Subcontract Documents

Onalaska Municipal Landfill Site
Onalaska Township, Wisconsin

LANDFILL CAP REMEDIAL ACTION

Volume II of II Reports

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PART 6

GEOTECHNICAL DATA REPORT

GEOTECHNICAL DATA REPORT
LANDFILL CAP REMEDIAL ACTION

ONALASKA MUNICIPAL LANDFILL SITE
Onalaska, Wisconsin

WA 38-5NL5 / Contract No. 68-W8-0040

April 1992

This report was prepared under the supervision of a registered professional engineer.

CONTENTS

GLT316/009.51

Introduction

Purpose and Scope

The field exploration was performed to characterize the subsurface conditions in the area of the Treatment Facility and the Effluent Outfall Pipeline. The scope of work included:

- Collecting and reviewing available geologic and geotechnical data
- Drilling three borings in the area of the Treatment Facility and three borings along the proposed alignment of the Effluent Outfall Pipeline
- Preparing this report

Site Description

The Onalaska Municipal Landfill site is located in the Township of Onalaska, La Crosse County, Wisconsin. The site consists of Onalaska's former municipal landfill, about 8 acres in size, and adjacent property where a groundwater contaminant plume of naphtha contaminants has migrated. The site is bordered by the Black River to the north and west, and Sportsman Club Road to the south and east.

The site was a sand and gravel quarry before it was used as a municipal landfill from the 1960s to the mid-1970s. Industrial wastes, including naphtha-based solvents, were also disposed of at the site.

The U.S. EPA conducted a remedial investigation and feasibility study (RI/FS) at the site from April 1988 to December 1989. It was determined during the RI that, as a result of waste disposal at the landfill, various chemical contaminants have been leaching into the groundwater and flowing toward the Black River. The Record of Decision (ROD), signed in August of 1990, calls for implementation of a remedial action to protect human health and the environment. The selected remedy includes the design, construction, and operation and maintenance of a groundwater extraction, treatment, and discharge system to meet Wisconsin Department of Natural Resources (WDNR) cleanup standards and discharge requirements. The remedy also includes the construction and operation and maintenance of a landfill cap and passive landfill gas venting system.

The groundwater extraction and treatment system was the focus of this site exploration. The system will include:

- A treatment building, clarifier, aeration tank, and air stripper and miscellaneous appurtenances (referred to as the Treatment Facility)
- Piping to carry the treated groundwater to a discharge point in the Bullet Chute of the Black River (referred to as Effluent Outfall Pipeline)

Limitations

This report was prepared for the exclusive use of the U.S. EPA for specific application to the Onalaska Municipal Landfill site in accordance with generally accepted geotechnical engineering practice. No other warranty, express or implied, is made.

Data from the borings indicate subsurface conditions only at specific locations and times and only to the depths penetrated. They do not necessarily reflect strata variations that may exist between such locations. Water levels at other locations may differ from those conditions occurring at these boring locations. Also, the passage of time may result in a change in the conditions at these locations. If variations in subsurface conditions from those described are discovered before or during construction, the data must be reevaluated.

Investigation

Geology

The natural undisturbed surficial soil in the vicinity of the Onalaska Municipal Landfill belongs to the Plainfield series, which is prevalent on alluvial terraces. The soils of the Plainfield series are light-colored, fine and loamy, fine sands. They are droughty (exhibit excessive drainage) and are easily eroded by wind. They contain only small amounts of silt, and are not suitable for continuous cultivation.

The unconsolidated deposits at the site consist primarily of sand and gravel of glaciofluvial and alluvial origin. The site is within an eroded bedrock valley of the Mississippi River. The bedrock valley was filled with outwash transported by the Black and Mississippi Rivers near the end of Wisconsin Stage glaciation (Beatty 1960). Later, these deposits were eroded by the Mississippi River, leaving a series of terraces, referred to as the Mississippi River Terraces. In the Onalaska area, four of these terraces have been preserved: Lytle-Brice Prairie, French Island, North La Crosse, and Onalaska.

The Lytle-Brice Prairie terrace on which the site is located is composed of sand and gravel, occasionally with some silty material, and frequently with dune sand on the surface. The presence of crystalline pebbles and gravels confirm that the terrace material is glacial outwash. The presence of limestone and the lack of weathering in most of the crystalline pebbles indicate that most of the terraces represent valley train outwash of the Wisconsin Stage of glaciation (Martin 1965).

Bedrock in the immediate vicinity of the Onalaska Municipal Landfill consists of over 1,200 feet of undifferentiated Cambrian sandstone. This undifferentiated sandstone includes the Jordan Sandstone, St. Lawrence Formation, and the Franconia, Galesville, Eau Claire, and Mount Simon Sandstones. These sandstones are fine- to coarse-grained and contain trace amounts of shale. Sandstone was encountered during previous investigations at depths ranging from 118 to 142 feet.

Previous Investigations

Remedial Investigation

RI activities were completed for the U.S. EPA by CH2M HILL in 1989. The *Remedial Investigation Report* (CH2M HILL 1989) was reviewed as part of this investigation. Select geoenvironmental data from the report is presented in Appendix A as reference information. A copy of the full report is available as supplementary information.

The tasks completed during the RI included the following:

- **Topographic Survey**
- **Cap Investigation**, which included the excavation of 11 shallow test pits together with the collection of 13 Shelby tube samples and 14 grab samples, 11 double-ring infiltrometer tests, and in situ density and moisture tests on 100-foot centers across the existing cap
- **Geophysical Investigation**, which included a magnetometer survey conducted on a 20- by 20-foot grid across the site and an electromagnetic survey conducted on a 40- by 40-foot grid across the site
- **Solvent Disposal Area Investigation**, which consisted of two subtasks:
  - Shallow Groundwater Sampling, which included the collection of over 40 samples through and around the existing landfill cap

- Source Area Test Pit Excavations, which included the excavation of four deep test pits through the landfill and collection of grab soil samples

- **Hydrogeologic Investigation**, which included the drilling and geologic logging of 8 geotechnical boreholes, the installation of 21 monitoring wells, the measurement of groundwater elevations, and in situ hydraulic conductivity testing

- **Environmental Sampling and Analysis**, which included collecting two rounds of groundwater samples from 21 new and 5 existing monitoring wells, 7 residential well samples, 12 surface water and sediment samples, and 5 subsurface nonaqueous phase soil samples

Results of the cap investigation revealed problems with the existing cap at the site, the most significant being that cap soils with the greatest permeabilities are along the caps' southwestern edge, which is the area of the highest levels of groundwater contamination detected. The existing cap does not meet current WDNR requirements for landfill closure.

Data from samples collected from test pits completed in the landfill indicate that there is no gross contamination of the upper portion of the unsaturated zone. However, crushed empty drums were found in the test pits. The distribution of these drums, when extrapolated across the magnetic anomalies identified in the geophysical survey, would account for an estimated 1,000 buried drums. It is possible that there are a number of drums as well as a tank truck still in the landfill contributing to groundwater contamination at the site.

A zone of nonaqueous phase contamination was identified and was determined to be about 4 feet thick and to extend up to 150 feet beyond the southwest landfill boundary. It is believed that floating nonaqueous phase contaminants adhere to the soils of this zone as the water table fluctuates. Soil boring sampling results from this zone showed low levels of volatile organic compounds (VOCs) and semi-VOC contamination similar to those detected at the landfill test pits, with the exception of one sample with high toluene and xylene concentrations. Relatively high concentrations of total petroleum hydrocarbons were found in this zone.

Data collected during the RI indicated the presence of a landfill leachate plume. Elevated levels of several leachate parameters were detected in shallow monitoring wells penetrating the upper 20 feet of the aquifer. This VOC contaminant plume emanates from the southwestern edge of the landfill. The plume has migrated about 500 feet horizontally in a south-southwesterly direction and to a depth of about 60 feet below the water table surface. The leading edge of the plume appears to be discharging to Dodge Chute and the wetlands adjacent to the site. VOC concentrations near the landfill are at least an order of magnitude higher than those at the leading edge of the plume.

Data from surface water and sediment samples collected in the area of the Dodge Chute indicate no site-related organic contamination. Inorganic results were found to be unusable because of poor analytical spike recoveries. The residential wells sampled during the RI showed no site related contamination.

Landfill Gas Probing

Landfill gas probing was performed at the landfill in January 1992 to obtain qualitative data of soil landfill gas concentrations in and around the limits of the landfill. The results of this investigation are presented in Appendix B.

WDNR Dredging Investigation

WDNR considered dredging to reopen the north end of Dodge Chute which is currently blocked with coarse material and vegetation. Their investigation into this proposed action included a review of available sediment data from the area and the performance of an initial sediment survey including grain-size analysis. At that time, dredged material was considered for use in construction of the landfill cap. The results of this investigation are presented in Appendix C.

Dredging of the Dodge Chute is no longer considered viable and should not be considered a potential material source.

Subsurface Investigation

Borings were located on the basis of structure locations and depths proposed for the Treatment Facility and Effluent Outfall Pipeline at the time the site was investigated. The field exploration program consisted of six borings, three in the area of the Treatment Facility (SB-1, SB-2, and SB-3) and three along the proposed alignment of the Effluent Outfall Pipeline (P-1, P-2, and P-3). The borings for the Treatment Facility were advanced to a depth of about 25 feet and the borings for the Effluent Outfall Pipeline were advanced to a depth of about 10 feet.

The locations and elevations of the borings were surveyed by CH2M HILL prior to drilling. Borings were drilled by Environmental & Foundation Drilling (EFD) of Waunakee, Wisconsin, on February 17, 1992. The approximate locations of the borings are shown in Figure 1 and the soil boring logs are presented in Appendix D. Borings were backfilled with bentonite chips as required by the Wisconsin Department of Natural Resources.

Five of the borings (SB-1, SB-2, SB-3, P-1, and P-2) were advanced using a CME-75 truck-mounted drill rig with 2¼-inch inside-diameter, hollow-stem augers. Representative disturbed samples of materials encountered in these soil borings were obtained with a standard 2-inch outside-diameter, split-spoon sampler in general accordance with the standard penetration test (SPT; ASTM D1586). SPTs were

performed at 2½-foot intervals to a depth of 10 feet and at 5-foot intervals below that depth.

The SPT is used to characterize the consistency or density of in-place soil by measuring penetration resistance expressed as "blow counts." The blow count is the number of blows required to advance the standard split-spoon sampler 6 inches using a 140-pound hammer falling 30 inches. The sampler was driven 24 inches, and the blow count was recorded for each 6-inch increment. The sum of the blows for the second and third increments is referred to as the N-value for this report. Low N-values indicate soft or loose deposits, whereas high N-values indicate hard or dense materials. After the sampler has been driven and the blow counts recorded, the sampler is withdrawn from the boring to recover a disturbed soil sample.

Boring P-3 was advanced using telescoping hand augers because the location was inaccessible for a drill rig. Soil samples were collected for classification by advancing the hand auger into undisturbed soil and withdrawing the hand auger to recover a disturbed soil sample.

Soil samples were visually classified in the field by a CH2M HILL geotechnical engineer in accordance with the Visual-Manual Procedure, ASTM D2488. The boring logs (Appendix D) show the sampling intervals and classification of soil samples.

Results

Subsurface Conditions

The borings conducted for the Treatment Facility and Effluent Outfall Pipeline indicate the following subsurface conditions at the locations and to the depths penetrated:

- **Topsoil**

- **Silty Sand or Poorly Graded Sand (Fill)**, moderate brown to dark brown, occasionally black, very loose to medium dense, with some gravel. This layer was found in all three of the treatment facility borings (SB-1, SB-2 and SB-3) and in two of the effluent outfall pipeline borings (P-1 and P-2). This layer extended to a depth of about 1 to 2 feet in Borings SB-1, P-1 and P-2, to about 3.5 feet in Boring SB-2, and extended to a depth of about 4.5 feet in Boring SB-3. In SB-3, this fill layer was underlain by a topsoil layer.

- **Poorly Graded Sand**, light brown to dusky brown changing to grey with depth in borings SB-1 and P-3, very loose to loose, with trace gravel.

BLACK RIVER

HUBLEY RESIDENCE

PROPERTY LINE

APPROXIMATE LANDFILL LIMITS AS DETERMINED BY GEOPHYSICAL SURVEY

CTH Z

P3

EFFLUENT OUTFALL PIPELINE

P2

P1

SB1

SB2

SB3

TREATMENT FACILITY

EASEMENTS TO BE SECURED BY OTHERS

DODGE CHUTE

SITE ACCESS ROAD

EXTRACTION PIPE

SPORTSMANS CLUB ROAD

N

0 60 120 180

SCALE 1"=60'

ACKERMAN RESIDENCE

FIGURE 1
BORING LOCATION MAP

CH2M HILL

This layer was encountered at a depth ranging from about 0 to 6.0 feet below ground surface and extended to the end of each of the borings.

Monitoring with an HNu photoionization detector and an explosimeter was conducted during drilling. No explosive conditions were detected during drilling. Volatile organic vapors were detected while drilling borings SB-1, SB-2, and SB-3, as detailed in Table 1.

Groundwater

Groundwater was encountered in the treatment facility borings at depths of 6 to 7 feet below ground surface during drilling at elevations of about 644.5 (boring SB-1), 643.9 (boring SB-2), and 640.6 (boring SB-3). Groundwater was encountered in only one of the effluent outfall pipeline borings, P-3, at a depth of about 5 feet (about elevation 640.8).

Groundwater levels observed during previous investigations indicate groundwater flow beneath the site is south-southwesterly toward the wetlands bordering the Black River for most of the year. Occasionally, the groundwater flow is altered because of high river stages (e.g., during spring) when groundwater flow directions can change to the south-southeast.

The level of the water table underlying the Onalaska Municipal Landfill fluctuates with the seasons. Based on the available data, the water table is about 642 feet above sea level for much of the year. However, during high river stages, the water table has been observed to rise about 4 feet to an elevation of 646 feet.

The 100-year flood elevation of the Black River is about 648.5 feet. It is possible that subsurface water at the landfill site could reach or exceed the 100-year flood level of the Black River.

References

Beatty, Marvin T. Soil Conservation Service. Soil Survey of La Crosse County, Wisconsin. Series 1956. No. 7. April 1960.

Martin, Lawrence. The Physical Geography of Wisconsin. 1965.

CH2M HILL. Remedial Investigation Report, Onalaska Municipal Landfill, Onalaska, Wisconsin. December 22, 1989.

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Table 1
VOC Screening Results
(Page 1 of 2)

Boring	Sample Interval (feet)	Reading Type *	HNu Reading *
SB-1	1.0–3.0	All	BG
	3.5–5.5	All	BG
	6.0–8.0	All	BG
	8.5–10.5	TB	~5 ppm
		AOS	>20 ppm
		BZ	>1 ppm
	13.5–15.5	TB	BG
		TS	~1 ppm
		AOS	<1 ppm
	18.5–20.0	All	BG
	23.0–25.0	All	BG
SB-2	1.0–3.0	All	BG
	3.5–5.5	TS	1 ppm
		AOS	BG
	6.0–8.0	TS	>20 ppm
		AOS	2–3 ppm
	8.5–10.5	TB	>20 ppm
		TS	>20 ppm
		AOS	>20 ppm
	13.5–15.5	TB	BG
		TS	<1 ppm
		AOS	BG
	18.5–20.5	All	BG
	23.0–25.0	All	BG

Table 1
VOC Screening Results
(Page 2 of 2)

Boring	Sample Interval (feet)	Reading Type *	HNu Reading *
SB-3	1.0–3.0	BZ	BG
		AOS	>50 ppm
	3.5–5.5	TB	>50 ppm
		AOS	>50 ppm
		BZ	>5 ppm
	6.0–8.0	AOS	>20 ppm
	8.5–10.5	AOS	>20 ppm
		BZ	<1 ppm
	13.5–15.5	TB	BG
		AOS	3–5 ppm
	18.5–20.5	TB	BG
		AOS	1–2 ppm
		BZ	BG
	23.0–25.0	All	BG
P-1	Entire Depth	All	BG
P-2	Entire Depth	All	BG

* Abbreviations:
BG = Background
TB = Top of Soil Boring When Sample Pulled
TS = Tip of Closed Spoon
AOS = Above Open Spoon
BZ = Breathing Zone

APPENDIX A
SELECT GEOENVIRONMENTAL DATA FROM THE REMEDIAL INVESTIGATION REPORT

Appendix A
Remedial Investigation

This appendix contains information obtained from the Remedial Investigation (RI) as it applies to the proposed work. Actual data is reproduced from the original report.

This appendix contains only a selection of the information available in the RI Report. **It is provided as reference information only and is not intended to summarize the information in the report. The RI report should be consulted as supplementary information.**

Test pit locations reference a site grid system established during the RI. The grid is shown on the figures included with Reference No. 2, Geophysical Investigation. The RI coordinates 6+00E and 0+00N roughly correspond to the southeast property line corner.

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Reference No. 1—Cap Investigation

The cap investigation at the Onalaska Municipal Landfill was conducted in the spring of 1989. The objectives of the investigation were:

- To determine the permeability of the existing cap soils to evaluate the magnitude of precipitation infiltration
- To determine engineering properties of the cap soils to evaluate their susceptibility to damage from freezing/thawing and desiccation
- To evaluate the magnitude of damage that has occurred because of freezing and thawing, desiccation, and root damage

The exploration consisted of 11 shallow test pits, 13 Shelby tube samples and 14 grab samples, 11 double-ring infiltrometer tests, and in situ density and moisture tests on 100-foot centers across the site. Soil samples from each test pit were analyzed for grain size, Atterberg limits, density, and permeability. Two moisture-density tests were performed on bag samples taken from STP-04.

Based on the results of this investigation, the cap was divided into five general classes:

- Single sand layer cap greater than 12 inches thick
- Layered cap greater than 12 inches thick with clay barrier
- Layered cap greater that 12 inches thick with silt barrier
- Layered cap greater than 12 inches thick with evidence of frost damage in the silt barrier
- Single sand layer or silt cap less than 12 inches thick

The locations of the different classes and areas of visible damage are shown in Figure 3-6 reproduced from the RI report. Test pit locations are shown in Figure C-1. Test pit logs from this investigation are included herein. Table C-2 reproduced from the RI report presents a summary of the laboratory testing.

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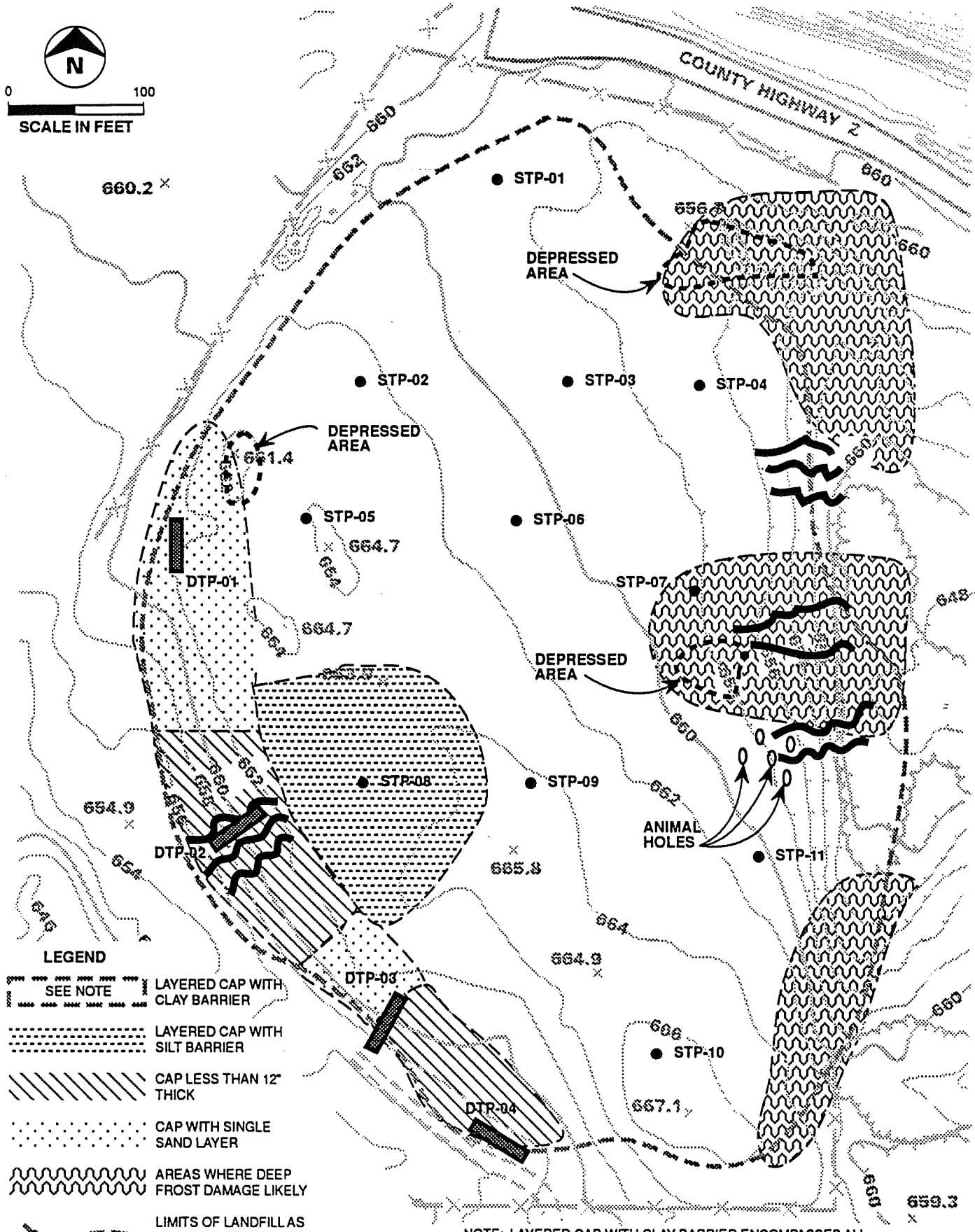
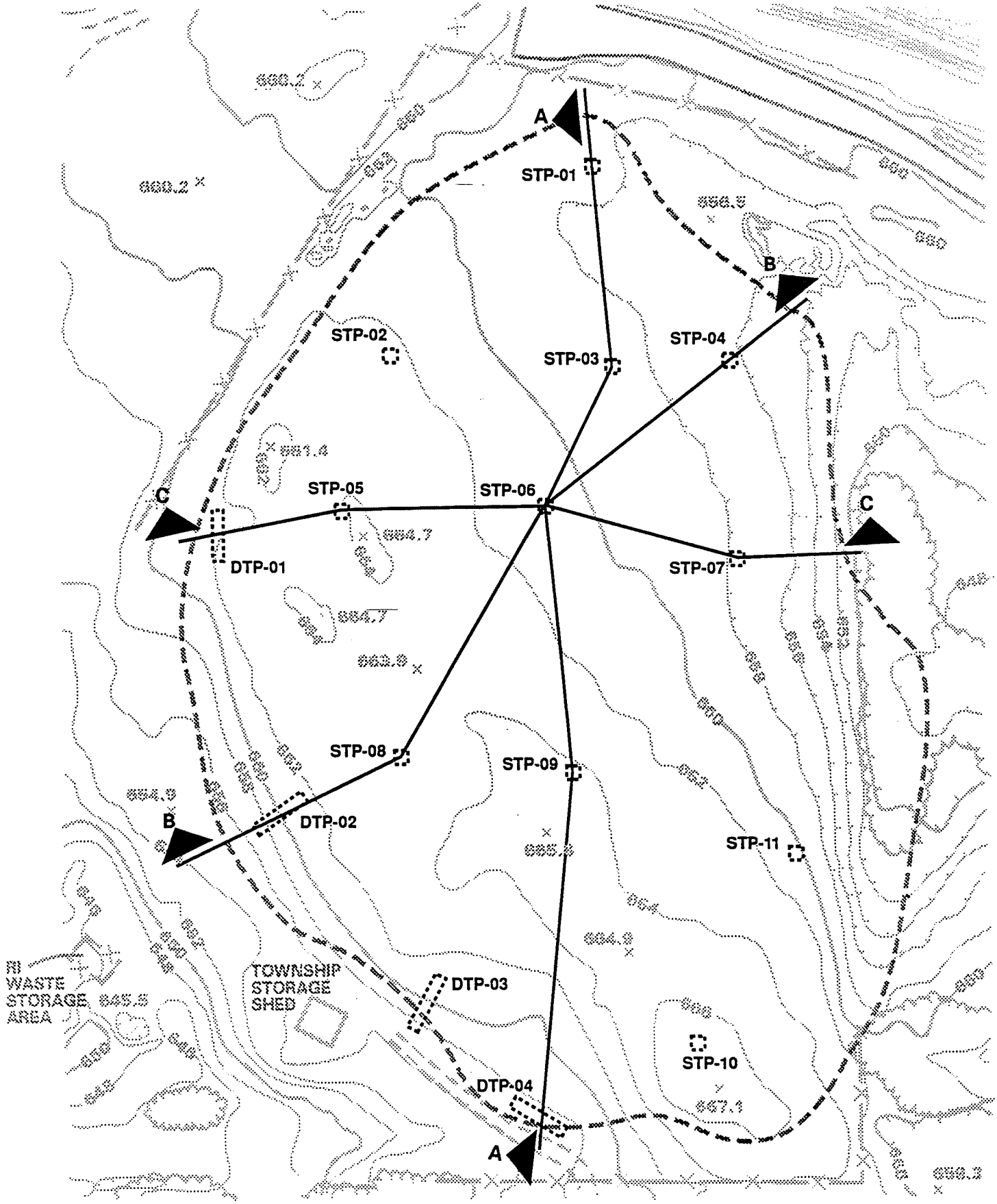


NOTE: LAYERED CAP WITH CLAY BARRIER ENCOMPASSES ALL OTHER AREAS WITHIN LANDFILL AREA THAT ARE NOT SHOWN WITH OTHER CAP MATERIALS.

FIGURE 3-6
GENERAL CAP CLASSIFICATION AND AREAS OF VISIBLE DAMAGE
ONALASKA LANDFILL RI

GLO65550.RI FIG 3-6 12-01-89



GLO65550.RI FIGC-1 10-17-89

FIGURE C-1
TEST PIT AND CROSS SECTION LOCATIONS
ONALASKA LANDFILL RI/FS

TEST PIT LOG LEGEND:

SAMPLE TYPE:
B – BAG SAMPLE
ST – SHELBY TUBE

NOTES:

1. THE TEST PIT LOGS AND RELATED INFORMATION DEPICT SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC LOCATIONS AND DATE INDICATED. SOIL CONDITIONS AND WATER LEVELS AT OTHER LOCATIONS MAY DIFFER FROM CONDITIONS OCCURRING AT THESE BORING AND/OR TEST PIT LOCATIONS. ALSO, THE PASSAGE OF TIME MAY RESULT IN A CHANGE IN THE CONDITIONS AT THESE LOCATIONS.

2. TEST PITS WERE LOGGED IN THE FIELD BY A CH2M HILL ENGINEERING GEOLOGIST OR GEOTECHNICAL ENGINEER. SAMPLES WERE EXAMINED AND VISUALLY CLASSIFIED IN APPROXIMATE ACCORDANCE WITH ASTM D2488.

3. SOIL DESCRIPTIONS PRESENTED IN THESE LOGS ARE A SUMMARY OF FIELD LOGS, VISUAL CLASSIFICATIONS AND LABORATORY TESTS.

4. LABORATORY TEST RESULTS PRESENTED ON THESE LOGS ARE RESULTS OF TESTS PERFORMED ON SHELBY TUBE SAMPLES. SHELBY TUBES WERE PUSHED AS FAR AS 5 FEET AWAY FROM THE TEST PITS AND VERTICAL INTERVALS DO NOT ALWAYS CORRELATE. TEST RESULTS ARE SHOWN ADJACENT TO THE TYPE OF SOIL TESTED, AND ARE NOT NECESSARILY AT THE SHELBY TUBE INTERVAL TESTED.

TEST PIT
LOG LEGEND

CH2M HILL

PROJECT NUMBER	TEST PIT NUMBER
GLO65550.FI.FS	STP-01 SHEET 1 OF 1

TEST PIT LOG

PROJECT Onalaska Municipal Landfill RI/FS LOCATION 3+80E, 7+60N LOGGER C. Lawrence
ELEVATION 658 ft ± CONTRACTOR E.T.I.
EXCAVATION EQUIPMENT JD 310-A DATE EXCAVATED 4/20/89
WATER LEVEL AND DATE Not encountered APPROX. DIMENSIONS: Length 3 ft Width 2 ft Maximum Depth 3 ft

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SOIL DESCRIPTION (SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL)	SYMBOLIC LOG	COMMENTS (DIFFICULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, GRADATIONAL CONTACTS, TESTS AND INSTRUMENTATION)
	0	B-1 ST-1 (0'-2')	SILTY SAND Fine sand, light brown, moist, medium dense (SM)		BEGIN EXCAVATION AT 09:25
1.0'	1.3'				Wc = 11.5% Dry Density = 118 PCF K = 4.9 x 10^{-5} cm/sec
		B-2	LEAN CLAY, gray, moist, stiff (CL)		
2.0'	2.0'				
	2.3'		POORLY GRADED SAND, medium to fine sand, brown, moist, loose to medium dense (SP)		
3.0'			END TEST PIT @ 3' B.G.S.		FINISH BACKFILLING 10:00
4.0'					
5.0'					

CH2M HILL

PROJECT NUMBER	TEST PIT NUMBER
GLO65550.FI.FS	STP-02 SHEET 1 OF 1

TEST PIT LOG

PROJECT Onalaska Municipal Landfill RI/FS LOCATION 200+40E, 6+00N LOGGER C. Lawrence
ELEVATION 662 ft ± CONTRACTOR E.T.I.
EXCAVATION EQUIPMENT JD 310-A DATE EXCAVATED 4/20/89
WATER LEVEL AND DATE Not encountered APPROX. DIMENSIONS: Length 3 ft Width 2 ft Maximum Depth 3 ft

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SOIL DESCRIPTION (SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL)	SYMBOLIC LOG	COMMENTS (DIFFICULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, GRADATIONAL CONTACTS, TESTS AND INSTRUMENTATION)
0	0	B-1 ST-1A, ST-1B (0'-2')	LEAN CLAY, brown to gray, moist, stiff (CL)		BEGIN EXCAVATION at 08:55
1.0'					Wc = 22.5% LL = 30 PI = 9 Dry Density = 102.9 PCF K = 3.2 x 10^{-7} cm/sec
2.0'	2.0'				
	2.5'		POORLY GRADED SAND, medium to fine sand, brown, moist, loose to medium dense (SW)		
3.0'			END TEST PIT @ 3' B.G.S.		FINISH BACKFILLING @ 9:20
4.0'					
5.0'					

CH2M HILL

PROJECT NUMBER	TEST PIT NUMBER
GLO65550.FI.FS	STP-03 SHEET 1 OF 1

TEST PIT LOG

PROJECT Onalaska Municipal Landfill RI/FS LOCATION 4+00E, 6+00N LOGGER C. Lawrence
ELEVATION 659 ft ± CONTRACTOR E.T.I.
EXCAVATION EQUIPMENT JD 310-A DATE EXCAVATED 4/20/89
WATER LEVEL AND DATE Not encountered APPROX. DIMENSIONS: Length 3 ft Width 2 ft Maximum Depth 3 ft

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SOIL DESCRIPTION (SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL)	SYMBOLIC LOG	COMMENTS (DIFFICULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, GRADATIONAL CONTACTS, TESTS AND INSTRUMENTATION)
	0	B-1	SILTY SAND, fine sand, light brown, moist, medium dense (SM)		BEGIN EXCAVATION @ 08:20
	0.7'				
		B-2	LEAN CLAY, gray, moist, stiff (CL)		Gray silty clay layer ranged from 0.5' to 1.5' thick along east pit wall
1.0'	1.2'	ST-1 (0'-2')			
			POORLY GRADED SAND, medium to fine sand, brown, moist, loose to medium dense (SP)		
2.0'	2.0				Excavated material contained what appeared to be medical waste (blood-stained plastic bags and labels which read "T&G Bags")
3.0'			END TEST PIT @ 3' B.G.S.		FINISH BACKFILLING @
4.0'					
5.0'					

CH2MHILL

PROJECT NUMBER	TEST PIT NUMBER
GLO65550.FI.FS	STP-04 SHEET 1 OF 1

TEST PIT LOG

PROJECT Onalaska Municipal Landfill RI/FS LOCATION 5+00E, 6+00N LOGGER C. Lawrence
ELEVATION 656 ft ± CONTRACTOR E.T.I.
EXCAVATION EQUIPMENT JD 310-A DATE EXCAVATED 4/20/89
WATER LEVEL AND DATE Not encountered APPROX. DIMENSIONS: Length 3 ft Width 2 ft Maximum Depth 5 ft

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SOIL DESCRIPTION (SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL)	SYMBOLIC LOG	COMMENTS (DIFFICULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, GRADATIONAL CONTACTS, TESTS AND INSTRUMENTATION)
0	0	B-1, ST-1 (0'-2')	SILTY SAND, fine sand, light brown, moist, medium dense (SM)		BEGIN EXCAVATION @ 07:30
1.0'					Wc = 15.0% Dry Density = 113.0 PCF K = 2.4 x 10^{-5} cm/sec
	1.5'		LEAN CLAY, gray, moist, stiff (CL)		
2.0'	2.0'	B-2			
3.0'					
4.0'	4.0'		POORLY GRADED SAND, medium to fine, brown, moist, loose to medium dense (SP)		Refuse observed in excavated material
5.0'			END TEST PIT @ 5.0' B.G.S.		FINISH BACKFILLING @ 08:15

CH2M HILL

PROJECT NUMBER	TEST PIT NUMBER
GLO65550.FI.FS	STP-05 SHEET 1 OF 1

TEST PIT LOG

PROJECT Onalaska Municipal Landfill RI/FS LOCATION 2+00E, 5+00N LOGGER C. Lawrence
ELEVATION 664 ft ± CONTRACTOR E.T.I.
EXCAVATION EQUIPMENT JD 310-A DATE EXCAVATED 4/19/89
WATER LEVEL AND DATE Not encountered APPROX. DIMENSIONS: Length 3 ft Width 2 ft Maximum Depth 2.5 ft

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SOIL DESCRIPTION (SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL)	SYMBOLIC LOG	COMMENTS (DIFFICULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, GRADATIONAL CONTACTS, TESTS AND INSTRUMENTATION)
0	0	ST-1 (0'-2')	SILT, brown, moist, firm to stiff (ML)		BEGIN EXCAVATION @ 16:20
1.0'	1.0'	B-1	LEAN CLAY, gray, moist, stiff (CL)		
	1.5'		POORLY GRADED SAND, medium to fine, brown, moist, loose to medium dense (SP)		
2.0'	2.0'		END TEST PIT @ 2.5' B.G.S.		FINISH BACKFILLING @ 16:55
3.0'					
4.0'					
5.0'					

B-2

CH2M HILL

PROJECT NUMBER	TEST PIT NUMBER
GLO65550.FI.FS	STP-06 SHEET 1 OF 1

TEST PIT LOG

PROJECT Onalaska Municipal Landfill RI/FS LOCATION 3+60E, 5+00N LOGGER C. Lawrence
ELEVATION 661 ft ± CONTRACTOR E.T.I.
EXCAVATION EQUIPMENT JD 310-A DATE EXCAVATED 4/19/89
WATER LEVEL AND DATE Not encountered APPROX. DIMENSIONS: Length 3 ft Width 2 ft Maximum Depth 3 ft

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	0	ST-1A, ST-1B (0'-2')	SILT, brown, moist, firm to stiff (ML)		BEGIN EXCAVATION @ 15:55
1.0'	1.6'				ST-1A / ST-1B Wc = 15.6% / 18.6% Dry Density = 113.4 PCF / 108.6 PCF LL = 19 / 21 PI = 1 / 1 K = 2.0 x 10^{-6} cm/sec / 1.1 x 10^{-6} cm/sec
	2.0'	B-1	LEAN CLAY, gray, moist, stiff (CL)		
2.0'			POORLY GRADED SAND, medium to fine, brown, moist, loose to medium dense (SP)		
3.0'			END TEST PIT @ 3.0' B.G.S.		FINISH BACKFILLING @ 16:15
4.0'					
5.0'					

CH2M HILL

PROJECT NUMBER	TEST PIT NUMBER
GLO65550.FI.FS	STP-07 SHEET 1 OF 1

TEST PIT LOG

PROJECT Onalaska Municipal Landfill RI/FS LOCATION 5+00E, 4+50N LOGGER C. Lawrence
ELEVATION 658 ft ± CONTRACTOR E.T.I.
EXCAVATION EQUIPMENT JD 310-A DATE EXCAVATED 4/19/89
WATER LEVEL AND DATE Not encountered APPROX. DIMENSIONS: Length 3 ft Width 2 ft Maximum Depth 3 ft

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SOIL DESCRIPTION (SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL)	SYMBOLIC LOG	COMMENTS (DIFFICULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, GRADATIONAL CONTACTS, TESTS AND INSTRUMENTATION)
	0	B-1, ST-1	SILT, mostly brown with some gray zones, moist, stiff (ML)		BEGIN EXCAVATION @ 15:30
1.0'					
	2.0'				Wc = 22.2% Dry Density = 95.0 PCF LL = 21 PI = 2 K = 6.2 x 10^{-5} cm/sec
2.0'			POORLY GRADED SAND, fine, gray, dry to moist, loose to medium dense (SP)		
3.0'			END TEST PIT @ 3.0' B.G.S.		FINISH BACKFILLING @ 15:50
4.0'					
5.0'					

CH2M HILL

PROJECT NUMBER	TEST PIT NUMBER
GLO65550.FI.FS	STP-08 SHEET 1 OF 1

TEST PIT LOG

PROJECT Onalaska Municipal Landfill RI/FS LOCATION 2+50E, 3+00N LOGGER C. Lawrence
ELEVATION CONTRACTOR E.T.I.
EXCAVATION EQUIPMENT JD 310-A DATE EXCAVATED 4/19/89
WATER LEVEL AND DATE Not encountered APPROX. DIMENSIONS: Length 3 ft Width 2 ft Maximum Depth 3 ft

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SOIL DESCRIPTION (SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL)	SYMBOLIC LOG	COMMENTS (DIFFICULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, GRADATIONAL CONTACTS, TESTS AND INSTRUMENTATION)
	0	ST-1 (0'-2')	SANDY SILT, brown, moist, firm to stiff (ML)		BEGIN EXCAVATION @ 15:10
	0.7'				Wc = 19.6%
		B-1	LEAN CLAY, gray, moist, stiff (CL)		Dry Density = 100.0 PCF
1.0'					LL = 21 PI = 1
	1.7'				$K = 4.6 \times 10^{-6}$ cm/sec
			POORLY GRADED SAND, medium to fine, brown, moist, loose to medium dense (SP)		
2.0'	2.0'				
3.0'			END TEST PIT @ 3.0' B.G.S.		FINISH BACKFILLING @ 15:25
4.0'					
5.0'					

CH2M HILL

PROJECT NUMBER	TEST PIT NUMBER
GLO65550.FI.FS	STP-09 SHEET 1 OF 1

TEST PIT LOG

PROJECT Onalaska Municipal Landfill RI/FS LOCATION 3+80E, 3+00N LOGGER C. Lawrence
ELEVATION 664 ft ± CONTRACTOR E.T.L
EXCAVATION EQUIPMENT JD 310-A DATE EXCAVATED 4/19/89
WATER LEVEL AND DATE Not encountered APPROX. DIMENSIONS: Length 3 ft Width 2 ft Maximum Depth 3 ft

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SOIL DESCRIPTION (SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL)	SYMBOLIC LOG	COMMENTS (DIFFICULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, GRADATIONAL CONTACTS, TESTS AND INSTRUMENTATION)
	0		SANDY SILT, brown, moist, firm to stiff (ML)		BEGIN EXCAVATION @ 14:50
	1.0'	ST-1 (0'-2')			
1.0'		B-1	LEAN CLAY, gray, moist, stiff (CL)		
	1.7'		POORLY GRADED SAND, fine, dry to moist, loose to medium dense (SP)		
2.0'	2.0'				
3.0'			END TEST PIT @ 3.0' B.G.S.		FINISH BACKFILLING @ 15:05
4.0'					
5.0'					

PROJECT NUMBER	TEST PIT NUMBER			
GLO65550.FI.FS	STP-10	SHEET 1	OF 1	

TEST PIT LOG

PROJECT Onalaska Municipal Landfill RI/FS LOCATION 4+80E, 1+00N LOGGER C. Lawrence
ELEVATION 666 ft ± CONTRACTOR E.T.I.
EXCAVATION EQUIPMENT JD 310-A DATE EXCAVATED 4/19/89
WATER LEVEL AND DATE Not encountered APPROX. DIMENSIONS: Length 3 ft Width 2 ft Maximum Depth 3 ft

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	0	ST-1 (0'-2')	SANDY SILT, brown, moist, firm to stiff (ML)		BEGIN EXCAVATION @ 14:20
1.0'	1.0'				Wc = 22.5% Dry Density = 100.2 PCF LL = 26 PI = 4 K = 5.5 x 10^{-7} cm/sec
		B-1	LEAN CLAY, gray, moist, stiff (CL)		
2.0'	2.0'				Wc = 7.2% Dry Density = 103.5 PCF K = 6.8 x 10^{-4} cm/sec
			POORLY GRADED SAND, fine, gray, dry to moist, loose to medium dense (SP)		
3.0'			END TEST PIT @ 3.0' B.G.S.		FINISH BACKFILLING @ 14:45
4.0'					
5.0'					

CH2M HILL

PROJECT NUMBER	TEST PIT NUMBER
GLO65550.FI.FS	STP-11 SHEET 1 OF 1

TEST PIT LOG

PROJECT Onalaska Municipal Landfill RI/FS LOCATION 5+50E, 2+50N LOGGER C. Lawrence

ELEVATION 660 ft ± CONTRACTOR E.T.I.

EXCAVATION EQUIPMENT JD 310-A DATE EXCAVATED 4/19/89

WATER LEVEL AND DATE Not encountered APPROX. DIMENSIONS: Length 3 ft Width 2 ft Maximum Depth 3 ft

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SOIL DESCRIPTION (SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL)	SYMBOLIC LOG	COMMENTS (DIFFICULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, GRADATIONAL CONTACTS, TESTS AND INSTRUMENTATION)
0	0 – 1.0'	ST-1 (0'-2')	SANDY SILT, brown, moist, firm to stiff (ML)		BEGIN EXCAVATION @ 13:50 Wc = 13.4% Dry Density = 115.8 PCF K = 6.3 x 10^{-7} cm/sec
1.0'	1.0' – 1.7'	B-1	LEAN CLAY, gray, moist, stiff (CL)		
2.0'			POORLY GRADED SAND, fine, gray, dry to moist, loose to medium dense (SP)		
3.0'			END TEST PIT @ 3.0' B.G.S.		FINISH BACKFILLING @ 14:15
4.0'					
5.0'					

Table C-2
RESULTS OF LABORATORY TESTING

Sample	Sample Interval In Shelby Tube (a) (in)	Description	Laboratory USCS Classification	Natural Moisture Content (%)	Dry Density (pcf)	Permeability (cm/sec)	Type of Permeability Test	Liquid Limit	Plastic Index	Maximum (b) Dry Density (pcf)	Optimum (b) Moisture (%)
STP-01	10 - 18	Brown, silty, fine to med. SAND; little clay, trace gravel	SM	11.5	118.0	0.000049	Rigid-wall	NP	NP		
STP-02B	7 - 13	Brown, lean CLAY, trace sand	CL	22.5	102.9	0.00000032	Flexible-wall	30	9		
STP-04	12 - 17	Brown, silty, fine to med. SAND; little clay	SM	15.0	113.0	0.000024	Rigid-wall	NP	NP	120	11
STP-06A	9 - 14	Brown silt, some sand, little clay	ML	15.6	113.4	0.000002	Flexible-wall	19	1		
STP-06B	1 - 6	Gray SILT, some sand, little clay	ML	18.6	108.6	0.0000011	Flexible-wall	21	2		
STP-07	2 - 6	Brown SILT, little sand and clay	ML	22.2	95.0	0.000062	Flexible-wall	22	2		
STP-08	1 - 7	Gray SILT, some sand, little clay	ML	19.6	106.0	0.0000046	Flexible-wall	21	1		
STP-10	1 - 6	Brown, fine to med. SAND, trace silt and clay	SP-SM	7.2	103.5	0.00068	Rigid-wall	NP	NP		
STP-10	15 - 19	Gray-brown SILT, some clay, little sand	ML	22.5	100.2	0.00000055	Flexible-wall	26	4		
STP-11	14 - 19	Brown, silty, fine to med. SAND; little clay	SM	13.4	115.8	0.0000063	Rigid-wall	NP	NP		
STP-04	18 - 48 (Bag Sample)	Brown, lean CLAY, little sand	CL	19.4	103.7	0.00000043(c)	Flexible-wall	30	10	112	14

(a) Zero inches is bottom of tube.

(b) Maximum Dry Density and Optimum Moisture Content were determined in accordance with ASTM D 698. Tests were performed on bag samples taken while excavating test pits.

(c) Permeability test was performed on a trimmed moisture density specimen.

Reference No. 2—Geophysical Investigation

Geophysical surveys were performed at the Onalaska Municipal Landfill in October 1988. The objectives of the investigations were:

- To determine the location, extent, and magnitude of the main drum disposal area and the location of the buried tank truck
- To map the groundwater conductivity plume extending south of the landfill
- To locate the "designated" solvent disposal area

A magnetometer survey defined several areas of buried metal. The electromagnetic survey was unable to detect a conductivity plume on the south side of the landfill or to identify liquid disposal pits. The electromagnetic data were used to delineate the limits of the landfill and to estimate its thickness.

Figure E-2 reproduced from the RI report shows areas of buried metals. Figure E-5 from the report shows the estimated limits of the landfill and its thickness.

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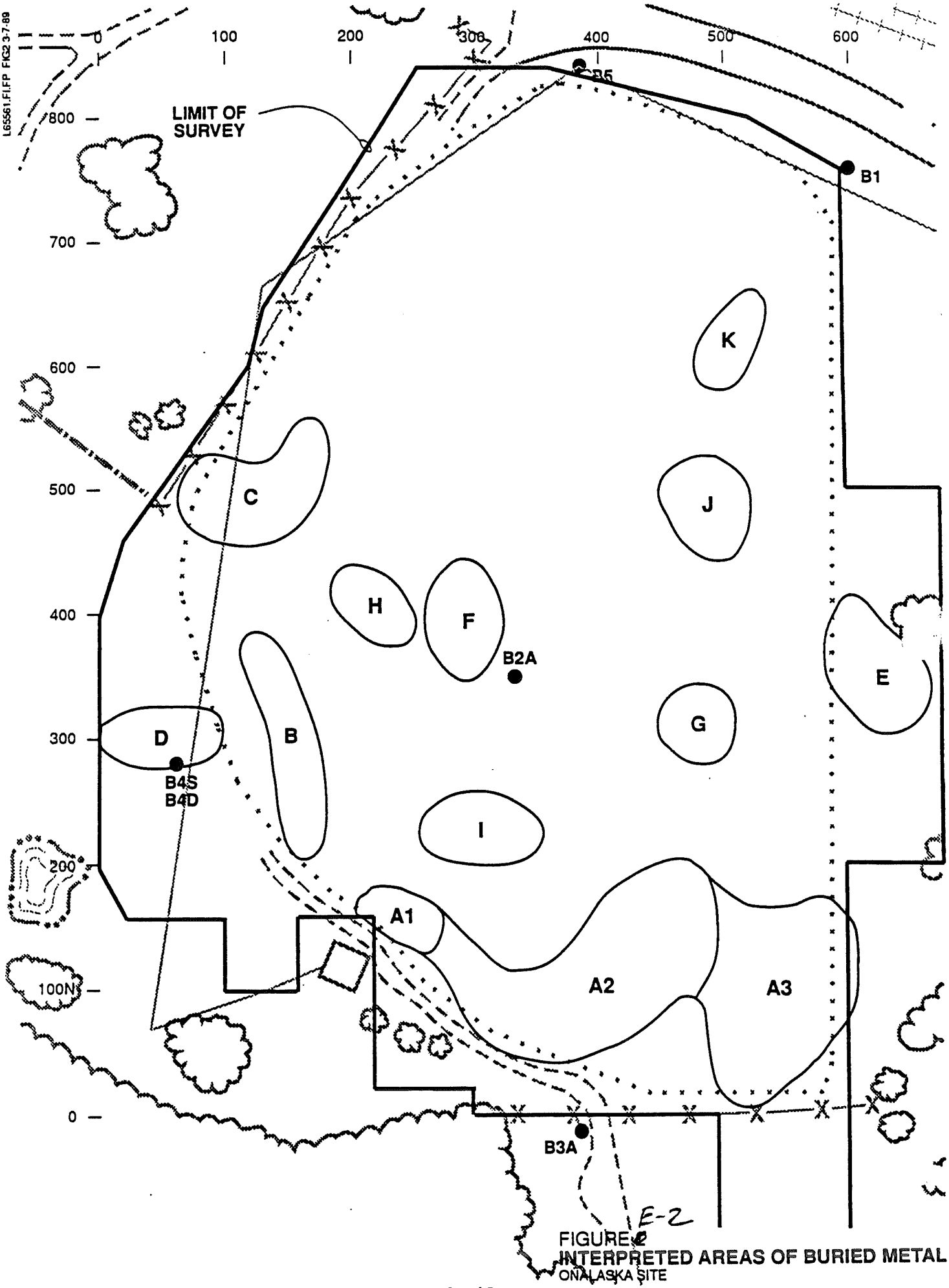


E-2

FIGURE 2
INTERPRETED AREAS OF BURIED METAL
ONALASKA SITE

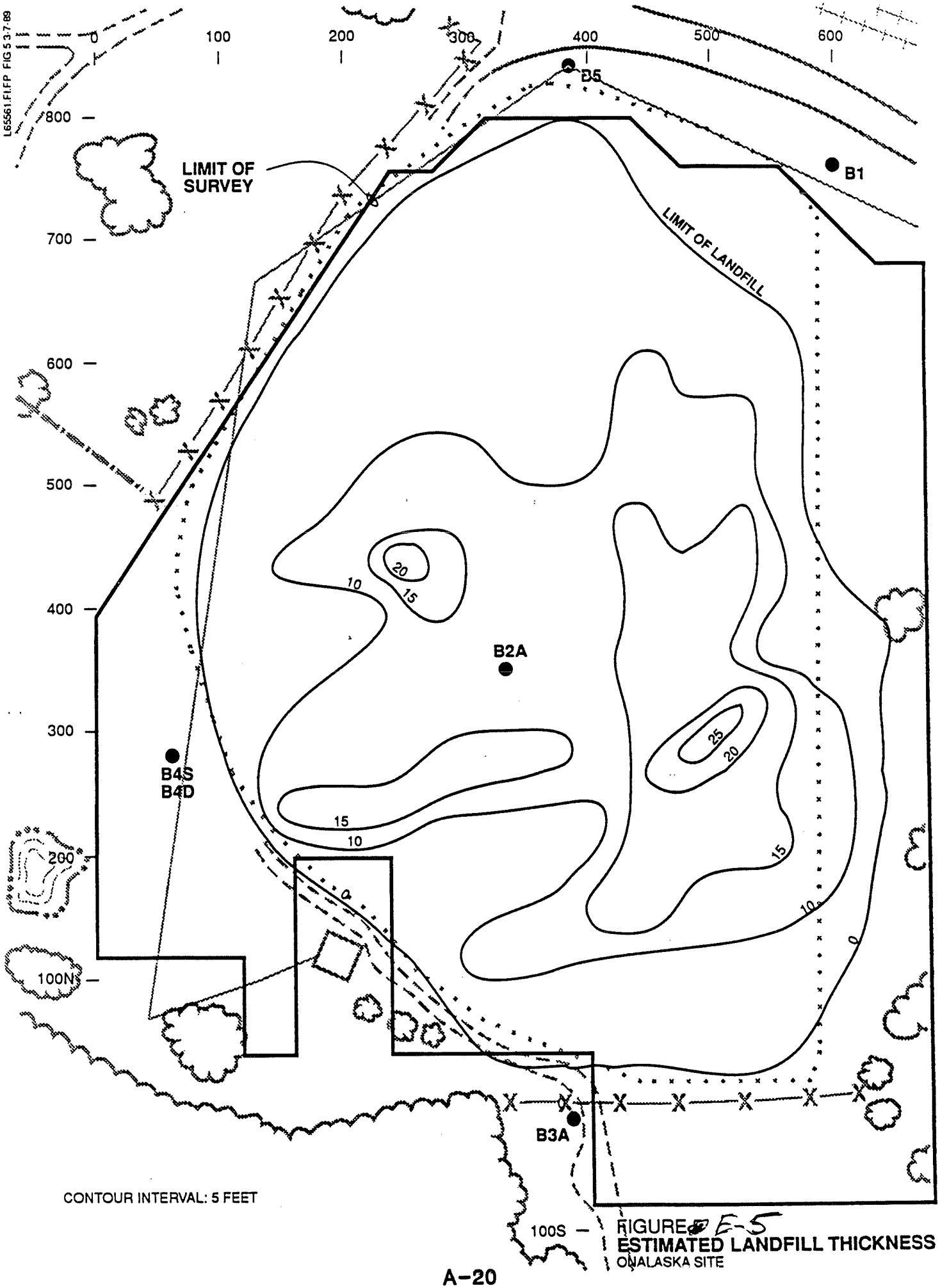


FIGURE E-5
ESTIMATED LANDFILL THICKNESS
ONALASKA SITE

Reference No. 3—Solvent Disposal Area Investigation

Shallow Groundwater Sampling

The shallow groundwater sampling investigation consisted of sampling groundwater through a narrow probe driven about 2 feet below the water table and analyzing the samples in an onsite close support laboratory. Table F-1 from the RI report shows the results of the sampling and Table 1 from the same report show the results of the close support laboratory testing.

Source Area Test Pit Investigation

The source area test pit investigation consisted of the excavation of four deep test pits and the collection of grab soil samples. The objectives of the investigation were:

- To locate the major disposal area for the solvent waste within the landfill and to evaluate the degree of contamination in the unsaturated soils in this area
- To obtain data important in the evaluation of soil incineration and offsite disposal
- To locate and determine the condition of a cache of 300 drums and a 500-gallon tank truck buried at the landfill site

The approximate locations of the test pits are shown on Figure H-1 from the RI Report. The test pit logs are included herein.

GLT316/011.51

Table F-1
SHALLOW GROUNDWATER SAMPLING RESULTS

Sample Number	Grid Coordinates	Depth of Proble Tip	Date	Time	HNu Headspace (ppm)	Observations
PB-01	160E 160N	13' 6"	3/19/89	1050	500	
PB-02	80E 90N	5'	3/19/89	1137	400	Sheen on water sample
PB-03	20W 80N	4' 3"	3/19/89	1145	50	
PB-04	80E 30N	4' 3"	3/19/89	1330	5	
PB-05	160E 30N	5' 4"	3/19/89	1340	500	Slight sheen on water sample
PB-06	Probe blank	--	3/19/89	1409	7	HNu reading may be due to moisture evaporation from probe
PB-07	Bottle blank	--	3/19/89	1420	0.5	
PB-08	40W 30N	5' 10"	3/19/89	1437	55	
PB-09	80W 90N	3' 4"	3/19/89	1504	1.5	Light milky brown color
PB-10	160E 80S	4' 10"	3/19/89	1534	170	Slight yellow-green color; slight foaming when shaken
PB-11	240E 70S	15" 10"	3/19/89	1605	200	Slight yellow-green color; slight foaming when shaken
PB-12	320E 80S	17' 0"	3/20/89	804	18	
PB-13	372E 40S	19' 6"	3/20/89	845	125	Slightly cloudy; naphtha smell during purging
PB-14	400E 160S	16' 6"	3/20/89	918	35	Yellow-green color
PB-15	570E 70S	21' 6"	3/20/89	1022	140	Slightly cloudy; foaming
PB-16	680E 80S	21' 0"	3/20/89	1115	1.5	
PB-17	600E 160S	18' 6"	3/20/89	1150	1.5	
PB-18	480E 160S	21' 0"	3/20/89	1337	260	Yellow-green color; slightly cloudy
PB-19	0E 200N	3' 4"	3/20/89	1404	480	Yellow-green color; slightly cloudy
PB-20	40W 330N	12'6"	3/20/89	1430	60	Yellow-green color; slightly cloudy
PB-21	10E 430N	15' 6"	3/20/89	1505	260	Yellow-green color; slightly cloudy
PB-22	70E 540N	21' 0"	3/[illegible]/89	1608	6	
PB-23	150W 410N	14' 4"	3[illegible]/89	1700	3	
PB-24	680E 430N	8' 4"	[illegible]/89	841	1	
PB-25	680E 280N	8' 0"	3/21/89	921	1	
PB-26	655E 160N	15' 10"	3/21/89	1000	5	
PB-27	Probe blank	--	3/21/89	1025	1.5	
PB-28						
PB-29						

Table F-1 (Continued)

Sample Number	Grid Coordinates	Depth of Proble Tip	Date	Time	HNu Headspace (ppm)	Observations
PB-30	110E 440N	19' 0"	3/29/89	1012	400	Slight foaming
PB-31	180E 450N	21' 0"	3/29/89	1353	60	Slight foaming
PB-32	120E 530N	20' 0"	3/29/89	1435	90	
PB-33	200E 350N	21'	3/29/89			No sample obtained
PB-34	120E 350N	14' 0"	3/30/89	1107	450	
PB-35	190E 160N	13' 0"	3/30/89	1205	420	Slight foaming
PB-36	300W 400N	8' 0"	3/30/89	1423	9	
PB-37	290W 490N	4' 0"	3/30/89	1450	6	
PB-38	340W 310N	5' 0"	3/30/89	1700	4	
PB-39	210W 420N	10' 4"	3/30/89	1508	3	
PB-40	210W 420N	10' 4"	3/30/89	1508	3	Field duplicate of PB-39
PB-41	210W 340N	8' 0"	3/30/89	1530	3	
PB-42	Probe blank	--	3/30/89	1543	0	
PB-43	300W 200N	5' 6"	3/30/89	1637	2	
PB-44	200W 80N	8' 0"	3/30/89	1612	4	

GLT866/46

TABLE 1

4/19/89

ONALASKA CLOSE SUPPORT LABORATORY DATA

Units for Water = ug/ml (ppm)
Units for Soil = mg/kg

Field I.D.	GC RUN#	CSL I.D.	Date Analyzed	Toluene	Xylenes	Matrix
GB-07-01	128	1	3/17/89	*0.080 N*	*0.020 J*	Water
GB-07-02	129	3	3/17/89	*0.120*	*0.010 J*	Water
GB-08 (55'-58')	130	5	3/17/89	*0.040 N*	BMDL	Water
GB-03-01	131	7	3/17/89	*0.690*	*1.12*	Water
GB08 (18'-28')	134	9	3/17/89	*0.040 N*	BMDL	Water
GB03-02	135	11	3/17/89	*0.110 N*	BMDL	Water
GB04 (8'-11')	136	13	3/17/89	*0.390 N*	BMDL	Water
GB04 (54'-57')	137	15	3/17/89	*0.100*	*0.040 J*	Water
MW04 (20'-30')	139	19	3/17/89	*0.110*	*0.060 J*	Water
MW-2S-01	140	21	3/17/89	*0.130 N*	BMDL	Water
GB-01-01 (80')	141	23	3/17/89	*0.150 N*	BMDL	Water
GB-01-(120')	147	27	3/18/89	*0.140 N*	BMDL	Water
MW-5S-01	155	17	3/18/89	*4.51*	*0.420*	Water
MW-2M-01	156	25	3/18/89	BMDL	BMDL	Water
MW-1S-23'	158	29	3/18/89	*0.170 N*	BMDL	Water
MW-2D(108'-111')	159	31	3/18/89	BMDL	BMDL	Water
MW-1M-01	160	33	3/18/89	*0.030 N*	BMDL	Water
MW-3S-01	161	35	3/18/89	*6.58*	*0.530*	Water
MW-7S(25'-30')	162	37	3/18/89	*0.160 N*	BMDL	Water

N = Qualitatively suspect.
J = Estimated value. Reported value is below quantitation limit.
BMDL = Below method detection limit.

TABLE 1

4/19/89

ONALASKA CLOSE SUPPORT LABORATORY DATA

Units for Water = ug/ml (ppm)
Units for Soil = mg/kg

Field I.D.	GC RUN#	CSL I.D.	Date Analyzed	Toluene	Xylenes	Matrix
MW-7M (80'-82')	163	39	3/18/89	0.130 N	0.030 J	Water
MW4PS01	206	41	3/20/89	37.900 J	1.390	Water
GB-06-(18'-21')	209	43	3/20/89	0.470 J	0.010 J	Water
PB-02	213	45	3/20/89	0.440	0.020 J	Water
PB-03	214	47	3/20/89	0.420	0.010 J	Water
PB-04	215	49	3/20/89	0.610 J	0.010 J	Water
PB-05	216	51	3/20/89	8.690 J	0.950	Water
PB-06	218	53	3/20/89	0.140	0.010 J	Water
PB-08	219	55	3/20/89	0.040 J	0.020 J	Water
PB-09	220	57	3/20/89	0.050 J	BMDL	Water
PB-10	221	59	3/20/89	0.130	0.220	Water
PB-11	222	61	3/20/89	0.360	0.230	Water
GB-6M-73'	224	63	3/20/89	0.190 J	BMDL	Water
PB-12	225	65	3/20/89	0.010 J	0.010 J	Water
PB-13	227	67	3/20/89	0.430 J	0.220	Water
PB-14	228	69	3/20/89	0.410 J	BMDL	Water
PB-16	230	73	3/20/89	0.200 J	BMDL	Water
PB-17	231	75	3/20/89	0.150 J	BMDL	Water
PB-18	233	77	3/20/89	5.570 J	0.140	Water
PB-20	236	81	3/21/89	0.140	0.110	Water
PB-21	238	83	3/21/89	3.400	0.670	Water

TABLE 1

4/19/89

ONALASKA CLOSE SUPPORT LABORATORY DATA

Units for Water = ug/ml (ppm)
Units for Soil = mg/kg

Field I.D.	GC RUN#	CSL I.D.	Date Analyzed	Toluene	Xylenes	Matrix
GB-5 (10')	239	85	3/21/89	BMDL	BMDL	Water
GB-5 (80')	240	87	3/21/89	BMDL	BMDL	Water
PB-22	241	89	3/21/89	*0.140*	*0.010 J*	Water
PB-23	242	91	3/21/89	*0.220 J*	BMDL	Water
MW-10M (18'-21')	249,261	93	3/21/89	BMDL	BMDL	Water
PB-24	250,262	95	3/21/89	BMDL	BMDL	Water
PB-25	251,263	97	3/21/89	BMDL	BMDL	Water
PB-26	252,264	99	3/21/89	BMDL	BMDL	Water
PB-27	254,265	101	3/21/89	BMDL	BMDL	Water
PB-19	255	79	3/21/89	*10.900*	*0.310*	Water
MW-10M (76'-78')	257	103	3/21/89	BMDL	BMDL	Water
MW-9M (25')	258	105	3/21/89	BMDL	BMDL	Water
PB-15	259	71	3/21/89	*1.080*	*0.120*	Water
MW-9M (80')	266	107	3/21/89	BMDL	BMDL	Water
MW-3M	340	109	3/28/89	*0.010 J*	*0.020 J*	Water
MW-11M (20'-22')	343	113	3/28/89	BMDL	BMDL	Water
MW-11M (76')	344	115	3/28/89	BMDL	BMDL	Water
PB-28	346	117	3/28/89	BMDL	BMDL	Water
PB-29	347	119	3/28/89	BMDL	BMDL	Water
PB-30	363	121	3/29/89	*43.000 J*	*0.650*	Water
PB-31	369	123	3/29/89	*5.970 J*	*0.470*	Water

TABLE 1

4/19/89

ONALASKA CLOSE SUPPORT LABORATORY DATA

Units for Water = ug/ml (ppm)
Units for Soil = mg/kg

Field I.D.	GC RUN#	CSL I.D.	Date Analyzed	Toluene	Xylenes	Matrix
PB-32	373	125	3/29/89	5.030 J	0.770	Water
MW-12S	380	127	3/30/89	BMDL	BMDL	Water
MW-14S	386	129	3/30/89	BMDL	BMDL	Water
MW-13S	389	135	3/30/89	BMDL	BMDL	Water
MW-8D	390	137	3/30/89	BMDL	BMDL	Water
PB-34	391	131	3/30/89	20.400 J	0.830	Water
PB-35	393	133	3/30/89	13.300 J	0.766	Water
PB-37	395	139	3/30/89	BMDL	BMDL	Water
PB-39	396	141	3/30/89	BMDL	BMDL	Water
PB-40	397	143	3/30/89	BMDL	BMDL	Water
PB-38	399	145	3/30/89	BMDL	BMDL	Water
PB-41	401	147	3/30/89	BMDL	BMDL	Water
PB-42	402	149	3/30/89	BMDL	BMDL	Water
PB-43	403	151	3/30/89	BMDL	BMDL	Water
PB-44	404	153	3/30/89	BMDL	BMDL	Water
PB-45	405	155	3/30/89	BMDL	BMDL	Water
PB-46	406	157	3/30/89	0.140 J	BMDL	Water
TP-01 (CSL)	454	159	4/18/89	0.050	0.060 J	Soil
TP-02 (CSL)	456	161	4/18/89	BMDL	BMDL	Soil
TP-03 (CSL)	463	163	4/18/89	1.830	0.390 J	Soil
TP-04 (CSL)	458	165	4/18/89	13.800 J	2.430 J	Soil

TABLE 1

4/19/89

ONALASKA CLOSE SUPPORT LABORATORY DATA

Units for Water = ug/ml (ppm)
Units for Soil = mg/kg

Field I.D.	GC RUN#	CSL I.D.	Date Analyzed	Toluene	Xylenes	Matrix
TP-05 (CSL)	464	167	4/18/89	BMDL	BMDL	Soil
TP-06 (CSL)	466	169	4/18/89	BMDL	BMDL	Soil
TP-07 (CSL)	467	171	4/18/89	9.270 J	BMDL	Soil
TP-08 (CSL)	469	173	4/18/89	1.166	0.670	Soil
TP-09 (CSL)	472	177	4/18/89	BMDL	BMDL	Soil
TP-10 (CSL)	474	179	4/18/89	BMDL	BMDL	Soil
TP-FB-04 (CSL)	479	181	4/19/89	BMDL	BMDL	Soil
TP-11 (CSL)	480	183	4/19/89	0.975	5.990 J	Soil
TP-11-FR (CSL)	483	185	4/19/89	1.720	9.670 J	Soil
TP-12 (CSL)	486	187	4/19/89	BMDL	BMDL	Soil
TP-13 (CSL)	488	189	4/19/89	0.085 J	BMDL	Soil
TP-14 (CSL)	490	191	4/19/89	BMDL	BMDL	Soil

TABLE 1

4-20-89

ONALASKA CLOSE SUPPORT LABORATORY DATA

Units for Water = ug/ml (ppm)

Units for Soil = mg/kg

Field I.D.	GC RUN#	CSL I.D.	Date Analyzed	1,1,1-TCA	TCE	PCE	Matrix
GB03-02	92	12	3/15/89	BMDL	BMDL	BMDL	Water
GB04 (8'-11')	93	14	3/15/89	BMDL	BMDL	BMDL	Water
GB04 (54'-57')	94	16	3/15/89	BMDL	BMDL	BMDL	Water
MW-5S-01	95	18	3/15/89	BMDL	BMDL	BMDL	Water
MW04 (20'-30')	96	20	3/15/89	BMDL	BMDL	BMDL	Water
MW-2S-01	97	22	3/15/89	BMDL	BMDL	BMDL	Water
GB-01-01 (80')	98	24	3/15/89	BMDL	BMDL	BMDL	Water
MW-2M-01	99	26	3/15/89	BMDL	BMDL	BMDL	Water
GB-07-01	101	2	3/15/89	*0.010*	BMDL	BMDL	Water
GB-07-02	102	4	3/15/89	BMDL	BMDL	BMDL	Water
GB08 (55'-58')	103	6	3/15/89	BMDL	BMDL	BMDL	Water
GB-01 (120')	171	28	3/19/89	BMDL	BMDL	BMDL	Water
MW-1S-23'	176	30	3/19/89	BMDL	BMDL	BMDL	Water
MW2D(108'-111')	177	32	3/19/89	BMDL	BMDL	BMDL	Water
MW-1M-01	178	34	3/19/89	BMDL	BMDL	BMDL	Water
MW-3S-01	179	36	3/19/89	*0.130*	*0.010*	BMDL	Water
MW-7S-(20'-30')	181	38	3/19/89	BMDL	BMDL	BMDL	Water
MW-7M-(80'-82')	182	40	3/19/89	BMDL	BMDL	BMDL	Water
MW4PS-01	186	42	3/19/89	*0.730*	*0.010*	BMDL	Water
GB-06(18'-21')	187	44	3/19/89	BMDL	BMDL	BMDL	Water

TABLE 1

4-20-89

ONALASKA CLOSE SUPPORT LABORATORY DATA

Units for Water = ug/ml (ppm)

Units for Soil = mg/kg

Field I.D.	GC RUN#	CSL I.D.	Date Analyzed	1,1,1-TCA	TCE	PCE	Matrix
PB-02	192	46	3/19/89	BMDL	BMDL	BMDL	Water
PB-03	193	48	3/19/89	*0.008*	BMDL	BMDL	Water
PB-04	195	50	3/19/89	BMDL	BMDL	BMDL	Water
PB-05	196	52	3/19/89	*0.050*	BMDL	*0.010*	Water
PB-06	197	54	3/19/89	BMDL	BMDL	BMDL	Water
PB-09	272	58	3/21/89	BMDL	BMDL	BMDL	Water
PB-10	273	60	3/21/89	BMDL	BMDL	BMDL	Water
PB-11	274	62	3/21/89	BMDL	BMDL	BMDL	Water
GB-6M (73')	275	64	3/21/89	BMDL	BMDL	BMDL	Water
PB-12	277	66	3/21/89	BMDL	BMDL	BMDL	Water
PB-13	278	68	3/21/89	BMDL	BMDL	BMDL	Water
PB-14	279	70	3/21/89	BMDL	BMDL	BMDL	Water
PB-16	280	74	3/21/89	*0.010*	BMDL	BMDL	Water
PB-17	282	76	3/21/89	*0.040*	BMDL	BMDL	Water
PB-18	283	78	3/21/89	BMDL	BMDL	BMDL	Water
PB-18 DUP	284	78 DUP	3/21/89	BMDL	BMDL	BMDL	Water
PB-20	285	82	3/22/89	BMDL	BMDL	BMDL	Water
PB-21	287	84	3/22/89	*0.090*	BMDL	BMDL	Water
GB-5 (10')	288	86	3/22/89	BMDL	BMDL	BMDL	Water
GB-5 (80')	289	88	3/22/89	BMDL	BMDL	BMDL	Water
PB-22	290	90	3/22/89	BMDL	BMDL	BMDL	Water

TABLE 1

4-20-89

ONALASKA CLOSE SUPPORT LABORATORY DATA

Units for Water = ug/ml (ppm)

Units for Soil = mg/kg

Field I.D.	GC RUN#	CSL I.D.	Date Analyzed	1,1,1-TCA	TCE	PCE	Matrix
PB-23	292	92	3/22/89	BMDL	BMDL	BMDL	Water
MW-10M (18-21')	293	94	3/22/89	BMDL	BMDL	BMDL	Water
PB-24	294	96	3/22/89	BMDL	BMDL	BMDL	Water
PB-25	295	98	3/22/89	BMDL	BMDL	BMDL	Water
PB-26	297	100	3/22/89	BMDL	BMDL	BMDL	Water
PB-27	298	102	3/22/89	BMDL	BMDL	BMDL	Water
MW-10M (76'-78')	299	104	3/22/89	BMDL	BMDL	BMDL	Water
MW-9M (25')	300	106	3/22/89	BMDL	BMDL	BMDL	Water
MW-9M (80')	301	108	3/22/89	BMDL	BMDL	BMDL	Water
PB-08	302	56	3/22/89	BMDL	BMDL	BMDL	Water
PB-15	308	72	3/22/89	*0.450*	BMDL	BMDL	Water
PB-19	309	80	3/22/89	BMDL	BMDL	BMDL	Water
HOSE DISC WATER	310	112	3/22/89	BMDL	BMDL	BMDL	Water
MW-3M	311	110	3/22/89	BMDL	BMDL	BMDL	Water
MW-11M (20'-22')	312	114	3/22/89	BMDL	BMDL	BMDL	Water
MW-11M (76')	313	116	3/22/89	BMDL	BMDL	BMDL	Water
PB-28	417	118	3/31/89	BMDL	BMDL	BMDL	Water
PB-29	418	120	3/31/89	BMDL	BMDL	BMDL	Water
PB-30	419	122	3/31/89	*0.010 J*	BMDL	BMDL	Water
PB-31	424	124	3/31/89	*0.470*	BMDL	BMDL	Water
PB-32	425	126	3/31/89	*0.020*	BMDL	BMDL	Water

TABLE 1

4-20-89

ONALASKA CLOSE SUPPORT LABORATORY DATA

Units for Water = ug/ml (ppm)

Units for Soil = mg/kg

Field I.D.	GC RUN#	CSL I.D.	Date Analyzed	1,1,1-TCA	TCE	PCE	Matrix
MW-12S	426	128	3/31/89	BMDL	BMDL	BMDL	Water
MW-14S	427	130	3/31/89	BMDL	BMDL	BMDL	Water
PB-34	431	132	3/31/89	*0.210*	*0.010*	BMDL	Water
PB-35	432	134	3/31/89	*0.040*	BMDL	BMDL	Water
PB-38	433	136	3/31/89	BMDL	BMDL	BMDL	Water
MW-8D	434	138	3/31/89	BMDL	BMDL	BMDL	Water
PB-37	435	140	3/31/89	BMDL	BMDL	BMDL	Water
PB-39	436	142	3/31/89	BMDL	BMDL	BMDL	Water
PB-40	437	144	3/31/89	BMDL	BMDL	BMDL	Water
PB-41	438	148	3/31/89	BMDL	BMDL	BMDL	Water
PB-42	439	150	3/31/89	BMDL	BMDL	BMDL	Water
PB-43	440	152	3/31/89	BMDL	BMDL	BMDL	Water
PB-44	441	154	3/31/89	BMDL	BMDL	BMDL	Water
TP-01	506	160	4/20/89	BMDL	BMDL	BMDL	Soil
TP-02	507	162	4/20/89	BMDL	BMDL	BMDL	Soil
TP-03	508	164	4/20/89	BMDL	BMDL	BMDL	Soil
TP-04	509	166	4/20/89	BMDL	BMDL	*0.010*	Soil
TP-05	511	168	4/20/89	BMDL	BMDL	BMDL	Soil
TP-06	512	170	4/20/89	BMDL	BMDL	BMDL	Soil
TP-07	513	172	4/20/89	BMDL	BMDL	BMDL	Soil
TP-08	514	174	4/20/89	BMDL	BMDL	BMDL	Soil

TABLE 1

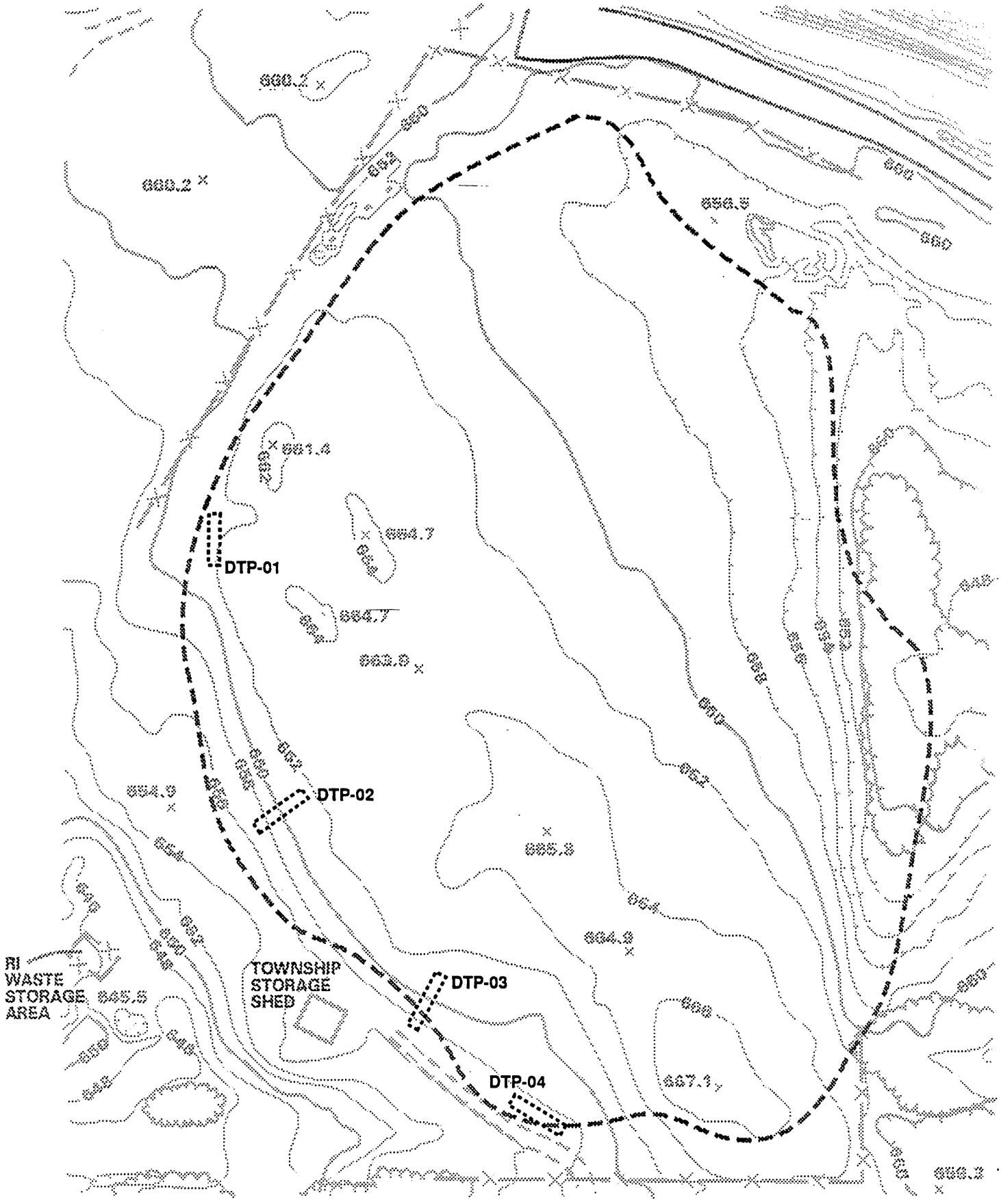
4-20-89

ONALASKA CLOSE SUPPORT LABORATORY DATA

Units for Water = ug/ml (ppm)

Units for Soil = mg/kg

Field I.D.	GC RUN#	CSL I.D.	Date Analyzed	1,1,1-TCA	TCE	PCE	Matrix
MW-14S (8.5')	515	176	4/20/89	BMDL	BMDL	BMDL	Soil
TP-09	516	178	4/20/89	BMDL	BMDL	BMDL	Soil
TP-10	517	180	4/20/89	BMDL	BMDL	BMDL	Soil
TP-FR-04	518	182	4/20/89	BMDL	BMDL	BMDL	Soil
TP-11	519	184	4/20/89	BMDL	BMDL	BMDL	Soil
TP-11-FR	520	186	4/20/89	BMDL	BMDL	BMDL	Soil
TP-12	521	188	4/20/89	BMDL	BMDL	BMDL	Soil
TP-13	522	190	4/20/89	BMDL	BMDL	BMDL	Soil



GLO65550.RI FIGH-1 10-24-89

FIGURE H-1
DEEP TEST PIT LOCATIONS
ONALASKA LANDFILL RI/FS

PROJECT NUMBER	TEST PIT NUMBER	
GLO65550.FI.FT	DTP-01	SHEET 1 OF 1

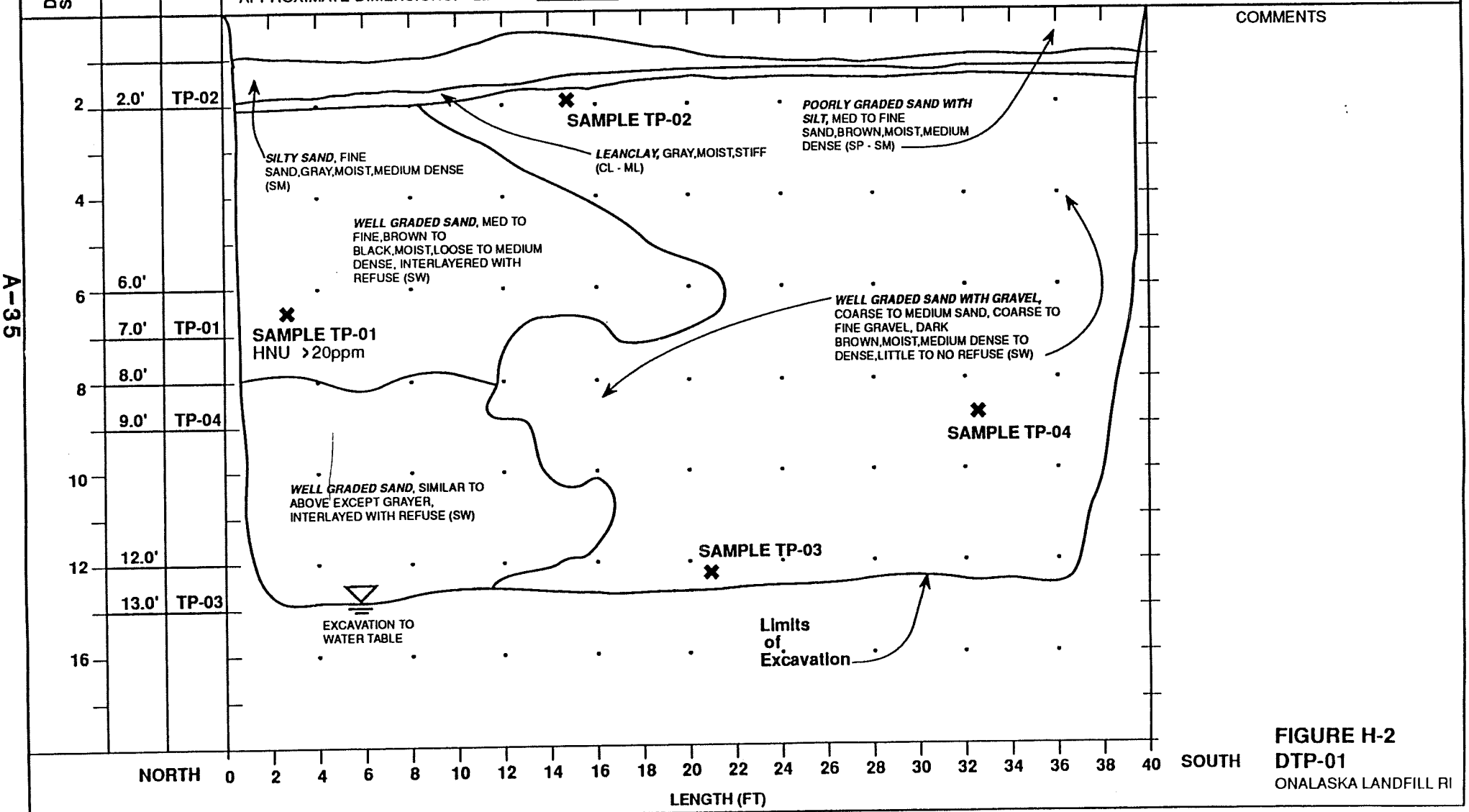
TEST PIT WALL LOG

PROJECT ONALASKA LOCATION 1+00E, 4+80N TO 1+00E, 4+40N MAP OF E WALL OF PIT

ELEVATION 662' CONTRACTOR ETI DATE EXCAVATED 4/17/89

WATER LEVEL AND DATE 13' B.G.S. 4/17/89 EXCAVATION METHOD BACKHOE - JD - 310A LOGGER J. LAMONT / C. LAWRENCE

APPROXIMATE DIMENSIONS: LENGTH 40' WIDTH 2' DEPTH 12 - 13' REMARKS



A-35

FIGURE H-2
DTP-01
ONALASKA LANDFILL RI

GLO65550.FI \ TP-01 10-24-89

PROJECT NUMBER	TEST PIT NUMBER	
GLO65550.FI.FT	DTP-02	SHEET 1 OF 1

TEST PIT WALL LOG

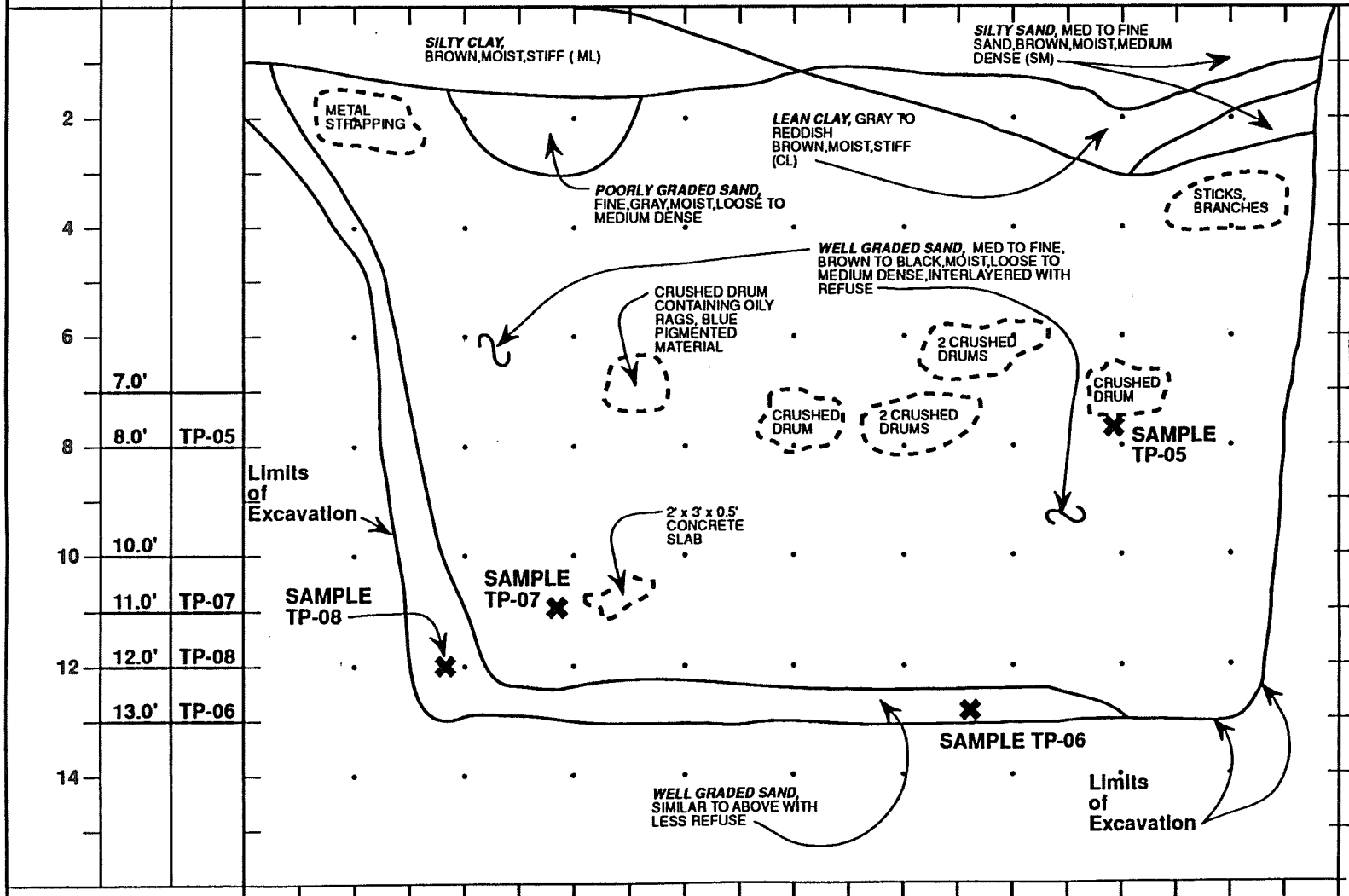
PROJECT ONALASKA LOCATION 1+40E, 2+50N TO 1+70E, 2+80N MAP OF N WALL OF PIT

ELEVATION 656' - 660' CONTRACTOR ETI DATE EXCAVATED 4/18/89

WATER LEVEL AND DATE NONE ENCOUNTERED EXCAVATION METHOD BACKHOE JD - 310 - A LOGGER C. LAWRENCE

APPROXIMATE DIMENSIONS: LENGTH 40' WIDTH 2 - 4' DEPTH 13' REMARKS

DEPTH BELOW SURFACE (FT)	SAMPLE Interval	SAMPLE Type and Number
	7.0'	
	8.0'	TP-05
	10.0'	
	11.0'	TP-07
	12.0'	TP-08
	13.0'	TP-06



COMMENTS

Began excavation at 0820 hrs

Stop excavation and begin backfilling at 1110 break for lunch 1230 - 1330 stop backfilling at 1500.

FIGURE H-3
DTP-02
ONALA[illegible] LANDFILL RI

GLO65550.FI\TP-02 8-26-89

PROJECT NUMBER	TEST PIT NUMBER	
GLO65550.FI.FT	DTP-03	SHEET 1 OF 1

TEST PIT WALL LOG

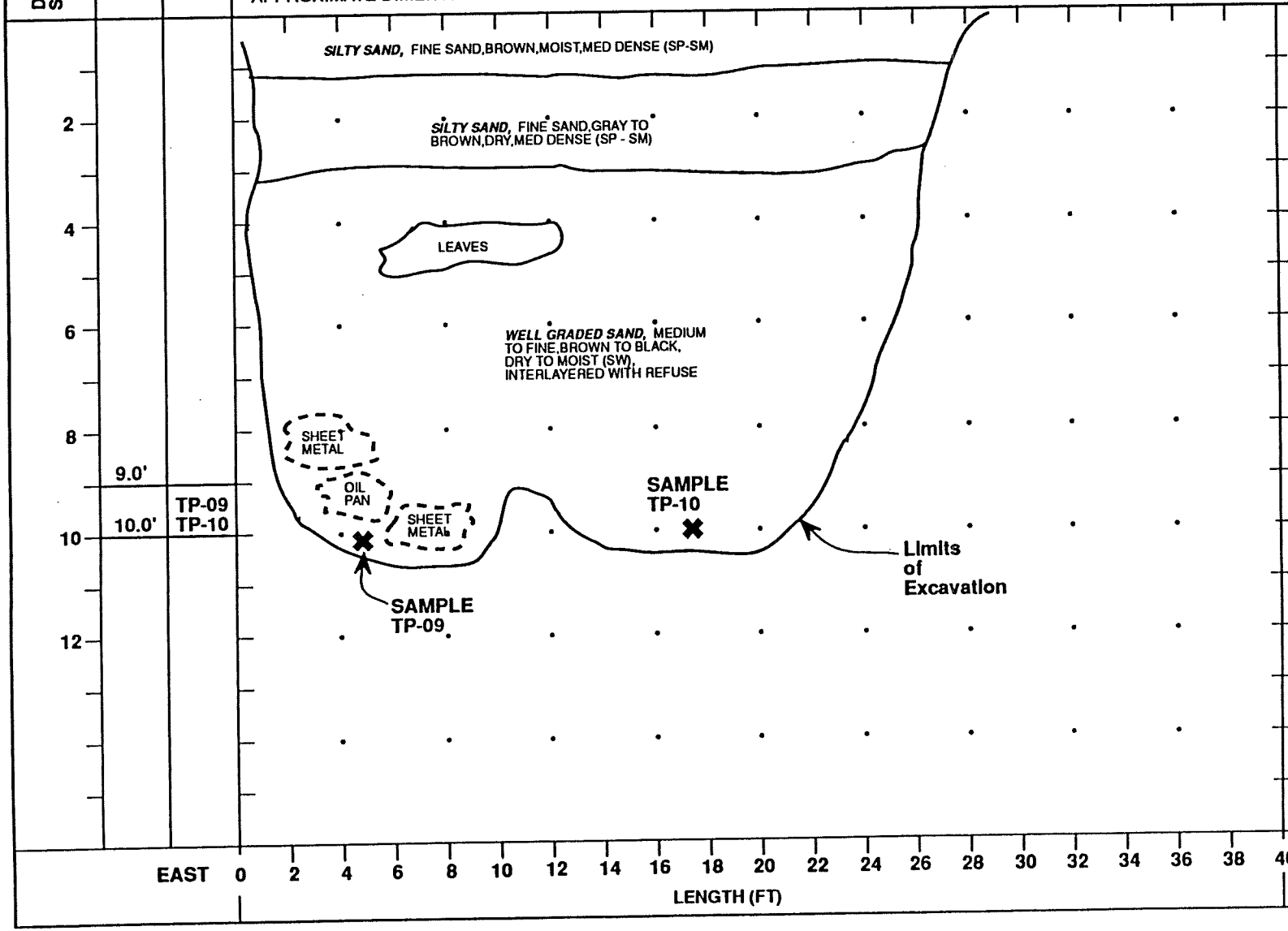
PROJECT ONALASKA LOCATION 2+50E, 1+20N TO 2+60E, 1+50N MAP OF S WALL OF PIT

ELEVATION 658' - 662' CONTRACTOR ETI DATE EXCAVATED 4/18/89

WATER LEVEL AND DATE NOT ENCOUNTERED EXCAVATION METHOD BACKHOE JD - 310 - A LOGGER CHRIS LAWRENCE

APPROXIMATE DIMENSIONS: LENGTH 28' WIDTH 2' - 3' DEPTH 10.5' REMARKS

DEPTH BELOW SURFACE (FT)	SAMPLE Interval	SAMPLE Type and Number
	9.0'	
	10.0'	TP-09
		TP-10



COMMENTS

Began excavation at 1530.

Little evidence of leave decomposition

Stop excavation and begin backfilling at 1700 stop backfilling at 1800.

FIGURE H-4
DTP-03
ONALASKA LANDFILL RI

PROJECT NUMBER	TEST PIT NUMBER	
GLO65550.FI.FT	DTP-04	SHEET 1 OF 1

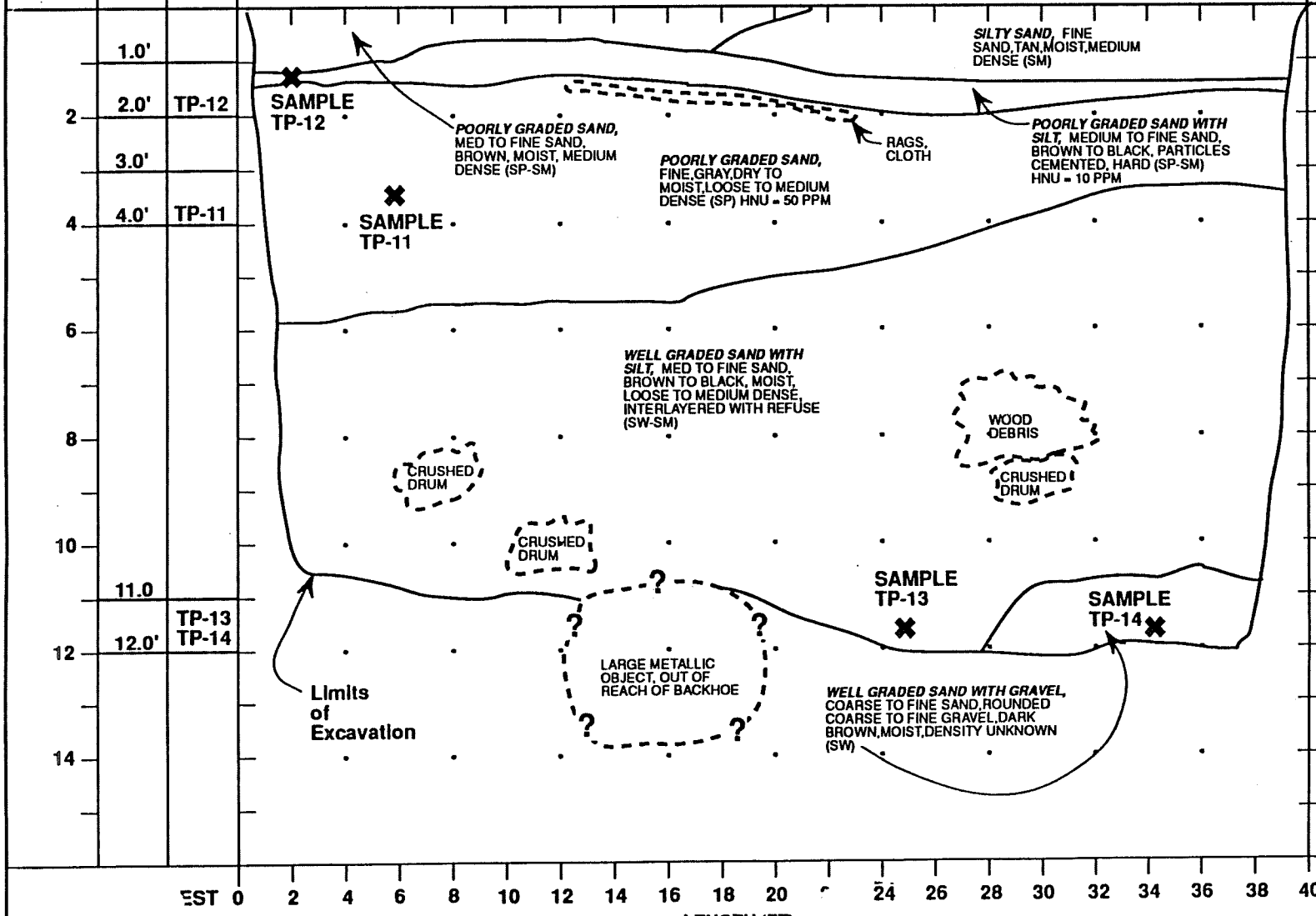
TEST PIT WALL LOG

PROJECT ONALASKA LOCATION 3+60E, 0+40N TO 3+80E 0+30N MAP OF N WALL OF PIT

ELEVATION 657' CONTRACTOR ETI DATE EXCAVATED 4/19/89

WATER LEVEL AND DATE NOT ENCOUNTERED EXCAVATION METHOD BACKHOE JD - 310 - A LOGGER C. LAWRENCE

APPROXIMATE DIMENSIONS: LENGTH 38' WIDTH 2' - 8' DEPTH 10' - 12' REMARKS



COMMENTS

Began excavation at 0755 HNU reading 10 ppm at top of trench on west side after ≈ 0.5' of excavation.
Sample TP-11 taken at 0805 upgrade to Level B at 0815 (2 ppm on HNU in BZ).

TP-12 taken at 0845.

TP-13 taken at 1022.

Large amounts of sheet metal, cans, and other metallic debris observed throughout excavation.

TP-14 taken at 1120.

Fine gray sand layer continuously sloughing during pit excavation.

Stop excavation and begin backfilling at 1130.
Finish backfilling at 1215.

FIGURE H-5
DTP-04
ONALA LANDFILL RI

Reference No. 4—Hydrogeologic Investigation

The hydrogeologic investigation consisted of the drilling and geologic logging of 8 geotechnical boreholes, installation of 21 monitoring wells, water level monitoring, and slug testing for in situ hydraulic conductivity measurement.

Monitoring well and boring locations are shown in Figure D-1 from the RI report. A summary of the drilling methods used is presented in Table D-1 from the report. Groundwater elevations measured are shown in Table D-7 from the report. The geotechnical boring logs from the RI are included herein. Grain-size testing was performed on select samples. Grain-size testing results are presented in the RI report.

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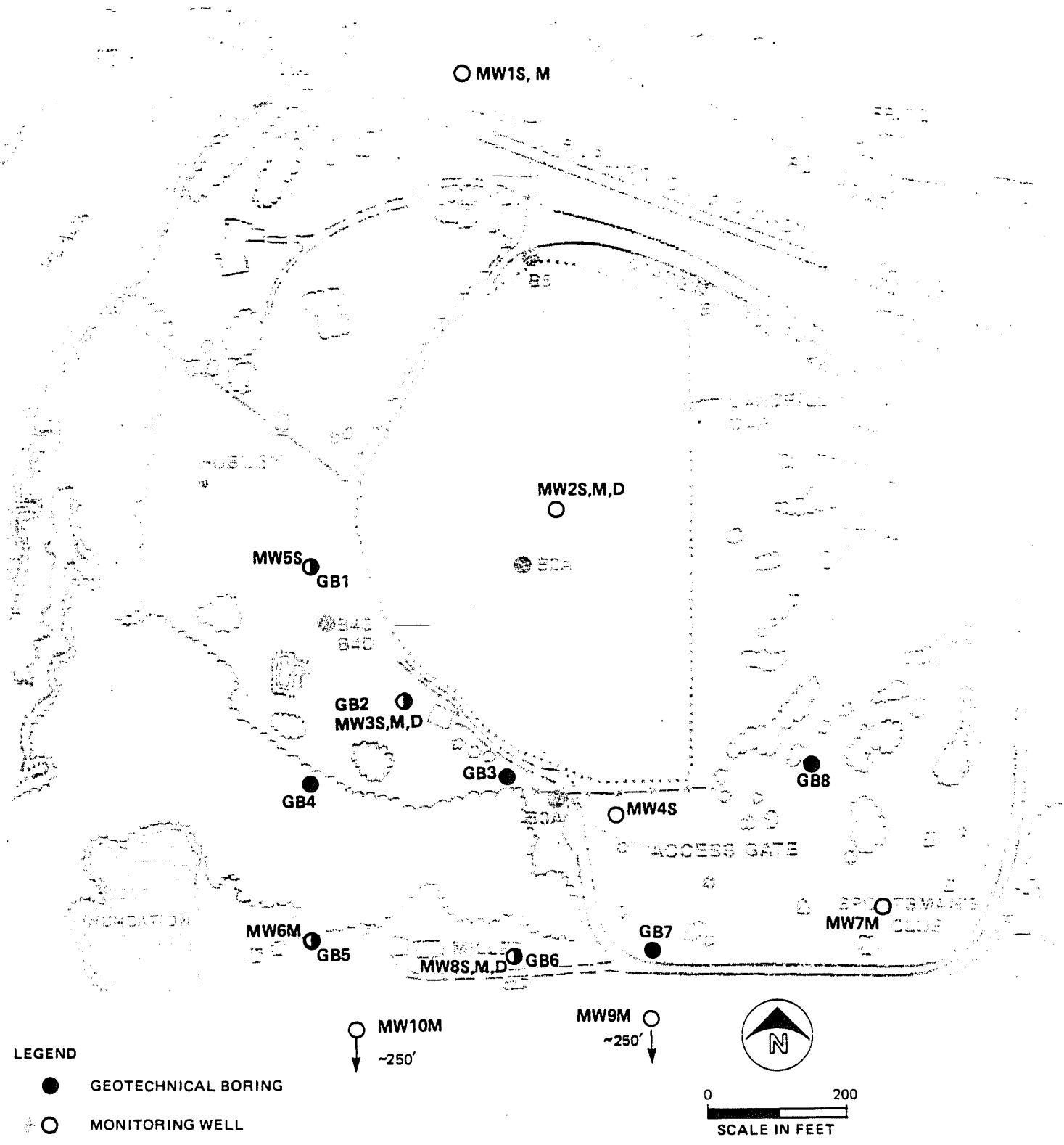


FIGURE D-1
GEOTECHNICAL BORINGS
ONALASKA LANDFILL RI

Table D-1 (Page 1 of 2)
SUMMARY OF DRILLING METHODS

	Method	Comments
GB1	Mud rotary to 118 feet Surface casing (5 inches) to 30 feet	Floating product
GB2	Flight auger (pilot hole) to 10 feet Surface casing (6 inches) to 15 feet Mud rotary to 65 feet Water rotary to 80 feet Casing (5 inches) to 80 feet	Floating product Installed MW-3M in borehole
GB3	Auger to 16 feet Surface casing (6 inches) to 20 feet Mud rotary to 68 feet	Floating product
GB4	Auger to 60 feet	
GB5	Auger to 80 feet	Installed MW-6M in borehole
GB6	Auger to 80 feet	Installed MW-8M in borehole
GB7	Auger to 69 feet	
GB8	Auger to 50 feet	
MW-1S	Auger to 26 feet	
MW-1M	Auger to 80 feet	
MW-2S	Auger to 28 feet	
MW-2M	Auger to 78 feet, Wooden plug in screened lead auger	
MW-2D	Auger to 18 feet 6-inch Surface casing to 20 feet Mud rotary to 110 feet Water rotary to 139 feet 5-inch Casing to 134 feet	
MW-3S	Auger to 18 feet	
MW-3M	See GB-2 for details	
MW-3D	Flight auger to 10 feet (pilot hole) 6-inch Surface casing to 15 feet Mud rotary to 100 feet Water rotary to 142 feet 5-inch Casing to 138 feet	
MW-4S	Auger to 28 feet	
MW-5S	Auger to 22 feet	
MW-6M	See GB-5 for details	
MW-7M	Auger to 80 feet	

Table D-1 (Page 2 of 2)
SUMMARY OF DRILLING METHODS

	Method	Comments
MW-8S	Auger to 24 feet	
MW-8M	See GB-6 for details	
MW-8D	Mud rotary to 138 feet	
MW-9M	Auger to 80 feet	
MW-10M	Auger to 80 feet	
MW-11M	Auger to 80 feet	
MW-12S	Auger to 23 feet	Drilled 3 times (well problem)
MW-13S	Auger to 25 feet	
MW-14S	Auger to 18 feet	

GLT913/007.WP

Table D-7
GROUNDWATER ELEVATIONS IN FEET

Well Number	6/1/88 Elev.	3/31/89 Depth	3/31/89 Elev.	4/17/89 Depth	4/17/89 Elev.	6/12/89 Depth	6/12/89 Elev.	8/2/89 Depth	8/2/89 Elev.
New Wells									
MW-1S	--	16.87	646.35	19.13	644.10	18.48	644.25	20.88	642.34
MW-1M	--	17.13	646.34	19.35	644.12	19.22	644.25	21.12	642.35
MW-2S	--	17.82	647.06	20.33	644.55	20.16	644.72	22.11	642.77
MW-2M	--	19.07	645.86	20.94	643.99	20.67	644.26	22.59	642.34
MW-2D	--	19.61	645.46	21.05	644.02	20.79	644.28	22.81	642.26
MW-3S	--	11.17	645.27	12.50	643.94	12.35	644.09	14.46	641.98
MW-3M	--	10.12	645.31	11.58	643.85	11.36	644.07	13.35	642.08
MW-3D	--	11.06	645.40	12.52	643.94	12.30	644.16	14.29	642.17
MW-4S	--	20.19	644.82	21.16	643.85	20.90	644.11	22.82	642.19
MW-5S	--	13.82	645.64	15.54	643.92	15.35	644.11	17.52	641.94
MW-6M	--	3.21	645.25	4.83	643.63	4.66	643.80	6.55	641.91
MW-7M	--	18.12	644.39	18.58	643.93	18.28	644.23	20.39	642.12
MW-8S	--	17.15	644.73	18.15	643.73	19.93	643.95	19.91	641.97
MW-8M	--	17.80	644.83	18.90	643.73	18.66	643.97	20.63	642.00
MW-8D	--	16.84	644.81	17.89	643.76	17.65	644.00	19.63	642.02
MW-9M	--	11.73	644.37	12.53	643.57	12.35	643.75	13.71	642.39
MW-10M	--	11.71	644.80	13.07	643.44	12.93	643.58	14.22	642.29
MW-11M	--	13.10	644.07	13.55	643.62	13.21	643.96	15.14	642.03
MW-12S	--	18.43	644.52	19.14	643.81	18.87	644.08	20.90	642.05
MW-13S	--	20.03	644.84	20.86	644.01	20.55	644.32	22.69	642.18
MW-14S	--	11.48	644.71	13.44	642.75	13.24	642.95	15.14	641.05
Old Wells									
B-1	642.61	17.76	645.66	19.28	644.14	19.03	644.39	--	--
B-2A	642.45		--	23.30	643.93	23.12	644.11	--	--
B-3A	642.42	16.09	644.97	17.20	643.86	16.93	644.13	--	--
B-4S	642.45	11.24	644.92	12.82	643.34	12.60	643.56	--	--
B-4D	--	11.20	645.92	12.75	643.87	12.58	644.04	--	--
B-5	642.57	16.92	645.08	18.12	643.88	--	--	--	--
River	642.56								

GLT913/012.WP

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-01	SHEET 1 OF 4

SOIL BORING LOG

PROJECT ONALASKA LOCATION SE OF MW-5S

ELEVATION _____ DRILLING CONTRACTOR ETI (CME 750)

DRILLING METHOD AND EQUIPMENT MUD ROTARY WITH SPLIT- SPOON SAMPLING

WATER LEVEL AND DATE _____ START 3-13-89 FINISH 3-15-89 LOGGER JAI

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
5		SS1	1.6	2-1-2-2	Light Brown Silty - Fine Sand	SM	HNu = 0 ppm (t = 11:50)
10		SS2	-	4-7-6-8	No Recovery		HNu = 0 ppm (t = 11:58)
15		SS3	1.0	5-7-8-10	Loose Medium to Coarse Sand	SP	HNu = 8-9 ppm SS = 10-12 ppm in Borehole Note: Slight oil sheen on water from SS Hard Drilling - Gravelly
20		SS4	0.7	4-4-4-5	Loose Coarse Sand and Fine Gravel	SP	HNu = 4 ppm in Borehole = 0 ppm in Breathing Zone = 2-3 ppm in SS Hard Drilling - Gravelly HNu = 0 ppm in Mud
25		SS5	0.5	10-9-9-6	Loose Coarse Sand and Fine Gravel	SP	HNu = 2-6 ppm in Borehole = 0 ppm in Breathing Zone = 0 ppm in Mud and SS
					Cobbles		
30		SS6	0.6	7-5-7-7	Loose Coarse Sand and Fine Gravel	SP	HNu = 1-2 ppm in Borehole = 1 ppm in SS = 0 ppm in Breathing Zone

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-01	SHEET 2 OF 4

SOIL BORING LOG

PROJECT ONALASKA LOCATION

ELEVATION DRILLING CONTRACTOR ETI (CME 750)

DRILLING METHOD AND EQUIPMENT MUD ROTARY WITH SPLIT- SPOON SAMPLING

WATER LEVEL AND DATE START 3-13-89 FINISH 3-15-89 LOGGER JAI

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
							Note: 30' Casing in Hole (t= 4:20)
							Drilling Rough - Gravelly Losing Water
		SS7	0.6	4-14-5-5	*Gravelly Sand*	SP	*HNu = 0 ppm in Borehole (t = 4:40)*
35							
		SS8	0.2	6-6-8-8	*Fine Gravel with Some Coarse Sand*	GP	*(t = 5:00)*
40							
		SS9	0.2	14-14-16-22	*Fine to Medium Gravel with Some Coarse Sand (Rock Blocking End of Spoon)*	GP	*HNu = 0 ppm*
45							*Drilling Easier Less Gravel*
					0.2' Fine - Medium Gravel		*HNu = 0 ppm (t = 8:15)*
		SS10	1.0	12-14-22-16	*Medium Coarse Sand*	SP	
50							*(t = 8:40) Make Another Batch of Mud*
							HNu = 0 ppm in Mud
		SS11	1.3	12-15-14-28	*Medium - Coarse Sand*	SP	*HNu = 0 ppm (t = 9:00)*
55					*0.5' Gravelly Sand*		
		SS12	0.5	15-10-10-13	*Medium - Coarse Sand with Trace Fine Gravel*		*HNu = 0 ppm*
60							

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-01	SHEET 3 OF 4

SOIL BORING LOG

PROJECT ONALASKA LOCATION

ELEVATION DRILLING CONTRACTOR ETI (CME 750)

DRILLING METHOD AND EQUIPMENT MUD ROTARY WITH SPLIT- SPOON SAMPLING

WATER LEVEL AND DATE START 3-13-89 FINISH 3-15-89 LOGGER JAI

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
65		SS13	1.5	3-1-1-1	*Very Loose Medium Sand with Some Coarse Sand*	SP	*(t = 1:05)*
70		SS14	0.9	12-11-14-17	*Medium - Coarse Sand*	SP	*HNu = 0 ppm (t = 1:22)*
75		SS15	1.7	11-16-13-3	*Medium - Coarse Sand with Little Fine Gravel*	SP	*HNu = 0 ppm (t = 1:50) Mix Batch of Mud*
80		SS16	1.8	9-2-2-6	*Same as Above*	SP	
85		SS17	0.9	20-30-31-35	*Brown Medium - Coarse Sand*	SP	*OVA = 0 ppm = 1-2 ppm from SS = 4-6 ppm in Mud*
90		SS18	-	7-1-5-13	*Brown Medium - Coarse Sand with Fine Gravel*	SP	

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-01	SHEET 4 OF 4

SOIL BORING LOG

PROJECT ONALASKA LOCATION

ELEVATION DRILLING CONTRACTOR ETI (CME 750)

DRILLING METHOD AND EQUIPMENT MUD ROTARY WITH SPLIT-SPOON SAMPLING

WATER LEVEL AND DATE START 3-13-89 FINISH 3-15-89 LOGGER JAI

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
95		SS19		12-10-31-33			(t = 5:05) OVA = 40-50 ppm in Mud = 0 ppm in Breathing Zone = 0 ppm in Borehole
100		SS20		13-17-25-20	Reddish Brown Silty Fine Sand with Trace Medium Sand	SM	
					0.5' Medium Fine Sand		Cobbles
105		SS21		11-15-19-24	Reddish Brown Silty Fine Sand with Trace Medium Sand	SM	(t = 5:40)
110		SS22	1.8	2-2-11-21	Same as Above	SP	(t = 8:50) Hnu = 0 ppm
115		SS23	1.0	31-40-33-28	Reddish Fine Sand	SP	HNu = 0 ppm Take CLP Sample (-0.1)
		3"-SS		17-22			
					END OF BORING		

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-02	SHEET 1 OF 3

SOIL BORING LOG

PROJECT ONALASKA LOCATION WEST OF SHED, SW OF LANDFILL

ELEVATION _____ DRILLING CONTRACTOR ETI

DRILLING METHOD AND EQUIPMENT FLIGHT AUGERS TO MUD ROTARY, WATER ROTARY THROUGH SCREENED ZONE

WATER LEVEL AND DATE _____ START 3-19-89 FINISH 3-20-89 LOGGER K. OLSON

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
5		SS1	2.0	4-5-6-3	*Medium to Coarse Sand, Brown, Moist. Alt. Sequences of Coarse Sand Grading to Medium Sand. Fineing upward in Approx. 4" Sequences.*	SP	*HNu = 0 ppm Down Hole* *Hnu = Ø ppm Sample Headspace* *90 LEL = 0*
10		SS2	10	3-4-5-5	*Same, but with less Apparent Laminar Structure, Trace Fine to Medium Gravel*	SP	*HNu = 5 ppm in Breathing Zone Diminished to 0 ppm within 1 Min.* *HNu = 70 ppm on Sample Headspace 90 LEL = 10*
							6" Casing installed to 15'
15		SS3	0	5-10-15-23	*All Slough*	SP	*3" Spoon (14' to 16') CLP Sample Added Mud, Flushed to 16' then Sampled. ON-6B02-16*
		SS4	0.6	7-7-6-6	*Fine to Coarse Sand, Trace Silt and Gravel. Brown in Color.*	SP	*VOAs (4 - 4oz. jars) and (8 - 8oz. jars)*
20		SS5	0.7	6-10-8-8	*Same as Above*	SP	
25		SS6	0	7-7-6-5		SP	*HNu = 0 ppm Down hole*
30							

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-02	SHEET 2 OF 3

SOIL BORING LOG

PROJECT ONALASKA LOCATION WEST OF SHED, SW OF LANDFILL

ELEVATION _____ DRILLING CONTRACTOR ETI

DRILLING METHOD AND EQUIPMENT FLIGHT AUGERS TO MUD ROTARY, WATER ROTARY THROUGH SCREENED ZONE

WATER LEVEL AND DATE _____ START 3-19-89 FINISH 3-20-89 LOGGER K. OLSON

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL	SAMPLE: TYPE AND NUMBER	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
35		SS7	0.4	13-18-15-17	*Sand with Gravel less than 1"*	SP	*HNu = 0 ppm on Sample Headspace. Could be mostly slough. Rig has been noisy, so could be occasional Gravel Seams in Last 10'*
40							
45		SS8	0.9	12-13-11-14	*Fine to Coarse Sand, Trace Gravel*	SP	*HNu = 0 ppm on Sample Headspace*
50							
55		SS9		19-27-49-21	*Same as Above, Except Encountered a 4" Gravel Zone, Gravel Less than 2" at 54'*	SP	*3" Spoon at 55' to Collect CLP Sample (2 - 4oz. jars) for VOAs and (5 - 8oz. jars) ON-6B02-55 Hnu = 0 ppm on Sample Headspace*
60					*Gravel Zones*		*Rig Chattering from 57' to 59'*

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-02	SHEET 3 OF 3

SOIL BORING LOG

PROJECT ONALASKA LOCATION WEST OF SHED, SW OF LANDFILL

ELEVATION _____ DRILLING CONTRACTOR ETI

DRILLING METHOD AND EQUIPMENT FLIGHT AUGERS TO MUD ROTARY, WATER ROTARY THROUGH SCREENED ZONE

WATER LEVEL AND DATE _____ START 3-19-89 FINISH 3-20-89 LOGGER K. OLSON

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
65		SS10	0.4	21-19-16-13	*Same as Above, Fine to Coarse Sand, Trace Gravel*	SP	*Install 5" Casing to 65', and Flushed with Clear Water*
70							
75		SS11	0	26-30-15-16		SP	*CLP Sample Collected from 73' to Approx. 78', VOAs were Collected from Undisturbed Sample. Some of other Parameters were Collected from Undisturbed Sample and Slough that Settled out in Cased Borehole ON-GB02-75*
80					END OF BORING		

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-03	SHEET 1 OF 3

SOIL BORING LOG

PROJECT ONALASKA LOCATION 75FT WEST OF SOUTH GATE.

ELEVATION _____ DRILLING CONTRACTOR ETI

DRILLING METHOD AND EQUIPMENT CME-75 HSA (4 1/2") AND MUD ROTARY WITH SPLIT-SPOON SAMPLING

WATER LEVEL AND DATE _____ START 3-8-89 FINISH 3-9-89 LOGGER JAI

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
							HSA
		SS	1.3	29-21-13	Dark Brown Silty - Fine Sand with Trace Fine Gravel	SM	No HNu Deflection
		SS	1.6	3-4-3-3			LEL = 0%
5					Rust Silty - Fine Sand withTrace Fine Gravel	SM	
		SS	0.6	2-5-6-7	Fine to Coarse Sand With Some Silt	SP	LEL = 0%
10		SS	1.3	6-3-1-1			No HNu Deflection
					Dark Brown Fine Sand with Trace Fine Gravel		
		SS	0.5	3-2-2-3	Medium to Coarse Sand and Fine Gravel	SP	HNu Deflection From SS 40-50ppm Borehole 10-15ppm Breathing Zone 0ppm
15		SS	0.7	2-1-1-1	Same as Above (Sample Collected for CSL)	SP	HNu Deflection From Borehole 30-40ppm Breathing Zone 0ppm Last 1/2' Discolored - Grey 1 > 4
		SS	0.3	2-3-12-13	Same as Above	SP	Noted Oil-type Sheen HNu Deflection From SS 12-13ppm Borehole 20ppm Breathing Zone 0ppm Slight Discoloration
20		SS	0.5		Same as Above	SP	HNu Deflection From Borehole 10-15ppm Breathing Zone 3-4ppm
							Mud Rotary
		SS01	0.8	6-11-13-19	Medium to Coarse Sand with Trace Fine Gravel	SP	No Discoloration OVA = 0 Collected Grain Size Sample
25		SS	1.4	30-16-20-16	Same as Above	SP	No OVA Readings
		SS	0.7	5-5-7-5	Same as Above	SP	No OVA Readings
30		SS	0	10-13-12-11	No Recovery		

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-03	SHEET 2 OF 3

SOIL BORING LOG

PROJECT ONALASKA LOCATION

ELEVATION DRILLING CONTRACTOR

DRILLING METHOD AND EQUIPMENT

WATER LEVEL AND DATE START FINISH LOGGER JAI

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
30							
		SS	0.8	7-8-9-23	Medium - Coarse Sand with Trace Fine Gravel	SP	
					Sand with some Fine Gravel		
35		SS	1.3	27-27-21-22	Medium - Coarse Sand with some Gravel	SP	
					Gravelly Medium Coarse Sand		
		SS	0.8	11-12-13-12	Medium to Coarse Sand, More Gravelly at Bottom	SP	OVA = 0 ppm (t = 11:15)
40		SS02	0.9	11-10-10-13	Medium to Coarse Sand with Trace Fine Gravel	SP	OVA = 0 ppm (t = 11:40) Collected Grain Size Sample
		SS	0.8	15-21-22-24	Same as Above	SP	
45		SS	0.9	12-13-12-12	Same as Above	SP	
		SS	0.8	10-18-20-20	Same as Above	SP	OVA = 0 ppm (t = 13:00)
50		SS	1.1	10-15-15-17	Same as Above	SP	
		SS	0.9	6-10-11-18	Same as Above	SP	OVA = 0 ppm (t = 13:50)
55		SS	0.7	15-15-13-13	Same as Above	SP	
		SS	1.0	18-18-16-25	Gravelly Medium - Coarse Sand Fine to Medium Gravel	SP	
60		SS	0.9	50-48-29-20	Same as Above	SP	

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-03	SHEET 3 OF 3

SOIL BORING LOG

PROJECT ONALASKA LOCATION

ELEVATION DRILLING CONTRACTOR

DRILLING METHOD AND EQUIPMENT

WATER LEVEL AND DATE START FINISH 3-9-89 LOGGER JAI

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL	SAMPLE: TYPE AND NUMBER	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
60							
		SS	1.2	20-20-45-35	*Same as Above*	SP	
					Gravelly Fine - Medium Sand		
65		SS	0.9	18-14-11-10	*Medium - Coarse Sand*	SP	*OVA = 0 ppm (t = 14:45)*
					Fine - Medium Sand		
		SS	1.0	10-10-15-18	*Fine - Medium Sand with Trace Fine Gravel*	SP	*OVA = 0 ppm (t = 15:10)*
70					**END OF BORING**		

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-04	SHEET 1 OF 2

SOIL BORING LOG

PROJECT ONALASKA LOCATION RAVINE SW OF SHED

ELEVATION _____ DRILLING CONTRACTOR ETI

DRILLING METHOD AND EQUIPMENT 4 1/4" AUGERS, LEAD SCREENED, SS SAMPLING WITH 2'-2" SPLIT-SPOONS

WATER LEVEL AND DATE _____ START 3-8-89 FINISH 3-9-89 LOGGER KLO / JJI

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
		SS1	1.0	2-3-3-3	Brown Medium to Coarse Sand, Moist to Wet, Trace Gravel (fine).	SP	HNu = 0 ppm
		SS2	1.2	6-4-2-2	Same, but Saturated.	SP	HNu = 0 ppm
5		SS3	1.5	1-3-3-5	Same, with a Trace of Silt.	SP	HNu = 0 ppm
		SS4	0.2	2-1-2-1	Same	SP	HNu = 0 ppm (Suspect of Validity of these First 4 readings).
10		SS5	0.8	11-8-4-2	Same	SP	Installed Sandpoint from 8 to 11' to Sample, Collected CSL Sample 15=05 - 3/8/89.
		SS6	1.5	2-13-15-20	Brown, Medium to Coarse Sand, Wet, Trace Gravel (up to 1").	SP	Collected a Sample for Grain Size Analysis. HNu = 0 ppm SS.
15		SS7	0	2-2-4-8	Same	SP	A little Fine Gravel Left in Spoon.
		SS8	1.0	16-15-8-12	Same, with a Slight Increase in Gravel (subangular).	SP	HNu = 0 ppm SS
20		SS9	0.8	40-13-5-6	Same	SP	
		SS10	1.2	21-12-8-9	Same	SP	HNu = 0 ppm SS
25		SS11	1.8	12-9-11-17	Same	SP	
		SS12	2.0	2-6-17-28	Same	SP	HNu = 0 ppm SS
30							

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-04	SHEET 2 OF 2

SOIL BORING LOG

PROJECT ONALASKA LOCATION

ELEVATION DRILLING CONTRACTOR

DRILLING METHOD AND EQUIPMENT

WATER LEVEL AND DATE START FINISH 3-9-89 LOGGER KLO / JJI

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL	SAMPLE: TYPE AND NUMBER	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
		SS13	1.5	20-15-12-25	Same	SP	
		SS14	2.0	3-5-13-35	Same	SP	
35		No Sample	0	5-2-6-11			
		SS15	2.0	5-12-36-50/5"	Same	SP	Collected a Sample for Grain-size Analysis.
40		No Sample	0	10-6-7-23			
		SS16	2.0	7-7-14-41	Same, with Slightly Less Gravel.	SP	HNu = 0 ppm SS
45		SS17	1.5	15-12-8-13	Same	SP	HNu = 0 ppm SS
		SS18	1.0	21-10-8-30	Same	SP	
50		No Sample	0	16-29-13-13			
		No Sample	0	37-28-29-50		SP	Blow Counts Reflect a Full Spoon, Not the Formation. Replaced Sediment Catcher. Collected Grain-size Sample.
55		SS19	0.9	16-45-44-33	Same, Slightly More Well Graded.	SP	HNu = 0.2 ppm on Cuttings 4' of Blow In into Augers, Could c Shake out 4".
		No Sample	0	28-69			Collected a CSL Sample from Sandpoint within Auger at 53 ft.
60					END OF BORING		

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-05	SHEET 1 OF 2

SOIL BORING LOG

PROJECT ONALASKA LOCATION WEST EDGE OF ACKERMAN PROPERTY

ELEVATION _____ DRILLING CONTRACTOR ETI

DRILLING METHOD AND EQUIPMENT 4 1/4" AUGERS

WATER LEVEL AND DATE _____ START 3-20-89 FINISH 3-20-89 LOGGER D. PLOMB

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
		SS1	1.1	4-1-2-2	*Dark Brown Fine Coarse Sand, with a little Silt, Loose, and Dry.*	SW	*HNu = 0 ppm on Borehole*
5					*Dark Brown Medium to Coarse Sand, Loose, and Saturated.*	SP	*HNu = 0 ppm SS*
		SS2	1.0	2-2-2-2	*Same*	SP	*HNu = 0 ppm on Borehole* *HNu = 0 ppm SS*
10							
		SS3	2.0	5-5-3-3	*Same*	SP	*HNu = 0 ppm on Borehole* *HNu = 0 ppm SS*
15							
		SS4	2.0	24-28-7	*Same, but with Occasionally Small to Large Gravel.*	SP	*HNu = 0 ppm on Borehole* *HNu = 0 ppm SS*
20							
		SS5	1.5	14-24-26-23	*Same, but Very Dense*	SP	*HNu = 0 ppm on Borehole* *HNu = 0 ppm SS*
25							
		SS6	-	23-33-27-16	*Same, but Very Dense*	SP	
30							

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-05	SHEET 2 OF 2

SOIL BORING LOG

PROJECT ONALASKA LOCATION

ELEVATION DRILLING CONTRACTOR

DRILLING METHOD AND EQUIPMENT

WATER LEVEL AND DATE START FINISH 3-20-89 LOGGER D. PLOMB

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
40		SS7	0.4	11-11-7-7	Same	SP	HNu = 0 ppm on Borehole HNu = 0 ppm SS
50		SS8	No Sample	9-27-29-57	—	—	HNu = 0 ppm on Borehole
60		SS9	0.4	19-36-35-12	Same	SP	HNu = 0 ppm on Borehole HNu = 0 ppm SS
70		SS10	0.3	45-19-22-13	Same	SP	HNu = 0 ppm on Borehole HNu = 0 ppm SS
80		SS11	1.5	56-27-27-4	Same, but Very Dense with Increased Gravel Content.	SP	HNu = 0 ppm on Borehole HNu = 0 ppm SS
					END OF BORING		

CH2M HILL

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-06	SHEET 1 OF 3

SOIL BORING LOG

PROJECT ONALASKA LOCATION ENTRANCE TO ACKERMAN'S

ELEVATION _____ DRILLING CONTRACTOR ETI

DRILLING METHOD AND EQUIPMENT 4 1/4" AUGERS

WATER LEVEL AND DATE _____ START 3-19-89 FINISH 3-19-89 LOGGER D. PLOMB

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
5		SS1	1.6	2-2-3-3	Dark Brown Fine to Coarse Sand, With a little Silt, Dry and Loose.	SW	HNu = 0 ppm on Borehole HNu = 0 ppm SS
10		SS2	0.9	2-3-3-5	Dark Brown Medium to Coarse Sand, Moist and Loose	SP	HNu = 0 ppm on Borehole HNu = 0 ppm SS
15		SS3	0.4	5-5-5-5	Same	SP	HNu = 0 ppm on Borehole HNu = 0 ppm SS
20		SS4	1.8	10-8-4-3	Same, But Satuated with Occasionally some Small to Medium Gravel.	SP	HNu = 0 ppm on Borehole HNu = 0 ppm SS
25		SS5	1.1	16-17-12-5	Same	SP	HNu = 0 ppm on Borehole HNu = 0 ppm SS
30		SS6	1.3	10-10-12-8	Same	SP	HNu = 0 ppm on Borehole HNu = 0 ppm SS

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-06	SHEET 2 OF 3

SOIL BORING LOG

PROJECT ONALASKA LOCATION

ELEVATION DRILLING CONTRACTOR

DRILLING METHOD AND EQUIPMENT

WATER LEVEL AND DATE START FINISH LOGGER D. PLOMB

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL	SAMPLE: TYPE AND NUMBER	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
35							
40		SS7	1.3	35-42-17-13	*Same, with an Occasional Cobble or Boulder, Very Dense.*	SP	*HNu = 0 ppm on Borehole* *HNu = 0 ppm SS*
45							
50		SS8	1.8	51-68-80-45	*Same, Cobbles are Still Present, Very Dense.*	SP	*HNu = 0 ppm on Borehole* *HNu = 0 ppm SS*
55							
60		SS9	0	26-83-100/3"		—	*No Recovery* *HNu = 0 ppm on Borehole*

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-06	SHEET 3 OF 3

SOIL BORING LOG

PROJECT ONALASKA LOCATION

ELEVATION DRILLING CONTRACTOR

DRILLING METHOD AND EQUIPMENT

WATER LEVEL AND DATE START FINISH 3-19-89 LOGGER D. PLOMB

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL	SAMPLE: TYPE AND NUMBER	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
65							
70		SS10	0.5	40-80-100/3"	*Same, Very Dense*	SP	*HNu = 0 ppm on Borehole* *HNu = 0 ppm SS*
75							
80		SS11	2.0	——	*Same, Cobbles and Very Dense.*	SP	*HNu = 0 ppm on Borehole* *HNu = 0 ppm SS*
					END OF BORING		

CRMHILL

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-07	SHEET 1 OF 3

SOIL BORING LOG

PROJECT ONALASKA LOCATION SOUTH OF SITE ENTRANCE

ELEVATION _____ DRILLING CONTRACTOR ETI (CML 75)

DRILLING METHOD AND EQUIPMENT HSA (4 1/2") WITH SPLIT SPOON SAMPLING EVERY 2.5'

WATER LEVEL AND DATE _____ START 3-7-89 FINISH 3-7-89 LOGGER JAI

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
					Fine Sand with some Silt		
		SS	1.8	33-21-17-11	*Fine to Coarse Sand, Poorly Sorted with some Gravel*	SP	*Frost to 3'* *HNu = 0*
5		SS	1.6	2-1-2-3	*Loose Fine - Coarse Sand with Trace Gravel Poorly Sorted*	SP	*LEL = 0% (t = 9:35)* *RAD = 0.05 (BKG)* *HNu = 0*
		SS	0.4	1-2-3-3	*Same as Above*		
10		SS	0.6	1-3-3-3	*Medium Sand with Trace Fine Sand and some Coarse Sand*	SP	
		SS	—	3-5-5-5	*No Recovery (Catcher Broke)*		*HNu = 0* *LEL = 0%*
15		SS	0.8	1-2-2-2	*Medium Sand with Trace Fine Sand and some Coarse Sand*	SP	
		SS	0.7	4-3-2-2	*Same as Above*		*LEL = 0%* *HNu = 0 ppm* *WIL = 17'*
20		SS	—		*No Recovery*		*Take H_2O Sample*
		SS	0.4	2-3-13-17	*Medium - Coarse Sand*	SP	
25		SS	0.7	4-3-17-16	*Medium - Coarse Sand with Trace Fine Gravel*	SP	
		SS	—	2-3-17-37	*No Recovery (Catcher Broke)*	SP	*HNu = 0 ppm*
30							

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-07	SHEET 2 OF 3

SOIL BORING LOG

PROJECT ONALASKA LOCATION

ELEVATION DRILLING CONTRACTOR

DRILLING METHOD AND EQUIPMENT

WATER LEVEL AND DATE START FINISH LOGGER JAI

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL	SAMPLE: TYPE AND NUMBER	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
30		SS	—	6-18-13-33	No Recovery		18" Drives
		SS	1.1	3-5-33	Medium Sand	SP	HNu = 0 ppm
35		SS	0.5	13-27-33	Medium Sand and Medium Gravel	SP	
					Fine - Medium Gravel 0.3		
		SS	0.2	8-13-17	Medium - Fine Sand	SP	HNu = 0 ppm
40		SS	—	5-8-13	No Recovery	SP	Hard Drilling - Gravelly
		SS	1.3	6-25-26	Medium Sand with some Coarse Sand and Trace Fine Gravel	SP	
45		SS	0.7	8-10-24	Medium Sand with some Fine Gravel	SP	
					Silty Fine Sand		
		SS	0.4	8-12-28	Medium - Coarse Sand with some Fine Gravel	SP	
50		SS	0.5	5-13-22	Medium - Coarse Sand with Trace Fine Gravel	SP	
		SS	—	5-5-21	No Recovery		
55		SS	0.9	5-10-34	Medium Sand 0.8	SP	
					Medium - Fine Gravel 0.1		
		SS	0.9	3-17-22	Medium - Coarse Sand with some Fine Gravel	SP	
60							

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-07	SHEET 3 OF 3

SOIL BORING LOG

PROJECT ONALASKA LOCATION

ELEVATION DRILLING CONTRACTOR

DRILLING METHOD AND EQUIPMENT

WATER LEVEL AND DATE START FINISH 3-7-89 LOGGER JAI

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL	SAMPLE: TYPE AND NUMBER	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
60		SS	0.5	13-20-32	*Medium Sand with some Gravel (Last 0.2' Fine - Coarse Sand with Trace Yellowish Brown Silt)*	SP	
		SS	—	11-13-15	*No Recovery*		
65		SS	0.8	4-21-34	*Medium to Coarse Sand with some Fine Gravel and Trace Medium Gravel*	SP	
		SS	1.5	14-21-57	*Same as Above*	SP	
70							

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-08	SHEET 1 OF 2

SOIL BORING LOG

PROJECT ONALASKA LOCATION SE OF LANDFILL

ELEVATION _____ DRILLING CONTRACTOR ETI

DRILLING METHOD AND EQUIPMENT 4 1/4" AUGERS

WATER LEVEL AND DATE _____ START 3-7-89 FINISH 3-8-89 LOGGER KLO

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
		SS1	1.5	32-18-20	Medium to Coarse Sand with Trace Gravel, Moist, Color=7.5 YR 5/6. Loose Below Frostline, Mostly Quartz With Pebbles and Particles of Granite, Magnetite, etc., and Glacial Outwash.	SP	Frost Down to 2 ft.
		SS2	1.5	3-5-6			HNu = 0 ppm on Borehole
5		SS3	0.8	2-2-2	Thin 1-2" Fine Sand With Silt, Trace Gravel. Dark Reddish Brown, Color =7.5 YR 3/4, Moist.	SM	
		SS4	1.0	15-4-5	Medium to Coarse Sand, as above, but Getting Wetter.	SP	
10		SS5	0.6	7-4-5			
		SS6	1.0	12-12-5	Medium Sand, Trace Gravel, Moist.	SP	OUA = 0 ppm on Borehole
15		SS7	1.0	3-3-4	Medium to Coarse Sand, Trace Gravel, Color =7.5 YR 4/6.		▽ Collected a Grain-size Sample.
		SS8	0.8	2-2-2-2	Same, but Saturated.		OUA = 0 ppm on Borehole
20							Blind Drill to 28 ft.
25					Water Sampled for CSL 25 to 28ft. with Well point.		OUA = 0 ppm on Purge Water.
		SS9	1.3	12-16-17	Same, Mostly Medium Sand with some Coarse.		
30							

PROJECT NUMBER	BORING NUMBER	
GLO 65550.F1.FQ	GB-08	SHEET 2 OF 2

SOIL BORING LOG

PROJECT ONALASKA LOCATION

ELEVATION DRILLING CONTRACTOR

DRILLING METHOD AND EQUIPMENT

WATER LEVEL AND DATE START FINISH 3-8-89 LOGGER KLO

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
		SS10	1.0	11-8-8	Same		OVA = 0 ppm on Borehole
		SS11	1.0	10-10-12	Same		
35		SS12	1.2	12-15-10	Same		
		SS13	1.7	20-36-42	Same		
40		SS14	2.0	7-29-29	Same, but had a 2" Subrounded Gravel Seam (Minus 3/4") in Bottom of Spoon		
		SS15	1.3	12-18-10	Same		OVA = 0 ppm on Borehole
45		SS16	0	15-16-6	No Recovery		
		SS17	2.0	12-15-18	Same		Collected a Grain-size Sample.
50					END OF BORING		Drove Sandpoint to 58 ft. and Collected a CSL Water Sample.

Reference No. 5—Environmental Sampling and Analysis

The following environmental sampling and analysis was performed:

- Residential well sampling to determine whether contaminants from the landfill site had migrated to surrounding residential wells
- Monitoring well sampling to determine the nature and extent of groundwater contamination
- Surface water and sediment sampling from surface waters near the site to determine whether contaminants from the site had migrated to surface waters and sediment near the site
- Nonaqueous phase sampling from the unsaturated zone immediately above the water table to assess the extent and nature of nonaqueous phase contamination along the southwestern edge of the landfill

The results of the sampling are presented in the attached tables reproduced from the RI report.

GLT316/011.51

INORGANIC CHEMICAL ANALYSIS OF RESIDENTIAL WELL SAMPLES (Page 1 of 4)

	DETECTION LIMITS	Sample Location: RW01-01	RW02-01	RW03-01	RW04-01	FRRW04-01	RW05-01	RW06-01	RW07-01	RWFB-01
		Resident Name: Hubley	Marshall	Fritz	Davis	Davis	D. Johnson	F. Johnson	Kellicut	Field Blank
		Date Sampled: 89-03-15	89-03-15	89-03-15	89-03-15	89-03-15	89-03-15	89-03-15	89-03-15	89-03-15
		CRL Number: 89ZC01S01	89ZC01S02	89ZC01S03	89ZC01S08	89ZC01D09	89ZC01S04	89ZC01S05	89ZC01S06	89ZC01R07
		Laboratory: EPA CRL	EPA CRL	EPA CRL	EPA CRL	EPA CRL	EPA CRL	EPA CRL	EPA CRL	EPA CRL
INORGANIC CHEMICALS (ug/l)										
ALUMINUM	80.0	--	--	--	--	--	--	--	--	--
ANTIMONY	2.0	--	--	--	--	--	--	--	--	--
ARSENIC	2.0	--	18.0	--	--	--	--	--	--	--
BARIUM	6.0	99.9	--	344.0	20.3 B	20.7 B	44.2 B	32.4 B	35.9 B	13.7
BERYLLIUM	1.0	--	--	--	--	--	--	--	--	--
BORON	80.0	--	--	--	--	--	--	--	--	--
CADMIUM	0.2	0.2 J	--	--	--	--	--	--	--	--
CALCIUM	500.0	31500.0	--	60200.0	66600.0	68100.0	56200.0	62500.0	46600.0	700.0
CHROMIUM	8.0	11.1 J	--	--	--	10.7	--	--	--	--
COBALT	6.0	--	--	--	--	--	--	--	--	--
COPPER	6.0	12.8	--	13.5	8.0	11.3	--	7.0	9.4	--
CYANIDE	5.0	--	--	--	--	--	--	--	--	--
IRON	80.0	587.0	--	1080.0	828.0	795.0	1190.0	535.0	--	--
LEAD	2.0	--	--	--	--	--	--	--	--	--
LITHUIM	10.0	--	--	--	--	--	--	--	--	--
MAGNESIUM	100.0	11600.0	--	14300.0	18000.0	18300.0	14100.0	16000.0	16800.0	--
MANGANESE	5.0	359.0	--	704.0	161.0	163.0	134.0	198.0	--	--
MERCURY	0.2	0.2	--	--	--	--	0.2	--	--	--
MOLYBDENUM	15.0	--	--	--	--	--	--	--	--	--
NICKEL	15.0	--	--	--	--	15.1 J	--	--	--	--
POTASSIUM	5000.0	--	--	--	--	--	--	--	--	--
SELENIUM	2.0	--	--	--	--	--	--	--	--	--
SILVER	6.0	--	--	--	--	--	--	--	--	--
SODIUM	1000.0	8100.0	68000.0	3400.0 B	3600.0 B	3900.0 B	3700.0 B	3800.0 B	4600.0 B	1100.0
THALLIUM	2.0	--	--	--	--	--	--	--	--	--
TITIANIUM	25.0	--	--	--	--	--	--	--	--	--
VANADIUM	5.0	--	--	--	--	--	--	--	--	--
ZINC	40.0	56.8	--	347.0	--	--	120.0	212.0	87.2	--

NOTES:

B = Blank contamination

J = Estimated value

-- = Not detected at detection limit

ORGANIC COMPOUND ANALYSIS OF RESIDENTIAL WELL SAMPLES (Page 2 of 4)

	DETECTION LIMITS	Sample Location: RW01-01 / Resident Name: Hubley / Date Sampled: 89-03-15 / CRL Number: 89ZC01S01 / Laboratory: EPA CRL	RW02-01 Marshall 89-03-15 89ZC01S02 EPA CRL	RW03-01 Fritz 89-03-15 89ZC01S03 EPA CRL	RW04-01 Davis 89-03-15 89ZC01S08 EPA CRL	FRRW04-01 Davis 89-03-15 89ZC01D09 EPA CRL	RW05-01 D. Johnson 89-03-15 89ZC01S04 EPA CRL	RW06-01 F. Johnson 89-03-15 89ZC01S05 EPA CRL	RW07-01 Kellicut 89-03-15 89ZC01S06 EPA CRL	RWFB-01 Field Blank 89-03-15 89ZC01R07 EPA CRL
ORGANIC COMPOUNDS (ug/l)										
VOLATILE										
CHLOROMETHANE	3.0	--	--	--	--	--	--	--	--	--
BROMOMETHANE	3.0	--	--	--	--	--	--	--	--	--
VINYL CHLORIDE	3.0	--	--	--	--	--	--	--	--	--
CHLOROETHANE	3.0	--	--	--	--	--	--	--	--	--
METHYLENE CHLORIDE	1.0	--	--	--	0.8 B	--	--	--	--	--
ACETONE	50.0	--	--	--	--	--	--	--	--	--
CARBON DISULFIDE	0.3	100.0	26.0	180.0	R	170.0	170.0	110.0	130.0	0.2 B
1,1-DICHLOROETHENE	1.0	--	--	--	--	--	--	--	--	--
1,1-DICHLOROETHANE	1.0	--	--	--	--	--	--	--	--	--
1,2-DICHLOROETHENE (TOTAL)	1.0	--	--	--	--	--	--	--	--	--
CHLOROFORM	1.0	--	--	--	1.0	1.0	--	--	--	--
1,2-DICHLOROETHANE	1.0	--	--	--	--	--	--	--	--	--
2-BUTANONE	20.0	--	--	--	--	--	--	--	--	--
1,1,1-TRICHLOROETHANE	1.0	--	--	--	--	--	--	--	--	--
CARBON TETRACHLORIDE	1.0	--	--	--	--	--	--	--	--	--
VINYL ACETATE	10.0	--	--	--	--	--	--	--	--	--
BROMODICHLOROMETHANE	1.0	--	--	--	--	--	--	--	--	--
ACROLEIN	75.0	--	--	--	--	--	--	--	--	--
ACRYLONITRILE	50.0	--	--	--	--	--	--	--	--	--
1,2-DICHLOROPROPANE	1.0	--	--	--	--	--	--	--	--	--
TRANS-1,3-DICHLOROPROPENE	1.0	--	--	--	--	--	--	--	--	--
TRICHLOROETHENE	1.0	--	--	--	--	--	--	--	--	--
DIBROMOCHLOROMETHANE	1.0	--	--	--	--	--	--	--	--	--
1,1,2-TRICHLOROETHANE	1.0	--	--	--	--	--	--	--	--	--
BENZENE	1.0	--	--	--	--	--	--	--	--	--
CIS-1,3-DICHLOROPROPENE	1.0	--	--	--	--	--	--	--	--	--
2-CHLOROETHYLVINYLETHER	1.0	--	--	--	--	--	--	--	--	--
BROMOFORM	1.0	--	--	--	--	--	--	--	--	--
2-HEXANONE	4.0	--	--	--	--	--	--	--	--	--
4-METHYL-2-PENTANONE	4.0	--	--	--	--	--	--	--	--	--
TETRACHLOROETHENE	1.0	--	--	--	--	--	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	1.0	--	--	--	--	--	--	--	--	--
TOLUENE	1.0	--	--	--	--	--	--	--	--	--
CHLOROBENZENE	1.0	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	1.0	--	--	--	--	--	--	--	--	--
STYRENE	2.0	--	--	--	--	--	--	--	--	--
M-XYLENE	2.0	--	--	--	--	--	--	--	--	--
O/P-XYLENE	2.0									

NOTES:
B = Blank contamination
-- = Not detected at detection limit
R = Unuseable data
Dilution Factor: 1.0

ORGANIC COMPOUND ANALYSIS OF RESIDENTIAL WELL SAMPLING (PAGE 3 OF 4)

	DETECTION LIMITS	Sample Location: RW01-01	RW02-01	RW03-01	RW04-01	FRRW04-01	RW05-01	RW06-01	RW07-01	RWFB-01
		Resident Name: Hubley	Marshall	Fritz	Davis	Davis	D. Johnson	F. Johnson	Kellicut	Field Blank
		Date Sampled: 89-03-15	89-03-15	89-03-15	89-03-15	89-03-15	89-03-15	89-03-15	89-03-15	89-03-15
		CRL Number: 89ZC01S01	89ZC01S02	89ZC01S03	89ZC01S08	89ZC01D09	89ZC01S04	89ZC01S05	89ZC01S06	89ZC01R07
		Laboratory: EPA CRL	EPA CRL	EPA CRL	EPA CRL	EPA CRL	EPA CRL	EPA CRL	EPA CRL	EPA CRL
ORGANIC COMPOUNDS (ug/l)										
SEMIVOLATILE										
PHENOL	2	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROETHYL)ETHER	2	--	--	--	--	--	--	--	--	--
2-CHLOROPHENOL	2	--	--	--	--	--	--	--	--	--
1,3-DICHLOROBENZENE	2	--	--	--	--	--	--	--	--	--
1,4-DICHLOROBENZENE	2	--	--	--	--	--	--	--	--	--
BENZYL ALCOHOL	2	--	--	--	--	--	--	--	--	--
1,2-DICHLOROBENZENE	3	--	--	--	--	--	--	--	--	--
2-METHYLPHENOL	1	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROISOPROPYL)ETHER	3	--	--	--	--	--	R	--	R	R
4-METHYLPHENOL	1	--	--	--	--	--	--	--	--	--
N-NITROSO-DI-n-PROPLYAMINE	2	R	R	R	--	R	R	R	R	R
HEXACHLOROETHANE	2	--	--	--	--	--	--	--	--	--
NITROBENZENE	3	--	--	--	--	--	--	--	--	--
ISOPHORONE	3	--	--	--	--	--	--	--	--	--
2-NITROPHENOL	2	--	--	--	--	--	--	--	--	--
2,4-DIMETHYLPHENOL	2	--	--	--	--	--	--	--	--	--
BENZOIC ACID	30	--	--	--	R	--	--	R	--	--
BIS(2-CHLOROETHOXY)METHANE	3	--	--	--	--	--	--	--	--	--
2,4-DICHLOROPHENOL	2	--	--	--	--	--	--	--	--	--
1,2,4-TRICHLOROBENZENE	2	--	--	--	--	--	--	--	--	--
NAPHTHALENE	2	--	--	--	--	--	--	--	--	--
4-CHLOROANILINE	2	--	--	--	--	--	--	--	--	--
HEXACHLOROBUTADIENE	3	--	--	--	--	--	--	--	--	--
4-CHLORO-3-METHYLPHENOL	2	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE	2	--	--	--	--	--	--	--	--	--
HEXACHLOROCYCLOPENTADIENE	2	--	--	--	--	--	--	--	--	--
2,4,6-TRICHLOROPHENOL	2	--	--	--	--	--	--	--	--	--
2,4,5-TRICHLOROPHENOL	2	--	--	--	--	--	--	--	--	--
2-CHLORONAPHTHALENE	2	--	--	--	--	--	--	--	--	--
2-NITROANILINE	3	--	--	--	--	--	--	--	--	--
DIMETHYL PHTHALATE	2	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	2	--	--	--	--	--	--	--	--	--
3-NITROANILINE	1	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	2	--	--	--	--	--	--	--	--	--
2,4-DINITROPHENOL	15	--	--	--	--	--	--	--	--	R
4-NITROPHENOL	2	--	--	--	--	--	--	R	R	--
DIBENZOFURAN	1	--	--	--	--	--	--	--	--	--
2,4-DINITROTOLUENE	1	--	--	--	--	--	--	--	--	--
2,6-DINITROTOLUENE	1	--	--	--	--	--	--	--	--	--
DIETHYL PHTHALATE	1	--	--	--	--	--	--	--	--	--
4-CHLOROPHENYL PHENYL ETHER	1	--	--	--	--	--	--	--	--	--
FLUORENE	1	--	--	--	--	--	--	--	--	--
4-NITROANILINE	3	--	--	--	--	--	--	--	--	--
4,6-DINITRO-2-METHYLPHENOL	15	--	--	--	--	--	--	--	--	--
N-NITROSODIPHENYLAMINE	2	--	--	--	--	--	--	--	--	--
4-BROMOPHENYL PHENYL ETHER	2	--	--	--	--	--	--	--	--	--
HEXACHLOROBENZENE	2	--	--	--	--	--	--	--	--	--
PENTACHLOROPHENOL	2	--	--	--	--	--	--	--	--	--
PHENANTHRENE	1	--	--	--	--	--	--	--	--	--
ANTHRACENE	3	--	--	--	--	--	--	--	--	--
DI-N-BUTYL PHTHALATE	2	13 B	9 B	6 B	6 B	10 B	6 B	6 B	11 B	9
FLUORANTHENE	2	--	--	--	--	--	--	--	--	--
PYRENE	2	--	--	--	--	--	--	--	--	--
BUTYL BENZYL PHTHALATE	4	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	2	--	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	1	2	2	--	--	--	--	--	--	--
CHRYSENE	2	--	--	--	--	--	--	--	--	--
DI-N-OCTYL PHTHALATE	2	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENES	2	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENES	2	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	2	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	4	--	--	--	--	--	--	--	--	--
DIBENZ(A,H)ANTHRACENE	3	--	--	--	--	--	--	--	--	--
BENZO(GHI)PERYLENE	4	--	--	--	--	--	--	--	--	--

NOTES:
-- = Not detected at detection limit
B = Blank contamination
R = Unuseable data

Dilution Factor: 1.0

ORGANIC COMPOUND [PESTICIDES and PCBs] ANALYSIS OF RESIDENTIAL WELL SAMPLES (Page 4 of 4)

	DETECTION LIMITS	Sample Location: RW01-01	RW02-01	RW03-01	RW04-01	FRRW04-01	RW05-01	RW06-01	RW07-01	RWFB-01
		Resident Name: Hubley	Marshall	Fritz	Davis	Davis	D. Johnson	F. Johnson	Kellicut	Field Blank
		Date Sampled: 89-03-15	89-03-15	89-03-15	89-03-15	89-03-15	89-03-15	89-03-15	89-03-15	89-03-15
		CRL Number: 89ZC01S01	89ZC01S02	89ZC01S03	89ZC01S08	89ZC01D09	89ZC01S04	89ZC01S05	89ZC01S06	89ZC01R07
		Laboratory: EPA CRL	EPA CRL	EPA CRL	EPA CRL	EPA CRL	EPA CRL	EPA CRL	EPA CRL	EPA CRL
ORGANIC COMPOUNDS (ug/l)										
PESTICIDES and PCBs										
ALPHA-BHC	0.02	--	--	--	--	--	--	--	--	--
BETA-BHC	0.02	--	--	--	--	--	--	--	--	--
DELTA-BHC	0.02	--	--	--	--	--	--	--	--	--
GAMMA-BHC (LINDANE)	0.002	--	--	--	--	--	--	--	--	--
HEPTACHLOR	0.03	--	--	--	--	--	--	--	--	--
ALDRIN	0.02	--	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	0.01	--	--	--	--	--	--	--	--	--
ENDOSULFAN I	.01 to .02	--	--	--	--	0.02 J	0.02 J	0.02 J	--	--
DIELDRIN	0.01	--	--	--	--	--	--	--	--	--
4,4-DDE	0.005	--	--	--	--	--	--	--	--	--
ENDRIN	0.01	--	--	--	--	--	--	--	--	--
ENDOSULFAN II	0.01	--	--	--	--	--	--	--	--	--
4,4-DDD	0.02	--	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	0.13	--	--	--	--	--	--	--	--	--
4,4-DDT	0.02	0.03 J, B	0.04 J, B	0.04 J, B	0.02 J, B	0.07 B	--	--	0.02 J, B	0.04 J, B
METHOXYCHLOR	0.02	--	--	--	--	--	--	--	--	--
ENDRIN KETONE	0.03	--	--	--	--	--	--	--	--	--
CHLORDANE	0.02	--	--	--	--	--	--	--	--	--
TOXAPHENE	0.25	--	--	--	--	--	--	--	--	--
AROCLOR-1242	0.2	--	--	--	--	--	--	--	--	--
AROCLOR-1248	0.2	--	--	--	--	--	--	--	--	--
AROCLOR-1254	0.2	--	--	--	--	--	--	--	--	--
AROCLOR-1260	0.2	--	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	0.05	--	--	--	--	--	--	--	--	--

NOTES:
J = Estimated value
-- = Not detected at detection limit
B = Blank contamination

24-Oct-89

VOLATILE ORGANIC COMPOUNDS - GROUNDWATER

Sample Location:	MW1S-01	MW1S-02	MW1M-01	MW1M-02	MWFB01-01	MWFB01-02	MWB1-01	MWB1-02	MW02S-01	MW02S-02	FRMW02S-01	MWFB02-01	MWFB02-02	MW02M-01
Sample Number:	EBP32	EEF15	EBP37	EEF16	EBP27	EEF22	EBP36	EEF08	EBP18	EBP93	EBP19	EBP49	EEF23	EBP29
Date Sampled:	04-19-89	06-14-89	04-19-89	06-14-89	04-17-89	06-14-89	04-19-89	06-13-89	04-17-89	06-12-89	04-17-89	04-19-89	06-14-89	04-17-89
CRL Number:	89ZC02S18	89ZC40S46	89ZC02S13	89ZC40S47	89ZC02R01	89ZC40R04	89ZC02S15	89ZC40S37	89ZC02S05	89ZC40S26	89ZC02D05	89ZC02R02	89ZC40R03	89ZC02S06
Laboratory:	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED	S-CUBED Round 2	S-CUBED
ORGANIC COMPOUNDS (ug/l)														
VOLATILE														
CHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BROMOMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VINYL CHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
METHYLENE CHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACETONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CARBON DISULFIDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-DICHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-DICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROETHENE (TOTAL)	--	--	--	--	--	--	--	--	--	--	--	14	--	--
CHLOROFORM	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-BUTANONE	--	--	--	--	--	--	--	--	3 J	--	--	--	--	--
1,1,1-TRICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CARBON TETRACHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VINYL ACETATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BROMODICHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROPROPANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CIS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TRICHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIBROMOCHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2-TRICHLOROETHANE	--	--	--	--	--	--	--	--	5 J	2 J	5 J	--	--	--
BENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TRANS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BROMOFORM	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-HEXANONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-METHYL-2-PENTANONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TETRACHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	--	--	--	--	--	--	--	--	--	3 J	84 B	--	1 B	--
TOLUENE	82 B	2 B	--	2 B	--	--	--	--	--	--	--	--	--	--
CHLOROBENZENE	--	--	--	--	--	--	--	--	5 J	4 J	10	--	--	--
ETHYLBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
STYRENE	--	--	--	--	220 B	--	--	--	66 B	42	88 B	--	--	--
TOTAL XYLENES	--	--	--	--	--	--	--	--	--	--	--	--	--	--

NOTES:
- B = Blank contamination.
- J = Estimated value.
- -- = < contract required detection limit.
- * = Potential contaminant, see narrative.

File: W-MWVOC.WK1

VOLATILE ORGANIC COMPOUNDS - GROUNDWATER

Sample Location:	MW02M-02	MW02D-01	MW02D-02	MWB2-01	MWB2-02	MW03S-01	MW03S-02	FRMW03S-02	MWFB03-01	MW03M-01	MW03M-02	MW03D-01	MW03D-02
Sample Number:	EBP94	EBP22	EBP95	EBP38	EEF09	EBP17	EEF00	EEF01	EBP55	EBP30	EEF02	EBP21	EEF03
Date Sampled:	06-12-89	04-17-89	06-12-89	04-19-89	06-13-89	04-17-89	06-13-89	06-13-89	04-20-89	04-17-89	06-13-89	04-18-89	06-13-89
CRL Number:	89ZC40S27	89ZC02S07	89ZC40S28	89ZC02S22	89ZC40S38	89ZC02S01	89ZC40S23	89ZC40D23	89ZC02R04	89ZC02S02	89ZC40S32	89ZC02S10	89ZC40S33
Laboratory:	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED Round 2	S-CUBED	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2
ORGANIC COMPOUNDS (ug/l)													
VOLATILE													
CHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
BROMOMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
VINYL CHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--	--
CHLOROETHANE	--	--	--	--	--	7 J	--	--	--	--	--	--	--
METHYLENE CHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--	--
ACETONE	--	--	--	--	--	--	--	--	--	--	--	--	--
CARBON DISULFIDE	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-DICHLOROETHENE	--	--	--	--	--	15	--	--	--	--	--	--	--
1,1-DICHLOROETHANE	--	--	--	--	--	190	250 J	190	--	--	--	5 J	--
1,2-DICHLOROETHENE (TOTAL)	--	--	--	--	--	180	250 J	180	--	--	--	--	--
CHLOROFORM	--	--	--	--	--	--	--	--	17	--	--	--	--
1,2-DICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
2-BUTANONE	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,1-TRICHLOROETHANE	--	--	--	--	--	240	450 J	360 J	--	--	--	--	--
CARBON TETRACHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--	--
VINYL ACETATE	--	--	--	--	--	--	--	--	--	--	--	--	--
BROMODICHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROPROPANE	--	--	--	--	--	--	--	--	--	--	--	--	--
CIS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	--	--	--	--	--	--
TRICHLOROETHENE	--	--	--	--	--	11	14	13	--	--	--	--	--
DIBROMOCHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2-TRICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZENE	--	--	--	--	--	13	11	12	--	--	--	--	--
TRANS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	--	--	--	--	--	--
BROMOFORM	--	--	--	--	--	--	--	--	--	--	--	--	--
2-HEXANONE	--	--	--	--	--	--	--	--	--	--	--	--	--
4-METHYL-2-PENTANONE	--	--	--	--	--	--	--	--	--	--	--	--	--
TETRACHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
TOLUENE	--	--	--	19	21	8300 J	20000 J	18000	--	140 B	230 •	160 B	9 B
CHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	--	2 J	--	--	--	210	230 J	--	--	--	--	230	--
STYRENE	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL XYLENES	--	--	--	--	--	2300 J	1800	1700 •	--	--	62 •	450 B	--

NOTES:
- B = Blank contamination.
- J = Estimated value.
- -- = < contract required detection limit.
- • = Potential contaminant. see narrative.

File: W-MWVOC.WK1

VOLATILE ORGANIC COMPOUNDS - GROUNDWATER

Sample Location:	MWB3-01	MWB3-02	MW4S-01	MW4S-02	MWB4S-01	MWB4S-02	MWB4D-01	MWB4D-02	MW05S-01	MW05S-02	MW06M-01	MW06M-02	MW7M-01	MW7M-02
Sample Number:	EBP39	EEF12	EBP26	EBP96	EBP20	EEF04	EBP23	EEF05	EBP28	EEF24	EBP31	EEF14	EBP24	EBP97
Date Sampled:	04-19-89	06-14-89	04-17-89	06-13-89	04-18-89	06-13-89	04-18-89	06-13-89	04-18-89	06-14-89	04-17-89	06-14-89	04-18-89	06-13-89
CRL Number:	89ZC02S21	89ZC40S48	89ZC02S03	89ZC40S29	89ZC02S08	89ZC40S34	89ZC02S09	89ZC40S31	89ZC02S11	89ZC40S43	89ZC02S04	89ZC40S50	89ZC02S12	89ZC40S30
Laboratory:	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2
ORGANIC COMPOUNDS (ug/l)														
VOLATILE														
CHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BROMOMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VINYL CHLORIDE	--	--	--	--	53	45	--	--	--	--	20	51	--	--
CHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
METHYLENE CHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACETONE	--	--	--	--	--	--	--	--	--	2 J	--	--	--	--
CARBON DISULFIDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-DICHLOROETHENE	--	--	--	--	760	1200	3 J	39	570	800	36	43	--	--
1,1-DICHLOROETHANE	--	--	--	--	260	320 J	--	--	27	21	5	--	--	--
1,2-DICHLOROETHENE (TOTAL)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHLOROFORM	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-BUTANONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,1-TRICHLOROETHANE	--	--	5 J	--	3 J	3 J	--	--	7	8	--	--	--	--
CARBON TETRACHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VINYL ACETATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BROMODICHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROPROPANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CIS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TRICHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIBROMOCHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2-TRICHLOROETHANE	--	--	--	--	10	12	--	--	7	6	--	--	--	--
BENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TRANS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BROMOFORM	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-HEXANONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-METHYL-2-PENTANONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TETRACHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	--	--	--	--	--	--	--	--	8300 J	11000 J	--	3 B	--	2 J
TOLUENE	10	3 B	530 J	270	5300 J	14000 J	--	--	--	--	--	--	--	--
CHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	--	--	42	35	160	160	31	27	160	150	--	--	--	--
STYRENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL XYLENES	--	--	350 B	300	1300 J	1800	64 B	37	1400 J	1700	--	--	--	--

NOTES:
- B = Blank contamination.
- J = Estimated value.
- -- = < contract required detection limit.
- • = Potential contaminant, see narrative.

File: W-MWVOC.WK1

VOLATILE ORGANIC COMPOUNDS - GROUNDWATER

Sample Location:	FRMW7M-01	FRMW7M-02	MW08S-01	MW08S-02	MW08M-01	MW08M-02	MW08D-01	MW08D-02	MW09M-01	MW09M-02	FRMW09M-02	MW10M-01	MW10M-02	MW11M-01
Sample Number:	EBP25	EBP98	EBP34	EEF10	EBP35	EEF11	EBP33	EEF17	EBP54	EEF18	EEF19	EBP53	EEF20	EBP56
Date Sampled:	04-18-89	06-13-89	04-19-89	06-13-89	04-19-89	06-13-89	04-19-89	06-14-89	04-20-89	06-14-89	06-14-89	04-20-89	06-14-89	04-20-89
CRL Number:	89ZC02D12	89ZC40D30	89ZC02S16	89ZC40S39	89ZC02S17	89ZC40S40	89ZC02S14	89ZC40S45	89ZC02S33	89ZC40S42	89ZC40D42	89ZC02S32	89ZC40S41	89ZC02S35
Laboratory:	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED
ORGANIC COMPOUNDS (ug/l)														
VOLATILE														
CHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BROMOMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VINYL CHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
METHYLENE CHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACETONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CARBON DISULFIDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-DICHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-DICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROETHENE (TOTAL)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHLOROFORM	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-BUTANONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,1-TRICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CARBON TETRACHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VINYL ACETATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BROMODICHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROPROPANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CIS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TRICHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIBROMOCHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2-TRICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TRANS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BROMOFORM	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-HEXANONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-METHYL-2-PENTANONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TETRACHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOLUENE	--	--	--	17	--	14	--	--	--	--	2 B	--	--	--
CHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
STYRENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL XYLENES	--	--	--	--	--	--	--	--	--	--	--	--	--	--

NOTES:
- B = Blank contamination.
- J = Estimated value.
- -- = < contract required detection limit.
- • = Potential contaminant, see narrative.

File: W-MWVOC.WK1

24-Oct-89

VOLATILE ORGANIC COMPOUNDS - GROUNDWATER

Sample Location:	FRMW11M-01	MW11M-02	MW12S-01	MW12S-02	MW13S-01	MW13S-02	MW14S-01	MW14S-02	MW20S-01	MW20D-01	MW21S-01
Sample Number:	EBP57	EEF21	EBP41	EEF06	EBP40	EEF07	EBP58	EEF13	EBP60	EBP61	EBP62
Date Sampled:	04-20-89	06-14-89	04-19-89	06-13-89	04-19-89	06-13-89	04-20-89	06-14-89	04-20-89	04-20-89	04-20-89
CRL Number:	89ZC02D35	89ZC40S44	89ZC02S19	89ZC40S35	89ZC02S20	89ZC40S36	89ZC02S31	89ZC40S49	89ZC02S34	89ZC02S36	89ZC02S37
Laboratory:	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED	S-CUBED
ORGANIC COMPOUNDS (ug/l)											
VOLATILE											
CHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--
BROMOMETHANE	--	--	--	--	--	--	--	--	--	--	--
VINYL CHLORIDE	--	--	--	--	--	--	--	--	--	--	15
CHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--
METHYLENE CHLORIDE	--	--	--	--	--	--	--	--	--	--	--
ACETONE	--	--	--	--	--	--	--	--	--	--	--
CARBON DISULFIDE	--	--	--	--	--	--	--	--	--	--	--
1,1-DICHLOROETHENE	--	--	--	--	--	--	--	--	--	--	490
1,1-DICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROETHENE (TOTAL)	--	--	--	--	--	--	--	--	--	--	--
CHLOROFORM	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--
2-BUTANONE	--	--	--	--	--	--	--	--	--	--	--
1,1,1-TRICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--
CARBON TETRACHLORIDE	--	--	--	--	--	--	--	--	--	--	--
VINYL ACETATE	--	--	--	--	--	--	--	--	--	--	--
BROMODICHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROPROPANE	--	--	--	--	--	--	--	--	--	--	--
CIS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	--	--	--	--
TRICHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--
DIBROMOCHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--
1,1,2-TRICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--
BENZENE	--	--	--	--	--	--	--	--	--	--	--
TRANS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	--	--	--	--
BROMOFORM	--	--	--	--	--	--	--	--	--	--	--
2-HEXANONE	--	--	--	--	--	--	--	--	--	--	--
4-METHYL-2-PENTANONE	--	--	--	--	--	--	--	--	--	--	--
TETRACHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--
TOLUENE	--	--	--	--	--	--	--	--	--	--	--
CHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	--	--	--	--	--	--	--	--	--	--	--
STYRENE	--	--	--	--	--	--	--	--	--	--	--
TOTAL XYLENES	--	--	--	--	--	--	--	--	--	--	--

NOTES:
- B = Blank contamination.
- J = Estimated value.
- -- = < contract required detection limit.
- • = Potential contaminant, see narrative.

File: W-MWVOC.WK1

SEMI-VOLATILES - GROUNDWATER

Sample Location:	MWB1-01	MWB1-02	MWFB01-01	MWFB01-02	MW1M-01	MW1M-02	MW1S-01	MW1S-02	MWB2-01	MWB2-02	MWFB02-01	MWFB02-02	MW02D-01	MW02D-02
Sample Number:	EBP36	EEF08	EBP37	EEF22	EBP32	EEF16	EBP32	EEF15	EBP38	EEF09	EBP49	EEF23	EBP22	EBP95
Date Sampled:	04-19-89	06-13-89	04-17-89	06-14-89	04-19-89	06-14-89	04-19-89	06-14-89	04-19-89	06-13-89	04-19-89	06-14-89	04-17-89	06-12-89
CRL Number:	89ZC02S15	89ZC40S37	89ZC02R01	89ZC40R04	89ZC02S18	89ZC40S47	89ZC02S18	89ZC40S46	89ZC02S22	89ZC40S38	89ZC02R02	89ZC40R03	89ZC02S07	89ZC40S28
Laboratory:	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2
ORGANIC COMPOUNDS (ug/l)														
SEMIVOLATILE														
PHENOL	--	--	--	--	--	--	130	--	--	3 B	--	--	--	--
BIS(2-CHLOROETHYL)ETHER	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-CHLOROPHENOL	--	--	--	--	--	--	150	--	--	--	--	--	--	--
1,3-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-DICHLOROBENZENE	--	--	--	--	--	--	62	--	--	--	--	--	--	--
BENZYL ALCOHOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROISOPROPYL)ETHER	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-NITROSO-DI-n-PROPLYAMINE	--	--	--	--	--	--	71	--	--	--	--	--	--	--
HEXACHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NITROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ISOPHORONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-NITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DIMETHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZOIC ACID	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROETHOXY)METHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-TRICHLOROBENZENE	--	--	--	--	--	--	70	--	--	--	--	--	--	--
NAPHTHALENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLOROANILINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBUTADIENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLORO-3-METHYLPHENOL	--	--	--	--	--	--	120	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROCYCLOPENTADIENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,5-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-CHLORONAPHTHALENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIMETHYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-DINITROTOLUENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	--	--	--	--	--	--	84	--	--	--	--	--	--	--
2,4-DINITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-NITROPHENOL	--	--	--	--	--	--	160	--	--	--	--	--	--	--
DIBENZOFURAN	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DINITROTOLUENE	--	--	--	--	--	--	78	--	--	--	--	--	--	--
DIETHYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLOROPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,6-DINITRO-2-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-NITROSODIPHENYLAMINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-BROMOPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PENTACHLOROPHENOL	--	--	--	--	--	--	100	--	--	--	--	--	--	--
PHENANTHRENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DI-N-BUTYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PYRENE	--	--	--	--	--	--	74	--	--	--	--	--	--	--
BUTYL BENZYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3-DICHLOROBENZIDINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	5 J
DI-N-OCTYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENES	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENES	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZ(A,H)ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(GHI)PERYLENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--

NOTES:
B = Blank contamination.
J = Estimated value.
-- = < contract required detection limit.

File: W-MWBNA.W

24-Oct-89

SEMI-VOLATILES - GROUNDWATER

Sample Location:	MW02S-01	MW02S-02	FRMW02S-01	MW02M-01	MW02M-02	MWB3-01	MWB3-02	MWFB03-01	MW03D-01	MW03D-02	MW03M-01	MW03M-02	MW03S-01	MW03S-02
Sample Number:	EBP18	EBP93	EBP19	EBP29	EBP94	EBP39	EEF12	EBP55	EBP21	EEF03	EBP30	EEF02	EBP17	EEF00
Date Sampled:	04-17-89	06-12-89	04-17-89	04-17-89	06-12-89	04-19-89	06-14-89	04-20-89	04-18-89	06-13-89	04-17-89	06-13-89	04-17-89	06-13-89
CRL Number:	89ZC02S05	89ZC40S26	89ZC02D05	89ZC02S06	89ZC40S27	89ZC02S21	89ZC40S48	89ZC02R04	89ZC02S10	89ZC40S33	89ZC02S02	89ZC40S32	89ZC02S01	89ZC40S23
Laboratory:	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2
ORGANIC COMPOUNDS (ug/l)														
SEMIVOLATILE														
PHENOL	--	--	--	--	--	--	--	6 J	--	--	--	--	--	--
BIS(2-CHLOROETHYL)ETHER	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-CHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-DICHLOROBENZENE	2 J	--	--	--	--	--	--	--	--	--	--	--	--	16
BENZYL ALCOHOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	56 J	88
2-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROISOPROPYL)ETHER	--	--	--	--	--	--	--	--	--	--	--	--	64 J	78
4-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-NITROSO-DI-n-PROPLYAMINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NITROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ISOPHORONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-NITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	8 J
2,4-DIMETHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	23 J
BENZOIC ACID	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROETHOXY)METHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-TRICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	56 J	40
NAPHTHALENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLOROANILINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBUTADIENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLORO-3-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	14 J	9 J
2-METHYLNAPHTHALENE	--	--	2 J	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROCYCLOPENTADIENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,5-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-CHLORONAPHTHALENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIMETHYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-DINITROTOLUENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DINITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-NITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZOFURAN	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DINITROTOLUENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIETHYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLOROPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,6-DINITRO-2-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-NITROSODIPHENYLAMINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-BROMOPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PENTACHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	--	--	--	--	--	--	--	--	--	--	--	--	5 J	--
ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DI-N-BUTYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PYRENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BUTYL BENZYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3-DICHLOROBENZIDINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	--	--	--	--	7 J	--	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DI-N-OCTYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENES	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENES	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZ(A,H)ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(GHI)PERYLENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--

NOTES:
B = Blank contamination.
J = Estimated value.
-- = < contract required detection limit.

File: W-MWBNA.WK1

SEMI-VOLATILES - GROUNDWATER

Sample Location:	FRMW03S-02	MWB4D-01	MWB4D-02	MWB4S-01	MWB4S-02	MW4S-01	MW4S-02	MW05S-01	MW05S-02	MW06M-01	MW06M-02	MW7M-01	MW7M-02	FRMW7M-01
Sample Number:	EEF01	EBP23	EEF05	EBP20	EEF04	EBP26	EBP96	EBP28	EEF24	EBP31	EEF14	EBP24	EBP97	EBP25
Date Sampled:	06-13-89	04-18-89	06-13-89	04-18-89	06-13-89	04-17-89	06-13-89	04-18-89	06-14-89	04-17-89	06-14-89	04-18-89	06-13-89	04-18-89
CRL Number:	89ZC40D23	89ZC02S09	89ZC40S31	89ZC02S08	89ZC40S34	89ZC02S03	89ZC40S29	89ZC02S11	89ZC40S43	89ZC02S04	89ZC40S50	89ZC02S12	89ZC40S30	89ZC02D12
Laboratory:	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED
ORGANIC COMPOUNDS (ug/l)														
SEMIVOLATILE														
PHENOL	--	--	--	--	--	--	--	6 J	--	--	--	--	--	--
BIS(2-CHLOROETHYL)ETHER	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-CHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZYL ALCOHOL	160	--	--	8 J	--	--	--	21	13	--	--	--	--	--
1,2-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLPHENOL	91	--	--	--	17	--	--	58	30	--	--	--	--	--
BIS(2-CHLOROISOPROPYL)ETHER	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-METHYLPHENOL	93	--	--	--	41	--	55	110	40	--	--	--	--	--
N-NITROSO-DI-n-PROPLYAMINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NITROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ISOPHORONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-NITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DIMETHYLPHENOL	8 J	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZOIC ACID	22 J	--	--	20 J	10 J	--	8 J	71	11 J	--	--	--	--	--
BIS(2-CHLOROETHOXY)METHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-TRICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE	43	--	--	39	45	23	20	47	51	--	--	--	--	--
4-CHLOROANILINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBUTADIENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLORO-3-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE	11	4 J	--	14	23	9 J	7 J	10	15	--	--	--	--	--
HEXACHLOROCYCLOPENTADIENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,5-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-CHLORONAPHTHALENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIMETHYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-DINITROTOLUENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DINITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-NITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZOFURAN	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DINITROTOLUENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIETHYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLOROPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,6-DINITRO-2-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-NITROSODIPHENYLAMINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-BROMOPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PENTACHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DI-N-BUTYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PYRENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BUTYL BENZYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3-DICHLOROBENZIDINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	--	--	--	--	19	--	3 J	--	--	--	--	--	--	--
DI-N-OCTYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENES	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENES	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZ(A,H)ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(GHI)PERYLENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--

NOTES:
B = Blank contamination.
J = Estimated value.
-- = < contract required detection limit.

File: W-MWBNA..

SEMI-VOLATILES - GROUNDWATER

Sample Location:	FRMW7M-02	MW08D-01	MW08D-02	MW08M-01	MW08M-02	MW08S-01	MW08S-02	MW09M-01	MW09M-02	FRMW09M-02	MW10M-01	MW10M-02	MW11M-01	FRMW11M-01
Sample Number:	EBP98	EBP33	EEF17	EBP35	EEF11	EBP34	EEF10	EBP54	EEF18	EEF19	EBP53	EEF20	EBP56	EBP57
Date Sampled:	06-13-89	04-19-89	06-14-89	04-19-89	06-13-89	04-19-89	06-13-89	04-20-89	06-14-89	06-14-89	04-20-89	06-14-89	04-20-89	04-20-89
CRL Number:	89ZC40D30	89ZC02S14	89ZC40S45	89ZC02S17	89ZC40S40	89ZC02S16	89ZC40S39	89ZC02S33	89ZC40S42	89ZC40D42	89ZC02S32	89ZC40S41	89ZC02S35	89ZC02D35
Laboratory:	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED
ORGANIC COMPOUNDS (ug/l)														
SEMIVOLATILE														
PHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROETHYL)ETHER	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-CHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZYL ALCOHOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROISOPROPYL)ETHER	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-NITROSO-DI-n-PROPLYAMINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NITROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ISOPHORONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-NITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DIMETHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZOIC ACID	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROETHOXY)METHANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-TRICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLOROANILINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBUTADIENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLORO-3-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROCYCLOPENTADIENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,5-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-CHLORONAPHTHALENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIMETHYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-DINITROTOLUENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DINITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-NITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZOFURAN	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DINITROTOLUENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIETHYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLOROPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,6-DINITRO-2-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-NITROSODIPHENYLAMINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-BROMOPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PENTACHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DI-N-BUTYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PYRENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BUTYL BENZYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3-DICHLOROBENZIDINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DI-N-OCTYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENES	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENES	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZ(A,H)ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(GHI)PERYLENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--

NOTES:
B = Blank contamination.
J = Estimated value.
-- = < contract required detection limit.

File: W-MWBNA.WK1

SEMI-VOLATILES - GROUNDWATER

Sample Location:	MW11M-02	MW12S-01	MW12S-02	MW13S-01	MW13S-02	MW14S-01	MW14S-02	MW20S-01	MW20D-01	MW21S-01
Sample Number:	EEF21	EBP41	EEF06	EBP40	EEF07	EBP58	EEF13	EBP60	EBP61	EBP62
Date Sampled:	06-14-89	04-19-89	06-13-89	04-19-89	06-13-89	04-20-89	06-14-89	04-20-89	04-20-89	04-20-89
CRL Number:	89ZC40S44	89ZC02S19	89ZC40S35	89ZC02S20	89ZC40S36	89ZC02S31	89ZC40S49	89ZC02S34	89ZC02S36	89ZC02S37
Laboratory:	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED	S-CUBED
ORGANIC COMPOUNDS (ug/l)										
SEMIVOLATILE										
PHENOL	--	--	2 B	--	--	--	--	--	--	--
BIS(2-CHLOROETHYL)ETHER	--	--	--	--	--	--	--	--	--	--
2-CHLOROPHENOL	--	--	--	--	--	--	--	--	--	--
1,3-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--
1,4-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--
BENZYL ALCOHOL	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--
2-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROISOPROPYL)ETHER	--	--	--	--	--	--	--	--	--	--
4-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--
N-NITROSO-DI-n-PROPLYAMINE	--	--	--	--	--	--	--	--	--	--
HEXACHLOROETHANE	--	--	--	--	--	--	--	--	--	--
NITROBENZENE	--	--	--	--	--	--	--	--	--	--
ISOPHORONE	--	--	--	--	--	--	--	--	--	--
2-NITROPHENOL	--	--	--	--	--	--	--	--	--	--
2,4-DIMETHYLPHENOL	--	--	--	--	--	--	--	--	--	--
BENZOIC ACID	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROETHOXY)METHANE	--	--	--	--	--	--	--	--	--	--
2,4-DICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--
1,2,4-TRICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE	--	--	--	--	--	--	--	--	--	--
4-CHLOROANILINE	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBUTADIENE	--	--	--	--	--	--	--	--	--	--
4-CHLORO-3-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE	--	--	--	--	--	--	--	--	--	--
HEXACHLOROCYCLOPENTADIENE	--	--	--	--	--	--	--	--	--	--
2,4,6-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--
2,4,5-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--
2-CHLORONAPHTHALENE	--	--	--	--	--	--	--	--	--	--
2-NITROANILINE	--	--	--	--	--	--	--	--	--	--
DIMETHYL PHTHALATE	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	--	--	--	--	--	--	--	--	--	--
2,6-DINITROTOLUENE	--	--	--	--	--	--	--	--	--	--
3-NITROANILINE	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	--	--	--	--	--	--	--	--	--	--
2,4-DINITROPHENOL	--	--	--	--	--	--	--	--	--	--
4-NITROPHENOL	--	--	--	--	--	--	--	--	--	--
DIBENZOFURAN	--	--	--	--	--	--	--	--	--	--
2,4-DINITROTOLUENE	--	--	--	--	--	--	--	--	--	--
DIETHYL PHTHALATE	--	--	--	--	--	--	--	--	--	--
4-CHLOROPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--	--
FLUORENE	--	--	--	--	--	--	--	--	--	--
4-NITROANILINE	--	--	--	--	--	--	--	--	--	--
4,6-DINITRO-2-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--
N-NITROSODIPHENYLAMINE	--	--	--	--	--	--	--	--	--	--
4-BROMOPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBENZENE	--	--	--	--	--	--	--	--	--	--
PENTACHLOROPHENOL	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	--	--	--	--	--	--	--	--	--	--
DI-N-BUTYL PHTHALATE	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	--	--	--	--	--	--	--	--	--	--
PYRENE	--	--	--	--	--	--	--	--	--	--
BUTYL BENZYL PHTHALATE	--	--	--	--	--	--	--	--	--	--
3,3-DICHLOROBENZIDINE	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	--	--	--	--	--	--	--	--	--	--
CHRYSENE	--	--	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	--	--	--	--	--	--	--	--	--	--
DI-N-OCTYL PHTHALATE	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENES	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENES	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	--	--	--	--	--	--	--	--	--	--
DIBENZ(A,H)ANTHRACENE	--	--	--	--	--	--	--	--	--	--
BENZO(GHI)PERYLENE	--	--	--	--	--	--	--	--	--	--

NOTES:
B = Blank contamination.
J = Estimated value.
-- = < contract required detection limit.

File: W-MWINA 1

PESTICIDE/PCBs - GROUNDWATER

Sample Location:	MWB1-01	MWB1-02	MWFB01-01	MWFB01-02	MW1M-01	MW1M-02	MW1S-01	MW1S-02	MWB2-01	MWB2-02	MWFB02-01	MWFB02-02	MW02D-01	MW02D-02
Sample Number:	EBP36	EEF08	EBP27	EEF22	EBP37	EEF16	EBP32	EEF15	EBP38	EEF09	EBP49	EEF23	EBP22	EBP95
Date Sampled:	04-19-89	06-13-89	04-17-89	06-14-89	04-19-89	06-14-89	04-19-89	06-14-89	04-19-89	06-13-89	04-19-89	06-14-89	04-17-89	06-12-89
CRL Number:	89ZC02S15	89ZC40S37	89ZC02R01	89ZC40R04	89ZC02S13	89ZC40S47	89ZC02S18	89ZC40S46	89ZC02S22	89ZC40S38	89ZC02R02	89ZC40R03	89ZC02S07	89ZC40S28
Laboratory:	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2
ORGANIC COMPOUNDS (ug/l)														
PESTICIDES and PCBs														
ALPHA-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BETA-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DELTA-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GAMMA-BHC (LINDANE)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ALDRIN	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN I	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4-DDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN II	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4-DDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	0.12 J	--	--	--	--	--	--	--	--	--	--	--	--	--
4 4-DDT	--	--	--	--	--	--	--	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHLORDANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1016	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	--	--	--	--	--	--	--	--	--	--	--	--	--	--

NOTES:

-- = Not detected at detection limit.

R = Unusable.

B = Blank contamination.

J = Estimated value.

File: W-MWPCB.WK1

PESTICIDE/PCBs - GROUNDWATER

Sample Location:	MW02M-01	MW02M-02	MW02S-01	FRMW02S-01	MW02S-02	MWB3-01	MWB3-02	MWFB03-01	MW03D-01	MW03D-02	MW03M-01	MW03M-02	MW03S-01	MW03S-02
Sample Number:	EBP29	EBP94	EBP18	EBP19	EBP93	EBP39	EEF12	EBP55	EBP21	EEF03	EBP30	EEF02	EBP17	EEF00
Date Sampled:	04-17-89	06-12-89	04-17-89	04-17-89	06-12-89	04-19-89	06-14-89	04-20-89	04-18-89	06-13-89	04-17-89	06-13-89	04-17-89	06-13-89
CRL Number:	89ZC02S06	89ZC40S27	89ZC02S05	89ZC02D05	89ZC40S26	89ZC02S21	89ZC40S48	89ZC02R04	89ZC02S10	89ZC40S33	89ZC02S02	89ZC40S32	89ZC02S01	89ZC40S23
Laboratory:	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2
ORGANIC COMPOUNDS (ug/l)														
PESTICIDES and PCBs														
ALPHA-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BETA-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DELTA-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GAMMA-BHC (LINDANE)	--	--	--	--	--	--	0.02 R	--	--	0.04 R	--	--	--	0.04 R
HEPTACHLOR	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ALDRIN	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN I	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4-DDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN II	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4-DDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4-DDT	--	--	--	--	--	--	--	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHLORDANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1016	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	--	--	--	--	--	--	--	--	--	--	--	--	--	--

NOTES:

-- = Not detected at detection limit.

R = Unusable.

B = Blank contamination.

J = Estimated value.

File: W-MWPCB.WK1

PESTICIDE/PCBs - GROUNDWATER

Sample Location:	MW03S-02	MWB4D-01	MWB4D-02	MWB4S-01	MWB4S-02	MW4S-01	MW4S-02	MW05S-01	MW05S-02	MW06M-01	MW06M-02	MW7M-01	MW7M-02	FRMW7M-01
Sample Number:	EEF01	EBP23	EEF05	EBP20	EEF04	EBP26	EBP96	EBP28	EEF24	EBP31	EEF14	EBP24	EBP97	EBP25
Date Sampled:	06-13-89	04-18-89	06-13-89	04-18-89	06-13-89	04-17-89	06-13-89	04-18-89	06-14-89	04-17-89	06-14-89	04-18-89	06-13-89	04-18-89
CRL Number:	89ZC40D23	89ZC02S09	89ZC40S31	89ZC02S08	89ZC40S34	89ZC02S03	89ZC40S29	89ZC02S11	89ZC40S43	89ZC02S04	89ZC40S50	89ZC02S12	89ZC40S30	89ZC02D12
Laboratory:	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED	S-CUBED Round 2	S-CUBED
ORGANIC COMPOUNDS (ug/l)														
PESTICIDES and PCBs														
ALPHA-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BETA-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DELTA-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GAMMA-BHC (LINDANE)	--	--	--	--	--	--	0.14 B	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ALDRIN	--	--	--	--	--	--	0.06 J	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN I	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4-DDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN II	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4-DDD	--	--	--	--	--	0.38 J	1.20 J	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	0.22 J	--	--	--	--	--	--	--	--	--
4,4-DDT	--	--	--	--	--	--	--	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHLORDANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1016	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	--	--	--	--	--	--	--	--	--	--	--	--	--	--

NOTES:

-- = Not detected at detection limit.

R = Unusable.

B = Blank contamination.

J = Estimated value.

File: W-MWPCB.WK1

PESTICIDE/PCBs - GROUNDWATER

Sample Location:	FRMW7M-02	MW08D-01	MW08D-02	MW08M-01	MW08M-02	MW08S-01	MW08S-02	MW09M-01	MW09M-02	FRMW09M-02	MW10M-01	MW10M-02	MW11M-01	FRMW11M-01
Sample Number:	EBP98	EBP33	EEF17	EBP35	EEF11	EBP34	EEF10	EBP54	EEF18	EEF19	EBP53	EEF20	EBP56	EBP57
Date Sampled:	06-13-89	04-19-89	06-14-89	04-19-89	06-13-89	04-19-89	06-13-89	04-20-89	06-14-89	06-14-89	04-20-89	06-14-89	04-20-89	04-20-89
CRL Number:	89ZC40D30	89ZC02S14	89ZC40S45	89ZC02S17	89ZC40S40	89ZC02S16	89ZC40S39	89ZC02S33	89ZC40S42	89ZC40D42	89ZC02S32	89ZC40S41	89ZC02S35	89ZC02D35
Laboratory:	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED
	Round 2		Round 2		Round 2		Round 2		Round 2	Round 2		Round 2		
ORGANIC COMPOUNDS (ug/l)														
PESTICIDES and PCBS														
ALPHA-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BETA-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DELTA-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GAMMA-BHC (LINDANE)	0.02 R	--	--	--	--	--	0.04 R	--	--	--	--	--	--	0.09 R
HEPTACHLOR	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ALDRIN	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN I	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4-DDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN II	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4-DDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4-DDT	--	--	--	--	--	--	--	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHLORDANE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1016	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	--	--	--	--	--	--	--	--	--	--	--	--	--	--

NOTES:

-- = Not detected at detection limit.

R = Unusable.

B = Blank contamination.

J = Estimated value.

File: W-MWPCB.WK1

24-Oct-89

PESTICIDE/PCBs - GROUNDWATER

Sample Location:	MW11M-02	MW12S-01	MW12S-02	MW13S-01	MW13S-02	MW14S-01	MW14S-02	MW20D-01	MW20S-01	MW21S-01
Sample Number:	EEF21	EBP41	EEF06	EBP40	EEF07	EBP58	EEF13	EBP61	EBP60	EBP62
Date Sampled:	06-14-89	04-19-89	06-13-89	04-19-89	06-13-89	04-20-89	06-14-89	04-20-89	04-20-89	04-20-89
CRL Number:	89ZC40S44	89ZC02S19	89ZC40S35	89ZC02S20	89ZC40S36	89ZC02S31	89ZC40S49	89ZC02S36	89ZC02S34	89ZC02S37
Laboratory:	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED
	Round 2		Round 2		Round 2		Round 2			
ORGANIC COMPOUNDS (ug/l)										
PESTICIDES and PCBs										
ALPHA-BHC	--	--	--	--	--	--	0.01 J	--	--	--
BETA-BHC	--	--	--	--	--	--	--	--	--	--
DELTA-BHC	--	--	--	--	--	--	--	--	--	--
GAMMA-BHC (LINDANE)	--	--	0.03 R	--	0.02 R	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--	--	--	--
ALDRIN	--	--	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN I	--	--	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--	--	--
4,4-DDE	--	--	--	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN II	--	--	--	--	--	--	--	--	--	--
4,4-DDD	--	--	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--	0.03 J	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--	--	--	--
4,4-DDT	--	--	--	--	--	--	--	--	0.05 J	--
METHOXYCHLOR	--	--	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--	--	--
CHLORDANE	--	--	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--	--	--	--
AROCLOR-1016	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	--	--	--	--	--	--	--	--	--	--

NOTES:

-- = Not detected at detection limit.
R = Unusable.
B = Blank contamination.
J = Estimated value.

File: W-MWPCB.WK1

INORGANICS - GROUNDWATER

Sample Location:	MWB01-01	MWB01-02	MWFB01-01	MWFB01-02	MW01S-01	MW01S-02	MW01M-01	MW01M-02	MWB02-01	MWB02-02	MWFB02-01	MWFB02-02	MW02S-01
ITR Sample Number:	MEBC36	MECW12	MEBC27	MECW26	MEBC32	MECW19	MEBC37	MECW20	MEBC38	MECW13	MEBC49	MECW27	MEBC18
Date Sampled:	04-19-89	06-13-89	04-18-89	06-14-89	04-19-89	06-14-89	04-19-89	06-14-89	04-19-89	06-13-89	04-19-89	06-14-89	04-18-89
CRL Number:	89ZC02S54	89ZC40S86	89ZC02R05	89ZC40R07	89ZC02S57	89ZC40S95	89ZC02S58	89ZC40S96	89ZC02S53	89ZC40S87	89ZC02R06	89ZC40R08	89ZC02S44
Laboratory:	RMAL	KEYSTONE Round 2	RMAL	KEYSTONE Round 2	RMAL	KEYSTONE Round 2	RMAL	KEYSTONE Round 2	RMAL	KEYSTONE Round 2	RMAL	KEYSTONE Round 2	RMAL
INORGANIC CHEMICALS (ug/l)													
ALUMINUM	119 J	--	--	54.4 J	--	--	--	--	103 J	--	--	--	1090
ANTIMONY	--	--	--	--	--	--	--	--	--	--	--	--	--
ARSENIC	6.1 J	2.1 J	--	-- R	1 J	-- R	9.8 J	10.1 J	29.2	-- R	--	-- R	9.5 J
BARIUM	275	274	8 J	10.3 J	59 J	37.7 J	289	257	2010	1600	--	17.2 J	352
BERYLLIUM	--	--	--	--	--	--	--	--	--	--	--	--	--
CADMIUM	--	--	--	--	5.2	--	--	--	5.2	--	--	5.5	--
CALCIUM	35000	36500	345 J	510 J	42500	38800	30800	27500	71300	61600	108 J	791 J	46300
CHROMIUM	--	--	--	--	--	--	--	--	--	--	--	--	24.8
COBALT	--	--	--	--	--	--	--	--	--	--	--	--	8.1 J
COPPER	--	--	--	--	5.4 J	--	--	--	--	--	5.2 J	--	8.3 J
IRON	14800	16100	72.3 J	45.8 B	163	69.2 B	4460	5260	79800	73600	--	45.8 J	55800
LEAD	--	--	--	--	--	--	--	--	1.8 J	--	2.1 J	--	7.6
CYANIDE	--	--	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	6570	6890	65.5 J	44.5 J	13700	13700	3380 J	3030 J	19500	16200	47.6 J	--	20600
MANGANESE	6230	7070	8.4 J	--	426	34.4	994	942	204	1690	--	6.1 J	1340
MERCURY	--	--	--	--	--	--	--	--	--	--	--	--	--
NICKEL	6.4 J	7.5 J	--	--	--	--	--	--	--	--	--	--	27.8 J
POTASSIUM	1780 J	2040 J	144 J	--	2320 J	2680 J	1360 J	1210 J	8380	7590	--	--	44600
SELENIUM	-- R	-- R	-- R	-- R	-- R	-- R	--	-- R	--	-- R	--	-- R	-- R
SILVER	--	--	--	--	--	--	--	--	--	--	--	--	--
SODIUM	4920 J	3340 J	--	1840 J	4830 J	4290 J	3030 J	3230 J	10900	9510	--	1260 J	41500
THALLIUM	--	--	--	--	--	--	--	--	--	--	--	--	--
VANADIUM	3.8 J	--	--	--	--	--	--	--	3.5 J	--	--	--	8.1 J
ZINC	9.4 J	--	14.7 J	8.9 B	28.5	--	7.6	--	7.4 J	--	6.5 J	9.6 B	49.8

NOTES:

B = Blank contamination.
J = Estimated value.
R = Unuseable data.
-- = < contract required detection limit.

File: W-MWINO.WK1

INORGANICS - GROUNDWATER

Sample Location:	MW02S-02	FRMW02S-01	MW02M-01	MW02M-02	MW02D-01	MW02D-02	MWB03-01	MWB03-02	MWFB03-01	MW03S-01	MW03S-02	FRMW03S-02	MW03M-01
ITR Sample Number:	MEBC93	MEBC19	MEBC29	MEBC94	MEBC22	MEBC95	MEBC39	MECW16	MEBC55	MEBC17	MECW04	MECW05	MEBC30
Date Sampled:	06-12-89	04-18-89	04-18-89	06-12-89	04-18-89	06-12-89	04-19-89	06-14-89	04-20-89	04-17-89	06-13-89	06-13-89	04-17-89
CRL Number:	89ZC02S71	89ZC02D44	89ZC02S45	89ZC02S88	89ZC02S46	89ZC02S72	89ZC02S52	89ZC40S90	89ZC02R08	89ZC02S38	89ZC40S80	89ZC40D80	89ZC02S39
Laboratory:	KEYSTONE Round 2	RMAL	RMAL	KEYSTONE Round 2	RMAL	KEYSTONE Round 2	RMAL	KEYSTONE Round 2	RMAL	RMAL	KEYSTONE Round 2	KEYSTONE Round 2	RMAL
INORGANIC CHEMICALS (ug/l)													
ALUMINUM	51 J	690	44.1 J	--	25.2 J	--	29.4 J	--	--	47.8 J	235	362	43.5 J
ANTIMONY	--	--	--	--	--	--	--	--	--	--	--	--	--
ARSENIC	3.1 J	9.1 J	19.4	18.8 J	2.4 J	3.3 J	6.1 J	4.8 J	--	19.4	24.1 J	22.1 J	68.4
BARIUM	376	348	1390	989	152 J	147 J	979	869	--	593	439	480	2760
BERYLLIUM	--	--	--	--	--	--	--	--	--	--	--	--	--
CADMIUM	12.6	6	--	--	--	--	--	--	--	--	--	--	--
CALCIUM	89200	45500	89300	64600	33200	30800	53900	49100	--	53200	49300	52500	50800
CHROMIUM	--	19.5	--	--	--	--	--	--	--	--	--	--	--
COBALT	19.6 J	7 J	--	--	--	--	--	7.2 J	--	16.6 J	15 J	12.4 J	5.8 J
COPPER	4.1 J	6.7 J	--	--	8.1 J	--	--	--	--	--	5.2 J	--	--
IRON	91300	54100	24700	16700	473	379	4080	5060	--	43000	39900	42900	27300
LEAD	3 B	8.6	8.1	1 J	--	1.8 J	--	--	--	--	2.1 J	1.9 J	--
CYANIDE	--	--	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	30800	20400	25100	19300	12700	12000	22900	22500	--	14600	13700	14700	19500
MANGANESE	3500	1300	972	680	1190	1120	3630	3180	--	3720	3870	4280	1260
MERCURY	-- R	--	--	-- R	--	-- R	--	--	--	--	-- R	-- R	--
NICKEL	18.7 J	23.3 J	7.4 J	--	5.4 J	--	--	--	--	19.8 J	15.1 J	10.8 J	6.3 J
POTASSIUM	60400	43800	1480 J	1270 J	988 J	846 J	16100	16000	--	17000	15500	16500	19700
SELENIUM	--	-- R	-- R	--	-- R	--	--	-- R	--	-- R	--	--	-- R
SILVER	--	--	--	--	--	--	--	--	--	--	--	--	--
SODIUM	60100	41400	5360	3910 J	2780 J	1850 J	7550	8100	--	14200	12900	13500	5910
THALLIUM	--	--	--	--	--	--	--	--	--	--	--	--	--
VANADIUM	--	6.4 J	--	--	--	--	--	--	--	3.4 J	--	--	--
ZINC	68.6	140	58.4	12.4 B	9.9 J	23 B	6.6 J	--	3.4	10.9 J	15.3 B	10.2 B	14.4 J

NOTES:

B = Blank contamination.
J = Estimated value.
R = Unuseable data.
-- = < contract required detection limit.

File: W-MWINO.WK1

INORGANICS - GROUNDWATER

Sample Location:	MW03M-02	MW03D-01	MW03D-02	MW04S-01	MW04S-02	MW04S-01	MW04S-02	MW04D-01	MW04D-02	MW05S-01	MW05S-02	MW06M-01	MW06M-02
ITR Sample Number:	MECW06	MEBC21	MECW07	MEBC26	MEBC96	MEBC20	MECW08	MEBC23	MECW09	MEBC28	MECW25	MEBC31	MECW18
Date Sampled:	06-13-89	04-18-89	06-13-89	04-18-89	06-13-89	04-18-89	06-13-89	04-18-89	06-13-89	04-18-89	06-14-89	04-18-89	06-14-89
CRL Number:	89ZC40S81	89ZC02S42	89ZC40S82	89ZC02S47	89ZC02S77	89ZC02S40	89ZC40S83	89ZC02S41	89ZC40S79	89ZC02S43	89ZC40S99	89ZC02S48	89ZC40S93
Laboratory:	KEYSTONE Round 2	RMAL	KEYSTONE Round 2	RMAL	KEYSTONE Round 2	RMAL	KEYSTONE Round 2	RMAL	KEYSTONE Round 2	RMAL	KEYSTONE Round 2	RMAL	KEYSTONE Round 2
INORGANIC CHEMICALS (ug/l)													
ALUMINUM	--	21.3 J	--	49.5 J	--	36.1 J	41 J	43 J	--	70 J	--	--	--
ANTIMONY	--	--	--	--	--	--	--	--	--	--	--	--	--
ARSENIC	65.7 J	6.9 J	6 J	10.2	13.4 J	12.8	13 J	14.7	14.3 J	8 J	4.1 J	1.1 J	-- R
BARIUM	2680	1140	838	401	623	582	434	682	584	347	129 J	1370	1390
BERYLLIUM	--	--	--	--	--	--	--	--	--	--	--	--	--
CADMIUM	--	--	--	--	--	--	--	--	--	--	--	--	--
CALCIUM	49900	77900	59000	143000	57600	66400	108000	71000	63600	81400	49600	68800	66300
CHROMIUM	--	--	--	--	--	--	--	--	--	--	--	--	--
COBALT	--	--	--	--	13.4 J	14.3 J	6 J	--	--	19.8 J	--	4.9 J	--
COPPER	--	--	--	--	--	6.5 J	--	--	--	--	--	--	--
IRON	30100	3560	2870	29500	25900	25100	37900	19400	18200	57800	2020	--	140 B
LEAD	--	--	1 J	--	1.3 J	--	1.1 J	--	2 J	--	--	--	--
CYANIDE	--	--	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	20300	25600	19900	28500	15800	17400	26100	29200	26600	40100	12100	15800	16000
MANGANESE	1160	4110	2910	1320	2470	3050	3390	521	471	6890	811	4500	4250
MERCURY	-- R	--	-- R	--	-- R	--	--	--	--	--	--	--	--
NICKEL	--	6.5 J	--	--	9.6 J	17 J	--	--	--	8.8 J	--	8.1 J	10.5 J
POTASSIUM	19800	2090 J	1840 J	[illegible]	13900	10300	20900	1570 J	1690 J	1810 J	921 J	1080 J	1110 J
SELENIUM	--	-- R	--	-- R	--	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R
SILVER	--	--	--	--	--	--	--	--	--	--	--	--	--
SODIUM	5040	5870	4560 J	3750 J	5020	5350	3340 J	5420	4260 J	2000 J	2550 J	6630	5950
THALLIUM	--	--	--	--	--	--	--	--	--	--	--	--	--
VANADIUM	--	--	--	--	--	--	--	--	--	--	--	--	--
ZINC	16.5 B	9.4 J	9.2 B	15.1 J	18 J	23.9	--	7.5 J	--	31.6	8.8 B	6.7 J	--

NOTES:

B = Blank contamination.
J = Estimated value.
R = Unuseable data.
-- = < contract required detection limit.

File: W-MWINO.WK1

INORGANICS - GROUNDWATER

Sample Location:	MW07M-01	MW07M-02	FRMW07M-01	FRMW07M-02	MW08S-01	MW08S-02	MW08M-01	MW08M-02	MW08D-01	MW08D-02	MW09M-01	MW09M-02	FRMW09M-02
ITR Sample Number:	MEBC24	MEBC97	MEBC25	MEBC98	MEBC34	MECW14	MEBC35	MECW15	MEBC33	MECW21	MEBC54	MECW22	MECW23
Date Sampled:	04-18-89	06-13-89	04-18-89	06-13-89	04-19-89	06-13-89	04-19-89	06-13-89	04-19-89	06-14-89	04-20-89	06-14-89	06-14-89
CRL Number:	89ZC02S49	89ZC02S78	89ZC02D49	89ZC02D78	89ZC02S55	89ZC40S91	89ZC02S56	89ZC40S89	89ZC02S59	89ZC40S94	89ZC02S69	89ZC40S98	89ZC40D98
Laboratory:	RMAL	KEYSTONE Round 2	RMAL	KEYSTONE Round 2	RMAL	KEYSTONE Round 2	RMAL	KEYSTONE Round 2	RMAL	KEYSTONE Round 2	RMAL	KETSTONE Round 2	KETSTONE Round 2
INORGANIC CHEMICALS (ug/l)													
ALUMINUM	--	--	33 J	--	--	81.3 J	--	--	--	--	27.8 J	--	--
ANTIMONY	--	--	--	--	--	--	--	--	--	--	--	--	--
ARSENIC	3.3 J	4.1 J	3.3 J	3.6 J	--	2.2 J	--	12.3 J	3.2 J	3.4 J	5.3 J	4.8 J	121 J
BARIUM	235	216	226	218	145 J	140 J	600	454	88.2 J	87.8 J	122 J	107 J	115 J
BERYLLIUM	--	--	--	--	--	--	--	--	--	--	--	--	--
CADMIUM	--	--	--	--	--	--	--	--	--	--	--	--	--
CALCIUM	49500	45000	47500	45300	72900	63300	65000	48200	42700	41300	53900	48900	49800
CHROMIUM	--	--	--	--	--	--	--	--	--	--	--	--	--
COBALT	--	--	--	--	8.7 J	9.6 J	--	--	--	--	--	--	--
COPPER	--	--	--	--	6.2 J	--	--	--	--	--	--	--	--
IRON	1140	1440	1160	1400	--	294	--	164 B	32.9 J	142 B	882	1030	958
LEAD	--	1.3 J	3.1 J	--	2.7 J	--	--	--	--	--	--	--	151
CYANIDE	--	--	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	11900	11100	11500	11200	25900	22600	17200	13000	13700	13600	13200	12300	12600
MANGANESE	718	582	682	577	5690	5270	3060	2130	2530	2480	991	729	759
MERCURY	--	-- R	--	-- R	--	--	--	--	--	--	--	--	-- R
NICKEL	--	--	6.1 J	--	19.9 J	18.7 J	8.7 J	9 J	5.1 J	--	--	--	--
POTASSIUM	1010 J	902 J	1030	969 J	2970 J	3580 J	1370 J	1220 J	1310 J	1240 J	1010 J	938 J	988 J
SELENIUM	-- R	--	-- R	--	-- R	-- R	-- R	-- R	-- R	-- R	--	-- R	3.1 J
SILVER	--	--	--	--	--	--	--	--	--	--	--	--	--
SODIUM	3140 J	2650 J	3440 J	2460 J	10300	13900	10500	8320	8280	5220	3360 J	2910 J	2940 J
THALLIUM	--	--	--	--	--	--	--	--	--	--	--	--	3.1 J
VANADIUM	--	--	--	--	--	--	--	--	--	--	--	--	--
ZINC	14.4 J	15.2 B	19.3 J	36.3 B	20.2	--	13.8 J	--	9 J	--	6.1 J	7.5 B	8.2 B

NOTES:

B = Blank contamination.
J = Estimated value.
R = Unuseable data.
-- = < contract required detection limit.

File: W-MWINO.WK1

INORGANICS - GROUNDWATER

Sample Location:	MW10M-01	MW10M-02	MW11M-01	MW11M-02	FRMW11M-01	MW12S-01	MW12S-02	MW13S-01	MW13S-02	MW14S-01	MW14S-02	MW20S-01	MW20D-01
ITR Sample Number:	MEBC53	MECW24	MEBC56	MECW28	MEBC57	MEBC41	MECW10	MEBC40	MECW11	MEBC58	MECW17	MEBC60	MEBC61
Date Sampled:	04-20-89	06-14-89	04-20-89	06-14-89	04-20-89	04-19-89	06-13-89	04-19-89	06-13-89	04-20-89	06-14-89	04-20-89	04-20-89
CRL Number:	89ZC02S68	89ZC40S97	89ZC02S70	89ZC41S01	89ZC02D70	89ZC02S50	89ZC40S84	89ZC02S51	89ZC40S85	89ZC02S74	89ZC40S92	89ZC02S71	89ZC02S72
Laboratory:	RMAL	KETSTONE Round 2	RMAL	KEYSTONE Round 2	RMAL	RMAL	KEYSTONE Round 2	RMAL	KEYSTONE Round 2	RMAL	KEYSTONE Round 2	RMAL	RMAL
INORGANIC CHEMICALS (ug/l)													
ALUMINUM	24 J	--	38.5 J	68.8 J	35.8 J	30.6 J	35 J	55.3 J	62.2 J	28.1 J	--	--	26.6 J
ANTIMONY	--	--	--	--	--	--	--	--	--	--	--	--	--
ARSENIC	--	-- R	3.6 J	12 J	4.6 J	--	-- R	--	3 J	--	-- R	3.5 J	--
BARIUM	141 J	132 J	143 J	357	145 J	14.9 J	17.2 J	11.3 J	15.8 J	134 J	152 J	1280	24.8 J
BERYLLIUM	--	--	--	--	--	--	--	--	--	--	--	--	--
CADMIUM	--	--	--	--	--	--	--	--	--	--	--	--	--
CALCIUM	76600	61800	54300	77100	54500	37500	35500	24500	25400	41900	47600	111000	71500
CHROMIUM	--	--	--	--	--	--	--	--	--	--	--	--	--
COBALT	--	--	--	17 J	--	--	--	--	--	--	--	--	--
COPPER	--	--	--	4.6 J	--	--	--	--	--	--	--	--	--
IRON	--	64.4 B	1690	62900	1660	--	132 B	95.0 J	204 B	3670	7410	456	2210
LEAD	--	--	--	-- R	--	--	--	--	1.8 J	--	--	2.0 J	--
CYANIDE	--	--	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	27600	22600	12600	37800	12800	15300	14800	10200	11000	10700	12900	40100	18000
MANGANESE	2780	2190	1040	5960	1050	7.5 J	--	19.1	23.6	952	1260	7710	100
MERCURY	--	--	--	-- R	--	--	--	--	--	--	--	--	--
NICKEL	9.2 J	7.5 J	--	--	--	--	--	--	--	--	--	5.6 J	--
POTASSIUM	1910	1930 J	1000 J	1690 J	945 J	397 J	419 J	350 J	737 J	5720	7150	3040 J	2450 J
SELENIUM	--	-- R	--	--	--	--	-- R	--	-- R	--	-- R	--	--
SILVER	--	--	--	--	--	--	--	--	--	--	--	--	--
SODIUM	41500	42200	3040 J	1570 J	3310 J	3290 J	7410	1830 J	2360 J	12700	15100	32600	8160
THALLIUM	--	--	--	--	--	--	--	--	--	--	--	--	--
VANADIUM	--	--	--	5.3 J	--	--	--	--	--	--	--	--	--
ZINC	10.1 J	6.6 B	14.2 J	24.3 B	2.7 J	9.6 J	8.2 B	5.8 J	8.8 B	5.8 J	6 B	491	12.6 J

NOTES:

B = Blank contamination.
J = Estimated value.
R = Unuseable data.
-- = < contract required detection limit.

File: W-MWINO.WK1

08-NOV-89

INORGANICS - GROUNDWATER

Sample Location:	MW21S-01
ITR Sample Number:	MEBC62
Date Sampled:	04-20-89
CRL Number:	89ZC02573
Laboratory:	RMAL

INORGANIC CHEMICALS (ug/l)	
ALUMINUM	--
ANTIMONY	--
ARSENIC	--
BARIUM	201
BERYLLIUM	--
CADMIUM	--
CALCIUM	80300
CHROMIUM	--
COBALT	4.3 J
COPPER	--
IRON	160
LEAD	--
CYANIDE	--
MAGNESIUM	39400
MANGANESE	3220
MERCURY	--
NICKEL	13.4 J
POTASSIUM	1990 J
SELENIUM	--
SILVER	--
SODIUM	6400
THALLIUM	--
VANADIUM	--
ZINC	1010

NOTES:

B = Blank contamination.
J = Estimated value.
R = Unuseable data.
-- = < contract required detection limit.

File: W-MWINO.WK1

SPECIAL ANALYTICAL SERVICES -
GROUNDWATER

SAMPLE LOCATION:	ON-MWB1-01	ON-MWB1-02	ON-MWFB01-01	ON-MWFB01-02	ON-MW1M-01	ON-MW1M-02	ON-MW1S-01	ON-MW1S-02	ON-MWB2-01	ON-MWB2-02	ON-MWFB02-01	ON-MWFB02-02
SAMPLE NUMBER:	4558E-20	4668E-15	4558E-13	4668E-25	4558E-24	4668E-24	4558E-23	4668E-23	4558E-19	4668E-16	4558E-25	4668E-27
DATE SAMPLED:	04/19/89	06/13/89	04/18/89	06/14/89	04/19/89	06/14/89	04/19/89	06/14/89	04/19/89	06/13/89	04/19/89	06/14/89
CRL NUMBER:	89ZC02S17	89ZC41S14	89ZC02R01	89ZC41R09	89ZC02S21	89ZC41S23	89ZC02S20	89ZC41S22	89ZC02S16	89ZC41S15	89ZC02R03	89ZC41R10
LABORATORY:	RMAL	Allied Round 2	RMAL	Allied Round 2	RMAL	Allied Round 2	RMAL	Allied Round 2	RMAL	Allied Round 2	RMAL	Allied Round 2
SAS ANALYSES (mg/l)												
TOTAL PHOSPHORUS	0.24		--		0.13		0.13		0.03 B		0.083	
SULFIDE (FILTRATES)	--		--		--		--		--		--	
SULFIDE (FILTERS)	--		--		--		--		--		--	
COD	15.2 J		--		9.6 J		6 J		25.6 J		--	
TOC	6.7		--		4.4		3.2		6.8		--	
TSS	2.5		--		3.0		68.0		145		--	
TDS	190 B		--		132 B		191 B		337 B		--	
NO2 + NO3	--		--		0.69 B		0.35		311 B		382	
NH3	0.33		--		0.30		0.19		7.1		--	
CHLORIDE	5.6		--		5.8		5.4		15.8		--	
SULFATE	30.3		--		6.0		12.2		--		--	
TOTAL ALKALINITY	--		--		82.1		140		293		--	
BOD	--		--		--		--		--		--	
OIL AND GREASE	--	0.5 J		< 0.4	--	< 0.4	--	< 0.4	--	< 0.4	--	< 0.4

NOTES:
B = Blank contamination.
J = Estimated value.
-- = < detection limit

File: SAS_MW.WK1

24-Oct-89

SPECIAL ANALYTICAL SERVICES -
GROUNDWATER

SAMPLE LOCATION:	ON-MW02D-01	ON-MW02D-02	ON-MW02M-01	ON-MW02M-02	ON-MW02S-01	ON-MW02S-02	ON-FRMW02S-01	ON-MWB3-01	ON-MWB3-02	ON-MWFB03-01	ON-MW03D-01	ON-MW03D-02
SAMPLE NUMBER:	4558E-10	4668E-03	4558E-09	4668E-02	4558E-07	4668E-01	4558E-08	4558E-18	4668E-18	4558E-29	4558E-05	4668E-11
DATE SAMPLED:	04/17/89	06/12/89	04/18/89	06/12/89	04/17/89	06/12/89	04/17/89	04/19/89	06/14/89	04/20/89	04/18/89	06/13/89
CRL NUMBER:	89ZC02S09	89ZC41S04	89ZC02S08	89ZC41S03	89ZC02S07	89ZC41S02	89ZC02D07	89ZC02S15	89ZC41S16	89ZC02R04	89ZC02S05	89ZC41S10
LABORATORY:	RMAL	Allied Round 2	RMAL	Allied Round 2	RMAL	Allied Round 2	RMAL	RMAL	Allied Round 2	RMAL	RMAL	Allied Round 2
SAS ANALYSES (mg/l)												
TOTAL PHOSPHORUS	0.017		0.011		0.11		0.11	0.21		0.019 B	0.22	
SULFIDE (FILTRATES)	--		--		--		--	--		--	--	
SULFIDE (FILTERS)	--		--		--		--	--		--	--	
COD	5.8		24.1		104		136	11.2 J		--	16.2	
TOC	--		3.8		31.8		30	4.8		--	5.3	
TSS	--		50		269		219	10.5		--	--	
TDS	145		341		445		425	293 B		223	322 B	
NO2 + NO3	--		--		--		--	--		--	--	
NH3	--		0.55		83.2		75.7	14.3		--	0.34	
CHLORIDE			7.7		54.3		55.2	13.0		--	13.5	
SULFATE			--		--		--	--		--	--	
TOTAL ALKALINITY			316		521		525	273		--	285	
BOD	--		--		100 J		18.4 J	--		--	--	
OIL AND GREASE		< 0.4		0.6 J		3 J		--	0.5 J	3.2 J		0.7 J

NOTES:
B = Blank contamination.
J = Estimated value.
-- = < detection limit

File: SAS_MW.WK1

SPECIAL ANALYTICAL SERVICES -
GROUNDWATER

SAMPLE LOCATION:	ON-MW03M-01	ON-MW03M-02	ON-MW03S-01	ON-MW03S-02	ON-FRMW03S-02	ON-MW4S-01	ON-MW4S-02	ON-MWB4D-01	ON-MWB4D-02	ON-MWB4S-01	ON-MWB4S-02	ON-MW05S-01
SAMPLE NUMBER:	4558E-02	4668E-10	4558E-01	4668E-08	4668E-09	4558E-11	4668E-04	4558E-04	4668E-07	4558E-03	4668E-12	4558E-06
DATE SAMPLED:	04/17/89	06/13/89	04/17/89	06/13/89	06/13/89	04/17/89	06/13/89	04/18/89	06/13/89	04/18/89	06/13/89	04/18/89
CRL NUMBER:	89ZC02S02	89ZC41S09	89ZC02S01	89ZC41S08	89ZC41D08	89ZC02S10	89ZC41S05	89ZC02S04	89ZC41S07	89ZC02S03	89ZC41S11	89ZC02S06
LABORATORY:	RMAL	Allied Round 2	RMAL	Allied Round 2	Allied Round 2	RMAL	Allied Round 2	RMAL	Allied Round 2	RMAL	Allied Round 2	RMAL
SAS ANALYSES (mg/l)												
TOTAL PHOSPHORUS	0.053		0.018 B			0.19		0.2		0.12		0.083
SULFIDE (FILTRATES)	--		--			--		--		--		--
SULFIDE (FILTERS)	--		--			--		--		--		--
COD	23.7		55.3			56		13.7		57		104
TOC	4.6		12.4			21.8		3.1		16.4		21.6
TSS	61.5		82			275		28.5		58		269
TDS	263		312			331		291		527		445
NO2 + NO3	--		--			--		--		--		--
NH3	8.8		12.9			9.2		2.1		2.1		1.1
CHLORIDE	11.6		11.6			6		4.6		5.4		--
SULFATE	--		--			--		--		49.8		--
TOTAL ALKALINITY	244		244			300		291		406		371
BOD	--		21 J			44 J		--		42 J		84.5 J
OIL AND GREASE		0.45 J		17 J	8 J		17 J		< 0.4		13 J	

NOTES:

B = Blank contamination.
J = Estimated value.
-- = < detection limit

File: SAS_MW.WK1

SPECIAL ANALYTICAL SERVICES -
GROUNDWATER

SAMPLE LOCATION:	ON-MW05S-02	ON-MW06M-01	ON-MW06M-02	ON-MW7M-01	ON-MW7M-02	ON-FRMW7M-01	ON-FRMW7M-02	ON-MW08D-01	ON-MW08D-02	ON-MW08M-01	ON-MW08M-02	ON-MW08S-01
SAMPLE NUMBER:	4668E-30	4558E-12	4668E-21	4558E-14	4668E-05	4558E-15	4668E-06	4558E-26	4668E-22	4558E-22	4668E-19	4558E-21
DATE SAMPLED:	06/14/89	04/17/89	06/14/89	04/18/89	06/13/89	04/18/89	06/13/89	04/19/89	06/14/89	04/19/89	06/13/89	04/19/89
CRL NUMBER:	89ZC41S26	89ZC02S11	89ZC41S20	89ZC02S12	89ZC41S06		89ZC41D06	89ZC02S22	89ZC41S21	89ZC02S19	89ZC41S18	89ZC02S18
LABORATORY:	Allied	RMAL	Allied	RMAL	Allied	RMAL	Allied	RMAL	Allied	RMAL	Allied	RMAL
	Round 2		Round 2		Round 2		Round 2		Round 2		Round 2	
SAS ANALYSES (mg/l)												
TOTAL PHOSPHORUS		--		0.013 B		--		--		0.04 B		0.058 B
SULFIDE (FILTRATES)		--		--		--		--		--		--
SULFIDE (FILTERS)		--		--		--		--		--		--
COD		9.6		6.2		--		--		--		14.8 J
TOC		2.6		--		--		--		2.4		5.3
TSS		--		--		--		59.5		--		59.5
TDS		264		185		181		209 B		270 B		348 B
NO2 + NO3		--		--		--		--		267 B		247 B
NH3		0.17		--		0.1		--		0.13		1.3
CHLORIDE		--		--		--		--		--		15.1
SULFATE		--		--		--		6.0		--		--
TOTAL ALKALINITY		236		170		167		159		222		262
BOD		2 J		--		--		--		--		--
OIL AND GREASE	12 J		0.7 J		< 0.4		< 0.4	--	< 0.4	--	< 0.4	--

NOTES:
B = Blank contamination.
J = Estimated value.
-- = < detection limit

File: SAS_MW.WK1

SPECIAL ANALYTICAL SERVICES -
GROUNDWATER

SAMPLE LOCATION:	ON-MW08S-02	ON-MW09M-01	ON-MW09M-02	ON-FRMW09M-02	ON-MW10M-01	ON-MW10M-02	ON-MW11M-01	ON-MW11M-01	ON-FRMW11M-01	ON-MW12S-01	ON-MW12S-02	ON-MW13S-01
SAMPLE NUMBER:	4668E-17	4558E-28	4668E-28	4668E-29	4558E-27	4668E-26	4558E-30	4668E-31	4558E-31	4558E-16	4668E-13	4558E-17
DATE SAMPLED:	06/13/89	04/20/89	06/14/89	06/14/89	04/20/89	06/14/89	04/20/89	06/14/89	04/20/89	04/18/89	06/13/89	04/18/89
CRL NUMBER:	89ZC41S17	89ZC02S24	89ZC41S25	89ZC41D25	89ZC02S23	89ZC41S24	89ZC02S25	89ZC41S27	89ZC02D25	89ZC02S13	89ZC41S12	89ZC02S14
LABORATORY:	Allied Round 2	RMAL	Allied Round 2	Allied Round 2	RMAL	Allied Round 2	RMAL	Allied Round 2	RMAL	RMAL	Allied Round 2	RMAL
SAS ANALYSES (mg/l)												
TOTAL PHOSPHORUS		0.084 B			0.036 B		0.02 B		--	0.045 B		0.03 B
SULFIDE (FILTRATES)		--			--		--		--	--		--
SULFIDE (FILTERS)		--			--		--		--	--		--
COD		8 J			10.4 J		--		--	5.8		--
TOC		--			4.6		--		--	--		--
TSS		--			--		--		--	94		45.5
TDS		--			397 B		213 B		206 B	173 B		119 B
NO2 + NO3		--			--		--		--	0.29		0.40
NH3		--			--		--		--	--		--
CHLORIDE		--			19.5		--		--	--		--
SULFATE		--			--		--		--	--		5.0
TOTAL ALKALINITY		174			347		181		173	135		92.5
BOD		--			--		--		--	--		--
OIL AND GREASE	< 0.4	3.1 B	< 0.4	< 0.4	5.1 B	< 0.4	--	< 0.4	--		< 0.4	

NOTES:
B = Blank contamination.
J = Estimated value.
-- = < detection limit

File: SAS_MW.WK1

24-Oct-89

SPECIAL ANALYTICAL SERVICES -
GROUNDWATER

SAMPLE LOCATION:	ON-MW13S-02	ON-MW14S-01	ON-MW14S-02
SAMPLE NUMBER:	4668E-14	4558E-32	4668E-20
DATE SAMPLED:	06/13/89	04/20/89	06/14/89
CRL NUMBER:	89ZC41S13	89ZC02S26	89ZC41S19
LABORATORY:	Allied	RMAL	Allied
	Round 2		Round 2
SAS ANALYSES (mg/l)			
TOTAL PHOSPHORUS		0.19	
SULFIDE (FILTRATES)		--	
SULFIDE (FILTERS)		--	
COD		16.8 J	
TOC		4.5	
TSS		28.0	
TDS		226 B	
NO2 + NO3		0.83 B	
NH3		0.26	
CHLORIDE		--	
SULFATE		11.5	
TOTAL ALKALINITY		166	
BOD		--	
OIL AND GREASE	< 0.4	1.6 B	2 J

NOTES:
B = Blank contamination.
J = Estimated value.
-- = < detection limit

File: SAS_MW.WK1

VOLATILE ORGANIC COMPOUNDS -
SOILS

Sample Location:	FBSB01	GB01-113-117	ON-FBGB02	ON-GB02M-14	ON-FRGB02M-14	ON-GB02M-55	ON-GB02M-75	ON-GB06M-20	ON-GB06M-80	TP03-01	TP04-01	TPFB04-01
Sample Number:	EBP06	EBP05	EBP10	EBP11	EBP12	EBP13	EBP14	EBP15	EBP16	EBP42	EBP43	EBP48
Date Sampled:	03-15-89	03-15-89	3/20/89	3/20/89	3/20/89	3/20/89	3/20/89	3/20/89	3/20/89	04-17-89	04-17-89	04-19-89
CRL Number:	89ZC01R01	89ZC01S05	892C01R01	892C01S01	892C01D01	8892C01S02	892C01S03	892C01S04	892C01S05	89ZC02S25	89ZC02S26	89ZC02R03
Laboratory:	CEIMIC	CEIMIC	WRI	WRI	WRI	WRI	WRI	WRI	WRI	S-CUBED	S-CUBED	S-CUBED
ORGANIC COMPOUNDS (ug/kg)												
VOLATILE												
CHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--
BROMOMETHANE	--	--	--	--	--	--	--	--	--	--	--	--
VINYL CHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--
CHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--
METHYLENE CHLORIDE	7 B	15 B	--	33	35	--	10	13	23	6 B	--	6 B
ACETONE	14 B	29 B	5 J	68	19 B	11 B	31 B	26 B	35 B	88 J	--	--
CARBON DISULFIDE	--	--	--	--	--	--	--	--	--	8 B	--	5 B
1,1-DICHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--
1,1-DICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROETHENE (TOTAL)	--	--	--	--	--	--	--	--	--	--	--	--
CHLOROFORM	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--
2-BUTANONE	--	--	--	--	--	--	--	--	--	30 B	15 B	10 B
1,1,1-TRICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--
CARBON TETRACHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--
VINYL ACETATE	--	--	--	--	--	--	--	--	--	--	--	--
BROMODICHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROPROPANE	--	--	--	--	--	--	--	--	--	--	--	--
CIS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	--	--	--	--	--
TRICHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--
DIBROMOCHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2-TRICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--
BENZENE	--	--	4 J	--	--	--	7	7	7	--	--	--
TRANS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	--	--	--	--	--
BROMOFORM	--	--	--	--	--	--	--	--	--	--	--	--
4-METHYL-2-PENTANONE	--	--	--	--	--	--	--	--	--	--	--	--
2-HEXANONE	--	--	--	--	--	--	--	--	--	--	--	--
TETRACHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--
TOLUENE	--	5 J	--	5 J	6	5 J	5 J	4 J	--	290	20	--
CHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	--	--	--	--	--	--	--	--	--	--	7	--
STYRENE	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL XYLENES	--	--	--	5 J	--	--	1 J	--	--	1000 J	110 B	560 B

NOTES:
B = Blank contamination.
J = Estimated value.
-- = < detection limit.

Date: 08/16/89

File: S-1. MKI

(24-Oct-89

VOLATILE ORGANIC COMPOUNDS - SOILS

Sample Location:	TP07-01	TP08-01	TP09-01	TP10-01	TP11-01	FRTP11-01	TP13-01	MW02D-24	MW02D-58	MW02D-75	MW02D-108	FRMW02D-108	MW01S-18-22
Sample Number:	EBP44	EBP45	EBP46	EBP47	EBP50	EBP51	EBP52	EBP00	EBP01	EBP02	EBP03	EBP04	EBP07
Date Sampled:	04-18-89	04-18-89	04-18-89	04-18-89	04-19-89	04-19-89	04-19-89	03-15-89	03-15-89	03-15-89	03-15-89	03-15-89	03-16-89
CRL Number:	89ZC02S27	89ZC02S28	89ZC02S29	89ZC02S30	89ZC02S23	89ZC02D23	89ZC02S24	89ZC01S01	89ZC01S02	89ZC01S03	89ZC01S04	89ZC01D04	89ZC01S06
Laboratory:	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	CEIMIC	CEIMIC	CEIMIC	CEIMIC	CEIMIC	CEIMIC
ORGANIC COMPOUNDS (ug/kg)													
VOLATILE													
CHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
BROMOMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
VINYL CHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--	--
CHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
METHYLENE CHLORIDE	4 B	4 B	7 B	10 B	9 B	2 B	--	97	10 B	27 B	6 B	18 B	67 B
ACETONE	54 J	47 J	--	39 J	--	40 J	86 J	160	21 B	23 B	16 B	22 B	95 B
CARBON DISULFIDE	5 B	10 B	--	6 B	19 B	5 B	5 B	--	--	--	--	--	--
1,1-DICHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1-DICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROETHENE (TOTAL)	--	--	--	--	4 J	3 J	--	--	--	--	--	--	--
CHLOROFORM	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
2-BUTANONE	21 B	47 B	3 B	6 B	--	25 B	24 B	12 B	5 J	--	--	--	--
1,1,1-TRICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
CARBON TETRACHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--	--
VINYL ACETATE	--	--	--	--	--	--	--	--	--	--	--	--	--
BROMODICHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROPROPANE	--	--	--	--	--	--	--	--	--	--	--	--	--
CIS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	--	--	--	--	--	--
TRICHLOROETHENE	--	--	--	--	4 J	3 J	--	--	--	--	--	--	--
DIBROMOCHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2-TRICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--
TRANS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	--	--	--	--	--	--
BROMOFORM	--	--	--	--	--	--	--	--	--	--	--	--	--
4-METHYL-2-PENTANONE	--	--	--	--	--	--	--	--	--	--	--	--	--
2-HEXANONE	--	--	--	--	--	--	--	--	--	--	--	--	--
TETRACHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
TOLUENE	87	67	70	83	1700	330	77	--	--	--	--	--	--
CHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	--	34	--	--	1600	660	--	--	--	--	--	--	--
STYRENE	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL XYLENES	540 B	600 B	360 B	90 B	24000	5600 J	--	3 J	--	--	--	--	--

NOTES:

B = Blank contamination.
J = Estimated value.
-- = < detection limit.

Date: 08/16/89

File: S-TPVOC.WK1

VOLATILE ORGANIC COMPOUNDS -
SOILS

Sample Location:	MW01M-78-80	MW01M-53-55
Sample Number:	EBP08	EBP09
Date Sampled:	03-16-89	03-16-89
CRL Number:	89ZC01S08	89ZC01S07
Laboratory:	CEIMIC	CEIMIC

ORGANIC COMPOUNDS (ug/kg)

VOLATILE		
CHLOROMETHANE	--	--
BROMOMETHANE	--	--
VINYL CHLORIDE	--	--
CHLOROETHANE	--	--
METHYLENE CHLORIDE	12 B	14 B
ACETONE	23 B	20 B
CARBON DISULFIDE	--	--
1,1-DICHLOROETHENE	--	--
1,1-DICHLOROETHANE	--	--
1,2-DICHLOROETHENE (TOTAL)	--	--
CHLOROFORM	--	--
1,2-DICHLOROETHANE	--	--
2-BUTANONE	2 J	--
1,1,1-TRICHLOROETHANE	--	--
CARBON TETRACHLORIDE	--	--
VINYL ACETATE	--	--
BROMODICHLOROMETHANE	--	--
1,2-DICHLOROPROPANE	--	--
CIS-1,3-DICHLOROPROPENE	--	--
TRICHLOROETHENE	--	--
DIBROMOCHLOROMETHANE	--	--
1,1,2-TRICHLOROETHANE	--	--
BENZENE	--	--
TRANS-1,3-DICHLOROPROPENE	--	--
BROMOFORM	--	--
4-METHYL-2-PENTANONE	--	--
2-HEXANONE	--	--
TETRACHLOROETHENE	--	--
1,1,2,2-TETRACHLOROETHANE	--	--
TOLUENE	--	4 J
CHLOROBENZENE	--	--
ETHYLBENZENE	--	--
STYRENE	--	--
TOTAL XYLENES	--	--

NOTES:
B = Blank contamination.
J = Estimated value.
-- = < detection limit.

Date: 08/16/89

File: S-TPV 1

24-Oct-89

SEMI-VOLATILES - SOILS

Sample Location:	FBSB01	ON-GB02M-14	ON-FRGB02M-14	ON-GB02M-55	ON-GB02M-75	ON-GB06M-20	ON-GB06M-80	ON-FBGB02	GB01-113-117	TP03-01	TP04-01	TPFB04-01
Sample Number:	EBP06	EBP11	EBP12	EBP13	EBP14	EBP15	EBP16	EBP10	EBP05	EBP42	EBP43	EBP48
Date Sampled:	03-15-89	3/20/89	3/20/89	3/20/89	3/20/89	3/20/89	3/20/89	3/20/89	03-15-89	04-17-89	04-17-89	04-19-89
CRL Number:	89ZC01R01	892C01S01	892C01D01	8892C01S02	892C01S03	892C01S04	892C01S05	892C01R01	89ZC01S05	89ZC02S25	89ZC02S26	89ZC02R03
Laboratory:	CEIMIC	WRI	WRI	WRI	WRI	WRI	WRI	WRI	CEIMIC	S-CUBED	S-CUBED	S-CUBED

ORGANIC COMPOUNDS (ug/kg)

SEMIVOLATILE												
PHENOL	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROETHYL)ETHER	--	--	--	--	--	--	--	--	--	--	--	--
2-CHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
1,3-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
1,4-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
BENZYL ALCOHOL	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROISOPROPYL)ETHER	--	--	--	--	--	--	--	--	--	--	--	--
4-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
N-NITROSO-DI-n-PROPLYAMINE	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--
NITROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
ISOPHORONE	--	--	--	--	--	--	--	--	--	--	--	--
2-NITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DIMETHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
BENZOIC ACID	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROETHOXY)METHANE	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-TRICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	810	--
NAPHTHALENE	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLOROANILINE	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBUTADIENE	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLORO-3-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	490 J	--
2-METHYLNAPHTHALENE	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROCYCLOPENTADIENE	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
2,4,5-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
2-CHLORONAPHTHALENE	--	--	--	--	--	--	--	--	--	--	--	--
2-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--
DIMETHYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	--	--	--	--	--	--	--	--	--	--	--	--
2,6-DINITROTOLUENE	--	--	--	--	--	--	--	--	--	--	--	--
3-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DINITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
4-NITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZOFURAN	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DINITROTOLUENE	--	--	--	--	--	--	--	--	--	--	--	--
DIETHYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLOROPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--	--	--	--
FLUORENE	--	--	--	--	--	--	--	--	--	--	--	--
4-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--
4,6-DINITRO-2-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
N-NITROSODIPHENYLAMINE	--	--	--	--	--	--	--	--	--	--	--	--
4-BROMOPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
PENTACHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	--	--	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--
DI-N-BUTYL PHTHALATE	--	30 J	22 J	--	29 J	--	25 J	--	--	--	--	--
FLUORANTHENE	--	--	--	--	--	--	--	--	--	--	--	--
PYRENE	--	--	--	--	--	--	--	--	70 J	--	--	--
BUTYL BENZYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--
3,3-DICHLOROBENZIDINE	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	--	84 B	86 B	57 B	40 B	81 B	54 B	20 J	170 J	96 J	130 J	--
DI-N-OCTYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENES	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENES	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	--	--	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZ(A,H)ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(GHI)PERYLENE	--	--	--	--	--	--	--	--	--	--	--	--

NOTES:
B = Blank contamination.
J = Estimated value.
R = Unuseable data.
-- = < detection limit.

File: S-TPBNA WK1

SEMI-VOLATILES - SOILS

Sample Location:	TP07-01	TP08-01	TP09-01	TP10-01	TP11-01	FRTP11-01	TP13-01	MW02D-24	MW02D-58	MW02D-75	MW02D-108	FRMW02D-108	MW01S-18-22
Sample Number:	EBP44	EBP45	EBP46	EBP47	EBP50	EBP51	EBP52	EBP00	EBP01	EBP02	EBP03	EBP04	EBP07
Date Sampled:	04-18-89	04-18-89	04-18-89	04-18-89	04-19-89	04-19-89	04-19-89	03-15-89	03-15-89	03-15-89	03-15-89	03-15-89	03-16-89
CRL Number:	89ZC02S27	89ZC02S28	89ZC02S29	89ZC02S30	89ZC02S23	89ZC02D23	89ZC02S24	89ZC01S01	89ZC01S02	89ZC01S03	89ZC01S04	89ZC01D04	89ZC01S06
Laboratory:	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	CEIMIC	CEIMIC	CEIMIC	CEIMIC	CEIMIC	CEIMIC
ORGANIC COMPOUNDS (ug/kg)													
SEMIVOLATILE													
PHENOL	--	--	--	--	--	--	--	80 J	--	--	160 J	--	--
BIS(2-CHLOROETHYL)ETHER	--	--	--	--	--	--	--	--	--	--	--	--	--
2-CHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	100 J	--	--
1,3-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZYL ALCOHOL	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROISOPROPYL)ETHER	--	--	--	--	--	--	--	--	--	--	--	--	--
4-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--
N-NITROSO-DI-n-PROPLYAMINE	--	--	--	--	--	--	--	--	--	--	44 J	--	--
HEXACHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
NITROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--
ISOPHORONE	--	--	--	--	--	--	340 J	--	--	--	--	--	--
2-NITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DIMETHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZOIC ACID	--	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROETHOXY)METHANE	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-TRICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	68 J	--	--
NAPHTHALENE	--	--	--	--	1400	3500	540 J	--	--	--	--	--	--
4-CHLOROANILINE	--	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBUTADIENE	--	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLORO-3-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	95 J	--	--
2-METHYLNAPHTHALENE	--	130 J	--	--	700 J	2300	190 J	--	--	--	--	--	--
HEXACHLOROCYCLOPENTADIENE	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,5-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--
2-CHLORONAPHTHALENE	--	--	--	--	--	--	--	--	--	--	--	--	--
2-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--	--
DIMETHYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	--	--	--	--	--	--	--	--	--	--	70 J	--	--
2,6-DINITROTOLUENE	--	--	--	--	--	--	--	--	--	--	--	--	--
3-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DINITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--
4-NITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZOFURAN	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DINITROTOLUENE	--	--	--	--	--	--	--	--	--	--	--	--	--
DIETHYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLOROPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORENE	--	--	--	--	--	120 J	--	--	--	--	--	--	--
4-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--	--
4,6-DINITRO-2-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--	--
N-NITROSODIPHENYLAMINE	--	--	--	--	--	--	--	--	--	--	--	--	--
4-BROMOPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--	--
PENTACHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	69 J	--	--
PHENANTHRENE	--	--	--	--	160 J	440 J	220 J	--	--	--	--	--	--
ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--	--
DI-N-BUTYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	--	--	--	--	--	--	170 J	--	--	--	--	--	--
PYRENE	--	--	--	--	--	--	180 J	--	--	--	64 J	--	--
BUTYL BENZYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3-DICHLOROBENZIDINE	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	--	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	150 J	160 J	--	--	230 J	850	2300	5300	--	1200	--	--	--
DI-N-OCTYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENES	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENES	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	--	--	--	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	--	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZ(A,H)ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(GHI)PERYLENE	--	--	--	--	--	--	--	--	--	--	--	--	--

NOTES:
B = Blank contamination.
J = Estimated value.
R = Unuseable data.
-- = < detection limit.

File: S-TPBNA

24-Oct-89

SEMI-VOLATILES - SOILS

Sample Location:	MW01M-78-80	MW01M-53-55
Sample Number:	EBP08	EBP09
Date Sampled:	03-16-89	03-16-89
CRL Number:	89ZC01S08	89ZC01S07
Laboratory:	CEIMIC	CEIMIC
ORGANIC COMPOUNDS (ug/kg)		
SEMIVOLATILE		
PHENOL	--	--
BIS(2-CHLOROETHYL)ETHER	--	--
2-CHLOROPHENOL	--	--
1,3-DICHLOROBENZENE	--	--
1,4-DICHLOROBENZENE	--	--
BENZYL ALCOHOL	--	--
1,2-DICHLOROBENZENE	--	--
2-METHYLPHENOL	--	--
BIS(2-CHLOROISOPROPYL)ETHER	--	--
4-METHYLPHENOL	--	--
N-NITROSO-DI-n-PROPLYAMINE	--	--
HEXACHLOROETHANE	--	--
NITROBENZENE	--	--
ISOPHORONE	--	--
2-NITROPHENOL	--	--
2,4-DIMETHYLPHENOL	--	--
BENZOIC ACID	--	--
BIS(2-CHLOROETHOXY)METHANE	--	--
2,4-DICHLOROPHENOL	--	--
1,2,4-TRICHLOROBENZENE	--	--
NAPHTHALENE	--	--
4-CHLOROANILINE	--	--
HEXACHLOROBUTADIENE	--	--
4-CHLORO-3-METHYLPHENOL	--	--
2-METHYLNAPHTHALENE	--	--
HEXACHLOROCYCLOPENTADIENE	--	--
2,4,6-TRICHLOROPHENOL	--	--
2,4,5-TRICHLOROPHENOL	--	--
2-CHLORONAPHTHALENE	--	--
2-NITROANILINE	--	--
DIMETHYL PHTHALATE	--	--
ACENAPHTHYLENE	--	--
2,6-DINITROTOLUENE	--	--
3-NITROANILINE	--	--
ACENAPHTHENE	--	--
2,4-DINITROPHENOL	--	--
4-NITROPHENOL	--	--
DIBENZOFURAN	--	--
2,4-DINITROTOLUENE	--	--
DIETHYL PHTHALATE	--	--
4-CHLOROPHENYL PHENYL ETHER	--	--
FLUORENE	--	43 J
4-NITROANILINE	--	--
4,6-DINITRO-2-METHYLPHENOL	--	--
N-NITROSODIPHENYLAMINE	--	--
4-BROMOPHENYL PHENYL ETHER	--	--
HEXACHLOROBENZENE	--	--
PENTACHLOROPHENOL	--	--
PHENANTHRENE	--	--
ANTHRACENE	--	--
DI-N-BUTYL PHTHALATE	--	--
FLUORANTHENE	--	--
PYRENE	--	--
BUTYL BENZYL PHTHALATE	--	--
3,3-DICHLOROBENZIDINE	--	--
BENZO(A)ANTHRACENE	--	--
CHRYSENE	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	--	--
DI-N-OCTYL PHTHALATE	--	--
BENZO(B)FLUORANTHENES	--	--
BENZO(K)FLUORANTHENES	--	--
BENZO(A)PYRENE	--	--
INDENO(1,2,3-CD)PYRENE	--	--
DIBENZ(A,H)ANTHRACENE	--	--
BENZO(GHI)PERYLENE	--	--

NOTES:
B = Blank contamination.
J = Estimated value.
R = Unusable data.
-- = < detection limit.

File: S-TPBNA WK1

PESTICIDE/PCBS - SOILS

Sample Location:	FBSB01	GB01-113-117	ON-GB02M-14	ON-FRGB02M-14	ON-GB02M-55	ON-GB02M-75	ON-GB06M-20	ON-GB06M-80	ON-FBGB02
Sample Number:	EBP06	EBP05	EBP11	EBP12	EBP13	EBP14	EBP15	EBP16	EBP10
Date Sampled:	03-15-89	03-15-89	3/20/89	3/20/89	3/20/89	3/20/89	3/20/89	3/20/89	3/20/89
CRL Number:	89ZC01R01	89ZC01S05	892C01S01	892C01D01	8892C01S02	892C01S03	892C01S04	892C01S05	892C01R01
Laboratory:	CEIMIC	CEIMIC	WRI	WRI	WRI	WRI	WRI	WRI	WRI
ORGANIC COMPOUNDS (ug/kg)									
PESTICIDES and PCBs									
ALPHA-BHC	--	--	--	--	--	--	--	--	--
BETA-BHC	--	--	--	--	--	--	--	--	--
DELTA-BHC	--	--	--	--	--	--	--	--	--
GAMMA-BHC (LINDANE)	--	--	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--	--	--
ALDRIN	--	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--	--
ENDOSULFAN I	--	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--	--
4,4-DDE	--	--	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--	--
ENDOSULFAN II	--	--	--	--	--	--	--	--	--
4,4-DDD	--	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--	--	--
4,4-DDT	--	--	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--	--
CHLORDANE	--	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--	--	--
AROCLOR-1016	--	--	--	--	--	--	--	--	--
AROCLOR-1221	--	--	--	--	--	--	--	--	--
AROCLOR-1232	--	--	--	--	--	--	--	--	--
AROCLOR-1242	--	--	--	--	--	--	--	--	--
AROCLOR-1248	--	--	--	--	--	--	--	--	--
AROCLOR-1254	--	--	--	--	--	--	--	--	--
AROCLOR-1260	--	--	--	--	--	--	--	--	--

NOTES:
B = Blank contamination.
J = Estimated value.
-- = < detection limit.

File: S-P&PCB.WK1

PESTICIDE/PCBS - SOILS

Sample Location:	TP03-01	TP04-01	TPFB04-01	TP07-01	TP08-01	TP09-01	TP10-01	TP11-01	FRTP11-01	TP13-01
Sample Number:	EBP42	EBP43	EBP48	EBP44	EBP45	EBP46	EBP47	EBP50	EBP51	EBP52
Date Sampled:	04-17-89	04-17-89	04-19-89	04-18-89	04-18-89	04-18-89	04-18-89	04-19-89	04-19-89	04-19-89
CRL Number:	89ZC02S25	89ZC02S26	89ZC02R03	89ZC02S27	89ZC02S28	89ZC02S29	89ZC02S30	89ZC02S23	89ZC02D23	89ZC02S24
Laboratory:	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED
ORGANIC COMPOUNDS (ug/kg)										
PESTICIDES and PCBs										
ALPHA-BHC	--	--	--	--	--	--	--	--	--	--
BETA-BHC	--	--	--	--	--	--	--	--	--	--
DELTA-BHC	--	--	--	--	--	--	--	--	--	--
GAMMA-BHC (LINDANE)	86 B	59 B	130 B	--	120 B	190 B	--	--	--	190 B
HEPTACHLOR	--	--	--	--	--	--	--	--	--	--
ALDRIN	--	--	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN I	--	--	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--	--	--
4,4-DDE	--	--	--	28	--	330	--	--	--	25
ENDRIN	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN II	--	--	--	--	--	--	--	--	--	--
4,4-DDD	--	--	--	32	--	360	--	--	--	140
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--	--	--	--
4,4-DDT	--	--	--	--	--	130	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--	--	--
CHLORDANE	--	--	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--	--	--	--
AROCLOR-1016	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	--	--	--	--	--	--	--	--	--	--

NOTES:
B = Blank contamination.
J = Estimated value.
-- = < detection limit.

File: S-P&PCB.WK1

PESTICIDE/PCBS - SOILS

Sample Location:	MW02D-24	MW02D-58	MW02D-75	MW02D-108	FRMW02D-108	MW01S-18-22	MW01M-78-80	MW01M-53-55
Sample Number:	EBP00RE	EBP01	EBP02	EBP03	EBP04	EBP07	EBP08	EBP09
Date Sampled:	03-15-89	03-15-89	03-15-89	03-15-89	03-15-89	03-16-89	03-16-89	03-16-89
CRL Number:	89ZC01S01	89ZC01S02	89ZC01S03	89ZC01S04	89ZC01D04	89ZC01S06	89ZC01S08	89ZC01S07
Laboratory:	CEIMIC	CEIMIC	CEIMIC	CEIMIC	CEIMIC	CEIMIC	CEIMIC	CEIMIC
ORGANIC COMPOUNDS (ug/kg)								
PESTICIDES and PCBs								
ALPHA-BHC	--	--	--	--	--	--	--	
BETA-BHC	--	--	--	--	--	--	--	
DELTA-BHC	--	--	--	--	--	--	--	--
GAMMA-BHC (LINDANE)	--	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--	--
ALDRIN	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--
ENDOSULFAN I	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--
4,4-DDE	--	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--
ENDOSULFAN II	--	--	--	--	--	--	--	--
4,4-DDD	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--	--
4,4-DDT	--	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--
CHLORDANE	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--	--
AROCLOR-1016	--	--	--	--	--	--	--	--
AROCLOR-1221	--	--	--	--	--	--	--	--
AROCLOR-1232	--	--	--	--	--	--	--	--
AROCLOR-1242	--	--	--	--	--	--	--	--
AROCLOR-1248	--	--	--	--	--	--	--	--
AROCLOR-1254	--	--	--	--	--	--	--	--
AROCLOR-1260	--	--	--	--	--	--	--	--

NOTES:
B = Blank contamination.
J = Estimated value.
-- = < detection limit.

File: S-P&PCB.WK1

24-Oct-89

INORGANICS - SOILS

Sample Location:	TP03-01	TP04-01	TPFB04-01	TP07-01	TP08-01	TP09-01	TP10-01	TP11-01	FRTP11-01	TP13-01	MW02D-24	MW02D-58
ITR Number:	MEBC42	MEBC43	MEBC48	MEBC44	MEBC45	MEBC46	MEBC47	MEBC50	MEBC51	MEBC52	MEBC00	MEBC01
Date Sampled:	04-17-89	04-17-89	04-18-89	04-18-89	04-18-89	04-18-89	04-18-89	04-19-89	04-19-89	04-19-89	03-15-89	03-15-89
CRL Number:	89ZC02S60	89ZC02S61	89ZC02R07	89ZC02S62	89ZC02S63	89ZC02S64	89ZC02S65	89ZC02S66	89ZC02D66	89ZC02S67	89ZC01S09	89ZC01S10
Laboratory:	RMAL	RMAL	RMAL	RMAL	RMAL	RMAL	RMAL	RMAL	RMAL	RMAL	Wilson	Wilson
INORGANIC CHEMICALS (mg/kg)												
ALUMINUM	2980	4550	57	5130	3990	3220	3480	2610	3120	10800	1730	1890
ANTIMONY	--	--	--	--	--	--	--	--	--	--	--	--
ARSENIC	0.96 J	0.71 J	--	0.95 J	1.6 J	0.7 J	1.1 J	0.74 J	0.75 J	17.6 J	--	--
BARIUM	27.3 J	39.5 J	0.43 J	47	36 J	29.7 J	62.3	50.8	45.6	184	--	20.8 J
BERYLLIUM	--	--	--	0.35 J	--	--	0.23 J	--	--	0.29 J	--	--
CADMIUM	--	--	--	--	--	--	--	--	1.5 J	3.5	--	--
CALCIUM	2660	1330	43.9 J	3100	1860	2390	7400	955 J	886 J	19200	1210	6910
CHROMIUM	7.3	9.4	--	9.4	7.8	7.6	8	5.8	7.8	27.6	4.1	7.4
COBALT	5 J	5.6 J	--	5.4 J	4 J	4.8 J	4.9 J	4.1 J	4.2 J	6.8 J	2.8 J	4.6 J
COPPER	10.9	14.45	--	14.7	10.1	11.7	10	4.9 J	7.4	217	8.7	7.8
IRON	6860	8180	68.8	8290	6950	6680	6910	4860	4220	26500	5240	7060
LEAD	3.4 J	2 J	--	37.9 J	9.1 J	6.7 J	170 J	41.9 J	39.8 J	274 J	2.4 J	1.1 J
CYANIDE	--	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	2260	1850	43.9 J	2400	1590	2150	4790	931 J	903 J	5980	1410	3610
MANGANESE	348 J	409 J	--	337 J	242 J	255 J	292 J	139 J	129 J	562 J	53.7	176
MERCURY	--	--	--	--	--	--	--	--	--	--	--	--
NICKEL	10.8	12	--	19.9	9.8	10.2	10.1	7.5 J	7.7 J	20.6	--	7.9 J
POTASSIUM	262 J	317 J	33 J	362 J	361 J	349	340 J	234 J	206 J	582 J	--	--
SELENIUM	--	--	--	--	--	--	--	--	--	--	--	--
SILVER	--	--	--	--	--	--	--	1.9 J	34.6	1.9 J	--	--
SODIUM	--	--	--	--	--	--	--	--	--	--	--	--
THALLIUM	--	--	--	--	--	--	--	--	--	--	--	--
VANADIUM	13.4	14.7	--	14.8	12.3	13	12.7	9.9 J	9.7 J	17.7	9.5 J	12.6
ZINC	21.2	21	3.8 B	65.4	32.4	112	39.5	53	54.8	918	9.6	11.4

NOTES:

B = Blank contamination.
J = Estimated value.
-- = < contract required detection limit.

File: S-INO.WK1

INORGANICS - SOILS

Sample Location:	MW02D-75	MW02D-108	FRMW02D-108	GB01-113-117	FBSB01	MW01S-18-22	MW01M-78-80	MW01M-53-55	FBGB-02	GB02M-14	FRGB02M-14	GB02M-55
ITR Number:	MEBC02	MEBC03	MEBC04	MEBC05	MEBC06	MEBC07	MEBC08	MEBC09	MEBC10	MEBC11	MEBC12	MEBC13
Date Sampled:	03-15-89	03-15-89	03-15-89	03-15-89	03-15-89	03-16-89	03-16-89	03-16-89	03-20-889	03-20-89	03-20-89	03-20-89
CRL Number:	89ZC01S11	89ZC01S12	89ZC01D12	89ZC01S13	89ZC01R02	89ZC01S14	89ZC01S16	89ZC01S15	89ZC01R02	89ZC01S06	89ZC01D06	89ZC01S07
Laboratory:	Wilson	Wilson	Wilson	Wilson	Wilson	Wilson	Wilson	Wilson	NANCO	NANCO	NANCO	NANCO
INORGANIC CHEMICALS (mg/kg)												
ALUMINUM	1310	1470	1470	1610	--	2260	1170	1780	30.7 J	2400 J	2490 J	2850 J
ANTIMONY	--	--	--	--	--	--	--	--	--	--	--	--
ARSENIC	--	--	--	--	--	--	--	--	0.16 J	1.4 J	1 J	1 J
BARIUM	16.2 J	--	14.1 J	15.7	--	18.2 J	--	20.3 J	--	15.4 J	20 J	19.6 J
BERYLLIUM	--	--	--	--	--	--	--	--	--	0.48 J	0.47 J	0.46 J
CADMIUM	--	--	1.1 J	--	--	--	1.3	--	--	--	--	--
CALCIUM	3310	4090	3480	3070	--	1850	4700	1640	--	3340	3890	4120
CHROMIUM	--	4.5	4	4.7	--	7.4	3.3	3.2	--	9.9	8.9	9.1
COBALT	--	--	--	--	--	2.8 J	22	2.6 J	--	3.6 J	4.2 J	3.9 J
COPPER	5.6 J	6.6	5.9	--	--	7.4	3.9 J	--	42.5 J	45.9 J	--	--
IRON	3760	4680	4580	5560	45	6000	3700	5170	65.3 B	5870 J	7230 J	6360 J
LEAD	1 J	1.5 J	2.5 J	2.5 J	--	4.7 J	1.3 J	10.8 J	0.32 J	2.4	1.6	1.4
CYANIDE	--	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	1570	2120	1920	2300	--	2240	2160	1430	61.1 J	2230 J	2080 J	2350 J
MANGANESE	79 8	107	113	173	--	226	140	104	--	185	215	111
MERCURY	--	--	--	--	--	--	--	--	0.055 J	0.072 J	0.058 J	0.063 J
NICKEL	4 7 J	6 J	4.7 J	--	--	9.3 J	4.8 J	11.6	--	--	4.4 J	3.4 J
POTASSIUM	--	--	--	--	--	--	--	--	--	317 J	--	--
SELENIUM	--	1.2 J	--	--	--	--	--	--	--	--	--	--
SILVER	--	--	--	--	--	--	--	--	--	--	--	--
SODIUM	--	--	--	--	--	--	--	--	--	223 J	229 J	200 J
THALLIUM	--	--	--	--	--	--	--	--	--	--	--	--
VANADIUM	5 J	11.1 J	8.6 J	8.3 J	--	9.2	8 J	12.4	--	11.5 J	18.6	9.6 J
ZINC	5.9	8.5	9.7	10.4	--	15.1	7.5	18	26.9 J	53.6 J	36.1 J	36.9 J

NOTES:

B = Blank contamination.
J = Estimated value.
-- = < contract required detection limit.

File: S-INO.WK1

24-Oct-89

INORGANICS - SOILS

Sample Location:	GB02M-75	GB06M-20	GW06M-80
ITR Number:	MEBC14	MEBC15	MEBC16
Date Sampled:	03-20-89	03-20-89	03-20-89
CRL Number:	89ZC01S08	89ZC01S09	89ZC01S10
Laboratory:	NANCO	NANCO	NANCO
INORGANIC CHEMICALS (mg/kg)			
ALUMINUM	3680 J	4260 J	2200 J
ANTIMONY	--	--	--
ARSENIC	2 J	0.72 J	1 J
BARIUM	37.9 J	21.5 J	26.3 J
BERYLLIUM	0.45 J	0.72 J	0.48 J
CADMIUM	0.9 J	--	--
CALCIUM	23100	1940	6210
CHROMIUM	10.1	13.2	9.1
COBALT	4.7 J	4.8 J	4.3 J
COPPER	8.1 J	--	--
IRON	9300 J	9500 J	6470 J
LEAD	1.7	1.2	1.4
CYANIDE	--	--	--
MAGNESIUM	12000 J	2630 J	2410 J
MANGANESE	435	161	195
MERCURY	0.15 J	--	--
NICKEL	5.6 J	8.4 J	3.8 J
POTASSIUM	--	--	--
SELENIUM	--	--	--
SILVER	--	--	--
SODIUM	--	--	--
THALLIUM	--	--	--
VANADIUM	15.2	10.5 J	13.6
ZINC	30.5 J	28.5 J	56.3 J

NOTES:

B = Blank contamination.
J = Estimated value.
-- = < contract required detection limit.

File: S-INO.WK1

SPECIAL ANALYTICAL SERVICES -
SOILS

SAMPLE LOCATION:	ON-TP03-01	ON-TP04-01	ON-TPFB04-01	ON-TP07-01	ON-TP08-01	ON-TP09-01	ON-TP10-01	ON-TP11-01
SAMPLE NUMBER:	4501E-51	4501E-52	4501E-60	4501E-53	4501E-54	4501E-55	4501E-56	4501E-57
DATE SAMPLED:	04/17/89	04/17/89	04/19/89	04/18/89	04/18/89	04/18/89	04/18/89	04/19/89
CRL NUMBER:	89ZC02S14	89ZC02S15	89ZC02R03	89ZC02S16	89ZC02S17	89ZC02S18	89ZC02S19	89ZC02S20
LABORATORY:	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE
SAS ANALYSES (mg/kg)								
TOC	3000 J	300 J	11 J	3200 J	746 J	1400 J	8600 J	447 J

NOTES:
B = Blank contamination.
J = Estimated value.

File: SAS_TOC.WK1

SPECIAL ANALYTICAL SERVICES -
SOILS

SAMPLE LOCATION:	ON-FRTP11-01	ON-TP13-01	ON-MW02D-24	ON-MW02D-58	ON-MW02D-75	ON-MW02D-108	ON-FRMW02D-108	ON-GB01-113-
SAMPLE NUMBER:	4501E-58	4501E-59	4501E-01	4501E-02	4501E-03	4501E-04	4501E-05	4501E-06
DATE SAMPLED:	04/19/89	04/19/89	03/15/89	03/15/89	03/15/89	03/15/89	03/15/89	03/15/89
CRL NUMBER:	89ZC02D20	89ZC02S21	89ZC01S01	89ZC01S02	89ZC01S03	89ZC01S04	89ZC01D04	89ZC01S05
LABORATORY:	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE
SAS ANALYSES (mg/kg)								
TOC	4400 J	14700 J	112	156	189	147	167	394

NOTES:
B = Blank contamination.
J = Estimated value.

File: SAS_TOC.WK1

SPECIAL ANALYTICAL SERVICES -
SOILS

SAMPLE LOCATION:	117	ON-FBSB01	ON-MW01S-18-22	ON-MW01M-53-55	ON-MW01M-78-80	ON-GB02M-14	ON-FRGB02M-14	ON-GB02M-55
SAMPLE NUMBER:		4501E-07	4501E-08	4501E-09	4501E-10	4501E-11	4501E-12	4501E-13
DATE SAMPLED:		03/15/89	03/16/89	03/16/89	03/16/89	03/20/89	03/20/89	03/20/89
CRL NUMBER:		89ZC01R01	89ZC01S06	89ZC01S07	89ZC01S08	89ZC01S09	89ZC01D09	89ZC01S10
LABORATORY:		KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE
SAS ANALYSES (mg/kg)								
TOC		13.1	9990	638	284	131	391	40 B

NOTES:
B = Blank contamination.
J = Estimated value.

File: SAS_TOC.WK1

24-Oct-89

SPECIAL ANALYTICAL SERVICES -
SOILS

SAMPLE LOCATION:	ON-GB02M-75	ON-FBGB02	ON-GB06M-20	ON-GB06M-80
SAMPLE NUMBER:	4501E-14	4501E-17	4501E-15	4501E-16
DATE SAMPLED:	03/20/89	03/20/89	03/20/89	03/20/89
CRL NUMBER:	89ZC01S11	89ZC01R02	89ZC01S12	89ZC01S13
LABORATORY:	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE
SAS ANALYSES (mg/kg)				
TOC	19 B	13	79	156

NOTES:
B = Blank contamination.
J = Estimated value.

File: SAS_TOC.WK1

SPECIAL ANALYTICAL SERVICES -
SOILS

SAMPLE LOCATION:	ON-TPB-01	ON-TP03-01	ON-TP04-01	ON-FBTP04-01	ON-TP07-01	ON-TP08-01	ON-TP09-01	ON-TP10-01	ON-TP11-01	ON-FRTP11-01
SAS SAMPLE NUMBER:	4558E55	4558E46	4558E47	4558E54	4558E48	4558E49	4558E50	4558E51	4558E52	4558E53
DATE SAMPLED:	04/19/89	04/17/89	04/17/89	04/19/89	04/18/89	04/18/89	04/18/89	04/18/89	04/19/89	04/19/89
CRL NUMBER:	89ZC40S09	89ZC40S01	89ZC40S02	89ZC40R08	89ZC40S03	89ZC40S04	89ZC40S05	89ZC40S06	89ZC40S07	89ZC40D07
LABORATORY:	HAZEN	HAZEN	HAZEN	HAZEN	HAZEN	HAZEN	HAZEN	HAZEN	HAZEN	HAZEN
SAS ANALYSES (%)										
CHLORINE	0.03	<0.01	0.10	<0.01	0.13	0.07	0.02	<0.01	0.02	<0.01
SULFUR	0.14	0.03	0.03	0.02	0.03	0.02	0.06	0.03	0.04	0.03

File: SU-CL_TP.WK1

EP TOXICITY - SOILS

Sample Location:	TP03-01	TP04-01	TPFB04-01	TP07-01	TP08-01	TP09-01	TP10-01	TP11-01	FRTP11-01	TP13-01
SAS Sample Number:	4558E35	4558E36	4558E44	4558E37	4558E38	4558E39	4558E40	4558E41	4558E42	4558E43
Date Sampled:	04-17-89	04-17-89	04-18-89	04-18-89	04-18-89	04-18-89	04-18-89	04-19-89	04-19-89	04-19-89
CRL Number:	89ZC02S27	89ZC02S28	89ZC02R06	89ZC02S29	89ZC02S30	89ZC02S31	89ZC02S32	89ZC02S33	89ZC02D33	89ZC02S34
Laboratory:	JTC	JTC	JTC	JTC	JTC	JTC	JTC	JTC	JTC	JTC
INORGANIC CHEMICALS (mg/kg)										
ARSENIC	6.5 J	3.7 J	2.8 J	6.6 J	6.4 J	6.5 J	4.6 J	6.7 J	6.0 J	18.0 J
BARIUM	271.0	293.0	--	486.0	107.0	375.0	326.0	628.0	791.0	161.0
CADMIUM	15.1 J	25.6 J	4.8 J	7.7 J	7.4 J	11.8 J	12.5 J	24.1 J	--	--
CHROMIUM	17.3 J	31.9 J	--	--	11.8 J	8.9 J	14.9 J	37.4 J	--	--
LEAD	--	89.5 J	89.3 J	--	--	--	--	--	--	--
MERCURY	--	--	--	--	--	--	--	--	--	--
SELENIUM	7.0 J	6.9 J	4.1 J	3.8 J	4.2 J	4.2 J	5.7 J	4.9 J	6.1 J	6.0 J
SILVER	--	12.2 J	--	--	--	--	9.3 J	8.2	--	--

NOTES:

J = Estimated value.

-- = < contract required detection limit.

File: EPTOX.WK1

VOLATILE ORGANIC COMPOUNDS - SEDIMENT

Sample Location:	ON-SD01-01	ON-SD02-01	ON-SD03-01	ON-SD04-01	ON-SD05-01	ON-SD06-01	ON-SD07-01	ON-SD08-01	ON-SD09-01	ON-SD10-01	ON-SD11-01	ON-FRSD11-01
Sample Number:	EBP78	EBP79	EBP80	EBP81	EBP82	EBP83	EBP84	EBP85	EBP86	EBP87	EBP88	EBP89
Date Sampled:	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89
CRL Number:	89ZC40S01	89ZC40S02	89ZC40S03	89ZC40S04	89ZC40S05	89ZC40S06	89ZC40S07	89ZC40S08	89ZC40S09	89ZC40S10	89ZC40S21	89ZC40D21
Laboratory:	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED
ORGANIC COMPOUNDS (ug/kg)												
VOLATILE												
CHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--
BROMOMETHANE	--	--	--	--	--	--	--	--	--	--	--	--
VINYL CHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--
CHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--
METHYLENE CHLORIDE	10 B	8 B	7 B	20 B	8 B	17 B	22 B	25 B	14 B	6 B	14 B	5 B
ACETONE	--	--	--	--	--	--	--	--	--	--	--	--
CARBON DISULFIDE	--	--	--	--	--	--	--	--	--	--	--	--
1,1-DICHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--
1,1-DICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROETHENE (TOTAL)	--	--	--	--	--	--	--	--	--	--	--	--
CHLOROFORM	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--
2-BUTANONE	16 J	--	--	--	--	--	--	--	--	--	62 J	--
1,1,1-TRICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--
CARBON TETRACHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--
VINYL ACETATE	--	--	--	--	--	--	--	--	--	--	--	--
BROMODICHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROPROPANE	--	--	--	--	--	--	--	--	--	--	--	--
CIS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	--	--	--	--	--
TRICHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--
DIBROMOCHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2-TRICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--
BENZENE	--	--	--	--	--	--	--	--	--	--	--	--
TRANS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	--	--	--	--	--
BROMOFORM	--	--	--	--	--	--	--	--	--	--	--	--
4-METHYL-2-PENTANONE	--	--	--	--	--	--	--	--	--	--	--	--
2-HEXANONE	--	--	--	--	--	--	--	--	--	--	--	--
TETRACHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--
TOLUENE	9 B	3 B	--	21 B	3 B	--	2 B	7 B	--	--	--	6 B
CHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
STYRENE	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL XYLENES	--	--	--	--	--	--	--	--	--	--	--	--

NOTES:

B = Blank contamination
J = Estimated value
-- = Not detected at detection limit

File: W-SDVOC.WK1

24-Oct-89

VOLATILE ORGANIC COMPOUNDS -
SEDIMENT

Sample Location:	ON-SD12-01	ON-FRSD12-01	ON-SDFB13-01
Sample Number:	EBP90	EBP91	EBP92
Date Sampled:	06-12-89	06-12-89	06-12-89
CRL Number:	89ZC40S22	89ZC40D22	89ZC40R01
Laboratory:	S-CUBED	S-CUBED	S-CUBED
ORGANIC COMPOUNDS (ug/kg)			
VOLATILE			
CHLOROMETHANE	--	--	--
BROMOMETHANE	--	--	--
VINYL CHLORIDE	--	--	--
CHLOROETHANE	--	--	--
METHYLENE CHLORIDE	9 B	15 B	45 B
ACETONE	--	--	--
CARBON DISULFIDE	--	--	--
1,1-DICHLOROETHENE	--	--	--
1,1-DICHLOROETHANE	--	--	--
1,2-DICHLOROETHENE (TOTAL)	--	--	--
CHLOROFORM	--	--	--
1,2-DICHLOROETHANE	--	--	--
2-BUTANONE	--	--	--
1,1,1-TRICHLOROETHANE	--	--	--
CARBON TETRACHLORIDE	--	--	--
VINYL ACETATE	--	--	--
BROMODICHLOROMETHANE	--	--	--
1,2-DICHLOROPROPANE	--	--	--
CIS-1,3-DICHLOROPROPENE	--	--	--
TRICHLOROETHENE	--	--	--
DIBROMOCHLOROMETHANE	--	--	--
1,1,2-TRICHLOROETHANE	--	--	--
BENZENE	--	--	--
TRANS-1,3-DICHLOROPROPENE	--	--	--
BROMOFORM	--	--	--
4-METHYL-2-PENTANONE	--	--	--
2-HEXANONE	--	--	--
TETRACHLOROETHENE	--	--	--
1,1,2,2-TETRACHLOROETHANE	--	--	--
TOLUENE	9 B	10 B	28
CHLOROBENZENE	--	--	--
ETHYLBENZENE	--	--	--
STYRENE	--	--	--
TOTAL XYLENES	--	--	--

NOTES:
B = Blank contamination
J = Estimated value
-- = Not detected at detection limit

File: W-SDVOC.WK1

SEMI-VOLATILES - SEDIMENT

Sample Location:	ON-SD01-01	ON-SD02-01	ON-SD03-01	ON-SD04-01	ON-SD05-01	ON-SD06-01	ON-SD07-01	ON-SD08-01	ON-SD09-01	ON-SD10-01	ON-SD11-01	ON-FRSD11-01
Sample Number:	EBP78	EBP79	EBP80	EBP81	EBP82	EBP83	EBP84	EBP85	EBP86	EBP87	EBP88	EBP89
Date Sampled:	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89
CRL Number:	89ZC40S01	89ZC40S02	89ZC40S03	89ZC40S04	89ZC40S05	89ZC40S06	89ZC40S07	89ZC40S08	89ZC40S09	89ZC40S10	89ZC40S21	89ZC40D21
Laboratory:	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED
ORGANIC COMPOUNDS (ug/kg)												
SEMIVOLATILE												
PHENOL	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROETHYL)ETHER	--	--	--	--	--	--	--	--	--	--	--	--
2-CHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
1,3-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
1,4-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
BENZYL ALCOHOL	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROISOPROPYL)ETHER	--	--	--	--	--	--	--	--	--	--	--	--
4-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
N-NITROSO-DI-n-PROPLYAMINE	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--
NITROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
ISOPHORONE	--	--	--	--	--	--	--	--	--	--	--	--
2-NITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DIMETHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
BENZOIC ACID	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROETHOXY)METHANE	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-TRICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLOROANILINE	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBUTADIENE	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLORO-3-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROCYCLOPENTADIENE	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
2,4,5-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
2-CHLORONAPHTHALENE	--	--	--	--	--	--	--	--	--	--	--	--
2-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--
DIMETHYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	--	--	--	--	--	--	--	--	--	--	--	--
2,6-DINITROTOLUENE	--	--	--	--	--	--	--	--	--	--	--	--
3-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DINITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
4-NITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZOFURAN	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DINITROTOLUENE	--	--	--	--	--	--	--	--	--	--	--	--
DIETHYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLOROPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--	--	--	--
FLUORENE	--	--	--	--	--	--	--	--	--	--	--	--
4-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--
4,6-DINITRO-2-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
N-NITROSODIPHENYLAMINE	--	--	--	--	--	--	--	--	--	--	--	--
4-BROMOPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
PENTACHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	--	--	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--
DI-N-BUTYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	--	--	--	--	--	--	--	--	--	--	--	--
PYRENE	--	--	--	--	--	--	--	--	--	--	--	--
BUTYL BENZYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--
3,3-DICHLOROBENZIDINE	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--
DI-N-OCTYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENES	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENES	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	--	--	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZ(A,H)ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(GHI)PERYLENE	--	--	--	--	--	--	--	--	--	--	--	--

NOTES: E = Estimated value
-- = Not detected at detection limit

File: W-SDBNA.WK1

24-Oct-89

SEMI-VOLATILES - SEDIMENT

Sample Location:	ON-SD12-01	ON-FRSD12-01	ON-SDFB13-01
Sample Number:	EBP90	EBP91	EBP92
Date Sampled:	06-12-89	06-12-89	06-12-89
CRL Number:	89ZC40S22	89ZC40D22	89ZC40R01
Laboratory:	S-CUBED	S-CUBED	S-CUBED
ORGANIC COMPOUNDS (ug/kg)			
SEMIVOLATILE			
PHENOL	--	--	--
BIS(2-CHLOROETHYL)ETHER	--	--	--
2-CHLOROPHENOL	--	--	--
1,3-DICHLOROBENZENE	--	--	--
1,4-DICHLOROBENZENE	--	--	--
BENZYL ALCOHOL	--	--	--
1,2-DICHLOROBENZENE	--	--	--
2-METHYLPHENOL	--	--	--
BIS(2-CHLOROISOPROPYL)ETHER	--	--	--
4-METHYLPHENOL	--	--	--
N-NITROSO-DI-n-PROPLYAMINE	--	--	--
HEXACHLOROETHANE	--	--	--
NITROBENZENE	--	--	--
ISOPHORONE	--	--	--
2-NITROPHENOL	--	--	--
2,4-DIMETHYLPHENOL	--	--	--
BENZOIC ACID	--	--	--
BIS(2-CHLOROETHOXY)METHANE	--	--	--
2,4-DICHLOROPHENOL	--	--	--
1,2,4-TRICHLOROBENZENE	--	--	--
NAPHTHALENE	--	--	--
4-CHLOROANILINE	--	--	--
HEXACHLOROBUTADIENE	--	--	--
4-CHLORO-3-METHYLPHENOL	--	--	--
2-METHYLNAPHTHALENE	--	--	--
HEXACHLOROCYCLOPENTADIENE	--	--	--
2,4,6-TRICHLOROPHENOL	--	--	--
2,4,5-TRICHLOROPHENOL	--	--	--
2-CHLORONAPHTHALENE	--	--	--
2-NITROANILINE	--	--	--
DIMETHYL PHTHALATE	--	--	--
ACENAPHTHYLENE	--	--	--
2,6-DINITROTOLUENE	--	--	--
3-NITROANILINE	--	--	--
ACENAPHTHENE	--	--	--
2,4-DINITROPHENOL	--	--	--
4-NITROPHENOL	--	--	--
DIBENZOFURAN	--	--	--
2,4-DINITROTOLUENE	--	--	--
DIETHYL PHTHALATE	--	--	--
4-CHLOROPHENYL PHENYL ETHER	--	--	--
FLUORENE	--	--	--
4-NITROANILINE	--	--	--
4,6-DINITRO-2-METHYLPHENOL	--	--	--
N-NITROSODIPHENYLAMINE	--	--	--
4-BROMOPHENYL PHENYL ETHER	--	--	--
HEXACHLOROBENZENE	--	--	--
PENTACHLOROPHENOL	--	--	--
PHENANTHRENE	--	--	--
ANTHRACENE	--	--	--
DI-N-BUTYL PHTHALATE	--	--	--
FLUORANTHENE	--	--	--
PYRENE	--	--	--
BUTYL BENZYL PHTHALATE	--	--	--
3,3-DICHLOROBENZIDINE	--	--	--
BENZO(A)ANTHRACENE	--	--	--
CHRYSENE	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	--	--	--
DI-N-OCTYL PHTHALATE	--	--	--
BENZO(B)FLUORANTHENES	--	--	--
BENZO(K)FLUORANTHENES	--	--	--
BENZO(A)PYRENE	--	--	--
INDENO(1,2,3-CD)PYRENE	--	--	--
DIBENZ(A,H)ANTHRACENE	--	--	--
BENZO(GHI)PERYLENE	--	--	--

NOTES: E = Estimated value
-- = Not detected at detection limit

File: W-SDBNA.WK1

PESTICIDE/PCB - SEDIMENT

Sample Location:	ON-SD01-01	ON-SD02-01	ON-SD03-01	ON-SD04-01	ON-SD05-01	ON-SD06-01	ON-SD07-01	ON-SD08-01	ON-SD09-01	ON-SD10-01	ON-SD11-01	ON-FRSD11-01
Sample Number:	EBP78	EBP79	EBP80	EBP81	EBP82	EBP83	EBP84	EBP85	EBP86	EBP87	EBP88	EBP89
Date Sampled:	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89
CRL Number:	89ZC40S01	89ZC40S02	89ZC40S03	89ZC40S04	89ZC40S05	89ZC40S06	89ZC40S07	89ZC40S08	89ZC40S09	89ZC40S10	89ZC40S21	89ZC40D21
Laboratory:	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED
ORGANIC COMPOUNDS (ug/kg)												
PESTICIDES and PCBs												
ALPHA-BHC	--	--	--	--	--	--	--	--	--	--	--	--
BETA-BHC	--	--	--	--	--	--	--	--	--	--	--	--
DELTA-BHC	--	--	--	--	--	--	--	--	--	--	--	--
GAMMA-BHC (LINDANE)	--	--	9.3 J	--	--	4.9 J	--	--	--	3.8 J	--	--
HEPTACHLOR	--	--	--	--	--	--	--	--	--	--	--	--
ALDRIN	--	--	--	--	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN I	--	--	--	--	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--	--	--	--	--
4,4-DDE	4.9 J	--	--	--	--	--	--	4.8 J	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN II	--	--	--	--	--	--	--	--	--	--	--	--
4,4-DDD	--	--	--	--	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--	--	--	--	--	--
4,4-DDT	--	--	--	--	--	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--	--	--	--	--
CHLORDANE	--	--	--	--	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1016	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	--	--	--	--	--	--	--	--	--	--	--	--

NOTES:

-- = Not detected at detection limit.

J = Estimated value.

File: W-SDPCB.WK1

24-Oct-89

PESTICIDE/PCB - SEDIMENT

Sample Location:	ON-SD12-01	ON-FRSD12-01	ON-SDFB13-01
Sample Number:	EBP90	EBP91	EBP92
Date Sampled:	06-12-89	06-12-89	06-12-89
CRL Number:	89ZC40S22	89ZC40D22	89ZC40R01
Laboratory:	S-CUBED	S-CUBED	S-CUBED
ORGANIC COMPOUNDS (ug/kg)			
PESTICIDES and PCBs			
ALPHA-BHC	--	--	--
BETA-BHC	--	--	--
DELTA-BHC	--	--	--
GAMMA-BHC (LINDANE)	--	4.1 J	--
HEPTACHLOR	--	--	--
ALDRIN	--	--	--
HEPTACHLOR EPOXIDE	--	--	--
ENDOSULFAN I	--	--	--
DIELDRIN	--	--	--
4,4-DDE	--	--	--
ENDRIN	--	--	--
ENDOSULFAN II	--	--	--
4,4-DDD	--	--	--
ENDRIN ALDEHYDE	--	--	--
ENDOSULFAN SULFATE	--	--	--
4,4-DDT	--	--	--
METHOXYCHLOR	--	--	--
ENDRIN KETONE	--	--	--
CHLORDANE	--	--	--
TOXAPHENE	--	--	--
AROCLOR-1016	--	--	--
AROCLOR-1221	--	--	--
AROCLOR-1232	--	--	--
AROCLOR-1242	--	--	--
AROCLOR-1248	--	--	--
AROCLOR-1254	--	--	--
AROCLOR-1260	--	--	--

NOTES:
-- = Not detected at detection limit.
J = Estimated value.

File: W-SDPCB.WK1

INORGANICS - SEDIMENTS

Sample Location:	SD01-01	SD02-01	SD03-01	SD04-01	SD05-01	SD06-01	SD07-01	SD08-01	SD09-01	SD10-01	SD11-01	FRSD11-01	SD12-01
ITR Sample Number:	MEBC78	MEBC79	MEBC80	MEBC81	MEBC82	MEBC83	MEBC84	MEBC85	MEBC86	MEBC87	MEBC88	MEBC89	MEBC90
Date Sampled:	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89
CRL Number:	89ZC40S51	89ZC40S52	89ZC40S53	89ZC40S54	89ZC40S63	89ZC40S64	89ZC40S65	89ZC40S66	89ZC40S67	89ZC40S68	89ZC40S75	89ZC40D75	89ZC40S76
Laboratory:	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	SKINER	SKINER	SKINER
INORGANIC CHEMICALS (mg/kg)													
ALUMINUM	4560 R	7080 R	2870 R	3420 R	11100 R	7070 R	998 R	11000 R	696 R	9050 R	2060 J	783 J	3260 J
ANTIMONY	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	--	--	--
ARSENIC	3 R	2.4 R	1.7 R	2.2 R	7.8 R	2.4 R	1.6 R	3.4 R	-- R	2.6 R	1.4 J	--	1 J
BARIUM	86.7 R	73.2 R	39.5 R	60 R	108 R	76.2 R	13.7 R	135 R	7.4 R	109 R	29.9 J	10.2 J	36.4 J
BERYLLIUM	0.23 R	0.44 R	0.24 R	-- R	0.77 R	0.43 R	-- R	0.75 R	-- R	0.62 R	--	--	--
CADMIUM	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	--	--	--
CALCIUM	3300 R	1300 R	1010 R	1140 R	1690 R	2550 R	408 R	2680 R	279 R	2560 R	1170 J	371 J	1600
CHROMIUM	9.5 R	13.5 R	6.6 R	7.1 R	20.5 R	14.6 R	2.6 R	24.2 R	2.3 R	19.4 R	3.8	0.94 J	6.1
COBALT	-- R	5.6 R	4.5 R	5 R	9.5 R	5.4 R	-- R	8.1 R	-- R	6.1 R	3.1 J	1.4 J	4 J
COPPER	9.1 R	10.8 R	4.7 R	5 R	14.5 R	10.3 R	-- R	17.2 R	2.3 R	10.9 R	6.9	--	5.5 J
IRON	8090 R	10200 R	6420 R	8490 R	18900 R	10200 R	2510 R	14400 R	1650 R	13600 R	4370 J	1810 J	7240 J
LEAD	13.3 R	15.7 R	5.2 R	6.5 R	37.7 R	7.8 R	0.78 R	24 R	0.46 R	17.2 R	2.8 J	1 J	4 J
MAGNESIUM	1180 R	1730 R	848 R	942 R	2280 R	1970 R	340 R	2590 R	222 R	2370 R	802 J	278 J	1390
MANGANESE	64.3 R	210 R	186 R	516 R	340 R	125 R	111 R	189 R	43.6 R	293 R	191 J	82.2 J	302 J
MERCURY	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	--	--	--
NICKEL	-- R	13.7 R	-- R	9.2 R	21.5 R	11.6 R	-- R	16.7 R	-- R	14.8 R	3.5 J	--	5.7 J
POTASSIUM	-- R	527 R	-- R	-- R	922 R	780 R	-- R	1200 R	-- R	964 R	229 J	85.9 J	338 J
SELENIUM	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	0.6 J	0.54 J	--
SILVER	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	--	--	--
SODIUM	-- R	38.3 R	-- R	-- R	85.3 R	56.1 R	-- R	79.1 R	-- R	53.5 R	34.1 B	25.1 B	39.7 B
THALLIUM	-- R	-- R	-- R	0.74 R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R
VANADIUM	22 R	23 R	11 R	10.4 R	37.2 R	23.8 R	4.4 R	36.5 R	4 R	27.2 R	5.3 J	2.5 J	11.9 J
ZINC	42.2 R	43.2 R	26 R	37 R	65 R	53.4 R	11.1 R	106 R	10.2 R	51.5 R	20.2	8.6	21.5

NOTES:

B = Blank contamination.
J = Estimated value.
R = Unuseable data.
-- = < contract required detection limit.

File: W-SDINO.WK1

INORGANICS - SEDIMENTS

Sample Location:	FRSD12-01	SDFB13-01
ITR Sample Number:	MEBC91	MEBC92
Date Sampled:	06-12-89	06-12-89
CRL Number:	89ZC40D76	89ZC40R06
Laboratory:	SKINER	SKINER

INORGANIC CHEMICALS (mg/kg)

ALUMINUM	5360 J	276 J
ANTIMONY	--	--
ARSENIC	1.6 J	0.88 J
BARIUM	67	4.6 J
BERYLLIUM	--	--
CADMIUM	--	--
CALCIUM	2500	1400
CHROMIUM	10.2	10.2
COBALT	5.6 J	--
COPPER	7.5	--
IRON	11300 J	143 J
LEAD	6 J	-- J
MAGNESIUM	1820	79.5 J
MANGANESE	459 J	1.9 J
MERCURY	--	--
NICKEL	8 J	--
POTASSIUM	562 J	66.8 J
SELENIUM	--	--
SILVER	--	--
SODIUM	82.4 B	1220
THALLIUM	-- R	-- R
VANADIUM	16.2	19.3
ZINC	36.6	1.3

NOTES:

B = Blank contamination.
J = Estimated value.
R = Unuseable data.
-- = < contract required detection limit.

File: W-SDINO.WK1

VOLATILE ORGANIC COMPOUNDS -
SURFACE WATER

Sample Location:	ON-SW01-01	ON-SW02-01	ON-SW03-01	ON-SW04-01	ON-SW05-01	ON-SW06-01	ON-SW07-01	ON-SW08-01	ON-SW09-01	ON-SW10-01	ON-SW11-01	ON-FRSW11-01
Sample Number:	EBP63	EBP64	EBP65	EBP66	EBP67	EBP68	EBP69	EBP70	EBP71	EBP72	EBP73	EBP74
Date Sampled:	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89
CRL Number:	89ZC40S11	89ZC40S12	89ZC40S13	89ZC40S14	89ZC40S15	89ZC40S16	89ZC40S17	89ZC40S18	89ZC40S19	89ZC40S20	89ZC40S24	89ZC40D24
Laboratory:	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED
ORGANIC COMPOUNDS (ug/kg)												
VOLATILE												
CHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--
BROMOMETHANE	--	--	--	--	--	--	--	--	--	--	--	--
VINYL CHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--
CHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--
METHYLENE CHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--
ACETONE	--	--	--	--	--	--	--	--	--	--	--	--
CARBON DISULFIDE	--	--	--	--	--	--	--	--	--	--	--	--
1,1-DICHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--
1,1-DICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROETHENE (TOTAL)	--	--	--	--	--	--	--	--	--	--	--	--
CHLOROFORM	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--
2-BUTANONE	--	--	--	--	--	--	--	--	--	--	--	--
1,1,1-TRICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--
CARBON TETRACHLORIDE	--	--	--	--	--	--	--	--	--	--	--	--
VINYL ACETATE	--	--	--	--	--	--	--	--	--	--	--	--
BROMODICHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROPROPANE	--	--	--	--	--	--	--	--	--	--	--	--
CIS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	--	--	--	--	--
TRICHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--
DIBROMOCHLOROMETHANE	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2-TRICHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--
BENZENE	--	--	--	--	--	--	--	--	--	--	--	--
TRANS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	--	--	--	--	--
BROMOFORM	--	--	--	--	--	--	--	--	--	--	--	--
4-METHYL-2-PENTANONE	--	--	--	--	--	--	--	--	--	--	--	--
2-HEXANONE	--	--	--	--	--	--	--	--	--	--	--	--
TETRACHLOROETHENE	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--
TOLUENE	--	--	--	--	--	--	--	--	--	--	--	--
CHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
STYRENE	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL XYLENES	--	--	--	--	--	--	--	--	--	--	--	--

NOTES:

B = Blank contamination
E = Estimated value
-- = Not detected at detection limit

File: W-SWVOC.WK1

24-Oct-89

VOLATILE ORGANIC COMPOUNDS -
SURFACE WATER

Sample Location:	ON-SW12-01	ON-FRSW12-01	ON-SWFB13-01
Sample Number:	EBP75	EBP76	EBP77
Date Sampled:	06-12-89	06-12-89	06-12-89
CRL Number:	89ZC40S25	89ZC40D25	89ZC40R02
Laboratory:	S-CUBED	S-CUBED	S-CUBED
ORGANIC COMPOUNDS (ug/kg)			
VOLATILE			
CHLOROMETHANE	--	--	--
BROMOMETHANE	--	--	--
VINYL CHLORIDE	--	--	--
CHLOROETHANE	--	--	--
METHYLENE CHLORIDE	--	--	--
ACETONE	--	--	--
CARBON DISULFIDE	--	--	--
1,1-DICHLOROETHENE	--	--	--
1,1-DICHLOROETHANE	--	--	--
1,2-DICHLOROETHENE (TOTAL)	--	--	--
CHLOROFORM	--	--	--
1,2-DICHLOROETHANE	--	--	--
2-BUTANONE	--	--	--
1,1,1-TRICHLOROETHANE	--	--	--
CARBON TETRACHLORIDE	--	--	--
VINYL ACETATE	--	--	--
BROMODICHLOROMETHANE	--	--	--
1,2-DICHLOROPROPANE	--	--	--
CIS-1,3-DICHLOROPROPENE	--	--	--
TRICHLOROETHENE	--	--	--
DIBROMOCHLOROMETHANE	--	--	--
1,1,2-TRICHLOROETHANE	--	--	--
BENZENE	--	--	--
TRANS-1,3-DICHLOROPROPENE	--	--	--
BROMOFORM	--	--	--
4-METHYL-2-PENTANONE	--	--	--
2-HEXANONE	--	--	--
TETRACHLOROETHENE	--	--	--
1,1,2,2-TETRACHLOROETHANE	--	--	--
TOLUENE	--	--	--
CHLOROBENZENE	--	--	--
ETHYLBENZENE	--	--	--
STYRENE	--	--	--
TOTAL XYLENES	--	--	--

NOTES:
B = Blank contamination
E = Estimated value
-- = Not detected at detection limit

File: W-SWVOC.WK1

SEMI-VOLATILES - SURFACE WATER

Sample Location:	ON-SW01-01	ON-SW02-01	ON-SW03-01	ON-SW04-01	ON-SW05-01	ON-SW06-01	ON-SW07-01	ON-SW08-01	ON-SW09-01	ON-SW10-01	ON-SW11-01	ON-FRSW11-01
Sample Number:	EBP63	EBP64	EBP65	EBP66	EBP67	EBP68	EBP69	EBP70	EBP71	EBP72	EBP73	EBP74
Date Sampled:	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89
CRL Number:	89ZC40S11	89ZC40S12	89ZC40S13	89ZC40S14	89ZC40S15	89ZC40S16	89ZC40S17	89ZC40S18	89ZC40S19	89ZC40S20	89ZC40S24	89ZC40D24
Laboratory:	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED
ORGANIC COMPOUNDS (ug/l)												
SEMIVOLATILE												
PHENOL	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROETHYL)ETHER	--	--	--	--	--	--	--	--	--	--	--	--
2-CHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
1,3-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
1,4-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
BENZYL ALCOHOL	--	--	--	--	--	--	--	--	--	--	--	--
1,2-DICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROISOPROPYL)ETHER	--	--	--	--	--	--	--	--	--	--	--	--
4-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
N-NITROSO-DI-n-PROPLYAMINE	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROETHANE	--	--	--	--	--	--	--	--	--	--	--	--
NITROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
ISOPHORONE	--	--	--	--	--	--	--	--	--	--	--	--
2-NITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DIMETHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
BENZOIC ACID	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROETHOXY)METHANE	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-TRICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLOROANILINE	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBUTADIENE	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLORO-3-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROCYCLOPENTADIENE	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
2,4,5-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
2-CHLORONAPHTHALENE	--	--	--	--	--	--	--	--	--	--	--	--
2-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--
DIMETHYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	--	--	--	--	--	--	--	--	--	--	--	--
2,6-DINITROTOLUENE	--	--	--	--	--	--	--	--	--	--	--	--
3-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DINITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
4-NITROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZOFURAN	--	--	--	--	--	--	--	--	--	--	--	--
2,4-DINITROTOLUENE	--	--	--	--	--	--	--	--	--	--	--	--
DIETHYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--
4-CHLOROPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--	--	--	--
FLUORENE	--	--	--	--	--	--	--	--	--	--	--	--
4-NITROANILINE	--	--	--	--	--	--	--	--	--	--	--	--
4,6-DINITRO-2-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
N-NITROSODIPHENYLAMINE	--	--	--	--	--	--	--	--	--	--	--	--
4-BROMOPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBENZENE	--	--	--	--	--	--	--	--	--	--	--	--
PENTACHLOROPHENOL	--	--	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	--	--	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--
DI-N-BUTYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	--	--	--	--	--	--	--	--	--	--	--	--
PYRENE	--	--	--	--	--	--	--	--	--	--	--	--
BUTYL BENZYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--
3,3-DICHLOROBENZIDINE	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--
DI-N-OCTYL PHTHALATE	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENES	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENES	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	--	--	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZ(A,H)ANTHRACENE	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(GHI)PERYLENE	--	--	--	--	--	--	--	--	--	--	--	--

NOTES: E = Estimated value
-- = Not detected at detection limit

File: W-SWBNA.WK1

24-Oct-89

SEMI-VOLATILES - SURFACE WATER

Sample Location:	ON-SW12-01	ON-FRSW12-01	ON-SWFB13-01
Sample Number:	EBP75	EBP76	EBP77
Date Sampled:	06-12-89	06-12-89	06-12-89
CRL Number:	89ZC40S25	89ZC40D25	89ZC40R02
Laboratory:	S-CUBED	S-CUBED	S-CUBED
ORGANIC COMPOUNDS (ug/l)			
SEMIVOLATILE			
PHENOL	--	--	--
BIS(2-CHLOROETHYL)ETHER	--	--	--
2-CHLOROPHENOL	--	--	--
1,3-DICHLOROBENZENE	--	--	--
1,4-DICHLOROBENZENE	--	--	--
BENZYL ALCOHOL	--	--	--
1,2-DICHLOROBENZENE	--	--	--
2-METHYLPHENOL	--	--	--
BIS(2-CHLOROISOPROPYL)ETHER	--	--	--
4-METHYLPHENOL	--	--	--
N-NITROSO-DI-n-PROPLYAMINE	--	--	--
HEXACHLOROETHANE	--	--	--
NITROBENZENE	--	--	--
ISOPHORONE	--	--	--
2-NITROPHENOL	--	--	--
2,4-DIMETHYLPHENOL	--	--	--
BENZOIC ACID	--	--	--
BIS(2-CHLOROETHOXY)METHANE	--	--	--
2,4-DICHLOROPHENOL	--	--	--
1,2,4-TRICHLOROBENZENE	--	--	--
NAPHTHALENE	--	--	--
4-CHLOROANILINE	--	--	--
HEXACHLOROBUTADIENE	--	--	--
4-CHLORO-3-METHYLPHENOL	--	--	--
2-METHYLNAPHTHALENE	--	--	--
HEXACHLOROCYCLOPENTADIENE	--	--	--
2,4,6-TRICHLOROPHENOL	--	--	--
2,4,5-TRICHLOROPHENOL	--	--	--
2-CHLORONAPHTHALENE	--	--	--
2-NITROANILINE	--	--	--
DIMETHYL PHTHALATE	--	--	--
ACENAPHTHYLENE	--	--	--
2,6-DINITROTOLUENE	--	--	--
3-NITROANILINE	--	--	--
ACENAPHTHENE	--	--	--
2,4-DINITROPHENOL	--	--	--
4-NITROPHENOL	--	--	--
DIBENZOFURAN	--	--	--
2,4-DINITROTOLUENE	--	--	--
DIETHYL PHTHALATE	--	--	--
4-CHLOROPHENYL PHENYL ETHER	--	--	--
FLUORENE	--	--	--
4-NITROANILINE	--	--	--
4,6-DINITRO-2-METHYLPHENOL	--	--	--
N-NITROSODIPHENYLAMINE	--	--	--
4-BROMOPHENYL PHENYL ETHER	--	--	--
HEXACHLOROBENZENE	--	--	--
PENTACHLOROPHENOL	--	--	--
PHENANTHRENE	--	--	--
ANTHRACENE	--	--	--
DI-N-BUTYL PHTHALATE	--	--	--
FLUORANTHENE	--	--	--
PYRENE	--	--	--
BUTYL BENZYL PHTHALATE	--	--	--
3,3-DICHLOROBENZIDINE	--	--	--
BENZO(A)ANTHRACENE	--	--	--
CHRYSENE	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	--	--	--
DI-N-OCTYL PHTHALATE	--	--	--
BENZO(B)FLUORANTHENES	--	--	--
BENZO(K)FLUORANTHENES	--	--	--
BENZO(A)PYRENE	--	--	--
INDENO(1,2,3-CD)PYRENE	--	--	--
DIBENZ(A,H)ANTHRACENE	--	--	--
BENZO(GHI)PERYLENE	--	--	--

NOTES: E = Estimated value
-- = Not detected at detection limit

File: W-SWBNA.WK1

PESTICIDE/PCBS - SURFACE WATER

Sample Location:	ON-SW01-01	ON-SW02-01	ON-SW03-01	ON-SW04-01	ON-SW05-01	ON-SW06-01	ON-SW07-01	ON-SW08-01	ON-SW09-01	ON-SW10-01	ON-SW11-01	ON-FRSW11-01
Sample Number:	EBP63	EBP64	EBP65	EBP66	EBP67	EBP68	EBP69	EBP70	EBP71	EBP72	EBP73	EBP74
Date Sampled:	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89
CRL Number:	89ZC40S11	89ZC40S12	89ZC40S13	89ZC40S14	89ZC40S15	89ZC40S16	89ZC40S17	89ZC40S18	89ZC40S19	89ZC40S20	89ZC40S24	89ZC40D24
Laboratory:	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED	S-CUBED
ORGANIC COMPOUNDS (ug/kg)												
PESTICIDES and PCBs												
ALPHA-BHC	--	--	--	--	--	--	--	--	--	--	--	--
BETA-BHC	--	--	--	--	--	--	--	--	--	--	--	--
DELTA-BHC	--	--	--	--	--	0.01 J	--	--	--	--	--	--
GAMMA-BHC (LINDANE)	--	0.04 B	--	0.06 B	--	--	0.03 B	--	--	0.07 B	--	--
HEPTACHLOR	--	--	--	--	--	--	--	--	--	--	--	--
ALDRIN	--	--	--	--	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN I	--	--	--	--	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--	--	--	--	--
4,4-DDE	--	--	--	--	--	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN II	--	--	--	--	--	--	--	--	--	--	--	--
4,4-DDD	--	--	--	--	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--	--	--	--	--	--
4,4-DDT	--	--	--	--	--	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--	--	--	--	--
CHLORDANE	--	--	--	--	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1016	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	--	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	--	--	--	--	--	--	--	--	--	--	--	--

NOTES:

-- = Not detected at detection limit.

B = Blank contamination.

J = Estimated value.

File: W-SWPCB.WK1

24-Oct-89

PESTICIDE/PCBS - SURFACE WATER

Sample Location:	ON-SW12-01	ON-FRSW12-01	ON-SWFB13-01
Sample Number:	EBP75	EBP76	EBP77
Date Sampled:	06-12-89	06-12-89	06-12-89
CRL Number:	89ZC40S25	89ZC40D25	89ZC40R02
Laboratory:	S-CUBED	S-CUBED	S-CUBED
ORGANIC COMPOUNDS (ug/kg)			
PESTICIDES and PCBs			
ALPHA-BHC	--	--	--
BETA-BHC	--	--	--
DELTA-BHC	--	--	--
GAMMA-BHC (LINDANE)	0.09 B	--	--
HEPTACHLOR	--	--	--
ALDRIN	--	--	--
HEPTACHLOR EPOXIDE	--	--	--
ENDOSULFAN I	--	--	--
DIELDRIN	--	--	--
4,4-DDE	--	--	--
ENDRIN	--	--	--
ENDOSULFAN II	--	--	--
4,4-DDD	--	--	--
ENDRIN ALDEHYDE	--	--	--
ENDOSULFAN SULFATE	--	--	--
4,4-DDT	--	--	--
METHOXYCHLOR	--	--	--
ENDRIN KETONE	--	--	--
CHLORDANE	--	--	--
TOXAPHENE	--	--	--
AROCLOR-1016	--	--	--
AROCLOR-1221	--	--	--
AROCLOR-1232	--	--	--
AROCLOR-1242	--	--	--
AROCLOR-1248	--	--	--
AROCLOR-1254	--	--	--
AROCLOR-1260	--	--	--

NOTES:
-- = Not detected at detection limit.
B = Blank contamination.
J = Estimated value.

File: W-SWPCB.WK1

INORGANICS - SURFACE WATER

Sample Location:	SW01-01	SW02-01	SW03-01	SW04-01	SW05-01	SW06-01	SW07-01	SW08-01	SW09-01	SW10-01	SW11-01	FRSW11-01	SW12-01
ITR Sample Number:	MEBC63	MEBC64	MEBC65	MEBC66	MEBC67	MEBC68	MEBC69	MEBC70	MEBC71	MEBC72	MEBC73	MEBC74	MEBC75
Date Sampled:	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89	06-12-89
CRL Number:	89ZC40S55	89ZC40S56	89ZC40S57	89ZC40S58	89ZC40S59	89ZC40S60	89ZC40S61	89ZC40S62	89ZC40S69	89ZC40S70	89ZC40S73	89ZC40D73	89ZC40S74
Laboratory:	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	KEYSTONE	SKINNER	SKINNER	SKINNER
INORGANIC CHEMICALS (ug/l)													
ALUMINUM	74000 R	2450 R	460 R	8300 R	382 R	96.3 R	606 R	777 R	237 R	76.8 R	397 R	602	729
ANTIMONY	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	--	--
ARSENIC	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	6.1 R	-- R	--	--
BARIUM	2470 R	96.4 R	31.3 R	133 R	31 R	63.7 R	52 R	69.6 R	53.5 R	74.8 R	33.1 R	31.1 J	31.1 J
BERYLLIUM	6.3 R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	--	--
CADMIUM	7.1 R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	--	--
CALCIUM	123000 R	13800 R	12200 R	18000 R	12800 R	20800 R	17000 R	17200 R	20500 R	27600 R	13400 R	12800	12900
CHROMIUM	98.4 R	-- R	-- R	13.4 R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	--	--
COBALT	51 R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	--	--
COPPER	119 R	13.4 R	9.1 R	-- R	20.8 R	16.5 R	16.1 R	6.9 R	8.8 R	-- R	-- R	--	--
IRON	230000 R	12200 R	2030 R	14500 R	1930 R	10200 R	8420 R	10700 R	3430 R	8260 R	2060 R	2330	2380
LEAD	298 R	3.6 R	-- R	5.8 R	-- R	2.7 R	2.4 R	1.4 R	1.5 R	-- R	1.8 R	1.8 J	1.8 J
MAGNESIUM	32500 R	4840 R	4750 R	7760 R	4990 R	7150 R	6350 R	6180 R	7140 R	9820 R	5260 R	5040	5100
MANGANESE	2350 R	2020 R	185 R	1880 R	198 R	1930 R	816 R	1540 R	2090 R	3430 R	176 R	176	169
MERCURY	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	0.35 J
NICKEL	101 R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	--	--
POTASSIUM	6820 R	3420 R	1870 R	4160 R	1920 R	3980 R	2620 R	2440 R	5610 R	3770 R	2200 R	2110 J	2120 J
SELENIUM	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	2.7 R	--	--
SILVER	-- R	6.1 R	8.6 R	-- R	-- R	-- R	5.8 R	-- R	-- R	-- R	-- R	--	--
SODIUM	3280 R	2430 R	2420 R	2710 R	2510 R	2820 R	2770 R	3090 R	2540 R	2420 R	2690 R	2540 J	2600 J
THALLIUM	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	--	--
VANADIUM	416 R	14.8 R	-- R	25.6 R	-- R	6.3 R	6.9 R	6.9 R	-- R	-- R	-- R	--	--
ZINC	923 R	32.2 R	12.1 R	56.3 R	17.8 R	28.5 R	18.6 R	22.3 R	15.1 R	8.9 R	16 R	10.3 B	9.3 B

NOTES:

B = Blank contamination.
J = Estimated value.
R = Unuseable data.
-- = < contract required detection limit.

File: W-SWINO.WK1

08-Nov-89

INORGANICS - SURFACE WATER

Sample Location:	FRSW12-01	SWFB13-01
ITR Sample Number:	MEBC76	MEBC77
Date Sampled:	06-12-89	06-12-89
CRL Number:	89ZC40D74	89ZC40R05
Laboratory:	SKINNER	SKINNER

INORGANIC CHEMICALS (ug/l)

ALUMINUM	690	--
ANTIMONY	--	--
ARSENIC	--	--
BARIUM	30.7 J	--
BERYLLIUM	--	--
CADMIUM	--	--
CALCIUM	13000	--
CHROMIUM	--	--
COBALT	--	--
COPPER	--	4.8 J
IRON	2360	22.9 B
LEAD	2.2 J	2.7 J
MAGNESIUM	5110	--
MANGANESE	169	--
MERCURY	-- R	-- R
NICKEL	--	--
POTASSIUM	2150 J	--
SELENIUM	--	--
SILVER	--	--
SODIUM	2640 J	64.5 B
THALLIUM	--	--
VANADIUM	--	--
ZINC	13.1 B	11.5 B

NOTES:

B = Blank contamination.
J = Estimated value.
R = Unuseable data.
-- = < contract required detection limit.

File: W-SWINO.WK1

APPENDIX B
LANDFILL GAS PROBING

TECHNICAL MEMORANDUM

CH2M HILL

TO: File

COPIES: Steve Keith/CH2M HILL/GLO
Cathy Barnett/CH2M HILL/GLO

FROM: Jim Russell/CH2M HILL/GLO

DATE: March 23, 1992

SUBJECT: Onalaska Municipal Landfill
Landfill Gas Probes

PROJECT: GLO65602.LC.P2

Introduction

This memorandum summarizes the results of landfill gas probing performed at the Onalaska Municipal Landfill on January 3, 1992. Probes were advanced to obtain qualitative data on soil landfill gas concentrations in and around the limits of the landfill.

Landfill Gas Probes

Landfill gas probes were constructed of ½-inch outside diameter stainless steel casing. The probes were driven into the ground manually with a post hammer or automatically with a pneumatic jack hammer. The lower 2-foot section of each probe was slotted to allow landfill gas to enter the probe. Probes were advanced from about 4 to 6 feet below ground by attaching additional probe sections as required.

A total of 15 gas probes were advanced in and around the limits of the landfill. The approximate locations of these probes are shown in Figure 1. Explosimeter, oxygen, and natural gas readings were taken at each probe. The explosimeter, oxygen, and natural gas meter readings were obtained by inserting the individual meter probes directly into the top of the landfill gas probe casing. Each of these meters applied a small vacuum at the top of the gas probes. The gas probes were not purged prior to taking the meter readings. Carbon dioxide and HNu readings were taken from Tevlar bag samples collected using Gillian pumps at two probe locations. Explosimeter readings ranging from about 50 to 100 percent of the Lower Explosive Limit (LEL) and natural gas readings of between 3 and 60 percent by volume (30,000 to 600,000 ppm) were detected at 8 of the 15 gas probes. Six of these positive readings (at gas probes GP3, GP5, GP6, GP9, GP10, and GP14) were located outside the limits of the landfill as determined during the Remedial Investigation (RI) geophysical survey. Two of the probes (gas probes GP3 and GP12) were located outside the landfill property line. Carbon dioxide readings of more than 7,500 ppm (the carbon dioxide meter could not read above 7,500 ppm) were detected at gas probes GP1 and GP10. No volatile organic HNu readings were detected from the bag sample collected from gas probe GP1. Gas probe reading results are summarized and presented in Table 1.

Conclusions

Based on the gas probe readings it appears that landfill gas near the surface of the landfill is composed primarily of methane and carbon dioxide. However, it should be noted that sustained HNu readings above background were observed in the breathing zone during RI deep test pit excavation in test pits DTP-01 and DTP-03. It is anticipated that high concentrations of volatile organics, natural gas (e.g., methane), carbon dioxide, and other landfill gasses will be encountered during the Landfill Cap Remedial Action. These high concentrations may require Level B, Level C, and other health and safety protective clothing, gear, or methods (e.g., ventilation, staging of the work) be used by site workers during construction of the landfill gas collector and interceptor trenches, landfill gas monitoring wells, grading of the landfill cap, and excavation and grading at the Treatment Facility area.

GLT316/012.51

Table 1
Landfill Gas Probing Results
Landfill Cap Remedial Action
Onalaska Township, Wisconsin

Gas Probe No.	Percent Methane by Volume	Percent CO_2 by Volume	Explosimeter (% LEL)	O_2 (%)
1	60	0.75	100	0
2	0	--	0	21
3	10	--	100	0
4	0	--	0	<5
5	40	--	100	0
6	40	--	100	0
7	0	--	0	21
8	0	--	0	21
9	18	--	100	0
10	45	0.75	100	0
11	0	--	0	<5
12	3-10	--	50	18
13	0	--	0	21
14	3-10	--	100	0
15	0	--	0	21

-- No reading taken

GLT301/022.51

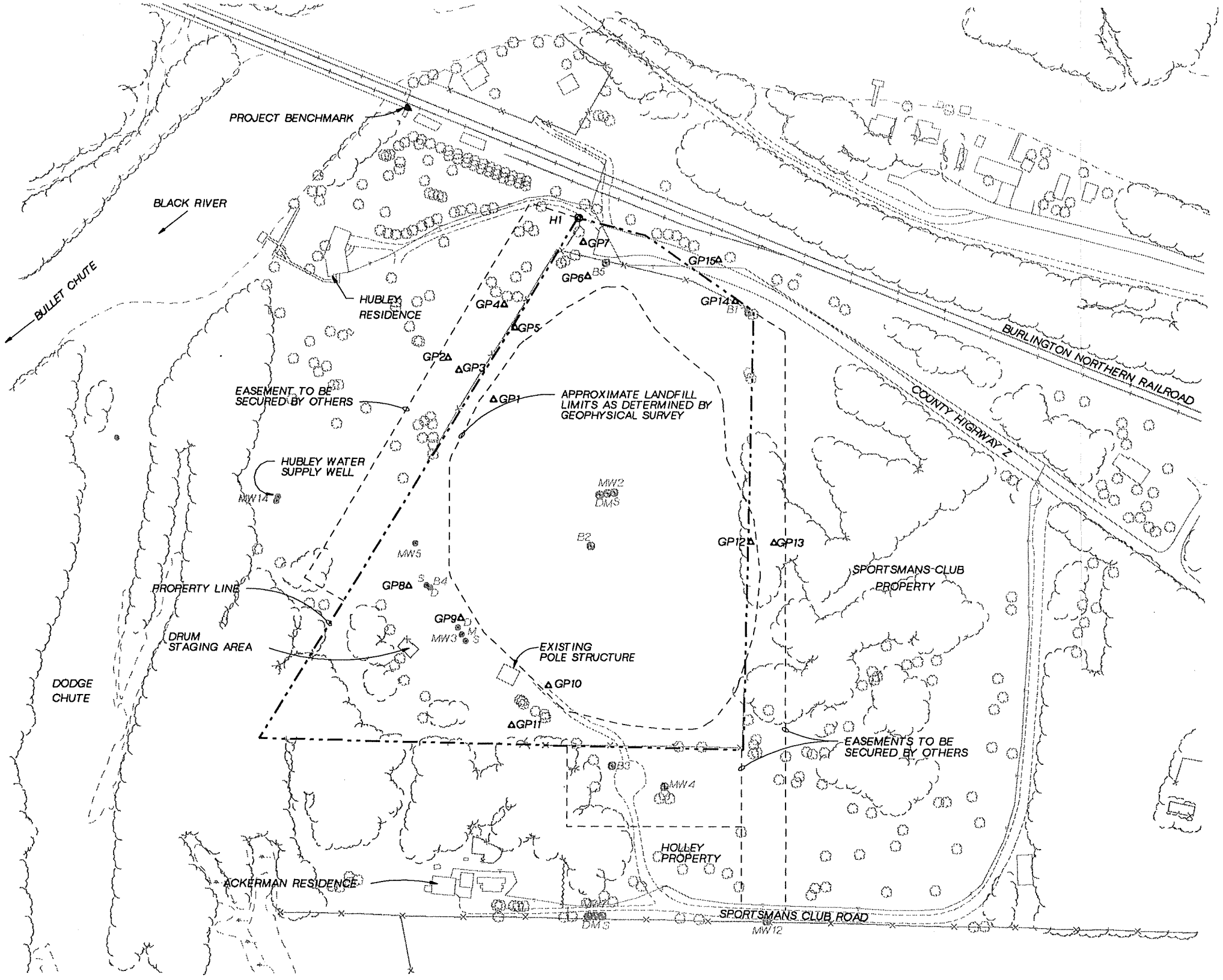


FIGURE 1
GAS PROBE LOCATIONS

CH2M HILL

APPENDIX C
WDR DREDGING INVESTIGATION

CORRESPONDENCE/MEMORANDUM State of Wisconsin

File Code: 3200 MAY 30 91

Date: May 29, 1991

To: Robin Schmidt, SW/3

From: John Sullivan, Lax

Re: Tier I Evaluation Of Potential Dredge Materials For the Town of Onalaska Landfill Cap

The purpose of this memo is to review available sediment data from the Mississippi and Black River areas and to recommend a future sampling strategy to assess the suitability of using dredged materials for the landfill cap. This correspondence is in response to your memo to Terry Moe dated March 26, 1991.

Listed below is a summary of information that was considered to define the need for detailed sediment evaluations for the Dodge Chute area of the Black River. This Tier I sediment evaluation approach follows general guidance provided in NR 347 and the St. Paul District COE's Standard Operating Procedures for habitat rehabilitation projects on the river.

Tentative Dredging Location

Based on initial discussions with work unit staff the site of the proposed dredging would likely be at the north end of Dodge Chute. The actual location would be west and northwest of the Town of Onalaska Landfill (Figure 1). Bed materials are expected to be coarse-grain deposits based on previous borings in the Black River area. The actual zone of dredging would likely be outside the existing or future leachate plume emanating from the landfill. The purpose of this dredging is to re-open the north end of Dodge Chute which appears to be blocked with coarse materials and small willows. It is anticipated that additional dredging may be needed downstream to meet the objectives of re-establishing flows into Dodge Chute and Lake Onalaska during low flow conditions. However, dredging in this latter location will be considered at a later date pending the results of hydraulic studies of the Black River delta area.

The size of the dredge cut would be partially determined based on material needs for the landfill cap. Preliminary estimates indicate that about 30,000 cubic yards will be needed for cover soils and grading. A tentative channel design and dredging location is provided in Figure 1. The specific dimension and location of the dredge cut has not been defined at this time. This will be determined after sediment borings and cross sections are obtained.

It should be noted that this plan is still preliminary. The USCOE and our River Unit staff are conducting hydraulic studies to assess existing flow conditions in the Black River delta to further evaluate this dredging project. The site of dredging is on private land and agreements would have to be reached with the property owner(s). Further, additional discussions with the Lake Onalaska Lake District and other interested citizens are necessary to obtain their input and support for this dredging project.

Sediment Borings

No sediment borings are available from the immediate project area. Soil borings taken as part of the landfill site investigations by Warzyn Inc. in 1978 indicated primarily sandy deposits 15 to 45 ft below the landfill surface. Some layers of silt were encountered, but silt and clay contents were normally less than 5 %. Gravel was found in several of the borings and ranged from 2 to 30 %.

The Wisconsin DOT conducted soil borings and resistivity soundings in the New Amsterdam area of the Black River located a few miles upstream from the proposed dredge cut. The purpose of their work was to assess the nature of the alluvium in the river valley and to determine its usefulness as a source of materials for a major highway project. Their results indicated sandy deposits were present to a depth of about 100 ft. Some gravel was also found. Seams of silt (1-2 ft thick) were encountered in the upper 5 to 10 feet at some boring locations. No particle size analysis was available from their investigations.

Sediment Contaminant Data

There is apparently no sediment contaminant data from the immediate project area. Sediment samples were collected as part of site investigations for the landfill, but were deemed not acceptable (by Solid Waste) due to QA/QC concerns. Data are available from the Pool 7 area that provides an indication of what could be expected at the proposed dredge cut.

The USFWS conducted a very comprehensive sediment evaluation program in the Upper Mississippi River in 1985. I have summarized their results for surficial sediments collected from the Pool 7 area, including the Black River delta area (Table 1). Unfortunately, no physical analysis of these sediments were conducted to assess particle size or organic content. However, the high Fe, Mn, and Al levels indicate the samples represent fine materials typical of sediments normally found in backwater areas. Moisture contents of fine surficial sediments would likely exceed 75% and would be dominated by silts and clays. Typical organic contents would range from 2 to 8 % (total volatile solids).

The USFWS 1985 sediment metals data revealed contaminant levels representative of backwater sediments for the Upper Mississippi River. In general, the metal concentrations do not indicate substantial contamination and mostly fall into the low to moderately polluted classification proposed by the EPA (Great Lakes Harbor Guidelines) or by the Ontario Ministry of the Environment. We tend to see higher levels of Ba, Fe, and Mn in Mississippi River backwater sediments, but these constituents do not provide a serious contaminant problem to aquatic organisms. No organochlorines, including PCBs, were detected in the 1985 samples collected by the USFWS. Low levels of PAHs and aliphatic hydrocarbons were detected in some samples, particularly Site 19 in Lake Onalaska (Figure 2). I suspect these levels reflects cultural inputs from the Halfway Creek watershed.

The USCOE has obtained sediment data from the main channel of the Mississippi River at historic dredge cuts in the reach between Lock and Dams 6 and 7. These bed materials are primarily sand deposits with little organic matter (Table 2). Contaminant levels are low and reflect the high sand content of the bed sediments. It should be noted that dredge spoils from Pool 7 are being used as a sand blanket for the leachate collection system for the new La Crosse County Landfill.

I believe the USFWS 1985 sediment data represents the expected range of contaminants that would be found in fine surficial deposits (upper 2 ft) in the Black River area. The USCOE's data for the main channel deposits would likely be similar to bed sediments encountered in the Black River distributaries (Dodge Chute, Bullet Chute, Shingle Creek and others).

Recommended Sediment Testing for the Proposed Dredge Cut at Dodge Chute

Based on the existing sediment information for Pool 7, the dredging project area, and the proximity to the Town of Onalaska Landfill, I recommend the following sediment testing be performed:

1. Three sediment cores should be collected from the project area for chemical or physical analysis. Samples should extend to the project depth plus 1 to 2 ft. Core samples should be divided vertically into 2 ft increments unless visual examination indicates little vertical changes in texture, particle size and organic content. Two or three additional sediment borings should be collected to visually assess vertical and spatial variation in sediment particle size in the project area.

2. The following physical analysis should be performed on each strata collected: grain size, moisture content, and organic content (total/volatile/solids).

3. Chemical analysis should be performed on fine sediments (those strata having a P200 content greater than 10 %). Samples for chemical analysis may be composited horizontally between the three core samples if similar strata are encountered (based on visual examination in the field).

4. Chemical analysis should include the following parameters:

   Inorganics: Ba, Cd, Cr, Cu, Hg, Mn, Ni, Pb, Zn,

   Organics: TOC, Total PCBs, toluene, 1,1-Dichloroethylene and 1,2-Dichloroethylene. + pesticides

   Notes: Ba and the VOCs are not normally analyzed in river sediments. These parameters were added to assess possible source contribution from the Town of Onalaska Landfill.

   Chemical analysis will presumably be performed by the State Lab of Hygiene, unless timing dictates that we do otherwise. Physical analysis will be performed by the University of Wisconsin Extension Laboratory or by a local consulting laboratory.

5. Surplus sediments will be saved in the event further testing is warranted.

Please review the attached data and sampling recommendations to see if this will meet your program needs. Please let me know if you have any questions on the existing sediment data or the proposed sediment evaluations for Dodge Chute. I would appreciate your response within 2-3 weeks if possible. If you have questions on the habitat project or coordination efforts with local citizens or land owners, you should contact Jeff Janvrin (785-9005).

Sediment cores will be collected as soon as water levels return to "normal" conditions. Currently, we plan to collect these samples ourselves providing our equipment is capable of sampling to the desired dredging depths. Should this not be the case, we would then have to make other arrangements for collecting these samples.

cc: Terry Moe, Lax
Jeff Janvrin, Lax
Mike Degen, Lax
Art Bernhardt, WD
Linda Talbot, WR/2

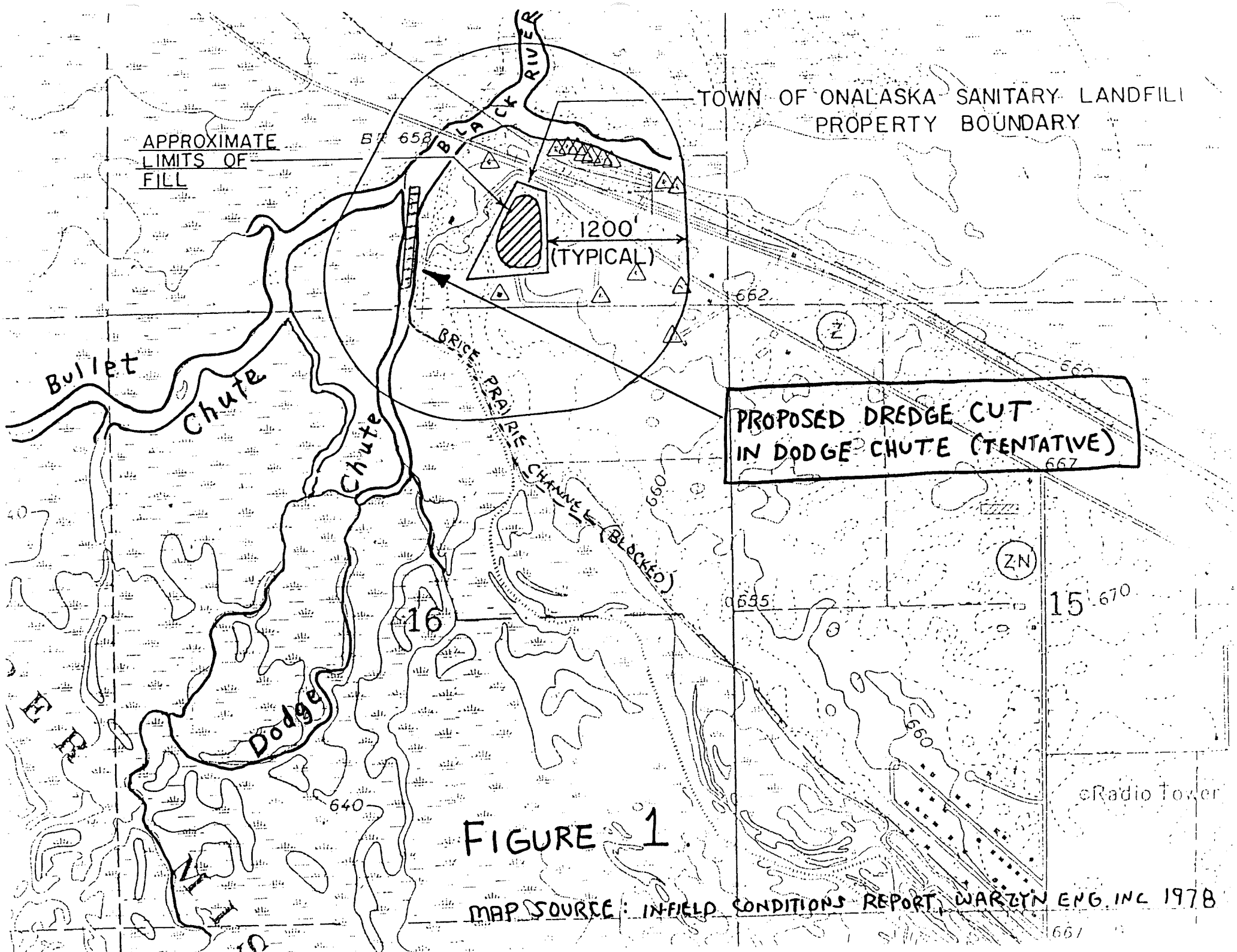


FIGURE 1.

MAP SOURCE: INFIELD CONDITIONS REPORT, WARZYN ENG. INC 1978

TABLE 1. BULK SEDIMENT DATA FROM THE USFWS COLLECTED BY STAN SMITH, ST PAUL, MN. ANALYZED BY MISSISSIPPI STATE UNIVERSITY. SAMPLES COLLECTED FROM THE POOL 7 AREA OF THE UPPER MISSISSIPPI RIVER IN 1985.

PARAMETER		LOD (ug/g dw)	SAMPLING LOCATION 13	14	15	16	17	18	19
METALS (ug/g dw)									
	Ag	0.4-0.5	ND	ND	ND	ND	ND	ND	ND
	Al		7830	12400	5490	16100	5520	13100	12900
	As	5-8	ND	ND	ND	ND	ND	ND	ND
	B	4	ND	5	6	5	13	6	7
	Ba		108	153	105	246	85	159	189
	Be		0.45	0.72	0.4	0.91	0.37	0.74	0.81
	Cd	0.3	0.5	0.5	ND	0.5	0.4	0.4	ND
	Cr		20	24	14	31	14	21	23
	Cu		13	17	11	23	11	23	23
	Fe		17900	22200	13800	27900	12600	27700	27700
	Hg		4020	3520	3240	3800	4990	4180	4450
	Mn		783	476	956	760	745	2030	1970
	Mo	1-3	ND	ND	ND	ND	ND	ND	ND
	Ni		14	20	13	24	13	19	20
	Pb		16	17	12	22	14	20	23
	Sb	4	ND	ND	ND	ND	ND	ND	ND
	Se	9-10	ND	ND	ND	ND	ND	ND	ND
	Sn	2-3	ND	ND	ND	ND	ND	ND	ND
	Sr		20.4	21.1	15.7	26.7	16.7	53	27.2
	Tl	20	ND	ND	ND	ND	ND	ND	ND
	V		15	21	10	25	9.4	26	18
	Zn		59.4	88.2	50.1	109	51.8	85.1	88.3
ORGANOCHLORINES (ug/g dw)									
	HCB	0.01	ND	ND	ND	ND	ND	ND	ND
	alpha-BHC	0.01	ND	ND	ND	ND	ND	ND	ND
	gamma-BHC	0.01	ND	ND	ND	ND	ND	ND	ND
	beta-BHC	0.01	ND	ND	ND	ND	ND	ND	ND
	delta-BHC	0.01	ND	ND	ND	ND	ND	ND	ND
	Oxychlordane	0.01	ND	ND	ND	ND	ND	ND	ND
	Hept. Epox	0.01	ND	ND	ND	ND	ND	ND	ND
	gamma Chlordane	0.01	ND	ND	ND	ND	ND	ND	ND
	t-Nonachlor	0.01	ND	ND	ND	ND	ND	ND	ND
	Toxaphene	0.05	ND	ND	ND	ND	ND	ND	ND
	PCBs (total)	0.05	ND	ND	ND	ND	ND	ND	ND
	o, p'-DDE	0.01	ND	ND	ND	ND	ND	ND	ND
	alpha-Chlordane	0.01	ND	ND	ND	ND	ND	ND	ND
	p, p'-DDE	0.01	ND	ND	ND	ND	ND	ND	ND
	Dieldrin	0.01	ND	ND	ND	ND	ND	ND	ND
	o, p'-DDD	0.01	ND	ND	ND	ND	ND	ND	ND
	Endrin	0.01	ND	ND	ND	ND	ND	ND	ND
	cis-Nonachlor	0.01	ND	ND	ND	ND	ND	ND	ND
	o, p'-DDT	0.01	ND	ND	ND	ND	ND	ND	ND
	p, p'-DDD	0.01	ND	ND	ND	ND	ND	ND	ND
	p, p'-DDT	0.01	ND	ND	ND	ND	ND	ND	ND
	Mirex	0.01	ND	ND	ND	ND	ND	ND	ND
PAHs (ug/g dw)									
	naphthalene	0.01	ND	ND	ND	ND	ND	ND	0.01
	fluorene	0.01	ND	ND	ND	ND	ND	ND	0.01
	phenanthrene	0.01	ND	ND	ND	ND	ND	ND	0.05
	anthracene	0.01	ND	ND	ND	ND	ND	ND	0.02
	fluoranthrene	0.01	0.01	ND	ND	0.01	ND	0.01	0.1
	pyrene	0.01	ND	0.01	ND	0.01	ND	0.01	0.1
	1, 2-benzanthracene	0.01	ND	ND	ND	ND	ND	ND	0.04
	chrysene	0.01	ND	ND	ND	ND	ND	ND	0.06
	benzo(b)fluoranthrene	0.01	0.01	ND	ND	0.01	0.01	0.01	0.06
	benzo(k)fluoranthrene	0.01	ND	ND	ND	ND	ND	ND	0.03
	benzo(e)pyrene	0.01	ND	ND	ND	ND	ND	ND	0.07
	benzo(a)pyrene	0.01	ND	ND	ND	ND	ND	0.01	0.07
	1,2,5,6-dibenzanthracene	0.01	ND	ND	ND	ND	ND	ND	0.04
	benzo(g,h,i)perylene	0.01	ND	ND	ND	ND	ND	0.01	0.07
ALIPHATIC HYDROCARBONS (ug/g dw)									
	n-dodecane	0.01	ND	ND	ND	ND	ND	ND	ND
	n-tridecane	0.01	ND	ND	ND	ND	ND	ND	ND
	n-tetradecane	0.01	ND	ND	ND	ND	ND	ND	ND
	octylcyclohexane	0.01	ND	ND	ND	ND	ND	ND	ND
	n-pentadecane	0.01	ND	ND	ND	ND	ND	ND	ND
	nonylcyclohexane	0.01	ND	ND	ND	ND	ND	ND	ND
	n-hexadecane	0.01	ND	ND	ND	ND	ND	ND	ND
	n-heptadecane	0.01	0.05	0.04	0.08	0.02	0.08	0.02	0.16
	pristane	0.01	ND	ND	ND	ND	ND	ND	0.03
	n-octadecane	0.01	0.02	ND	ND	ND	ND	0.02	0.02
	phytane	0.01	0.01	ND	ND	0.02	ND	0.05	0.05
	n-nonadecane	0.01	0.04	0.04	ND	0.04	ND	ND	0.08
	n-eicosane	0.01	0.05	ND	0.03	0.03	ND	0.12	0.14

ND = NOT DETECTED.

SAMPLING LOCATION DESCRIPTIONS:
SITE 013 - MISS. RIVER MAIN CHANNEL BORDER NEAR LONG LAKE
SITE 014 - SHINGLE CREEK AREA - BLACK RIVER DELTA AREA
SITE 015 - MISS. RIVER CHANNEL BORDER BELOW BLACK RIVER DELTA
SITE 016 - OLD BLACK RIVER CHANNEL NEAR UPPER BRICE PRAIRE LANDING
SITE 017 - MISS. RIVER SIDE CHANNEL AT DRESBACH ISLAND
SITE 018 - LAKE ONALASKA NEAR MOSEY LANDING - ROSEBUD ISLAND AREA
SITE 019 - LAKE ONALASKA NEAR HALFWAY CREEK - ROSEBUD ISLAND AREA

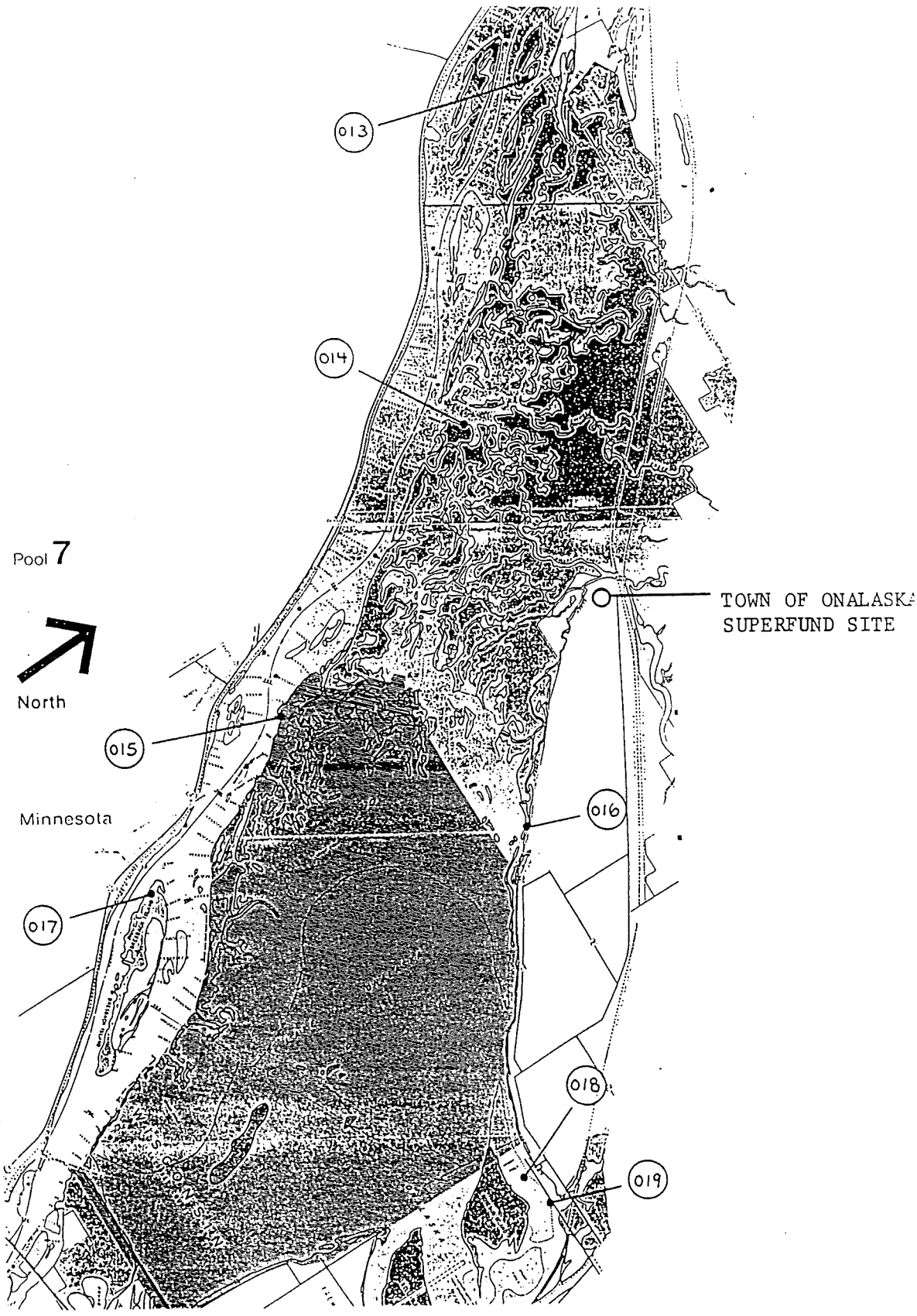


Figure 2 Location of sediment sampling sites collected by the USFWS in 1985. From Stan Smith, USFWS - St. Paul, Mn.

TABLE 2. BULK SEDIMENT CHEMISTRY DATA FROM THE USCOE, ST. PAUL, MN. DATA OBTAINED FROM DENNIS ANDERSON. SAMPLES COLLECTED FROM MAIN CHANNEL DREDGING SITES FROM THE MISSISSIPPI RIVER IN POOL 7. SAMPLES ANALYZED BY VARIOUS CONSULTING LABORATORIES. RESULTS EXPRESSED ON A DRY WEIGHT BASIS.

REC	MILE	YEAR	POOL	AS (ug/g)	BA (ug/g)	CD (ug/g)	CR (ug/g)	CU (ug/g)	FE (ug/g)	HG (ug/g)	MN (ug/g)	NI (ug/g)	PB (ug/g)	ZN (ug/g)	CN (ug/g)	CHLOR (ug/kg)	DDD (ug/kg)	DDE (ug/kg)	DDT (ug/kg)	DIELD (ug/kg)	ENDR (ug/kg)	PCB (ug/kg)	OIL (ug/kg)	LOI (ug/g)	COD (ug/g)	NH4N (ug/g)	KJDN (ug/g)	TPHOS (ug/g)	P200 %
229	714.10	1981	7	0.00	20.0	< 1.00	< 10.0	< 10.0	3100	< 0.010	280	< 10	< 10.0	10.0	0	< 1.00	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1	0	9690	1400	3.90	146.00	--	0.0
230	713.90	1981	7	0.00	30.0	< 1.00	< 10.0	< 10.0	3400	< 0.010	310	< 10	< 10.0	10.0	0	< 1.00	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1	0	1830	1300	3.20	250.00	--	0.0
231	712.71	1979	7	1.00	30.0	< 10.00	< 10.0	< 10.0	4600	0.000	220	< 10	< 10.0	10.0	0	0.00	0.0	0.0	0.0	0.0	0.0	0	100	4880	1700	7.90	120.00	170.00	1.0
232	712.70	1979	7	0.00	20.0	< 10.00	< 10.0	< 10.0	3200	0.000	150	< 10	< 10.0	< 10.0	0	0.00	0.0	0.0	0.0	0.0	0.0	0	0	3050	1200	6.10	320.00	62.00	1.0
233	712.00	1980	7	0.00	10.0	< 10.00	< 10.0	< 10.0	2400	0.000	270	< 10	< 10.0	13.0	0	0.00	0.0	0.0	0.0	0.0	0.0	0	0	3810	1500	5.90	90.00	--	0.0
234	711.64	1974	7	< 0.90	--	< 1.00	7.0	5.0	--	0.200	--	9	< 9.0	16.0	--	< 10.00	< 10.0	10.0	< 10.0	< 10.0	< 10.0	--	439	4000	< 461	--	11.00	209.00	0.0
235	711.50	1980	7	0.00	10.0	< 10.00	< 10.0	< 10.0	2300	0.000	230	< 10	< 10.0	17.0	0	0.00	0.0	0.0	0.0	0.0	0.0	0	0	3710	1500	5.40	120.00	--	0.0
236	710.60	1981	7	0.00	20.0	< 1.00	< 10.0	< 10.0	3500	< 0.010	280	10	< 10.0	10.0	0	< 1.00	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1	0	3660	1100	4.10	171.00	--	0.0
237	710.30	1981	7	0.00	20.0	< 1.00	< 10.0	< 10.0	2500	< 0.010	200	< 10	< 10.0	8.0	0	< 1.00	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1	0	3070	1500	3.30	147.00	--	0.0
238	709.10	1981	7	0.00	40.0	< 1.00	< 10.0	< 10.0	4000	< 0.010	370	10	< 10.0	12.0	0	< 1.00	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1	100	3070	1300	3.60	217.00	--	0.0
239	709.01	1974	7	< 0.90	--	< 0.90	7.0	4.0	--	0.300	--	7	< 9.0	16.0	--	< 10.00	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	--	371	4000	1417	--	145.00	207.00	0.0
240	709.00	1974	7	< 0.80	--	1.00	8.0	5.0	--	0.400	--	5	10.0	15.0	--	< 10.00	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	--	409	4000	418	--	123.00	205.00	0.0
241	708.51	1978	7	0.00	30.0	< 10.00	< 10.0	< 10.0	2200	0.000	29	< 10	10.0	10.0	0	0.00	0.0	0.0	0.0	0.0	0.0	0	0	6680	1800	1.00	180.00	180.00	1.0
242	708.50	1978	7	0.00	10.0	< 10.00	< 10.0	< 10.0	2500	0.000	24	< 10	< 10.0	10.0	0	0.00	0.0	0.0	0.0	0.0	0.0	0	0	5750	1200	0.70	210.00	190.00	0.0
243	708.00	1981	7	0.00	10.0	< 1.00	< 10.0	< 10.0	4500	< 0.010	280	< 10	< 10.0	13.0	0	< 1.00	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1	0	2320	1200	3.50	230.00	--	0.0
244	706.50	1980	7	0.00	10.0	< 10.00	< 10.0	< 10.0	2400	0.000	120	< 10	< 10.0	11.0	0	0.00	0.0	0.0	0.0	0.0	0.0	0	0	2110	460	4.20	70.00	--	0.0
245	706.32	1974	7	< 0.90	--	< 0.90	7.0	5.0	--	0.100	--	5	9.0	14.0	--	< 10.00	< 10.0	10.0	< 10.0	< 10.0	< 10.0	--	34	4000	444	--	112.00	200.00	0.0
246	706.00	1980	7	0.00	20.0	< 10.00	< 10.0	< 10.0	3400	0.000	240	10	10.0	2.1	0	0.00	0.0	0.0	0.0	0.0	0.0	0	0	3750	1000	6.20	440.00	--	38.0
247	705.40	1980	7	0.00	50.0	< 10.00	< 10.0	< 10.0	3800	0.000	450	10	10.0	11.0	0	0.00	0.0	0.0	0.0	0.0	0.0	0	0	3790	1100	3.80	250.00	--	0.0
248	704.92	1974	7	< 0.90	--	< 0.60	6.0	6.0	--	0.400	--	6	< 6.0	19.0	--	< 10.00	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	--	139	6000	475	--	108.00	375.00	0.0
249	704.30	1980	7	0.00	30.0	< 10.00	< 10.0	< 10.0	2400	0.000	230	10	10.0	9.4	0	0.00	0.0	0.0	0.0	0.0	0.0	0	0	3730	750	4.10	1210.00	--	0.0

TABLE 2. CONTINUED.

REC	MILE	DREDGE CUT/LOCATION	YEAR	SYS	HAB TYPE	POOL	FREQ	SETTLEABLITY TESTS SUSPENDD SOLIDS (g/l) 0 HRS	SUSPENDD SOLIDS (g/l) 4 HRS	TURBIDITY (FTU) 0 HRS	TURBIDITY (FTU) 4 HRS	PARTICLE SIZE DISTRIBUTION (% FINER) SILT OR CLAY HYDROMETER .005 mm	SILT OR CLAY HYDROMETER .020 @ 270	SILT OR CLAY 200	FINE SAND HYDROMETER .005 mm	FINE SAND .020 @ 270	FINE SAND 200	FINE SAND 140	MEDIUM SAND 100	MEDIUM SAND 80	MEDIUM SAND 70	MEDIUM SAND 50	MEDIUM SAND U. S. 40	MEDIUM SAND STANDARD 30	MEDIUM SAND STANDARD 20	MEDIUM SAND MESH 16	MEDIUM SAND MESH 12	MEDIUM SAND SIZE 10	COARSE SAND 8	COARSE SAND 4	FINE GRAVEL 3/8 in	FINE GRAVEL 3/4 in
229	714.10	LOWER APPROACH L/D 6	1981	MI	MC	7	14	296	--	45	--	0	0.0	0	0	0	0.0	0	0	--	0	--	1	3	18	46	--	85	--	--	96	99	100	100
230	713.90	LOWER APPROACH L/D 6	1981	MI	MC	7	14	260	--	48	--	0	0.0	0	0	0	0.0	0	0	--	0	--	1	4	23	54	--	93	--	--	99	100	100	100
231	712.71	HEAD OF RICHMOND ISLAND	1979	MI	MC	7	14	296	168	28	10	0	0.0	--	1	0	0.0	--	1	--	--	2	--	--	16	--	61	--	--	90	--	99	100	100
232	712.70	HEAD OF RICHMOND ISLAND	1979	MI	MC	7	14	852	232	88	21	0	0.0	--	1	0	0.0	--	1	--	--	3	--	--	52	--	89	--	--	100	--	100	100	100
233	712.00	RICHMOND ISLAND	1980	MI	MC	7	28	72	0	44	0	0	0.0	--	0	0	0.0	--	0	--	0	--	--	--	20	--	--	63	--	--	95	98	100	100
234	711.64	RICHMOND ISLAND	1974	MI	MC	7	28	--	--	--	--	0	0.0	--	0	0	0.0	--	0	--	0	--	--	--	11	--	--	81	--	--	93	98	100	100
235	711.50	RICHMOND ISLAND	1980	MI	MC	7	28	108	0	55	35	0	0.0	--	0	0	0.0	--	0	--	0	--	--	--	2	--	--	77	--	--	95	100	100	100
236	710.60	BELOW QUEENS BLUFF	1981	MI	MC	7	9	288	--	42	--	0	0.0	0	0	0	0.0	0	0	--	0	--	2	11	41	74	--	95	--	--	97	98	100	100
237	710.30	BELOW QUEENS BLUFF	1981	MI	MC	7	9	412	--	75	--	0	0.0	0	0	0	0.0	0	0	--	0	--	2	17	63	85	--	98	--	--	100	100	100	100
238	709.10	WINTERS LANDING	1981	MI	MC	7	40	220	--	48	--	0	0.0	--	0	0	0.0	--	0	--	0	--	1	6	25	46	--	81	--	--	94	100	100	100
239	709.01	WINTERS LANDING	1974	MI	MC	7	40	--	--	--	--	0	0.0	--	0	0	0.0	--	0	--	0	--	--	--	12	--	--	81	--	--	95	100	100	100
240	709.00	WINTERS LANDING	1974	MI	MC	7	40	--	--	--	--	0	0.0	--	0	0	0.0	--	0	--	0	--	--	--	12	--	--	81	--	--	95	100	100	100
241	708.51	WINTERS LANDING	1978	MI	MC	7	40	700	72	150	36	0	0.0	--	1	0	0.0	--	1	--	--	5	--	--	53	--	87	--	--	98	--	100	100	100
242	708.50	WINTERS LANDING	1978	MI	MC	7	40	324	40	70	27	0	0.0	--	0	0	0.0	--	0	--	--	2	--	--	36	--	85	--	--	98	--	100	100	100
243	708.00	WINTERS LANDING	1981	MI	MC	7	40	100	--	35	--	0	0.0	0	0	0	0.0	0	0	--	0	--	1	9	42	71	--	97	--	--	100	100	100	100
244	706.50	DAKOTA	1980	MI	MC	7	44	88	0	48	28	0	0.0	--	0	0	0.0	--	0	--	1	--	--	--	58	--	--	99	--	--	100	100	100	100
245	706.32	DAKOTA	1974	MI	MC	7	44	--	--	--	--	0	0.0	--	0	0	0.0	--	0	--	0	--	--	--	11	--	--	87	--	--	96	100	100	100
246	706.00	DAKOTA	1980	MI	MC	7	44	1236	64	400	66	0	0.0	--	38	0	0.0	--	38	--	97	--	--	--	100	--	--	100	--	--	100	100	100	100
247	705.40	HEAD OF DRESBACH CUT	1980	MI	MC	7	28	64	0	37	20	0	0.0	--	0	0	0.0	--	0	--	0	--	--	--	44	--	--	96	--	--	100	100	100	100
248	704.92	HEAD OF DRESBACH CUT	1974	MI	MC	7	28	--	--	--	--	0	0.0	--	0	0	0.0	--	0	--	0	--	--	--	10	--	--	77	--	--	94	100	100	100
249	704.30	HEAD OF DRESBACH CUT	1980	MI	MC	7	28	96	0	50	27	0	0.0	--	0	0	0.0	--	0	--	0	--	--	--	63	--	--	99	--	--	100	100	100	100

CORRESPONDENCE/MEMORANDUM

State of Wisconsin
La Crosse, Wi.

Date: November 8, 1991

To: Jim Leverance, SW/3

From: John Sullivan, Lax

Subject: Physical analysis results for Dodge Chute sediments collected October 10, 1991.

Enclosed you will find the results of our initial sediment sampling survey of the upper end of Dodge Chute in the Black River bottoms area. I have also included a tentative channel design for your information and review. A map and aerial photograph are also included to show the proximity to the Town of Onalaska Landfill.

A hand soil auger was used to collect sediments down to groundwater which was about 0.5 to 3.0 ft below grade. A two inch, ten ft long metal core was used to collected samples in the saturated zone.

Groundwater elevation was assumed to be similar to the Black River surface elevation. The water surface elevation of the Black River was not determined during our survey. However, a reasonable estimate should be available based on local stage level readings made at the north end of Dodge Chute this summer as part of a joint USCOE-Department study.

Sediment borings were conducted in six areas of Dodge Chute starting about 100 ft. and ending 600 ft south of the Black River (Figure 1). There was no water flowing through Dodge Chute at the time of our survey. A draft layout of the proposed channel illustrating the boring sites is provided in Figure 2. You will note the finished channel depth has been changed to about 5 ft below "normal" Black River water levels. The actual channel design elevations will be calculated later.

The physical analysis results indicated bed sediment contained very little fine material (generally less than 1 %), (Table 1). Fine sediments were present in depressions of the historical Dodge Chute channel and were about 1/2 to 3 inches thick. The surficial materials at higher elevations in Dodge Chute were almost all sand (99%).

Sediment borings extended to 5.5 to 11.2 feet below grade at sites 1 to 4. Sandy deposits (99%) were encountered at all locations. A thin (0.5 ft) thick clay lens was found at about 4 ft below grade at site 4. Wood deposits were found at 5.5 ft in Site 2 and 10.5 ft in Site 1.

Small willow trees (5-12 ft) are common at the higher elevations of the Dodge Chute (ie. 1-3 ft above "normal" groundwater elevations).

Based on the revised channel depth of 5 ft and length of 600 ft, I estimate that over 11,000 cubic yds of sand would be available for the landfill. This

could be easily increase by widening the channel or extending the length if more materials were necessary.

Need for Bulk Chemistry Data

Based on the existing sediment data for the Black River delta, the location of the proposed dredge channel, proximity to the landfill and contaminant groundwater plume, I ask that you reconsider the need for bulk chemical analysis in the northern end of Dodge Chute. I don't believe bulk chemical analysis is warranted for the following reasons:

1. The dredging location does not appear to be down-gradient of the landfill based on the known contaminant plume movement identified in the Record Of Decision. Further, there is an isolated slough just east of the proposed dredging area that would likely intercept VOCs and the nonaqueous phase contaminants if the plume does move in the direction of the dredge cut.

2. Previous sediment contaminant data collected as part of the remedial actions studies near the landfill and data collected in the Black River delta by the collected by the USFWS, has not indicated a serious sediment contamination problem. The Record of Decision indicated that no organic chemicals were detected in sediment samples or water samples down-gradient of the landfill.

3. Physical analysis of sediments collected in the proposed dredge cut contain little fine materials (ie. 99 % sand). The thin fine deposits present at the surface at some sites would likely have bulk chemistries similar to that found by the USFWS for the Black River delta (see my memo of May 29, 1991 to Robin Schmidt).

4. If landfill contaminants reach the proposed dredging area, they would more likely be found in pore water (ie groundwater). Sediment contamination would not be expected due to the absence of organic matter. It is very unlikely that detectable contaminant levels would be found in the pore water based on frequent surface water dilution when the Black River flows through Dodge Chute. Pore water quality is likely reflective of Black River water quality conditions.

If you still believe it is necessary to collect sediment samples for bulk chemistry analysis, please let me know as soon as possible. Russ Dunst, Technical Services, indicated the Wisconsin SLOH could handle one sample for the requested parameters. It would likely take 3 to 4 weeks to do the analyses if given high priority (we would have to fund the work). I will not be able to sample again until the Black River stage levels return to normal conditions. This will be at least 1-2 weeks. The recent cold weather may present some problems, especially if the sediments freeze. In summary, we will not be able to provide bulk chemistry data by the December 1 deadline in your most recent memo.

I will send copies of this memo and attachments to CH2M Hill (Jim Russell and Steve Keith) and EPA (Kevin Adler). I would suggest a conference call with appropriate parties as soon as possible to discuss future data needs.

c: Terry Moe, Lax
Gretchen Benjamin, Lax
Art Bernhardt, WD
Linda Talbot, WR/2
Kevin Adler, EPA
Jim Russel and Steve Keith, CH2M Hill


PROPOSED DREDGE CUT
DODGE CHUTE
BLACK RIVER DELTA
N
LANDFILL
DREDGE CUT
60' x 90'
SCALE ~ 1" ~ 9000 FT

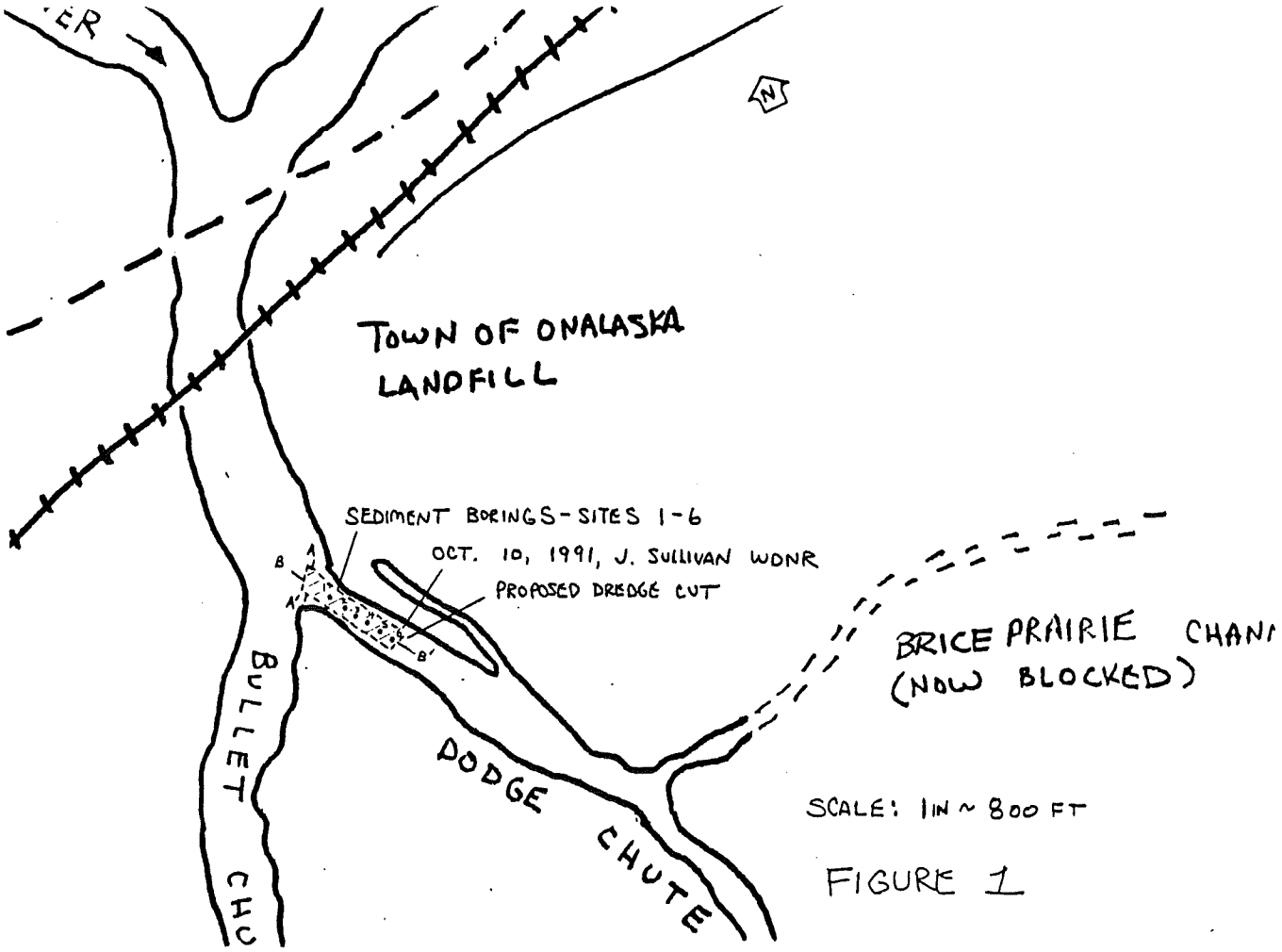
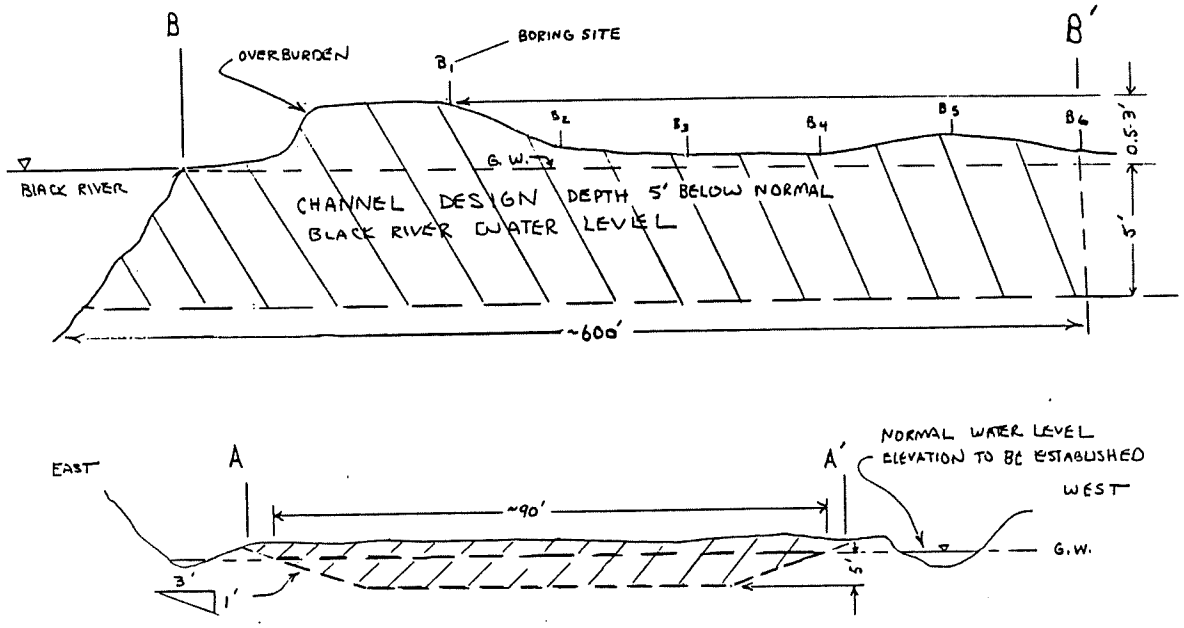


FIGURE 1

FIGURE 2. TENTATIVE CHANNEL LAYOUT - DODGE CHUTE, BLACK RIVER



FINISHED CHANNEL X-SECTION 90'W x 5'D AREA = 375 FT²

ESTIMATED DREDGING REQUIREMENTS

OVERBURDEN ~ 100'x1.5'x600' = 3,300 C.Y.

FINISHED CHANNEL ~ 375FT² x 600' = 8,300 C.Y.

11,600 C.Y.

TABLE 1. RESULTS OF PHYSICAL ANALYSIS OF SEDIMENT SAMPLES COLLECTED AT THE NORTERN END OF DODGE CHUTE OCTOBER 10, 1991. SAMPLES COLLECTED BY J. SULLIVAN, WDNR-LACROSSE. LABORATORY RESULTS PROVIDED BY THE UNIVERSITY OF WISCONSIN-EXTENSION, SOIL & PLANT ANALYSIS LABORATORY.

BORING SITE NO.	LAB NO.	DEPTH TO WATER (FT)	STRATA (FT)	SIEVE ANALYSIS % RETAINED							TEXTURE ANALYSIS %			% WATER	TVS %	COMMENTS
				SIEVE: 10	18	35	60	140	270	(SAND)	SAND	SILT	CLAY			
1	1	3.0	0-3.0	0	0.3	10.3	64.9	23.9	0.3	99.7	-	-	-	-	-	BARK & WOOD CHIPS
	2		3-3.4	-	-	-	-	-	-	-	99	1	0	-	-	FOUND AT ABOUT
	3		3.4-8.5	0	2.2	31.3	50.5	15.5	0.2	99.7	-	-	-	-	-	10.5 FT BELOW GRADE
	4		10.5-11.2	0	2.8	39.5	41.0	16.2	0.2	99.7	-	-	-	-	-	
2	5	1.0	0-0.5	-	-	-	-	-	-	-	83	15	2	28.9	2.8	STANDING WATER IN
	6		0.5-1.2	-	-	-	-	-	-	-	99	1	0	-	-	AREA THIS SUMMER
	7		1.2-5.5	0	1.2	36.8	56.1	5.6	0	99.7	-	-	-	-	-	FINES AT SURFACE. HIT WOOD AT 5.5 FT
3	8	0.4	0-0.4	-	-	-	-	-	-	-	99	1	0	-	-	STANDING WATER IN
			0.4-6.1	0	1.5	31.7	57.5	7.4	0.6	98.7	-	-	-	-	-	AREA THIS SUMMER. FINES AT SURFACE. CLAY LENS AT ABOUT 4 FT
4	9	0.5	0-0.5	-	-	-	-	-	-	-	99	1	0	-	-	STANDING WATER IN
	10		0.5-6.9	0	1.0	26.3	64.5	7.9	0.1	99.8	-	-	-	-	-	AREA THIS SUMMER. FINES AT SURFACE.
5	11	1.4	0-1.4	-	-	-	-	-	-	-	99	1	0	-	-	HIGHER GROUND
											-	-	-	-	-	NO FINES ON SURFACE
6	12	0.5	0-0.5	-	-	-	-	-	-	-	99	1	0	-	-	SOME FINES AT SURFACE
											-	-	-	-	-	

APPENDIX D
SUBSURFACE INVESTIGATION BORING LOGS

PROJECT NUMBER	BORING NUMBER
GL065602.PD.CT	P-1 SHEET 1 OF 1

SOIL BORING LOG

PROJECT Onalaska-Municipal-Landfill LOCATION Onalaska-Township, Wisconsin

ELEVATION ~655.9 DRILLING CONTRACTOR Environmental & Foundation Drilling

DRILLING METHOD AND EQUIPMENT CME 75 with 2 1/4" ID HSA and automatic hammer

WATER LEVELS Not Encountered START 2/17/92 FINISH 2/17/92 LOGGER C. Barnett

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION	COMMENTS
	1.0					Background reading: HNu = 0 ppm
			1.5	17-16-13 (29)	Silty Sand (SM), dark brown, moist, medium dense, fine to medium sand, some gravel (FILL)	HNu=background
	3.0				1.0 Silty Sand (SM), moderate to dusky brown, moist, medium dense, with gravel	
	3.5					
5			1.5	2-3-3-2 (6)	Silty Sand (SM), same as above except loose	HNu=background
	5.5				5.0 Poorly Graded Sand (SP), moderate brown, moist, loose, fine sand	
	6.0					
			0	2-3-5-8 (8)	No Recovery, gravel and root at tip of spoon	HNu=background
	8.0					
	8.5					
10			0.7	3-5-4-4 (9)	Poorly Graded Sand (SP), moderate brown, moist, loose, with gravel, medium to coarse sand	HNu=background
	10.5					
					End Soil Boring @ 10.5 feet	
15						
20						
25						

CH2M HILL

PROJECT NUMBER	BORING NUMBER
GL065602.PD.C1	P-2 SHEET 1 OF 1

SOIL BORING LOG

PROJECT Onalaska Municipal Landfill LOCATION Onalaska Township, Wisconsin

ELEVATION ~653.4 DRILLING CONTRACTOR Environmental & Foundation Drilling

DRILLING METHOD AND EQUIPMENT CME 75 with 2 1/4" ID HSA and automatic hammer

WATER LEVELS Not Encountered START 2/17/92 FINISH 2/17/92 LOGGER C. Barnett

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	1.0					Background reading: HNu = 0 ppm
	3.0		1.3	1-1-1-1 (2)	Silty Sand (SM), dusky brown, moist, very loose, fine to medium sand, trace gravel (FILL)	HNu=background
	3.5				1.0 Poorly Graded Sand (SP), moderate brown, moist, very loose, layered fine to coarse sand	
5	5.5		1.5	1-2-3-4 (5)	Poorly Graded Sand (SP), same as above except loose	HNu=background
	6.0					
	8.0		1.5	2-3-3-4 (6)	Poorly Graded Sand (SP), light brown to moderate brown, moist, loose, layered fine to medium and medium to coarse sand	HNu=background
	8.5					
10	10.5		2.0	4-4-6-7 (10)	Poorly Graded Sand (SP), same as above	HNu=background
					End Soil Boring @ 10.5 feet	
15						
20						
25						

CH2M HILL

PROJECT NUMBER	BORING NUMBER
GL065602.PD.C1	P-3 SHEET 1 OF 1

SOIL BORING LOG

PROJECT Onalaska Municipal Landfill LOCATION Onalaska Township, Wisconsin

ELEVATION ~645.8 DRILLING CONTRACTOR Environmental & Foundation Drilling

DRILLING METHOD AND EQUIPMENT Hand Auger

WATER LEVELS ~5 feet bgs START 2/17/92 FINISH 2/17/92 LOGGER C. Barnett

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL	SAMPLE: TYPE AND NUMBER	SAMPLE: RECOVERY	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
					0 to 2 inches Topsoil, dusky brown, moist	
					Poorly Graded Sand (SP), light brown, moist, trace silt to 3 feet	3 1/4" Hand Auger 0 to 6 feet
5					Becoming moist to wet at 5 feet	Groundwater at about 5 feet
					Poorly Graded Sand (SP), gray, moist to wet, turning brown with depth	2" Hand Auger 6 to 8 feet
						1 1/2" Hand Auger 8 to 9.5 feet
10					End Soil Boring @ 9.5 feet	
15						
20						
25						

PROJECT NUMBER	BORING NUMBER
GL065602.PD.C1	SB-1 SHEET 1 OF 1

SOIL BORING LOG

PROJECT Onalaska Municipal Landfill LOCATION Onalaska Township, Wisconsin

ELEVATION ~651.5 DRILLING CONTRACTOR Environmental & Foundation Drilling

DRILLING METHOD AND EQUIPMENT CME 75 with 2 1/4" ID HSA and automatic hammer

WATER LEVELS ~7 feet bgs START 2/17/92 FINISH 2/17/92 LOGGER C. Barnett

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	1.0					Background reading: HNu = 0 ppm
	3.0		1.5	WOH-1-1-1 (2)	Silty Sand (SM), moderate brown, dry, very loose 2.0 Poorly Graded Sand (SP), light brown, dry, very loose, fine to medium sand	HNu=background
	3.5					
5	5.5		1.5	WOH-1-1-1 (2)	Poorly Graded Sand (SP), same as above except moist	HNu=background
	6.0					
	8.0		1.3	1-1-1-1 (2)	Poorly Graded Sand (SP), same as above	HNu=background Wet Spoon
	8.5					
10	10.5		1.5	3-3-4-5 (7)	Poorly Graded Sand (SP), same as above except loose 9.5 Poorly Graded Sand (SP), grey, wet, loose	HNu~5 ppm at top of borehole when pulled HNu>20 ppm above open spoon HNu>1 ppm breathing zone briefly
	13.5					
15	15.5		1.0	2-2-1-2 (3)	Poorly Graded Sand (SP), same as above	HNu=background at top of borehole when pulled HNu~1 ppm at tip of spoon HNu<1 ppm above open spoon
	18.5					
20	20.5		1.0	2-3-2-2 (5)	Poorly Graded Sand (SP), same as above except with trace gravel	HNu=background
	23.0					
25	25.0		0.8	2-2-3-3 (5)	Poorly Graded Sand (SP), same as above	HNu=background
					End Soil Boring @ 25.0 feet	

PROJECT NUMBER	BORING NUMBER
GL065602.PD.CT	SB-2 SHEET 1 OF 1

SOIL BORING LOG

PROJECT Onalaska Municipal Landfill LOCATION Onalaska Township, Wisconsin

ELEVATION ~649.9 DRILLING CONTRACTOR Environmental & Foundation Drilling

DRILLING METHOD AND EQUIPMENT CME 75 with 2 1/4" ID HSA and automatic hammer

WATER LEVELS ~7 feet bgs START 2/17/92 FINISH 2/17/92 LOGGER C. Barnett

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	1.0					Background reading: HNu = 0 ppm
	3.0		1.4	4-4-4-4 (8)	Poorly Graded Sand (SP), brown and black, moist, loose, fine to medium sand, trace silt and gravel (FILL)	HNu=background
	3.5					
5	5.5		1.6	3-4-5-6 (9)	Poorly Graded Sand (SP), brown, moist, loose, layered fine to medium and fine sand	HNu=1 ppm at tip of spoon HNu=background above open spoon
	6.0					
	8.0		1.3	3-3-3-3 (6)	Poorly Graded Sand (SP), same as above except moist to wet	HNu>20 ppm at tip of spoon HNu=2-3 ppm above open spoon Wet Spoon
	8.5					
10	10.5		1.3	1-1-1-1 (2)	Poorly Graded Sand (SP), same as above except wet, very loose	HNu>20 ppm at top of borehole when pulled HNu>20 ppm at tip of spoon HNu>20 ppm above open spoon
	13.5					
15	15.5		0.8	2-3-3-4 (6)	Poorly Graded Sand (SP), same as above except loose	HNu=background at top of borehole when pulled HNu<1 ppm at tip of spoon HNu=background above open spoon
	18.5					
20	20.5		0.8	3-3-2-4 (5)	Poorly Graded Sand (SP), same as above except with trace gravel	HNu=background HNu=1-5 ppm above cuttings HNu=1-2 ppm in breathing zone as cuttings removed
	23.0					
25	25.0		0.5	1-2-2-1 (4)	Poorly Graded Sand (SP), same as above except very loose	HNu=background at top of borehole when pulled HNu<0.5 ppm above open spoon
					End Soil Boring @ 25.0 feet	HNu=5-10 ppm at top of borehole as augers pulled from hole

CH2M HILL

PROJECT NUMBER	BORING NUMBER
GL065602.PD.C1	SB-3 SHEET 1 OF 1

SOIL BORING LOG

PROJECT Onalaska Municipal Landfill LOCATION Onalaska Township, Wisconsin

ELEVATION ~647.6 DRILLING CONTRACTOR Environmental & Foundation Drilling

DRILLING METHOD AND EQUIPMENT CME 75 with 2 1/4" ID HSA and automatic hammer

WATER LEVELS ~6 feet bgs START 2/17/92 FINISH 2/17/92 LOGGER C. Barnett

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	1.0					Background reading: HNu = 0 ppm
	3.0		1.4	7-5-4-3 (9)	Silty Sand (SM), dark brown and black, moist, loose, fine to coarse sand, trace gravel (FILL)	HNu=background in breathing zone HNu>50 ppm above open spoon
	3.5					
5	5.5		1.5	2-3-2-2 (5)	Silty Sand (SM), same as above 4.4 Topsoil, black, moist, sandy silt	HNu>50 ppm at top of borehole when pulled HNu>50 ppm above open spoon HNu>5 ppm in breathing zone briefly
	6.0					
	8.0		0.5	1-2-1-1 (3)	Poorly Graded Sand (SP), light brown, wet, very loose, fine to medium sand	HNu>20 ppm above open spoon Wet Spoon
	8.5					
10	10.5		0.8	1-1-1-1 (2)	Poorly Graded Sand (SP), same as above	HNu>20 ppm above open spoon HNu<1ppm in breathing zone briefly
	13.5					
15	15.5		0.8	1-1-2-2 (3)	Poorly Graded Sand (SP), same as above, mostly fine sand at 15.0	HNu=background at top of borehole when pulled HNu=3-5 ppm above open spoon
	18.5					
20	20.5		0.8	2-1-3-3 (4)	Poorly Graded Sand (SP), same as above	HNu=background at top of borehole when pulled HNu=1-2 ppm above open spoon HNu=background in breathing zone
	23.0					
25	25.0		0.5	5-5-5-8 (10)	Poorly Graded Sand (SP), same as above except loose	HNu=background
					End Soil Boring @ 21.0 feet	

PART 7

SUMMARY OF THE INTERIM CLAY INVESTIGATION REPORT

Summary of the Interim Clay Investigation Report

An investigation of potential clay sources was performed by Foth & Van Dyke (February 1987) for the LaCrosse County Landfill expansion. The investigation identified two major sources of clay—the Diocese of LaCrosse and the William Cornforth property in LaCrescent, Minnesota. The County has exhausted the Diocese of LaCrosse clay source and is currently taking clay from a third source adjacent to the LaCrosse County Landfill. It is expected that all clay from this third source will be exhausted by the County.

The County had a written agreement with Mr. Cornforth for the purchase of his clay. This agreement expired in December 1991 prior to the County excavating any clay from the Cornforth property. Mr. Cornforth operates a realty office in LaCrescent, Minnesota called Cornforth Realty (507/895-2106). The Foth & Van Dyke investigation report is provided as supplementary data to the Landfill Cap Remedial Action Subcontract Documents.

The Contractor performed a review of the report to determine if the Cornforth Property is a **potential** source of clay for the Onalaska Municipal Landfill Cap Remedial Action. The report, based on the results of 34 test pits, indicates that the subsurface conditions at the Cornforth property consist of the following:

- Topsoil

- Fat Clay, primarily red, brown red, and grey red. Samples tested exhibited an average liquid limit of 73 percent and an average plasticity index of 42 percent. An average of 99 percent passed the No. 200 sieve with 64 percent clay ($\leq$0.005 mm) for the samples tested. The Fat Clay layer extends from 0 to 8.0 feet below ground surface with an average thickness of 4.3 feet.

- Lean Clay, primarily grey, brown grey, and tan. Samples tested exhibited an average liquid limit of 42 percent and an average plasticity index of 21 percent. On average, 96 percent of the material passes the No. 200 sieve and 31 percent was smaller than or equal to 0.005 mm for the samples tested. This layer was found at depths of 2.5 to 8.0 feet below ground surface with an average thickness of 3.3 feet.

Based on the testing performed by others, it appears that the Fat Clay does not satisfy the specification requirements for clay barrier material. Based on the testing performed by others, it appears that the Lean Clay may be able to meet the specification material requirements and may provide a layer with the required permeability (this will not be known until the Subcontractor performs quality control source testing and constructs the clay barrier test pads). No hydraulic conductivity testing results for the Fat or Lean Clay were obtained.