	ND		120	47.9
106-93-4	1,2-Dibromoethane	ND		58	47.9

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		58	47.9
108-90-7	Chlorobenzene	ND		58	47.9
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	47.9
100-41-4	Ethylbenzene	ND		58	47.9
108383,106423	m & p-Xylene	ND		120	47.9
75-25-2	Bromoform	ND		120	47.9
100-42-5	Styrene	ND		58	47.9
95-47-6	o-Xylene	ND		58	47.9
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	47.9
96-18-4	1,2,3-Trichloropropane	ND		120	47.9
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	47.9
98-82-8	Isopropylbenzene	ND		120	47.9
108-86-1	Bromobenzene	ND		120	47.9
103-65-1	n-Propylbenzene	ND		120	47.9
108-67-8	1,3,5-Trimethylbenzene	ND		120	47.9
98-06-6	tert-Butylbenzene	ND		290	47.9
95-63-6	1,2,4-Trimethylbenzene	ND		120	47.9
135-98-8	sec-Butylbenzene	ND		290	47.9
541-73-1	1,3-Dichlorobenzene	ND		120	47.9
106-46-7	1,4-Dichlorobenzene	ND		120	47.9
99-87-6	p-Isopropyl toluene	ND		290	47.9
95-50-1	1,2-Dichlorobenzene	120		120	47.9
104-51-8	n-Butylbenzene	ND		290	47.9
67-72-1	Hexachloroethane	ND		120	47.9
96-12-8	1,2-Dibromo-3-chloropropane	ND		290	47.9
120-82-1	1,2,4-Trichlorobenzene	ND		290	47.9
91-20-3	Naphthalene	ND		290	47.9
87-61-6	1,2,3-Trichlorobenzene	ND		290	47.9
91-57-6	2-Methylnaphthalene	ND		290	47.9

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104144-11ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/25/2001 by JRS	Sample ID:	SS-11
Total Solids:	83%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		290	47.9
74-87-3	Chloromethane	ND		290	47.9
75-01-4	Vinyl chloride	ND		58	47.9
74-83-9	Bromomethane	ND		290	47.9
75-00-3	Chloroethane	ND		290	47.9
75-69-4	Trichlorofluoromethane	ND		290	47.9
67-64-1	Acetone	ND		870	47.9
60-29-7	Diethyl ether	ND		290	47.9
75-35-4	1,1-Dichloroethylene	ND		58	47.9
74-88-4	Methyl iodide	ND		120	47.9
107-13-1	Acrylonitrile	ND		290	47.9
75-09-2	Methylene chloride	ND		290	47.9
75-15-0	Carbon disulfide	ND		290	47.9
156-60-5	trans-1,2-Dichloroethylene	ND		58	47.9
1634-04-4	Methyltertbutylether (MTBE)	ND		290	47.9
75-34-3	1,1-Dichloroethane	ND		58	47.9
78-93-3	2-Butanone (MEK)	ND		290	47.9
156-59-2	cis-1,2-Dichloroethylene	ND		58	47.9
67-66-3	Chloroform	ND		58	47.9
74-97-5	Bromochloromethane	ND		120	47.9
71-55-6	1,1,1-Trichloroethane	ND		58	47.9
107-06-2	1,2-Dichloroethane	ND		58	47.9
71-43-2	Benzene	ND		58	47.9
56-23-5	Carbon tetrachloride	ND		58	47.9
78-87-5	1,2-Dichloropropane	ND		58	47.9
79-01-6	Trichloroethylene	ND		58	47.9
74-95-3	Dibromomethane	ND		120	47.9
75-27-4	Bromodichloromethane	ND		120	47.9
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		290	47.9
10061-01-5	cis-1,3-Dichloropropene	ND		58	47.9
10061-02-6	trans-1,3-Dichloropropene	ND		58	47.9
108-88-3	Toluene	ND		58	47.9
79-00-5	1,1,2-Trichloroethane	ND		58	47.9
591-78-6	2-Hexanone	ND		290	47.9
124-48-1	Dibromochloromethane	ND		120	47.9
106-93-4	1,2-Dibromoethane	ND		58	47.9

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		58	47.9
108-90-7	Chlorobenzene	ND		58	47.9
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	47.9
100-41-4	Ethylbenzene	ND		58	47.9
108383,106423	m & p-Xylene	ND		120	47.9
75-25-2	Bromoform	ND		120	47.9
100-42-5	Styrene	ND		58	47.9
95-47-6	o-Xylene	ND		58	47.9
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	47.9
96-18-4	1,2,3-Trichloropropane	ND		120	47.9
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	47.9
98-82-8	Isopropylbenzene	ND		120	47.9
108-86-1	Bromobenzene	ND		120	47.9
103-65-1	n-Propylbenzene	ND		120	47.9
108-67-8	1,3,5-Trimethylbenzene	ND		120	47.9
98-06-6	tert-Butylbenzene	ND		290	47.9
95-63-6	1,2,4-Trimethylbenzene	ND		120	47.9
135-98-8	sec-Butylbenzene	ND		290	47.9
541-73-1	1,3-Dichlorobenzene	ND		120	47.9
106-46-7	1,4-Dichlorobenzene	ND		120	47.9
99-87-6	p-Isopropyl toluene	ND		290	47.9
95-50-1	1,2-Dichlorobenzene	ND		120	47.9
104-51-8	n-Butylbenzene	ND		290	47.9
67-72-1	Hexachloroethane	ND		120	47.9
96-12-8	1,2-Dibromo-3-chloropropane	ND		290	47.9
120-82-1	1,2,4-Trichlorobenzene	ND		290	47.9
91-20-3	Naphthalene	ND		290	47.9
87-61-6	1,2,3-Trichlorobenzene	ND		290	47.9
91-57-6	2-Methylnaphthalene	ND		290	47.9

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104144-12ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/25/2001 by JRS	Sample ID:	SS-12
Total Solids:	83%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		300	49.6
74-87-3	Chloromethane	ND		300	49.6
75-01-4	Vinyl chloride	ND		60	49.6
74-83-9	Bromomethane	ND		300	49.6
75-00-3	Chloroethane	ND		300	49.6
75-69-4	Trichlorofluoromethane	ND		300	49.6
67-64-1	Acetone	ND		900	49.6
60-29-7	Diethyl ether	ND		300	49.6
75-35-4	1,1-Dichloroethylene	ND		60	49.6
74-88-4	Methyl iodide	ND		120	49.6
107-13-1	Acrylonitrile	ND		300	49.6
75-09-2	Methylene chloride	ND		300	49.6
75-15-0	Carbon disulfide	ND		300	49.6
156-60-5	trans-1,2-Dichloroethylene	ND		60	49.6
1634-04-4	Methyltertbutylether (MTBE)	ND		300	49.6
75-34-3	1,1-Dichloroethane	ND		60	49.6
78-93-3	2-Butanone (MEK)	ND		300	49.6
156-59-2	cis-1,2-Dichloroethylene	ND		60	49.6
67-66-3	Chloroform	ND		60	49.6
74-97-5	Bromochloromethane	ND		120	49.6
71-55-6	1,1,1-Trichloroethane	ND		60	49.6
107-06-2	1,2-Dichloroethane	ND		60	49.6
71-43-2	Benzene	ND		60	49.6
56-23-5	Carbon tetrachloride	ND		60	49.6
78-87-5	1,2-Dichloropropane	ND		60	49.6
79-01-6	Trichloroethylene	ND		60	49.6
74-95-3	Dibromomethane	ND		120	49.6
75-27-4	Bromodichloromethane	ND		120	49.6
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		300	49.6
10061-01-5	cis-1,3-Dichloropropene	ND		60	49.6
10061-02-6	trans-1,3-Dichloropropene	ND		60	49.6
108-88-3	Toluene	ND		60	49.6
79-00-5	1,1,2-Trichloroethane	ND		60	49.6
591-78-6	2-Hexanone	ND		300	49.6
124-48-1	Dibromochloromethane	ND		120	49.6
106-93-4	1,2-Dibromoethane	ND		60	49.6

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		60	49.6
108-90-7	Chlorobenzene	ND		60	49.6
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	49.6
100-41-4	Ethylbenzene	ND		60	49.6
108383,106423	m & p-Xylene	ND		120	49.6
75-25-2	Bromoform	ND		120	49.6
100-42-5	Styrene	ND		60	49.6
95-47-6	o-Xylene	ND		60	49.6
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	49.6
96-18-4	1,2,3-Trichloropropane	ND		120	49.6
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	49.6
98-82-8	Isopropylbenzene	ND		120	49.6
108-86-1	Bromobenzene	ND		120	49.6
103-65-1	n-Propylbenzene	ND		120	49.6
108-67-8	1,3,5-Trimethylbenzene	ND		120	49.6
98-06-6	tert-Butylbenzene	ND		300	49.6
95-63-6	1,2,4-Trimethylbenzene	ND		120	49.6
135-98-8	sec-Butylbenzene	ND		300	49.6
541-73-1	1,3-Dichlorobenzene	ND		120	49.6
106-46-7	1,4-Dichlorobenzene	ND		120	49.6
99-87-6	p-Isopropyl toluene	ND		300	49.6
95-50-1	1,2-Dichlorobenzene	ND		120	49.6
104-51-8	n-Butylbenzene	ND		300	49.6
67-72-1	Hexachloroethane	ND		120	49.6
96-12-8	1,2-Dibromo-3-chloropropane	ND		300	49.6
120-82-1	1,2,4-Trichlorobenzene	ND		300	49.6
91-20-3	Naphthalene	ND		300	49.6
87-61-6	1,2,3-Trichlorobenzene	ND		300	49.6
91-57-6	2-Methylnaphthalene	ND		300	49.6

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104144-13ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/25/2001 by JRS	Sample ID:	SS-13
Total Solids:	82%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		310	51.3
74-87-3	Chloromethane	ND		310	51.3
75-01-4	Vinyl chloride	ND		63	51.3
74-83-9	Bromomethane	ND		310	51.3
75-00-3	Chloroethane	ND		310	51.3
75-69-4	Trichlorofluoromethane	ND		310	51.3
67-64-1	Acetone	ND		940	51.3
60-29-7	Diethyl ether	ND		310	51.3
75-35-4	1,1-Dichloroethylene	ND		63	51.3
74-88-4	Methyl iodide	ND		130	51.3
107-13-1	Acrylonitrile	ND		310	51.3
75-09-2	Methylene chloride	ND		310	51.3
75-15-0	Carbon disulfide	ND		310	51.3
156-60-5	trans-1,2-Dichloroethylene	ND		63	51.3
1634-04-4	Methyltertbutylether (MTBE)	ND		310	51.3
75-34-3	1,1-Dichloroethane	ND		63	51.3
78-93-3	2-Butanone (MEK)	ND		310	51.3
156-59-2	cis-1,2-Dichloroethylene	ND		63	51.3
67-66-3	Chloroform	ND		63	51.3
74-97-5	Bromochloromethane	ND		130	51.3
71-55-6	1,1,1-Trichloroethane	ND		63	51.3
107-06-2	1,2-Dichloroethane	ND		63	51.3
71-43-2	Benzene	ND		63	51.3
56-23-5	Carbon tetrachloride	ND		63	51.3
78-87-5	1,2-Dichloropropane	ND		63	51.3
79-01-6	Trichloroethylene	ND		63	51.3
74-95-3	Dibromomethane	ND		130	51.3
75-27-4	Bromodichloromethane	ND		130	51.3
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		310	51.3
10061-01-5	cis-1,3-Dichloropropene	ND		63	51.3
10061-02-6	trans-1,3-Dichloropropene	ND		63	51.3
108-88-3	Toluene	ND		63	51.3
79-00-5	1,1,2-Trichloroethane	ND		63	51.3
591-78-6	2-Hexanone	ND		310	51.3
124-48-1	Dibromochloromethane	ND		130	51.3
106-93-4	1,2-Dibromoethane	ND		63	51.3

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		63	51.3
108-90-7	Chlorobenzene	ND		63	51.3
630-20-6	1,1,1,2-Tetrachloroethane	ND		130	51.3
100-41-4	Ethylbenzene	ND		63	51.3
108383,106423	m & p-Xylene	ND		130	51.3
75-25-2	Bromoform	ND		130	51.3
100-42-5	Styrene	ND		63	51.3
95-47-6	o-Xylene	ND		63	51.3
79-34-5	1,1,2,2-Tetrachloroethane	ND		130	51.3
96-18-4	1,2,3-Trichloropropane	ND		130	51.3
110-57-6	trans-1,4-Dichloro-2-butene	ND		130	51.3
98-82-8	Isopropylbenzene	ND		130	51.3
108-86-1	Bromobenzene	ND		130	51.3
103-65-1	n-Propylbenzene	ND		130	51.3
108-67-8	1,3,5-Trimethylbenzene	ND		130	51.3
98-06-6	tert-Butylbenzene	ND		310	51.3
95-63-6	1,2,4-Trimethylbenzene	ND		130	51.3
135-98-8	sec-Butylbenzene	ND		310	51.3
541-73-1	1,3-Dichlorobenzene	ND		130	51.3
106-46-7	1,4-Dichlorobenzene	ND		130	51.3
99-87-6	p-Isopropyl toluene	ND		310	51.3
95-50-1	1,2-Dichlorobenzene	ND		130	51.3
104-51-8	n-Butylbenzene	ND		310	51.3
67-72-1	Hexachloroethane	ND		130	51.3
96-12-8	1,2-Dibromo-3-chloropropane	ND		310	51.3
120-82-1	1,2,4-Trichlorobenzene	ND		310	51.3
91-20-3	Naphthalene	ND		310	51.3
87-61-6	1,2,3-Trichlorobenzene	ND		310	51.3
91-57-6	2-Methylnaphthalene	ND		310	51.3

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104144-14ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/25/2001 by JRS	Sample ID:	SS-14
Total Solids:	86%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		300	51.1
74-87-3	Chloromethane	ND		300	51.1
75-01-4	Vinyl chloride	ND		59	51.1
74-83-9	Bromomethane	ND		300	51.1
75-00-3	Chloroethane	ND		300	51.1
75-69-4	Trichlorofluoromethane	ND		300	51.1
67-64-1	Acetone	ND		890	51.1
60-29-7	Diethyl ether	ND		300	51.1
75-35-4	1,1-Dichloroethylene	ND		59	51.1
74-88-4	Methyl iodide	ND		120	51.1
107-13-1	Acrylonitrile	ND		300	51.1
75-09-2	Methylene chloride	ND		300	51.1
75-15-0	Carbon disulfide	ND		300	51.1
156-60-5	trans-1,2-Dichloroethylene	ND		59	51.1
1634-04-4	Methyltertbutylether (MTBE)	ND		300	51.1
75-34-3	1,1-Dichloroethane	ND		59	51.1
78-93-3	2-Butanone (MEK)	ND		300	51.1
156-59-2	cis-1,2-Dichloroethylene	ND		59	51.1
67-66-3	Chloroform	ND		59	51.1
74-97-5	Bromochloromethane	ND		120	51.1
71-55-6	1,1,1-Trichloroethane	ND		59	51.1
107-06-2	1,2-Dichloroethane	ND		59	51.1
71-43-2	Benzene	ND		59	51.1
56-23-5	Carbon tetrachloride	ND		59	51.1
78-87-5	1,2-Dichloropropane	ND		59	51.1
79-01-6	Trichloroethylene	ND		59	51.1
74-95-3	Dibromomethane	ND		120	51.1
75-27-4	Bromodichloromethane	ND		120	51.1
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		300	51.1
10061-01-5	cis-1,3-Dichloropropene	ND		59	51.1
10061-02-6	trans-1,3-Dichloropropene	ND		59	51.1
108-88-3	Toluene	85		59	51.1
79-00-5	1,1,2-Trichloroethane	ND		59	51.1
591-78-6	2-Hexanone	ND		300	51.1
124-48-1	Dibromochloromethane	ND		120	51.1
106-93-4	1,2-Dibromoethane	ND		59	51.1

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		59	51.1
108-90-7	Chlorobenzene	ND		59	51.1
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	51.1
100-41-4	Ethylbenzene	ND		59	51.1
108383,106423	m & p-Xylene	140		120	51.1
75-25-2	Bromoform	ND		120	51.1
100-42-5	Styrene	ND		59	51.1
95-47-6	o-Xylene	100		59	51.1
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	51.1
96-18-4	1,2,3-Trichloropropane	ND		120	51.1
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	51.1
98-82-8	Isopropylbenzene	ND		120	51.1
108-86-1	Bromobenzene	ND		120	51.1
103-65-1	n-Propylbenzene	ND		120	51.1
108-67-8	1,3,5-Trimethylbenzene	ND		120	51.1
98-06-6	tert-Butylbenzene	ND		300	51.1
95-63-6	1,2,4-Trimethylbenzene	ND		120	51.1
135-98-8	sec-Butylbenzene	ND		300	51.1
541-73-1	1,3-Dichlorobenzene	ND		120	51.1
106-46-7	1,4-Dichlorobenzene	ND		120	51.1
99-87-6	p-Isopropyl toluene	ND		300	51.1
95-50-1	1,2-Dichlorobenzene	ND		120	51.1
104-51-8	n-Butylbenzene	ND		300	51.1
67-72-1	Hexachloroethane	ND		120	51.1
96-12-8	1,2-Dibromo-3-chloropropane	ND		300	51.1
120-82-1	1,2,4-Trichlorobenzene	ND		300	51.1
91-20-3	Naphthalene	640		300	51.1
87-61-6	1,2,3-Trichlorobenzene	ND		300	51.1
91-57-6	2-Methylnaphthalene	410		300	51.1

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104144-15ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/25/2001 by JRS	Sample ID:	SS-15
Total Solids:	85%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		320	53.8
74-87-3	Chloromethane	ND		320	53.8
75-01-4	Vinyl chloride	ND		63	53.8
74-83-9	Bromomethane	ND		320	53.8
75-00-3	Chloroethane	ND		320	53.8
75-69-4	Trichlorofluoromethane	ND		320	53.8
67-64-1	Acetone	ND		950	53.8
60-29-7	Diethyl ether	ND		320	53.8
75-35-4	1,1-Dichloroethylene	ND		63	53.8
74-88-4	Methyl iodide	ND		130	53.8
107-13-1	Acrylonitrile	ND		320	53.8
75-09-2	Methylene chloride	ND		320	53.8
75-15-0	Carbon disulfide	ND		320	53.8
156-60-5	trans-1,2-Dichloroethylene	ND		63	53.8
1634-04-4	Methyltertbutylether (MTBE)	ND		320	53.8
75-34-3	1,1-Dichloroethane	ND		63	53.8
78-93-3	2-Butanone (MEK)	ND		320	53.8
156-59-2	cis-1,2-Dichloroethylene	ND		63	53.8
67-66-3	Chloroform	ND		63	53.8
74-97-5	Bromochloromethane	ND		130	53.8
71-55-6	1,1,1-Trichloroethane	ND		63	53.8
107-06-2	1,2-Dichloroethane	ND		63	53.8
71-43-2	Benzene	ND		63	53.8
56-23-5	Carbon tetrachloride	ND		63	53.8
78-87-5	1,2-Dichloropropane	ND		63	53.8
79-01-6	Trichloroethylene	ND		63	53.8
74-95-3	Dibromomethane	ND		130	53.8
75-27-4	Bromodichloromethane	ND		130	53.8
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		320	53.8
10061-01-5	cis-1,3-Dichloropropene	ND		63	53.8
10061-02-6	trans-1,3-Dichloropropene	ND		63	53.8
108-88-3	Toluene	ND		63	53.8
79-00-5	1,1,2-Trichloroethane	ND		63	53.8
591-78-6	2-Hexanone	ND		320	53.8
124-48-1	Dibromochloromethane	ND		130	53.8
106-93-4	1,2-Dibromoethane	ND		63	53.8

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		63	53.8
108-90-7	Chlorobenzene	ND		63	53.8
630-20-6	1,1,1,2-Tetrachloroethane	ND		130	53.8
100-41-4	Ethylbenzene	ND		63	53.8
108383,106423	m & p-Xylene	ND		130	53.8
75-25-2	Bromoform	ND		130	53.8
100-42-5	Styrene	ND		63	53.8
95-47-6	o-Xylene	ND		63	53.8
79-34-5	1,1,2,2-Tetrachloroethane	ND		130	53.8
96-18-4	1,2,3-Trichloropropane	ND		130	53.8
110-57-6	trans-1,4-Dichloro-2-butene	ND		130	53.8
98-82-8	Isopropylbenzene	ND		130	53.8
108-86-1	Bromobenzene	ND		130	53.8
103-65-1	n-Propylbenzene	ND		130	53.8
108-67-8	1,3,5-Trimethylbenzene	ND		130	53.8
98-06-6	tert-Butylbenzene	ND		320	53.8
95-63-6	1,2,4-Trimethylbenzene	ND		130	53.8
135-98-8	sec-Butylbenzene	ND		320	53.8
541-73-1	1,3-Dichlorobenzene	ND		130	53.8
106-46-7	1,4-Dichlorobenzene	ND		130	53.8
99-87-6	p-Isopropyl toluene	ND		320	53.8
95-50-1	1,2-Dichlorobenzene	ND		130	53.8
104-51-8	n-Butylbenzene	ND		320	53.8
67-72-1	Hexachloroethane	ND		130	53.8
96-12-8	1,2-Dibromo-3-chloropropane	ND		320	53.8
120-82-1	1,2,4-Trichlorobenzene	ND		320	53.8
91-20-3	Naphthalene	ND		320	53.8
87-61-6	1,2,3-Trichlorobenzene	ND		320	53.8
91-57-6	2-Methylnaphthalene	ND		320	53.8

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104144-16ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/25/2001 by JRS	Sample ID:	SS-16
Total Solids:	82%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		310	50.4
74-87-3	Chloromethane	ND		310	50.4
75-01-4	Vinyl chloride	ND		61	50.4
74-83-9	Bromomethane	ND		310	50.4
75-00-3	Chloroethane	ND		310	50.4
75-69-4	Trichlorofluoromethane	ND		310	50.4
67-64-1	Acetone	ND		920	50.4
60-29-7	Diethyl ether	ND		310	50.4
75-35-4	1,1-Dichloroethylene	ND		61	50.4
74-88-4	Methyl iodide	ND		120	50.4
107-13-1	Acrylonitrile	ND		310	50.4
75-09-2	Methylene chloride	ND		310	50.4
75-15-0	Carbon disulfide	ND		310	50.4
156-60-5	trans-1,2-Dichloroethylene	ND		61	50.4
1634-04-4	Methyltertbutylether (MTBE)	ND		310	50.4
75-34-3	1,1-Dichloroethane	ND		61	50.4
78-93-3	2-Butanone (MEK)	ND		310	50.4
156-59-2	cis-1,2-Dichloroethylene	ND		61	50.4
67-66-3	Chloroform	ND		61	50.4
74-97-5	Bromochloromethane	ND		120	50.4
71-55-6	1,1,1-Trichloroethane	ND		61	50.4
107-06-2	1,2-Dichloroethane	ND		61	50.4
71-43-2	Benzene	ND		61	50.4
56-23-5	Carbon tetrachloride	ND		61	50.4
78-87-5	1,2-Dichloropropane	ND		61	50.4
79-01-6	Trichloroethylene	80		61	50.4
74-95-3	Dibromomethane	ND		120	50.4
75-27-4	Bromodichloromethane	ND		120	50.4
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		310	50.4
10061-01-5	cis-1,3-Dichloropropene	ND		61	50.4
10061-02-6	trans-1,3-Dichloropropene	ND		61	50.4
108-88-3	Toluene	ND		61	50.4
79-00-5	1,1,2-Trichloroethane	ND		61	50.4
591-78-6	2-Hexanone	ND		310	50.4
124-48-1	Dibromochloromethane	ND		120	50.4
106-93-4	1,2-Dibromoethane	ND		61	50.4

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		61	50.4
108-90-7	Chlorobenzene	ND		61	50.4
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	50.4
100-41-4	Ethylbenzene	ND		61	50.4
108383,106423	m & p-Xylene	ND		120	50.4
75-25-2	Bromoform	ND		120	50.4
100-42-5	Styrene	ND		61	50.4
95-47-6	o-Xylene	ND		61	50.4
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	50.4
96-18-4	1,2,3-Trichloropropane	ND		120	50.4
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	50.4
98-82-8	Isopropylbenzene	ND		120	50.4
108-86-1	Bromobenzene	ND		120	50.4
103-65-1	n-Propylbenzene	ND		120	50.4
108-67-8	1,3,5-Trimethylbenzene	ND		120	50.4
98-06-6	tert-Butylbenzene	ND		310	50.4
95-63-6	1,2,4-Trimethylbenzene	ND		120	50.4
135-98-8	sec-Butylbenzene	ND		310	50.4
541-73-1	1,3-Dichlorobenzene	ND		120	50.4
106-46-7	1,4-Dichlorobenzene	ND		120	50.4
99-87-6	p-Isopropyl toluene	ND		310	50.4
95-50-1	1,2-Dichlorobenzene	ND		120	50.4
104-51-8	n-Butylbenzene	ND		310	50.4
67-72-1	Hexachloroethane	ND		120	50.4
96-12-8	1,2-Dibromo-3-chloropropane	ND		310	50.4
120-82-1	1,2,4-Trichlorobenzene	ND		310	50.4
91-20-3	Naphthalene	ND		310	50.4
87-61-6	1,2,3-Trichlorobenzene	ND		310	50.4
91-57-6	2-Methylnaphthalene	ND		310	50.4

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

Work Order #: 0104144-17ME

Date Collected:	4/17/2001	Test Code:	SME
		Test Name:	MEOH-Sed
Date Analyzed:	4/26/2001 by JRS	Sample ID:	SS-17
Total Solids:	86%		

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
75-71-8	Dichlorodifluoromethane	ND		300	51.6
74-87-3	Chloromethane	ND		300	51.6
75-01-4	Vinyl chloride	ND		60	51.6
74-83-9	Bromomethane	ND		300	51.6
75-00-3	Chloroethane	ND		300	51.6
75-69-4	Trichlorofluoromethane	ND		300	51.6
67-64-1	Acetone	ND		900	51.6
60-29-7	Diethyl ether	ND		300	51.6
75-35-4	1,1-Dichloroethylene	ND		60	51.6
74-88-4	Methyl iodide	ND		120	51.6
107-13-1	Acrylonitrile	ND		300	51.6
75-09-2	Methylene chloride	ND		300	51.6
75-15-0	Carbon disulfide	ND		300	51.6
156-60-5	trans-1,2-Dichloroethylene	ND		60	51.6
1634-04-4	Methyltertbutylether (MTBE)	ND		300	51.6
75-34-3	1,1-Dichloroethane	ND		60	51.6
78-93-3	2-Butanone (MEK)	ND		300	51.6
156-59-2	cis-1,2-Dichloroethylene	ND		60	51.6
67-66-3	Chloroform	ND		60	51.6
74-97-5	Bromochloromethane	ND		120	51.6
71-55-6	1,1,1-Trichloroethane	ND		60	51.6
107-06-2	1,2-Dichloroethane	ND		60	51.6
71-43-2	Benzene	ND		60	51.6
56-23-5	Carbon tetrachloride	ND		60	51.6
78-87-5	1,2-Dichloropropane	ND		60	51.6
79-01-6	Trichloroethylene	ND		60	51.6
74-95-3	Dibromomethane	ND		120	51.6
75-27-4	Bromodichloromethane	ND		120	51.6
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		300	51.6
10061-01-5	cis-1,3-Dichloropropene	ND		60	51.6
10061-02-6	trans-1,3-Dichloropropene	ND		60	51.6
108-88-3	Toluene	ND		60	51.6
79-00-5	1,1,2-Trichloroethane	ND		60	51.6
591-78-6	2-Hexanone	ND		300	51.6
124-48-1	Dibromochloromethane	ND		120	51.6
106-93-4	1,2-Dibromoethane	ND		60	51.6

MDEQ ENVIRONMENTAL LABORATORY
ANALYTICAL REPORT

CAS #	COMPOUND	RESULTS ug/Kg (dry)	REMARK	REPORTING LIMIT	DILUTION FACTOR
127-18-4	Tetrachloroethene	ND		60	51.6
108-90-7	Chlorobenzene	ND		60	51.6
630-20-6	1,1,1,2-Tetrachloroethane	ND		120	51.6
100-41-4	Ethylbenzene	ND		60	51.6
108383,106423	m & p-Xylene	ND		120	51.6
75-25-2	Bromoform	ND		120	51.6
100-42-5	Styrene	ND		60	51.6
95-47-6	o-Xylene	ND		60	51.6
79-34-5	1,1,2,2-Tetrachloroethane	ND		120	51.6
96-18-4	1,2,3-Trichloropropane	ND		120	51.6
110-57-6	trans-1,4-Dichloro-2-butene	ND		120	51.6
98-82-8	Isopropylbenzene	ND		120	51.6
108-86-1	Bromobenzene	ND		120	51.6
103-65-1	n-Propylbenzene	ND		120	51.6
108-67-8	1,3,5-Trimethylbenzene	ND		120	51.6
98-06-6	tert-Butylbenzene	ND		300	51.6
95-63-6	1,2,4-Trimethylbenzene	ND		120	51.6
135-98-8	sec-Butylbenzene	ND		300	51.6
541-73-1	1,3-Dichlorobenzene	ND		120	51.6
106-46-7	1,4-Dichlorobenzene	ND		120	51.6
99-87-6	p-Isopropyl toluene	ND		300	51.6
95-50-1	1,2-Dichlorobenzene	ND		120	51.6
104-51-8	n-Butylbenzene	ND		300	51.6
67-72-1	Hexachloroethane	ND		120	51.6
96-12-8	1,2-Dibromo-3-chloropropane	ND		300	51.6
120-82-1	1,2,4-Trichlorobenzene	ND		300	51.6
91-20-3	Naphthalene	ND		300	51.6
87-61-6	1,2,3-Trichlorobenzene	ND		300	51.6
91-57-6	2-Methylnaphthalene	ND		300	51.6

ND = not detected at the specified reporting limit. NM = not measured.
Reference method is 8260.
USEPA Methods 8260 and 624 are used to quantitate volatile organic compounds that have boiling points below 200°C.
2-Methylnaphthalene and naphthalene are compounds with boiling points above 200°C and are better suited to quantitation by USEPA Methods 8270 or 625 as semivolatile organic compounds.

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY	PROCEDURE	NO: PD-13/Ver. 2
	LABORATORY SERVICES SECTION	DATE REV.:12/99

SUBJECT: Laboratory Result Remark Codes

EFFECTIVE DATE: December1999

A	value reported is the mean of two or more determinations.
C	value calculated from other independent parameters.
J	estimated value or value not accurate.
K	actual value is known to be less than the value given, i.e., substance, if present, is below detection limit.
L	actual value is known to be greater than the value given.
T	value reported is less than criteria of detection.
W	value observed is less than lowest value reportable under "T" code.
DL	sample analyzed using a dilution(s).
DM	dilution required due to matrix problems.
HT	recommended laboratory holding time was exceeded before analysis.
LH	QC indicated possible low recovery. Actual level may be higher.
LL	QC indicated possible high recovery. Actual level may be lower.
MM	analytical method or matrix is not within SOP of this laboratory.
NC	no confirmation by a second technique.
NH	non-homogeneous sample made analysis of a representative sample questionable.
PI	possible interference may have affected the accuracy of the laboratory result.
QC	quality control problems exist.
RB	reagent blank. The level of reagent blank contamination is reported in the comment column and may be subtracted from the analyte value by the user.
ST	recommended sample collection/preservation technique not used.
ACC	laboratory accident resulted in no obtainable value.
FCN	free cyanide was not analyzed due to low level of total cyanide.
INT	interference encountered during analysis resulted in no obtainable value.
IST	improper sample collection/preservation. Sample not suitable for analysis.
NAV	requested analysis not available.
QNS	quantity not sufficient to perform requested analysis.
STR	settleable residue was not analyzed due to low suspended solids.

Approved by:

Bob H. Avery 11/30/99

Bob Avery, Laboratory Director Date

DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

Goldenrod

LAB ORDER # 01-04-144

MATRIX=SEDIMENT/SOIL/SOLIDS

SUBMITTER DIVISION	DISTRICT OR OFFICE	MDEQ PROJECT MANAGER & PHONE	ACCEPT HT CODES? YES / NO
ERD	SUPERFUND	TERESA DUCSAY 373-4809	

LOCATION SAMPLED / SITE ID NUMBER	INDEX	PCA	PROJECT	PH
Hastings Street	46538	-31351	-454660	-02

COLLECTED BY	PHONE
Teresa Ducsay	373-4809

OVERFLOW CONTRACT LAB (Required for ERD & CMI)
1ST CHOICE: 2ND CHOICE:

PRIMARY CONTACT & PHONE:

ADDITIONAL REPORT
TO ATTENTION OF
AT (ADDRESS) (If different than above office)

**** SAFETY INFORMATION REQUIRED ****
SEE BACK OF FORM

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE COLLECTED DATE	TIME	COMMENTS
1	SS-1	4/17/01	17:05	
2	SS-2		16:55	
3	SS-3		17:15	
4	SS-4		16:40	
5	SS-5		16:30	
6	SS-6		15:10	
7	SS-7		15:00	
8	SS-8		16:00	
9	SS-9		15:45	
10	SS-10		15:25	

ORGANIC

VOA VOLATILES *(MeOH/8260)

Full List	1 2 3 4 5 6 7 8 9 10
BTEX/MTBE only	1 2 3 4 5 6 7 8 9 10

OS PESTICIDES/PCBS (8081/8082)

Pesticides & PCBs	1 2 3 4 5 6 7 8 9 10
Pesticides only	1 2 3 4 5 6 7 8 9 10
PCBs only	1 2 3 4 5 6 7 8 9 10

BNA BASE NEUTRAL & ACIDS (8270)

BNAs	1 2 3 4 5 6 7 8 9 10
PNAs only	1 2 3 4 5 6 7 8 9 10
BNs only	1 2 3 4 5 6 7 8 9 10

SPECIAL REQUESTS
Library Search (Qualitative)

Volatiles	1 2 3 4 5 6 7 8 9 10
Semivolatiles	1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

GS

COD	1 2 3 4 5 6 7 8 9 10
KJEL N, Tot. P	1 2 3 4 5 6 7 8 9 10
Phenolics	1 2 3 4 5 6 7 8 9 10
Total CN	1 2 3 4 5 6 7 8 9 10
% Total Solids	1 2 3 4 5 6 7 8 9 10
_____	1 2 3 4 5 6 7 8 9 10
_____	1 2 3 4 5 6 7 8 9 10

INORGANIC

MS

MICH TEN METALS (As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn)	1 2 3 4 5 6 7 8 9 10
Fe Co Li Mn	1 2 3 4 5 6 7 8 9 10
Al Be Mo Ti V	1 2 3 4 5 6 7 8 9 10
Sr - Strontium	1 2 3 4 5 6 7 8 9 10
Ni - Nickel	1 2 3 4 5 6 7 8 9 10
Tl - Thallium	1 2 3 4 5 6 7 8 9 10
Ca Mg Na K	1 2 3 4 5 6 7 8 9 10
% Total Solids	1 2 3 4 5 6 7 8 9 10
_____	1 2 3 4 5 6 7 8 9 10
_____	1 2 3 4 5 6 7 8 9 10
_____	1 2 3 4 5 6 7 8 9 10

*MeOH Preservative Tracking Number FL -

Chain-of-Custody

	RELEASED BY / AFFILIATION	RECEIVED BY / AFFILIATION	DATE & TIME
Print Name & Affiliation	dropped	Dawn Hartig	Date: 4/18/01
Signature		D Hartig	Time: 815
Print Name & Affiliation			Date:
Signature			Time:

See Safety Section "Back of Form"

Revised February 2001

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

SAFETY INFORMATION
(MUST BE COMPLETED PRIOR TO SAMPLE SUBMITTAL)

1	Are samples expected to contain cyanide (CN)? If yes, at what level? _____	YES	NO
2	Are samples expected to be flamable?	YES	NO
3	Are samples expected to be acidic (pH ≤ 5)?	YES	NO
4	Are samples expected to be caustic (pH > 8)?	YES	NO
5	Are samples expected to be a Biohazard?	YES	NO
6	Are samples expected to be reactive with water or acid?	YES	NO
7	Are samples expected to be radioactive?	YES	NO
8	Are samples expected to contain dioxin?	YES	NO
9	Are samples expected to be explosive?	YES	NO
10	List additional suspected hazard information.		

_____
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DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

Goldenrod

LAB ORDER # 01-04-144

MATRIX=SEDIMENT/SOIL/SOLIDS

SUBMITTER DIVISION	DISTRICT OR OFFICE	MDEQ PROJECT MANAGER & PHONE	ACCEPT HT CODES? YES / NO
ERD	SUPERFUND	Teresa Ducsay 373-4809	

LOCATION SAMPLED / SITE ID NUMBER	INDEX	PCA	PROJECT	PH
Hastings Street	46538-	31351-	454660-	02

COLLECTED BY: Teresa Ducsay
PHONE: 373-4809

ADDITIONAL REPORT TO ATTENTION OF
AT (ADDRESS) (If different than above office)

OVERFLOW CONTRACT LAB (Required for ERD & CMI)
1ST CHOICE:
2ND CHOICE:

PRIMARY CONTACT & PHONE:

**** SAFETY INFORMATION REQUIRED ****
SEE BACK OF FORM

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE COLLECTED DATE	TIME	COMMENTS
1	SS-11	4-17-01	13:40	
2	SS-12		14:40	
3	SS-13		14:00	
4	SS-14		14:25	
5	SS-15		14:05	
6	SS-16		14:10	
7	SS-17		14:40	
8				
9				
10				

ORGANIC

VOA VOLATILES *(MeOH/8260)
Full List 1 2 3 4 5 6 7 8 9 10
BTEX/MTBE only 1 2 3 4 5 6 7 8 9 10

OS PESTICIDES/PCBS (8081/8082)
Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10
Pesticides only 1 2 3 4 5 6 7 8 9 10
PCBs only 1 2 3 4 5 6 7 8 9 10

BNA BASE NEUTRAL & ACIDS (8270)
BNAs 1 2 3 4 5 6 7 8 9 10
PNAs only 1 2 3 4 5 6 7 8 9 10
BNs only 1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

GS
COD 1 2 3 4 5 6 7 8 9 10
KJEL N, Tot. P 1 2 3 4 5 6 7 8 9 10
Phenolics 1 2 3 4 5 6 7 8 9 10
Total CN 1 2 3 4 5 6 7 8 9 10
% Total Solids 1 2 3 4 5 6 7 8 9 10
_____ 1 2 3 4 5 6 7 8 9 10
_____ 1 2 3 4 5 6 7 8 9 10

INORGANIC

MS
MICH TEN METALS (As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn) 1 2 3 4 5 6 7 8 9 10
Fe Co Li Mn 1 2 3 4 5 6 7 8 9 10
Al Be Mo Ti V 1 2 3 4 5 6 7 8 9 10
Sr - Strontium 1 2 3 4 5 6 7 8 9 10
Ni - Nickel 1 2 3 4 5 6 7 8 9 10
Tl - Thallium 1 2 3 4 5 6 7 8 9 10
Ca Mg Na K 1 2 3 4 5 6 7 8 9 10
% Total Solids 1 2 3 4 5 6 7 8 9 10
_____ 1 2 3 4 5 6 7 8 9 10
_____ 1 2 3 4 5 6 7 8 9 10
_____ 1 2 3 4 5 6 7 8 9 10

SPECIAL REQUESTS
Library Search (Qualitative)
Volatiles 1 2 3 4 5 6 7 8 9 10
Semivolatiles 1 2 3 4 5 6 7 8 9 10

*MeOH Preservative Tracking Number FL-

Chain-of-Custody	RELEASED BY / AFFILIATION	RECEIVED BY / AFFILIATION	DATE & TIME
	Print Name & Affiliation: Croppe	Print Name & Affiliation: Dawn Hartig	Date: 4-18-01
	Signature:	Signature: D Hartig	Time: 8:15
	Print Name & Affiliation:	Print Name & Affiliation:	Date:
	Signature:	Signature:	Time:

See Safety Section "Back of Form"

Revised February 2001

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

SAFETY INFORMATION
(MUST BE COMPLETED PRIOR TO SAMPLE SUBMITTAL)

1	Are samples expected to contain cyanide (CN)? If yes, at what level? _____	YES	NO
2	Are samples expected to be flamable?	YES	NO
3	Are samples expected to be acidic (pH ≤ 5)?	YES	NO
4	Are samples expected to be caustic (pH > 8)?	YES	NO
5	Are samples expected to be a Biohazard?	YES	NO
6	Are samples expected to be reactive with water or acid?	YES	NO
7	Are samples expected to be radioactive?	YES	NO
8	Are samples expected to contain dioxin?	YES	NO
9	Are samples expected to be explosive?	YES	NO
10	List additional suspected hazard information.		

_____
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APPENDIX C

PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS

INTEGRATED TABLE
of
PART 201 CLEANUP CRITERIA
and
SCREENING LEVELS

The following table presents cleanup criteria and screening levels for Part 201. Substances are listed alphabetically within typically used analytical groups. The table is divided into three parts:

Groundwater: Residential and Industrial-Commercial (pages 6.01 - 6.10)
Soil: Residential and Commercial I (pages 6.11 - 6.20)
Soil: Industrial and Commercial II, III, and IV (Pages 6.21 - 6.30)

Numbers shown at the tops of the columns (#1 to #29) are references to "Guidesheets" that present key considerations in the use and interpretation of specific values. Footnotes used in the table are explained on pages 6.31 through 6.33.

Values within a bolded box represent the lowest generic residential soil and groundwater criterion for a given hazardous substance. Bolded values are presented for those substances having either a full set of criteria or having a partial set where professional judgment can be made that the lowest presented criterion is protective of pathways lacking criteria. Therefore, the bolded value reliably represents that level in soil and in groundwater at and below which no significant risk is present. Such a location is therefore not a facility. However, bolded values may not necessarily be applicable cleanup targets for a given facility. For example, the drinking water protection criteria (Column #1 and #2) are not applicable at locations where the groundwater is not in an aquifer. The lowest criterion is not bolded for substances lacking GSI criteria. With respect to substances lacking GSI criteria, it may not be possible to reach definitive conclusions regarding status as a facility or compliance with cleanup criteria until a GSI criterion is generated or a professional determination is made by Surface Water Quality Division that on-site concentrations are protective of surface water.

The next scheduled revision of the criteria tables is June 2001. If new or revised criteria are developed based on new scientific data, these criteria will be considered draft until publication in June 2001 with the exception of significant revisions that may impact public health. Contact the Toxicology Unit to determine if new or revised criteria are pending.

GROUNDWATER: RESIDENTIAL AND INDUSTRIAL-COMMERCIAL
PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS
Developed under the authority of the
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT, 1994 PA 451, AS AMENDED

Groundwater criteria were calculated using currently available chemical-specific data and U.S. Environmental Protection Agency risk assessment guidance. Criteria may change for the next annual revision of the criteria tables. All criteria are expressed in units of parts per billion (ppb;ug/L). Scientific notation is represented by E+ or E- a value; for example, 2 x 10^6 is reported as 2.0E+6. For comparison to the criteria, groundwater samples should be representative of the water moving through the aquifer in the contaminant plume. Samples should be collected using a low flow protocol that minimizes turbidity caused by disturbances from sampling and, in most cases, total analyses of the samples should be conducted (see Op Memos #18 for details). Please refer to Op Memo #6 for recommended analytical methods and target detection limits.

Guidesheet Number →		#1	#2	#3	#4	#5	#6	#7	#8	#9
	Chemical Abstract Service Number	Residential & Commercial I Drinking Water Criteria	Industrial & Commercial II, III & IV Drinking Water Criteria	Groundwater Surface Water Interface Criteria	Residential & Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria	Industrial & Commercial II, III & IV Groundwater Volatilization to Indoor Air Inhalation Criteria	Groundwater Contact Criteria	Water Solubility	Flammability and Explosivity Screening Level	Acute Inhalation Screening Level
PHYSICAL PARAMETERS										
Dissolved oxygen (DO)		NA	NA	{AE}	NA	NA	NA	NA	NA	NA
Phosphorus		NA	NA	{AE}	NA	NA	NA	NA	NA	NA
Total dissolved solids (TDS)		5.0E+5 {E}	5.0E+5 {E}	{AE}	NA	NA	NA	NA	NA	NA
HAZARDOUS SUBSTANCES										
BTEX + MTBE										
Benzene {I}	71432	5.0 {A}	5.0 {A}	200 {X}	5,800	36,000	11,000	1.75E+6	34,000	67,000
Ethylbenzene {I}	100414	74 {E}	74 {E}	18	1.7E+5 {S}	1.7E+5 {S}	1.7E+5 {S}	1.69E+5	22,000	1.7E+5 {S}
Methyl-tert-butyl ether (MTBE)	1634044	40 {E}	40 {E}	730 {X}	4.7E+7 {S}	4.7E+7 {S}	6.9E+5	4.68E+7	ID	ID
Toluene {I}	108883	790 {E}	790 {E}	140	5.3E+5 {S}	5.3E+5 {S}	5.3E+5 {S}	5.26E+5	31,000	ID
Xylenes {I}	1330207	280 {E}	280 {E}	35	1.9E+5 {S}	1.9E+5 {S}	1.9E+5 {S}	1.86E+5	35,000	1.9E+5 {S}
VOLATILES										
Acetone {I}	67641	730	2,100	1,700	1.0E+9 {D,S}	1.0E+9 {D,S}	3.1E+7	1.0E+9	7.5E+6	1.0E+9 {D}
Acrolein {I}	107028	120	330	NA	2,100	4,200	3.4E+6	2.10E+8	3.3E+6	3.4E+5
Acrylonitrile {I}	107131	2.6	11	4.9 {X}	34,000	1.9E+5	14,000	7.50E+7	3.2E+6	ID
Benzyl chloride	100447	7.7	32	NA	12,000	77,000	3,600	4.90E+5	NA	ID
Bromobenzene {I}	108861	18	50	NA	1.8E+5	3.9E+5	12,000	4.13E+5	ID	ID
Bromodichloromethane	75274	100 {A,W}	100 {A,W}	ID	4,800	38,000	14,000	6.74E+6	ID	ID
Bromoform	75252	100 {A,W}	100 {A,W}	ID	4.8E+5	3.1E+6 {S}	1.4E+5	3.10E+6	ID	ID
Bromomethane	74839	10	29	35	4,000	9,000	70,000	1.45E+7	ID	ID

GROUNDWATER: RESIDENTIAL AND INDUSTRIAL-COMMERCIAL
PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS

Guidesheet Number →		#1	#2	#3	#4	#5	#6	#7	#8	#9
	Chemical Abstract Service Number	Residential & Commercial I Drinking Water Criteria	Industrial & Commercial II, III & IV Drinking Water Criteria	Groundwater Surface Water Interface Criteria	Residential & Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria	Industrial & Commercial II, III & IV Groundwater Volatilization to Indoor Air Inhalation Criteria	Groundwater Contact Criteria	Water Solubility	Flammability and Explosivity Screening Level	Acute Inhalation Screening Level
n-Butanol {I}	71363	950	2,700	NA	NLV	NLV	8.8E+6	7.40E+7	2.4E+7	7.4E+7 {S}
2-Butanone (MEK) {I}	78933	13,000	38,000	2,200	2.4E+8 {S}	2.4E+8 {S}	2.4E+8 {S}	2.40E+8	ID	2.4E+8 {S}
n-Butyl acetate	123864	550	1,600	NA	6.7E+6 {S}	6.7E+6 {S}	1.8E+6	6.70E+6	1.2E+6	6.7E+6 {S}
t-Butyl alcohol	75650	3,900	11,000	NA	1.0E+9 {D,S}	1.0E+9 {D,S}	7.9E+7	1.0E+9	3.0E+7	ID
n-Butylbenzene	104518	80	230	NA	ID	ID	5,900	NA	ID	ID
sec-Butylbenzene	135988	80	230	NA	ID	ID	4,400	NA	ID	ID
tert-Butylbenzene {I}	98066	80	230	NA	ID	ID	8,900	NA	ID	ID
Carbon disulfide {I,R}	75150	800	2,300	ID	2.5E+5	5.5E+5	1.2E+6 {S}	1.19E+6	6,500	ID
Carbon tetrachloride	56235	5.0 {A}	5.0 {A}	45 {X}	370	2,400	4,600	7.93E+5	ID	96,000
Chlorobenzene {I}	108907	100 {A}	100 {A}	47	2.1E+5	4.7E+5 {S}	86,000	4.72E+5	79,000	ID
1-Chloro-1,1-difluoroethane	75683	15,000	44,000	NA	3.9E+8 {S}	3.9E+8 {S}	3.9E+8 {S}	3.9E+08	NA	ID
Chloroethane	75003	430	1,700	ID	5.7E+6 {S}	5.7E+6 {S}	4.4E+5	5.74E+6	56,000	ID
2-Chloroethyl vinyl ether	110758	ID	ID	NA	ID	ID	ID	1.50E+7	ID	ID
Chloroform	67663	100 {A,W}	100 {A,W}	170 {X}	28,000	1.8E+5	1.5E+5	7.92E+6	ID	ID
Chloromethane {I}	74873	260	1,100	ID	8,600	52,000	4.9E+5	6.34E+6	18,000	2.1E+5
o-Chlorotoluene {I}	95498	150	420	NA	3.7E+5 {S}	3.7E+5 {S}	44,000	3.73E+5	ID	ID
Dibromochloromethane	124481	100 {A,W}	100 {A,W}	ID	15,000	1.1E+5	18,000	2.60E+6	ID	ID
Dibromochloropropane	96128	0.2 {A}	0.2 {A}	NA	1,200 {S}	1,200 {S}	390	1,230	NA	ID
Dibromomethane	74953	80	230	NA	ID	ID	5.3E+5	1.10E+7	ID	ID
Dichlorodifluoromethane	75718	1,700	4,800	ID	2.2E+5	3.0E+5 {S}	3.0E+5 {S}	3.00E+5	ID	ID
1,1-Dichloroethane	75343	880	2,500	ID	1.0E+6	2.3E+6	2.4E+6	5.06E+6	1.9E+5	ID
1,2-Dichloroethane {I}	107062	5.0 {A}	5.0 {A}	360 {X}	9,600	59,000	19,000	8.52E+6	1.3E+6	ID
1,1-Dichloroethylene {I}	75354	7.0 {A}	7.0 {A}	65 {X}	200	1,300	11,000	2.25E+6	48,000	1.4E+5
cis-1,2-Dichloroethylene	156592	70 {A}	70 {A}	ID	96,000	2.2E+5	2.0E+5	3.50E+6	2.7E+5	ID
trans-1,2-Dichloroethylene	156605	100 {A}	100 {A}	ID	85,000	2.0E+5	2.2E+5	6.30E+6	1.2E+5	ID
1,2-Dichloropropane {I}	78875	5.0 {A}	5.0 {A}	290 {X}	16,000	36,000	16,000	2.80E+6	2.7E+5	2.8E+6 {S}
1,3-Dichloropropene	542756	21	63	NA	2.0	13	13,000	2.80E+6	66,000	ID
Diethyl ether	60297	10 {E,M}	10 {E,M}	ID	6.1E+7 {S}	6.1E+7 {S}	3.5E+7	6.10E+7	3.2E+5	6.1E+7 {S}

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Diisopropyl ether	108203	30	86	NA	ID	ID	8,000 {S}	8,041	ID	ID
Dimethylformamide {I}	68122	700	2,000	NA	NLV	NLV	1.1E+8	1.0E+9	ID	ID
Dimethylsulfoxide	67685	2.2E+5	6.3E+5	1.9E+5	NLV	NLV	1.7E+8 {S}	1.66E+8	ID	ID
1,4-Dioxane {I}	123911	85	350	2,800 {X}	NLV	NLV	1.7E+6	9.00E+8	7.2E+7	ID
Epichlorohydrin {I}	106898	5.0 {M}	6.0	NA	3.2E+5	6.3E+5	11,000	6.60E+7	2.3E+7	ID
Ethanol {I}	64175	1.9E+6	3.8E+6	IP	NLV	NLV	1.0E+9 {D}	1.0E+9	4.8E+7	ID
Ethyl acetate {I}	141786	6,600	19,000	NA	6.4E+7 {S}	6.4E+7 {S}	6.4E+7 {S}	6.40E+7	2.1E+6	ID
Ethylene dibromide	106934	1.0 {A,M}	1.0 {A,M}	1.0 {M}	2,400	15,000	25	4.20E+6	ID	ID
n-Heptane	142825	2,700 {S}	2,700 {S}	NA	2,700 {S}	2,700 {S}	2,700 {S}	2,690	100	2,700 {S}
n-Hexane	110543	3,000	8,600	NA	12,000 {S}	12,000 {S}	12,000 {S}	12,000	12,000 {S}	ID
2-Hexanone	591786	1,000	2,900	NA	4.2E+6	8.8E+6	5.2E+6	1.60E+7	ID	ID
Isobutyl alcohol {I}	78831	2,300	6,700	NA	7.6E+7 {S}	7.6E+7 {S}	2.5E+7	7.60E+7	ID	ID
Isopropyl alcohol {I}	67630	470	1,300	NA	NLV	NLV	1.3E+7	1.0E+9	3.0E+7	1.0E+9 {D}
Isopropyl benzene	98828	800	2,300	ID	56,000 {S}	56,000 {S}	56,000 {S}	56,000	15,000	ID
Methane	74828	ID	ID	ID	{K}	{K}	ID	NA	{K}	ID
Methanol	67561	3,700	10,000	480	2.5E+6	6.0E+6	2.9E+7 {S}	2.90E+7	2.3E+6	2.9E+7 {S}
4-Methyl-2-pentanone (MIBK) {I}	108101	1,800	5,200	ID	2.0E+7 {S}	2.0E+7 {S}	1.3E+7	2.00E+7	ID	2.0E+7 {S}
Methylene chloride	75092	5.0 {A}	5.0 {A}	940 {X}	2.2E+5	1.4E+6	2.2E+5	1.70E+7	ID	ID
Pentane	109660	ID	ID	NA	38,000 {S}	38,000 {S}	ID	38,200	170	38,000 {S}
2-Pentene {I}	109682	ID	ID	NA	ID	ID	ID	2.03E+5	ID	ID
Propyl alcohol {I}	71238	1,400	4,000	NA	NLV	NLV	2.8E+7	1.0E+9	3.6E+7	1.0E+9 {D}
n-Propylbenzene {I}	103651	80	230	ID	ID	ID	15,000	NA	ID	ID
Styrene	100425	100 {A}	100 {A}	80	1.7E+5	3.1E+5 {S}	9,700	3.10E+5	68,000	3.1E+5 {S}
1,1,1,2-Tetrachloroethane	630206	77	320	NA	15,000	96,000	30,000	1.10E+6	ID	ID
1,1,2,2-Tetrachloroethane	79345	8.5	35	78 {X}	12,000	77,000	4,700	2.97E+6	ID	ID
Tetrachloroethylene	127184	5.0 {A}	5.0 {A}	45 {X}	25,000	1.7E+5	12,000	2.0E+5	ID	2.0E+5 {S}
Tetrahydrofuran	109999	95	270	11,000 {X}	6.9E+6	1.6E+7	1.6E+6	1.0E+9	30,000	3.6E+6
1,1,1-Trichloroethane	71556	200 {A}	200 {A}	200	6.6E+5	1.3E+6 {S}	1.3E+6 {S}	1.33E+6	ID	1.3E+6 {S}
1,1,2-Trichloroethane	79005	5.0 {A}	5.0 {A}	330 {X}	17,000	1.1E+5	21,000	4.42E+6	1.8E+6	ID
Trichloroethylene	79016	5.0 {A}	5.0 {A}	200 {X}	15,000	97,000	37,000	1.10E+6	ID	1.1E+6 {S}

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Trichlorofluoromethane	75694	2,600	7,300	NA	1.1E+6 {S}	1.1E+6 {S}	1.1E+6 {S}	1.10E+6	ID	1.1E+6 {S}
1,2,3-Trichloropropane	96184	42	120	NA	ID	ID	84,000	1.90E+6	NA	ID
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	1.7E+5 {S}	1.7E+5 {S}	NA	1.7E+5 {S}	1.7E+5 {S}	1.7E+5 {S}	1.70E+5	ID	1.7E+5 {S}
Triethanolamine	102716	3,700	10,000	NA	NLV	NLV	1.0E+9 {D,S}	1.0E+9	ID	ID
2,2,4-Trimethyl pentane	540841	ID	ID	NA	ID	ID	ID	2,330	81	ID
2,4,4-Trimethyl-2-pentene {I}	107404.	ID	ID	NA	ID	ID	ID	11,900	ID	ID
1,2,4-Trimethylbenzene {I}	95636	63 {E}	63 {E}	ID	56,000 {S}	56,000 {S}	56,000 {S}	55,890	37,000	ID
1,3,5-Trimethylbenzene {I}	108678	72 {E}	72 {E}	ID	61,000 {S}	61,000 {S}	61,000 {S}	61,150	ID	ID
Vinyl acetate {I}	108054	640	1,800	NA	4.1E+6	8.9E+6	8.0E+6	2.00E+7	8.8E+5	4.8E+6
Vinyl chloride	75014	2.0 {A}	2.0 {A}	15	110	690	570	2.76E+6	17,000	ID
INORGANICS										
Aluminum {B}	7429905	50 {V}	50 {V}	NA	NLV	NLV	6.4E+7	NA	ID	ID
Antimony	7440360	6.0 {A}	6.0 {A}	ID	NLV	NLV	68,000	NA	ID	ID
Arsenic {B}	7440382	50 {A}	50 {A}	150 {X}	NLV	NLV	4,300	NA	ID	ID
Barium	7440393	2,000 {A}	2,000 {A}	{G,X}	NLV	NLV	1.4E+7	NA	ID	ID
Beryllium	7440417	4.0 {A}	4.0 {A}	{G}	NLV	NLV	2.9E+5	NA	ID	ID
Boron {B}	7440428	500 {F}	500 {F}	1,900	NLV	NLV	6.2E+7	NA	ID	ID
Cadmium {B}	7440439	5.0 {A}	5.0 {A}	{G,X}	NLV	NLV	1.9E+5	NA	ID	ID
Chromium (III) {B,H}	16065831	100 {A}	100 {A}	{G,X}	NLV	NLV	2.9E+8	NA	ID	ID
Chromium (VI)	18540299	100 {A}	100 {A}	11	NLV	NLV	4.6E+5	NA	ID	ID
Cobalt	7440484	40	100	100	NLV	NLV	2.4E+6	NA	ID	ID
Copper	7440508	1,000 {E}	1,000 {E}	{G}	NLV	NLV	7.4E+6	NA	ID	ID
Iron {B}	7439896	300 {E}	300 {E}	NA	NLV	NLV	5.8E+7	NA	ID	ID
Lead	7439921	4.0 {L}	4.0 {L}	{G,X}	NLV	NLV	ID	NA	ID	ID
Lithium {B}	7439932	170	350	25	NLV	NLV	5.4E+6	NA	ID	ID
Magnesium {B}	7439954	4.0E+5	1.1E+6	NA	NLV	NLV	1.0E+9 {D}	NA	ID	ID
Manganese {B}	7439965	50 {E}	50 {E}	{G,X}	NLV	NLV	9.1E+6	NA	ID	ID
Mercury (inorganic)	7439976	2.0 {A}	2.0 {A}	1.3E-3 {Z}	NLV	NLV	56 {S}	56	ID	ID
Molybdenum {B}	7439987	37	100	800 {X}	NLV	NLV	9.7E+5	NA	ID	ID

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Nickel {B}	7440020	100 {A}	100 {A}	{G}	NLV	NLV	7.4E+7	NA	ID	ID
Selenium {B}	7782492	50 {A}	50 {A}	5.0	NLV	NLV	9.7E+5	NA	ID	ID
Silver {B}	7440224	34	98	0.2 {M}	NLV	NLV	1.5E+6	NA	ID	ID
Sodium	7440235	1.2E+5	3.5E+5	NA	NLV	NLV	1.0E+9 {D}	NA	ID	ID
Strontium {B}	7440246	4,600	13,000	760	NLV	NLV	1.2E+8	NA	ID	ID
Thallium {B}	7440280	2.0 {A}	2.0 {A}	3.7 {X}	NLV	NLV	13,000	NA	ID	ID
Vanadium	7440622	4.5	82	12	NLV	NLV	9.7E+5	NA	ID	ID
White phosphorus {R}	12185103	0.11	0.31	NA	NLV	NLV	2,900	NA	ID	ID
Zinc {B}	7440666	2,400	5,000 {E}	{G}	NLV	NLV	1.1E+8	NA	ID	ID
PAHs										
Acenaphthene	83329	1,300	3,800	19	4,200 {S}	4,200 {S}	4,200 {S}	4,240	ID	ID
Acenaphthylene	208968	52	150	ID	3,900 {S}	3,900 {S}	3,900 {S}	3,930	ID	ID
Anthracene	120127	43 {S}	43 {S}	ID	43 {S}	43 {S}	43 {S}	43.4	ID	ID
Benzo(a)anthracene {Q}	56553	2.1	8.5	NA	NLV	NLV	9.4 {S,AA}	9.4	ID	ID
Benzo(b)fluoranthene {Q}	205992	2.0 {M}	2.0 {M}	ID	NLV	NLV	2.0 {M,AA}	1.5	ID	ID
Benzo(k)fluoranthene {Q}	207089	5.0 {M}	5.0 {M}	NA	NLV	NLV	5.0 {M,AA}	0.8	ID	ID
Benzo(g,h,i)perylene	191242	5.0 {M}	5.0 {M}	NA	NLV	NLV	5.0 {M,AA}	0.26	ID	ID
Benzo(a)pyrene {Q}	50328	5.0 {A,M}	5.0 {A,M}	ID	NLV	NLV	5.0 {M,AA}	1.62	ID	ID
beta-Chloronaphthalene	91587	1,800	5,200	NA	ID	ID	6,700 {S}	6,740	ID	ID
Chrysene {Q}	218019	5.0 {M}	5.0 {M}	ID	ID	ID	5.0 {M,AA}	1.6	ID	ID
Dibenzo(a,h)anthracene {Q}	53703	5.0 {M}	5.0 {M}	ID	NLV	NLV	5.0 {M,AA}	2.49	ID	ID
Dibenzofuran	132649	ID	ID	4.0	ID	ID	ID	10,000	ID	ID
Fluoranthene	206440	210 {S}	210 {S}	1.6	210 {S}	210 {S}	210 {S}	206	ID	ID
Fluorene	86737	880	2,000 {S}	12	2,000 {S}	2,000 {S}	2,000 {S}	1,980	ID	ID
Indeno(1,2,3-cd)pyrene {Q}	193395	5.0 {M}	5.0 {M}	ID	NLV	NLV	5.0 {M,AA}	0.022	ID	ID
2-Methylnaphthalene	91576	260	750	ID	ID	ID	25,000 {S}	24,600	ID	ID
Naphthalene	91203	520	1,500	13	31,000 {S}	31,000 {S}	31,000 {S}	31,000	31,000 {S}	31,000 {S}
Phenanthrene	85018	52	150	5.0 {M}	1,000 {S}	1,000 {S}	1,000 {S}	1,000	ID	ID
Pyrene	129000	140 {S}	140 {S}	ID	140 {S}	140 {S}	140 {S}	135	ID	ID

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SEMIVOLATILES										
Acetonitrile	75058	140	400	NA	2.4E+7	4.5E+7	5.8E+6	2.00E+8	1.0E+7	2.0E+8
Acetophenone	98862	1,500	4,400	NA	6.1E+6 {S}	6.1E+6 {S}	6.1E+6 {S}	6.1E+6	ID	ID
Acrylamide	79061	0.3	1.2	NA	NLV	NLV	13,000	2.20E+9	NA	ID
Acrylic acid	79107	3,900	11,000	NA	1.2E+7	2.8E+7	7.6E+7	1.0E+9	1.0E+9 {D}	ID
Aniline	62533	53	220	20 {M}	NLV	NLV	1.4E+5	3.60E+7	NA	ID
Azobenzene	103333	23	94	NA	6,400 {S}	6,400 {S}	1,600	6,400	ID	ID
Benzidine	92875	0.3 {M}	0.3 {M}	ID	NLV	NLV	7.1	5.20E+5	ID	ID
Benzoic acid	65850	32,000	92,000	NA	NLV	NLV	3.5E+6 {S}	3.50E+6	ID	ID
Benzyl alcohol	100516	10,000	29,000	NA	NLV	NLV	4.4E+7 {S}	4.40E+7	ID	ID
bis(2-Chloroethoxy)ethane	112265	ID	ID	NA	NLV	NLV	ID	1.89E+7	ID	ID
bis(2-Chloroethyl)ether {I}	111444	2.0	8.3	NA	38,000	2.1E+5	5,700	1.72E+7	1.7E+7 {S}	1.7E+7 {S}
Camphene {I}	79925	ID	ID	NA	ID	ID	ID	33,400	ID	ID
Caprolactam	105602	5,800	17,000	NA	NLV	NLV	3.9E+8	5.25E+9	NA	1.0E+9 {D}
Carbazole	86748	85	350	10 {M}	NLV	NLV	7,400	7,480	ID	ID
Decabromodiphenyl ether	1163195	30 {S}	30 {S}	NA	30 {S}	30 {S}	30 {S}	30	ID	ID
Di(2-ethylhexyl) adipate	103231	400 {A}	400 {A}	NA	NLV	NLV	470 {S}	471	ID	ID
Diacetone alcohol {I}	123422	ID	ID	NA	NLV	NLV	ID	1.0E+9	1.0E+9 {D}	ID
1,2-Dichlorobenzene	95501	600 {A}	600 {A}	16	1.6E+5 {S}	1.6E+5 {S}	1.6E+5 {S}	1.56E+5	NA	1.6E+5 {S}
1,3-Dichlorobenzene	541731	6.6	19	38	ID	ID	2,000	1.11E+5	ID	ID
1,4-Dichlorobenzene	106467	75 {A}	75 {A}	13	16,000	74,000 {S}	8,400	73,800	NA	ID
3,3'-Dichlorobenzidine	91941	1.1	4.3	0.3 {M,X}	NLV	NLV	180	3,110	ID	ID
2,6-Dichloro-4-nitroaniline	99309	2,200	6,300	NA	NLV	NLV	7,000 {S}	7,000	ID	ID
Diisopropylamine {I}	108189	5.6	16	NA	ID	ID	21,000	3.69E+7	2.3E+6	ID
Dimethyl phthalate	131113	73,000	2.1E+5	NA	NLV	NLV	4.2E+6 {S}	4.19E+6	NA	ID
N,N-Dimethylacetamide	127195	180	520	4,100 {X}	NLV	NLV	2.3E+7	1.0E+9	NA	ID
N,N-Dimethylaniline	121697	16	46	NA	2.4E+5	1.3E+6 {S}	20,000	1.27E+6	NA	1.3E+6 {S}
2,4-Dinitrotoluene	121142	7.7	32	NA	NLV	NLV	8,600	2.70E+5	ID	ID
1-Formylpiperidine	2591868	80	230	NA	ID	ID	ID	NA	ID	ID
Gentian violet	548629	15	63	NA	NLV	NLV	1.0E+6 {S}	1.00E+6	ID	ID

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Hexabromobenzene	87821	10 {M}	10 {M}	ID	ID	ID	10 {M}	0.17	ID	ID
Hexachlorobenzene (C-66)	118741	1.0 {A}	1.0 {A}	ID	440	3,000	4.6	6,200	ID	ID
Hexachlorobutadiene (C-46)	87683	15	42	0.053	1,600	3,200 {S}	400	3,230	ID	ID
alpha-Hexachlorocyclohexane	319846	0.43	1.7	NA	2,000 {S}	2,000 {S}	60	2,000	ID	ID
beta-Hexachlorocyclohexane	319857	0.88	3.6	NA	NLV	NLV	120	240	ID	ID
Hexachlorocyclopentadiene (C-56)	77474	50 {A}	50 {A}	ID	ID	ID	1,800 {S}	1,800	ID	ID
Hexachloroethane	67721	7.3	21	6.7 {X}	27,000	50,000 {S}	1,900	50,000	ID	ID
Isophorone	78591	770	3,100	570 {X}	NLV	NLV	9.9E+5	1.20E+7	NA	1.2E+7 {S}
2-Methoxyethanol {I}	109864	7.3	21	NA	NLV	NLV	8.3E+5	1.0E+9	ID	ID
N-Methyl-morpholine {I}	109024	20	56	NA	NLV	NLV	1.5E+6	1.0E+9	ID	ID
Methylcyclopentane {I}	96377	ID	ID	NA	ID	ID	ID	73,890	ID	ID
4,4'-Methylene-bis-2-chloroaniline (MBOCA)	101144	1.1	4.5	NA	NLV	NLV	110 {AA}	14,000	ID	ID
Nitrobenzene {I}	98953	3.4	9.6	180 {X}	2.1E+6 {S}	2.1E+6 {S}	11,000	2.09E+6	NA	ID
n-Nitroso-di-n-propylamine	621647	5.0 {M}	5.0 {M}	NA	NLV	NLV	360	9.89E+6	ID	ID
N-Nitrosodiphenylamine	86306	270	1,100	NA	NLV	NLV	35,000 {S}	35,100	ID	ID
Oxo-hexyl acetate	88230357	73	210	NA	ID	ID	ID	NA	ID	ID
Pentachlorobenzene	608935	6.1	17	NA	ID	ID	240	650	ID	ID
Pentachloronitrobenzene	82688	32 {S}	32 {S}	NA	32 {S}	32 {S}	32 {S}	32	ID	ID
Piperidine	110894	3.2	9.2	NA	NLV	NLV	34,000	1.0E+9	ID	ID
Propionic acid	79094	12,000	35,000	ID	NLV	NLV	2.8E+8	1.0E+9	9.7E+8	ID
Pyridine {I}	110861	7.3	21	NA	5,500	12,000	94,000	3.00E+5	41,000	ID
1,2,4,5-Tetrachlorobenzene	95943	1,300 {S}	1,300 {S}	2.9 {X}	ID	ID	1,300 {S}	1,300	ID	ID
p-Toluidine	106490	15	62	NA	NLV	NLV	24,000	7.60E+6	NA	ID
Tributylamine	102829	10	29	ID	14,000	75,000 {S}	2,300	75,400	ID	ID
1,2,4-Trichlorobenzene	120821	70 {A}	70 {A}	30	3.0E+5 {S}	3.0E+5 {S}	19,000	3.00E+5	NA	3.0E+5 {S}
Triphenyl phosphate	115866	1,200	1,400 {S}	NA	NLV	NLV	1,400 {S}	1,430	ID	ID
tris(2,3-Dibromopropyl)phosphate	126727	0.71	2.9	NA	4,700 {S}	4,700 {S}	2,100	4,700	ID	ID
PCBs										
Polychlorinated biphenyls (PCBs) {J,T}	1336363	0.5 {A}	0.5 {A}	0.2 {M}	45 {S}	45 {S}	3.3 {AA}	44.7	ID	ID

GROUNDWATER: RESIDENTIAL AND INDUSTRIAL-COMMERCIAL
PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS

Guidesheet Number →		#1	#2	#3	#4	#5	#6	#7	#8	#9
	Chemical Abstract Service Number	Residential & Commercial I Drinking Water Criteria	Industrial & Commercial II, III & IV Drinking Water Criteria	Groundwater Surface Water Interface Criteria	Residential & Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria	Industrial & Commercial II, III & IV Groundwater Volatilization to Indoor Air Inhalation Criteria	Groundwater Contact Criteria	Water Solubility	Flammability and Explosivity Screening Level	Acute Inhalation Screening Level
PHTHALATES										
bis(2-Ethylhexyl)phthalate	117817	6.0 {A}	6.0 {A}	32	NLV	NLV	320 {AA}	340	NA	340 {S}
Butyl benzyl phthalate	85687	1,200	2,700 {S}	14 {X}	NLV	NLV	2,700 {S}	2,690	ID	ID
Di-n-butyl phthalate	84742	880	2,500	9.7	NLV	NLV	11,000 {S}	11,200	NA	ID
Di-n-octyl phthalate	117840	130	380	ID	NLV	NLV	400	3,000	ID	ID
Dicyclohexyl phthalate	84617	ID	ID	NA	ID	ID	ID	4,000	ID	ID
Diethyl phthalate	84662	5,500	16,000	NA	NLV	NLV	1.1E+6 {S}	1.08E+6	NA	ID
Phthalic acid	88993	14,000	40,000	NA	NLV	NLV	1.4E+7 {S}	1.42E+7	ID	ID
Phthalic anhydride	85449	15,000	44,000	NA	NLV	NLV	6.2E+6 {S}	6.2E+6	NA	ID
PESTICIDES										
Alachlor	15972608	2.0 {A}	2.0 {A}	11 {X}	NLV	NLV	1,700	1.83E+5	ID	ID
Aldrin	309002	0.098	0.4	NA	180 {S}	180 {S}	0.34 {AA}	180	ID	ID
Atrazine	1912249	3.0 {A}	3.0 {A}	7.3 {X}	NLV	NLV	5,400	70,000	ID	ID
Chlordane {J}	57749	2.0 {A}	2.0 {A}	IP	56 {S}	56 {S}	15 {AA}	56	ID	ID
Chlorpyrifos	2921882	22	63	NA	2.9	6.6	1,100 {S}	1,120	ID	ID
Cyanazine	21725462	10 {M}	10 {M}	56 {X}	NLV	NLV	2,800	1.70E+5	ID	ID
Dacthal	1861321	73	210	NA	NLV	NLV	500 {S}	500	ID	ID
4-4'-DDD	72548	9.1	37	NA	NLV	NLV	44 {AA}	90	ID	ID
4-4'-DDE	72559	4.3	15	NA	ID	ID	27 {AA}	120	ID	ID
4-4'-DDT	50293	3.6	10	0.02 {M}	NLV	NLV	13 {AA}	25	NA	ID
Diazinon	333415	1.3	3.8	NA	NLV	NLV	1,300	68,800	NA	ID
Dichlorovos	62737	1.6	6.7	NA	NLV	NLV	5,900	1.60E+7	NA	ID
Dieldrin	60571	0.11	0.43	0.02 {M}	200 {S}	200 {S}	2.4 {AA}	195	ID	ID
Dinoseb	88857	7.0 {A}	7.0 {A}	NA	ID	ID	7,000	52,000	ID	ID
Diuron	330541	31	90	NA	NLV	NLV	37,000 {S}	37,300	ID	ID
Endosulfan {J}	115297	1.7	4.8	NA	ID	ID	510 {S}	510	ID	ID
Endothall	145733	100 {A}	100 {A}	NA	NLV	NLV	2.5E+7 {AA}	1.00E+8	ID	ID
Endrin	72208	2.0 {A}	2.0 {A}	IP	NLV	NLV	180 {AA}	250	ID	ID
Heptachlor	76448	0.4 {A}	0.4 {A}	NA	180 {S}	180 {S}	2.9 {AA}	180	ID	ID

GROUNDWATER: RESIDENTIAL AND INDUSTRIAL-COMMERCIAL
PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS

Guidesheet Number →		#1	#2	#3	#4	#5	#6	#7	#8	#9
	Chemical Abstract Service Number	Residential & Commercial I Drinking Water Criteria	Industrial & Commercial II, III & IV Drinking Water Criteria	Groundwater Surface Water Interface Criteria	Residential & Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria	Industrial & Commercial II, III & IV Groundwater Volatilization to Indoor Air Inhalation Criteria	Groundwater Contact Criteria	Water Solubility	Flammability and Explosivity Screening Level	Acute Inhalation Screening Level
Heptachlor epoxide	1024573	0.2 {A}	0.2 {A}	NA	NLV	NLV	9.0 {AA}	200	ID	ID
Lindane	58899	0.2 {A}	0.2 {A}	0.027	ID	ID	190	6,800	ID	ID
Methoxychlor	72435	40 {A}	40 {A}	NA	ID	ID	45 {S}	45	ID	ID
Methyl parathion	298000	1.8	5.2	NA	NLV	NLV	3,000	50,000	ID	ID
Metolachlor	51218452	240	990	NA	NLV	NLV	91,000	5.30E+5	ID	ID
Mirex	2385855	0.02 {M}	0.02 {M}	NA	NA	NA	0.02 {M}	6.8E-6	NA	ID
Pendimethalin	40487421	280 {S}	280 {S}	NA	NLV	NLV	280 {S}	275	ID	ID
Prometon	1610180	160	460	NA	NLV	NLV	1.8E+5	7.50E+5	ID	ID
Propachlor	1918167	95	270	NA	NLV	NLV	4.4E+5	6.55E+5	ID	ID
Propazine	139402	200	560	NA	NLV	NLV	8,600 {S}	8,600	ID	ID
Simazine	122349	4.0 {A}	4.0 {A}	NA	NLV	NLV	4,500 {S}	4,470	ID	ID
Tebuthiuron	34014181	510	1,500	NA	NLV	NLV	2.5E+6 {S}	2.50E+6	ID	ID
Toxaphene	8001352	3.0 {A}	3.0 {A}	1.0 {M}	NLV	NLV	44	740	ID	740 {S}
Triallate	2303175	95	270	NA	ID	ID	4,000 {S}	4,000	ID	ID
PESTICIDES-HERBICIDES										
Aldicarb	116063	3.0 {A}	3.0 {A}	NA	NLV	NLV	1.2E+5	6.00E+6	ID	ID
Aldicarb sulfoxide	1646873	4.0 {A}	4.0 {A}	NA	NLV	NLV	2.7E+6	2.80E+7	ID	ID
Aldicarb sulfone	1646884	2.0 {A}	2.0 {A}	NA	NLV	NLV	2.1E+6	7.80E+6	ID	ID
Carbaryl	63252	700	2,000	NA	ID	ID	1.3E+5 {S}	1.26E+5	ID	ID
Carbofuran	1563662	40 {A}	40 {A}	NA	NLV	NLV	3.4E+5	7.00E+5	ID	ID
Dalapon	75990	200 {A}	200 {A}	NA	NLV	NLV	1.2E+7	5.02E+8	ID	ID
2,4-Dichlorophenoxyacetic acid	94757	70 {A}	70 {A}	220	NLV	NLV	1.2E+5	6.80E+5	ID	ID
Diquat	85007	20 {A}	20 {A}	NA	NLV	NLV	7.0E+5 {S}	7.00E+5	ID	ID
Glyphosate	1071836	700 {A}	700 {A}	NA	NLV	NLV	1.2E+7 {S,AA}	1.16E+7	ID	ID
2-Methyl-4-chlorophenoxyacetic acid	94746	7.3	21	NA	NLV	NLV	9,200	9.24E+5	ID	ID
Oxamyl	23135220	200 {A}	200 {A}	NA	NLV	NLV	6.2E+7	2.80E+8	ID	ID
Picloram	1918021	500 {A}	500 {A}	NA	NLV	NLV	4.3E+5 {S}	4.30E+5	ID	ID
Silvex (2,4,5-TP)	93721	50 {A}	50 {A}	NA	NLV	NLV	43,000	1.40E+5	ID	ID
Trifluralin	1582098	37	110	NA	ID	ID	2,400	8,100	ID	ID

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Guidesheet Number →		#1	#2	#3	#4	#5	#6	#7	#8	#9
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DIOXINS										
2,3,7,8-Tetrabromodibenzo-p-dioxin {O}	50585416	{O}	{O}	{O}	NLV	NLV	{O}	0.00996	ID	ID
2,3,7,8-Tetrachlorodibenzo-p-dioxin {O}	1746016	3.0E-5 {A}	3.0E-5 {A}	1.0E-5 {M}	NLV	NLV	1.0E-5 {M,O,AA}	0.019	ID	ID
PHENOLS										
4-Chloro-3-methylphenol	59507	150	420	NA	NLV	NLV	79,000	3.90E+6	ID	ID
2-Chlorophenol	95578	45	130	22	ID	ID	94,000	2.20E+7	ID	ID
2,4-Dichlorophenol	120832	73	210	19	NLV	NLV	48,000	4.50E+6	ID	ID
2,4-Dimethylphenol	105679	370	1,000	380	NLV	NLV	5.2E+5	7.87E+6	ID	ID
2,6-Dimethylphenol	576261	4.4	13	NA	NLV	NLV	6,300	6.14E+6	ID	ID
3,4-Dimethylphenol	95658	10	29	NA	NLV	NLV	18,000	4.93E+6	ID	ID
2-Methyl-4,6-dinitrophenol	534521	20 {M}	20 {M}	NA	NLV	NLV	9,500	2.00E+5	ID	ID
Methylphenols (J)	1319773	370	1,000	71	NLV	NLV	8.1E+5	2.80E+7	NA	ID
2-Nitrophenol	88755	20	58	ID	NLV	NLV	79,000	2.50E+6	ID	ID
Pentachlorophenol	87865	1.0 {A}	1.0 {A}	{G,X}	NLV	NLV	200	1.85E+6	ID	ID
Phenol	108952	4,400	13,000	210	NLV	NLV	2.9E+7	8.28E+7	NA	ID
2,4,5-Trichlorophenol	95954	730	2,100	NA	NLV	NLV	1.7E+5	1.20E+6	ID	ID
2,4,6-Trichlorophenol	88062	120	470	4.4	NLV	NLV	10,000	8.00E+5	ID	ID
3-Trifluoromethyl-4-nitrophenol	88302	4,500	13,000	NA	NLV	NLV	5.0E+6 {S}	5.00E+6	ID	ID
MISCELLANEOUS										
Ammonia	7664417	10,000 {N}	10,000 {N}	{AC}	3.2E+6	7.2E+6	ID	5.30E+8	ID	3.5E+6
Asbestos {AB}	1332214	7.0E+6 f/mL {A}	7.0E+6 f/mL {A}	NA	NLV	NLV	ID	NA	NA	ID
Chloride	16887006	2.5E+5 {E}	2.5E+5 {E}	1.25E+5 {X}	NLV	NLV	ID	NA	ID	ID
Cyanide {R}	57125	200 {A}	200 {A}	20 {M}	NLV	NLV	57,000	NA	ID	ID
Fluorine (soluble fluoride) {B}	7782414	2,000 {E}	2,000 {E}	NA	NLV	NLV	1.2E+7	NA	ID	ID
Nitrate {B,N}	14797558	10,000 {A,N}	10,000 {A,N}	NA	NLV	NLV	3.1E+8	NA	ID	ID
Nitrite {B,N}	14797650	1,000 {A,N}	1,000 {A,N}	NA	NLV	NLV	1.9E+7	NA	ID	ID
Phosphorus (total)	7723140	63,000	2.4E+5	NA	NLV	NLV	ID	NA	ID	ID
Sulfate	14808798	2.5E+5 {E}	2.5E+5 {E}	NA	NLV	NLV	ID	NA	ID	ID
Urea	57136	ID {N}	ID {N}	NA	NLV	NLV	ID	NA	ID	ID

GROUNDWATER: RESIDENTIAL AND INDUSTRIAL-COMMERCIAL
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Guidesheet Number →		#1	#2	#3	#4	#5	#6	#7	#8	#9
	Chemical Abstract Service Number	Residential & Commercial I Drinking Water Criteria	Industrial & Commercial II, III & IV Drinking Water Criteria	Groundwater Surface Water Interface Criteria	Residential & Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria	Industrial & Commercial II, III & IV Groundwater Volatilization to Indoor Air Inhalation Criteria	Groundwater Contact Criteria	Water Solubility	Flammability and Explosivity Screening Level	Acute Inhalation Screening Level
PBBs										
Polybrominated biphenyls {J}	67774327	0.032	0.09	IP	NLV	NLV	ID	1.66E+7	ID	ID
GLYCOLS										
Diethylene glycol monobutyl ether	112345	88	250	NA	NLV	NLV	4.0E+6	1.0E+9	ID	ID
Ethylene glycol	107211	15,000	42,000	1.9E+5 {X}	NLV	NLV	1.0E+9 {D,S}	1.0E+9	NA	1.0E+9 {D}
Ethylene glycol monobutyl ether	111762	3,700	10,000	NA	2.9E+6	6.5E+6	5.3E+7	2.24E+8	NA	ID
Propylene glycol	57556	1.5E+5	4.2E+5	NA	NLV	NLV	1.0E+9 {D,S}	1.0E+9	ID	ID
Triethylene glycol	112276	10,000 {M}	12,000	NA	NLV	NLV	1.0E+6 {S}	1.00E+6	ID	ID
CARBONYLS										
Acetaldehyde {I}	75070	950	2,700	NA	1.1E+6	2.3E+6	4.2E+7	1.0E+9	4.4E+6	2.6E+7
Cyclohexanone	108941	33,000	94,000	NA	1,400	3,300	2.3E+7 {S}	2.30E+7	NA	ID
Formaldehyde	50000	1,300	3,800	120	63,000	3.6E+5	3.0E+7	5.50E+8	ID	61,000
LOW MOLECULAR WEIGHT ACID										
Acetic acid	64197	18,000 {M}	18,000 {M}	18,000 {M}	NLV	NLV	1.8E+8	6.0E+9	4.8E+9	1.0E+9 {D}
Formic acid {I,U}	64186	18,000 {M}	29,000	ID	7.7E+6	1.5E+7	6.0E+8	1.0E+9	6.6E+8	3.5E+8

GROUNDWATER: RESIDENTIAL & INDUSTRIAL/COMMERCIAL

SOIL: RESIDENTIAL AND COMMERCIAL I

PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS
Developed under the authority of the
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT, 1994 PA 451, AS AMENDED

Soil criteria were calculated using currently available chemical-specific data and U.S. Environmental Protection Agency risk assessment guidance. Criteria may change for the next annual revision of the criteria tables. All criteria are expressed in units of parts per billion (ppb;ug/Kg). Scientific notation is represented by E+ or E- a value; for example, 2 x 10^6 is reported as 2.0E+6. Analytical results must be expressed as dry-weight concentrations for comparison to criteria. Please refer to Operational Memorandum #6 for recommended analytical methods and target detection limits.

			Groundwater Protection			Indoor Air	Ambient Air (Y)				Direct Contact	
Guidesheet Number →		#10	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Hazardous Substance	Chemical Abstract Service Number	Statewide Default Background Levels	Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Groundwater Contact Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Direct Contact Criteria	Soil Saturation Concentration Screening Levels
BTEX + MTBE												
Benzene (I)	71432	NA	100	4,000 (X)	2.2E+5	1,600	13,000	34,000	79,000	3.8E+8	1.8E+5	4.0E+5
Ethylbenzene (I)	100414	NA	1,500	360	1.4E+5 (C)	1.4E+5 (C)	9.5E+6	1.4E+7	3.0E+7	6.7E+10	1.4E+5 (C)	1.4E+5
Methyl-tert-butyl ether (MTBE)	1634044	NA	800	15,000 (X)	5.9E+6 (C)	5.9E+6 (C)	2.5E+7	3.9E+7	8.7E+7	2.0E+11	1.8E+6	5.9E+6
Toluene (I)	108883	NA	16,000	2,800	2.5E+5 (C)	2.5E+5 (C)	2.8E+6	5.1E+6	1.2E+7	2.7E+10	2.5E+5 (C)	2.5E+5
Xylenes (I)	1330207	NA	5,600	700	1.5E+5 (C)	1.5E+5 (C)	4.6E+7	6.1E+7	1.3E+8	2.9E+11	1.5E+5 (C)	1.5E+5
VOLATILES												
Acetone (I)	67641	NA	15,000	34,000	1.1E+8 (C)	1.1E+8 (C)	1.3E+8	1.3E+8	1.9E+8	3.9E+11	2.3E+7	1.1E+8
Acrolein (I)	107028	NA	2,400	NA	2.3E+7 (C)	410	310	310	610	1.3E+6	3.6E+6	2.3E+7
Acrylonitrile (I)	107131	NA	52	98 (X)	2.8E+5	6,600	5,000	5,100	10,000	4.6E+7	16,000	8.3E+6
Benzyl chloride	100447	NA	200 (M)	NA	72,000	6,300	14,000	14,000	17,000	6.2E+7	48,000	2.3E+5
Bromobenzene (I)	108861	NA	550	NA	3.8E+5	3.1E+5	4.5E+5	4.5E+5	4.5E+5	5.3E+8	5.4E+5	7.6E+5
Bromodichloromethane	75274	NA	2,000 (W)	ID	2.8E+5	1,200	9,100	9,700	19,000	8.4E+7	1.1E+5	1.5E+6
Bromoform	75252	NA	2,000 (W)	ID	8.7E+5 (C)	1.5E+5	9.0E+5	9.0E+5	9.0E+5	2.8E+9	8.2E+5	8.7E+5
Bromomethane	74839	NA	200	700	1.4E+6	860	11,000	57,000	1.4E+5	3.3E+8	3.2E+5	2.2E+6
n-Butanol (I)	71363	NA	19,000	NA	8.7E+6 (C)	NLV	NLV	NLV	NLV	2.3E+10	8.7E+6 (C)	8.7E+6
2-Butanone (MEK) (I)	78933	NA	2.6E+5	44,000	2.7E+7 (C)	2.7E+7 (C)	2.9E+7	2.9E+7	3.5E+7	6.7E+10	2.7E+7 (C,AD)	2.7E+7
n-Butyl acetate	123864	NA	11,000	NA	1.1E+6 (C)	1.1E+6 (C)	1.1E+8	2.6E+8	3.2E+8	4.7E+11	1.1E+6 (C)	1.1E+6
t-Butyl alcohol	75650	NA	78,000	NA	1.1E+8 (C)	1.1E+8 (C)	9.7E+7	2.0E+8	2.0E+8	1.3E+11	1.1E+8 (C)	1.1E+8
n-Butylbenzene	104518	NA	1,600	NA	1.2E+5	ID	ID	ID	ID	ID	2.5E+6	1.0E+7
sec-Butylbenzene	135988	NA	1,600	NA	88,000	ID	ID	ID	ID	ID	2.5E+6	1.0E+7
tert-Butylbenzene (I)	98066	NA	1,600	NA	1.8E+5	ID	ID	ID	ID	ID	2.5E+6	1.0E+7
Carbon disulfide (I,R)	75150	NA	16,000	ID	2.8E+5 (C)	76,000	1.3E+6	7.9E+6	1.9E+7	4.7E+10	2.8E+5 (C,AD)	2.8E+5
Carbon tetrachloride	56235	NA	100	900 (X)	92,000	190	3,500	12,000	28,000	1.3E+8	96,000	3.9E+5
Chlorobenzene (I)	108907	NA	2,000	940	2.6E+5 (C)	1.2E+5	7.7E+5	9.9E+5	2.1E+6	4.7E+9	2.6E+5 (C)	2.6E+5

SOIL: RESIDENTIAL AND COMMERCIAL I

PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS

			Groundwater Protection			Indoor Air	Ambient Air (Y)				Direct Contact	
Guidesheet Number →		#10	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Hazardous Substance	Chemical Abstract Service Number	Statewide Default Background Levels	Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Groundwater Contact Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Direct Contact Criteria	Soil Saturation Concentration Screening Levels
1-Chloro-1,1-difluoroethane	75683	NA	3.0E+5	NA	9.6E+5 {C}	9.6E+5 {C}	7.9E+7	ID	ID	3.3E+12	9.6E+5 {C}	9.6E+5
Chloroethane	75003	NA	8,600	ID	9.5E+5 {C}	9.5E+5 {C}	3.0E+7	1.2E+8	2.8E+8	6.7E+11	9.5E+5 {C}	9.5E+5
2-Chloroethyl vinyl ether	110758	NA	ID	NA	ID	ID	ID	ID	ID	ID	ID	1.9E+6
Chloroform	67663	NA	2,000 {W}	3,400 {X}	1.5E+6 {C}	7,200	45,000	1.2E+5	2.7E+5	1.3E+9	1.2E+6	1.5E+6
Chloromethane {I}	74873	NA	5,200	ID	1.1E+6 {C}	2,300	40,000	4.1E+5	1.0E+6	4.9E+9	1.1E+6 {C}	1.1E+6
o-Chlorotoluene {I}	95498	NA	3,300	NA	5.0E+5 {C}	5.0E+5 {C}	ID	ID	ID	1.7E+11	5.0E+5 {C}	5.0E+5
Dibromochloromethane	124481	NA	2,900 {W}	ID	3.6E+5	3,900	24,000	24,000	33,000	1.3E+8	1.1E+5	6.1E+5
Dibromochloropropane	96128	NA	4.0	NA	1,200 {C}	1,200 {C}	13,000	ID	ID	1.3E+7	1,200 {C}	1,200
Dibromomethane	74953	NA	1,600	NA	2.0E+6 {C}	ID	ID	ID	ID	ID	2.0E+6 {C}	2.0E+6
Dichlorodifluoromethane	75718	NA	95,000	ID	1.0E+6 {C}	9.0E+5	5.3E+7	5.5E+8	1.4E+9	3.3E+12	1.0E+6 {C}	1.0E+6
1,1-Dichloroethane	75343	NA	18,000	ID	8.9E+5 {C}	2.3E+5	2.1E+6	5.9E+6	1.4E+7	3.3E+10	8.9E+5 {C}	8.9E+5
1,2-Dichloroethane {I}	107062	NA	100	7,200 {X}	3.8E+5	2,100	6,200	11,000	26,000	1.2E+8	91,000	1.2E+6
1,1-Dichloroethylene {I}	75354	NA	140	1,300 {X}	2.2E+5	62	1,100	5,300	13,000	6.2E+7	2.0E+5	5.7E+5
cis-1,2-Dichloroethylene	156592	NA	1,400	ID	6.4E+5 {C}	23,000	1.8E+5	4.2E+5	9.9E+5	2.3E+9	6.4E+5 {C}	6.4E+5
trans-1,2-Dichloroethylene	156605	NA	2,000	ID	1.4E+6 {C}	23,000	2.8E+5	8.3E+5	2.0E+6	4.7E+9	1.4E+6 {C}	1.4E+6
1,2-Dichloropropane {I}	78875	NA	100	5,800 {X}	3.2E+5	4,000	25,000	50,000	1.1E+5	2.7E+8	1.4E+5	5.5E+5
1,3-Dichloropropene	542756	NA	420	NA	2.6E+5	10 {M}	10 {M}	35	83	4.0E+5	1.3E+5	6.2E+5
Diethyl ether	60297	NA	200	ID	7.4E+6 {C}	7.4E+6 {C}	8.5E+7	1.5E+8	3.4E+8	8.0E+11	7.4E+6 {C}	7.4E+6
Diisopropyl ether	108203	NA	600	NA	1,300 {C}	ID	ID	ID	ID	ID	1,300 {C}	1,300
Dimethylformamide {I}	68122	NA	14,000	NA	1.1E+8 {C}	NLV	NLV	NLV	NLV	2.0E+9	2.2E+7	1.1E+8
Dimethylsulfoxide	67685	NA	4.4E+6	3.8E+6	1.8E+7 {C}	NLV	NLV	NLV	NLV	ID	1.8E+7 {C}	1.8E+7
1,4-Dioxane {I}	123911	NA	1,700	56,000	3.4E+7	NLV	NLV	NLV	NLV	5.7E+8	5.3E+5	9.7E+7
Epichlorohydrin {I}	106898	NA	100	NA	2.2E+5	64,000	31,000	31,000	35,000	6.7E+7	8,900	7.3E+6
Ethanol {I}	64175	NA	3.8E+7	IP	1.1E+8 {C}	NLV	NLV	NLV	NLV	1.3E+12	1.1E+8 {C,AD}	1.1E+8
Ethyl acetate {I}	141786	NA	1.3E+5	NA	7.5E+6 {C}	7.5E+6 {C}	4.9E+7	4.9E+7	9.8E+7	2.1E+11	7.5E+6 {C}	7.5E+6
Ethylene dibromide	106934	NA	10 {M}	20	500	670	1,700	1,700	3,300	1.4E+7	92	8.9E+5
n-Heptane	142825	NA	2.4E+5 {C}	NA	2.4E+5 {C}	2.4E+5 {C}	2.1E+7	ID	ID	2.3E+11	2.4E+5 {C}	2.4E+5
n-Hexane	110543	NA	44,000 {C}	NA	44,000 {C}	44,000 {C}	3.0E+6	ID	ID	1.3E+10	44,000 {C}	44,000
2-Hexanone	591786	NA	20,000	NA	2.5E+6 {C}	9.9E+5	1.1E+6	ID	ID	2.7E+9	2.5E+6 {C}	2.5E+6
Isobutyl alcohol {I}	78831	NA	46,000	NA	8.9E+6 {C}	8.9E+6 {C}	7.9E+7	7.9E+7	7.9E+7	1.0E+11	8.9E+6 {C}	8.9E+6
Isopropyl alcohol {I}	67630	NA	9,400	NA	1.1E+8 {C}	NLV	NLV	NLV	NLV	1.5E+10	1.4E+7	1.1E+8

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			Groundwater Protection			Indoor Air	Ambient Air (Y)				Direct Contact	
Guidesheet Number →		#10	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Hazardous Substance	Chemical Abstract Service Number	Statewide Default Background Levels	Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Groundwater Contact Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Direct Contact Criteria	Soil Saturation Concentration Screening Levels
Isopropyl benzene	98828	NA	91,000	ID	3.9E+5 (C)	3.9E+5 (C)	1.7E+6	ID	ID	5.8E+9	3.9E+5 (C)	3.9E+5
Methane	74828	NA	ID	ID	ID	(K)	ID	ID	ID	ID	ID	ID
Methanol	67561	NA	74,000	9,800	3.1E+6 (C)	5.0E+5	3.1E+7	4.4E+7	9.6E+7	2.2E+11	3.1E+6 (C)	3.1E+6
4-Methyl-2-pentanone (MIBK) (I)	108101	NA	36,000	ID	2.7E+6 (C)	2.7E+6 (C)	4.5E+7	4.5E+7	6.7E+7	1.4E+11	2.7E+6 (C)	2.7E+6
Methylene chloride	75092	NA	100	19,000 (X)	2.3E+6 (C)	45,000	2.1E+5	5.9E+5	1.4E+6	6.6E+9	1.3E+6	2.3E+6
Pentane	109660	NA	ID	NA	ID	2.4E+5 (C)	3.7E+7	ID	ID	1.2E+12	ID	2.4E+5
2-Pentene (I)	109682	NA	ID	NA	ID	ID	ID	ID	ID	ID	ID	2.2E+5
Propyl alcohol (I)	71238	NA	28,000	NA	1.1E+8 (C)	NLV	NLV	NLV	NLV	4.9E+10	1.3E+7 (AD)	1.1E+8
n-Propylbenzene (I)	103651	NA	1,600	NA	3.0E+5	ID	ID	ID	ID	1.3E+9	2.5E+6	1.0E+7
Styrene	100425	NA	2,700	2,200	2.7E+5	2.5E+5	9.7E+5	9.7E+5	1.4E+6	5.5E+9	4.0E+5	5.2E+5
1,1,1,2-Tetrachloroethane	630206	NA	1,500	NA	4.4E+5 (C)	6,200	36,000	54,000	1.0E+5	4.2E+8	4.4E+5 (C)	4.4E+5
1,1,2,2-Tetrachloroethane	79345	NA	170	1,600 (X)	94,000	4,300	10,000	10,000	14,000	5.4E+7	53,000	8.7E+5
Tetrachloroethylene	127184	NA	100	900 (X)	88,000 (C)	11,000	1.8E+5	4.8E+5	1.1E+6	5.4E+9	88,000 (C)	88,000
Tetrahydrofuran	109999	NA	1,900	2.2E+5 (X)	3.2E+7	1.3E+6	1.3E+7	ID	ID	3.9E+11	2.9E+6	1.2E+8
1,1,1-Trichloroethane	71556	NA	4,000	4,000	4.6E+5 (C)	2.5E+5	3.6E+6	1.2E+7	2.8E+7	6.7E+10	4.6E+5 (C)	4.6E+5
1,1,2-Trichloroethane	79005	NA	100	6,600 (X)	4.2E+5	4,600	17,000	21,000	44,000	1.9E+8	1.8E+5	9.2E+5
Trichloroethylene	79016	NA	100	4,000 (X)	5.0E+5 (C)	7,100	78,000	1.7E+5	3.9E+5	1.8E+9	5.0E+5 (C)	5.0E+5
Trichlorofluoromethane	75694	NA	52,000	NA	5.6E+5 (C)	5.6E+5 (C)	9.2E+7	6.3E+8	1.5E+9	3.8E+12	5.6E+5 (C)	5.6E+5
1,2,3-Trichloropropane	96184	NA	840	NA	8.3E+5 (C)	ID	ID	ID	ID	ID	8.3E+5 (C)	8.3E+5
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	NA	5.5E+5 (C)	NA	5.5E+5 (C)	5.5E+5 (C)	1.8E+8	8.8E+8	2.1E+9	5.1E+12	5.5E+5 (C)	5.5E+5
Triethanolamine	102716	NA	74,000	NA	1.1E+8 (C)	NLV	NLV	NLV	NLV	3.3E+9	1.1E+8	1.1E+8
2,2,4-Trimethyl pentane	540841	NA	ID	NA	ID	ID	ID	ID	ID	ID	ID	19,000
2,4,4-Trimethyl-2-pentene (I)	107404	NA	ID	NA	ID	ID	ID	ID	ID	ID	ID	58,000
1,2,4-Trimethylbenzene (I)	95636	NA	2,100	ID	1.1E+5 (C)	1.1E+5 (C)	2.1E+7	5.0E+8	5.0E+8	8.2E+10	1.1E+5 (C)	1.1E+5
1,3,5-Trimethylbenzene (I)	108678	NA	1,800	ID	94,000 (C)	94,000 (C)	1.6E+7	3.8E+8	3.8E+8	8.2E+10	94,000 (C)	94,000
Vinyl acetate (I)	108054	NA	13,000	NA	2.4E+6 (C)	7.9E+5	1.7E+6	2.6E+6	5.8E+6	1.3E+10	2.4E+6 (C,AD)	2.4E+6
Vinyl chloride	75014	NA	40	300	11,000	28	440	3,100	7,600	3.7E+7	4,000	4.9E+5
INORGANICS												
Aluminum (B)	7429905	6.9E+6	1,000	NA	1.0E+9 (D)	NLV	NLV	NLV	NLV	ID	5.0E+7 (AD)	NA

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			Groundwater Protection			Indoor Air	Ambient Air (Y)				Direct Contact	
Guidesheet Number →		#10	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Hazardous Substance	Chemical Abstract Service Number	Statewide Default Background Levels	Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Groundwater Contact Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Direct Contact Criteria	Soil Saturation Concentration Screening Levels
Antimony	7440360	NA	500 (M)	ID	4.9E+7	NLV	NLV	NLV	NLV	1.3E+7	1.8E+5	NA
Arsenic (B)	7440382	5,800	23,000	70,000 (X)	2.0E+6	NLV	NLV	NLV	NLV	7.2E+5	7,600	NA
Barium	7440393	75,000	1.3E+6	(G,X)	1.0E+9 (D)	NLV	NLV	NLV	NLV	3.3E+8	3.7E+7	NA
Beryllium	7440417	NA	51,000	(G)	1.0E+9 (D)	NLV	NLV	NLV	NLV	1.3E+6	4.1E+5	NA
Boron (B)	7440428	NA	10,000	38,000	1.0E+9 (D)	NLV	NLV	NLV	NLV	ID	4.8E+7 (AD)	NA
Cadmium (B)	7440439	1,200	6,000	(G,X)	2.3E+8	NLV	NLV	NLV	NLV	1.7E+6	5.5E+5	NA
Chromium (III) (B,H)	16065831	18,000 (total)	1.0E+9 (D)	(G,X)	1.0E+9 (D)	NLV	NLV	NLV	NLV	3.3E+8	7.9E+8	NA
Chromium (VI)	18540299	18,000 (total)	30,000	3,300	1.4E+8	NLV	NLV	NLV	NLV	2.6E+5	2.5E+6	NA
Cobalt	7440484	6,800	800	2,000	4.8E+7	NLV	NLV	NLV	NLV	1.3E+7	2.6E+6	NA
Copper	7440508	32,000	5.8E+6	(G)	1.0E+9 (D)	NLV	NLV	NLV	NLV	1.3E+8	2.0E+7	NA
Iron (B)	7439896	1.2E+7	6,000	NA	1.0E+9 (D)	NLV	NLV	NLV	NLV	ID	1.6E+8	NA
Lead	7439921	21,000	7.0E+5	(G,M,X)	ID	NLV	NLV	NLV	NLV	1.0E+8	4.0E+5	NA
Lithium (B)	7439932	9,800	3,400	500	1.1E+8	NLV	NLV	NLV	NLV	ID	4.2E+6 (AD)	NA
Magnesium (B)	7439954	NA	8.0E+6	NA	1.0E+9 (D)	NLV	NLV	NLV	NLV	6.7E+9	1.0E+9 (D)	NA
Manganese (B)	7439965	4.4E+5	1,000	(G,X)	1.8E+8	NLV	NLV	NLV	NLV	3.3E+6	2.5E+7	NA
Mercury (Inorganic)	7439976	130	1,700	100 (M)	47,000	NLV	NLV	NLV	NLV	ID	1.6E+5	NA
Molybdenum (B)	7439987	NA	740	16,000 (X)	1.9E+7	NLV	NLV	NLV	NLV	ID	2.6E+6	NA
Nickel (B)	7440020	20,000	1.0E+5	(G)	1.0E+9 (D)	NLV	NLV	NLV	NLV	1.3E+7	4.0E+7	NA
Selenium (B)	7782492	410	4,000	400	7.8E+7	NLV	NLV	NLV	NLV	1.3E+8	2.6E+6	NA
Silver (B)	7440224	1,000	4,500	500 (M)	2.0E+8	NLV	NLV	NLV	NLV	6.7E+6	2.5E+6	NA
Sodium	7440235	NA	2.5E+6	NA	1.0E+9 (D)	NLV	NLV	NLV	NLV	ID	1.0E+9 (D)	NA
Strontium (B)	7440246	NA	92,000	15,000	1.0E+9 (D)	NLV	NLV	NLV	NLV	ID	3.3E+8	NA
Thallium (B)	7440280	NA	2,300	4,200 (X)	1.5E+7	NLV	NLV	NLV	NLV	ID	35,000	NA
Vanadium	7440622	NA	72,000	1.9E+5	1.0E+9 (D)	NLV	NLV	NLV	NLV	ID	7.5E+5	NA
White phosphorus (R)	12185103	NA	2.2	NA	58,000	NLV	NLV	NLV	NLV	ID	2,300 (AD)	NA
Zinc (B)	7440666	47,000	2.4E+6	(G)	1.0E+9 (D)	NLV	NLV	NLV	NLV	ID	1.7E+8	NA
PAHs												
Acenaphthene	83329	NA	3.0E+5	4,400	9.7E+5	1.9E+8	8.1E+7	8.1E+7	8.1E+7	1.4E+10	4.1E+7	NA
Acenaphthylene	208968	NA	5,900	ID	4.4E+5	1.6E+6	2.2E+6	2.2E+6	2.2E+6	2.3E+9	1.6E+6	NA
Anthracene	120127	NA	41,000	ID	41,000	1.0E+9 (D)	1.4E+9	1.4E+9	1.4E+9	6.7E+10	2.3E+8	NA
Benzo(a)anthracene (Q)	56553	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	20,000	NA

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Hazardous Substance	Chemical Abstract Service Number	Statewide Default Background Levels	Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Groundwater Contact Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Direct Contact Criteria	Soil Saturation Concentration Screening Levels
Benzo(b)fluoranthene (Q)	205992	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	20,000	NA
Benzo(k)fluoranthene (Q)	207089	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	2.0E+5	NA
Benzo(g,h,i)perylene	191242	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	8.0E+8	2.5E+6	NA
Benzo(a)pyrene (Q)	50328	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	1.5E+6	2,000	NA
beta-Chloronaphthalene	91587	NA	6.2E+5	NA	2.3E+6	ID	ID	ID	ID	ID	5.6E+7	NA
Chrysene (Q)	218019	NA	NLL	NLL	NLL	ID	ID	ID	ID	ID	2.0E+6	NA
Dibenzo(a,h)anthracene (Q)	53703	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	2,000	NA
Dibenzofuran	132649	NA	ID	1,700	ID	ID	ID	ID	ID	ID	ID	NA
Fluoranthene	206440	NA	7.3E+5	5,500	7.3E+5	1.0E+9 (D)	7.4E+8	7.4E+8	7.4E+8	9.3E+9	4.6E+7	NA
Fluorene	86737	NA	3.9E+5	5,300	8.9E+5	5.8E+8	1.3E+8	1.3E+8	1.3E+8	9.3E+9	2.7E+7	NA
Indeno(1,2,3-cd)pyrene (Q)	193395	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	20,000	NA
2-Methylnaphthalene	91576	NA	57,000	ID	5.5E+6	ID	ID	ID	ID	ID	8.1E+6	NA
Naphthalene	91203	NA	35,000	870	2.1E+6	2.5E+5	3.0E+5	3.0E+5	3.0E+5	2.0E+8	1.6E+7	NA
Phenanthrene	85018	NA	56,000	2,300	1.1E+6	1.8E+6	9,300	31,000	31,000	6.7E+6	1.6E+8	NA
Pyrene	129000	NA	4.8E+5	ID	4.8E+5	1.0E+9 (D)	6.5E+8	6.5E+8	6.5E+8	6.7E+9	2.9E+7	NA
SEMIVOLATILES												
Acetonitrile	75058	NA	2,800	NA	2.2E+7 (C)	4.8E+6	1.6E+6	1.6E+6	2.1E+6	4.0E+9	4.3E+6	2.2E+7
Acetophenone	98862	NA	30,000	NA	1.1E+6 (C)	1.1E+6 (C)	4.4E+7	ID	ID	3.3E+10	1.1E+6 (C)	1.1E+6
Acrylamide	79061	NA	6.0	NA	2.6E+5	NLV	NLV	NLV	NLV	2.4E+6	1,900	NA
Acrylic acid	79107	NA	78,000	NA	1.1E+8 (C)	2.4E+6	1.9E+5	2.3E+5	2.3E+5	6.7E+7	3.5E+7 (AD)	1.1E+8
Aniline	62533	NA	1,700 (M)	1,700 (M)	2.8E+6	NLV	NLV	NLV	NLV	6.7E+7	3.3E+5	4.5E+6
Azobenzene	103333	NA	4,200	NA	3.0E+5	6.1E+6	6.3E+5	ID	ID	1.0E+8	1.4E+5	NA
Benzidine	92875	NA	1,000 (M)	ID	1,000 (M)	NLV	NLV	NLV	NLV	46,000	1,000 (M)	NA
Benzoic acid	65850	NA	6.4E+5	NA	7.0E+7	NLV	NLV	NLV	NLV	ID	9.9E+8	NA
Benzyl alcohol	100516	NA	2.0E+5	NA	5.8E+6 (C)	NLV	NLV	NLV	NLV	3.3E+11	5.8E+6 (C)	5.8E+6
bis(2-Chloroethoxy)ethane	112265	NA	ID	NA	ID	NLV	NLV	NLV	NLV	ID	ID	2.7E+6
bis(2-Chloroethyl)ether (I)	111444	NA	330 (M)	NA	1.1E+5	8,300	3,800	3,800	3,800	9.4E+6	13,000	2.2E+6
Camphene (I)	79925	NA	ID	NA	ID	ID	ID	ID	ID	ID	ID	NA
Caprolactam	105602	NA	1.2E+5	NA	1.0E+9 (D)	NLV	NLV	NLV	NLV	6.7E+8	5.3E+7 (AD)	NA
Carbazole	86748	NA	9,400	1,100	8.2E+5	NLV	NLV	NLV	NLV	ID	5.3E+5	NA
Decabromodiphenyl ether	1163195	NA	1.4E+5	NA	1.4E+5	1.0E+9 (D)	8.6E+7	ID	ID	2.3E+9	3.8E+6	NA

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			Groundwater Protection			Indoor Air	Ambient Air (Y)				Direct Contact	
Guidesheet Number →		#10	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Hazardous Substance	Chemical Abstract Service Number	Statewide Default Background Levels	Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Groundwater Contact Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Direct Contact Criteria	Soil Saturation Concentration Screening Levels
Di(2-ethylhexyl) adipate	103231	NA	9.6E+5 (C)	NA	9.6E+5 (C)	NLV	NLV	NLV	NLV	9.2E+9	9.6E+5 (C,AD)	9.6E+5
Diacetone alcohol (I)	123422	NA	ID	NA	ID	NLV	NLV	NLV	NLV	1.6E+11	ID	1.1E+8
1,2-Dichlorobenzene	95501	NA	14,000	360	2.1E+5 (C)	2.1E+5 (C)	3.9E+7	3.9E+7	5.2E+7	1.0E+11	2.1E+5 (C)	2.1E+5
1,3-Dichlorobenzene	541731	NA	170	1,100	51,000	ID	ID	ID	ID	ID	1.7E+5 (C)	1.7E+5
1,4-Dichlorobenzene	106467	NA	1,700	290	1.4E+5	19,000	77,000	77,000	1.1E+5	4.5E+8	4.0E+5	NA
3,3'-Dichlorobenzidine	91941	NA	2,000 (M)	2,000 (M,X)	4,600	NLV	NLV	NLV	NLV	6.5E+6	6,600	NA
2,6-Dichloro-4-nitroaniline	99309	NA	44,000	NA	1.4E+5	NLV	NLV	NLV	NLV	ID	6.8E+7	NA
Diisopropylamine (I)	108189	NA	110	NA	4.2E+5	ID	ID	ID	ID	ID	1.7E+5	6.7E+6
Dimethyl phthalate	131113	NA	7.9E+5 (C)	NA	7.9E+5 (C)	NLV	NLV	NLV	NLV	3.3E+9	7.9E+5 (C)	7.9E+5
N,N-Dimethylacetamide	127195	NA	3,600	82,000 (X)	1.1E+8 (C)	NLV	NLV	NLV	NLV	ID	5.6E+6	1.1E+8
N,N-Dimethylaniline	121697	NA	320	NA	4.0E+5	1.7E+5	1.5E+5	ID	ID	2.6E+8	5.0E+5	8.0E+5
2,4-Dinitrotoluene	121142	NA	430	NA	1.7E+5	NLV	NLV	NLV	NLV	1.6E+7	48,000	NA
1-Formylpiperidine	2591868	NA	1,600	NA	ID	ID	ID	ID	ID	ID	2.5E+6	1.0E+7
Gentian violet	548629	NA	300	NA	2.0E+7	NLV	NLV	NLV	NLV	ID	96,000	NA
Hexabromobenzene	87821	NA	3.2E+5	ID	3.2E+5	ID	ID	ID	ID	ID	1.1E+6	NA
Hexachlorobenzene (C-66)	118741	NA	1,800	ID	8,200	41,000	17,000	17,000	17,000	6.8E+6	8,900	NA
Hexachlorobutadiene (C-46)	87683	NA	26,000	330 (M)	3.5E+5 (C)	1.3E+5	1.3E+5	1.3E+5	1.3E+5	1.4E+8	1.0E+5	3.5E+5
alpha-Hexachlorocyclohexane	319846	NA	18	NA	2,500	30,000	12,000	22,000	25,000	1.7E+6	2,600	NA
beta-Hexachlorocyclohexane	319857	NA	37	NA	5,100	NLV	NLV	NLV	NLV	5.9E+6	5,400	NA
Hexachlorocyclopentadiene (C-56)	77474	NA	3.2E+5	ID	7.2E+5 (C)	ID	ID	ID	ID	ID	7.2E+5 (C)	7.2E+5
Hexachloroethane	67721	NA	430	1,800 (X)	1.1E+5	40,000	5.5E+5	9.3E+5	9.3E+5	2.3E+8	2.3E+5	NA
Isophorone	78591	NA	15,000	11,000 (X)	2.4E+6 (C)	NLV	NLV	NLV	NLV	1.2E+10	2.4E+6 (C)	2.4E+6
2-Methoxyethanol (I)	109864	NA	150	NA	1.7E+7	NLV	NLV	NLV	NLV	1.3E+9	2.3E+5	1.1E+8
N-Methyl-morpholine (I)	109024	NA	400	NA	3.0E+7	NLV	NLV	NLV	NLV	ID	6.1E+5	1.1E+8
Methylcyclopentane (I)	96377	NA	ID	NA	ID	ID	ID	ID	ID	ID	ID	3.5E+5
4,4'-Methylene-bis-2-chloroaniline (MBOCA)	101144	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	8.4E+7	6,800	NA
Nitrobenzene (I)	98953	NA	330 (M)	3,600 (X)	2.2E+5	4.9E+5 (C)	3.9E+6	3.9E+6	3.9E+6	3.3E+9	1.0E+5	4.9E+5
n-Nitroso-di-n-propylamine	621647	NA	330 (M)	NA	7,200	NLV	NLV	NLV	NLV	1.6E+6	1,200	1.5E+6
N-Nitrosodiphenylamine	86306	NA	5,400	NA	7.0E+5	NLV	NLV	NLV	NLV	ID	1.7E+6	NA
Oxo-hexyl acetate	88230357	NA	1,500	NA	ID	ID	ID	ID	ID	5.4E+9	2.3E+6	1.0E+7
Pentachlorobenzene	608935	NA	29,000	NA	1.9E+5 (C)	ID	ID	ID	ID	ID	1.9E+5 (C)	1.9E+5

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			Groundwater Protection			Indoor Air	Ambient Air (Y)				Direct Contact	
Guidesheet Number →		#10	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Hazardous Substance	Chemical Abstract Service Number	Statewide Default Background Levels	Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Groundwater Contact Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Direct Contact Criteria	Soil Saturation Concentration Screening Levels
Pentachloronitrobenzene	82688	NA	37,000	NA	37,000	1.2E+5	2.3E+5	2.3E+5	2.3E+5	3.3E+8	1.7E+6	NA
Piperidine	110894	NA	64	NA	6.8E+5	NLV	NLV	NLV	NLV	9.3E+9	99,000	1.2E+8
Propionic acid	79094	NA	2.4E+5	NA	1.1E+8 (C)	NLV	NLV	NLV	NLV	2.0E+10	1.1E+8 (C)	1.1E+8
Pyridine (I)	110861	NA	330 (M)	NA	37,000 (C)	1,100	8,200	40,000	97,000	2.3E+8	37,000 (C)	37,000
1,2,4,5-Tetrachlorobenzene	95943	NA	1.5E+6	3,400 (X)	1.5E+6	ID	ID	ID	ID	ID	7.7E+7	NA
p-Toluidine	106490	NA	680 (M)	NA	4.8E+5	NLV	NLV	NLV	NLV	1.0E+8	94,000	1.2E+6
Tributylamine	102829	NA	7,800	ID	1.8E+6	5.8E+5	6.0E+5	ID	ID	4.7E+8	7.9E+5	3.7E+6
1,2,4-Trichlorobenzene	120821	NA	4,200	1,800	1.1E+6	1.1E+6 (C)	2.8E+7	2.8E+7	2.8E+7	2.5E+10	9.9E+5 (AD)	1.1E+6
Triphenyl phosphate	115866	NA	1.1E+5 (C)	NA	1.1E+5 (C)	ID	ID	ID	ID	ID	1.1E+5 (C)	1.1E+5
tris(2,3-Dibromopropyl)phosphate	126727	NA	66	NA	27,000 (C)	27,000 (C)	18,000	18,000	18,000	5.9E+6	4,400	27,000
PCBs												
Polychlorinated biphenyls (PCBs) (J,T)	1336363	NA	NLL	NLL	NLL	3.0E+6	2.4E+5	7.9E+6	7.9E+6	5.2E+6	(T)	NA
PHTHALATES												
bis(2-Ethylhexyl)phthalate	117817	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	7.0E+8	2.6E+6	1.0E+7
Butyl benzyl phthalate	85687	NA	3.1E+5 (C)	26,000 (X)	3.1E+5 (C)	NLV	NLV	NLV	NLV	4.7E+10	3.1E+5 (C)	3.1E+5
Di-n-butyl phthalate	84742	NA	7.6E+5 (C)	11,000	7.6E+5 (C)	NLV	NLV	NLV	NLV	3.3E+9	7.6E+5 (C)	7.6E+5
Di-n-octyl phthalate	117840	NA	1.0E+8	ID	1.4E+8 (C)	NLV	NLV	NLV	NLV	ID	6.9E+6	1.4E+8
Dicyclohexyl phthalate	84617	NA	ID	NA	ID	ID	ID	ID	ID	ID	ID	NA
Diethyl phthalate	84662	NA	1.1E+5	NA	7.4E+5 (C)	NLV	NLV	NLV	NLV	3.3E+9	7.4E+5 (C)	7.4E+5
Phthalic acid	88993	NA	2.8E+5	NA	1.7E+6 (C)	NLV	NLV	NLV	NLV	ID	1.7E+6 (C)	1.7E+6
Phthalic anhydride	85449	NA	3.0E+5	NA	1.1E+6 (C)	NLV	NLV	NLV	NLV	ID	1.1E+6 (C)	1.1E+6
PESTICIDES												
Alachlor	15972608	NA	52	290 (X)	44,000	NLV	NLV	NLV	NLV	ID	93,000	NA
Aldrin	309002	NA	NLL	NLL	NLL	1.3E+6	58,000	58,000	58,000	6.4E+5	1,000	NA
Atrazine	1912249	NA	60	150 (X)	1.1E+5	NLV	NLV	NLV	NLV	ID	71,000 (AD)	NA
Chlordane (J)	57749	NA	NLL	NLL	NLL	1.1E+7	1.2E+6	1.2E+6	1.2E+6	3.1E+7	31,000	NA
Chlorpyrifos	2921882	NA	17,000	NA	8.4E+5	130	4,600	ID	ID	1.3E+8	1.1E+7	NA
Cyanazine	21725462	NA	500 (M)	1,100 (X)	56,000	NLV	NLV	NLV	NLV	ID	14,000	NA
Dacthal	1861321	NA	50,000	NA	3.4E+5	NLV	NLV	NLV	NLV	ID	2.3E+6	NA
4-4'-DDD	72548	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	4.4E+7	95,000	NA
4-4'-DDE	72559	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	3.2E+7	45,000	NA

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Guidesheet Number →		#10	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Hazardous Substance	Chemical Abstract Service Number	Statewide Default Background Levels	Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Groundwater Contact Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Direct Contact Criteria	Soil Saturation Concentration Screening Levels
4-4'-DDT	50293	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	3.2E+7	57,000	NA
Diazinon	333415	NA	95	NA	95,000	NLV	NLV	NLV	NLV	ID	12,000 {AD}	3.1E+5
Dichlorovos	62737	NA	50 {M}	NA	1.2E+5	NLV	NLV	NLV	NLV	3.3E+7	10,000	2.2E+6
Dieldrin	60571	NA	NLL	NLL	NLL	1.4E+5	19,000	19,000	19,000	6.8E+5	1,100	NA
Dinoseb	88857	NA	300	NA	1.4E+5 {C}	ID	ID	ID	ID	ID	66,000 {AD}	1.4E+5
Diuron	330541	NA	620	NA	7.4E+5	NLV	NLV	NLV	NLV	4.7E+8	9.7E+5	NA
Endosulfan {J}	115297	NA	NLL	NLL	NLL	ID	ID	ID	ID	ID	1.4E+6	NA
Endothall	145733	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	2.3E+9	3.8E+6	NA
Endrin	72208	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	65,000	NA
Heptachlor	76448	NA	NLL	NLL	NLL	3.5E+5	62,000	62,000	62,000	2.4E+6	5,600	NA
Heptachlor epoxide	1024573	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	1.2E+6	3,100	NA
Lindane	58899	NA	20 {M}	20 {M}	7,100	ID	ID	ID	ID	ID	8,300	NA
Methoxychlor	72435	NA	16,000	NA	18,000	ID	ID	ID	ID	ID	1.9E+6	NA
Methyl parathion	298000	NA	46	NA	78,000	NLV	NLV	NLV	NLV	ID	56,000	NA
Metolachlor	51218452	NA	4,800	NA	4.4E+5 {C}	NLV	NLV	NLV	NLV	ID	4.4E+5 {C,AD}	4.4E+5
Mirex	2385855	NA	NLL	NLL	NLL	ID	ID	ID	ID	ID	9,600	NA
Pendimethalin	40487421	NA	1.1E+6	NA	1.1E+6	NLV	NLV	NLV	NLV	ID	4.6E+7	NA
Prometon	1610180	NA	4,900	NA	5.5E+6	NLV	NLV	NLV	NLV	ID	5.0E+6	NA
Propachlor	1918167	NA	1,900	NA	8.8E+6	NLV	NLV	NLV	NLV	ID	2.9E+6	NA
Propazine	139402	NA	4,000	NA	1.7E+5	NLV	NLV	NLV	NLV	ID	6.1E+6	NA
Simazine	122349	NA	80	NA	90,000	NLV	NLV	NLV	NLV	ID	1.2E+6	NA
Tebuthiuron	34014181	NA	10,000	NA	5.0E+7	NLV	NLV	NLV	NLV	ID	4.6E+6 {AD}	NA
Toxaphene	8001352	NA	24,000	860	3.6E+5	NLV	NLV	NLV	NLV	9.7E+6	20,000	NA
Triallate	2303175	NA	95,000	NA	2.5E+5 {C}	ID	ID	ID	ID	ID	2.5E+5 {C}	2.5E+5
PESTICIDES-HERBICIDES												
Aldicarb	116063	NA	60	NA	2.4E+6	NLV	NLV	NLV	NLV	ID	2.3E+5	NA
Aldicarb sulfoxide	1646873	NA	80	NA	5.4E+7	NLV	NLV	NLV	NLV	ID	2.9E+5	NA
Aldicarb sulfone	1646884	NA	50 {M}	NA	4.2E+7	NLV	NLV	NLV	NLV	ID	2.5E+5	NA
Carbaryl	63252	NA	14,000	NA	2.6E+6	ID	ID	ID	ID	ID	2.2E+7	NA
Carbofuran	1563662	NA	800	NA	6.8E+6	NLV	NLV	NLV	NLV	ID	1.1E+6	NA
Delapon	75990	NA	4,000	NA	5.9E+7 {C}	NLV	NLV	NLV	NLV	ID	1.9E+7	5.9E+7

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Hazardous Substance	Chemical Abstract Service Number	Statewide Default Background Levels	Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Groundwater Contact Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Direct Contact Criteria	Soil Saturation Concentration Screening Levels
2,4-Dichlorophenoxyacetic acid	94757	NA	1,400	4,400	2.4E+6	NLV	NLV	NLV	NLV	6.7E+9	2.5E+6	NA
Diquat	85007	NA	400	NA	1.4E+7	NLV	NLV	NLV	NLV	ID	5.0E+5	NA
Glyphosate	1071836	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	1.1E+7 (AD)	NA
2-Methyl-4-chlorophenoxyacetic acid	94746	NA	390	NA	4.9E+5	NLV	NLV	NLV	NLV	ID	2.3E+5	NA
Oxamyl	23135220	NA	4,000	NA	1.0E+9 (D)	NLV	NLV	NLV	NLV	ID	8.6E+6	NA
Picloram	1918021	NA	10,000	NA	8.6E+6	NLV	NLV	NLV	NLV	ID	1.6E+7	NA
Silvex (2,4,5-TP)	93721	NA	3,600	NA	3.1E+6	NLV	NLV	NLV	NLV	ID	1.7E+6	NA
Trifluralin	1582098	NA	1.9E+5	NA	1.2E+7	ID	ID	ID	ID	ID	2.0E+6	NA
DIOXINS												
2,3,7,8-Tetrabromodibenzo-p-dioxin (O)	50585416	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	(O)	(O)	NA
2,3,7,8-Tetrachlorodibenzo-p-dioxin (O)	1746016	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	71 (O)	0.09 (O)	NA
PHENOLS												
4-Chloro-3-methylphenol	59507	NA	5,800	NA	3.0E+6	NLV	NLV	NLV	NLV	ID	4.5E+6	NA
2-Chlorophenol	95578	NA	900	440	1.9E+6	ID	ID	ID	ID	ID	1.4E+6	1.9E+7
2,4-Dichlorophenol	120832	NA	1,500	380	9.6E+5	NLV	NLV	NLV	NLV	5.1E+9	6.6E+5 (AD)	1.8E+6
2,4-Dimethylphenol	105679	NA	7,400	7,600	1.0E+7	NLV	NLV	NLV	NLV	4.7E+9	1.1E+7	NA
2,6-Dimethylphenol	576261	NA	330 (M)	NA	1.3E+5	NLV	NLV	NLV	NLV	ID	1.4E+5	NA
3,4-Dimethylphenol	95658	NA	330 (M)	NA	3.6E+5	NLV	NLV	NLV	NLV	ID	3.2E+5	NA
2-Methyl-4,6-dinitrophenol	534521	NA	1,700 (M)	NA	1.9E+5	NLV	NLV	NLV	NLV	ID	79,000	NA
Methylphenols (J)	1319773	NA	7,400	1,400	1.6E+7	NLV	NLV	NLV	NLV	6.7E+9	1.1E+7	NA
2-Nitrophenol	88755	NA	400	ID	1.6E+6	NLV	NLV	NLV	NLV	ID	6.3E+5	NA
Pentachlorophenol	87865	NA	22	(G,X)	4,300	NLV	NLV	NLV	NLV	1.0E+8	90,000	NA
Phenol	108952	NA	88,000	4,200	1.2E+7 (C)	NLV	NLV	NLV	NLV	4.0E+10	1.2E+7 (C,AD)	1.2E+7
2,4,5-Trichlorophenol	95954	NA	39,000	NA	9.1E+6	NLV	NLV	NLV	NLV	2.3E+10	2.3E+7	NA
2,4,6-Trichlorophenol	88062	NA	2,400	330 (M)	2.0E+5	NLV	NLV	NLV	NLV	1.0E+9	7.1E+5	NA
3-Trifluoromethyl-4-nitrophenol	88302	NA	1.1E+5	NA	1.2E+8	NLV	NLV	NLV	NLV	ID	4.1E+7 (AD)	NA
MISCELLANEOUS												
Ammonia	7664417	NA	ID (N)	(AC)	ID	ID	ID	ID	ID	6.7E+9	ID	1.0E+7
Asbestos (AB)	1332214	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	1.0E+7 (M)	ID	NA
Chloride	16887006	NA	5.0E+6	2.5E+6 (X)	ID	NLV	NLV	NLV	NLV	ID	5.0E+5 (F)	NA
Cyanide (R)	57125	390 (Total)	4,000 (P)	400 (P)	2.5E+5 (P)	NLV	NLV	NLV	NLV	2.5E+5 (P)	12,000 (P)	NA

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Fluorine (soluble fluoride) (B)	7782414	NA	40,000	NA	2.4E+8	NLV	NLV	NLV	NLV	ID	9.0E+6 (AD)	NA
Nitrate (B,N)	14797558	NA	2.0E+5 (N)	NA	1.0E+9 (D)	NLV	NLV	NLV	NLV	ID	ID	NA
Nitrite (B,N)	14797650	NA	20,000 (N)	NA	3.8E+8	NLV	NLV	NLV	NLV	ID	ID	NA
Phosphorus (total)	7723140	NA	1.3E+6	NA	ID	NLV	NLV	NLV	NLV	ID	1.0E+9 (D)	NA
Sulfate	14808798	NA	5.0E+6	NA	ID	NLV	NLV	NLV	NLV	ID	ID	NA
Urea	57136	NA	ID (N)	NA	ID	NLV	NLV	NLV	NLV	ID	ID	NA
PBBs												
Polybrominated biphenyls (J)	67774327	NA	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	1,200	NA
GLYCOLS												
Diethylene glycol monobutyl ether	112345	NA	1,800	NA	8.0E+7	NLV	NLV	NLV	NLV	1.3E+9	2.7E+6	1.1E+8
Ethylene glycol	107211	NA	3.0E+5	NA	1.1E+8 (C)	NLV	NLV	NLV	NLV	6.7E+10	1.1E+8 (C)	1.1E+8
Ethylene glycol monobutyl ether	111762	NA	74,000	NA	4.1E+7 (C)	7.4E+5	1.8E+7	1.5E+8	3.6E+8	8.7E+11	4.1E+7 (C)	4.1E+7
Propylene glycol	57556	NA	3.0E+6	NA	1.1E+8 (C)	NLV	NLV	NLV	NLV	4.0E+11	1.1E+8 (C)	1.1E+8
Triethylene glycol	112276	NA	2.0E+5	NA	1.1E+5 (C)	NLV	NLV	NLV	NLV	ID	1.1E+5 (C,AD)	1.1E+5
CARBONYLS												
Acetaldehyde (I)	75070	NA	19,000	NA	1.1E+8 (C)	2.2E+5	1.7E+5	1.7E+5	2.8E+5	6.0E+8	2.9E+7	1.1E+8
Cyclohexanone	108941	NA	5.2E+6	NA	2.2E+8 (C)	17,000	1.0E+6	ID	ID	6.7E+10	2.2E+8 (C)	2.2E+8
Formaldehyde	50000	NA	26,000	2,400	6.0E+7 (C)	12,000	13,000	23,000	52,000	2.4E+8	4.1E+7	6.0E+7
LOW MOLECULAR WEIGHT ACIDS												
Acetic acid	64197	NA	9.0E+5 (M)	9.0E+5 (M)	6.5E+8 (C)	NLV	NLV	NLV	NLV	1.7E+10	1.3E+8	6.5E+8
Formic acid (I,U)	64186	NA	9.0E+5 (M)	ID	1.1E+8 (C)	1.5E+6	9.0E+5 (M)	9.0E+5 (M)	9.0E+5 (M)	1.3E+8	1.1E+8 (C)	1.1E+8

SOIL: RESIDENTIAL & COMMERCIAL I

SOIL: INDUSTRIAL AND COMMERCIAL II, III, AND IV

PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS

Developed under the authority of the

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT, 1994 PA 451, AS AMENDED

Soil criteria were calculated using currently available chemical-specific data and U.S. Environmental Protection Agency risk assessment guidance. Criteria may change for the next annual revision of the criteria tables. All criteria are expressed in units of parts per billion (ppb;ug/Kg). Scientific notation is represented by E+ or E- a value; for example, 2 x 10^6 is reported as 2.0E+6. Analytical results must be expressed as dry-weight concentrations for comparison to criteria. Please refer to Operational Memorandum #6 for recommended analytical methods and target detection limits.

			Groundwater Protection				Indoor Air	Ambient Air (Y)				Direct Contact			
Guidesheet Number →		#10	#21		#12	#13	#22	#23	#24	#25	#26	#27	#28	#29	#20
Hazardous Substance	Chemical Abstract Service Number	Statewide Default Background Levels	Residential Drinking Water Protection Criteria	Industrial And Commercial Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Groundwater Contact Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Industrial and Commercial II	Commercial III	Commercial IV	Soil Saturation Concentration Screening Levels
BTEX + MTBE															
Benzene {I}	71432	NA	100	100	4,000 {X}	2.2E+5	8,400	45,000	99,000	2.3E+5	4.7E+8	4.0E+5 {C}	4.0E+5 {C}	4.0E+5 {C}	4.0E+5
Ethylbenzene {I}	100414	NA	1,500	1,500	360	1.4E+5 {C}	1.4E+5 {C}	1.1E+7	1.4E+7	3.0E+7	2.9E+10	1.4E+5 {C}	1.4E+5 {C}	1.4E+5 {C}	1.4E+5
Methyl-tert-butyl ether (MTBE)	1634044	NA	800	800	15,000 {X}	5.9E+6 {C}	5.9E+6 {C}	3.0E+7	4.1E+7	8.9E+7	8.8E+10	5.9E+6 {C}	5.9E+6 {C}	5.9E+6 {C}	5.9E+6
Toluene {I}	108883	NA	16,000	16,000	2,800	2.5E+5 {C}	2.5E+5 {C}	3.3E+6	3.6E+7	3.6E+7	1.2E+10	2.5E+5 {C}	2.5E+5 {C}	2.5E+5 {C}	2.5E+5
Xylenes {I}	1330207	NA	5,600	5,600	700	1.5E+5 {C}	1.5E+5 {C}	5.4E+7	6.5E+7	1.3E+8	1.3E+11	1.5E+5 {C}	1.5E+5 {C}	1.5E+5 {C}	1.5E+5
VOLATILES															
Acetone {I}	67641	NA	15,000	42,000	34,000	1.1E+8 {C}	1.1E+8 {C}	1.6E+8	1.6E+8	2.0E+8	1.7E+11	1.1E+8	1.1E+8 {C}	1.1E+8 {C}	1.1E+8
Acrolein {I}	107028	NA	2,400	6,600	NA	2.3E+7 {C}	760	370	370	630	5.9E+5	1.8E+7	2.3E+7 {C}	2.3E+7	2.3E+7
Acrylonitrile {I}	107131	NA	52	220	98 {X}	2.8E+5	35,000	17,000	17,000	31,000	5.8E+7	1.1E+5	2.0E+5	1.5E+5	8.3E+6
Benzyl chloride	100447	NA	200 {M}	640	NA	72,000	33,000	48,000	48,000	52,000	7.8E+7	2.3E+5 {C}	2.3E+5 {C}	2.3E+5 {C}	2.3E+5
Bromobenzene {I}	108861	NA	550	1,500	NA	3.6E+5	5.8E+5	5.4E+5	5.4E+5	5.4E+5	2.4E+8	7.6E+5 {C}	7.6E+5 {C}	7.6E+5 {C}	7.6E+5
Bromodichloromethane	75274	NA	2,000 {W}	2,000 {W}	ID	2.6E+5	6,400	31,000	31,000	57,000	1.1E+8	7.5E+5	1.3E+6	9.7E+5	1.5E+6
Bromoform	75252	NA	2,000 {W}	2,000 {W}	ID	8.7E+5 {C}	7.7E+5	3.1E+6	3.1E+6	3.1E+6	3.6E+9	8.7E+5 {C}	8.7E+5 {C}	8.7E+5 {C}	8.7E+5
Bromomethane	74839	NA	200	580	700	1.4E+6	1,600	13,000	57,000	1.4E+5	1.5E+8	1.6E+6	2.2E+6 {C}	2.0E+6	2.2E+6
n-Butanol {I}	71363	NA	19,000	54,000	NA	8.7E+6 {C}	NLV	NLV	NLV	NLV	1.0E+10	8.7E+6 {C}	8.7E+6 {C}	8.7E+6 {C}	8.7E+6
2-Butanone (MEK) {I}	78933	NA	2.6E+5	7.6E+5	44,000	2.7E+7 {C}	2.7E+7 {C}	3.5E+7	3.5E+7	3.6E+7	2.9E+10	2.7E+7 {C,AD}	2.7E+7 {C,AD}	2.7E+7 {C,AD}	2.7E+7
n-Butyl acetate	123864	NA	11,000	32,000	NA	1.1E+6 {C}	1.1E+6 {C}	1.4E+8	3.1E+8	3.5E+8	2.1E+11	1.1E+6 {C}	1.1E+6 {C}	1.1E+6 {C}	1.1E+6
t-Butyl alcohol	75650	NA	78,000	2.2E+5	NA	1.1E+8 {C}	1.1E+8 {C}	1.2E+8	ID	ID	5.6E+10	1.1E+8 {C}	1.1E+8 {C}	1.1E+8 {C}	1.1E+8
n-Butylbenzene	104518	NA	1,600	4,600	NA	1.2E+5	ID	ID	ID	ID	ID	1.0E+7 {C}	1.0E+7 {C}	1.0E+7 {C}	1.0E+7
sec-Butylbenzene	135988	NA	1,600	4,600	NA	88,000	ID	ID	ID	ID	ID	1.0E+7 {C}	1.0E+7 {C}	1.0E+7 {C}	1.0E+7
tert-Butylbenzene {I}	98066	NA	1,600	4,600	NA	1.8E+5	ID	ID	ID	ID	ID	1.0E+7 {C}	1.0E+7 {C}	1.0E+7 {C}	1.0E+7
Carbon disulfide {I,R}	75150	NA	16,000	46,000	ID	2.8E+5 {C}	1.4E+5	1.6E+6	8.0E+6	1.9E+7	2.1E+10	2.8E+5 {C,AD}	2.8E+5 {C,AD}	2.8E+5 {C,AD}	2.8E+5
Carbon tetrachloride	56235	NA	100	100	900 {X}	92,000	990	12,000	34,000	79,000	1.7E+8	3.9E+5 {C}	3.9E+5 {C}	3.9E+5 {C}	3.9E+5

SOIL: INDUSTRIAL AND COMMERCIAL II, III, AND IV

PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS

			Groundwater Protection				Indoor Air	Ambient Air (Y)				Direct Contact			
Guidesheet Number →		#10	#21		#12	#13	#22	#23	#24	#25	#26	#27	#28	#29	#20
Hazardous Substance	Chemical Abstract Service Number	Statewide Default Background Levels	Residential Drinking Water Protection Criteria	Industrial And Commercial Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Groundwater Contact Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Industrial and Commercial II	Commercial III	Commercial IV	Soil Saturation Concentration Screening Levels
Chlorobenzene (I)	108907	NA	2,000	2,000	940	2.6E+5 (C)	2.2E+5	9.2E+5	1.1E+6	2.1E+6	2.1E+9	2.6E+5 (C)	2.6E+5 (C)	2.6E+5 (C)	2.6E+5
1-Chloro-1,1-difluoroethane	75683	NA	3.0E+5	8.8E+5	NA	9.6E+5 (C)	9.6E+5 (C)	9.4E+7	ID	ID	1.5E+12	9.6E+5 (C)	9.6E+5 (C)	9.6E+5 (C)	9.6E+5
Chloroethane	75003	NA	8,600	34,000	ID	9.5E+5 (C)	9.5E+5 (C)	3.6E+7	1.2E+8	2.8E+8	2.9E+11	9.5E+5 (C)	9.5E+5 (C)	9.5E+5 (C)	9.5E+5
2-Chloroethyl vinyl ether	110758	NA	ID	ID	NA	ID	ID	ID	ID	ID	ID	ID	ID	ID	1.9E+6
Chloroform	67663	NA	2,000 (W)	2,000 (W)	3,400 (X)	1.5E+6 (C)	38,000	1.5E+5	3.4E+5	7.9E+5	1.6E+9	1.5E+6 (C)	1.5E+6 (C)	1.5E+6 (C)	1.5E+6
Chloromethane (I)	74873	NA	5,200	22,000	ID	1.1E+6 (C)	12,000	1.4E+5	1.2E+6	2.9E+6	6.1E+9	1.1E+6 (C)	1.1E+6 (C)	1.1E+6 (C)	1.1E+6
o-Chlorotoluene (I)	95498	NA	3,300	9,300	NA	5.0E+5 (C)	5.0E+5 (C)	ID	ID	ID	7.6E+10	5.0E+5 (C)	5.0E+5 (C)	5.0E+5 (C)	5.0E+5
Dibromochloromethane	124481	NA	2,000 (W)	2,000 (W)	ID	3.6E+5	21,000	80,000	80,000	98,000	1.6E+8	6.1E+5 (C)	6.1E+5 (C)	6.1E+5 (C)	6.1E+5
Dibromochloropropane	96128	NA	4.0	4.0 (M)	NA	1,200 (C)	1,200 (C)	1.5E+4	ID	ID	5.9E+6	1,200 (C)	1,200 (C)	1,200 (C)	1,200
Dibromomethane	74953	NA	1,600	4,600	NA	2.0E+6 (C)	ID	ID	ID	ID	ID	2.0E+6 (C)	2.0E+6 (C)	2.0E+6 (C)	2.0E+6
Dichlorodifluoromethane	75718	NA	95,000	2.7E+5	ID	1.0E+6 (C)	1.0E+6 (C)	6.3E+7	5.5E+8	1.4E+9	1.5E+12	1.0E+6 (C)	1.0E+6 (C)	1.0E+6 (C)	1.0E+6
1,1-Dichloroethane	75343	NA	18,000	50,000	ID	8.9E+5 (C)	4.3E+5	2.5E+6	6.0E+6	1.4E+7	1.5E+10	8.9E+5 (C)	8.9E+5 (C)	8.9E+5 (C)	8.9E+5
1,2-Dichloroethane (I)	107062	NA	100	100	7,200 (X)	3.8E+5	11,000	21,000	33,000	74,000	1.5E+8	6.4E+5	1.1E+6	8.4E+5	1.2E+6
1,1-Dichloroethylene (I)	75354	NA	140	140	1,300 (X)	2.2E+5	330	3,700	15,000	37,000	7.8E+7	5.7E+5 (C)	5.7E+5 (C)	5.7E+5 (C)	5.7E+5
cis-1,2-Dichloroethylene	156592	NA	1,400	1,400	ID	6.4E+5 (C)	42,000	2.1E+5	4.3E+5	1.0E+6	1.0E+9	6.4E+5 (C)	6.4E+5 (C)	6.4E+5 (C)	6.4E+5
trans-1,2-Dichloroethylene	156605	NA	2,000	2,000	ID	1.4E+6 (C)	43,000	3.3E+5	8.4E+5	2.0E+6	2.1E+9	1.4E+6 (C)	1.4E+6 (C)	1.4E+6 (C)	1.4E+6
1,2-Dichloropropane (I)	78875	NA	100	100	5,800 (X)	3.2E+5	7,400	30,000	51,000	1.2E+5	1.2E+8	5.5E+5 (C)	5.5E+5 (C)	5.5E+5 (C)	5.5E+5
1,3-Dichloropropene	542756	NA	420	1,300	NA	2.6E+5	10 (M)	31	100	240	5.0E+5	6.2E+5 (C)	6.2E+5 (C)	6.2E+5 (C)	6.2E+5
Diethyl ether	60297	NA	200	200	ID	7.4E+6 (C)	7.4E+6 (C)	1.0E+8	1.6E+8	3.5E+8	3.5E+11	7.4E+6 (C)	7.4E+6 (C)	7.4E+6 (C)	7.4E+6
Diisopropyl ether	108203	NA	800	1,300 (C)	NA	1,300 (C)	ID	ID	ID	ID	ID	1,300 (C)	1,300 (C)	1,300 (C)	1,300
Dimethylformamide (I)	68122	NA	14,000	40,000	NA	1.1E+8 (C)	NLV	NLV	NLV	NLV	8.8E+8	1.1E+8	1.1E+8 (C)	1.1E+8 (C)	1.1E+8
Dimethylsulfoxide	67685	NA	4.4E+6	1.3E+7	3.8E+6	1.8E+7 (C)	NLV	NLV	NLV	NLV	ID	1.8E+7 (C)	1.8E+7 (C)	1.8E+7 (C)	1.8E+7
1,4-Dioxane (I)	123911	NA	1,700	7,000	56,000	3.4E+7	NLV	NLV	NLV	NLV	7.1E+8	3.7E+6	6.7E+6	4.9E+6	9.7E+7
Epichlorohydrin (I)	106898	NA	100	120	NA	2.2E+5	1.2E+5	37,000	37,000	37,000	2.9E+7	63,000	1.1E+5	82,000	7.3E+6
Ethanol (I)	64175	NA	3.8E+7	7.6E+7	IP	1.1E+8 (C)	NLV	NLV	NLV	NLV	5.6E+11	1.1E+8 (C,AD)	1.1E+8 (C,AD)	1.1E+8 (C,AD)	1.1E+8
Ethyl acetate (I)	141786	NA	1.3E+5	3.8E+5	NA	7.5E+6 (C)	7.5E+6 (C)	5.9E+7	5.9E+7	1.0E+8	9.4E+10	7.5E+6 (C)	7.5E+6 (C)	7.5E+6 (C)	7.5E+6
Ethylene dibromide	106934	NA	10 (M)	10 (M)	20	500	3,600	5,800	5,800	9,800	1.8E+7	660	1,200	850	8.9E+5
n-Heptane	142825	NA	2.4E+5 (C)	2.4E+5 (C)	NA	2.4E+5 (C)	2.4E+5 (C)	2.5E+7	ID	ID	1.0E+11	2.4E+5 (C)	2.4E+5 (C)	2.4E+5 (C)	2.4E+5
n-Hexane	110543	NA	44,000 (C)	44,000 (C)	NA	44,000 (C)	44,000 (C)	3.5E+6	ID	ID	5.9E+9	44,000 (C)	44,000 (C)	44,000 (C)	44,000
2-Hexanone	591786	NA	20,000	58,000	NA	2.5E+6 (C)	1.8E+6	1.3E+6	ID	ID	1.2E+9	2.5E+6 (C)	2.5E+6 (C)	2.5E+6 (C)	2.5E+6

SOIL: INDUSTRIAL AND COMMERCIAL II, III, AND IV

PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS

			Groundwater Protection				Indoor Air	Ambient Air (Y)				Direct Contact			
Guidesheet Number →		#10	#21		#12	#13	#22	#23	#24	#25	#26	#27	#28	#29	#20
Hazardous Substance	Chemical Abstract Service Number	Statewide Default Background Levels	Residential Drinking Water Protection Criteria	Industrial And Commercial Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Groundwater Contact Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 8 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Industrial and Commercial II	Commercial III	Commercial IV	Soil Saturation Concentration Screening Levels
Isobutyl alcohol (I)	78831	NA	46,000	1.3E+5	NA	8.9E+6 (C)	8.9E+6 (C)	9.5E+7	9.5E+7	9.5E+7	4.4E+10	8.9E+6 (C)	8.9E+6 (C)	8.9E+6 (C)	8.9E+6
Isopropyl alcohol (I)	67630	NA	9,400	26,000	NA	1.1E+8 (C)	NLV	NLV	NLV	NLV	6.5E+9	7.2E+7	1.1E+8 (C)	9.3E+7	1.1E+8
Isopropyl benzene	98828	NA	91,000	2.6E+5	ID	3.9E+5 (C)	3.9E+5 (C)	2.0E+6	ID	ID	2.6E+9	3.9E+5 (C)	3.9E+5 (C)	3.9E+5 (C)	3.9E+5
Methane	74828	NA	ID	ID	ID	ID	(K)	ID	ID	ID	ID	ID	ID	ID	ID
Methanol	67561	NA	74,000	2.0E+5	9,600	3.1E+6 (C)	1.2E+6	3.7E+7	4.6E+7	9.7E+7	9.6E+10	3.1E+6 (C)	3.1E+6 (C)	3.1E+6 (C)	3.1E+6
4-Methyl-2-pentanone (MIBK) (I)	108101	NA	36,000	1.0E+5	ID	2.7E+6 (C)	2.7E+6 (C)	5.3E+7	5.3E+7	7.0E+7	6.0E+10	2.7E+6 (C)	2.7E+6 (C)	2.7E+6 (C)	2.7E+6
Methylene chloride	75092	NA	100	100	19,000 (X)	2.3E+6 (C)	2.4E+5	7.0E+5	1.7E+6	4.0E+6	8.3E+9	2.3E+6 (C)	2.3E+6 (C)	2.3E+6 (C)	2.3E+6
Pentane	109660	NA	ID	ID	NA	ID	2.4E+5 (C)	4.4E+7	ID	ID	5.2E+11	ID	ID	ID	2.4E+5
2-Pentene (I)	109682	NA	ID	ID	NA	ID	ID	ID	ID	ID	ID	ID	ID	ID	2.2E+5
Propyl alcohol (I)	71238	NA	28,000	80,000	NA	1.1E+8 (C)	NLV	NLV	NLV	NLV	2.1E+10	1.1E+8 (AD)	1.1E+8 (C,AD)	1.1E+8 (C,AD)	1.1E+8
n-Propylbenzene (I)	103651	NA	1,600	4,600	NA	3.0E+5	ID	ID	ID	ID	5.9E+8	1.0E+7 (C)	1.0E+7 (C)	1.0E+7 (C)	1.0E+7
Styrene	100425	NA	2,700	2,700	2,200	2.7E+5	5.2E+5 (C)	3.3E+6	3.3E+6	4.2E+6	6.9E+9	5.2E+5 (C)	5.2E+5 (C)	5.2E+5 (C)	5.2E+5
1,1,1,2-Tetrachloroethane	630206	NA	1,500	6,400	NA	4.4E+5 (C)	33,000	1.2E+5	2.1E+5	3.3E+5	5.3E+8	4.4E+5 (C)	4.4E+5 (C)	4.4E+5 (C)	4.4E+5
1,1,2,2-Tetrachloroethane	79345	NA	170	700	1,600 (X)	94,000	23,000	34,000	34,000	34,000	6.8E+7	3.7E+5	6.7E+5	4.9E+5	8.7E+5
Tetrachloroethylene	127184	NA	100	100	900 (X)	88,000 (C)	60,000	6.0E+5	1.4E+6	3.3E+6	6.8E+9	88,000 (C)	88,000 (C)	88,000 (C)	88,000
Tetrahydrofuran	109999	NA	1,900	5,400	2.2E+5 (X)	3.2E+7	2.4E+6	1.5E+7	ID	ID	1.7E+11	1.5E+7	2.6E+7	1.9E+7	1.2E+8
1,1,1-Trichloroethane	71556	NA	4,000	4,000	4,000	4.6E+5 (C)	4.6E+5	4.5E+6	1.5E+7	3.1E+7	2.9E+10	4.6E+5 (C)	4.6E+5 (C)	4.6E+5 (C)	4.6E+5
1,1,2-Trichloroethane	79005	NA	100	100	6,600 (X)	4.2E+5	24,000	57,000	57,000	1.2E+5	2.5E+8	9.2E+5 (C)	9.2E+5 (C)	9.2E+5 (C)	9.2E+5
Trichloroethylene	79016	NA	100	100	4,000 (X)	5.0E+5 (C)	37,000	2.6E+5	4.4E+5	1.1E+6	2.3E+9	5.0E+5 (C)	5.0E+5 (C)	5.0E+5 (C)	5.0E+5
Trichlorofluoromethane	75694	NA	52,000	1.5E+5	NA	5.6E+5 (C)	5.6E+5 (C)	1.1E+8	1.4E+11	1.4E+11	1.7E+12	5.6E+5 (C)	5.6E+5 (C)	5.6E+5 (C)	5.6E+5
1,2,3-Trichloropropane	96184	NA	840	2,400	NA	8.3E+5 (C)	ID	ID	ID	ID	ID	8.3E+5 (C)	8.3E+5 (C)	8.3E+5 (C)	8.3E+5
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	NA	5.5E+5 (C)	5.5E+5 (C)	NA	5.5E+5 (C)	5.5E+5 (C)	2.1E+8	8.9E+8	2.1E+9	2.3E+12	5.5E+5 (C)	5.5E+5 (C)	5.5E+5 (C)	5.5E+5
Triethanolamine	102716	NA	74,000	2.0E+5	NA	1.1E+8 (C)	NLV	NLV	NLV	NLV	1.5E+9	1.1E+8 (C)	1.1E+8 (C)	1.1E+8 (C)	1.1E+8
2,2,4-Trimethyl pentane	540841	NA	ID	ID	NA	ID	ID	ID	ID	ID	ID	ID	ID	ID	19,000
2,4,4-Trimethyl-2-pentene (I)	107404	NA	ID	ID	NA	ID	ID	ID	ID	ID	ID	ID	ID	ID	58,000
1,2,4-Trimethylbenzene (I)	95636	NA	2,100	2,100	ID	1.1E+5 (C)	1.1E+5 (C)	2.5E+7	6.0E+8	6.0E+8	3.6E+10	1.1E+5 (C)	1.1E+5 (C)	1.1E+5 (C)	1.1E+5
1,3,5-Trimethylbenzene (I)	108678	NA	1,800	1,800	ID	94,000 (C)	94,000 (C)	1.9E+7	4.6E+8	4.6E+8	3.6E+10	94,000 (C)	94,000 (C)	94,000 (C)	94,000
Vinyl acetate (I)	108054	NA	13,000	36,000	NA	2.4E+6 (C)	1.5E+6	2.0E+6	2.7E+6	5.9E+6	5.9E+9	2.4E+6 (C,AD)	2.4E+6 (C,AD)	2.4E+6 (C,AD)	2.4E+6
Vinyl chloride	75014	NA	40	40	300	11,000	150	1,500	9,000	22,000	4.7E+7	29,000	51,000	37,000	4.9E+5

SOIL: INDUSTRIAL AND COMMERCIAL II, III, AND IV

PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS

			Groundwater Protection				Indoor Air	Ambient Air (Y)				Direct Contact			
Guidesheet Number →		#10	#21		#12	#13	#22	#23	#24	#25	#26	#27	#28	#29	#20
Hazardous Substance	Chemical Abstract Service Number	Statewide Default Background Levels	Residential Drinking Water Protection Criteria	Industrial And Commercial Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Groundwater Contact Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Industrial and Commercial II	Commercial III	Commercial IV	Soil Saturation Concentration Screening Levels
INORGANICS															
Aluminum {B}	7429905	6.9E+6	1,000	1,000	NA	1.0E+9 {D}	NLV	NLV	NLV	NLV	ID	6.6E+8 {AD}	8.1E+8 {AD}	7.3E+8 {AD}	NA
Antimony	7440360	NA	500 {M}	4,300	ID	4.9E+7	NLV	NLV	NLV	NLV	5.9E+6	1.2E+6	1.4E+6	1.3E+6	NA
Arsenic {B}	7440382	5,800	23,000	23,000	70,000 {X}	2.0E+6	NLV	NLV	NLV	NLV	9.1E+5	61,000	90,000	74,000	NA
Barium	7440393	75,000	1.3E+6	1.3E+6	{G,X}	1.0E+9 {D}	NLV	NLV	NLV	NLV	1.5E+8	2.5E+8	2.9E+8	2.7E+8	NA
Beryllium	7440417	NA	51,000	51,000	{G}	1.0E+9 {D}	NLV	NLV	NLV	NLV	5.9E+5	3.1E+6	3.1E+6	3.1E+6	NA
Boron {B}	7440428	NA	10,000	10,000	38,000	1.0E+9 {D}	NLV	NLV	NLV	NLV	ID	6.4E+8 {AD}	7.8E+8 {AD}	7.1E+8 {AD}	NA
Cadmium {B}	7440439	1,200	6,000	6,000	{G,X}	2.3E+8	NLV	NLV	NLV	NLV	2.2E+6	4.1E+6	4.2E+6	4.1E+6	NA
Chromium (III) {B,H}	16065831	18,000 (total)	1.0E+9 {D}	1.0E+9 {D}	{G,X}	1.0E+9 {D}	NLV	NLV	NLV	NLV	1.5E+8	1.0E+9 {D}	1.0E+9 {D}	1.0E+9 {D}	NA
Chromium (VI)	18540299	18,000 (total)	30,000	30,000	3,300	1.4E+8	NLV	NLV	NLV	NLV	2.4E+5	1.7E+7	2.0E+7	1.8E+7	NA
Cobalt	7440484	6,800	800	2,000	2,000	4.8E+7	NLV	NLV	NLV	NLV	5.9E+6	1.8E+7	2.1E+7	1.9E+7	NA
Copper	7440508	32,000	5.8E+6	5.8E+6	{G}	1.0E+9 {D}	NLV	NLV	NLV	NLV	5.9E+7	1.4E+8	1.6E+8	1.5E+8	NA
Iron {B}	7439896	1.2E+7	6,000	6,000	NA	1.0E+9 {D}	NLV	NLV	NLV	NLV	ID	1.0E+9 {D}	1.0E+9 {D}	1.0E+9 {D}	NA
Lead	7439921	21,000	7.0E+5	7.0E+5	{G,M,X}	ID	NLV	NLV	NLV	NLV	4.4E+7	9.0E+5 (draft)	4.0E+5	4.0E+5	NA
Lithium {B}	7439932	9,800	3,400	7,000	500	1.1E+8	NLV	NLV	NLV	NLV	ID	5.6E+7 {AD}	6.9E+7 {AD}	6.2E+7 {AD}	NA
Magnesium {B}	7439954	NA	8.0E+6	2.2E+7	NA	1.0E+9 {D}	NLV	NLV	NLV	NLV	2.9E+9	1.0E+9 {D}	1.0E+9 {D}	1.0E+9 {D}	NA
Manganese {B}	7439965	4.4E+5	1,000	1,000	{G,X}	1.8E+8	NLV	NLV	NLV	NLV	1.5E+6	1.7E+8	1.9E+8	1.8E+8	NA
Mercury (Inorganic)	7439976	130	1,700	1,700	100 {M}	47,000	NLV	NLV	NLV	NLV	ID	1.1E+6	1.2E+6	1.2E+6	NA
Molybdenum {B}	7439987	NA	740	2,000	16,000 {X}	1.9E+7	NLV	NLV	NLV	NLV	ID	1.8E+7	2.1E+7	1.9E+7	NA
Nickel {B}	7440020	20,000	1.0E+5	1.0E+5	{G}	1.0E+9 {D}	NLV	NLV	NLV	NLV	1.6E+7	2.7E+8	3.1E+8	2.9E+8	NA
Selenium {B}	7782492	410	4,000	4,000	400	7.8E+7	NLV	NLV	NLV	NLV	5.9E+7	1.8E+7	2.1E+7	1.9E+7	NA
Silver {B}	7440224	1,000	4,500	13,000	500 {M}	2.0E+8	NLV	NLV	NLV	NLV	2.9E+6	1.7E+7	1.9E+7	1.8E+7	NA
Sodium	7440235	NA	2.5E+6	7.0E+6	NA	1.0E+9 {D}	NLV	NLV	NLV	NLV	ID	1.0E+9 {D}	1.0E+9 {D}	1.0E+9 {D}	NA
Strontium {B}	7440246	NA	92,000	2.6E+5	15,000	1.0E+9 {D}	NLV	NLV	NLV	NLV	ID	1.0E+9 {D}	1.0E+9 {D}	1.0E+9 {D}	NA
Thallium {B}	7440280	NA	2,300	2,300	4,200 {X}	1.5E+7	NLV	NLV	NLV	NLV	ID	2.4E+5	2.8E+5	2.6E+5	NA
Vanadium	7440622	NA	72,000	9.9E+5	1.9E+5	1.0E+9 {D}	NLV	NLV	NLV	NLV	ID	1.0E+7	1.2E+7	1.1E+7	NA
White phosphorus {R}	12185103	NA	2.2	6.0	NA	58,000	NLV	NLV	NLV	NLV	ID	30,000 {AD}	37,000 {AD}	33,000 {AD}	NA
Zinc {B}	7440666	47,000	2.4E+6	5.0E+6	{G}	1.0E+9 {D}	NLV	NLV	NLV	NLV	ID	1.0E+9 {D}	1.0E+9 {D}	1.0E+9 {D}	NA
PAHs															
Acenaphthene	83329	NA	3.0E+5	8.8E+5	4,400	9.7E+5	3.5E+8	9.7E+7	9.7E+7	9.7E+7	6.2E+9	2.0E+8	3.6E+8	2.6E+8	NA

SOIL: INDUSTRIAL AND COMMERCIAL II, III, AND IV

PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS

			Groundwater Protection				Indoor Air	Ambient Air (Y)				Direct Contact			
Guidesheet Number →		#10	#21		#12	#13	#22	#23	#24	#25	#26	#27	#28	#29	#20
Hazardous Substance	Chemical Abstract Service Number	Statewide Default Background Levels	Residential Drinking Water Protection Criteria	Industrial And Commercial Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Groundwater Contact Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Industrial and Commercial II	Commercial III	Commercial IV	Soil Saturation Concentration Screening Levels
Acenaphthylene	208968	NA	5,900	17,000	ID	4.4E+5	3.0E+6	2.7E+6	2.7E+6	2.7E+6	1.0E+9	8.0E+6	1.4E+7	1.0E+7	NA
Anthracene	120127	NA	41,000	41,000	ID	41,000	1.0E+9 {D}	1.6E+9	1.6E+9	1.6E+9	2.9E+10	1.0E+9 {D}	1.0E+9 {D}	1.0E+9 {D}	NA
Benzo(a)anthracene {Q}	56553	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	1.0E+5	3.0E+5	1.6E+5	NA
Benzo(b)fluoranthene {Q}	205992	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	1.0E+5	3.0E+5	1.6E+5	NA
Benzo(k)fluoranthene {Q}	207089	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	1.0E+6	3.0E+6	1.6E+6	NA
Benzo(g,h,i)perylene	191242	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	3.5E+8	9.1E+6	2.7E+7	1.4E+7	NA
Benzo(a)pyrene {Q}	50328	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	1.9E+6	10,000	30,000	16,000	NA
beta-Chloronaphthalene	91587	NA	6.2E+5	1.8E+6	NA	2.3E+6	ID	ID	ID	ID	ID	2.8E+8	5.0E+8	3.6E+8	NA
Chrysene {Q}	218019	NA	NLL	NLL	NLL	NLL	ID	ID	ID	ID	ID	1.0E+7	3.0E+7	1.6E+7	NA
Dibenzo(a,h)anthracene {Q}	53703	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	10,000	30,000	16,000	NA
Dibenzofuran	132649	NA	ID	ID	1,700	ID	ID	ID	ID	ID	ID	ID	ID	ID	NA
Fluoranthene	206440	NA	7.3E+5	7.3E+5	5,500	7.3E+5	1.0E+9 {D}	8.9E+8	8.8E+8	8.8E+8	4.1E+9	1.8E+8	4.6E+8	2.7E+8	NA
Fluorene	86737	NA	3.9E+5	8.9E+5	5,300	8.9E+5	1.0E+9 {D}	1.5E+8	1.5E+8	1.5E+8	4.1E+9	1.3E+8	2.4E+8	1.7E+8	NA
Indeno(1,2,3-cd)pyrene {Q}	193395	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	1.0E+5	3.0E+5	1.6E+5	NA
2-Methylnaphthalene	91576	NA	57,000	1.7E+5	ID	5.5E+6	ID	ID	ID	ID	ID	4.0E+7	7.2E+7	5.2E+7	NA
Naphthalene	91203	NA	35,000	1.0E+5	870	2.1E+6	4.7E+5	3.5E+5	3.5E+5	3.5E+5	8.8E+7	8.0E+7	1.4E+8	1.0E+8	NA
Phenanthrene	85018	NA	56,000	1.6E+5	2,300	1.1E+6	3.3E+6	11,000	37,000	37,000	2.9E+6	8.0E+6	1.4E+7	1.0E+7	NA
Pyrene	129000	NA	4.8E+5	4.8E+5	ID	4.8E+5	1.0E+9 {D}	7.8E+8	7.7E+8	7.7E+8	2.9E+9	1.1E+8	2.9E+8	1.7E+8	NA
SEMIVOLATILES															
Acetonitrile	75058	NA	2,800	8,000	NA	2.2E+7 {C}	8.8E+6	1.9E+6	1.9E+6	2.2E+6	1.8E+9	2.1E+7	2.2E+7 {C}	2.2E+7 {C}	2.2E+7
Acetophenone	98862	NA	30,000	88,000	NA	1.1E+6 {C}	1.1E+6 {C}	5.2E+7	ID	ID	1.4E+10	1.1E+6 {C}	1.1E+6 {C}	1.1E+6 {C}	1.1E+6
Acrylamide	79061	NA	6.0	24	NA	2.6E+5	NLV	NLV	NLV	NLV	3.0E+6	13,000	24,000	17,000	NA
Acrylic acid	79107	NA	78,000	2.2E+5	NA	1.1E+8 {C}	5.5E+6	2.2E+5	2.7E+5	2.7E+5	2.9E+7	1.1E+8 {C,AD}	1.1E+8 {C,AD}	1.1E+8 {C,AD}	1.1E+8
Aniline	62533	NA	1,700 {M}	4,400	1,700 {M}	2.8E+6	NLV	NLV	NLV	NLV	2.9E+7	2.3E+6	4.2E+6	3.0E+6	4.5E+6
Azobenzene	103333	NA	4,200	17,000	NA	3.0E+5	3.2E+7	2.1E+6	ID	ID	1.3E+8	1.0E+6	1.8E+6	1.3E+6	NA
Benzidine	92875	NA	1,000 {M}	1,000 {M}	ID	1,000 {M}	NLV	NLV	NLV	NLV	59,000	1,000 {M}	1,000 {M}	1,000 {M}	NA
Benzoic acid	65850	NA	6.4E+5	1.8E+6	NA	7.0E+7	NLV	NLV	NLV	NLV	ID	1.0E+9 {D}	1.0E+9 {D}	1.0E+9 {D}	NA
Benzyl alcohol	100516	NA	2.0E+5	5.8E+5	NA	5.8E+6 {C}	NLV	NLV	NLV	NLV	1.5E+11	5.8E+6 {C}	5.8E+6 {C}	5.8E+6 {C}	5.8E+6
bis(2-Chloroethoxy)ethane	112265	NA	ID	ID	NA	ID	NLV	NLV	NLV	NLV	ID	ID	ID	ID	2.7E+6
bis(2-Chloroethyl)ether (I)	111444	NA	330 {M}	330 {M}	NA	1.1E+5	44,000	13,000	13,000	13,000	1.2E+7	89,000	1.6E+5	1.2E+5	2.2E+6

SOIL: INDUSTRIAL AND COMMERCIAL II, III, AND IV

PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS

			Groundwater Protection				Indoor Air	Ambient Air (Y)				Direct Contact			
Guidesheet Number →		#10	#21		#12	#13	#22	#23	#24	#25	#26	#27	#28	#29	#20
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Camphene (I)	79925	NA	ID	ID	NA	ID	ID	ID	ID	ID	ID	ID	ID	ID	NA
Caprolactam	105602	NA	1.2E+5	3.4E+5	NA	1.0E+9 (D)	NLV	NLV	NLV	NLV	2.9E+8	4.5E+8 (AD)	9.4E+8 (AD)	6.2E+8 (AD)	NA
Carbazole	86748	NA	9,400	39,000	1,100	8.2E+5	NLV	NLV	NLV	NLV	ID	3.7E+6	6.7E+6	4.9E+6	NA
Decabromodiphenyl ether	1163195	NA	1.4E+5	1.4E+5	NA	1.4E+5	1.0E+9 (D)	1.0E+8	ID	ID	1.0E+9	1.5E+7	3.8E+7	2.2E+7	NA
Di(2-ethylhexyl) adipate	103231	NA	9.6E+5 (C)	9.6E+5 (C)	NA	9.6E+5 (C)	NLV	NLV	NLV	NLV	1.2E+10	9.6E+5 (C,AD)	9.6E+5 (C,AD)	9.6E+5 (C,AD)	9.6E+5
Diacetone alcohol (I)	123422	NA	ID	ID	NA	ID	NLV	NLV	NLV	NLV	7.1E+10	ID	ID	ID	1.1E+8
1,2-Dichlorobenzene	95501	NA	14,000	14,000	360	2.1E+5 (C)	2.1E+5 (C)	4.6E+7	4.6E+7	5.5E+7	4.4E+10	2.1E+5 (C)	2.1E+5 (C)	2.1E+5 (C)	2.1E+5
1,3-Dichlorobenzene	541731	NA	170	480	1,100	51,000	ID	ID	ID	ID	ID	1.7E+5 (C)	1.7E+5 (C)	1.7E+5 (C)	1.7E+5
1,4-Dichlorobenzene	106467	NA	1,700	1,700	290	1.4E+5	1.0E+5	2.6E+5	2.6E+5	3.4E+5	5.7E+8	2.9E+6	5.1E+6	3.7E+6	NA
3,3'-Dichlorobenzidine	91941	NA	2,000 (M)	2,000 (M)	2,000 (M,X)	4,600	NLV	NLV	NLV	NLV	8.2E+6	47,000	83,000	61,000	NA
2,6-Dichloro-4-nitroaniline	99309	NA	44,000	1.3E+5	NA	1.4E+5	NLV	NLV	NLV	NLV	ID	3.4E+8	6.0E+8	4.4E+8	NA
Diisopropylamine (I)	108189	NA	110	320	NA	4.2E+5	ID	ID	ID	ID	ID	8.6E+5	1.5E+6	1.1E+6	6.7E+6
Dimethyl phthalate	131113	NA	7.9E+5 (C)	7.9E+5 (C)	NA	7.9E+5 (C)	NLV	NLV	NLV	NLV	1.5E+9	7.9E+5 (C)	7.9E+5 (C)	7.9E+5 (C)	7.9E+5
N,N-Dimethylacetamide	127195	NA	3,600	10,000	82,000 (X)	1.1E+8 (C)	NLV	NLV	NLV	NLV	ID	2.8E+7	5.0E+7	3.6E+7	1.1E+8
N,N-Dimethylaniline	121697	NA	320	920	NA	4.0E+5	8.0E+5 (C)	5.2E+5	ID	ID	3.3E+8	8.0E+5 (C)	8.0E+5 (C)	8.0E+5 (C)	8.0E+5
2,4-Dinitrotoluene	121142	NA	430	640	NA	1.7E+5	NLV	NLV	NLV	NLV	2.0E+7	3.4E+5	6.1E+5	4.4E+5	NA
1-Formylpiperidine	2591868	NA	1,600	4,600	NA	ID	ID	ID	ID	ID	ID	1.0E+7 (C)	1.0E+7 (C)	1.0E+7 (C)	1.0E+7
Gentian violet	548629	NA	300	1,300	NA	2.0E+7	NLV	NLV	NLV	NLV	ID	6.8E+5	1.2E+6	8.8E+5	NA
Hexabromobenzene	87821	NA	3.2E+5	3.2E+5	ID	3.2E+5	ID	ID	ID	ID	ID	4.3E+6	1.1E+7	6.3E+6	NA
Hexachlorobenzene (C-66)	118741	NA	1,800	1,800	ID	8,200	2.2E+5	56,000	56,000	56,000	8.5E+6	51,000	1.3E+5	75,000	NA
Hexachlorobutadiene (C-46)	87683	NA	26,000	72,000	330 (M)	3.5E+5 (C)	3.5E+5 (C)	4.6E+5	4.6E+5	4.6E+5	1.8E+8	3.5E+5 (C)	3.5E+5 (C)	3.5E+5 (C)	3.5E+5
alpha-Hexachlorocyclohexane	319846	NA	18	71	NA	2,500	1.6E+5	41,000	86,000	86,000	2.1E+6	19,000	33,000	24,000	NA
beta-Hexachlorocyclohexane	319857	NA	37	150	NA	5,100	NLV	NLV	NLV	NLV	7.4E+6	38,000	69,000	50,000	NA
Hexachlorocyclopentadiene (C-56)	77474	NA	3.2E+5	3.2E+5	ID	7.2E+5 (C)	ID	ID	ID	ID	ID	7.2E+5 (C)	7.2E+5 (C)	7.2E+5 (C)	7.2E+5
Hexachloroethane	67721	NA	430	1,200	1,800 (X)	1.1E+5	79,000	6.6E+5	1.4E+6	1.4E+6	1.0E+8	1.1E+6	2.0E+6	1.5E+6	NA
Isophorone	78591	NA	15,000	62,000	11,000 (X)	2.4E+8 (C)	NLV	NLV	NLV	NLV	8.2E+9	2.4E+6 (C)	2.4E+6 (C)	2.4E+6 (C)	2.4E+6
2-Methoxyethanol (I)	109864	NA	150	420	NA	1.7E+7	NLV	NLV	NLV	NLV	5.9E+8	1.1E+6	2.0E+6	1.5E+6	1.1E+8
N-Methyl-morpholine (I)	109024	NA	400	1,100	NA	3.0E+7	NLV	NLV	NLV	NLV	ID	3.0E+6	5.4E+6	3.9E+6	1.1E+8
Methylcyclopentane (I)	96377	NA	ID	ID	NA	ID	ID	ID	ID	ID	ID	ID	ID	ID	3.5E+5
4,4'-Methylene-bis-2-chloroaniline (MBOCA)	101144	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	1.1E+8	48,000	87,000	63,000	NA

SOIL: INDUSTRIAL AND COMMERCIAL II, III, AND IV

PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS

			Groundwater Protection				Indoor Air	Ambient Air (Y)				Direct Contact			
Guidesheet Number →		#10	#21		#12	#13	#22	#23	#24	#25	#26	#27	#28	#29	#20
Hazardous Substance	Chemical Abstract Service Number	Statewide Default Background Levels	Residential Drinking Water Protection Criteria	Industrial And Commercial Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Groundwater Contact Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Industrial and Commercial II	Commercial III	Commercial IV	Soil Saturation Concentration Screening Levels
Nitrobenzene (I)	98953	NA	330 (M)	330 (M)	3,600 (X)	2.2E+5	4.9E+5 (C)	4.6E+6	4.6E+6	4.6E+6	1.5E+9	4.9E+5 (C)	4.9E+5 (C)	4.9E+5 (C)	4.9E+5
n-Nitroso-di-n-propylamine	621647	NA	330 (M)	330 (M)	NA	7,200	NLV	NLV	NLV	NLV	2.0E+6	8,300	15,000	11,000	1.5E+6
N-Nitrosodiphenylamine	86306	NA	5,400	22,000	NA	7.0E+5	NLV	NLV	NLV	NLV	ID	1.2E+7	2.2E+7	1.6E+7	NA
Oxo-hexyl acetate	88230357	NA	1,500	4,200	NA	ID	ID	ID	ID	ID	2.4E+9	1.0E+7 (C)	1.0E+7 (C)	1.0E+7 (C)	1.0E+7
Pentachlorobenzene	608935	NA	29,000	81,000	NA	1.9E+5 (C)	ID	ID	ID	ID	ID	1.9E+5 (C)	1.9E+5 (C)	1.9E+5 (C)	1.9E+5
Pentachloronitrobenzene	82688	NA	37,000	37,000	NA	37,000	2.2E+5	2.8E+5	2.8E+5	2.8E+5	1.5E+8	8.4E+6	1.5E+7	1.1E+7	NA
Piperidine	110894	NA	64	180	NA	6.8E+5	NLV	NLV	NLV	NLV	4.1E+9	4.9E+5	8.8E+5	6.4E+5	1.2E+8
Propionic acid	79094	NA	2.4E+5	7.0E+5	NA	1.1E+8 (C)	NLV	NLV	NLV	NLV	8.8E+9	1.1E+8 (C)	1.1E+8 (C)	1.1E+8 (C)	1.1E+8
Pyridine (I)	110861	NA	330 (M)	420	NA	37,000 (C)	2,000	9,800	40,000	97,000	1.0E+8	37,000 (C)	37,000 (C)	37,000 (C)	37,000
1,2,4,5-Tetrachlorobenzene	95943	NA	1.5E+6	1.5E+6	3,400 (X)	1.5E+6	ID	ID	ID	ID	ID	3.8E+8 (D)	6.8E+8	5.0E+8	NA
p-Toluidine	106490	NA	660 (M)	1,200	NA	4.8E+5	NLV	NLV	NLV	NLV	1.3E+8	6.7E+5	1.2E+6 (C)	8.7E+5	1.2E+6
Tributylamine	102829	NA	7,800	23,000	ID	1.8E+6	1.1E+6	7.2E+5	ID	ID	2.1E+8	3.7E+6 (C)	3.7E+6 (C)	3.7E+6 (C)	3.7E+6
1,2,4-Trichlorobenzene	120821	NA	4,200	4,200	1,800	1.1E+6	1.1E+6 (C)	3.4E+7	3.4E+7	3.4E+7	1.1E+10	1.1E+6 (C,AD)	1.1E+6 (C,AD)	1.1E+6 (C,AD)	1 1E+6
Triphenyl phosphate	115866	NA	1.1E+5 (C)	1.1E+5 (C)	NA	1.1E+5 (C)	NLV	ID	ID	ID	ID	1.1E+5 (C)	1.1E+5 (C)	1.1E+5 (C)	1.1E+5
tris(2,3-Dibromopropyl)phosphate	126727	NA	66	270	NA	27,000 (C)	27,000 (C)	60,000	60,000	60,000	7.4E+6	27,000 (C)	27,000 (C)	27,000 (C)	27,000
PCBs															
Polychlorinated biphenyls (PCBs) (J,T)	1336363	NA	NLL	NLL	NLL	NLL	1.6E+7	8.1E+5	2.8E+7	2.8E+7	6.5E+6	(T)	(T)	(T)	NA
PHTHALATES															
bis(2-Ethylhexyl)phthalate	117817	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	8.9E+8	1.0E+7 (C)	1.0E+7 (C)	1.0E+7 (C)	1.0E+7
Butyl benzyl phthalate	85687	NA	3.1E+5 (C)	3.1E+5 (C)	26,000 (X)	3.1E+5 (C)	NLV	NLV	NLV	NLV	2.1E+10	3.1E+5 (C)	3.1E+5 (C)	3.1E+5 (C)	3.1E+5
Di-n-butyl phthalate	84742	NA	7.6E+5 (C)	7.6E+5 (C)	11,000	7.6E+5 (C)	NLV	NLV	NLV	NLV	1.5E+9	7.6E+5 (C)	7.6E+5 (C)	7.6E+5 (C)	7.6E+5
Di-n-octyl phthalate	117840	NA	1.0E+8	1.4E+8 (C)	ID	1.4E+8 (C)	NLV	NLV	NLV	NLV	ID	2.8E+7	6.9E+7	4.0E+7	1.4E+8
Dicyclohexyl phthalate	84617	NA	ID	ID	NA	ID	ID	ID	ID	ID	ID	ID	ID	ID	NA
Diethyl phthalate	84662	NA	1.1E+5	3.2E+5	NA	7.4E+5 (C)	NLV	NLV	NLV	NLV	1.5E+9	7.4E+5 (C)	7.4E+5 (C)	7.4E+5 (C)	7.4E+5
Phthalic acid	88993	NA	2.8E+5	8.0E+5	NA	1.7E+6 (C)	NLV	NLV	NLV	NLV	ID	1.7E+6 (C)	1.7E+6 (C)	1.7E+6 (C)	1.7E+6
Phthalic anhydride	85449	NA	3.0E+5	8.8E+5	NA	1.1E+6 (C)	NLV	NLV	NLV	NLV	ID	1.1E+6 (C)	1.1E+6 (C)	1.7E+6 (C)	1.1E+6
PESTICIDES															
Alachlor	15972608	NA	52	52	290 (X)	44,000	NLV	NLV	NLV	NLV	ID	5.3E+5	1.3E+6	7.8E+5	NA
Aldrin	309002	NA	NLL	NLL	NLL	NLL	7.1E+6	2.0E+5	2.0E+5	2.0E+5	8 0E+5	5,900	15,000	8,600	NA
Atrazine	1912249	NA	60	60	150 (X)	1.1E+5	NLV	NLV	NLV	NLV	ID	5.0E+5 (AD)	9.0E+5 (AD)	6.6E+5 (AD)	NA

SOIL: INDUSTRIAL AND COMMERCIAL II, III, AND IV

PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS

			Groundwater Protection				Indoor Air	Ambient Air (Y)				Direct Contact			
Guidesheet Number →		#10	#21		#12	#13	#22	#23	#24	#25	#26	#27	#28	#29	#20
Hazardous Substance	Chemical Abstract Service Number	Statewide Default Background Levels	Residential Drinking Water Protection Criteria	Industrial And Commercial Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Groundwater Contact Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Industrial and Commercial II	Commercial III	Commercial IV	Soil Saturation Concentration Screening Levels
Chlordane {J}	57749	NA	NLL	NLL	NLL	NLL	5.9E+7	4.2E+6	4.2E+6	4.2E+6	2.1E+7	2.4E+5	3.8E+5	3.0E+5	NA
Chlorpyrifos	2921882	NA	17,000	48,000	NA	8.4E+5	240	5,500	ID	ID	5.9E+7	4.6E+7	1.2E+8	6.7E+7	NA
Cyanazine	21725462	NA	500 {M}	500 {M}	1,100 {X}	56,000	NLV	NLV	NLV	NLV	ID	1.0E+5	1.8E+5	1.3E+5	NA
Dacthal	1861321	NA	50,000	1.4E+5	NA	3.4E+5	NLV	NLV	NLV	NLV	ID	1.1E+7	2.0E+7	1.5E+7	NA
4-4'-DDD	72548	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	5.6E+7	5.4E+5	1.4E+6	7.9E+5	NA
4-4'-DDE	72559	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	4.0E+7	2.6E+5	6.4E+5	3.7E+5	NA
4-4'-DDT	50293	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	4.0E+7	4.6E+5	6.8E+5	5.5E+5	NA
Diazinon	333415	NA	95	280	NA	95,000	NLV	NLV	NLV	NLV	ID	1.0E+5 {AD}	2.1E+5 {AD}	1.4E+5 {AD}	3.1E+5
Dichlorovos	62737	NA	50 {M}	130	NA	1.2E+5	NLV	NLV	NLV	NLV	1.5E+7	72,000	1.3E+5	93,000	2.2E+6
Dieldrin	60571	NA	NLL	NLL	NLL	NLL	7.2E+5	64,000	64,000	64,000	8.5E+5	6,400	16,000	9,300	NA
Dinoseb	88857	NA	300	300	NA	1.4E+5 {C}	ID	ID	ID	ID	ID	1.4E+5 {C,AD}	1.4E+5 {C,AD}	1.4E+5 {C,AD}	1.4E+5
Diuron	330541	NA	620	1,800	NA	7.4E+5	NLV	NLV	NLV	NLV	2.1E+8	4.8E+6	8.6E+6	6.3E+6	NA
Endosulfan {J}	115297	NA	NLL	NLL	NLL	NLL	ID	ID	ID	ID	ID	6.7E+6	1.2E+7	8.7E+6	NA
Endothall	145733	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	1.0E+9	1.9E+7	3.4E+7	2.5E+7	NA
Endrin	72208	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	2.6E+5	6.5E+5	3.8E+5	NA
Heptachlor	76448	NA	NLL	NLL	NLL	NLL	1.9E+6	2.1E+5	2.1E+5	2.1E+5	3.0E+6	32,000	80,000	47,000	NA
Heptachlor epoxide	1024573	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	1.5E+6	13,000	33,000	19,000	NA
Lindane	58899	NA	20 {M}	20 {M}	20 {M}	7,100	ID	ID	ID	ID	ID	73,000	96,000	84,000	NA
Methoxychlor	72435	NA	16,000	16,000	NA	18,000	ID	ID	ID	ID	ID	7.7E+6	1.9E+7	1.1E+7	NA
Methyl parathion	298000	NA	46	130	NA	76,000	NLV	NLV	NLV	NLV	ID	2.8E+5	5.0E+5	3.6E+5	NA
Metolachlor	51218452	NA	4,800	20,000	NA	4.4E+5 {C}	NLV	NLV	NLV	NLV	ID	4.4E+5 {C,AD}	4.4E+5 {C,AD}	4.4E+5 {C,AD}	4.4E+5
Mirex	2385855	NA	NLL	NLL	NLL	NLL	ID	ID	ID	ID	ID	5.5E+4	1.4E+5	80,000	NA
Pendimethalin	40487421	NA	1.1E+6	1.1E+6	NA	1.1E+6	NLV	NLV	NLV	NLV	ID	1.8E+8	4.6E+8	2.7E+8	NA
Prometon	1610180	NA	4,900	14,000	NA	5.5E+6	NLV	NLV	NLV	NLV	ID	2.5E+7	4.4E+7	3.2E+7	NA
Propachlor	1918167	NA	1,900	5,400	NA	8.8E+6	NLV	NLV	NLV	NLV	ID	1.5E+7	2.6E+7	1.9E+7	NA
Propazine	139402	NA	4,000	11,000	NA	1.7E+5	NLV	NLV	NLV	NLV	ID	3.0E+7	5.4E+7	3.9E+7	NA
Simazine	122349	NA	80	80	NA	90,000	NLV	NLV	NLV	NLV	ID	5.8E+6	1.0E+7	7.6E+6	NA
Tebuthiuron	34014181	NA	10,000	30,000	NA	5.0E+7	NLV	NLV	NLV	NLV	ID	4.0E+7 {AD}	8.2E+7 {AD}	5.5E+7 {AD}	NA
Toxaphene	8001352	NA	24,000	24,000	860	3.6E+5	NLV	NLV	NLV	NLV	1.2E+7	1.2E+5	2.9E+5	1.7E+5	NA
Trialfate	2303175	NA	95,000	2.5E+5 {C}	NA	2.5E+5 {C}	ID	ID	ID	ID	ID	2.5E+5 {C}	2.5E+5 {C}	2.5E+5 {C}	2.5E+5

SOIL: INDUSTRIAL AND COMMERCIAL II, III, AND IV

PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS

			Groundwater Protection				Indoor Air	Ambient Air (Y)				Direct Contact			
Guidesheet Number →		#10	#21		#12	#13	#22	#23	#24	#25	#26	#27	#28	#29	#20
Hazardous Substance	Chemical Abstract Service Number	Statewide Default Background Levels	Residential Drinking Water Protection Criteria	Industrial And Commercial Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Groundwater Contact Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Industrial and Commercial II	Commercial III	Commercial IV	Soil Saturation Concentration Screening Levels
PESTICIDES-HERBICIDES															
Aldicarb	116063	NA	60	60	NA	2.4E+6	NLV	NLV	NLV	NLV	ID	1.1E+6	2.0E+6	1.5E+6	NA
Aldicarb sulfoxide	1646873	NA	80	80	NA	5.4E+7	NLV	NLV	NLV	NLV	ID	1.5E+6	2.6E+6	1.9E+6	NA
Aldicarb sulfone	1646884	NA	50 (M)	50 (M)	NA	4.2E+7	NLV	NLV	NLV	NLV	ID	1.2E+6	2.2E+6	1.6E+6	NA
Carbaryl	63252	NA	14,000	40,000	NA	2.6E+6	ID	ID	ID	ID	ID	1.1E+8	1.9E+8	1.4E+8	NA
Carbofuran	1563662	NA	800	800	NA	6.8E+6	NLV	NLV	NLV	NLV	ID	5.6E+6	1.0E+7	7.3E+6	NA
Dalapon	75990	NA	4,000	4,000	NA	5.9E+7 (C)	NLV	NLV	NLV	NLV	ID	5.9E+7 (C)	5.9E+7 (C)	5.9E+7 (C)	5.9E+7
2,4-Dichlorophenoxyacetic acid	94757	NA	1,400	1,400	4,400	2.4E+6	NLV	NLV	NLV	NLV	2.9E+9	1.5E+7	2.0E+7	1.7E+7	NA
Diquat	85007	NA	400	400	NA	1.4E+7	NLV	NLV	NLV	NLV	ID	2.5E+6	4.4E+6	3.2E+6	NA
Glyphosate	1071836	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	7.4E+7 (AD)	2.2E+8 (AD)	1.1E+8 (AD)	NA
2-Methyl-4-chlorophenoxyacetic acid	94746	NA	390	1,100	NA	4.9E+5	NLV	NLV	NLV	NLV	ID	1.1E+6	2.0E+6	1.5E+6	NA
Oxamyl	23135220	NA	4,000	4,000	NA	1.0E+9 (D)	NLV	NLV	NLV	NLV	ID	4.3E+7	7.6E+7	5.5E+7	NA
Picloram	1918021	NA	10,000	10,000	NA	8.6E+6	NLV	NLV	NLV	NLV	ID	7.8E+7	1.4E+8	1.0E+8	NA
Silvex (2,4,5-TP)	93721	NA	3,600	3,600	NA	3.1E+6	NLV	NLV	NLV	NLV	ID	8.4E+6	1.5E+7	1.1E+7	NA
Trifluralin	1582098	NA	1.9E+5	5.7E+5	NA	1.2E+7	ID	ID	ID	ID	ID	7.8E+6	2.0E+7	1.1E+7	NA
DIOXINS															
2,3,7,8-Tetrabromodibenzo-p-dioxin (O)	50585416	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	(O)	(O)	(O)	(O)	NA
2,3,7,8-Tetrachlorodibenzo-p-dioxin (O)	1746016	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	89 (O)	0.99 (O)	1.4 (O)	2.9 (O)	NA
PHENOLS															
4-Chloro-3-methylphenol	59507	NA	5,800	16,000	NA	3.0E+6	NLV	NLV	NLV	NLV	ID	2.2E+7	4.0E+7	2.9E+7	NA
2-Chlorophenol	95578	NA	900	2,600	440	1.9E+6	ID	ID	ID	ID	ID	6.9E+6	1.2E+7	9.0E+6	1.9E+7
2,4-Dichlorophenol	120832	NA	1,500	4,200	380	9.6E+5	NLV	NLV	NLV	NLV	2.3E+9	1.8E+6 (C,AD)	1.8E+6 (C,AD)	1.8E+6 (C,AD)	1.8E+6
2,4-Dimethylphenol	105679	NA	7,400	20,000	7,600	1.0E+7	NLV	NLV	NLV	NLV	2.1E+9	5.6E+7	1.0E+8	7.3E+7	NA
2,6-Dimethylphenol	576261	NA	330 (M)	330 (M)	NA	1.3E+5	NLV	NLV	NLV	NLV	ID	6.7E+5	1.2E+6	8.7E+5	NA
3,4-Dimethylphenol	95658	NA	330 (M)	580	NA	3.6E+5	NLV	NLV	NLV	NLV	ID	1.6E+6	2.8E+6	2.0E+6	NA
2-Methyl-4,6-dinitrophenol	534521	NA	1,700 (M)	1,700 (M)	NA	1.9E+5	NLV	NLV	NLV	NLV	ID	3.9E+5	7.0E+5	5.1E+5	NA
Methylphenols (J)	1319773	NA	7,400	20,000	1,400	1.6E+7	NLV	NLV	NLV	NLV	2.9E+9	5.6E+7	1.0E+8	7.3E+7	NA
2-Nitrophenol	88755	NA	400	1,200	ID	1.6E+6	NLV	NLV	NLV	NLV	ID	3.1E+6	5.6E+6	4.1E+6	NA
Pentachlorophenol	87865	NA	22	22	(G,X)	4,300	NLV	NLV	NLV	NLV	1.3E+8	3.9E+5	1.7E+6	6.5E+5	NA
Phenol	108952	NA	88,000	2.6E+5	4,200	1.2E+7 (C)	NLV	NLV	NLV	NLV	1.8E+10	1.2E+7 (C,AD)	1.2E+7 (C,AD)	1.2E+7 (C,AD)	1.2E+7

SOIL: INDUSTRIAL AND COMMERCIAL II, III, AND IV
PART 201 GENERIC CLEANUP CRITERIA AND SCREENING LEVELS

			Groundwater Protection				Indoor Air	Ambient Air (Y)				Direct Contact			
Guidesheet Number →		#10	#21		#12	#13	#22	#23	#24	#25	#26	#27	#28	#29	#20
Hazardous Substance	Chemical Abstract Service Number	Statewide Default Background Levels	Residential Drinking Water Protection Criteria	Industrial And Commercial Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Groundwater Contact Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Industrial and Commercial II	Commercial III	Commercial IV	Soil Saturation Concentration Screening Levels
2,4,5-Trichlorophenol	95954	NA	39,000	1.1E+5	NA	9.1E+6	NLV	NLV	NLV	NLV	1.0E+10	1.1E+8	2.0E+8	1.5E+8	NA
2,4,6-Trichlorophenol	88062	NA	2,400	9,400	330 {M}	2.0E+5	NLV	NLV	NLV	NLV	1.3E+9	5.0E+6	9.0E+6	6.6E+6	NA
3-Trifluoromethyl-4-nitrophenol	88302	NA	1.1E+5	3.1E+5	NA	1.2E+8	NLV	NLV	NLV	NLV	ID	3.5E+8 {AD}	7.3E+8 {AD}	4.8E+8 {AD}	NA
MISCELLANEOUS															
Ammonia	7664417	NA	ID {N}	ID {N}	{AC}	ID	ID	ID	ID	ID	2.9E+9	ID	ID	ID	1.0E+7
Asbestos {AB}	1332214	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	1.0E+7 {M}	ID	ID	ID	NA
Chloride	16887006	NA	5.0E+6	5.0E+6	2.5E+6 {X}	ID	NLV	NLV	NLV	NLV	ID	5.0E+5 {F}	5.0E+5 {F}	5.0E+5 {F}	NA
Cyanide {R}	57125	390 (Total)	4,000 {P}	4,000 {P}	400 {P}	2.5E+5 {P}	NLV	NLV	NLV	NLV	2.5E+5 {P}	2.5E+5 {P}	2.5E+5 {P}	2.5E+5 {P}	NA
Fluorine (soluble fluoride) {B}	7782414	NA	40,000	40,000	NA	2.4E+8	NLV	NLV	NLV	NLV	ID	1.2E+8 {AD}	1.5E+8 {AD}	1.3E+8 {AD}	NA
Nitrate {B,N}	14797558	NA	2.0E+5 {N}	2.0E+5 {N}	NA	1.0E+9 {D}	NLV	NLV	NLV	NLV	ID	ID	ID	ID	NA
Nitrite {B,N}	14797650	NA	20,000 {N}	20,000 {N}	NA	3.8E+6	NLV	NLV	NLV	NLV	ID	ID	ID	ID	NA
Phosphorus (total)	7723140	NA	1.3E+6	4.8E+6	NA	ID	NLV	NLV	NLV	NLV	ID	1.0E+9 {D}	1.0E+9 {D}	1.0E+9 {D}	NA
Sulfate	14808798	NA	5.0E+6	5.0E+6	NA	ID	NLV	NLV	NLV	NLV	ID	ID	ID	ID	NA
Urea	57136	NA	ID {N}	ID {N}	NA	ID	NLV	NLV	NLV	NLV	ID	ID	ID	ID	NA
PBBs															
Polybrominated biphenyls {J}	67774327	NA	NLL	NLL	NLL	NLL	NLV	NLV	NLV	NLV	ID	6,600	17,000	9,600	NA
GLYCOLS															
Diethylene glycol monobutyl ether	112345	NA	1,800	5,000	NA	8.0E+7	NLV	NLV	NLV	NLV	5.9E+8	1.3E+7	2.4E+7	1.7E+7	1.1E+8
Ethylene glycol	107211	NA	3.0E+5	8.4E+5	NA	1.1E+8 {C}	NLV	NLV	NLV	NLV	2.9E+10	1.1E+8 {C}	1.1E+8 {C}	1.1E+8 {C}	1.1E+8
Ethylene glycol monobutyl ether	111762	NA	74,000	2.0E+5	NA	4.1E+7 {C}	1.4E+6	2.1E+7	1.5E+8	3.6E+8	3.8E+11	4.1E+7 {C}	4.1E+7 {C}	4.1E+7 {C}	4.1E+7
Propylene glycol	57556	NA	3.0E+6	8.4E+6	NA	1.1E+8 {C}	NLV	NLV	NLV	NLV	1.8E+11	1.1E+8 {C}	1.1E+8 {C}	1.1E+8 {C}	1.1E+8
Triethylene glycol	112276	NA	2.0E+5	1.1E+5 {C}	NA	1.1E+5 {C}	NLV	NLV	NLV	NLV	ID	1.1E+5 {C,AD}	1.1E+5 {C,AD}	1.1E+5 {C,AD}	1.1E+5
CARBONYLS															
Acetaldehyde {I}	75070	NA	19,000	54,000	NA	1.1E+8 {C}	4.0E+5	2.1E+5	2.1E+5	2.9E+5	2.6E+8	1.1E+8 {C}	1.1E+8 {C}	1.1E+8 {C}	1.1E+8
Cyclohexanone	108941	NA	5.2E+6	1.5E+7	NA	2.2E+8 {C}	32,000	1.3E+6	ID	ID	2.9E+10	2.2E+8 {C}	2.2E+8 {C}	2.2E+8 {C}	2.2E+8
Formaldehyde	50000	NA	26,000	76,000	2,400	6.0E+7 {C}	65,000	43,000	69,000	1.5E+5	3.0E+8	6.0E+7 {C}	6.0E+7 {C}	6.0E+7 {C}	6.0E+7
LOW MOLECULAR WEIGHT ACIDS															
Acetic acid	64197	NA	9.0E+5 {M}	9.0E+5 {M}	9.0E+5 {M}	6.5E+8 {C}	NLV	NLV	NLV	NLV	7.4E+9	6.4E+8	6.5E+8 {C}	6.5E+8 {C}	6.5E+8
Formic acid {I,U}	64186	NA	9.0E+5 {M}	9.0E+5 {M}	ID	1.1E+8 {C}	2.8E+6	9.0E+5 {M}	9.0E+5 {M}	9.0E+5 {M}	5.9E+7	1.1E+8 {C}	1.1E+8 {C}	1.1E+8 {C}	1.1E+8

TABLE FOOTNOTES

FOOTNOTES

{A} Criterion is the State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{B} Background, as defined in Rule 299.5701(c), may be substituted if higher than the calculated cleanup criteria. Background levels may not exceed criteria for all inorganic compounds.

{C} Value presented is a screening level based on the chemical-specific generic soil saturation concentration (Csat) since the calculated risk-based criterion is greater than Csat. Concentrations greater than Csat are acceptable cleanup criteria for this pathway where a site-specific demonstration indicates that free-phase contaminant is not present. Consult the Generic Soil Saturation Concentrations: Technical Support Document (August 31, 1998) for further guidance on development of site-specific Csat values. Risk-based criteria are available by contacting an ERD toxicologist.

{D} Calculated criterion exceeds 100%, hence it is reduced to 100% (i.e., 1.0E+9 ppb). Evaluation of free phase contaminant, environmental impacts, adverse aesthetics and acute or local toxicity is required.

{E} Criterion is the aesthetic drinking water value, as required by Sec. 20120(1)(5). A Notice of Aesthetic Impact may be employed as an institutional control mechanism where groundwater concentrations exceed the aesthetic DWC, but do not exceed the applicable health-based DWC. Health-based DWC are provided in the table below.

Hazardous Substance	CAS #	Residential Health-Based DWC	Industrial-Commercial Health-Based DWC
Aluminum	7429905	300	4,100
Chloride	16887006	ID	ID
Copper	7440508	1,400	4,000
Diethyl ether	60297	3,700	10,000
Ethylbenzene	100414	700	700
Iron	7439896	2,000	5,600
Manganese	7439965	860	2,500
Methyl-tert-butyl ether (MTBE)	1634044	240	690
Sulfate	14808798	ID	ID
Toluene	108883	1,000	1,000
1,2,4-Trimethylbenzene	95636	1,000	2,900
1,3,5-Trimethylbenzene	108678	1,000	2,900
Xylenes	1330207	10,000	10,000

{F} Criterion is based on adverse impacts to plant life (i.e., phytotoxicity).

{G} GSI criterion is pH or water hardness dependent. The Final Chronic Value (FCV) for the protection of aquatic life must be calculated based on the pH or hardness of the receiving surface water. Where water hardness exceeds 400 mg $CaCO_3$/L, use 400 mg $CaCO_3$/L for the FCV calculation. The FCV formula provides values in units of ug/L (ppb). The generic GSI criterion is the lesser of the calculated FCV, the wildlife value (WV) and the surface water human non-drinking water value (HNDV). The soil GSI protection criteria for these hazardous substances are the greater of the 20 X GSI and the GSI soil-water partition values using the GSI criteria developed with the procedure described in this footnote.

Hazardous Substance	FCV Formula ug/L	FCV Conversion Factor (CF)	WV ug/L	HNDV ug/L
Barium[⊗]	EXP(1.0629*(LnH)+1.1869)	NA	NA	1.6E+5
Beryllium	EXP(2.5279*(LnH)-10.7689)	NA	NA	1,200

Hazardous Substance	FCV Formula ug/L	FCV Conversion Factor (CF)	WV ug/L	HNDV ug/L
Cadmium⊗	(EXP(0.7852*(LnH)-2.715))*CF	1.101672-((LnH)*0.04184)	NA	130
Chromium (III) ⊗	(EXP(0.819*(LnH)+0.6848))*CF	0.86	NA	9,400
Copper	(EXP(0.8545*(LnH)-1.702)) *CF	0.96	NA	64,000
Lead⊗	(EXP(1.273*(LnH)-3.296))*CF	1.46203-((LnH)*0.14571)	NA	190
Manganese	EXP(0.8784*(LnH)+2.226)	NA	NA	59,000
Nickel	(EXP(0.846*(LnH)+0.0584))*CF	0.997	NA	2.1E+5
Pentachlorophenol⊗	EXP(1.005*(pH)-5.134)	NA	NA	2.8
Zinc	(EXP(0.8473*(LnH)+0.884))*CF	0.986	NA	22,000

Where,

EXP(x) = The base of the natural logarithm raised to power x (e^x).
LnH = The natural logarithm of water hardness in mg $CaCO_3$/L.
SS = Total suspended solids in mg/L
* = The multiplication symbol.
⊗ = The GSI criterion developed here may not be protective for surface water that is used as a drinking water source. Refer to footnote {X} for further guidance.

A spreadsheet that may be used to calculate GSI and GSI PC for {G} footnoted hazardous substances is available at http://www.deq.state.mi.us/erd.

{H} Valence-specific chromium data (Cr III and Cr VI) must be compared to the corresponding valence-specific cleanup criteria. If both Cr III and Cr VI are present in groundwater, the total concentration of both cannot exceed the DWC of 100 ug/l. If analytical data are provided for "total" chromium only, then values for Cr VI must be applied as the cleanup criteria. Cr III cleanup criterion for protection of drinking water can only be used at sites where groundwater is prevented from being used as a public water supply, currently and in the future.

{I} Hazardous substance may exhibit the characteristic of ignitability as defined in 40 CFR 261.21.

{J} Hazardous substance may be present in several isomer forms. Isomer-specific concentrations must be added together for comparison to criteria.

{K} Hazardous substance may be flammable and/or explosive.

{L} Reserved

{M} Calculated criterion is below the analytical Target Detection Limit (TDL), therefore, the criterion defaults to the TDL.

{N} The concentrations of all potential sources of nitrate-nitrogen (e.g., ammonia-N, nitrite-N, nitrate-N) in groundwater used as a source of drinking water must not, when added together, exceed the nitrate DWC of 10,000 ug/L. Where leaching to groundwater is a relevant pathway, soil concentrations of all potential sources of nitrate-nitrogen must not, when added together, exceed the nitrate DWPC of 2.0E+5 ug/Kg.

{O} All polychlorinated and polybrominated dibenzodioxins and dibenzofurans are considered as one hazardous substance. The concentration of all isomers present at a facility, expressed as an equivalent concentration of 2,3,7,8-tetrachlorodibenzo-p-dioxin based upon their relative potency, must be added together and compared to the criteria for 2,3,7,8-tetrachlorodibenzo-p-dioxin. The generic criteria revisions have not been incorporated into the criteria for 2,3,7,8-tetrachlorodibenzo-p-dioxin, therefore the criteria listed is the same as shown in the May 28, 1999 criteria tables.

{P} Amenable or Method OIA-1677 analysis are used to quantify cyanide concentrations for compliance with all groundwater criteria. Total, amenable, or Method OIA-1677 analysis may be used to quantify cyanide concentrations for compliance with soil criteria. Industrial/commercial DCC may not be protective of the potential for release of hydrogen cyanide (HCN) gas. Additional land use restrictions may be necessary to protect for the acute inhalation concerns associated with HCN.

{Q} Criteria for carcinogenic polycyclic aromatic hydrocarbons (PAHs) were developed using "relative potential potencies" (RPPs) to benzo(a)pyrene.

{R} Hazardous substance may exhibit the characteristic of reactivity as defined in 40 CFR 261.23.

{S} Criterion defaults to the chemical-specific water solubility limit.

{T} Refer to the Toxic Substances Control Act (TSCA), 40 CFR 761, Subparts D and G, as amended, to determine the applicability of TSCA cleanup standards. Alternatives to compliance with the standards listed below are possible under Subpart D. New releases may be subject to the standards identified in Subpart G. Use Part 201 soil direct contact criteria in the table below where TSCA standards are not applicable.

LAND USE CATEGORY	TSCA, Subpart D	PART 201
Residential & Commercial I	1,000 ppb, or 10,000 ppb if capped	4,000 ppb
Industrial & Commercial II	1,000 ppb, or 10,000 ppb if capped	20,000 ppb
Commercial III	1,000 ppb, or 10,000 ppb if capped	62,000 ppb
Commercial IV	1,000 ppb, or 10,000 ppb if capped	32,000 ppb

{U} Hazardous substance may exhibit the characteristic of corrosivity as defined in 40 CFR 261.22.

{V} Criterion is the aesthetic drinking water value (secondary maximum contaminant level), as required by Sec. 20120(a)(5). Higher concentrations (up to 200 ug/L) may be acceptable on a case-by-case basis.

{W} Concentrations of trihalomethanes in groundwater must be added together to determine compliance with the State of Michigan Drinking Water Standard of 100 ug/L. Concentrations of trihalomethanes in soil must be added together to determine compliance with the DWPC of 2,000 ug/kg.

{X} The GSI criterion shown is not protective for surface water that is used as a drinking water source. For groundwater discharges to the Great Lakes and their connecting waters or discharges in close proximity to water supply intake(s) in inland surface waters, the generic GSI criterion is the Surface Water Human Drinking Water Value (HDV) listed in the table below except for those HDV indicted with an asterisk. For HDV with an asterisk, the generic GSI criterion is the lesser of the HDV, the WV and the calculated FCV (see formulas in footnote {G}). Soil GSI protection criteria based on the HDV are listed below except for those values with an asterisk. Soil GSI protection criteria for compounds with an asterisk are the greater of the 20 X GSI and the GSI soil-water partition values using the GSI criteria developed with the procedure described in this footnote.

Hazardous Substance	Chemical Abstract Service Number	Surface Water Human Drinking Water Values (HDV) (ug/L)	Soil GSI Protection Criteria for HDV (ug/Kg)
Acrylonitrile	107131	0.87	17
Alachlor	15972608	3.5	70
Arsenic	7440382	50	16,000
Atrazine	1912249	4.3	86
Barium	7440393	1,900*	*
Benzene	71432	12	240
Butyl benzyl phthalate	85687	6.9	1,300
Cadmium	7440439	2.5*	*
Carbon tetrachloride	56235	5.6	110
Chloride	16887006	50,000	1.0E+6
Chloroform	67663	77	1,500
Chromium (III)	16065831	120*	*
Cyanazine	21725462	10 {M}	200
3,3'-Dichlorobenzidine	91941	0.3 {M}	500
1,2-Dichloroethane	107062	6	120
1,1-Dichloroethylene	75354	24	480
1,2-Dichloropropane	78875	9.1	180
N,N-Dimethylacetamide	127195	700	14,000
1,4-Dioxane	123911	34	680
Ethylene glycol	107211	56,000	1.1E+6
Hexachloroethane	67721	5.3	1,500
Isophorone	78591	310	6,200
Lead	7439921	14*	*
Methyl-tert-butyl ether (MTBE)	1634044	120	2,400
Methylene chloride	75092	47	940
Molybdenum	7439987	120	2,400
Nitrobenzene	98953	4.7	94
Pentachlorophenol	87865	1.8*	*
1,2,4,5-Tetrachlorobenzene	95943	2.8	3,300
1,1,2,2-Tetrachloroethane	79345	3.2	64
Tetrachloroethylene	127184	11	220
Tetrahydrofuran	109999	350	7,000
Thallium	7440280	1.2	910
1,1,2-Trichloroethane	79005	12	240
Trichloroethylene	79016	29	580

{Y} Source size modifiers for Soil Inhalation Criteria (SIC) for Ambient Air. Consult the Technical Support Document (TSD) for the SIC if further guidance is needed.

Source Size sq. feet or acres	Modifier
400 sq feet	3.17
1000 sq feet	2.2
2000 sq feet	1.76
1/2 acre	1
1 acre	0.87
5 acre	0.66
10 acre	0.6
32 acre	0.5
100 acre	0.43

{Z} The current TDL for mercury is 0.2 ppb, however, a TDL of 5.0E-4 using U.S. EPA Method 1631, will be required after September 30, 2000.

{AA} Filtered groundwater samples must be collected for appropriate comparison to the GCC, since these hazardous substances are likely to be adsorbed to particulates rather than dissolved in water.

{AB} The state drinking water standard for asbestos is in units of fibers per milliliter of water (f/mL) longer than 10 millimicrons. Soil concentrations of asbestos are determined by polarized light microscopy (PLM).

{AC} The GSI criteria for unionized ammonia are 29 ug/L and 53 ug/L for coldwater and warmwater streams, respectively. The unionized ammonia concentration for comparison to the GSI is calculated from the measured total ammonia concentration based on pH and temperature for the receiving surface water and the discharge plume. The soil GSI PC are 580 ug/Kg and 1,100 ug/Kg for coldwater and warmwater streams, respectively.

{AD} Hazardous substance causes developmental effects. Residential and Commercial I DCC are protective of both prenatal and postnatal exposure. Industrial and Commercial II, III and IV DCC are protective for an adult pregnant receptor.

{AE} The following are applicable generic GSI criteria as allowed for under Sec. 20120a(15).

Hazardous Substance	GSI (ug/L)	Notes
Phosphorus	1,000	If the discharge is to an inland lake or a surface water with a designated phosphorus waste load allocation, consult the ERD Field Operation Section for further guidance.
Total dissolved solids (TDS)	5.0E+5	If TDS data are not available, the TDS criterion may be used a screening level for the sum of the concentrations of the following substances: Calcium, Chlorides, Iron, Magnesium, Potassium, Sodium, Sulfate.
Dissolved Oxygen (DO): Cold receiving waters Warm receiving waters	 ≥ 7,000 ≥ 5,000	DO criteria are not applicable if groundwater Carbonaceous Biochemical Oxygen Demand (CBOD) is less than 10,000 ug/L and groundwater ammonia concentration is less than 2,000 ug/L. Consult the ERD Field Operation Section for further guidance if needed.

ID = *Inadequate data* to develop criterion.

IP = Development of generic GSI value *in process*. This notation is used for those hazardous substances on the Rule 57 Water Quality Values table where the NLS (no literature search) notation is indicated for one or more of the endpoints required for development of a generic GSI. Additional work needed to address these endpoints may either be underway, or not yet initiated by the Surface Water Quality Division.

NA = Criterion or value is *not available* or, as is the case for Csat, *not applicable*.

NLL = Hazardous substance is *not likely to leach* under most soil conditions.

NLV = Hazardous substance is *not likely to volatilize* under most conditions.