DAMES & MOORE
A DAMES & MOORE GROUP COMPANY

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September 22, 1997

Mr. Jim Schmidt
Wisconsin Department of Natural Resources
4041 North Richards Street
P.O. Box 12436
Milwaukee, WI 53212

Re: Soil and Groundwater Assessment
Modern Metals of Wisconsin Facility
275 Industrial Drive
Fredonia, Wisconsin

Dear Mr. Schmidt:

This Soil and Groundwater Assessment Report documents the results of field and laboratory information recently obtained by Dames & Moore associated with the Modern Metals of Wisconsin (Modern Metals) facility, located in Fredonia, Wisconsin. The Soil and Groundwater Assessment was conducted as a follow-up to the June 1997 Phase I Environmental Site Assessment Report, and July 1997 Addendum to the Limited Phase II Environmental Site Assessment Report, which were both prepared by Key Environmental Services (KEY) of Cedarburg, Wisconsin.

The following sections document the methodology and results of the Dames & Moore Soil and Groundwater Investigation, provide calculated site-specific residual contaminant levels (RCLs) as defined in Wisconsin Administrative Code (WAC) Ch. NR 720.19(4)(a), and provide recommendations for additional activities to be conducted.

1.0 SOIL AND GROUNDWATER INVESTIGATION METHODOLOGY

A total of five soil borings were completed using 2¼-inch hollow-stem augers at the Modern Metals facility on August 27, 1997. The soil borings were advanced by Professional Service Industries, Inc. (PSI) of New Berlin, Wisconsin. The locations of the soil borings are identified as SB01 through SB05 on the attached Figure 1. Soil borings SB02 through SB05 were advanced to depths of 12 feet (ft) below land surface (bls), and soil boring SB01 was advanced to a depth of 41 ft bls. Soil samples were collected continuously at two ft intervals to depths of 12 ft bls from each of the soil borings, using split-spoon sampling techniques. Split-spoon soil samples were also collected from soil boring SB01 at the following depth intervals: 14 to 16, 19 to 21, 24 to 26, 29 to 31, 34 to 36, and 39 to 41 ft bls. All soil samples from the soil borings were screened in the field, both visually and for volatile organic compounds (VOCs) using a photoionization detector (PID). Based on the results of the PID screening, selected soil samples were submitted for laboratory analysis of VOCs. In addition, one soil sample from three of the soil borings were submitted for laboratory analysis of total organic carbon.

All down-hole drilling equipment and hollow-stem augers were steam-cleaned prior to the start of drilling activities. All soil sampling equipment was discontaminated between sample collection events using Alconox™ soap and tap water rinse. All soil cuttings were placed on and covered with plastic sheets and stored on-site. Subsequent to the completion of all soil borings, the open boreholes were backfilled with coarse bentonite chips. Soil borings logs are provided as Attachment A.

Soil boring SB01 was completed as temporary monitoring well TW001. This temporary groundwater monitoring well was constructed with 2-inch diameter Schedule 40 polyvinyl chloride (PVC) riser and 0.010 slot PVC screen. The screen length was 10 ft. Groundwater sampling of the temporary monitoring well was conducted by slowly lowering and retrieving a disposable boiler into the well to verify that representative groundwater samples were collected without promoting volatilization of any potential VOCs from the samples. The groundwater samples were transferred to pre-cleaned sample containers that were provided by the project laboratory, EnChem, Inc., of Green Bay, Wisconsin. All collected soil and groundwater samples were stored in ice chests with ice packs, and delivered to the project laboratory via courier within 36 hours of sample collection.

2.0 PHYSICAL SUBSURFACE CONDITIONS

Data collection activities conducted as part of this investigation have provided information to characterize subsurface conditions at the Modern Metals facility. In general, soils encountered at the site consist of silty clays with isolated silty sands within the upper 12 ft of the subsurface. At soil boring SB01, a sand unit of variable grain size was encountered from a depth of 29 ft bls to the base of the boring (41 ft bls).

3.0 CHEMICAL CHARACTERISTICS OF SOIL AND GROUNDWATER SAMPLES

Laboratory reports associated with the collected soil samples are provided as Attachment B. The locations of the soil samples collected for laboratory analysis are presented on Figure 1. The laboratory results are reported in units of micrograms per kilogram (µg/kg), which is equivalent to parts per billion (ppb). Two of the five soil samples collected as part of this investigation revealed detectable concentrations of VOCs. Soil sample SB0208 was collected from soil boring SB02 at a depth of 6 to 8 ft bls. This soil sample revealed 3,600 µg/kg of trichloroethene (TCE), and 72 µg/kg of cis-1,2-dichloroethene (cis-1,2-DCE). Soil sample SB0108 was collected from soil boring SB01, at a depth of 6 to 8 ft bls. This soil sample revealed 67 µg/kg of benzene, 54 µg/kg of cis-1,2-DCE, and 4,700 µg/kg of TCE. The detected concentrations of benzene and cis-1,2-DCE were below the respective limit of quantification; these results are therefore qualified due to the uncertainty of the parameter concentration between the limit of detection and limit of quantification.

One soil sample collected from each of the soil borings SB01 through SB05, at depths of 4 to 6 ft bls, were retained for laboratory analysis of total organic carbon (TOC). The resulting laboratory data revealed a TOC concentration of 2 percent in the soil sample collected from soil boring SB04, and 1 percent in each of the other retained soil samples. The arithmetic mean TOC concentration for the five collected soil samples is 1.2 percent.

Laboratory results of the groundwater sample collected from boring SB01 revealed the following constituent concentrations:

- cis-1,2-DCE 21 μg/L;
- Methylene chloride 2.4 μg/L;
- Naphthalene 6.7 μg/L; and
- TCE 480 μg/L.

Methylene chloride is a common laboratory contaminant, such that the detected presence of methylene chloride in the groundwater sample is probably a laboratory artifact. The detected concentration of cis-1,2-DCE is greater than the Preventive Action Limit (PAL) of 7 μg/L, and less than the Enforcement Standard (ES) of 70 μg/L. The detected concentration of naphthalene is less than the PAL value of 8 μg/L. The detected concentration of TCE is greater than the ES value of 5 μg/L.

4.0 SITE-SPECIFIC RESIDUAL CONTAMINANT LEVELS

Based on the detected concentrations of VOCs at the Modern Metals site, and in accordance with WAC Ch. NR 720.19(4)(b)(1), it is determined appropriate to establish site-specific RCLs for the site. The site-specific RCLs are estimated using the following equations:

$$RCL = PAL * Koc * foc * DAF$$

$$DAF = \frac{d}{R}(Koc * foc * \rho + n)$$

Where:

Parameter	Description	Default NR 720 Baseline Value
RCL	Soil residual contaminant level (mg/kg)	
d	Thickness of groundwater mixing zone (cm)	152.4
R	Groundwater recharge (cm) (monthly)	2.12
Koc	Organic carbon:water partitioning coefficient (liter/kg)	Chemical-specific
foc	Soil fractional organic carbon content (g/g)	Site-specific
ρ	Soil dry bulk density (g/cm^3)	Site-specific
n	Soil porosity (cm^3/cm^3)	Site-specific

These equations are derived from the fundamental equation defining linear, equilibrium soil: water partitioning, which relates the adsorbed and dissolved concentrations of a compound. The equations evaluate the effect of adsorption-desorption processes in the unsaturated zone and in the saturated zone. It is important to note that this approach is very conservative, because it is based on the assumption that contaminated soil is in contact with groundwater, and neglects the dispersion and dilution effects of contaminant migration through the saturated zone.

The site-specific RCLs were estimated using literature values for organic carbon: water partitioning coefficients for the constituents of interest, and the results of foc analysis of soil samples collected as part of this investigation, as provided in Attachment B. The calculations conducted to determine site-specific RCLs are documented in Attachment C. The estimated site-specific RCLs are summarized as follows:

- TCE 152 μg/kg
- cis-1,2-DCE 1,558 μg/kg
- Benzene 74 μg/kg
- Naphthalene 241,000 μg/kg

None of the detected concentrations of cis-1,2-DCE or naphthalene in the collected soil samples (obtained as part of the KEY and Dames & Moore Investigations) exceed the site-specific RCL values identified above. Exceedances of benzene and/or TCE RCL values were noted in soil samples collected from KEY borings GP-8, GP-11, and GP-13. In addition, exceedances of the TCE RCL value were noted in Dames & Moore borings SB01 and SB02. Based on the distribution of these boring locations at the Modern Metals site, it is preliminarily estimated that between 500 and 1,000 cubic yards of soils exceed site-specific RCL values.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The field and laboratory information obtained as part of this soil and groundwater investigation has allowed for a substantially improved understanding of environmental conditions at the Modern Metals site. Soils at the facility consist predominantly of silty clays with isolated silty sands, underlain by a sand unit at a depth of 29 ft bls, to the base of the deepest boring installed as part of this investigation (41 ft bls).

Based on a comparison of soil quality information obtained as part of the KEY investigations and the Dames & Moore investigation with site-specific RCL values, approximately 500 to 1,000 cubic yards of soils at the site are estimated to contain constituent concentrations greater than the RCL values. Based on the foregoing, we recommend that a detailed cost evaluation be conducted to identify the most cost-effective remedial alternative to remediate affected soils at the Modern Metals site. Based on our understanding of site conditions, applicable remedial alternatives to address these affected soils include the following:

- Soil excavation and off-site landfill disposal;
- Soil excavation and off-site thermal desorption;
- Soil excavation and on-site bioremediation; and
- Implementation of pavement cover and deed restriction.

The groundwater sample obtained as part of this investigation revealed an exceedance of an ES value for TCE. It is therefore necessary to identify the nature and extent of affected groundwater quality at the site, and to determine if any potable groundwater receptors are located near the Modern Metals site. We therefore recommend that four monitoring wells, identified as MW01 through MW04 on the attached Figure 1, be installed at the site. If the substantial sand layer identified as part of this investigation is found to be indicative of overall site conditions, we recommend that the four new monitoring wells be screened from 35 to 45 ft bls, to collect representative groundwater samples from this sand unit. A location and elevation survey is recommended to be conducted on the monitoring wells, followed by collection of water level elevations such that the direction of groundwater flow at the site can be evaluated. We also recommend that in-situ hydraulic conductivity testing be conducted on the four installed monitoring wells, such that the rate of groundwater flow at the site can be estimated. Groundwater samples are recommended to be collected from the four new monitoring wells, and submitted for laboratory analysis of VOCs. The results of this investigation would allow for an evaluation of groundwater remedial alternatives (if necessary), including natural attenuation, to address any documented exceedances of ES values based on the monitoring well data.

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We trust that the information contained herein adequately meets your current needs. If you have any questions or comments, please feel free to contact us.

Respectfully submitted

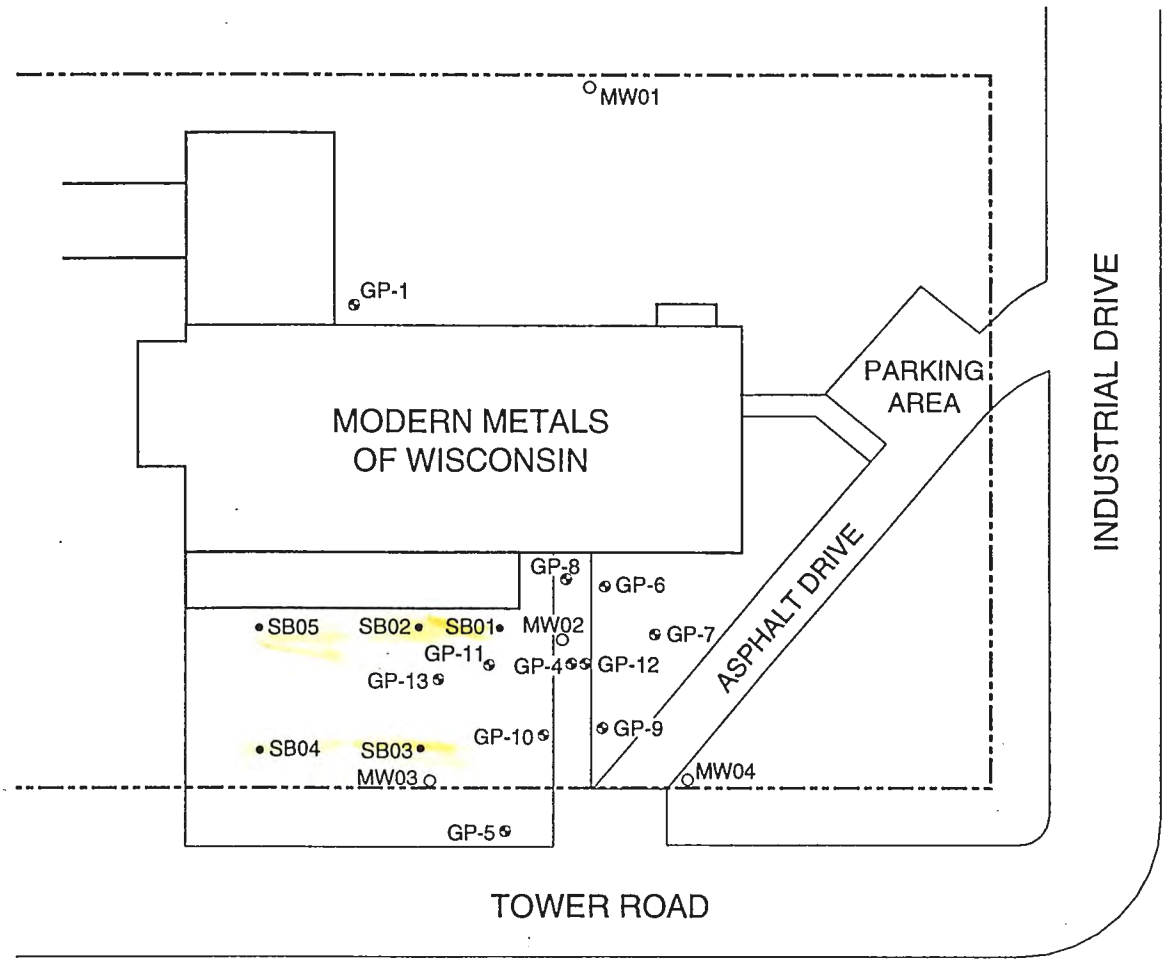
DAMES & MOORE

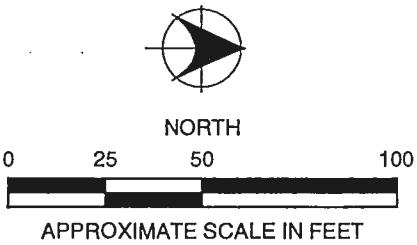
Mark M. Mejac

Mark M. Mejac, P.G.
Senior Hydrogeologist

Enclosure

cc: Mr. Charles Donald
Mr. James K. Powers





LEGEND

- PREVIOUS GEOPROBE ™ BORING LOCATION
- AUGUST 1997 DAMES & MOORE GEOPROBE™ BORING LOCATION
- RECOMMENDED MONITORING WELL LOCATION

MODERN METALS OF WISCONSIN
275 INDUSTRIAL DRIVE
FREDONIA, WISCONSIN

FIGURE 1
SAMPLING LOCATIONS

DRN. BY:	JJM
PROJ. NO.:	37292-001
DATE:	10SEP97

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P:\37292.001\FIGURES\SAMPLOC.AI

ATTACHMENT C

DETERMINATION OF SITE-SPECIFIC RESIDUAL CONTAMINANT LEVELS

The following soil:water partioning equations are applied for the Modern Metals site:

$$RCL = PAL * Koc * foc * DAF$$

$$DAF = \frac{d}{R}(Koc * foc * \rho + n)$$

Where:

Parameter	Description	Default NR 720 Baseline Value
RCL	Soil residual contaminant level (mg/kg)	
d	Thickness of groundwater mixing zone (cm)	152.4
R	Groundwater recharge (cm) (monthly)	2.12
Koc	Organic carbon:water partitioning coefficient (liter/kg)	Chemical-specific
foc	Soil fractional organic carbon content (g/g)	Site-specific
ρ	Soil dry bulk density (g/cm^3)	Site-specific
n	Soil porosity (cm^3/cm^3)	Site-specific

Constituents of Interest and Maximum Detected Concentrations:

Trichloroethene	4.7 mg/kg (Dames & Moore Investigation)
cis-1,2-Dichloroethene	0.084 mg/kg (KEY Investigations)
Benzene	0.400 mg/kg (KEY Investigations)
Napthalene	0.860 mg/kg (KEY Investigations)

Equation Parameters:
Organic carbon:water partitioning coefficients (Dragun, 1988 and Yaws, 1992):

Trichloroethene	123 L/kg
cis-1,2-Dichloroethene	104 L/kg
Benzene	83.0 L/kg
Napthalene	1,300 L/kg

Site-Specific Physical Soil Parameters:

Soil Organic Carbon Fraction	0.012 g/g
Dry Bulk Density	1.7 g/cm^3 (Estimated for Clay Soil)
Soil Porosity	0.36 (Estimated for Clay Soil)

Constituents of Interest Preventive Action Limits:

Trichloroethene	0.5 μg/L
cis-1,2-Dichloroethene	7.0 μg/L
Benzene	0.5 μg/L
Napthalene	8.0 μg/L

Estimated Site-Specific Residual Contaminant Levels:

Trichloroethene	**0.152 mg/kg**
cis-1,2-Dichloroethene	**1.558 mg/kg**
Benzene	**0.074 mg/kg**
Napthalene	**241 mg/kg**

REFERENCES CITED

Dragun, J., 1988, The Soil Chemistry of Hazardous Materials, Hazardous Materials Control Research Institute, Silver Spring, Maryland.

Yaws, C.L., 1992, Thermodynamic and Physical Property Data, Gulf Publishing Company, Houston, Texas.

EN CHEM INC.

1795 Industrial Drive
Green Bay, WI 54302
920-469-2436
800-7-ENCHEM
FAX: 920-469-8827

- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Client : DAMES & MOORE

Field ID : SB0208

Report Date : 9/2/97

Lab Sample Number : 872202-007

Collection Date : 8/27/97

WI DNR LAB ID : 40513270

Matrix Type : SOIL

1,2-Dichlorobenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1-Dichloroethene	< 25	25	60	ug/kg	8/29/97	SW846 8260
cis-1,2-Dichloroethene	72	29	70	ug/kg	8/29/97	SW846 8260
Dichlorodifluoromethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
trans-1,2-Dichloroethene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,2-Dichloropropane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1-Dichloroethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,3-Dichloropropane	< 25	25	60	ug/kg	8/29/97	SW846 8260
2,2-Dichloropropane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1-Dichloropropene	< 25	25	60	ug/kg	8/29/97	SW846 8260
cis-1,3-Dichloropropene	< 25	25	60	ug/kg	8/29/97	SW846 8260
trans-1,3-Dichloropropene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Diisopropyl ether	< 25	25	60	ug/kg	8/29/97	SW846 8260
Ethylbenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Fluorotrichloromethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
Hexachlorobutadiene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Isopropylbenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
p-Isopropyltoluene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Methylene chloride	< 25	25	60	ug/kg	8/29/97	SW846 8260
Methyl-tert-butyl-ether	< 25	25	60	ug/kg	8/29/97	SW846 8260
Naphthalene	< 25	25	60	ug/kg	8/29/97	SW846 8260
n-Propylbenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Styrene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1,2,2-Tetrachloroethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1,1,2-Tetrachloroethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
Tetrachloroethene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Toluene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,2,3-Trichlorobenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,2,4-Trichlorobenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1,1-Trichloroethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1,2-Trichloroethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,2,4-Trimethylbenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Trichloroethene	3600	29	70	ug/kg	8/29/97	SW846 8260
1,2,3-Trichloropropane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,3,5-Trimethylbenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260

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- Analytical Report -

Project Name : FREDONIA
Project Number : 37292-001
Field ID : SB0208
Lab Sample Number : 872202-007
WI DNR LAB ID : 40513270

Client : DAMES & MOORE
Report Date : 9/2/97
Collection Date : 8/27/97
Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analys
Solids, percent	85.6				%		8/29/97	SM2540G	SM2540G	PHS

Organic Results

EPA 8260 VOLATILE LIST - SOIL/METHANOL Prep Method: SW846 5030 Prep Date: 8/29/97 Analyst: RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Benzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromobenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromochloromethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromodichloromethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromoform	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromomethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
s-Butylbenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
t-Butylbenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
n-Butylbenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
Carbon tetrachloride	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chloroform	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chlorobenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chlorodibromomethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chloroethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chloromethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
2-Chlorotoluene	< 25	25	60		ug/kg		8/29/97	SW846 8260
4-Chlorotoluene	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,2-Dibromo-3-chloropropane	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,2-Dibromoethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Dibromomethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,3-Dichlorobenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,4-Dichlorobenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,2-Dichloroethane	< 25	25	60		ug/kg		8/29/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

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- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Field ID : SB0208

Lab Sample Number : 872202-007

WI DNR LAB ID : 40513270

Client : DAMES & MOORE

Report Date : 9/2/97

Collection Date : 8/27/97

Matrix Type : SOIL

Vinyl chloride	<	25	25	60	ug/kg	8/29/97	SW846 8260
Xylenes, -m, -p	<	25	25	60	ug/kg	8/29/97	SW846 8260
Xylene, -o	<	25	25	60	ug/kg	8/29/97	SW846 8260
4-Bromofluorobenzene		86			%Recov	8/29/97	SW846 8260
Dibromofluoromethane		86			%Recov	8/29/97	SW846 8260
Toluene-d8		93			%Recov	8/29/97	SW846 8260

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- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Field ID : SB0206

Lab Sample Number : 872202-008

WI DNR LAB ID : 40513270

Client : DAMES & MOORE

Report Date : 9/8/97

Collection Date : 8/27/97

Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analys
Organic Carbon, total	1.0	1.0	3.2		%	Q	9/3/97	ASTM 2974-87	ASTM 2974-87	MAD

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- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Field ID : SB0108

Lab Sample Number : 872202-009

WI DNR LAB ID : 40513270

Client : DAMES & MOORE

Report Date : 9/2/97

Collection Date : 8/27/97

Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analys
Solids, percent	84.2				%		8/29/97	SM2540G	SM2540G	PHS

Organic Results

EPA 8260 VOLATILE LIST - SOIL/METHANOL Prep Method: SW846 5030 Prep Date: 8/29/97 Analyst: RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Benzene	67	30	72		ug/kg	Q	8/29/97	SW846 8260
Bromobenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromochloromethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromodichloromethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromoform	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromomethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
s-Butylbenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
t-Butylbenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
n-Butylbenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
Carbon tetrachloride	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chloroform	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chlorobenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chlorodibromomethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chloroethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chloromethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
2-Chlorotoluene	< 25	25	60		ug/kg		8/29/97	SW846 8260
4-Chlorotoluene	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,2-Dibromo-3-chloropropane	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,2-Dibromoethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Dibromomethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,3-Dichlorobenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,4-Dichlorobenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,2-Dichloroethane	< 25	25	60		ug/kg		8/29/97	SW846 8260

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Project Name : FREDONIA

Project Number : 37292-001

Client : DAMES & MOORE

Field ID : SB0108

Report Date : 9/2/97

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WI DNR LAB ID : 40513270

Matrix Type : SOIL

1,2-Dichlorobenzene	< 25	25	60	ug/kg		8/29/97	SW846 8260
1,1-Dichloroethene	< 25	25	60	ug/kg		8/29/97	SW846 8260
cis-1,2-Dichloroethene	54	30	72	ug/kg	Q	8/29/97	SW846 8260
Dichlorodifluoromethane	< 25	25	60	ug/kg		8/29/97	SW846 8260
trans-1,2-Dichloroethene	< 25	25	60	ug/kg		8/29/97	SW846 8260
1,2-Dichloropropane	< 25	25	60	ug/kg		8/29/97	SW846 8260
1,1-Dichloroethane	< 25	25	60	ug/kg		8/29/97	SW846 8260
1,3-Dichloropropane	< 25	25	60	ug/kg		8/29/97	SW846 8260
2,2-Dichloropropane	< 25	25	60	ug/kg		8/29/97	SW846 8260
1,1-Dichloropropene	< 25	25	60	ug/kg		8/29/97	SW846 8260
cis-1,3-Dichloropropene	< 25	25	60	ug/kg		8/29/97	SW846 8260
trans-1,3-Dichloropropene	< 25	25	60	ug/kg		8/29/97	SW846 8260
Diisopropyl ether	< 25	25	60	ug/kg		8/29/97	SW846 8260
Ethylbenzene	< 25	25	60	ug/kg		8/29/97	SW846 8260
Fluorotrichloromethane	< 25	25	60	ug/kg		8/29/97	SW846 8260
Hexachlorobutadiene	< 25	25	60	ug/kg		8/29/97	SW846 8260
Isopropylbenzene	< 25	25	60	ug/kg		8/29/97	SW846 8260
p-Isopropyltoluene	< 25	25	60	ug/kg		8/29/97	SW846 8260
Methylene chloride	< 25	25	60	ug/kg		8/29/97	SW846 8260
Methyl-tert-butyl-ether	< 25	25	60	ug/kg		8/29/97	SW846 8260
Naphthalene	< 25	25	60	ug/kg		8/29/97	SW846 8260
n-Propylbenzene	< 25	25	60	ug/kg		8/29/97	SW846 8260
Styrene	< 25	25	60	ug/kg		8/29/97	SW846 8260
1,1,2,2-Tetrachloroethane	< 25	25	60	ug/kg		8/29/97	SW846 8260
1,1,1,2-Tetrachloroethane	< 25	25	60	ug/kg		8/29/97	SW846 8260
Tetrachloroethene	< 25	25	60	ug/kg		8/29/97	SW846 8260
Toluene	< 25	25	60	ug/kg		8/29/97	SW846 8260
1,2,3-Trichlorobenzene	< 25	25	60	ug/kg		8/29/97	SW846 8260
1,2,4-Trichlorobenzene	< 25	25	60	ug/kg		8/29/97	SW846 8260
1,1,1-Trichloroethane	< 25	25	60	ug/kg		8/29/97	SW846 8260
1,1,2-Trichloroethane	< 25	25	60	ug/kg		8/29/97	SW846 8260
1,2,4-Trimethylbenzene	< 25	25	60	ug/kg		8/29/97	SW846 8260
Trichloroethene	4700	30	72	ug/kg		8/29/97	SW846 8260
1,2,3-Trichloropropane	< 25	25	60	ug/kg		8/29/97	SW846 8260
1,3,5-Trimethylbenzene	< 25	25	60	ug/kg		8/29/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

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- Analytical Report -

Project Name : FREDONIA
Project Number : 37292-001
Field ID : SB0108
Lab Sample Number : 872202-009
WI DNR LAB ID : 40513270

Client : DAMES & MOORE
Report Date : 9/2/97
Collection Date : 8/27/97
Matrix Type : SOIL

Vinyl chloride	< 25	25	60	ug/kg	8/29/97	SW846 8260
Xylenes, -m, -p	< 25	25	60	ug/kg	8/29/97	SW846 8260
Xylene, -o	< 25	25	60	ug/kg	8/29/97	SW846 8260
4-Bromofluorobenzene	94			%Recov	8/29/97	SW846 8260
Dibromofluoromethane	90			%Recov	8/29/97	SW846 8260
Toluene-d8	99			%Recov	8/29/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

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- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Field ID : SB0106

Lab Sample Number : 872202-010

WI DNR LAB ID : 40513270

Client : DAMES & MOORE

Report Date : 9/8/97

Collection Date : 8/27/97

Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analys
Organic Carbon, total	1.0	1.0	3.2		%	Q	9/3/97	ASTM 2974-87	ASTM 2974-87	MAD

All soil results are reported on a dry weight basis unless otherwise noted.

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- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Field ID : MEOH BLANK

Lab Sample Number : 872202-011

WI DNR LAB ID : 40513270

Client : DAMES & MOORE

Report Date : 9/2/97

Collection Date : 8/27/97

Matrix Type : METHANOL

Organic Results

EPA 8260 VOLATILE LIST - METHANOL Prep Method: SW846 5030 Prep Date: 8/29/97 Analyst: RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Benzene	< 25	25	60		ug/L		8/29/97	SW846 8260
Bromobenzene	< 25	25	60		ug/L		8/29/97	SW846 8260
Bromochloromethane	< 25	25	60		ug/L		8/29/97	SW846 8260
Bromodichloromethane	< 25	25	60		ug/L		8/29/97	SW846 8260
Bromoform	< 25	25	60		ug/L		8/29/97	SW846 8260
Bromomethane	< 25	25	60		ug/L		8/29/97	SW846 8260
s-Butylbenzene	< 25	25	60		ug/L		8/29/97	SW846 8260
t-Butylbenzene	< 25	25	60		ug/L		8/29/97	SW846 8260
n-Butylbenzene	< 25	25	60		ug/L		8/29/97	SW846 8260
Carbon tetrachloride	< 25	25	60		ug/L		8/29/97	SW846 8260
Chloroform	< 25	25	60		ug/L		8/29/97	SW846 8260
Chlorobenzene	< 25	25	60		ug/L		8/29/97	SW846 8260
Chlorodibromomethane	< 25	25	60		ug/L		8/29/97	SW846 8260
Chloroethane	< 25	25	60		ug/L		8/29/97	SW846 8260
Chloromethane	< 25	25	60		ug/L		8/29/97	SW846 8260
2-Chlorotoluene	< 25	25	60		ug/L		8/29/97	SW846 8260
4-Chlorotoluene	< 25	25	60		ug/L		8/29/97	SW846 8260
1,2-Dibromo-3-chloropropane	< 25	25	60		ug/L		8/29/97	SW846 8260
1,2-Dibromoethane	< 25	25	60		ug/L		8/29/97	SW846 8260
Dibromomethane	< 25	25	60		ug/L		8/29/97	SW846 8260
1,3-Dichlorobenzene	< 25	25	60		ug/L		8/29/97	SW846 8260
1,4-Dichlorobenzene	< 25	25	60		ug/L		8/29/97	SW846 8260
1,2-Dichloroethane	< 25	25	60		ug/L		8/29/97	SW846 8260
1,2-Dichlorobenzene	< 25	25	60		ug/L		8/29/97	SW846 8260
1,1-Dichloroethene	< 25	25	60		ug/L		8/29/97	SW846 8260
cis-1,2-Dichloroethene	< 25	25	60		ug/L		8/29/97	SW846 8260
Dichlorodifluoromethane	< 25	25	60		ug/L		8/29/97	SW846 8260
trans-1,2-Dichloroethene	< 25	25	60		ug/L		8/29/97	SW846 8260

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- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Client : DAMES & MOORE

Field ID : MEOH BLANK

Report Date : 9/2/97

Lab Sample Number : 872202-011

Collection Date : 8/27/97

WI DNR LAB ID : 40513270

Matrix Type : METHANOL

1,2-Dichloropropane	<	25	25	60	ug/L	8/29/97	SW846 8260
1,1-Dichloroethane	<	25	25	60	ug/L	8/29/97	SW846 8260
1,3-Dichloropropane	<	25	25	60	ug/L	8/29/97	SW846 8260
2,2-Dichloropropane	<	25	25	60	ug/L	8/29/97	SW846 8260
1,1-Dichloropropene	<	25	25	60	ug/L	8/29/97	SW846 8260
cis-1,3-Dichloropropene	<	25	25	60	ug/L	8/29/97	SW846 8260
trans-1,3-Dichloropropene	<	25	25	60	ug/L	8/29/97	SW846 8260
Diisopropyl ether	<	25	25	60	ug/L	8/29/97	SW846 8260
Ethylbenzene	<	25	25	60	ug/L	8/29/97	SW846 8260
Fluorotrichloromethane	<	25	25	60	ug/L	8/29/97	SW846 8260
Hexachlorobutadiene	<	25	25	60	ug/L	8/29/97	SW846 8260
Isopropylbenzene	<	25	25	60	ug/L	8/29/97	SW846 8260
p-Isopropyltoluene	<	25	25	60	ug/L	8/29/97	SW846 8260
Methylene chloride	<	25	25	60	ug/L	8/29/97	SW846 8260
Methyl-tert-butyl-ether	<	25	25	60	ug/L	8/29/97	SW846 8260
Naphthalene	<	25	25	60	ug/L	8/29/97	SW846 8260
n-Propylbenzene	<	25	25	60	ug/L	8/29/97	SW846 8260
Styrene	<	25	25	60	ug/L	8/29/97	SW846 8260
1,1,2,2-Tetrachloroethane	<	25	25	60	ug/L	8/29/97	SW846 8260
1,1,1,2-Tetrachloroethane	<	25	25	60	ug/L	8/29/97	SW846 8260
Tetrachloroethene	<	25	25	60	ug/L	8/29/97	SW846 8260
Toluene	<	25	25	60	ug/L	8/29/97	SW846 8260
1,2,3-Trichlorobenzene	<	25	25	60	ug/L	8/29/97	SW846 8260
1,2,4-Trichlorobenzene	<	25	25	60	ug/L	8/29/97	SW846 8260
1,1,1-Trichloroethane	<	25	25	60	ug/L	8/29/97	SW846 8260
1,1,2-Trichloroethane	<	25	25	60	ug/L	8/29/97	SW846 8260
1,2,4-Trimethylbenzene	<	25	25	60	ug/L	8/29/97	SW846 8260
Trichloroethene	<	25	25	60	ug/L	8/29/97	SW846 8260
1,2,3-Trichloropropane	<	25	25	60	ug/L	8/29/97	SW846 8260
1,3,5-Trimethylbenzene	<	25	25	60	ug/L	8/29/97	SW846 8260
Vinyl chloride	<	25	25	60	ug/L	8/29/97	SW846 8260
Xylenes, -m, -p	<	25	25	60	ug/L	8/29/97	SW846 8260
Xylene, -o	<	25	25	60	ug/L	8/29/97	SW846 8260
4-Bromofluorobenzene		96			%Recov	8/29/97	SW846 8260
Dibromofluoromethane		87			%Recov	8/29/97	SW846 8260

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- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Field ID : MEOH BLANK

Lab Sample Number : 872202-011

WI DNR LAB ID : 40513270

Client : DAMES & MOORE

Report Date : 9/2/97

Collection Date : 8/27/97

Matrix Type : METHANOL

Toluene-d8	88	%Recov	8/29/97	SW846 8260

EN CHEM INC.

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- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Field ID : TW001

Lab Sample Number : 872202-012

WI DNR LAB ID : 40513270

Client : DAMES & MOORE

Report Date : 9/3/97

Collection Date : 8/27/97

Matrix Type : WATER

Organic Results

EPA 8260 VOLATILE LIST- WATER **Prep Method:** SW846 5030 **Prep Date:** 9/2/97 **Analyst:** JJB

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Benzene	< 4.1	4.1	13		ug/L		9/2/97	SW846 8260
Bromobenzene	< 2.9	2.9	9.2		ug/L		9/2/97	SW846 8260
Bromochloromethane	< 2.9	2.9	9.2		ug/L		9/2/97	SW846 8260
Bromodichloromethane	< 1.8	1.8	5.7		ug/L		9/2/97	SW846 8260
Bromoform	< 3.1	3.1	9.9		ug/L		9/2/97	SW846 8260
Bromomethane	< 3.0	3.0	9.6		ug/L		9/2/97	SW846 8260
s-Butylbenzene	< 2.3	2.3	7.3		ug/L		9/2/97	SW846 8260
t-Butylbenzene	< 2.4	2.4	7.6		ug/L		9/2/97	SW846 8260
n-Butylbenzene	< 3.1	3.1	9.9		ug/L		9/2/97	SW846 8260
Carbon tetrachloride	< 2.3	2.3	7.3		ug/L		9/2/97	SW846 8260
Chloroform	< 2.5	2.5	8.0		ug/L		9/2/97	SW846 8260
Chlorobenzene	< 2.7	2.7	8.6		ug/L		9/2/97	SW846 8260
Chlorodibromomethane	< 2.3	2.3	7.3		ug/L		9/2/97	SW846 8260
Chloroethane	< 2.5	2.5	8.0		ug/L		9/2/97	SW846 8260
Chloromethane	< 1.5	1.5	4.8		ug/L		9/2/97	SW846 8260
2-Chlorotoluene	< 2.7	2.7	8.6		ug/L		9/2/97	SW846 8260
4-Chlorotoluene	< 3.0	3.0	9.6		ug/L		9/2/97	SW846 8260
1,2-Dibromo-3-chloropropane	< 5.8	5.8	18		ug/L		9/2/97	SW846 8260
1,2-Dibromoethane	< 2.4	2.4	7.6		ug/L		9/2/97	SW846 8260
Dibromomethane	< 2.8	2.8	8.9		ug/L		9/2/97	SW846 8260
1,3-Dichlorobenzene	< 2.8	2.8	8.9		ug/L		9/2/97	SW846 8260
1,4-Dichlorobenzene	< 2.9	2.9	9.2		ug/L		9/2/97	SW846 8260
1,2-Dichloroethane	< 2.4	2.4	7.6		ug/L		9/2/97	SW846 8260
1,2-Dichlorobenzene	< 3.2	3.2	10		ug/L		9/2/97	SW846 8260
1,1-Dichloroethene	< 2.8	2.8	8.9		ug/L		9/2/97	SW846 8260
cis-1,2-Dichloroethene	21	2.8	8.9		ug/L		9/2/97	SW846 8260
Dichlorodifluoromethane	< 2.5	2.5	8.0		ug/L		9/2/97	SW846 8260
trans-1,2-Dichloroethene	< 2.5	2.5	8.0		ug/L		9/2/97	SW846 8260

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- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Field ID : TW001

Lab Sample Number : 872202-012

WI DNR LAB ID : 40513270

Client : DAMES & MOORE

Report Date : 9/3/97

Collection Date : 8/27/97

Matrix Type : WATER

1,2-Dichloropropane	< 2.4	2.4	7.6	ug/L		9/2/97	SW846 8260
1,1-Dichloroethane	< 2.6	2.6	8.3	ug/L		9/2/97	SW846 8260
1,3-Dichloropropane	< 2.7	2.7	8.6	ug/L		9/2/97	SW846 8260
2,2-Dichloropropane	< 4.5	4.5	14	ug/L		9/2/97	SW846 8260
1,1-Dichloropropene	< 2.6	2.6	8.3	ug/L		9/2/97	SW846 8260
cis-1,3-Dichloropropene	< 4.8	4.8	15	ug/L		9/2/97	SW846 8260
trans-1,3-Dichloropropene	< 4.5	4.5	14	ug/L		9/2/97	SW846 8260
Diisopropyl ether	< 4.3	4.3	14	ug/L		9/2/97	SW846 8260
Ethylbenzene	< 2.3	2.3	7.3	ug/L		9/2/97	SW846 8260
Fluorotrichloromethane	< 2.9	2.9	9.2	ug/L		9/2/97	SW846 8260
Hexachlorobutadiene	< 3.1	3.1	9.9	ug/L		9/2/97	SW846 8260
Isopropylbenzene	< 2.7	2.7	8.6	ug/L		9/2/97	SW846 8260
p-Isopropyltoluene	< 2.2	2.2	7.0	ug/L		9/2/97	SW846 8260
Methylene chloride	2.4	2.2	7.0	ug/L	Q	9/2/97	SW846 8260
Methyl-tert-butyl-ether	< 5.3	5.3	17	ug/L		9/2/97	SW846 8260
Naphthalene	6.7	6.6	21	ug/L	Q	9/2/97	SW846 8260
n-Propylbenzene	< 2.7	2.7	8.6	ug/L		9/2/97	SW846 8260
Styrene	< 1.9	1.9	6.1	ug/L		9/2/97	SW846 8260
1,1,2,2-Tetrachloroethane	< 4.6	4.6	15	ug/L		9/2/97	SW846 8260
1,1,1,2-Tetrachloroethane	< 2.1	2.1	6.7	ug/L		9/2/97	SW846 8260
Tetrachloroethene	< 2.7	2.7	8.6	ug/L		9/2/97	SW846 8260
Toluene	< 2.8	2.8	8.9	ug/L		9/2/97	SW846 8260
1,2,3-Trichlorobenzene	< 3.2	3.2	10	ug/L		9/2/97	SW846 8260
1,2,4-Trichlorobenzene	< 4.8	4.8	15	ug/L		9/2/97	SW846 8260
1,1,1-Trichloroethane	< 2.7	2.7	8.6	ug/L		9/2/97	SW846 8260
1,1,2-Trichloroethane	< 3.0	3.0	9.6	ug/L		9/2/97	SW846 8260
1,2,4-Trimethylbenzene	< 3.0	3.0	9.6	ug/L		9/2/97	SW846 8260
Trichloroethene	480	2.0	6.4	ug/L		9/2/97	SW846 8260
1,2,3-Trichloropropane	< 4.8	4.8	15	ug/L		9/2/97	SW846 8260
1,3,5-Trimethylbenzene	< 2.5	2.5	8.0	ug/L		9/2/97	SW846 8260
Vinyl chloride	< 2.3	2.3	7.3	ug/L		9/2/97	SW846 8260
Xylenes, -m, -p	< 5.1	5.1	16	ug/L		9/2/97	SW846 8260
Xylene, -o	< 2.8	2.8	8.9	ug/L		9/2/97	SW846 8260
4-Bromofluorobenzene	102			%Recov		9/2/97	SW846 8260
Dibromofluoromethane	95			%Recov		9/2/97	SW846 8260

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- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Field ID : TW001

Lab Sample Number : 872202-012

WI DNR LAB ID : 40513270

Client : DAMES & MOORE

Report Date : 9/3/97

Collection Date : 8/27/97

Matrix Type : WATER

Toluene-d8	95	%Recov	9/2/97	SW846 8260

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- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Field ID : TRIP BLANK

Lab Sample Number : 872202-013

WI DNR LAB ID : 40513270

Client : DAMES & MOORE

Report Date : 9/2/97

Collection Date : 8/27/97

Matrix Type : WATER

Organic Results

EPA 8260 VOLATILE LIST- WATER Prep Method: SW846 5030 Prep Date: 8/29/97 Analyst: RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Benzene	< 0.41	0.41	1.3		ug/L		8/29/97	SW846 8260
Bromobenzene	< 0.29	0.29	0.92		ug/L		8/29/97	SW846 8260
Bromochloromethane	< 0.29	0.29	0.92		ug/L		8/29/97	SW846 8260
Bromodichloromethane	< 0.18	0.18	0.57		ug/L		8/29/97	SW846 8260
Bromoform	< 0.31	0.31	0.99		ug/L		8/29/97	SW846 8260
Bromomethane	< 0.30	0.30	0.96		ug/L		8/29/97	SW846 8260
s-Butylbenzene	< 0.23	0.23	0.73		ug/L		8/29/97	SW846 8260
t-Butylbenzene	< 0.24	0.24	0.76		ug/L		8/29/97	SW846 8260
n-Butylbenzene	< 0.31	0.31	0.99		ug/L		8/29/97	SW846 8260
Carbon tetrachloride	< 0.23	0.23	0.73		ug/L		8/29/97	SW846 8260
Chloroform	< 0.25	0.25	0.80		ug/L		8/29/97	SW846 8260
Chlorobenzene	< 0.27	0.27	0.86		ug/L		8/29/97	SW846 8260
Chlorodibromomethane	< 0.23	0.23	0.73		ug/L		8/29/97	SW846 8260
Chloroethane	< 0.25	0.25	0.80		ug/L		8/29/97	SW846 8260
Chloromethane	< 0.15	0.15	0.48		ug/L		8/29/97	SW846 8260
2-Chlorotoluene	< 0.27	0.27	0.86		ug/L		8/29/97	SW846 8260
4-Chlorotoluene	< 0.30	0.30	0.96		ug/L		8/29/97	SW846 8260
1,2-Dibromo-3-chloropropane	< 0.58	0.58	1.8		ug/L		8/29/97	SW846 8260
1,2-Dibromoethane	< 0.24	0.24	0.76		ug/L		8/29/97	SW846 8260
Dibromomethane	< 0.28	0.28	0.89		ug/L		8/29/97	SW846 8260
1,3-Dichlorobenzene	< 0.28	0.28	0.89		ug/L		8/29/97	SW846 8260
1,4-Dichlorobenzene	< 0.29	0.29	0.92		ug/L		8/29/97	SW846 8260
1,2-Dichloroethane	< 0.24	0.24	0.76		ug/L		8/29/97	SW846 8260
1,2-Dichlorobenzene	< 0.32	0.32	1.0		ug/L		8/29/97	SW846 8260
1,1-Dichloroethene	< 0.28	0.28	0.89		ug/L		8/29/97	SW846 8260
cis-1,2-Dichloroethene	< 0.28	0.28	0.89		ug/L		8/29/97	SW846 8260
Dichlorodifluoromethane	< 0.25	0.25	0.80		ug/L		8/29/97	SW846 8260
trans-1,2-Dichloroethene	< 0.25	0.25	0.80		ug/L		8/29/97	SW846 8260

EN CHEM INC.

1795 Industrial Drive
Green Bay, WI 54302
920-469-2436
800-7-ENCHEM
FAX: 920-469-8827

- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Client : DAMES & MOORE

Field ID : TRIP BLANK

Report Date : 9/2/97

Lab Sample Number : 872202-013

Collection Date : 8/27/97

WI DNR LAB ID : 40513270

Matrix Type : WATER

1,2-Dichloropropane	<	0.24	0.24	0.76	ug/L	8/29/97	SW846 8260
1,1-Dichloroethane	<	0.26	0.26	0.83	ug/L	8/29/97	SW846 8260
1,3-Dichloropropane	<	0.27	0.27	0.86	ug/L	8/29/97	SW846 8260
2,2-Dichloropropane	<	0.45	0.45	1.4	ug/L	8/29/97	SW846 8260
1,1-Dichloropropene	<	0.26	0.26	0.83	ug/L	8/29/97	SW846 8260
cis-1,3-Dichloropropene	<	0.48	0.48	1.5	ug/L	8/29/97	SW846 8260
trans-1,3-Dichloropropene	<	0.45	0.45	1.4	ug/L	8/29/97	SW846 8260
Diisopropyl ether	<	0.43	0.43	1.4	ug/L	8/29/97	SW846 8260
Ethylbenzene	<	0.23	0.23	0.73	ug/L	8/29/97	SW846 8260
Fluorotrichloromethane	<	0.29	0.29	0.92	ug/L	8/29/97	SW846 8260
Hexachlorobutadiene	<	0.31	0.31	0.99	ug/L	8/29/97	SW846 8260
Isopropylbenzene	<	0.27	0.27	0.86	ug/L	8/29/97	SW846 8260
p-Isopropyltoluene	<	0.22	0.22	0.70	ug/L	8/29/97	SW846 8260
Methylene chloride	<	0.22	0.22	0.70	ug/L	8/29/97	SW846 8260
Methyl-tert-butyl-ether	<	0.53	0.53	1.7	ug/L	8/29/97	SW846 8260
Naphthalene	<	0.66	0.66	2.1	ug/L	8/29/97	SW846 8260
n-Propylbenzene	<	0.27	0.27	0.86	ug/L	8/29/97	SW846 8260
Styrene	<	0.19	0.19	0.61	ug/L	8/29/97	SW846 8260
1,1,2,2-Tetrachloroethane	<	0.46	0.46	1.5	ug/L	8/29/97	SW846 8260
1,1,1,2-Tetrachloroethane	<	0.21	0.21	0.67	ug/L	8/29/97	SW846 8260
Tetrachloroethene	<	0.27	0.27	0.86	ug/L	8/29/97	SW846 8260
Toluene	<	0.28	0.28	0.89	ug/L	8/29/97	SW846 8260
1,2,3-Trichlorobenzene	<	0.32	0.32	1.0	ug/L	8/29/97	SW846 8260
1,2,4-Trichlorobenzene	<	0.48	0.48	1.5	ug/L	8/29/97	SW846 8260
1,1,1-Trichloroethane	<	0.27	0.27	0.86	ug/L	8/29/97	SW846 8260
1,1,2-Trichloroethane	<	0.30	0.30	0.96	ug/L	8/29/97	SW846 8260
1,2,4-Trimethylbenzene	<	0.30	0.30	0.96	ug/L	8/29/97	SW846 8260
Trichloroethene	<	0.20	0.20	0.64	ug/L	8/29/97	SW846 8260
1,2,3-Trichloropropane	<	0.48	0.48	1.5	ug/L	8/29/97	SW846 8260
1,3,5-Trimethylbenzene	<	0.25	0.25	0.80	ug/L	8/29/97	SW846 8260
Vinyl chloride	<	0.23	0.23	0.73	ug/L	8/29/97	SW846 8260
Xylenes, -m, -p	<	0.51	0.51	1.6	ug/L	8/29/97	SW846 8260
Xylene, -o	<	0.28	0.28	0.89	ug/L	8/29/97	SW846 8260
4-Bromofluorobenzene		83			%Recov	8/29/97	SW846 8260
Dibromofluoromethane		83			%Recov	8/29/97	SW846 8260

EN CHEM INC.

1795 Industrial Drive
Green Bay, WI 54302
920-469-2436
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FAX: 920-469-8827

- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Client : DAMES & MOORE

Field ID : TRIP BLANK

Report Date : 9/2/97

Lab Sample Number : 872202-013

Collection Date : 8/27/97

WI DNR LAB ID : 40513270

Matrix Type : WATER

Toluene-d8	86	%Recov	8/29/97	SW846 8260

TOC due Sept 4 8260 due Sept 8 QT ~~Soils due~~ QT VBS6 1 of 2

DAMES & MOORE

13255 WEST BLUEMOUND ROAD, SUITE 202
BROOKFIELD, WISCONSIN 53005
(414) 782-7281 FAX (414) 782-7289

Project Manager: MARK MEJAC
Sample Collector(s): SDL
Project Name: FREDONIA
Project No.: 37292-001

Chain of Custody No.: 000970
Laboratory Name: EN-CHEM
Laboratory Contact: —
Send Data To: MARK MEJAC

CHAIN OF CUSTODY

LABORATORY USE Laboratory Sample Delivery Group#: _____
Cooler Temperature: _____ Volatiles Free of Headspace: YES / NO
Bottles Intact: YES / NO COC Seals Intact: YES / NO

Chain of Custody Seal No(s): _____

REQUESTED ANALYSES

SAMPLE IDENTIFIER	DATE SAMPLED	TIME SAMPLED	SAMPLE DEPTH INTERVAL (ft)	SAMPLE MATRIX	CONTAINER SIZE/TYPE	NO. OF CONTAINTERS	FIELD FILTER (Y/N)	VOC	~~TOC~~ WT	TOC METHOD D2974-87					COMMENTS/ PRESERVATION
SB0502	8/27	0930	0-2	SOIL	2oz GLASS	1	N	X					1-5oz 1-2oz/M	X	MEOH 001
↓		↓	↓		140ml PLASTIC	1	N		X						
SB0506		0940	4-6		2oz. GLASS	1	N			X			1-2oz		002
SB0404		1001	2-4		2oz. GLASS			X					1-5oz 1-2oz/M		MEOH 003
SB0404		1006	2-4 ~~1-5oz~~		140ml PLASTIC				X						
SB0406		1006	4-6		2oz. GLASS					X			1-2oz		004
SB0304		1030	2-4		2oz GLASS			X					1-5oz 1-2oz/M		005
↓		↓	↓		140ml PLASTIC				X				~~1-20~~ RA		
SB0306		1040	4-6		2oz. GLASS					X			1-2oz	✓	006

MKE 4/96

RELINQUISHED BY: (SIGNATURE)	DATE:	TIME:	RECEIVED BY: (SIGNATURE)
[signature]	8/28/97	12:00	[signature]
RELINQUISHED BY: (SIGNATURE)	DATE:	TIME:	RECEIVED BY: (SIGNATURE)
[signature]	8/28/97	1:00	[signature]
RELINQUISHED BY: (SIGNATURE)	DATE:	TIME:	RECEIVED BY: (SIGNATURE)
[signature]	8/28/97	1600	[signature] 8/28/97 1600

General Comments:

ROT

Proj# 872202

White Copy - Original (Accompanies Samples) Yellow Copy - Project Manager Pink Copy - Sample Collector

VBS8 2 of 2

DAMES & MOORE

13255 WEST BLUEMOUND ROAD, SUITE 202
BROOKFIELD, WISCONSIN 53005
(414) 782-7281 FAX (414) 782-7289

Lab: EN-CHEM

Chain of Custody Seal # _____ # _____

Turnaround Time
- ❑ Rush (preapproved by Lab)
- ❑ Normal

SHIPPING DETAILS:
Method of Shipment _____
Contents Temperature _____
Comments _____

PROJECT NAME: FREDONIA
PROJECT #: 37297-001
Send Results To:
PROJECT MANAGER: MARK METAK

LAB USE ONLY	DATE	CONTAINERS	NO.	SAMPLE ID	SAMPLE TYPE	ANALYSIS REQUESTED: VOC	DET INT.	TOC METHOD D2974-87						Cyanide		REMARKS/PRESERVATIVES	
	8/27	2 oz GLASS SEPTA	1	SB0208	Soil	1-502 1-202	X							X		MEOH	007
		140 ml PLASTIC		SB0208				X									
		2 oz. GLASS		SB0206		1-202			X								008
		2 oz GLASS		SB0108		1-502 1-202	X									MEOH	009
		140 ml PLASTIC		SB0108				X									
		2 oz. GLASS		SB0106		1-202			X								010
		2 oz GLASS	1	MEOH BLANK	MEOH	1-202	X									MEOH	011
		40 ml GLASS TEFLON SEPTA	3	TW001	H_2O	3-40ml	X							3W		HCL	012
		40 ml GLASS TEFLON SEPTA	2	TRIP BLANK (1,2)	HCL	2-40ml	X							2W			013

CHAIN OF CUSTODY RECORD

SAMPLER: (SIGNATURE)	DATE
[signature]	8-27-97

COMMENTS

RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)
[signature]	8/28/97 13:00	[signature]
RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)
[signature]	8/28/97 1:00	[signature]

RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)
[signature]	8/28/97 1600	
RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE) / DATE/TIME
[signature]	8/28/97 1600	

RDT

Proj# ~~872203~~ 8-T

ATTACHMENT C
DETERMINATION OF SITE-SPECIFIC RESIDUAL CONTAMINANT LEVELS

ATTACHMENT A
SOIL BORING LOGS

State of Wisconsin
Department of Natural Resources

Route To:
- ☐ Solid Waste
- ☐ Emergency Response
- ☐ Wastewater
- ☐ Haz. Waste
- ☐ Underground Tanks
- ☐ Water Resources
- ☐ Other

SOIL BORING LOG INFORMATION
Form 4400-122 7-91

LOCATION OF BORING: SB01: SEE MAP

JOB NO.	CLIENT	LOCATION
37292-001	MODERN METALS	FREDONIA, WI

DRILLING METHOD: 2 1/4 HSA

BORING NO.: SB01/TW001

SHEET: 1 OF 2

SAMPLING METHOD: 2FT. STAINLESS STEEL SPLIT SPOON

WATER LEVEL					DRILLING START	DRILLING FINISH
TIME					TIME 1135	TIME 1230
DATE					DATE 8/27	DATE
CASING DEPTH						

DATUM: ELEVATION:

DRILLING CONTR. 131 PATRICK BANDLE

NO. 285061

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	~~NUMBER OF RINGS~~ PID	DEPTH IN FEET	SOIL GRAPH	SURFACE CONDITIONS: CONCRETE ≈ 6" THICK
	18/6			3,3 5	0.0	0		TOP 6" - CONCRETE
						0-2		TOP 2" - GRAVEL FILL
						2		BOTTOM 4" - SANDY SILTY CLAY, CL, MED. PLASTICITY & CEMENTATION, 5YR4/6 WITH MOTTLED 10YR3/3, WITH GRAVEL, SOFT
	24/13			3,3 4,5	0.0	2-4		SAME AS BOTTOM 4" OF 0-2 FOOT INTERVAL
	24/7			3,3 1,1	0.0	4-6		SAME, VERY SOFT, MOIST TO DAMP
	24/20			2,6 11,14	5.4	6-8		SILTY CLAY, CL, MEDIUM PLASTICITY & CEMENTATION, STIFF, DRY, 5YR4/6, 15"-18" OF RECOVERED SAMPLE - SAND SEAM (COARSE GRAINED), WITH PLASTIC (PVC) POSSIBLY HIT DRAIN LINE
	24/22			4,7 14,16	1.3	8-10		SAME, SOFT, MOIST, GREAT MOTTLING
	24/24			5,10 14,21	0.0	10-12		SILTY CLAY, CL, MEDIUM PLASTICITY & CEMENTATION STIFF, DRY TO MOIST, 5YR4/6, WITH SAND & GRAVEL
	24/24			2,6 10,11	–	14-16		SILTY CLAY, CL, MEDIUM PLASTICITY & CEMENTATION, STIFF, 10YR3/3, WITH SAND & GRAVEL
	24/24			13,12 14,21	–	19-21		TOP 19" SILTY CLAY, CL, MEDIUM PLASTICITY & CEMENTATION MOIST, 5YR4/6, WITH 10YR6/8, N5 AND 10YR5/3 MOTTLING
						7		NEXT 3" CLAYEY SILT, ML, LITTLE TO NO PLASTICITY, WEAK CEMENTATION, MOIST, MOTTLING, 5YR4/6.
						8		BOTTOM 2" FINE TO MEDIUM SAND, WELL SORTED, POORLY GRADED, MOIST, 5Y4/1, WITH SILT

BY STEVE WILLIAMSON DATE 8/27/97 CHK'D BY

State of Wisconsin
Department of Natural Resources

Route To:
- ☐ Solid Waste
- ☐ Emergency Response
- ☐ Wastewater
- ☐ Haz. Waste
- ☐ Underground Tanks
- ☐ Water Resources
- ☐ Other

SOIL BORING LOG INFORMATION
Form 4400-122 7-91

LOCATION OF BORING: SB01

JOB NO.	CLIENT	LOCATION
37292-001	MODERN METALS	FREDONIA, WI

DRILLING METHOD: 2 1/4 HSA

BORING NO.: SB01

SHEET: 2 OF 2

SAMPLING METHOD: 2FT. STAINLESS STEEL SPLIT SPOON

					DRILLING START TIME	DRILLING FINISH TIME
WATER LEVEL						
TIME					1235	1453
DATE					DATE	DATE
CASING DEPTH					8/27	

DRILLING CONTR. PSI PATRICK BANDLE

DATUM: ELEVATION:

SURFACE CONDITIONS: GRAVEL

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	~~NUMBER OF RINGS~~ PID	DEPTH IN FEET	SOIL GRAPH	
	1/0			50-1"		0 / 24-26 / 7		NO RECOVERY
	24/12			4,9 / 12,15		2 / 29-31 / 8	X X	SAND, FINE TO COARSE, POORLY SORTED, WELL GRADED, 10YR5/3, DRY, SUB-ANGULAR TO SUB-ROUNDED
	24/18			4,4 / 13,19		4 / 34-36 / 5	X X X	TOP 4" - SAME BOTTOM 14" - SILTY SAND, MODERATELY SORTED, MODERATELY SORTED, MOIST TO WET, 10YR5/3, WITH GRAVEL, SM
	24/16			5,10 / 10,12		6 / 39-41 / 7	X X	SAND, FINE TO MEDIUM GRAINED, SP, MODERATELY SORTED, POORLY GRADED, WET, SUB-ANGULAR TO SUB-ROUNDED, 10YR5/3.
						8		DEPTH TO BOTTOM - 45.0 FT.
						9		
						0		TEMP WELL SET: TW001 2" 10 SLOT, SCH. 80 PVC, 10.0 FT SCREEN 45-35 FT BLS = SCREEN 35 - TO GROUND SURFACE: SOLID PVC RISER PIPE SAMPLE COLLECTED: TW001 FOR VOC
						1		
						2		HOLE ABANDONED - 12 BAGS OF BENTONITE SOIL SAMPLES COLLECTED: VOC - SB0108 TOC - SB0106
						3		
						4		
						5		
						6		
						7		
						8		

DATE 8/27/91 CHK'D BY

No. 285061

State of Wisconsin
Department of Natural Resources

Route To:
- ☐ Solid Waste
- ☐ Emergency Response
- ☐ Wastewater
- ☐ Haz. Waste
- ☐ Underground Tanks
- ☐ Water Resources
- ☐ Other

SOIL BORING LOG INFORMATION
Form 4400-122 7-91

LOCATION OF BORING: SEE MAP

JOB NO.	CLIENT	LOCATION
37292-001	MODERN METALS	FREDONIA, WI

DRILLING METHOD: 2 1/4 HSA

BORING NO.: SB02

SHEET: 1 OF 1

SAMPLING METHOD: 2FT. STAINLESS STEEL SPLIT SPOON

WATER LEVEL					DRILLING START TIME	DRILLING FINISH TIME
TIME					1038	1120
DATE					DATE	DATE
CASING DEPTH					8/27	

DATUM: ELEVATION:

SURFACE CONDITIONS: GRAVEL

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	~~NUMBER OF RINGS~~ PID	DEPTH IN FEET	SOIL GRAPH	
	24/14			4,6 7,9	0.0	0-2		TOP 8" GRAVEL, FILL BOTTOM 6" - SILTY CLAY, CL, MEDIUM PLASTICITY & CEMENTATION, MOIST, SOFT
	24/18			3,5 7,8	2.0	2-4		TOP 6" - SLUFF BOTTOM 12" - SAME AS BOTTOM 6" OF 0-2 FT. INTERVAL TOP 4" - 10YR3/3, BOTTOM 8" 5YR4/6, WITH SAND & GRAVEL
	24/20			6,10 16,23	7.3	4-6		SILTY CLAY, WITH SAND, CL, MEDIUM PLASTICITY & CEMENTATION, STIFF, TOUGH, DRY, 5YR4/6, ABUNDANT GRAY MOTTLING
	24/24			7,11 17,22	8.7	6-8		SILTY CLAY, WITH SAND, CL, STIFF, TOUGH, DRY 5YR4/6, ABUNDANT GRAY MOTTLING, WITH SAND & GRAVEL
	24/24			9,13 18,27	0.0	8-10		SILTY CLAY, WITH SAND, CL, VERY STIFF, NO MOTTLING, WITH GRAVEL & SAND
	24/24			4,9 13,21	0.0	10-12		SILTY CLAY, CL, MEDIUM PLASTICITY & CEMENTATION, MOIST, STIFF, TOUGH, 5YR4/6, WITH SAND
						3		BOTTOM OF HOLE 12.0 FEET
						4		HOLE ABANDONED & BACKFILLED W/ TWO BAGS OF COARSE BENTONITE CHIPS
						5		SAMPLES COLLECTED: VOC - SB0208 TOC - SB0206
						6		
						7		
						8		

DRILLING CONTR. 131 PATRICK BANDLE

No. 285061

BY STEVE CHILESON DATE 8/27/97 CHK'D BY

State of Wisconsin
Department of Natural Resources

Route To:
- ☐ Solid Waste
- ☐ Emergency Response
- ☐ Wastewater
- ☐ Haz. Waste
- ☐ Underground Tanks
- ☐ Water Resources
- ☐ Other

SOIL BORING LOG INFORMATION
Form 4400-122 7-91

LOCATION OF BORING: SEE MAP

JOB NO.	CLIENT	LOCATION
37292-001	MODERN METALS	FREDONIA, WI

DRILLING METHOD: 2 1/4 HSA

BORING NO.: SB03

SHEET: 1 OF 1

SAMPLING METHOD: 2FT. STAINLESS STEEL SPLIT SPOON

					DRILLING START	DRILLING FINISH
WATER LEVEL					TIME	TIME
TIME					0948	1025
DATE					DATE	DATE
CASING DEPTH					8/27	

DATUM: | ELEVATION:

DRILLING CONTR. PSI PATRICK BANDLE

NO. 285061

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	~~NUMBER OF RINGS~~ PID	DEPTH IN FEET	SOIL GRAPH	SURFACE CONDITIONS: GRAVEL
	24/14			5,6 8,9	1.1	~~0~~ 0-2 ~~1~~ 2		TOP 7" GRAVEL FILL BOTTOM 7" SILTY CLAY, CL, MEDIUM PLASTICITY & CEMENTA STIFF, MOIST TO DRY, 5YR4/6, WITH GRAVEL, SOME IRON STAINING
	24/16			4,6 8,9	~~4,0~~ 1.2 ~~8,9~~	~~3~~ 2-4 ~~4~~		SILTY CLAY, CL, MEDIUM PLASTICITY & CEMENTATION, STIFF MOIST TO DRY, 5YR4/6, WITH GRAVEL, MIDDLE SIX INCHES - 10YR3/3
	24/18			3,5 10,14	~~3,5~~ 0.6 ~~10,14~~	~~5~~ 4-6 ~~6~~		SILTY CLAY, CL, MEDIUM PLASTICITY, HIGH CEMENTATION, STIFF, TOUGH, 5YR4/6, WITH SAND, DRY, GRAY MOTTLING THROUGHOUT.
	24/24			6,12 21,25	~~6,12~~ 0.0 ~~21,25~~	~~7~~ 6-8 ~~8~~		DRY CLAY, VERY STIFF, TOUGH, WITH GRAVEL, WITH GRAY MOTTLING
	24/20			6,12 15,22	~~6,12~~ 0.0 ~~15,22~~	~~9~~ 8-10 ~~10~~		DRY CLAY, STIFF, TOUGH, WITH GRAVEL, WITH GRAY MOTTLING
	24/24			6,9 15,20	0.0	~~11~~ 10-12 ~~12~~		SILTY CLAY, MEDIUM PLASTICITY & CEMENTATION, STIFF, MOIST TO DRY, 5YR4/6, WITH SAND
						3		~~BOTTOM OF HOLE: 12.0 FT.~~
						4		HOLE ABANDONED & BACKFILLED WITH 7 BAGS OF COARSE BENTONITE CHIPS
						5		SAMPLES COLLECTED: VOC - SB0304 TOC - SB0306
						6		
						7		
						8		

DATE 8/27/97 CHK'D BY

State of Wisconsin
Department of Natural Resources

Route To:
- ☐ Solid Waste
- ☐ Emergency Response
- ☐ Wastewater
- ☐ Haz. Waste
- ☐ Underground Tanks
- ☐ Water Resources
- ☐ Other

SOIL BORING LOG INFORMATION
Form 4400-122 7-91

LOCATION OF BORING: SEE MAP

JOB NO.	CLIENT	LOCATION
37292-001	MODERN METALS	FREDONIA, WI

DRILLING METHOD: 2 1/4 HSA

BORING NO.: SB04

SHEET: 1 OF 1

SAMPLING METHOD: 2FT. STAINLESS STEEL SPLIT SPOON

						DRILLING START	DRILLING FINISH
WATER LEVEL							
TIME						TIME 0907	TIME 0942
DATE						DATE 8/27	DATE
CASING DEPTH							

DATUM: ELEVATION:

SURFACE CONDITIONS: GRAVEL

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	~~NUMBER OF RINGS~~ PID	DEPTH IN FEET	SOIL GRAPH	
	24/8				0.1	0, 0-2, 1, 2		TOP 4" SILTY SANDY GRAVEL, FILL, BROWN (10YR5/3), DRY. BOTTOM 4" SILTY CLAY, CL, MEDIUM PLASTICITY, MEDIUM TO WEAK CEMENTATION, MOIST, 5YR4/6, WITH SAND & GRAVEL, NO ODOR
	24/12				1.4	2, 2-4, 4		SILTY CLAY, CL, MEDIUM PLASTICITY, MEDIUM TO WEAK CEMENTATION, MOIST, 5YR4/6 TOP 8", BOTTOM 4" – 10YR3/3, SLIGHT ODOR, W/ SAND, SOFT.
	24/18				0.0	5, 4-6, 6		SILTY CLAY, MEDIUM PLASTICITY, MEDIUM TO WEAK CEMENTATION, MOIST, SOFT, WITH GRAVEL, 5YR 4/6 WITH GRAY MOTTLING, NO ODOR
	24/24				0.3	7, 6-8, 8		SANDY SILTY CLAY, CL, MEDIUM TO LOW PLASTICITY, WEAK TO MODERATE CEMENTATION 5YR4/6 WITH GRAY MOTTLING, CRUMBLY, WITH GRAVEL
	24/24				0.2	9, 8-10, 9		CLAYEY SILTY SAND, MOD. TO POORLY SORTED, SC, WEAK TO NO CEMENTATION, 5YR4/6, WITH GRAVEL, WET, MODERATELY GRADED
	24/24				0.2	11, 10-12, 12		CLAYEY SILTY SAND, MODERATELY TO POORLY SORTED SC, WEAK TO NO CEMENTATION, 5YR4/6, WITH GRAVEL, WET, MODERATELY GRADED
						3		~~BOTTOM OF HOLE: 12.0FT~~
						4		HOLE ABANDONED & BACKFILLED WITH 2 BAGS COARSE BENTONITE
						5		SOIL SAMPLES COLLECTED VOC: SB0404 TOC: SB0406
						6		
						7		
						8		

DRILLING CONTR. 131 PATRICK BANDLE

No. 285061

BY STEVE KITTESON DATE 8/27/97 CHK'D BY

State of Wisconsin
Department of Natural Resources

Route To:
- ☐ Solid Waste
- ☐ Emergency Response
- ☐ Wastewater
- ☐ Haz. Waste
- ☐ Underground Tanks
- ☐ Water Resources
- ☐ Other

SOIL BORING LOG INFORMATION
Form 4400-122 7-91

LOCATION OF BORING: SEE MAP

JOB NO.	CLIENT	LOCATION
37292-001	MODERN METALS	FREDONIA, WI

DRILLING METHOD: 2 1/4 HSA

BORING NO.: SB05

SHEET: 1 OF 1

SAMPLING METHOD: 2FT. STAINLESS STEEL SPLIT SPOON

					DRILLING START	DRILLING FINISH
WATER LEVEL					TIME	TIME
TIME					0821	0900
DATE					DATE	DATE
CASING DEPTH					8/27	

DATUM: ELEVATION:

DRILLING CONTR. PSI
PATRICK BANDLE

No. 285061

BY: STEVE LITTLESON
DATE: 8/27/97
CHK'D BY:

SURFACE CONDITIONS: GRAVEL

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	~~NUMBER OF RINGS~~ PID	DEPTH IN FEET	SOIL GRAPH	
	24/15			6,5 5,7	3.0	0-2		TOP 6" GRAVEL WITH SAND (FILL) BOTTOM 9" CLAY, CL, MEDIUM PLASTICITY, MEDIUM CEMENTATION, MOIST, 5YR4/6 TO 10YR3/3, STAINING, SUSPECTED ODOR, WITH SILT
	24/17			3,5 6,11	1.0	2-4		TOP 3" SLUFF NEXT 4" - SAME AS BOTTOM 9" OF 0-2 FOOT INTERVAL, ODOR. BOTTOM 10" - CLAY, CL, WITH SILT, 5YR4/6, MOIST, SOFT
	24/21			4,7 9,13	1.0	4-6		SILTY CLAY, CL, MEDIUM PLASTICITY, LOW TO MODERATE CEMENTATION, 5YR4/6, MOIST GRAY MOTTLING, SOME SAND & GRAVEL, CRUMBLY
	24/24			6,11 17,23	0.9	6-8		SILTY CLAY, CL, MEDIUM PLASTICITY, LOW TO MODERATE CEMENTATION, 5YR4/6, MOIST, ABUNDANT GRAY MOTTLING, SOME SAND & GRAVEL CRUMBLY
	24/24			4,7 11,13	1.1	8-10		SILTY CLAY, CL, MEDIUM PLASTICITY, LOW TO MODERATE CEMENTATION, 5YR4/6, MOIST, NO MOTTLING, MOIST, SOFT
	24/20			5,9 11,14	0.9	10-12		SILTY CLAY, CL, MEDIUM PLASTICITY, LOW TO MODERATE CEMENTATION, 5YR4/6, MOIST, SOME MOTTLING, SAND POCKET AT 11.5FT (MOIST
						3		BOTTOM OF HOLE: 12.0FT
						4		HOLE ABANDONED & BACKFILLED WITH 2 BAGS OF COARSE VOLCAT CHIPS (50lbs), CETCO, ARLINGTON HEIGHTS, IL
						5		
						6		SOIL SAMPLE COLLECTED FROM: VOC - SB0502 TOC - SB0506
						7		
						8		

ATTACHMENT B
ANALYTICAL LABORATORY REPORTS

EN CHEM INC.
1795 Industrial Drive
Green Bay, WI 54302
920-469-2436
800-7-ENCHEM
FAX: 920-469-8827

DAMES & MOORE

SEP 11 1997

MILWAUKEE, WI

- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

WI DNR LAB ID : 40513270

Client: DAMES & MOORE

Report Date : 9/8/97

Sample No.	Field ID	Collection Date	Sample No.	Field ID	Collection Date
872202-001	SB0502	8/27/97			
872202-002	SB0506	8/27/97			
872202-003	SB0404	8/27/97			
872202-004	SB0406	8/27/97			
872202-005	SB0304	8/27/97			
872202-006	SB0306	8/27/97			
872202-007	SB0208	8/27/97			
872202-008	SB0206	8/27/97			
872202-009	SB0108	8/27/97			
872202-010	SB0106	8/27/97			
872202-011	MEOH BLANK	8/27/97			
872202-012	TW001	8/27/97			
872202-013	TRIP BLANK	8/27/97			

The "Q" flag is present when a parameter has been detected below the LOQ. This indicates the results are qualified due to the uncertainty of the parameter concentration between the LOD and the LOQ.

Soil VOC detects are corrected for the total solids, unless otherwise noted.

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and Laboratory Standard Operating Procedure. Exceptions, if any, are discussed in the accompanying sample narrative. Release of this final report is authorized by Laboratory management, as is verified by the following signature.

Peter Mely
Approval Signature

9/8/97
Date

EN CHEM INC.

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Green Bay, WI 54302
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800-7-ENCHEM
FAX: 920-469-8827

Lab#:	TestGroupID:	Comment:
872202	All Samples	TOC results were obtained by 100 minus percent Ash by ASTM 2974-87.
872202-009	8260+-S-ME	Low level hits not confirmed due to high concentration of Trichloroethene.
	8260+-S-ME	Sample submitted in a non-tarred jar. To obtain weight sample was transferred to a tarred jar prior to analysis.
872202-012	8260+-W	Methylene chloride is present in the laboratory environment. Detects should be considered suspect.

EN CHEM INC.

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- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Field ID : SB0502

Lab Sample Number : 872202-001

WI DNR LAB ID : 40513270

Client : DAMES & MOORE

Report Date : 9/2/97

Collection Date : 8/27/97

Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analys
Solids, percent	82.5				%		8/29/97	SM2540G	SM2540G	PHS

Organic Results

EPA 8260 VOLATILE LIST - SOIL/METHANOL Prep Method: SW846 5030 Prep Date: 8/29/97 Analyst: RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Benzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromobenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromochloromethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromodichloromethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromoform	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromomethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
s-Butylbenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
t-Butylbenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
n-Butylbenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
Carbon tetrachloride	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chloroform	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chlorobenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chlorodibromomethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chloroethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chloromethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
2-Chlorotoluene	< 25	25	60		ug/kg		8/29/97	SW846 8260
4-Chlorotoluene	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,2-Dibromo-3-chloropropane	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,2-Dibromoethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Dibromomethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,3-Dichlorobenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,4-Dichlorobenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,2-Dichloroethane	< 25	25	60		ug/kg		8/29/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

EN CHEM INC.

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Green Bay, WI 54302
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- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Field ID : SB0502

Lab Sample Number : 872202-001

WI DNR LAB ID : 40513270

Client : DAMES & MOORE

Report Date : 9/2/97

Collection Date : 8/27/97

Matrix Type : SOIL

1,2-Dichlorobenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1-Dichloroethene	< 25	25	60	ug/kg	8/29/97	SW846 8260
cis-1,2-Dichloroethene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Dichlorodifluoromethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
trans-1,2-Dichloroethene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,2-Dichloropropane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1-Dichloroethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,3-Dichloropropane	< 25	25	60	ug/kg	8/29/97	SW846 8260
2,2-Dichloropropane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1-Dichloropropene	< 25	25	60	ug/kg	8/29/97	SW846 8260
cis-1,3-Dichloropropene	< 25	25	60	ug/kg	8/29/97	SW846 8260
trans-1,3-Dichloropropene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Diisopropyl ether	< 25	25	60	ug/kg	8/29/97	SW846 8260
Ethylbenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Fluorotrichloromethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
Hexachlorobutadiene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Isopropylbenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
p-Isopropyltoluene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Methylene chloride	< 25	25	60	ug/kg	8/29/97	SW846 8260
Methyl-tert-butyl-ether	< 25	25	60	ug/kg	8/29/97	SW846 8260
Naphthalene	< 25	25	60	ug/kg	8/29/97	SW846 8260
n-Propylbenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Styrene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1,2,2-Tetrachloroethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1,1,2-Tetrachloroethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
Tetrachloroethene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Toluene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,2,3-Trichlorobenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,2,4-Trichlorobenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1,1-Trichloroethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1,2-Trichloroethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,2,4-Trimethylbenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Trichloroethene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,2,3-Trichloropropane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,3,5-Trimethylbenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

EN CHEM INC.

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- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Client : DAMES & MOORE

Field ID : SB0502

Report Date : 9/2/97

Lab Sample Number : 872202-001

Collection Date : 8/27/97

WI DNR LAB ID : 40513270

Matrix Type : SOIL

Vinyl chloride	<	25	25	60	ug/kg	8/29/97	SW846 8260
Xylenes, -m, -p	<	25	25	60	ug/kg	8/29/97	SW846 8260
Xylene, -o	<	25	25	60	ug/kg	8/29/97	SW846 8260
4-Bromofluorobenzene		84			%Recov	8/29/97	SW846 8260
Dibromofluoromethane		83			%Recov	8/29/97	SW846 8260
Toluene-d8		90			%Recov	8/29/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

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- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Field ID : SB0506

Lab Sample Number : 872202-002

WI DNR LAB ID : 40513270

Client : DAMES & MOORE

Report Date : 9/8/97

Collection Date : 8/27/97

Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analys
Organic Carbon, total	1.0	1.0	3.2		%	Q	9/3/97	ASTM 2974-87	ASTM 2974-87	MAD

All soil results are reported on a dry weight basis unless otherwise noted.

EN CHEM INC.

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- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Field ID : SB0404

Lab Sample Number : 872202-003

WI DNR LAB ID : 40513270

Client : DAMES & MOORE

Report Date : 9/2/97

Collection Date : 8/27/97

Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analys
Solids, percent	78.0				%		8/29/97	SM2540G	SM2540G	PHS

Organic Results

EPA 8260 VOLATILE LIST - SOIL/METHANOL Prep Method: SW846 5030 Prep Date: 8/29/97 Analyst: RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Benzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromobenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromochloromethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromodichloromethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromoform	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromomethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
s-Butylbenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
t-Butylbenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
n-Butylbenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
Carbon tetrachloride	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chloroform	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chlorobenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chlorodibromomethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chloroethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chloromethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
2-Chlorotoluene	< 25	25	60		ug/kg		8/29/97	SW846 8260
4-Chlorotoluene	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,2-Dibromo-3-chloropropane	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,2-Dibromoethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Dibromomethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,3-Dichlorobenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,4-Dichlorobenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,2-Dichloroethane	< 25	25	60		ug/kg		8/29/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

EN CHEM INC.

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Green Bay, WI 54302
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- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Client : DAMES & MOORE

Field ID : SB0404

Report Date : 9/2/97

Lab Sample Number : 872202-003

Collection Date : 8/27/97

WI DNR LAB ID : 40513270

Matrix Type : SOIL

1,2-Dichlorobenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1-Dichloroethene	< 25	25	60	ug/kg	8/29/97	SW846 8260
cis-1,2-Dichloroethene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Dichlorodifluoromethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
trans-1,2-Dichloroethene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,2-Dichloropropane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1-Dichloroethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,3-Dichloropropane	< 25	25	60	ug/kg	8/29/97	SW846 8260
2,2-Dichloropropane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1-Dichloropropene	< 25	25	60	ug/kg	8/29/97	SW846 8260
cis-1,3-Dichloropropene	< 25	25	60	ug/kg	8/29/97	SW846 8260
trans-1,3-Dichloropropene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Diisopropyl ether	< 25	25	60	ug/kg	8/29/97	SW846 8260
Ethylbenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Fluorotrichloromethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
Hexachlorobutadiene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Isopropylbenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
p-Isopropyltoluene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Methylene chloride	< 25	25	60	ug/kg	8/29/97	SW846 8260
Methyl-tert-butyl-ether	< 25	25	60	ug/kg	8/29/97	SW846 8260
Naphthalene	< 25	25	60	ug/kg	8/29/97	SW846 8260
n-Propylbenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Styrene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1,2,2-Tetrachloroethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1,1,2-Tetrachloroethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
Tetrachloroethene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Toluene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,2,3-Trichlorobenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,2,4-Trichlorobenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1,1-Trichloroethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1,2-Trichloroethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,2,4-Trimethylbenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Trichloroethene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,2,3-Trichloropropane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,3,5-Trimethylbenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

EN CHEM INC.
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Green Bay, WI 54302
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FAX: 920-469-8827

- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Client : DAMES & MOORE

Field ID : SB0404

Report Date : 9/2/97

Lab Sample Number : 872202-003

Collection Date : 8/27/97

WI DNR LAB ID : 40513270

Matrix Type : SOIL

Vinyl chloride	<	25	25	60	ug/kg	8/29/97	SW846 8260
Xylenes, -m, -p	<	25	25	60	ug/kg	8/29/97	SW846 8260
Xylene, -o	<	25	25	60	ug/kg	8/29/97	SW846 8260
4-Bromofluorobenzene		78			%Recov	8/29/97	SW846 8260
Dibromofluoromethane		90			%Recov	8/29/97	SW846 8260
Toluene-d8		95			%Recov	8/29/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

EN CHEM INC.

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800-7-ENCHEM
FAX: 920-469-8827

- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Field ID : SB0406

Lab Sample Number : 872202-004

WI DNR LAB ID : 40513270

Client : DAMES & MOORE

Report Date : 9/8/97

Collection Date : 8/27/97

Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analys
Organic Carbon, total	2.0	1.0	3.2		%	Q	9/3/97	ASTM 2974-87	ASTM 2974-87	MAD

All soil results are reported on a dry weight basis unless otherwise noted.

EN CHEM INC.

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FAX: 920-469-8827

- Analytical Report -

Project Name : FREDONIA
Project Number : 37292-001
Field ID : SB0304
Lab Sample Number : 872202-005
WI DNR LAB ID : 40513270

Client : DAMES & MOORE
Report Date : 9/2/97
Collection Date : 8/27/97
Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analys
Solids, percent	79.6				%		8/29/97	SM2540G	SM2540G	PHS

Organic Results

EPA 8260 VOLATILE LIST - SOIL/METHANOL Prep Method: SW846 5030 Prep Date: 8/29/97 Analyst: RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Benzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromobenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromochloromethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromodichloromethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromoform	< 25	25	60		ug/kg		8/29/97	SW846 8260
Bromomethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
s-Butylbenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
t-Butylbenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
n-Butylbenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
Carbon tetrachloride	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chloroform	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chlorobenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chlorodibromomethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chloroethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Chloromethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
2-Chlorotoluene	< 25	25	60		ug/kg		8/29/97	SW846 8260
4-Chlorotoluene	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,2-Dibromo-3-chloropropane	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,2-Dibromoethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
Dibromomethane	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,3-Dichlorobenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,4-Dichlorobenzene	< 25	25	60		ug/kg		8/29/97	SW846 8260
1,2-Dichloroethane	< 25	25	60		ug/kg		8/29/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

EN CHEM INC.

1795 Industrial Drive
Green Bay, WI 54302
920-469-2436
800-7-ENCHEM
FAX: 920-469-8827

- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Field ID : SB0304

Lab Sample Number : 872202-005

WI DNR LAB ID : 40513270

Client : DAMES & MOORE

Report Date : 9/2/97

Collection Date : 8/27/97

Matrix Type : SOIL

1,2-Dichlorobenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1-Dichloroethene	< 25	25	60	ug/kg	8/29/97	SW846 8260
cis-1,2-Dichloroethene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Dichlorodifluoromethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
trans-1,2-Dichloroethene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,2-Dichloropropane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1-Dichloroethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,3-Dichloropropane	< 25	25	60	ug/kg	8/29/97	SW846 8260
2,2-Dichloropropane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1-Dichloropropene	< 25	25	60	ug/kg	8/29/97	SW846 8260
cis-1,3-Dichloropropene	< 25	25	60	ug/kg	8/29/97	SW846 8260
trans-1,3-Dichloropropene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Diisopropyl ether	< 25	25	60	ug/kg	8/29/97	SW846 8260
Ethylbenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Fluorotrichloromethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
Hexachlorobutadiene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Isopropylbenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
p-Isopropyltoluene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Methylene chloride	< 25	25	60	ug/kg	8/29/97	SW846 8260
Methyl-tert-butyl-ether	< 25	25	60	ug/kg	8/29/97	SW846 8260
Naphthalene	< 25	25	60	ug/kg	8/29/97	SW846 8260
n-Propylbenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Styrene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1,2,2-Tetrachloroethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1,1,2-Tetrachloroethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
Tetrachloroethene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Toluene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,2,3-Trichlorobenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,2,4-Trichlorobenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1,1-Trichloroethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,1,2-Trichloroethane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,2,4-Trimethylbenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260
Trichloroethene	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,2,3-Trichloropropane	< 25	25	60	ug/kg	8/29/97	SW846 8260
1,3,5-Trimethylbenzene	< 25	25	60	ug/kg	8/29/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

EN CHEM INC.

1795 Industrial Drive
Green Bay, WI 54302
920-469-2436
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FAX: 920-469-8827

- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Field ID : SB0304

Lab Sample Number : 872202-005

WI DNR LAB ID : 40513270

Client : DAMES & MOORE

Report Date : 9/2/97

Collection Date : 8/27/97

Matrix Type : SOIL

Vinyl chloride	<	25	25	60	ug/kg	8/29/97	SW846 8260
Xylenes, -m, -p	<	25	25	60	ug/kg	8/29/97	SW846 8260
Xylene, -o	<	25	25	60	ug/kg	8/29/97	SW846 8260
4-Bromofluorobenzene		86			%Recov	8/29/97	SW846 8260
Dibromofluoromethane		88			%Recov	8/29/97	SW846 8260
Toluene-d8		91			%Recov	8/29/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

EN CHEM INC.

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Green Bay, WI 54302
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- Analytical Report -

Project Name : FREDONIA

Project Number : 37292-001

Field ID : SB0306

Lab Sample Number : 872202-006

WI DNR LAB ID : 40513270

Client : DAMES & MOORE

Report Date : 9/8/97

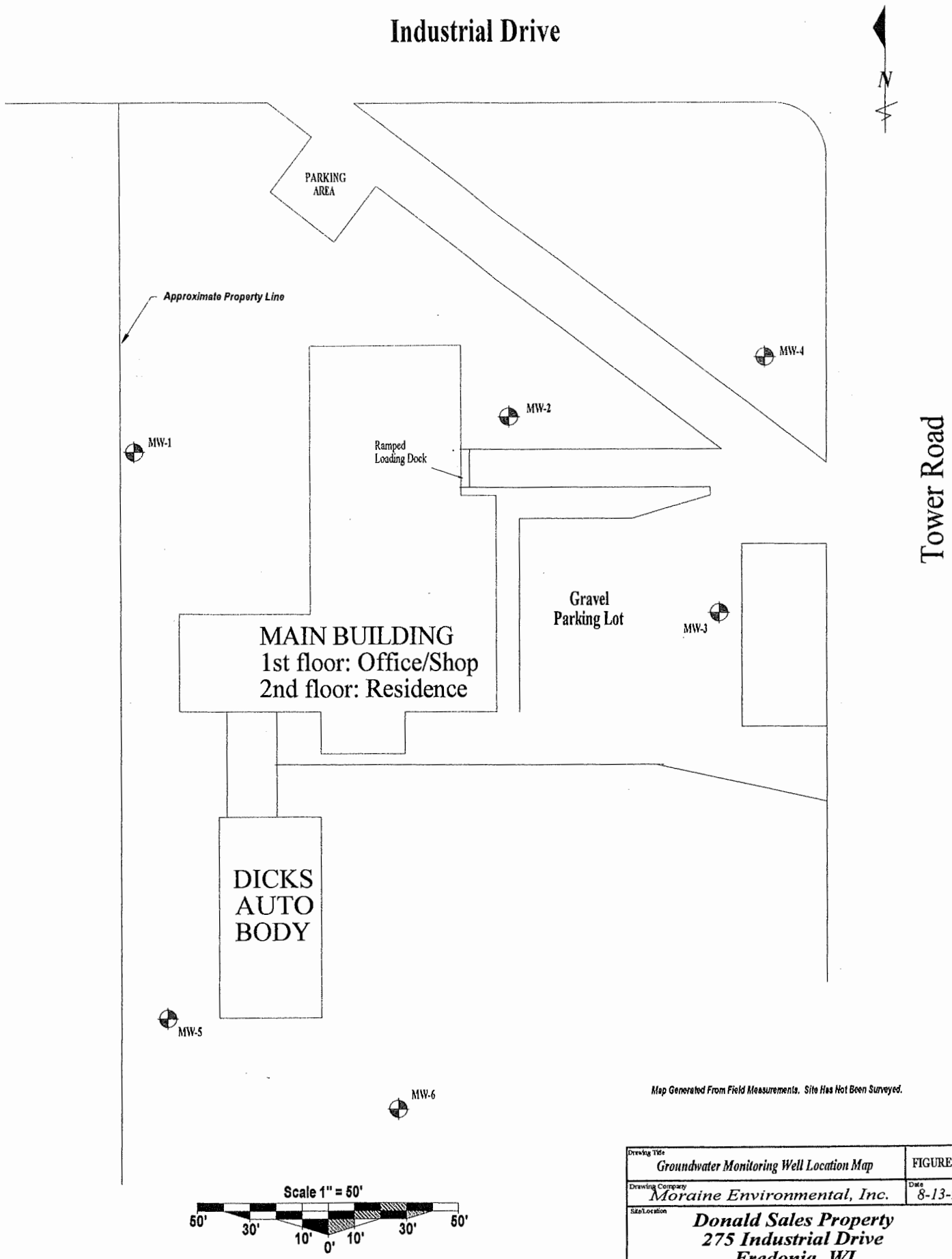
Collection Date : 8/27/97

Matrix Type : SOIL

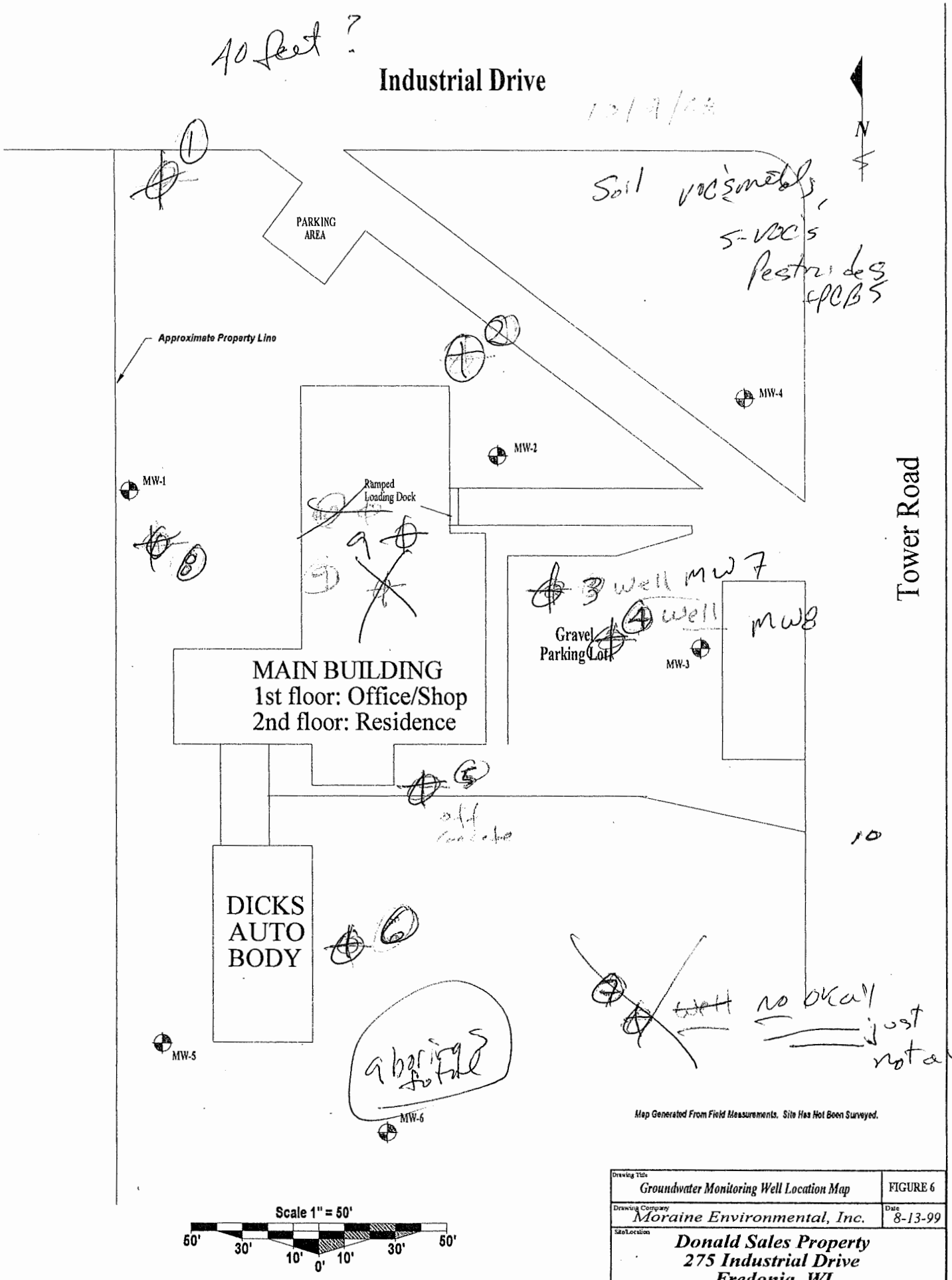
Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analys
Organic Carbon, total	1.0	1.0	3.2		%	Q	9/3/97	ASTM 2974-87	ASTM 2974-87	MAD

All soil results are reported on a dry weight basis unless otherwise noted.



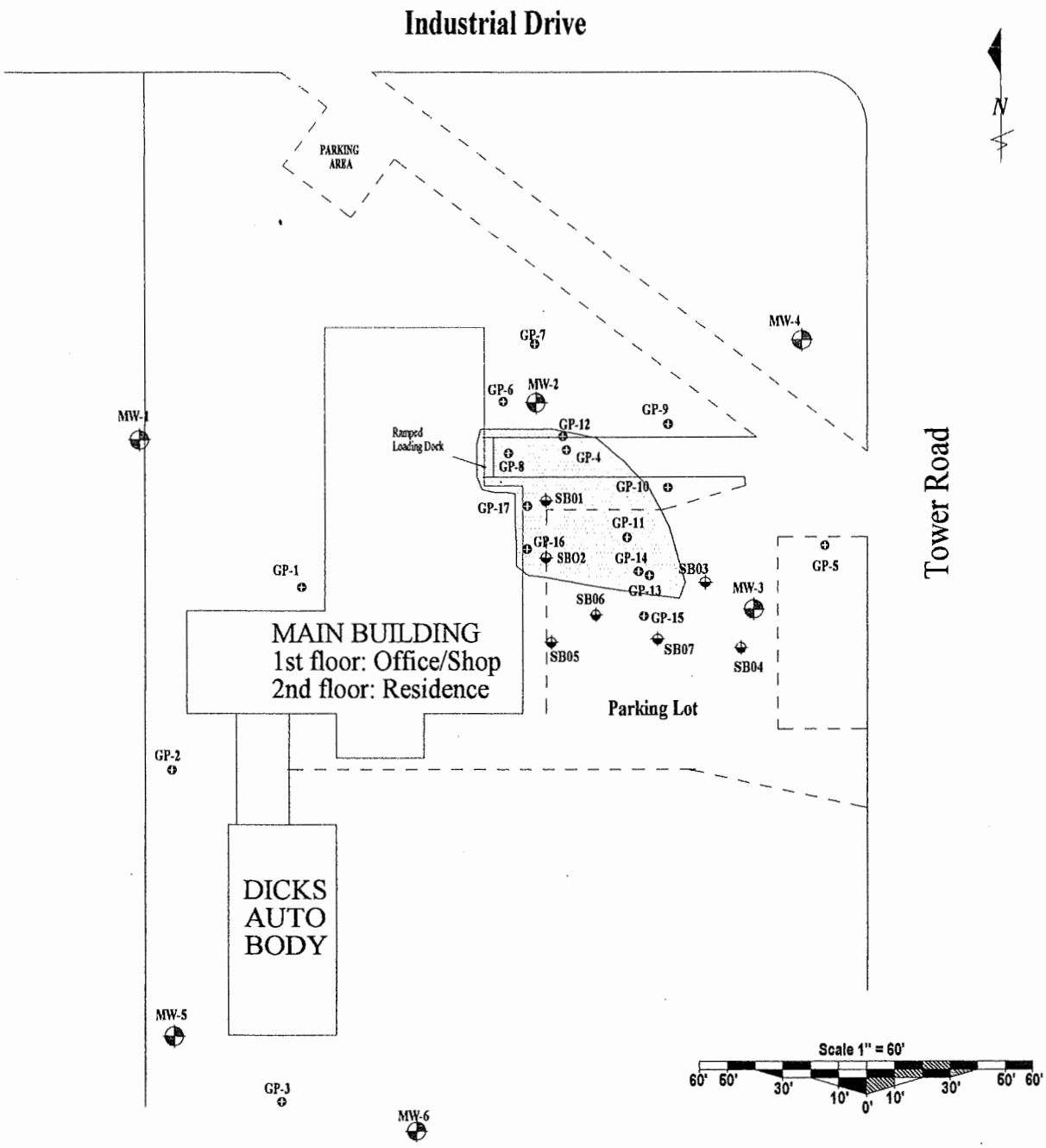
Drawing Title: *Groundwater Monitoring Well Location Map*	FIGURE 6
Drawing Company: *Moraine Environmental, Inc.*	Date: *8-13-99*
Site/Location: ***Donald Sales Property 275 Industrial Drive Fredonia, WI***	



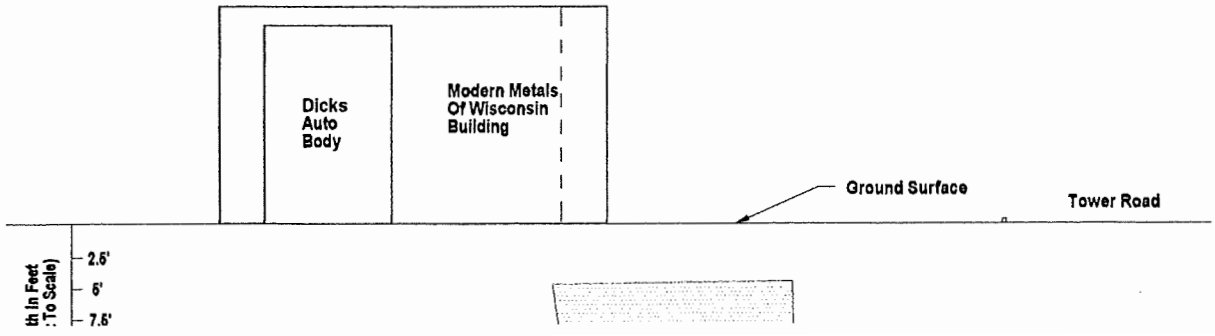
Drawing Title	
Groundwater Monitoring Well Location Map	FIGURE 6
Drawing Company: Moraine Environmental, Inc.	Date: 8-13-99
Site/Location: **Donald Sales Property 275 Industrial Drive Fredonia, WI**	

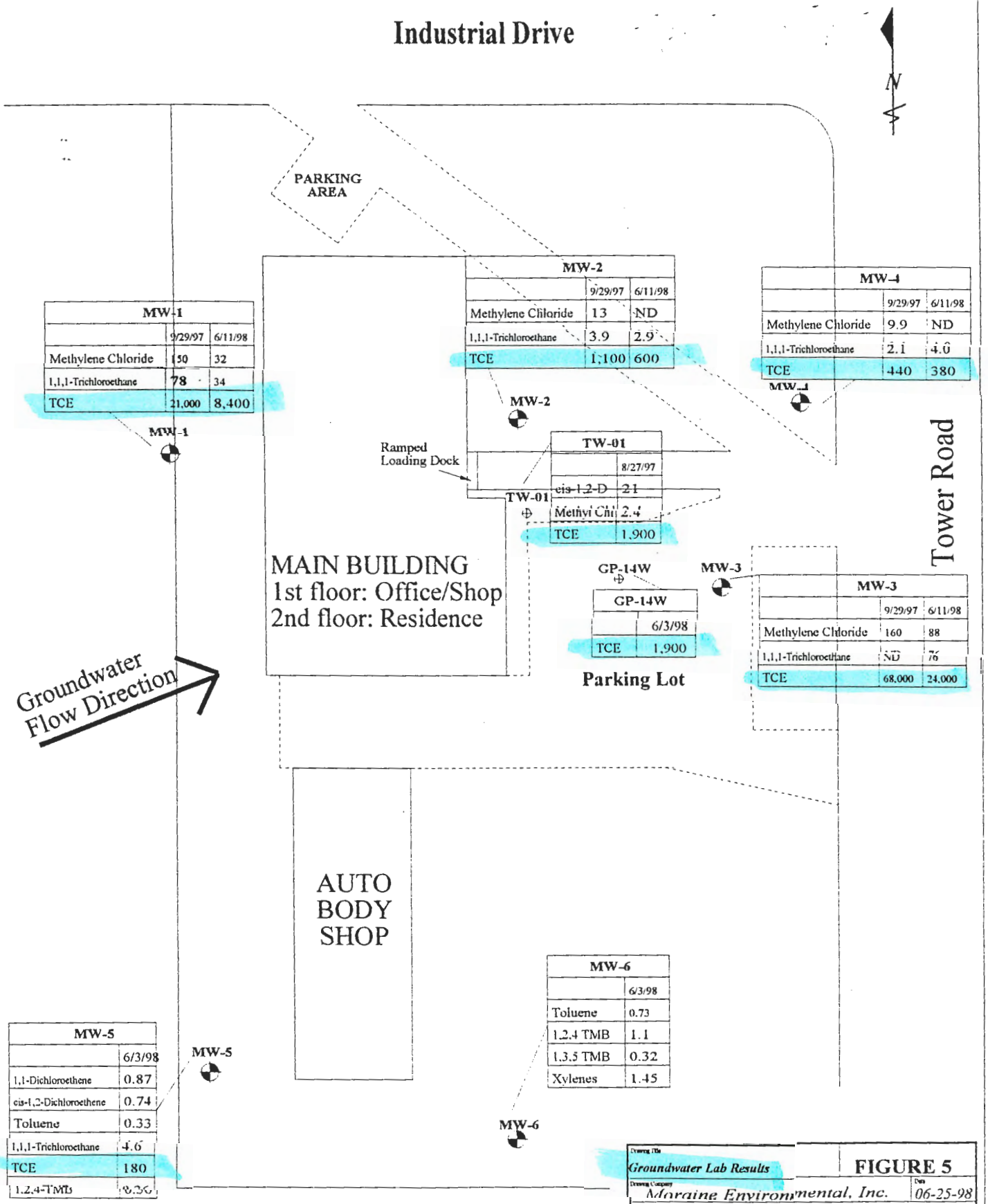
= proposed boring
well = proposed well

Plan View



Cross Sectional View





MW-1	9/29/97	6/11/98
Methylene Chloride	150	32
1,1,1-Trichloroethane	78	34
TCE	21,000	8,400

MW-2	9/29/97	6/11/98
Methylene Chloride	13	ND
1,1,1-Trichloroethane	3.9	2.9
TCE	1,100	600

MW-4	9/29/97	6/11/98
Methylene Chloride	9.9	ND
1,1,1-Trichloroethane	2.1	4.0
TCE	440	380

TW-01	8/27/97
cis-1,2-D	21
Methyl Chl	2.4
TCE	1,900

GP-14W	6/3/98
TCE	1,900

MW-3	9/29/97	6/11/98
Methylene Chloride	160	88
1,1,1-Trichloroethane	ND	76
TCE	68,000	24,000

MW-6	6/3/98
Toluene	0.73
1,2,4 TMB	1.1
1,3,5 TMB	0.32
Xylenes	1.45

MW-5	6/3/98
1,1-Dichloroethene	0.87
cis-1,2-Dichloroethene	0.74
Toluene	0.33
1,1,1-Trichloroethane	4.6
TCE	180
1,2,4-TMB	8.36

Notes: - All results in ug/l
- TCE = Trichloroethene, TMB = Trimethylbenzene, cis-1,2-D = cis-1,2-Dichloroethene

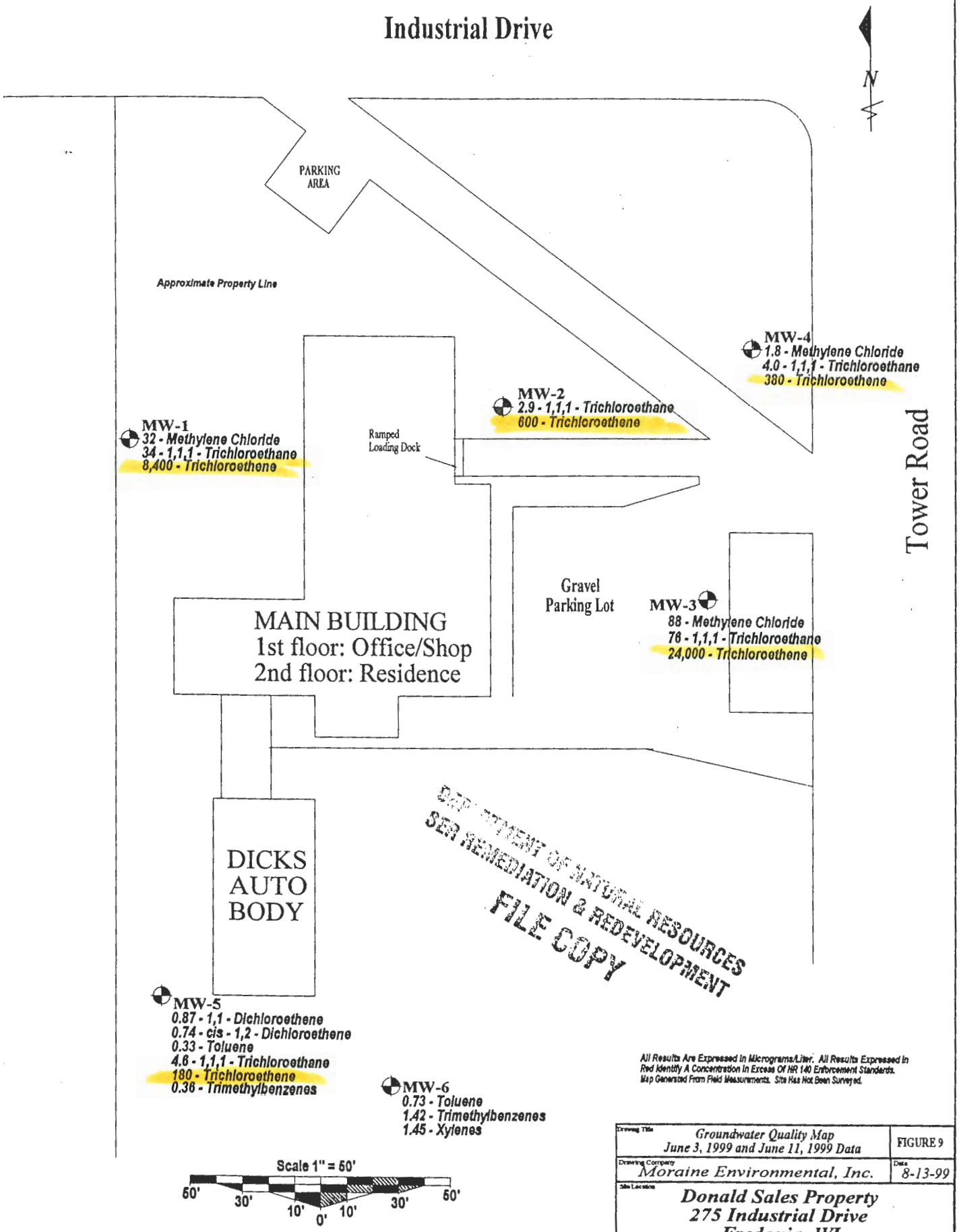
Drawing Title: *Groundwater Lab Results*

FIGURE 5

Drawing Company: *Moraine Environmental, Inc.*

Date: *06-25-98*

Donald Sales Property
275 Industrial Drive
Fredonia, WI



DEPARTMENT OF NATURAL RESOURCES
SER REMEDIATION & REDEVELOPMENT
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All Results Are Expressed In Micrograms/Liter. All Results Expressed In Red Identify A Concentration In Excess Of NR 140 Enforcement Standards. Map Generated From Field Measurements. Site Has Not Been Surveyed.

Drawing Title: *Groundwater Quality Map June 3, 1999 and June 11, 1999 Data*	FIGURE 9
Drawing Company: *Moraine Environmental, Inc.*	Date: *8-13-99*
Site Location: ***Donald Sales Property 275 Industrial Drive Fredonia, WI***	