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TILTON PROPERTY 3217 WEST VILLARD AVENUE MILWAUKEE, WISCONSIN

OCTOBER 1993

PREPARED FOR: MS. ANITA TILTON MILWAUKEE, Wisconsin

...

PREPARED BY: WARZYN INC. MILWAUKEE, WISCONSIN



October 28, 1993

Mr. Scott Ferguson Wisconsin Department of Natural Resources 4041 North Richards Street P.O. Box 12436 Milwaukee, Wisconsin 53212

Re: Site Investigation Report Tilton Property 3217 West Villard Avenue Milwaukee, Wisconsin

Dear Mr. Ferguson:

On behalf of Ms. Anita Tilton, Warzyn is submitting the enclosed Site Investigation report for the above-referenced property. The investigation was conducted in accordance with Warzyn's May 1992 Work Plan, which was approved by the Wisconsin Department of Natural Resources on November 25, 1992.

As discussed in the report, soil and groundwater at the site are contaminated with tetrachloroethene and trichloroethene and their degradation products. The groundwater contaminant concentrations exceed the Groundwater Quality Enforcement Standards (ES), as established in Chapter NR 140 Wis. Adm. Code. The vertical extent of soil contamination appears to be to a maximum depth of approximately 25 ft below ground surface (bgs). The horizontal extent of soil contamination has not been fully defined, but potentially follows the general groundwater flow pattern to the east. In the May 1992 Work Plan, Warzyn proposed to install two groundwater monitoring wells on the Soo Line Railroad property to assist in the delineation of potential contamination to the east. However, continuing efforts by Godfrey & Kahn and Warzyn have been unsuccessful in negotiating an access agreement to complete the work.

In order to further define the horizontal extent of soil and groundwater contamination, Warzyn proposes to perform a soil gas survey, and collect soil and groundwater samples using a hydraulic probe system. Recommendations for installation of additional permanent monitoring wells will be made, if appropriate, after reviewing results of the soil gas survey and soil and groundwater sampling. The proposed Work Plan is described in Section 7 of the report. Warzyn formally requests that the WDNR review the Work Plan and issue a letter of concurrence

THE PERFECT BALANCE BETWEEN TECHNOLOGY AND CREATIVITY.

MILWAUKEE 1925 WEST LAKE PARK DRIVE SUITE 200 MILWAUKEE, WI 53224 (414) 359-1144 FAX (414) 359-1145



regarding the project direction and authorization to proceed with the soil gas survey and hydraulic probe sampling.

If you have any questions regarding the submittal of this report please contact me at (414) 359-1144.

Sincerely,

WARZYN ING?

Kevyn D. Shaver, CHMM Project Manager

Enclosures: As stated

cc: Ms. Pamela Barker, Godfrey & Kahn, S.C. (w/encl) Mr. James L. Walt, Sr. (w/two encl)

KDS/lek/DRL [mil-109-135] 2733702/159

# SITE INVESTIGATION

## TILTON PROPERTY 3217 WEST VILLARD AVENUE MILWAUKEE, WISCONSIN

OCTOBER 1993

力ames D. Wink, CHMM

PROJECT 2733702

Annual Annua

Environmental Scientist

Kevin D. Shaver, CHMM Project Manager

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## INTRODUCTION

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This report presents the results of a Site Investigation performed by Warzyn Inc. (Warzyn) on behalf of Ms. Anita Tilton for a property located at 3217 West Villard Avenue in Milwaukee, Wisconsin. The purpose of the investigation was to evaluate the extent of chlorinated volatile organic compound (VOC) contamination in the soil and groundwater north and east of the northeast corner of the existing building at the property.

The investigation was conducted in accordance with the May 1992 Work Plan submitted to the Wisconsin Department of Natural Resources (WDNR). On November 24, 1992, representatives of Godfrey & Kahn and Warzyn met with Mr. Scott Ferguson of the WDNR and agreed that response to the potential chlorinated VOC contamination at the property should be regulated by the WDNR through s. 144.76(3), Wis. Stat., rather than ss. 144.60-144.74, Wis. Stats. Based on this meeting and agreement, on November 25, 1992 the WDNR approved Warzyn's May 1992 Work Plan.

The submitted Work Plan outlined the implementation of two soil borings and installation of one groundwater monitoring well directly east of the property, on Soo Line Railroad Company (Soo Line) right-of-way. However, continuing efforts by Godfrey & Kahn and Warzyn have been unsuccessful in negotiating an access agreement with the Soo Line to complete the work.

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# SITE DESCRIPTION

The subject property is located in the Northwest Quarter of the Southeast Quarter of Section 36, Township 8 North, Range 21 East, Milwaukee County, Wisconsin (Figure 1). The street address is 3217 West Villard Avenue.

The subject property is bounded by West Villard Avenue and by an industrial development to the north; the Chicago, Minneapolis, Saint Paul and Pacific (Soo Line) railroad tracks and by an industrial development to the east and southeast; and an industrial development, a church and a U.S. Post Office to the southwest and west.

The subject property is approximately 56,296 square ft in size and is occupied by a one-story brick building. The building is approximately 17,400 square ft in size. Approximately 16,400 square feet is occupied by a grocery store (Sheridan's Shop Rite) and 1,000 square ft by a pick-up dry cleaning store (Valet Cleaners). The remaining surface area of the property is covered with an asphalt parking lot.

The City of Milwaukee provides potable water and sanitary sewer services to the subject property and surrounding vicinity. According to the City of Milwaukee zoning records, the property is zoned industrial and business (I-B-85). A review of the Milwaukee, Wisconsin 7.5 minute U.S.G.S. topographic quadrangle map indicated that the surface topography in the vicinity gently slopes to the east-northeast towards Lincoln Creek, which is located approximately 950 ft to the east-northeast.

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# REGIONAL GEOLOGY AND HYDROGEOLOGY

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According to the Southeastern Wisconsin Regional Planning Commission (SEWRPC) publication, A Solid Waste Management Plan for Milwaukee County, Wisconsin (July 1987) the subject property is located on a glacial ground moraine. Surface water drainage is to the east towards Lincoln Creek, which is located approximately 950 ft to the east-northeast. The U.S. Department of Agriculture publication, Soil Survey of Milwaukee and Waukesha Counties, Wisconsin (July 1971) indicated surficial soil in the vicinity of the subject property is of the Ozaukee-Morley-Mequon Association. These types of soils are classified as well-drained to somewhat poorly-drained soils that have a subsoil of silty clay loam and silty clay. These types of soils are formed in thin layers of silty clay loam glacial till on moraines.

Historic well logs available from the WDNR-Southeast District Office for the Southwest and Northwest Quarters of Section 35 and Southeast and Northeast Quarters of Section 36 of Township 8 North, Range 21 East (approximately 0.5 mile radius from the subject property) indicate that unconsolidated glacial sediments consisting primarily of clay, but with some interbedded sand and gravels, extend from near ground surface to maximum depths of 65 to 170 feet, where bedrock was encountered. According to the SEWRPC publication, the surface of the bedrock in the vicinity of the subject property is composed of dolomite, some limestone, and shale of the Milwaukee Formation of Devonian Age.

According to the U.S. Department of the Interior publication, *Groundwater Conditions in the Milwaukee-Waukesha Area, Wisconsin (1953)* three primary aquifers are located in the vicinity of the subject property. The shallowest aquifer consists of permeable sand and gravel units within the unconsolidated glacial sediments and is generally referred to as the sand and gravel aquifer. The lowpermeability clay and silt deposits (glacial till) that comprise much of the

unconsolidated glacial sediments are generally not considered aquifer materials because they do not yield adequate amounts of water to wells. The sand and gravel aquifer is generally hydraulically connected to the underlying Niagara aquifer, which consists of dolomite, shale and limestone of the Devonian age Milwaukee Formation and Silurian age Niagara Formation. This aquifer is the primary aquifer used in the Milwaukee vicinity for private domestic, commercial and some industrial wells. Underlying the Niagara aquifer is the Ordovician age Maquoketa shale, which is an aquitard between the Niagara aquifer and the underlying sandstone aquifer. The sandstone aquifer consists of Cambrian and Ordovician age sandstone and dolomite and is used for some high capacity commercial or industrial wells in the Milwaukee area.

According to the SEWRPC publication, the depth to seasonal high groundwater in the unconsolidated soils in the vicinity of the subject property was estimated to be about 10 to 30 feet in 1976. Based on a review of regional topographic maps, it appears shallow groundwater flow is in an easterly direction towards Lincoln Creek, which is located approximately 950 ft to the east-northeast (Figure 1). However, localized conditions may affect the depth to groundwater and flow direction at the property. Flow direction in the deeper Niagara and sandstone aquifers likely trends in an easterly direction.

During this investigation, no evidence was noted that suggests operations at the property have impacted either the Niagara or sandstone aquifers. The historic Well logs suggest 65 to 170 ft of generally clayey soils overlie the Niagara aquifer at the property. This thick layer of clay would tend to minimize the potential for contaminants to migrate to either the Niagara or sandstone aquifer.

According to the City of Milwaukee Water Department, the subject property and the surrounding vicinity have been serviced with potable water supply from the City since 1952.

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# INVESTIGATION ACTIVITIES

The purpose of the investigation was to determine the horizontal and vertical extent of contamination in soil and groundwater.

#### SOIL BORINGS

On September 20, 1991 and March 3, 1993, Warzyn conducted a total of four soil borings (i.e., MW1 through MW4; Figure 2). A truck-mounted rotary drill rig was used to complete the borings. Soil samples were collected using a hollowstem auger (HSA) and split-spoon sampling. The samples were collected every 2.5 ft to a maximum depth of 25 ft, in accordance with ASTM:D 1586-84 methods. As samples were obtained in the field, they were visually classified in accordance with ASTM:D 2487-84 and ASTM:D 2488 methods. Representative portions of the samples were returned to the laboratory for further examination and verification. Sample lithology was recorded using the Unified Soil Classification System. Soil boring logs (WDNR Form 4400-122) documenting soil types and subsurface conditions are provided in Appendix A.

The soil samples from each sampled interval were split into several glass sample jars, including a four-ounce jar sealed with aluminum foil for headspace screening and an eight-ounce jar for potential laboratory analysis. The soil samples in the four-ounce jars were approximately one-half full. An HNu Systems Model 101 photoionization detector (PID) was used to screen soil samples for indication of the potential presence of volatile organic compounds (VOCs). Specifically, a 10.2 eV lamp was used with the PID to screen the soils. This lamp was selected based upon the ionization potential of tetrachloroethane (9.32 eV) and trichloroethene (9.47 eV). The PID was calibrated daily with 52.1 ppm isobutylene gas in accordance with Warzyn's written instrument operating procedure. The four-ounce sample jars were allowed to warm to approximately 70°F for a minimum of 30 minutes. The selection of soil samples for analysis was based upon this PID screening, along with the visual evidence of potential

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contamination (i.e., stained soils). The soil samples collected for laboratory analysis were clearly marked using a indelible marking pen indicating the sample date, location, and identification number. The samples were cooled to 4°C and shipped for analysis using chain-of-custody procedures.

The split-spoon sampler was cleaned between samples to minimize crosscontamination. The cleaning procedures consisted of a soap and water wash, with tap water and distilled water rinses. To avoid cross-contamination between soil borings, drilling augers and sampling equipment were cleaned with a high-pressure hot-water cleaner between holes.

#### MONITORING WELL INSTALLATION

Warzyn installed and developed four groundwater monitoring wells (MW1 through MW4) which were co-located at the soil boring locations (Figure 2). Well construction, development and sampling methods were in accordance with Chapter NR 141, Wis. Adm. Code and Warzyn's standard protocol (Appendix B). The well construction was documented on WDNR Form 4400-113A, and development was documented on WDNR Form 4400-113B (Appendix C). A summary of monitoring well information is provided on Table 1.

#### SOIL ANALYSES

Seven soil samples from the borings were submitted for VOC analysis. Samples exhibiting the highest PID reading or where the boring intersected the water table were selected for analysis in order to evaluate the maximum concentrations of onsite contamination. The samples were stored on ice and then transported under chain-of-custody procedures to Warzyn's Technical Services Laboratory in Madison, Wisconsin (WDNR Certification ID#113138300). The soil analytical laboratory results are provided in Appendix D.

#### WATER LEVEL MEASUREMENTS

The top of each monitoring well was surveyed on June 10, 1993 by National Survey and Engineering and referenced to mean sea level using an off-site benchmark for determining future groundwater elevations (Table 1). Water levels in the monitoring wells were measured on several dates using an electric water level indicator (Table 2).

#### **GROUNDWATER SAMPLING**

On October 2, 1991, a round of groundwater samples was collected from MW1 and MW2. Two additional rounds of groundwater samples were collected for MW1 through MW4 on April 4 and May 19, 1993. A field blank, bailer blank, and duplicate sample were collected to document the quality control (QC) of the sampling.

Prior to sample collection, wells were purged by removing a maximum of 3 to 5 well volumes, or until further yield could not be achieved. Purging and sample collection were accomplished by using a stainless steel bailer. The purged groundwater was containerized into 55-gallon drums. To avoid cross-contamination during groundwater sampling, the bailer was decontaminated between wells using a trisodium phosphate (TSP) wash and triple distilled water rinse.

The groundwater sample containers were clearly marked using an indelible marking pen indicating the sample date, location, and identification number. The samples were cooled to 4°C and shipped for analysis to Warzyn's Analytical Laboratory using chain-of-custody procedures. The collected groundwater samples were analyzed for VOCs using U.S. EPA Method 8010/8020 in SW 846, *Test Methods for Evaluating Solid Waste, November 1986*. Groundwater analytical laboratory reports are provided in Appendix E.

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## INVESTIGATION RESULTS

#### SITE PHYSICAL CHARACTERISTICS

#### Site Geology and Soils

Fill materials were encountered in the soil borings from the ground surface to 3.5 ft to 7.0 ft below ground surface (Appendix A). The fill materials consisted of brown, fine to medium sand with some gravel, and brown to grayish black lean clay fill with a trace fine to medium sand and gravel. Beneath the fill materials was a layer of black fibrous peat approximately 1.0 ft to 3.5 ft thick and a 1.0 to 1.5 ft layer of organic clay. Stiff brown mottled lean clays with little fine to medium sand and trace gravel were observed to a maximum depth of 21.0 ft. Beneath the brown clay layer, a very stiff gray to grayish brown lean clay with little fine to medium sand and trace gravel extended to the bottom of the soil borings at 25.5 feet.

#### Site Hydrogeology

Depth to the water measurements for the four monitoring wells are listed in Table 2. Based on water levels measured in MW3 and MW4, the water table generally appears to be between 2 and 4 ft below ground surface, generally within the fill material. Wells MW1 and MW2 appear to be screened 10 to 12 ft below the water table, and thus, do not provide conclusive water table elevation information. Based on a comparison of water level elevations for MW3 and MW4 to water level elevations for MW1, downward vertical gradients appear to occur at the site. Groundwater flow generally appears to be from west to east, based on comparison of water level elevations in MW3 and MW4 and the land surface topography in the site vicinity. Although water level elevation is not sufficient to more accurately delineate groundwater flow direction, the land surface topography and shallow depth to water at the site suggests that groundwater flow may be somewhat to the northeast.

### NATURE AND EXTENT OF CONTAMINATION

#### Soil

As indicated in the boring logs (Appendix A), the PID readings ranged between 50-105 instruments units (i.u.) from 1.0 to 10.5 ft depth in MW1. The PID readings increased to 200 to 500 i.u. in the 13.5 to 20.5 ft depth interval and then decreased significantly (7 to 12 i.u.) in the 21.0 to 25.5 ft depth interval. Lower PID readings (0.1 to 4.8 i.u.) were also observed in MW3 and MW4.

Soil analytical results are summarized in Table 3. Elevated concentrations of tetrachloroethene (37,000  $\mu$ g/kg), trichloroethane (3,000  $\mu$ g/kg) and cis-1, 2-dichloroethene (2,800  $\mu$ g/kg), trans-1, 2-dichloroethene (26  $\mu$ g/kg) and vinyl chloride (31  $\mu$ g/kg) were detected in the sample collected at the 3.5 to 5.5 ft depth interval in MW1 (B1:S2). The soil sample consisted of permeable fine to medium sand and was located above brown lean clay fill. A soil sample from the 16 to 18 ft depth interval (B1:S7) contained elevated concentrations of tetrachloroethene (140,000  $\mu$ g/kg), trichloroethene (est. 420  $\mu$ g/kg) and chlorobenzene (25  $\mu$ g/kg).

Slightly elevated concentrations of tetrachloroethene  $(33 \ \mu g/kg)$ , trichloroethene  $(7.7 \ \mu g/kg)$ , methylene chloride (est. 20  $\mu g/kg$ ) and cis-1,2-dichloroethene (8.4  $\mu g/kg)$ ) were detected in the shallow fill soil sample collected from the 1 to 3 ft depth interval in MW3 (B3:S1). Only cis-1,2-dichloroethene (36  $\mu g/kg$ ) was detected in the 6 to 8 ft depth sample (B3:S3) which was a stiff to hard mottled lean clay.

Elevated concentrations of tetrachloroethene (23,000  $\mu$ g/kg), trichloroethene (490  $\mu$ g/kg) and cis-1,2-dichloroethene (700  $\mu$ g/kg) were detected in the peat layer soil sample from the 6 to 8 ft depth interval in MW4 (B4:S3). Lower concentrations of the compounds were detected in the soil sample collected from the stiff to hard lean clay directly beneath the peat layer (B4:S4). The soil sample collected from background soil boring MW2 (B2:S7) contained no detectable concentrations of VOCs.

#### Groundwater

Groundwater analytical results are summarized in Table 4. Elevated concentrations of tetrachloroethene (14,000 to 38,000  $\mu$ g/L), trichloroethene (220 to 960  $\mu$ g/L), cis-1,2-dichloroethene (560 to 960  $\mu$ g/L) and vinyl chloride (11 to 33  $\mu$ g/L) were detected in MW1. These concentrations exceeded the corresponding s. NR 140.16 Wis. Adm. Code Enforcement Standards (ES).

Generally lower concentrations of tetrachloroethene (2,400 to 2,900  $\mu$ g/L) and trichloroethene (380 to 440  $\mu$ g/L) were observed in the MW4. However concentrations of the degradation compounds cis-1,2-dichloroethene (920 to

1,100  $\mu$ g/L) and vinyl chloride (42 to 48  $\mu$ g/L) were slightly higher in MW4 than in MW1. Concentrations of these four compounds exceeded the corresponding ES.

Concentrations of cis-1,2-dichloroethene (180 to 190  $\mu$ g/L) and vinyl chloride (4.8  $\mu$ g/L) exceeded the ES in MW3. The groundwater samples collected from the MW2 (background monitoring well) contained no detectable concentrations of VOCs.

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## CONCLUSIONS

Based on the results of the site investigation, the following conclusions are made:

- Chlorinated volatile organic compounds (VOCs), primarily tetrachloroethene and trichloroethene and their degradation products were detected in both soil and groundwater samples.
- The soils at the site generally consist of various fill materials extending to approximately 6 ft below ground surface. Beneath the fill materials are layers of fibrous peat and dark gray organic clay to a maximum depth of 9.5 ft. Beneath the organic layers are layers of stiff to very stiff brown to gray lean clays.
- The general horizontal extent of soil impact appears to radiate north and east from MW1. The soil contamination concentrations decrease with distance toward MW3 and MW4. However, elevated concentration still exist at these locations and indicate contamination may extend further to the north. The horizontal extent of off-site impact, if any, to the east and southeast has not been determined. The vertical extent of soil contamination appears to extend to a maximum depth of approximately 25 ft below ground surface in the vicinity of MW1.
- Groundwater flow generally appears to be to the east. The depth to groundwater generally appears to be 2 to 4 ft and downward vertical gradients appear to occur at the site.
- Concentrations of tetrachloroethane, trichloroethane, cis-1,2dichloroethene and vinyl chloride in groundwater samples from MW1 and MW4 exceeded the groundwater quality Enforcement Standards (ES) established in Chapter NR 140, Wis. Adm. Code. Concentrations of cis-1,2-dichloroethene exceeded the ES in MW3. Similar to the soil

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contamination, the groundwater contamination decreases with distance from MW1 toward the north. However, elevated concentration still exist at MW4, which indicates contamination may extend further to the north. In addition, groundwater contamination has not been delineated to the east and southeast (due to access agreement negotiation problems with the Soo Line).

[mil-608-178]

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## RECOMMENDATIONS

Conclusions of the site investigation indicate that the magnitude of soil and groundwater contamination decreases northward from the building on the Tilton Property. However, extent of contamination has not been fully determined further to the north on the Tilton property and to the northeast, east and southeast on the Soo Line Railroad property. Warzyn recommends further investigation in these areas, which will require continuing efforts to enter into an access agreement with the Soo Line.

To further investigate the extent and magnitude of contamination, Warzyn recommends conducting a soil gas survey and collecting soil and groundwater samples at multiple depths using a hydraulic probe system. Specifically, Warzyn proposes to collect approximately 24 soil gas samples at the locations shown on Figure 3. The soil gas samples will be analyzed for select chlorinated hydrocarbons previously identified at the site; including perchloroethylene, trichloroethylene, cis and trans-1,2-dichloroethene, vinyl chloride, and 1,1dichloroethene. The analysis will be performed in accordance with U.S. EPA Method 8010 (modified) using an electron capture detector (ECD) and direct injection of the soil gas.

Soil samples will be collected using the hydraulic probe system at three locations shown on Figure 3. Soil samples will be collected at approximate depths of 4, 8, 12, and 16 ft, and two samples from each location will be selected for laboratory analysis. Groundwater samples will also be collected at ten locations (Figure 3) using the hydraulic probe system. Groundwater samples will be collected at approximate depths of 6 ft and/or 18 ft. The soil and groundwater samples will be submitted to Warzyn's Analytical Services Laboratory for analysis of the previously mentioned chlorinated hydrocarbons using U.S. EPA method 8010. If on-site analysis of the soil gas samples is preferred, additional soil gas, soil or groundwater samples may be collected or locations modified, based on the initial soil gas results.

Recommendations for installation of additional permanent monitoring wells will be made, if appropriate, after reviewing results of the soil gas survey and soil and groundwater sampling. However, results of the investigation may be sufficient to evaluate and select an appropriate remediation method, without the need for installing additional monitoring wells until after implementing the remediation.

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### Monitoring Well Information Tilton Property 3217 West Villard Avenue Milwaukee, Wisconsin

Well	Date <u>Installed</u>	Well Depth (ft)	Screen <u>Length (ft)</u>	Land Surface Elevation (ft)	Top of <u>Casing (ft)</u>	Bottom of <u>Screen Elev. (ft)</u>	Top of <u>Screen (ft)</u>
MW1	9/20/91	25.0	10.0	651.32	650.84	626.32	636.32
MW2	9/20/91	25.0	10.0	651.65	651.12	626.65	636.65
MW3	3/9/93	15.0	10.0	650.70	650.30	635.70	645.70
MW4	3/9/93	15.0	10.0	650.37	649:97	635.37	645.37

### NOTES:

1. Elevations referenced to National Geodetic Vertical Datum (NGVD)

2. Well depths measured in feet below land surface.

3. All wells constructed of 2-inch diameter schedule 40 PVC pipe and screen (0.010-inch slot)

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### Water Level Elevation Information Tilton Property 3217 West Villard Avenue Milwaukee, Wisconsin

	<u>MW1</u>	<u>MW2</u>	MW3	<u>MW4</u>
Top of Casing (TOC) Elevation (ft)	650.84	651.12	650.30	649.97
Ground Surface (GS) Elevations (ft)	651.32	651.65	650.70	650.37
	Depth of Water Be	elow Top of Ca	sing, in Feet	
Date	×		X.	
09/30/91	7.34	4.97		
10/01/91	2.88	2.93		
04/07/93	6.89	7.54	2.28	2.02
05/19/93	9.02	8.54	2.98	2.96
07/21/93	8.19	7.04	3.27	3.12
09/03/93	6.72	6.80	3.74	3.53
	Water Level Elevat	tion, In Feet Ab	ove Sea Level	
09/30/91	644.50	646.15		
10/01/91	648.96	648.19		
04/07/93	644.95	643.58	648.02	647.95
05/19/93	642.82	642.58	647.32	647.01
07/21/93	643.65	644.08	647.03	646.85
09/03/93	644.12	644.32	646.56	646.44
			1	

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#### Summary of Soil Analytical Results Tilton Property 3217 West Villard Avenue Milwaukee, Wisconsin

## Concentration, in micrograms per kilogram (µg/kg)

Sample Identification	Sample Depth (ft)	Chlorobenzene	cis-1,2- Dichloroethene	trans-1,2- Dichloroethene	Methylene <u>Chloride</u>	<u>Tetrachloroethene</u>	Trichloroethene	Vinyl Chloride
MW1/B1:S2 MW1/B1:S7 MW2/B2:S7 MW3/B3:S1 MW3/B3:S3 MW4/B4:S3 MW4/B4:S4	3.5 - 5.5 16 - 18 16 - 18 1 - 3 6 - 8 6 - 8 8.5 - 10.5	ND 25 ND ND ND ND ND ND	2,800 ND ND 8.4 36 700 220	26 ND ND ND ND 45	ND ND 20(a) ND ND ND	37,000 140,000 ND 33 ND 23,000 33	3,000 420(a) ND 7.7 ND 490 9.1	31 ND ND ND ND 26

Notes:

- 1. ND indicates nondetectable concentrations
- (a) = result should be considered estimated with possible high bias as indicated by method QC.
- 3. Data compiled only for compounds with concentrations above quantitation limits.
- 4. Samples B1:S2, B1:S7 and B2:S7 were collected on September 20, 1991 and samples B3:S1, B3:S3, B4:S3 and B4:S4 were collected on March 3, 1993.

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#### Summary of Groundwater Analytical Results Tilton Property 3217 West Villard Avenue Milwaukee, Wisconsin

### Concentration, in micrograms per liter (µg/L)

	Chlorobenzene	1,1- Dichloroethene	cis-1,2 Dichloroethene	trans-1,2- Dichloroethene	Tetrachloroethene	Toluene	Trichloroethene	Vinyl Chloride	1,2,- Dichloropropane
<u>MW1</u> 10/2/91 4/4/93 5/19/93	2.0 ND ND	1.8 5.9 3.6	560 960 780	5.8 10 7.8	14,000 38,000 34,000	16 4.1 12	220 960 700	11 33 14	1.3 ND ND
<u>MW2</u> 10/2/91 4/4/93 5/19/93	ND ND ND	ND ND ND	ND ND ND	ND ND ND	ND ND ND	ND ND ND	ND ND ND	ND ND ND	ND ND ND
<u>MW3</u> 4/4/93 5/19/93	ND ND	ND ND	180 190	1.8 3.6	ND ND	ND ND	ND ND	ND 4.8	ND ND
<u>MW4</u> 4/4/93 5/19/93	ND ND	2.0 2	1,100 920	9.2 16	2,900 2,400	10 8.2	440 380	42 48	ND ND
ES	-	7.0	70	100	5	1,000	5	0.2	5
PAL	*	0.024	7	20	0.5	200	0.18	0.0015	0.5

Notes:

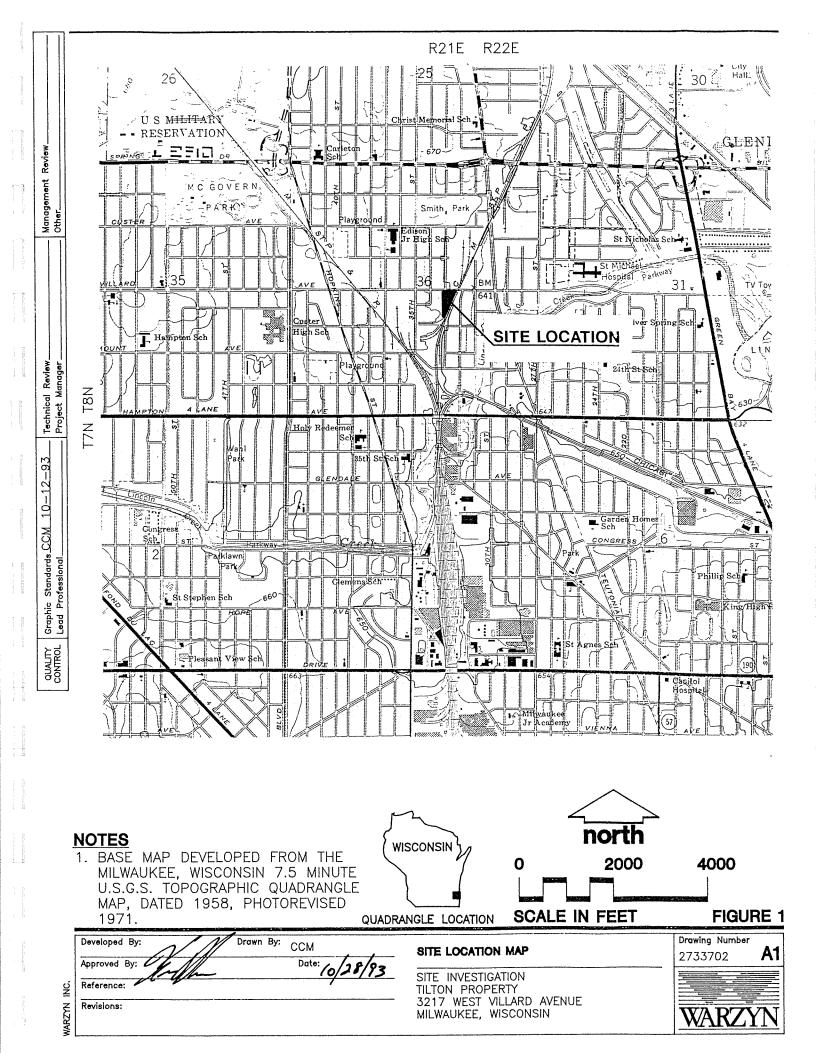
1) Only parameters detected above the quantitation limits are listed.

2) ND = denotes concentrations of the parameters were not detected above the quantitation limit.

 ES = Enforcement Standard, PAL = Preventive Action Limit, Both the PAL and ES have been established by Chapter NR 140, Wis. Adm. Code.

4) \*= An asterisk means a PAL or ES has not currently been established.

KDS/erw/DRL [mil-408-181] 2733702/159



# A

# SOIL BORING LOGS

ate of Wisconsin epartment of Natural Resources	Emergency Response   Ur     Wastewater   Wastewater	z. Waste idergrou ater Reso	nd Tar	ıks		DIL B( rm 4400		IG LC				7-91
acility/Project Name		her License	/Permi	it/Moni	toring	Numbe	- r	Boring		 er		
ESTATE OF AARON L. TI		Date D	illing	Started		Date D	Jrilling		W1	Drilling	Meth	
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217 West Villard Avenue -		<b>F</b> : 10	9/20	/91 /ater Le	-	Surfac	9/20			Boreho	1. D'-	
NR Facility Well No.   WI Uniqu	e Well No. Common Well Name	Final S		Feet MS				_Feet M	ASL	2 1	<u>/4</u> ii	
oring Location tate Plane	_N, E S/C/I	N   Li	ıt					-		olicable		ΠE
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County Milwaukee	DNR	County 41	Code	Civil I	ownyc	City/or V Milwar	v mage					
Sample v +					-			Soil	Proper	ties		
τ μ τ μ τ μ τ μ τ μ τ μ τ μ τ μ τ μ	Soil/Rock Description And Geologic Origin For		5	0	ы Ш	р.	ard rai	ente	ъ	U		n ts
ер th с т т т т т т т т т т т т т т т т т т т	Each Major Unit		nscs	Graphi Log	Well Diagr	PID/F	Standar Penetra tion	0 - 5 0 - 5	Ligui Limit	Plast Liait	P 200	RQD/ Comments
- 5" AS	SPHALT.											
	: 4" Brown Fine to Medium Sand, Some Gravel.					70.0				1		
n n	2" Brown Fine to Medium Sand, Trace C Black Fine to Medium Sand, Trace Grave					70.0	1					
$SS2   M   0   \neq 0$	Cinders. : Water Observed at 4.0 Feet Above Clay					105.0						
	Layer.								<u> </u>			
	: Brown Lean Clay; Trace Fine to Mediu Sand and Gravel.	imi [		V/////		50.0						
SS4 M 16 Note	: Grading into Grayish Black in Color. Organic Wood Pieces Noted at 5.0 Fee	t.								1	+	
10 Stiff,	, Brown Mottled Lean CLAY; Little Fine lium Sand, Trace Gravel (CL).					100.0		1				
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- Med	dium Sand, Trace Gravel (CL).					12.0	)			1		
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TSTATE OF AARON L. TILTON         27337.01         MiV2           oring Drilled By (Firm name and name of crew chief)         Date Drilling Started         Date Drilling Completed         D	cility/	Project	Name				- 		+	se/Perm	it/Mon	itoring	Numbe		Boring			_of	<u> </u>
217 West Villard Avenue -         9/20/91         9/20/91           SXT FEE GOWERNZ         Final Static Water Level         Surface Elevation         Borehole Diamet           String Location         N	EŚT	'AŤE	OF A	ARO	and the second s			37.01	ļ						M	IW2			
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Sorial Coartion later Plane         N         E         S/C/N         Lat         Local Grid Location (if applicable)           NW         1/4 of Section         36         T         8         N, R         21         E/V         Lat	217 W	est V	illaro	l Aver	iue -					9/20	)/91			9/20	)/91				
State Plane         N,         E         S/C/N         Lat         Prect         S							Common Well	Name	Fina				-		_Feet N		2	1/4 ii	
NW       1/4 of SW       1/4 of SW       1/4 of Section       36       T       8       N.R.       21       E/W       Long       Feet       IS       Fe			n		N.	×	. Е	e s/c/i	N	Lat			Local	Grid I			olicable	)	
Dounty Odd         DNR County Code         Civil Town(Citylor Village City of Milwaukee           Sample         *         Soil/Rock Description         Soil/Rock Description         Soil/Rock Description           *         *         *         Soil/Rock Description         *         Soil/Rock Description         *         Soil/Rock Description           *         *         *         Soil/Rock Description         *         *         Soil/Rock Description         *         *         Soil/Rock Description         *         *         Soil/Rock Description         * <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td>F</td> <td></td> <td></td> <td></td> <td>Feet</td> <td>⊢ ∐ E □ V</td>									1					F				Feet	⊢ ∐ E □ V
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b         5         c         Soil/Rock Description           a         And Geologic Origin For Each Major Unit         b         c         c         c	Samp	le	ហ	+-											Soil	Proper	ties	1	
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SS2       M       16	SS1	М	10		G Brow	ravel. vn to Black Le	an Clay, Little						0.2						
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SS7       M       14       Grayish Brown Lean CLAY; Little Fine to Medium Sand, Trace Gravel (CL).       0.4       0.4         SS8       M       12       Note: Thin Gray Silt Seams Noted From 18.5 to 25.5 Feet.       0.2       0.2         SS9       M       11       0.2       0.2       0.2         SS10       M       14       0.2       0.2       0.2         End of Boring at 25.5 Feet.       End of Boring at 25.5 Feet.       0.2       0.2	SS6	М	14	F.	_			•					ND						
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I hereby certify that the information on this form is true and correct to the best of my knowledge.																		s	
Signature EL / Firm WARZYN INC.							,						I INC.						

violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

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acility	/Projec	t Name	2		0	+	ense/1	Permi	t/Moni	toring	Numbe	r	Boring	Page Numb		_of	1
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Boring Drilled By (Firm name and name of crew chief)						Date Drilling Started				Date Drilling Completed			eted	d Drilling Method 2 1/4" ID HSA			
& J :	Soil T	esting	g Ltd.	- Eugene Lehman			•	3/3	/93			3/3	/93				+
DNR Facility Well No. 11 WI Unique Well No. 2111 Common Well Name						Final Static Water Level				Surface ElevationFeet MSL							
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		21	[ s	Black Fibrous PEAT. (PT) Dark Gray Organic CLAY. (	OL)			OL	भयो।				1	ļ	1	_	
3	15	13 48		Stiff to Hard, Brown Mottled Sand and Gravel (CL).		ittle		CL			0.4	7	M				
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				nformation on this form is true a													
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Tilt	Tilton 2733702										,		B	04			
-		× .		/			Date Drilling Started			Date Drilling Complete			letea	Drilling Method 2 1/4" ID HSA			
				- Eugene Lehma				3/3				3/3	•				
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County						DNR	County	Code	Civil 🛛	fown/G ilwau	City/or	Village	,				
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\$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

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# В

PROTOCOL FOR INSTALLATION OF GROUNDWATER MONITORING WELLS

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## PROTOCOL FOR GROUNDWATER MONITORING WELL INSTALLATION AND SAMPLING

Groundwater monitoring wells are installed using hollow stem auger (HSA) borings. Soil sampling is conducted during well installation. The drilling and well installation are directed by a Warzyn Scientist who documents geologic materials encountered during drilling, field screens auger cuttings and soil samples, and observes the drilling activities and supervises installation of groundwater monitoring wells.

Wells are constructed of 2 inch I.D. schedule 40 flushjoint PVC riser pipe, above an 0.010 inch slot, flushjoint PVC screen. The annular space surrounding the screen is backfilled with silica sand filter pack to a height not less than 2 feet above the top of the well screen. A minimum of one foot of bentonite pellets or granular bentonite is placed above this backfill, to provide a low permeability seal at the ground surface. Well screens are positioned to monitor selected areas of the water column. In high traffic areas, a flushmount protective casing with a locking well cap is generally installed at the surface and secured with concrete. In low traffic areas, a "stickup" locking protective casing and protective bumper posts are typically installed.

After installation, wells are developed using a stainless steel bailer by purging at least 5-10 well volumes of water from each well, or until the well water is visually clear. Wells are allowed to stabilize prior to sampling, to ensure the collected sample is representative of groundwater at the location. Prior to sample collection the wells are purged by removing a maximum of 3-5 well volumes, or until further yield cannot be achieved. Purging and sample collection is accomplished using a teflon or stainless steel bailer.

The bailer is decontaminated between wells using a trisodium phosphate (TSP) wash and triple distilled water rinse, as per U.S. EPA protocol. All samples are collected in laboratory glassware. All drilling equipment and tools are steam-cleaned prior to mobilization onto the site, between boreholes, and upon completion of the drilling program. Well materials are also steam-cleaned prior to installation.

In accordance with Warzyn's Site Safety Plan, a photoionization detector (PID) and explosimeter are used to monitor ambient air concentrations at the sampling locations. Personal protective equipment is utilized by site personnel during performance of sampling activities, as specified in the Site Safety Plan.

Groundwater samples are collected, placed in laboratory cleaned, glass jars and labelled, identifying sample number, location and date, and sampling personnel. Samples submitted for analysis are preserved on ice and shipped in a cooler overnight to Warzyn's analytical laboratory in Madison, Wisconsin. Warzyn standard chain of custody procedures are followed regarding shipment and receipt of samples. As part of the Quality Assurance/Quality Control (QA/QC) procedure for groundwater sampling, duplicate and trip blank samples may be collected and submitted for analyses. A duplicate consists of filling two sets of sample bottles using standard sampling equipment and procedures. A trip blank consists of two 40-ml vials prepared with distilled water and placed with the samples transported.

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# MONITORING WELL CONSTRUCTION DETAILS AND DEVELOPMENT FORMS

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MONITORING WELL CONSTRUCTION Route to: Solid Waste Haz. Waste Wastewater State of Wisconsin Form 4400-113A Rev. 4-90 epartment of Natural Resources Env. Response & Repair D Underground Tanks D Other D. Local Grid Location of Well Well Name Icility/Project Name To How Property В ft. DN \_ft.  $\Box E.$ MWI Shop Rite Supamarkat Grid Origin Location Wis Unique Well Number DNR Well Number acility License, Permit or Monitoring Number \_\_Long. Date Well Installed  $\frac{O^{9}}{m} \frac{20}{c} \frac{9}{v} \frac{1}{v}$ Type of Well Water Table Observation Well X11 ft. E. ft. N. St. Plane 012 Section Location of Waste/Source Piezometer <u>NU1/4 of SE 1/4 of Sec. 36, T. 8 N. R. 21 8 W</u> Well Installed By: (Person's Name and Firm) ristance Well Is From Waste/Source Boundary R Kenneth Kuchn NA Location of Well Relative to Waste/Source Is Well A Point of Enforcement Std. Application? s 🔲 Sidegradient u 🛛 Upgradient Warzyn In n 🗹 Not Known ⊠ No d 🔲 Downgradient 🗆 Yes X Ya 🗆 No 1. Cap and lock? -651.32 ft. MSL A. Protective pipe, top elevation 2. Prouse in cover Flush mount Cover .\_.650.84 ft. MSL. \_8.1 ir. B. Well casing, top elevation a. Inside diameter: 12.0 :b. Length: 651 3 ft. MSL I. Land surface elevation c. Material: Size! 🔲 04 D. Surface seal, bottom\_649 5 ft. MSL or \_1.8 ft. Aluminum দেশ 🕱 🕎 U Ya X No d. Additional protection? 12. USCS classification of soil near screen: If yes, describe: Bentonite 30 3. Surface seal: Bachack D Concrete X 01 13. Sieve analysis attached? 🛛 Yes X No - 633 Ober 🛛 4. Material between well casing and presenting Flushmount Cove Rotary 50 14. Drilling method used: 30 Hollow Stem Auger X 41 Bentonite 🛛 Armular space seal Other Sand \_ Ctre 🛛 15. Drilling fluid used: Water 🔲 02 5. Annular space seal: (ChipS)a. Grznular Bentonite 🕱 33 Air 🛛 01 Drilling Mud 🛛 03 None 99 b. \_\_\_\_Lbs/gal mud weight . . . Bertonite-sand shurry 🗆 3.5 \_\_Lbs/gal mud weight ..... Bentenite slurry 🗖 31 16. Drilling additives used? ΜŇο 🛛 Yes % Bentonite .... Bentonite-cement grout 🗆 Ft <sup>3</sup> volume added for any of the above NA Describe Trania [] 01 How installed: f 17. Source of water (attach analysis): Tramie pumped 02 Gravity 🕅 03 NA a. Bentonite granules [] 6. Bentonite seal: 33 E. Bentonite seal, top \_ 649 5 ft. MSL or \_ 1.5 ft. b. □1/4 in. □3/8 in. □1/2 in. Bentonite pellets □ Bentonite chips are X 7. Fine sand material: Manufacturer, product name & mesh size 6403 ft. MSL or \_ 11.0 ft. F. Fine sand, top 2 Red Flint Sands and Gravels #45/55 --637 8 ft. MSL or 13.5 ft. ·£3 b. Volume added Z G. Filter pack, top 8. Filter pack material: Manufacturer, product name and meth size \_6363 ft. MSL or \_15.0 ft. -2 Red Flint Sands and Gravels = 30 H. Screen joint, top b. Volume added \_ 6\_\_\_\_ £2 9. Well casing: Flush threaded PVC schedule 40 X 6263 ft. MSL or 250 ft. I. Well bottom Fush treaded PVC schedule 80 ( 24 J. Filter pack, bottom \_6258 ft. MSL or \_25.5 ft.\_ 10. Screen material: Flush Threaded AVC (40) 625 Bft. MSL or 25.5 ft. Factory cut 🕅 a. Screen type: (1, 1)K, Borehole, bottom Continuous slot 🗇 Other 🖸 62 in. L. Borehole, diameter b. Manufacarrer limro 0. *Q12*ir C. Slot size: 225 in. M. O.D. well casing Slotted length: 10.0 t ď Nare X 13 11. Backfill material (below filter pack): N. I.D. well casing 200 in. and D I hereby certify that the information on this form is true and correct to the best of my knowledge. Firm Signature Warzsn, Inc. ench KA Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 1cu, wis. Stats... and ch. NR 141, Wis. Ad. Code. In accordance with ch.144, Wis Stats., failure to file this form may result in a forfeiture of not less than \$10, nor more than \$5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than \$10,000 for each

day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent

State of Wisconsin Department of Natural Resources

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#### MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 4-90

Route to: Solid Waste 🗆 Haz. Waste 🗆 Wastewater 🗆 Env. Response & Repair 🗇 Underground Tanks 🗖 Other 🗆 \_\_\_\_\_

Facility/Project Name To How Property Shop Rite Supermarket	County Name Milwo	uk og	Well Name Q1	
Facility License, Permit or Monitoring Number			D I	N
Tainty Elesise, remit of Montoring Runder	County Code	Wis: Unique Well Nu	mber DNR We	11 Number
and the second se				
1. Can this well be purged dry?	Yes D No	11. Depth to Water	Before Development	After Development
<ul> <li>2. Well development method surged with bailer and bailed surged with bailer and pumped surged with block and bailed surged with block, and pumped surged with block, bailed and pumped compressed air bailed only pumped only pumped slowly Other</li> <li>3. Time spent developing well</li> </ul>	$ \begin{array}{c} 41 \\ 61 \\ 42 \\ 62 \\ 70 \\ 20 \\ 10 \\ 51 \\ 50 \\ \hline 3.9 \\ min. \end{array} $	<ul> <li>11. Depth to Water (from top of well casing)</li> <li>Date</li> <li>Time</li> <li>12. Sediment in well bottom</li> <li>13. Water clarity</li> </ul>	2. ∑ inches Clear □ 10 Turtid ⊠ 15 (Describe)	$\frac{O 9 1 2 9 1 9 1}{m m d d y y}$ $= \frac{1}{2} \cdot \frac{19 1}{2} = \frac{1}{2} \cdot \frac{19 1}{2} \cdot \frac{19 1}{2} \cdot \frac{10}{2} \cdot $
<ol> <li>Depth of well (from top of well casisng)</li> <li>Inside diameter of well</li> <li>Yolume of water in filter pack and well</li> </ol>	_24.ZfL _6.20in.		With mang Fine	Brown in Color Swith many fine (Silt). No odor or sheen Observed.
casing 7. Volume of water removed from well	<u></u> <u>&amp;</u> . <u>/</u> gal. <u>_</u> <u>_</u> <u>_</u> <u>_</u> <u>_</u> <u>g</u> al.	Fill in if drilling flu	ids were used and well is	at solid waste facility:
8. Volume of water added (if any)	<u>NA</u> gal.	14. Total suspended . solids	• mg	// mg//
9. Source of water added <u>NA</u>	۸	15. COD		Λ mg/
10. Analysis performed on water added? (If yes, attach results)	I Yes X No	1		l
16. Additional comments on development:				

Well developed by: Perzon's Name and Firm	I hereby certify that the above information is true and correct to the best of my knowledge.
Name: Kenneth R Kuchn	Signature: Levet R. Luch
Firm: Warzen Inc.	Print Initials: KRK
0	Firm: Warzsh, Inc.

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

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#### MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 4-90

Route to: Solid Waste || Haz. Waste || Wastewater || Env. Response & Repair || Underground Tanks || Other ||

shop Rite Supernarket	County Name Milwo	UKRO	Well Name Bi	· · · · · · · · · · · · · · · · · · ·
icility License, Permit or Monitoring Number		Wis Unique Well Nu	mber IDNR W	ill Number
			DAR AN	
	/			
. Can this well be purged dry?	Yes DNo.	: 11. Depth to Water	·Before Development	After Development
. Well development method		(from top of	16.3]ft.	_24.37:
surged with bailer and bailed	41	well casing)	· ·	
surged with bailer and pumped	61	·		
surged with block and bailed	42	Date	x09127191	912219
surged with block and pumped	1 62		mm d d y y	$\frac{0912219}{mm \ c \ d \ y}$
surged with block, bailed and pumped				
compressed air	-	Time	c. 1:03Mp.T	
	] 10		м	
· · · · · · · · · · · · · · · · · · ·	] 51	12. Sediment in well	2 Yirche	s <u>00</u> .0 inch
	3 50	bottom		s  <u> </u>
	י גר ד ה	13. Water clarity	Clear 🔲 10	
		15. Water clarity	Turbid X 15	
2 Time ment developing well	70.		· · · · · · · · · · · · · · · · · · ·	Turbic 25
3. Time spent developing well	<u>3</u> 2min.		(Describe)	(Describe)
	14 7c		Brown in Color	
4. Depth of well (from top of well casisng)	<u>24.</u> Z fr.		With mang Fini	25 with mang I.
	( 20.		(SITT). Mb aco	r (silt). No od
5. Inside diameter of well	6.20 in.		or sheen	or shaen
			obsaved:	observed.
6. Yolume of water in filter pack and well			·	1
casing	& gal.			
	· ·	Fill in if drilling fly	ids were used and well	is at solid waste facility;
7. Yolume of water removed from well	<u>9.0</u> gal.			.
• ···		14. Total suspende	i m	g/1
8. Volume of water added (if any) <u>N</u>	<u>Agal.</u>	, solids		
			· · · ·	3
9. Source of water added NA		15. COD		.zΛ
×				
10. Analysis performed on water added?	UYE XNo			•
(If yes, attach results)				·
16. Additional comments on development:	······			
		,		
da				
•				
		8		
Well developed by: Perron's Name and Firm		l hereby certify t   of my knowledg	hat the above informatio	n is true and correct to th
		OF HITY KIOWICCE		
		Signature:	Keneth R	1
Name: Kenneth RKue	hn		Hench R	- Aucin
		Print Initials:	KRK	
Name: <u>Kenneth RKue</u> Firm: <u>Warzen Inc</u>		riute fruitais:		
			Warzsh;	
		Firm:	Uhrzch.	LnC

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

#### MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 4-90

Route to: Solid Waste 🗆 Haz. Waste 🗖 Wastewater 🗖 Env. Response & Repair 🗇 Underground Tanks 🗋 Other 🗋 \_\_\_\_\_

acility/Project Name TI How Proparty		County Name	-	Well Name	$\mathbf{N}$
VILLARD ANE. PHASE I ESA	/	MILWA	UKEE	MW/BI	<u>)</u>
VILLARD AVE. PHASE IL ESA actility License, Permit or Monitoring Number	0		Wis. Unique Well Nu	mber DNR Wel	[Number
		<u>41</u>			
· · · · · · · · · · · · · · · · · · ·	🛛 Yes	D No		Before Development	After Development
Can this well be purged dry?			11. Depth to Water	Derere Dererephileme	
Well development method			(from top of	<u>a 6.89</u> ft.	ft.
surged with bailer and bailed	⊠ 4	1	well casing)		
surged with bailer and pumped			A STATE		
surged with block and bailed			Date	. 04,07,92	1 1
surged with block and pumped				$b \underbrace{O}_{m} \frac{4}{m} \underbrace{O}_{d} \frac{7}{q} \underbrace{I}_{y} \frac{9}{y} \underbrace{3}_{y}$	$\frac{1}{mm} \frac{d}{d} \frac{d}{v} \frac{v}{v}$
surged with block, bailed and pumped					
compressed air		0 .0 \	Time	c 2:30 N D.m.	: p.m.
bailed only					
pumped only		51	12. Sediment in well		0.0 inches
pumped slowly		50	bottom		tating affing training
Other			13. Water clarity	Clear 🔲 10	Clear 20
	شر <b>اسا</b> -	an anna		Turbid 🖾 15	Turbid 🛛 25
3. Time spent developing well	2	4 <u>5 min.</u>		(Describe)	(Describe)
5. The spendeveloping wen		<u></u>		REDDISH BROWN	REDDISH BROWN
( D. J. S. 11 (for a set - fourth projector)	24	5.0 fl		VERY TURBID	
4. Depth of well (from top of well casisng)	<u> </u>	<u> </u>		VERTIONER	
5. Inside diameter of well	2	<u>05</u> in.			-
J. IIBIde diameter of wen		<u> </u>		· · · · · · · · · · · · · · · · · · ·	•
6. Volume of water in filter pack and well				· · · · · · · · · · · · · · · · · · ·	-
casing		8.9 gal.		i	
		<u> </u>	Fill in if drilling fly	ids were used and well is	at solid waste facility:
7. Volume of water removed from well	1	0 . 0. gal.	U U		
			14. Total suspende	d mg	Л mg
8. Volume of water added (if any)	**************************************	gal.	. solids		
	,			1	
9. Source of water added	V/A		15. COD	<u> </u>	s/1 m
				/	
10. Analysis performed on water added?		Yes 🗆 No			
(If yes, attach results)					
				·	
10. Additional comments on development:		KRK			
WELL PREVIOUSLY DEVELO	PED BY	ARN			
		,			
			I horaby cartiby	that the above information	is the and coment to the
Weil developed by: Person's Name and Fir	m		of my knowledg	e.	is true and correct to the
Name: TERRY J. MAR			Signature:		
Name: TERRY J. MAR.	<u>LH</u>				
Firm: WARZYN, INC.			Print Initials:		
Firm: WARZYN, LNC.					
			Firm:		

		ς			
State of Wisconsin Route to: Soli	d Waste 🛛 Haz. Waste 🗆	Wastewater		MONITORING WELL C Form 4400-113A	CONSTRUCTION Rev. 4-90
	& Repair 🗌 Underzrou Local Grid Locauon of W	nd Tanks 🗌 Other			
			_ft. 🗆 E.  ^	Vell Name B2/1	hwa)
Shop Rite Suparmarket	Grid Origin Location	• • • • •		His Umaue Well Number L	
Furth Precipet 1 current of the		-	or	n B. dikite nea Kainza - E	
Type of Well Water Table Observation Well 🛛 11		1		Dale Weil Installed 00	
Piezometer D12	St. Plane Section Location of Was		R.E.	$\frac{O}{m}$	
ristance Well Is From Waste/Source Boundary	NG11/4 of $\underline{SE}$ 1/4 of Se		A ME.	Well Installed By: (Person's	
NA ft.	Location of Well Relativ	C. <u>JO</u> , I. <u>J</u> N, F	<u></u>	Kenneth R K	Kuchn
Is Well A Point of Enforcement Std. Application?	u 🛛 Upgradient	s 🔲 Sidegradie	nt	. / .	
		n 🛛 Not Know		Warzyn,-	
A. Protective pipe, top elevation _651.65	ft. MSL		Cap and lock?	Arpipo: Flushmount	XYS C No
3. Well casing, top elevation <u>b51.12</u>	. ft. MSL		a. Inside diama		_8.1 in
2. Land surface elevation $= 651.6$	ft. MSL 🔪		b. Length:	ť	12.01:
		- ANDERSON	c. Material:	•	Sizel [] 04
D. Surface seal, bottom_649.8 ft. MSL or _			<u>/+1</u>		<u>_ ct= X</u> 📰
12. USCS classification of soil near screen:	and the second	New York			D NR X VO
GP GM GM GC GW GW SW D SM G SC G ML G MH G CL X	CH L		-	লান্ড:	Benioniie 🗆 30
Betrock []		<b>₩ ₩ `</b> 3.	Surface seal:		Concrete X 01
13. Sieve analysis attached? 🗆 Yes	Ín E	`3.			
14. Drilling method used: Rotary [	ַ 50 _		. Material ber	ween well casing and provide	Flushmount Cove
Hollow Stern Auger	× 41				Bentonite 🔲 30
Other I					n einer sen 🔲 🕅
				Sand	ates X
15. Drilling fluid used: Water □ 02 Air   Drilling Mud □ 03 Nore			. Annular spa		
				gal mud weight Bertonit	
16. Drilling additives used?	× No			s/gal mud weight Ben Bentonjte	
				Ft volume added for my	
DescribeNA			f Howins		Tranis 🛛 01
17. Source of water (attach analysis):				, în	mie pumped 🔲 02
NA					Cravity X 03
			6. Bentonite		cnice granter X 33
E. Bentonite seal, top _649.% ft. MSL or	1.8 fr /		ъ. 🗆 1/4	in. 03/8 in. 01/2 in: Be Bentonite Chips	nionius pelleus 🔲 32
F. Fine sand, top 640 6t. MSL or			7 Fine sand	material: Manufacturer, 170	/
F. Fine sand, top $640.6$ ft. MSL of	-11.0	、圖 圖 / /	, Red F	Flint Sunds and Gras	101 = 45/5.5 =_
G. Filter pack, top _638 b ft. MSL o	r 130 ft.	四段/		ie added 0.5	e.3
· · · · · · · · · · · · · · · · · · ·				k material: Manufacturer, pro	schief name and mesh size
H. Screen joint, top _ 636 b ft. MSL o	r_15.0 ii.			-lint Sands and (-ra-	vel2 = 30
I. Well bottom 6266 ft. MSL o	TACO IL		b. Yolur 9. Well cas	ne added <u>3</u> ing: Flush threaded PV	_n. C schechule 40 💢 23 -
-					C schedule 80 🔲 24
J. Filter pack, bottom _624 .1 ft. MSL	or 25.5 ii.				೧೩ ಪ 👘
K. Borehole, bottom _624. 1 ft. MSL	- 755 fr			naterial: <u>Flush Threade</u>	
K. Borehole, bottom $-\underline{0} \underline{1} \underline{1}$ ft. MSL	or_a.j.j		a. Scree		Factory cut 💢 11 Continuous slot 🖂 01
L. Boreixole, diameter 6.2 in.				·	Other 🖸 📋
		$\backslash$		liacarer Timco	
M. O.D. well casing $225$ in.			c. Slot d. Slot	size: Ied length:	0. <i>016</i> 5 10.01
N. I.D. well casing $2.22$ in.			1	l material (below filter pack):	Nore X 14
	•				
I hereby certify that the information		and correct to	the best o	f my knowledge.	
Signature Keneth Rofu	eh rom	Warzy	n, In	с,	
Please complete both sides of this form and p	return to the appropriate I	ONR office listed at	the top of th	is form as required by chs. 14	4, 147 and 150, Wis. State s than S10, nor more than

...

and ch. NR 141, Wis. Ad. Code. In accordance with ch.144, Wis Stats., failure to file this form may result in a forfeiture of not less than 510, for more than 55000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than 510,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be tent.

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#### MONITORING WELL DEVEL OPMENT Form 4400-113B

Roule to: Solid Waste Haz. Waste Wastewater Env. Response & Repair Underground Tanks Other

Facility/Project Name THON Property Shop Rite Supernarts			Well Name B S	2
Facility License, Permit or Monitoring Number	County Code	Wis: Unique Well Ni	imber DNR Wei	ll-Number
1. Can this well be purged dry?	Y= No.	11. Depth to Water	Before Development	After Development
2. Well development method surged with bailer and bailed surged with bailer and pumped surged with block and bailed surged with block and pumped	□ 41 □ 61 □ 42	(from top of well casing) Date	a = 19.57 fr. $b = 0.2/2.2/9/2 m m d d y y$	
surged with block, bailed and pumped compressed air bailed only pumped only	□ 62 □ 70 □ 20 ☑ 10 □ 51	Time 12. Sediment in well	c Z: <u>3 80</u> p.m	
pumped slowly Other 3. Time spent developing well	□ 50 - □	bottom 13. Water clarity	Clear [] 10 Turbid X 15 (Describe)	Cier 20 Turbid X 25 (Describe)
<ol> <li>Depth of well (from top of well casisng)</li> <li>Inside diameter of well</li> </ol>	_23.5 fr _6.20 in		Brown in Glor With // The fine (Silt). No odor or show	With little Fin. (Silt). No odor
6. Yolume of water in filter pack and well casing	gal.	Fill in if drilling fu	observed:	observed.
<ol> <li>7. Volume of water removed from well</li> <li>8. Volume of water added (if any)</li> </ol>	<u> </u>	14. Total suspender	1	
9. Source of water added <u>NA</u>		15. COD	mg	Я mg/l
10. Analysis performed on water added? (If yes, attach results)	I Yes X No			1

 Well developed by: Person's Name and Firm
 I hereby certify that the above information is true and correct to the best of my knowledge.

 Name:
 Kenneth R Kuchn

 Firm:
 Warzen, Inc

 Firm:
 Warzen, Inc

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

#### MONITORING WELL DEVEL OPMENT Form 4400-113B

Route to: Solid Waste Haz. Waste Wastewater Haz. Wastewater Haz. Response & Repair Haz. Underground Tanks Other H

lity/Project Name THON Property		ounty Name Milwo	ukee	Well Name	B2	
Lity License, Permit or Monitoring Number	c		Wis Unique Well N	umber	DNR Well	
		·			Diffe and	naid: 
	X Ys	<b>[]</b> X-			,	
Can this well be purged dry?	M 12		11. Depth to Water		velopment	After Development
Well development method			(from top of		. <u>5</u> Zft.	-23.39 t
surged with bailer and bailed	□ 41		well casing)	···	·· <u>·</u> /	
surged with bailer and pumped			•			
surged with block and bailed	-		Date	- 0 - 0		
	been a		Lane	8 <u>0210</u>	2121	<u>09122191</u> mm c c y y
surged with block and pumped	□ 6 <sup>'</sup> 2			mm c	d y y	mm d d y y
surged with block, bailed and pumped	□ 70					_ <u>8:05(10.1</u>
compressed air	<u> </u>		Time	c: =	<u>3 8 🗋 p.m.</u>	_ <u>8:056pr</u>
bailed only	页 10	)			<i>1</i>	
pumped only	51	1	12. Sediment in we	<u> </u>	2.0 inches	<u>00.0</u> inche
pumped slowly	D 50	0	bottom		-	
Other			13. Water clarity	Clear . [	1 1 0	Cier [] 20
•				Turbid E		Turbel X 25
Time spent developing well	.1	Z min.		(Descrice)		(Describe)
					in Glor	
. Depth of well (from top of well casisng)	_23	5 fr		•	•	Brown in Co
. Deput of wen (none mp of wen cashing)					1TTLe Fines	I
. Inside diameter of well	_6.2	20:-		(sitz)		(SilT). No co
, inside diameter of well	Q,4	<u>A</u> O IR				or sheen
				obse	rved:	observed.
. Yolume of water in filter pack and well		1				
casing		Z. Q g2l.				
· · ·	,		Fill in if drilling f	luids were use	ed and well is	at solid waste facility:
7. Yolume of water removed from well		Zg21.				
			14. Total suspend	el	mg/	י ז
8. Volume of water added (if any)	NA-	gal.	. solids			
9. Source of water added <u>NA</u>			15. COD		mg	л г
· ·						
	·					
10. Analysis performed on water added?	$\Box Y$	es X No				
(If yes, attach results)						
·						
16. Additional comments on development:				_		· · · · · · · · · · · · · · · · · · ·
					-	
				•		
· · ·			,			
Well developed by: Person's Name and Firm			I hereby certify	that the above	information	is true and correct to th
			of my knowled	20.		
			C'	.1/	- 0	1/ 1
Name: Kenneth RK	Uch,	$\sim$ '	Signature:	"Xen	an oc	Kuch
······	<u> </u>			KOV	,	
Firm: Warzch, II	ЬС	•	Print Initials:	KKK	-	
				1.		-
			Firm:	Warz	-8h, I	nc
			11		~ /	

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#### MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 4-90

Route to:	Solid Waste 🔲	Haz. Waste 🗖	Wastewater		
Env. Resp	onse & Repair 🕻	] Underground	Tanks 🔲	Other 🛛	

Facility/Project Name To How Property	County Name		Well Name	
Vin ADD ANG PLACE TT FSA	MILWA	IKEE	MW2 (BZ)	
VILLARD AVE. PHASE IL ESA / Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Nu	mber DNR Wel	l Number
1 waa, 2.0000, 1 maar 1 maar 3	41			
1. Can this well be purged dry?	🛛 Yes 🛛 No		Before Development	After Development
	7	11. Depth to Water		۰ •
2. Well development method		(from top of	a7.54 ft.	<u></u> . <u></u> ft.
surged with bailer and bailed	⊠ 41	well casing)		
surged with bailer and pumped	<b>□</b> 61	1		
surged with block and bailed	42	Date	$b \cdot \frac{0}{m} \frac{4}{m} \frac{1}{d} \frac{0}{d} \frac{7}{y} \frac{1}{y} \frac{9}{y}$	//
surged with block and pumped	<b>□</b> 62		mm dd yy	mm dd yy
surged with block, bailed and pumped	□ ,70		X a.m.	_ 1.m.
compressed air	□ 20	Time	c, ⊥ <u> </u>	: p.m.
bailed only	□ 10		<b>^</b>	
pumped only	D 51	12. Sediment in well	$0  \underline{0}  0$	inches
pumped slowly	□ <u>50</u>	bottom		r
Other		13. Water clarity	Clear 🔲 10	Clear 🖸 20
,			Turbid 🖾 15	Turbid 🖾 25
3. Time spent developing well	<u>30</u> min.		(Describe)	(Describe)
			REDDISH-BROWN	REDDISH FROWN
4. Depth of well (from top of well casisng)	<u>_23.9</u> fr		SLIGHTLY	SLIGHTLY TURBID
	2		TURBID	
5. Inside diameter of well	-2.05 in.			-
. ?		· .		
6. Volume of water in filter pack and well	0 a .			" I <u> </u>
casing	<u>8.9 gal.</u>		• • • • • • • • •	
	/0.0 gal.	Fill in it drilling fit	uids were used and well is	at solid weste lecility:
7. Volume of water removed from well	<u> </u>			
		14. Total suspende solids	d mg	
8. Volume of water added (if any)	gal.	. sonas		
9. Source of water added N/A	1	15. COD	m	يما
9. Source of water actien			· · · · · · ····	5/1
				1
10. Analysis performed on water added?	Yes I No	ļ		i
(If yes, attach results)				
16. Addizional comments on development:				
WELL PREVIOUSLY DEVELOP	EP BY KRK			
Mette memory product				
,		· //		
				•
				¥
Well developed by: Person's Name and Firm	1	I hereby certify	that the above information	is true and correct to the be
	•	of my knowledg	that the above information e.	
	8			
Name: TERRY J. MARC	า <i>น</i>	Signature:		
THERE TERRY J. MARC	- F:			
Firm: WARZYN, INC.		Print Initials:		
VNAKLIN, INC.		X		
i		Firm:	·	
		l		

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

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· .	•		•			1.0000-000
e of Wisconsin	Route to: Solid V	Vaste 🛛 Haz. Waste I			MONITORING WEL Form 4400-113A	L CONSTRUCTION Rev. 4-90
artment of Natural Resources	Env. Response &	Revair 🗌 Underzro	und Tanks [] O	dh= 🛛		
Facility/Project Name .	عا	cal Grid Location of	Well	ΠΕ	Well Name	(~ \ ·
TILTON	_	ft_ []	<u>s</u>		MW3(	
ility License, Permit or Monitorir	ig Number Gr	id Origin Location	•		Wis. Unique Well Number	NDNK Well-Numoe
	L	L	_ Lõng	or		
Type of Well Water Table Observat	tion Well X 11 S,	. Plane	ft. N.	ft. E.	Date Well Installed	EPIEDI
Piezometer	T12 E	in Leasting of Wa	stelSource		<u> </u>	103193
Junce Well Is From Waste/Source	Boundary	<u>1/4 of 56 1/4 of S</u>	265 221	n 71 25	Well Installed By: (Perso	n's Name and Firm)
	ft. h	<u>1/4 of 56 1/4 of S</u>	ec. <u>3</u> , 1. <u>6</u> N	, <u>R. <u>P.</u> [] W.</u>	Eugene Lohn	. · · · /
Well A Point of Enforcement Std.		ocation of Well Relat	ive to Waste/Sour	ce		
	Abolication	u 🛛 Upgradient	•		J+J Soil T	esting Ltd.
🖸 Yes		d 🗌 Downgradient	I BE NOLAN	. Cap and lock		
A. Protective pipe, top elevation	-650.70 fr	MSL-	······································	•		X Ys D Yo
No. 11 Yes	630 30 ft				verpipe: Flush - Mou	
Herr carmer, mo and and		·. · ·	HL	a. Inside diam	velar:	_8. Sin
C. Land surface elevation	. 6507 ft	MSL _	115	b. Length:	the second strength of the	12.0fc
C. Land Surface C.C. mon			- times	c. Material:	•	Suel 🔲 04
. Surface seal, bottom_ 649 .	<u></u> fr_MSL or <u></u>	<u>0 n.</u>		A	luminum	Ctr 🖗 💹
2. USCS classification of soil no		- Te :	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	d. Additiona	l protection?	I Yo K No
GP GM GM GC GG G	ẃп sw п s			If yes, des	scribei isofra	
SM D SC D MLD N	AHD CLAR		$\amalg \sqcup \setminus$			Benioniie 🛛 30
Bechack []				3. Surface seal:	·	Concrete 🖾 01
13. Sieve analysis attached?	JYa ⊠Y	Ň.			. \	Ober 🔲 🏼
	Rotary D	50		4 Marmial ber	tween well casing and prote	
14. Drilling method used:	•			· / · · · · · · · · · · · · · · · · · ·	in our neir trading mit prom	Benonia 🗆 30
	v Stem Auger				Å.~	mular seese and a see
				5 .		
					ИD	Other 🖉 🦉
15. Drilling fluid used: Warr I				≥5. Armular sp	ace seal: a. Gr.	mular Bentenute 🍇 🔾
Drilling Mud	03 Nore	99		ъLъ	s/g2l mud weight Ber	onlie-sand shurry 🔲 3 d
				cLb	os/gal mud weight )	Bentenite shurry [] 3
16. Drilling additives used?		10			Bentonite Bentor	
· 월 · ·	•		顧顧	c	Ft <sup>o</sup> volume added for a	my of the above
Descrite				f How in	stalled:	Trenis 🔲 0
17. Source of water (attach analy	ysis):	and the second	屬. 屬			Tranie pumped 🛛 0
						Gravity 🛛 0
			屬麗	6. Bentonite	seal: a B	Ienenie granules 🛛 3
	9 LIST	06			in. []3/8 in. [] 1/2 in."	
E. Bentonite seal, top _ 64	I I R. MSL or	-1 "				
		225		7 Eine and	i material: Manufacturer,	
F. Fine sand, top <u>64</u>	2.7 ft. MSL or _	<u></u>			Flint Filter San	
	1		同日   / /			
G. Filter pack, top _64	6 7 fL MSL or	<u>7</u> .2 ".\_ `			ne acided 1/2 Bag	
	<u> </u>			8. Filter pa	ek material: Manufacturer.	, הסכום השהי שהם הכיום
H. Screen joint, 10p _64	57 ft. MSL or	ft		2 Red	Flint Filter Sand.	+ Gravel 30
					me scilled 7 Bags	f; <sup>3</sup>
- I. Well bottom _63	57 fl. MSL or	150 ft.		9. Well car		PYC schechule 40 🛛
	-				Fiush trended	PYC scheelule 80 🔲
J. Filter pack, bottom _63	57 fL MSL or	150 fr.	イ価ナ			
				10. Screen	material: Flush - thread	ded PVC schuddes 40
K. Borchole, bottom _62	557 fr MSI or	150 16		a Scre	,	Factory cut Ø.
K. Borchole, conom	:2 .1 in mon or				~	Cominuous slot 🛙
	07.	· · ·				0ther []
L Borehole, diameter	8 7 in.			·	ulacater TIMCO	U
· · · · · · · · · · · · · · · · · · ·			$\sim$	b. Man c. Slot		0.01
M. O.D. well casing $2$ .	<u>40</u> in.		Ň	<b>\</b>	aed length:	<i>L</i> 0
				<b>\</b>		
N. LD. well casing 2	<u>0</u> <u>0</u> in.	7 · ·		11. Backfil	ll material (below filter pac	k): Name K
		ł				
I hereby certify that the	information or	this form is true	and correct to	o the best o	of my knowledge.	·
Signature		Firm				
		· · · ·				

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch.144, Wis. Stats., failure to file this form may result in a forfeiture of not less than \$10,000 for each

#### MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 4-90

Route to: Solid Waste Haz. Waste Wastewater

Facility/Project Name	County Name		Well Name	
VILLARD AVE. PHASE II E5A Facility License, Permit or Monitoring Number	MILWA	UKEE	MW3	
Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Nu	mber DNR Well	Number
1. Can this well be purged dry?	🛛 Yes 🗖 No		Before Development	A free Development
1. Call this well be purged ury?		11. Depth to Water	Berole Development	After Development
2. Well development method		(from top of	12. 28 ft.	
surged with bailer and bailed	⊠ 41	well casing)		· · ·
surged with bailer and pumped				
surged with block and bailed	$\Box 42$	Date	04.00.00	
surged with block and pumped	$\Box 42$	Dan	$b \underbrace{O}_{m m} \frac{4}{d} \underbrace{O}_{d} \frac{7}{y} \underbrace{93}_{y}$	//
surged with block, bailed and pumped	$\Box 70$			
compressed air		Time	c. <u>12</u> : <u>20</u> ⊠ p.m.	: ⊥m
bailed only		Tune	c. <u>I a</u> : <u>a o a</u> p.m.	: p.m
		12. Sediment in well	0.5 inches	
pumped only pumped slowly	$\Box$ 51	bottom	$\underline{\smile}$ . $\underline{\supset}$ inches	$\underline{O}$ . $\underline{O}$ inches
Outer		13. Water clarity		
		15. mater clarity	Clear 🗖 10 Turbid 🖾 15	Clear 20
3. Time spent developing well				Turbid 22 25
2. Thue shell developing well	$-\underline{75}$ min.		(Describe) REDDISH BROWN	(Describe) <u>REDDISH - BROWN</u>
	14.6 fc			
4. Depth of well (from top of well casisng)	<u></u> . <u>@</u>		MODERATELY	SLIGHTLY TURBIC
5. Inside diameter of well	<u>205</u> in		TURBID	
5. Inside diameter of well				
6. Volume of water in filter pack and well				
casing	$-\sqrt{2}$ . $\exists$ gal.			I
1	-	Fill in if drilling flu	ids were used and well is	at and in master familian
7. Volume of water removed from well	25.0 g1l.		ids were used and well is	It solid wasta rachity:
The followed for weather the followed for weather	$\underline{-\underline{\circ}}$ $\underline{\circ}$ , $\underline{\circ}$ 5 <sup>±1</sup> .	14. Total suspended	mg/	~
8. Volume of water added (if any)	gal.	solids	·	└ <u> </u>
	-	. 301103		
9. Source of water added N/A		15. COD	m.a.	1
			· · · · '''''''''''''''	· · _ ·
10. Analysis performed on water added?	I Yes I No	ł		1
(If yes, attach results)				10.0mg
16. Additional comments on development:				
WELL BAILED DRY AND AL	LOUISO - PAG-1	ALLY PECHAPES	HAIN BRIGH NRY	2 EDDEDNA
				,,
Weil developed by: Person's Name and Firm		I harabu andibi th	at the about information	
in en developed by. Person's Name and Pim	L	of my knowledge	at the above information i	s and and correct to the
				£
North Trans T M.	· · · ·	Signature:		
Name: TERRY J. MARC	- H		<u> </u>	· · · · · · · · · · · · · · · · · · ·

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

Firm:

#### MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 4-90

Route to: Solid Waste Haz. Waste Wastewater Env. Response & Repair Underground Tanks Other ....

acility/Project Name	County Name	-	Well Name	
VILLARD AVE. PHASE IL ESA acility License, Permit or Monitoring Number	MILWAI	IKEE	I MW3	
acility License, Permit or Monitoring Number	Counry Code <u>4</u> 1	Wis. Unique Well Nu	mber DNR Wel	l Number
. Can this well be purged dry?	Yes 🗆 No		Before Development	After Development
		11. Depth to Water		That Do tologinene
2. Well development method		(from top of	22.28ft.	
surged with bailer and bailed	41	well casing)		
•	61			
surged with block and bailed	42	Date	×04107193	
surged with block and pumped	62		b. <u>04/07/93</u> mmddyyy	mm dd yy
surged with block, bailed and pumped	70			
compressed air	20	Time	c. <u>/ 2</u> : <u>20</u> M p.m.	
bailed only	10		\$	
pumped only	51	12. Sediment in well	0.5 inches	$\underline{O}, \underline{O}$ inches
pumped slowly	dala dala d	bottom -	_	
Other	<u></u>	13. Water clarity	Cierr 🔲 10 Turbid 🖾 15	Clear 20
				Turbic 🖾 25
3. Time spent developing well	-75 min.		(Describe) <u>REDDISH BROWN</u>	(Describe) REDDISH - BROWN
	14.6 EL		MODERATELY	
4. Depth of well (from top of well casisng)	· · · · · · · · · ·		TURBID	SLIGHTLY TURBID
5. Inside diameter of well	205in		TURBED	•
				•
6. Volume of water in filter pack and well				
casing	$\underline{/2.3}_{g2l.}$		/	
	•	Fill in if drilling flu	uids were used and well is	at solid waste facility: 👋
7. Yolume of water removed from well	<u>25.0</u> gzl.			
		14. Total suspende	d mg	Λ
8. Volume of water added (if any)	gal.	. solids		
9. Source of water added N/A		15. COD		
9. Source of water added //A		15.000	<u> </u>	y/mg/
			•	
10. Analysis performed on water added?	I Yes I No	l.		l
(If yes, attach results)				
		×		
16. Additional comments on development:				1
WELL BAILED DRY AND ALLOW	JED TO PARTI	ALLY RECHARGE	E AND BAILED DR-	: 4 ADDITISNAL
		ŧ		
· ·				
			·····	
Well developed by: Person's Name and Firm		of my knowledg	that the above information	is true and correct to the b
				· · · · · · · · · · · · · · · · · · ·
The TANK	•	Signature:		
Name: TERRY J. MARCH				
		Print Initials:		
Em. LIADZVIN THE				
Firm: WARZYN INC.				

The of Wisconsin Route to: Solid	Waste Haz, Waste 🗆	Wastewater	MONITORING WELL ( Form 4400-113A	CONSTRUCTION Rev. 4-90
	& Repair Underground	Tanks C Other C	Well Name	
TILTON	Local Grid Location of Wel fr. $\Box$ N.	fr. E.	MW4 BL	-
fility License, Permit or Monitoring Number	Grid Origin Location	.cng or	Wis. Unique Well Number 1	
Type of Well Water Table Observation Well 🔯 11 Piezometer 🛛 12	St. Plane f Section Location of Waster	L. N,ft. E.	Date Well Installed m m	03193
stance Well Is From Waste/Source Boundary ft.	NW 1/4 of $\frac{56}{1/4}$ 1/4 of Sec.	36, T. & N, R. 21		Name and Firm)
Well A Point of Enforcement Std. Application?	u Upgradient d Downgradient	s 🔲 Sidegradient	J+J Soil Tes	
A. Protective pipe, top elevation _ 650.37	fL MSL	1. Cap and loc!	k? overpipe: Flosh-moun	₽ Y= D Xo
Well casing, top elevation <u>64997</u>	• • • • •	a. Inside dia		_8:5in _1.0fr
C. Land surface elevation650.4		b. Length: c. Material:		Sizel 🔲 04
Surface seal, bottom_ 1049.4 ft MSL or _ 2. USCS classification of soil near screen:			2minum	Ctre 24 🔤 Ys 1/2 No
GP GM GC GC GW SW G SM G SC ML MH CL M Betrock G	CH LL I NU -		scribei	Bentonite 1 30 Concrete 2 01
13. Sieve analysis attached? 🛛 Yes 🖉				Ober 🛛 📖 ``
14. Drilling method used: Rotary D Hollow Stem Auger	1 50 K41	4. Material be	tween well casing and protectiv	Bentonite 🔲 30
- Other E		SA SA	+	□ [res = ==================================
15. Drilling fluid used: Water [] 02 Air [ Drilling Mud [] 03 Nore [	-Xo 1 50 X41 1 1 01 3-99	5. Armular sy bL	pace seal: a. Granul bs/gal mud weight Bertonic	lar Bentonite 🛛 33 e-sand shurry 🗆 35
16. Drilling additives used? 🗆 Yes 🗜	\$7%	cL d%	bs/gal mud weight Ben BentoniteBentonite- Ft <sup>3</sup> volume added for zny	cement grout 🛛 50
Describe		f. How i	nstalled:	Tremie 🗆 01
17. Source of water (attach analysis):	·		1	Gravity B 03
E. Bentonite seal, top _ 649.4 fr. MSL or		6. Bentoniu b. 11/	e seal: a. Benu 4 in, □3/3 in. □1/2 in. Benu	nice granules (A. 33 niconité pellecs (D. 32)
F. Fine sand, top _ [, 47 4 ft. MSL or		7. Fine san a Red	d material: Manufacturer, prox Flight Filter Sund + Gra	duct name & mesh size
G. Filter pack, top 6464 ft. MSL or	o fr	b. Yolu 8 Filter pr	me added 1/2 Bag	£ <sup>3</sup>
H. Screen joint, top _ 6454 ft. MSL or		$\frac{1}{1} \sum \frac{1}{1}$	Flint Filter Sand +	
I. Well bottom _ 635.4 fr. MSL or	-15.0 ft.	9. Well ca	ising: Flush threaded PY(	C schechule 40 🛛 23 C schechule 80 🗍 24
J. Filter pack, bottom _ <u>635.4</u> ft. MSL or	-15.0 ft.		material: <u>Flush-threaded</u>	Other []
K. Borehole, bottom _ 635. 4 ft. MSL o	r_15 0 ft.		een type:	Factory cut 🖾 11 Continuous slot 🔲 01
L. Borehole, diameter <u>8.2</u> in.		<u>касса</u> . b. Ма	nulacturer TIMLO	Other 🗆 🕎
M. O.D. well casing $2.40$ in.		\	ued length:	0. <u>010</u> in 10. <u>0</u> f:
N. I.D. well casing $2.00$ in.			Il material (below filter peck):	Nare 12 14 Other 🛛 📃
I hereby certify that the information of Signature	n this form is true ar	nd correct to the best of	DI MY KNOWIEDGE.	

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch.144, Wis Stats., failure to file this form may result in a forfeiture of not less than \$10,000 for each

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MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 4-90

Route to: Solid Waste 🗆 Haz. Waste 🔲 Wastewater 🗋

Env. Response & Repair 🔲 Underground Tanks 🗌 Other 🔲 💶

Facility/Project Name	County Name	-	Well Name	
VILLARD AVE. PHASE IL ESA Facility License, Permit or Monitoring Number	MILWA	UKEE	MW4	
Facility License, Permit or Monitoring Number	County Code 4_	Wis. Umque Well Nu	mber DNR We	I Number
1. Can this well be purged dry?	🗆 Yes 🛛 No	11 Denit to Water	Before Development	After Development
2. Well development method surged with bailer and bailed	□ 41	11. Depth to Water (from top of well casing)	₂ <u>2.02</u> ft.	2_ <u>04</u> ft.
surged with bailer and pumped surged with block and bailed surged with block and pumped	☑ 61 □ 42 □ 62	Date	b. <u>04107193</u> mmddyyy	$\frac{O}{m}\frac{4}{m}/\frac{O}{d}\frac{7}{d}/\frac{9}{y}\frac{3}{y}$
surged with block, bailed and pumped compressed air bailed only	□ 70 □ 20 □ 10		c:⊠ p.m.	
pumped only pumped slowly Cther	5 1 5 0 0 2	<ul><li>12. Sediment in well bottom</li><li>13. Water clarity</li></ul>	_ <u>3</u> . <u>O</u> inches Clear □ 10	<u></u> <u></u> <u></u>
3. Time spent developing weil	<u> </u>		Turbid 🛛 15 (Describe) DARK GRAY	Turbid 🛛 25 (Describe) GRAY
4. Depth of well (from top of well casisng)	<u>_/4.2</u> fr		NERY TURBID MUCH SILT	LESS TURBID SOME SILT
<ol> <li>Inside diameter of well</li> <li>Volume of water in filter pack and well</li> </ol>	<u>2.05</u> in.		AND FINE SAND	
casing	$-\underline{12} \cdot \underline{2} \text{ gal}.$	Fill in if driiling flui	ds were used and well is	at solid waste facility:
<ol> <li>7. Volume of water removed from well</li> <li>8. Volume of water added (if any)</li> </ol>	O gal.	14. Total suspended solids	mg/	1 mg.
9. Source of water added (II ally)	ga.	15. COD	mg	1mg
10. Analysis performed on water added? (If yes, attach results)	Yes No			

Weil deve	eloped by: Person's Name and Firm	I hereby certify that the above information is true and correct to the best of my knowledge.
Name:	TERRY J. MARCH	Signature:
Firm:	WARZYN, INC.	Print Initials:
		Firm:

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

- Contraction

## MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 4-90

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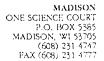
acılity/Project Name	C		Name	-	Well Name	
VILLARD AVE. PHASE IL ESA		<u> </u>	ILWA	UKEE	1 MW4	
acility License, Permit or Monitoring Number	- C		Code	Wis. Unique Well Nu	mber   DNR We	ll Number
1. Can this well be purged dry?	🗆 Yප	×	No		Before Development	After Development
× ×				11. Depth to Water	2 '	
2. Well development method				(from top of	a2.02ft.	2.04:
surged with bailer and bailed	□ 41			well casing)		
surged with bailer and pumped	61					
surged with block and bailed	□ 42	2		Date	$b \underbrace{O4}_{m m} \underbrace{O7}_{d d} \underbrace{93}_{y y}$	04107193
surged with block and pumped	0 62	2			mm dd yy	mmddy
surged with block, bailed and pumped	<b>D</b> 70	)			c: 🖸 a.m.	;;;
compressed air	□ 20	2		Time	c: 🛛 p.m	·; 🖸 P.
bailed only		0				
pumped only	5	1		12. Sediment in well	$\underline{3}$ . O inches	$- \underline{0} \cdot \underline{0}$ inch
pumped slowly				bottom		
Other		2		13. Water clarity	Clear 🔲 10	Clear 🗖 2'0
					Turbid 🖾 15	Turbid 🖾 25
3. Time spent developing well	9	Оm	in.		(Describe)	(Describe)
	· · · ·				DARK GRAY	GRAY
4. Depth of well (from top of well casisng)	4	.21	fL		VERY TURBID	LESS TURBID
•					MUCH SILT	SOME SILT
5. Inside diameter of well	_2.1	05	in.		AND FINE SAND	<u> </u>
				A		-
6. Volume of water in filter pack and well	1-	- -			, 	_ !
casing	_/2	•••	gal.		·	
	_ 20	$\sim$	1		ids were used and well is	
7. Volume of water removed from well	2	<u> </u>	ष्ट्रचा.		m2	л
9. Martine added (if any)			1	14. Total suspended solids	· · ·	······································
8. Volume of water added (if any)			gar.	. 30003		
9. Source of water added N/A			,	15. COD	m	sA
10. Analysis performed on water added?	$\Box Y$	ස	D No			
(If yes, attach results)						
16. Additional comments on development:				······································		
·						
4						<i></i>
					2 	
Weil developed by: Person's Name and Firm	1			l hereby certify the of my knowledge	at the above information	is true and correct to th
				of my knowledge	•	
				Signature:		
Name: ERRY J. MARC	:н			_	······································	
				Print Initials:		
Firm: WARZYN, INC.			<del></del>	_		
				Firm:		

# D

Second Concernance

meanin an an a' the

# SOIL ANALYTICAL RESULTS



#### LABORATORY RESULTS VOLATILE ORGANIC REPORT

#### Project: Villard Phase II

WARZ

#### Project #: 27337.01

Location: Milwaukee, Wisconsin

Date Sampled: 9/20/91

Ck'd:- K-App'd: Juni Date Issued: 10/5/51

Compound	Reporting <u>Limits (ug/kg)</u>	3337-001 <u>B1-S2</u>	3337-002 <u>B1-S7</u>	3337-003 <u>B2-S7</u>
Benzene	5.0	< 5.0	< 5.0	< 5.0
Bromodichloromethane	5.0	< 5.0	< 5.0	< 5.0
Bromoform	5.0	< 5.0	<b>&lt;</b> 5.0	< 5.0
Bromomethane	10	< 10	< 10	<10
Carbon tetrachloride	5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	5.0	<5.0	25	< 5.0
Chlorodibromomethane	5.0	< 5.0	<250 (a)	< 5.0
Chloroethane	10	<10	<10	<10
2-Chloroethylvinyl ether	50	<50	< 50	< 50
Chloroform	5.0	< 5.0	<5.0	<5.0
Chloromethane	10	< 10	<10	<10
1,2-Dichlorobenzene	5.0	< 5.0	< 5.0	< 5.0
1,3-Dichlorobenzene	5.0	< 5.0	<5.0	< 5.0
1,4-Dichlorobenzene	5.0	< 5.0	<5.0	< 5.0
1,1-Dichloroethane	5.0	< 5.0	< 5.0	< 5.0
1,2-Dichloroethane	5.0	< 5.0	<5.0	< 5.0
1,1-Dichloroethene	5.0	< 5.0	< 5.0	< 5.0
cis-1,2-Dichloroethene	5.0	2800	<20 (a)	<5.0
trans-1,2-Dichloroethene		26	<5.0	<5.0
1,2-Dichloropropane	5.0	< 5.0	<5.0	< 5.0
cis-1,3-Dichloropropene	5.0	< 5.0	< 5.0	< 5.0
trans-1,3-Dichloroproper	ne 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	5.0	< 5.0	< 5.0	< 5.0
Methylene chloride	15	<15	<15	<15
1,1,2,2-Tetrachloroethan		< 5.0	< 5.0	< 5.0
Tetrachloroethene	5.0	- 37000	140000	< 5.0
Toluene	5.0	< 5.0	< 5.0	< 5.0
1,1,1-Trichloroethane	5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	5.0	< 5.0	< 5.0	< 5.0
Trichloroethene	5.0	3000	420 (b)	< 5.0
Trichlorofluoromethane		< 5.0	< 5.0	< 5.0
Vinyl chloride	5.0	31	< 5.0	< 5.0
m and p-Xylene	10	< 10	< 10	< 10
o-Xylene	5.0	<5.0	< 5.0	< 5.0
		1		

(a) Elevated quantitation limit necessary to overcome interference.

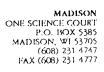
(b) Result should be considered estimated, concentration exceeds working calibration range.

Solids are analyzed on an "as received" or wet weight basis.

Method Reference: SW846, "Test Methods for Evaluating Solid Waste", November 1986. Method 8010/8020.

WI Lab Certification ID#: 113138300 [var-Oct-116] 27337.01-lab -1-

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#### VOLATILE ORGANIC REPORT TILTON PROPERTY MILWAUKEE WI Project Number: 2733702

Sample #	Site	Test	Result	RL	Matrix	Units	Footnotes
6349-0001	B3,S1 1.0-3.0	Benzene	< 5	5	Solid	ug/kg	
	FT.	Bromodichloromethane	< 5	5	Solid	ug/kg	
		Bromoform	< 5	5	Solid	ug/kg	
		Bromomethane	< 10	10	Solid	ug/kg	
		Carbon tetrachloride	< 5	5	Solid	ug/kg	
		Chlorobenzene	< 5	5	Solid	ug/kg	
	κ.	Chlorodibromomethane	< 5	5	Solid	ug/kg	
		Chloroethane	< 10	10	Solid	ug/kg	
		2-Chloroethylvinyl ether	· < 50	50	Solid	ug/kg	
		Chloroform	< 5	5	Solid	ug/kg	
		Chloromethane	< 10	10	Solid	ug/kg	•
		1,2-Dichlorobenzene	< 5	5	Solid	ug/kg	$\sum_{i=1}^{n} \frac{1}{i} \sum_{i=1}^{n} \frac{1}{i} \sum_{i$
		1,3-Dichlorobenzene	< 5	5	Solid	ug/kg	· · · · · · · · · · · · · · · · · · ·
		1,4-Dichlorobenzene	· < 5	5	Solid	ug/kg	
		1,1-Dichloroethane	< 5	5	Solid	ug/kg	• •
		1,2-Dichloroethane	< 5	5	Solid	ug/kg	
		1,1-Dichloroethene	< 5	5	Solid	ug/kg	
		cis-1,2-Dichloroethene	8.4	5	Solid	ug/kg	
		trans-1,2-Dichloroethene	< 5	5	Solid	ug/kg	
		1,2-Dichloropropane	< 5	5	Solid	ug/kg	
		cis-1,3-Dichloropropene	< 5	5	Solid	ug/kg	
		trans-1,3-Dichloropropene	< 5	5		ug/kg	,
		Ethylbenzene	< 5	5		ug/kg	
		Methylene chloride	20	15	Solid	ug/kg	A9
	`	1,1,2,2-Tetrachloroethane	< 5	5	Solid	ug/kg	4
		Tetrachloroethene	33	5	Solid	ug/kg	
	х	Toluene	< 5	5		ug/kg	
	. /	1,1,1-Trichloroethane	< 5	5	i Solid	ug/kg	
<i>v</i>		1,1,2-Trichloroethane	< 5	. 5	Solid	ug/kg	
		Trichloroethene	7.7	5	i Solid	ug/kg	
		Trichlorofluoromethane	< 5	5	5 Solid	∪g/kg	
		Vinyl chloride	< 5	-	5 Solid	ug/kg	
		m + p-Xylene	< 10	10	) Solid	ug/kg	
		o-Xylene	< 5		5 Solid	ug/kg	
		·					
		Sample Date: 03-MAR-	73				
		Analysis Date: 11-MAR-	93				

Note: Results in ug/kg are reported on an "as received" or wet weight basis.

RL = Reporting Limit WI Lab Certification ID#: 113138300

WARZY

Ck'd: CUK App'd+ Ar Date Issued: 3/19/93



#### MADISON ONE SCIENCE COURT P.O. IXX 5385 MADISON, WI 53705 (608) 231 4747 FAX (608) 231 4777

#### VOLATILE ORGANIC REPORT TILTON PROPERTY MILWAUKEE WI Project Number: 2733702

Sample #	Site	Test	Result	RL	Matrix	Units	Footnotes
349-0002	B3,S3 6.0-8.0	Benzene	< 5	5	Solid	ug/kg	
J47 000L	FT.	Bromodichloromethane	< 5	5	Solid	ug/kg	
	11.	Bromoform	< 5	5	Solid	ug/kg	
		Bromomethane	< 10	10	Solid	ug/kg	
· .	8	Carbon tetrachloride	< 5	5	Solid	ug/kg	
		Chlorobenzene	< 5	5	Solid	ug/kg	
		Chlorodibromomethane	< 5	<sup>`</sup> 5	Solid	ug/kg	
		Chloroethane	< 10	10	Solid	ug/kg	
		2-Chloroethylvinyl ether	< 50	50	Solid	ug/kg	
		Chloroform	< 5	5	Solid	ug/kg	
		Chloromethane	< 10	10	Solid	ug/kg	<b>、</b>
		1,2-Dichlorobenzene	< 5	5	Solid	ug/kg	
		1,3-Dichlorobenzene	< 5	5	Solid	ug/kg	
		1,4-Dichlorobenzene	< 5	5	Solid	ug/kg	/
		1,1-Dichloroethane	< 5	<b>5</b>	Solid	ug/kg	
		1,2-Dichloroethane	< 5	5	Solid	ug/kg	
	,	1,1-Dichloroethene	< 5	5	Solid	ug/kg	χ
		cis-1,2-Dichloroethene	36	5	Solid	ug/kg	
		trans-1,2-Dichloroethene	< 5	5	Solid	ug/kg	
		1,2-Dichloropropane	< 5	5	Solid	ug/kg	
		cis-1,3-Dichloropropene	< 5	5	Solid	ug/kg	
		trans-1,3-Dichloropropene	< 5	5	Solid	ug/kg	
		Ethylbenzene	· < 5	5	Solid	ug/kg	
		Methylene chloride	< 15	15	Solid	ug/kg	
		1,1,2,2-Tetrachloroethane	< 5	5	Solid	ug/kg	
		Tetrachloroethene	< 5	5	Solid	ug/kg	•
		Toluene	< 5	5	Solid	ug/kg	
		1,1,1-Trichloroethane	< 5	· 5	Solid	ug/kg	
		1,1,2-Trichloroethane	< 5	5	Solid	ug/kg	
,	1	Trichloroethene	< 5	5	Solid	ug/kg	
	1	Trichlorofluoromethane	< 5	5	Solid	ug/kg	а 1
		Vinyl chloride	< 5	5	Solid	ug/kg	,
		m + p-Xylene	< 10	10	Solid	ug/kg	
		o-Xylene	< 5	5	Solid	ug/kg	

Sample Date: Analysis Date: 03-MAR-93 11-MAR-93

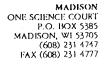
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Note: Results in ug/kg are reported on an "as received" or wet weight basis.

RL = Reporting Limit

WI Lab Certification ID#: 113138300

Ck'd: dlk App'd: Thu





#### VOLATILE ORGANIC REPORT TILTON PROPERTY MILWAUKEE WI Project Number: 2733702

Sample #	Site	Test	Result	RL	Matrix	Units	Footnotes
6349-0003	B4,S3 6.0-8.0	Benzene	< 5	5	Solid	ug/kg	
	FT.	Bromodichloromethane	< 50	5	Solid	ug/kg	A3
Ű	(1 <b>.</b>	Bromoform	< 50	5	Solid	ug/kg	A3
		Bromomethane	< 100	10	Solid	ug/kg	A3
/		Carbon tetrachloride	< 50	5	Solid	ug/kg	A3
		Chlorobenzene	< 50	5	Solid	ug/kg	A3
		Chlorodibromomethane	< 50	5	Solid	ug/kg	A3
		Chloroethane	< 100	10	Solid	ug/kg	A3 .
		2-Chloroethylvinyl ether	< 500	50	Solid	ug/kg	A3
		Chloroform	< 50	5	Solid	ug/kg	A3
		Chloromethane	< 100	10	Solid	ug/kg	A3
		1,2-Dichlorobenzene	< 50	5	Solid	ug/kg	A3
		1,3-Dichlorobenzene	< 50	5	Solid	ug/kg	A3
		1,4-Dichlorobenzene	< 50	5	Solid	ug/kg	A3
i.		1,1-Dichloroethane	< 50	5	Solid	ug/kg	A3
		1,2-Dichloroethane	< 50	5	Solid	ug/kg	A3
		1,1-Dichloroethene	< 50	5	Solid	ug/kg	A3
		cis-1,2-Dichloroethene	700	5	Solid	ug/kg	
		trans-1,2-Dichloroethene	< 50	5	Solid	ug/kg	A3
		1,2-Dichloropropane	< 50	5	Solid	ug/kg	A3
		cis-1,3-Dichloropropene	< 50	5	Solid	ug/kg	A3
		trans-1,3-Dichloropropene	< 50	5	Solid	ug/kg	A3
	•	Ethylbenzene	< 5	5	Solid	ug/kg	
		Methylene chloride	< 150	15	Solid	ug/kg	A3 ×
		1,1,2,2-Tetrachloroethane	< 50	5	Solid	ug/kg	A3
		Tetrachloroethene	23000	5	Solid	ug/kg	
		Toluene	< 5	5		ug/kg	· · ·
		1,1,1-Trichloroethane	< 50	5		ug/kg	A3
		1,1,2-Trichloroethane	< 50	5		ug/kg	A3
		Trichloroethene	490	5		ug/kg	
		Trichlorofluoromethane	< 50			ug/kg	A3
		Vinyl chloride	< 50			ug/kg	A3
		m + p-Xylene	< 10			ug/kg	
		o-Xylene	< 5	5	Solid	ug/kg	

Sample Date: Analysis Date: 03-MAR-93

11, 15, 16-MAR-93

Note: Results in ug/kg are reported on an "as received" or wet weight basis.

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RL = Reporting Limit

WI Lab Certification ID#: 113138300



#### MADISON ONE SCIENCE COURT P.O. IKOX 5385 MADISON, WI 53705 (608) 231 4747 FAX (608) 231 4777

#### VOLATILE ORGANIC REPORT TILTON PROPERTY MILWAUKEE WI Project Number: 2733702

Sample #	Site	Test	Result	RL	Matrix	Units	Footnotes
349-0004	B4,S4 8.5-10.5	Benzene	< 5	 5	Solid	ug/kg	
349-0004	FT.	Bromodichloromethane	< 5	5	Solid	ug/kg	
	F.I.+	Bromoform	< 5	5	Solid	ug/kg	
	ſ	Bromomethane	< 10	10	Solid	ug/kg	
		Carbon tetrachloride	< 5	5	Solid	ug/kg	ę.
		Chlorobenzene	< 5	5	Solid	ug/kg	
		Chlorodibromomethane	< 5	5	Solid	ug/kg	
		Chloroethane	< 10	10	Solid	ug/kg	Å
	,	2-Chloroethylvinyl ether	< 50	50	Solid	ug/kg	:
		Chloroform	< 5	5	Solid	ug/kg	
		Chloromethane	< 10	10	Solid	ug/kg	
		1,2-Dichlorobenzene	< 5	5	Solid	ug/kg	
		1,3-Dichlorobenzene	< 5	5	Solid	ug/kg	
		1,4-Dichlorobenzene	< 5	5	Solid	ug/kg	
		1,1-Dichloroethane	, - < 5	5	Solid	ug/kg	
		1,2-Dichloroethane	< 5	5	Solid	ug/kg	
		1,1-Dichloroethene	< 5,	5	Solid	ug/kg	
		cis-1,2-Dichloroethene	220	5	Solid	ug/kg	
		trans-1,2-Dichloroethene	45	5	Solid	ug/kg	
		1,2-Dichloropropane	< 5	5	Solid	ug/kg	
		cis-1,3-Dichloropropene	< 5	5	Solid	ug/kg	
		trans-1,3-Dichloropropene	< 5	5	Solid	ug/kg	
		Ethylbenzene	< 5	5	Solid	ug/kg	
		Methylene chloride	< 15	15	Solid	ug/kg	×
		1,1,2,2-Tetrachloroethane	< 5	5	Solid	ug/kg	1
		Tetrachloroethene	33	5	Solid	ug/kg	
		Toluene	< 5	5	Solid	ug/kg	
		1,1,1-Trichloroethane	< 5	5	Solid	ug/kg	
		1,1,2-Trichloroethane	< 5	5	Solid	ug/kg	
		Trichloroethene	9.1	5		ug/kg	
		Trichlorofluoromethane	< 5	- 5	Solid	ug/kg	
		Vinyl chloride	26	5		ug/kg	
,		m + p-Xylene	< 10	10	Solid	ug/kg	
		o-Xylene	< 5	5		ug/kg	$C_{\rm eff} = 0.01$

Sample Date: Analysis Date: 03-MAR-93 11, 12-MAR-93

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11, 12-MA

Note: Results in ug/kg are reported on an "as received" or wet weight basis.

RL = Reporting Limit WI Lab Certification ID#: 113138300 Ck'd: CLR App'd: Shi Date Issued: 3/19/93

#### STANDARD REPORT FOOTNOTES

A1 Elevated quantitation limit due to low sample volume.

WARZYN

- A2 Elevated quantitation limit necessary to overcome interference.
- A3 Elevated quantitation limit necessary to overcome difficult matrix.
- A4 Result should be considered estimated with possible low bias due to unknown interference.
- A5 Result should be considered estimated with possible low bias due to difficult matrix.
- A6 Result should be considered estimated with possible low bias as indicated by method QC.
- A7 Result should be considered estimated with possible high bias due to unknown interference.
- A8 Result should be considered estimated with possible high bias due to difficult matrix.
- A9 Result should be considered estimated with possible high bias as indicated by method QC.
- A10 Result should be considered estimated due to non-homogeneous sample matrix.
- A11 Sample received past recommended hold time.
- A12 Analysis requested past recommended hold time.
- A13 Initial analysis performed within hold time; confirmation analysis performed past recommended hold time. Results from repeat analysis are reported.
- A14 Initial analysis performed within hold time; necessary dilution performed past recommended hold time. Results from repeat analysis are reported.
- A15 Result should be considered estimated with possible high bias; analyte detected in method blank.
- A16 Elevated quantitation limit indicated by batch QC.
- W1 Sample contained <0.5% solids; filtered sample was analyzed as the TCLP extract.
- W2 Analysis performed on a 10% sample solution (10 grams sample + 90 mL calcium chloride solution).
- W3 There is no regulatory holdtime for sulfite. Analysis is recommended as soon as possible after collection.
- M1 Results are qualitative only, as requested.
- M2 Total analysis performed; total concentration indicates that TCLP regulatory level could not be exceeded.
- G1 Result should be considered estimated, concentration exceeds working calibration range.
- G2 Elevated quantitation limit due to the concentration of petroleum hydrocarbons in the sample.
- G3 Elevated quantitation limit due to the concentration of non-specific hydrocarbons in the sample.
- G4 Analyte coelutes with \_\_\_\_\_; result calculated from calibration standards in a 1:1 ratio of these two compounds.
- G5 Sample required extensive cleanup; Endrin Aldehyde is not recovered from these techniques.
- G6 Petroleum-type odor detected from this sample.
- G7 Elevated quantitation limit due to the concentration of PCBs in the sample.
- G8 Result should be considered estimated with possible high bias due to coelution with an additional hydrocarbon product.
- G9 Results are influenced by the presence of extraneous peaks which are not representative of petroleum hydrocarbon products.
- G10 Presence of one or more unidentified peaks eluting earlier than the retention time window.
- G11 Presence of one or more unidentified peaks eluting later than the retention time window.
- G12 Result is estimated. The method used is a screening procedure for this compound.
- G13 Measurement performed using test strips.
- G14 Measurement upon receipt performed using test strips.
- G15 n-Nitrosodiphenylamine decomposes in the GC inlet and cannot be separated from Diphenylamine.
- G16 Measurement upon receipt performed using test strips. Adjusted to pH < 2.

[QA-448a]

MADISON ONE SCHENCE COURT P.O. IKOX 5385 MADISON, WI 53705 (608) 231 4747 FAX (608) 231 4777

#### METHOD REFERENCES

Compounds	Soil/Groundwater	Wastewater
Alcohol	8015*	8015*
BEXT	8020	602
DRO	Modified DRO	Modified DRO
GRO	Modified GRO	Modified GRO
Herbicides	8150	8150
Pesticides	8080	608
Pesticide/PCBs	8080	608
PCBs	8080**	608
PNA (GC/MS)	8270	8270
PNA (HPLC)	8310	8310
PVOCs	8020	8020
SVOCs	8270	8270
ТРН	D-3328-78*	D-3328-78*
TRPH	418.1 & 9073	418.1 & 9073
VOCs	8021	8021
VOCs	8010/8020***	601/602

SW846, "Test Methods for Evaluating Solid Waste", 3rd Ed., December 1987.

EPA-600, "Methods for Organic Chemical Analysis of Water and Wastes", March, 1984.

ASTM, "Annual Book of ASTM Standards", 1990.

Wisconsin DNR Modified 9073 TRPH, PUBL-SW-140, Wisconsin DNR, April 1992.

Wisconsin DNR Modified DRO, PUBL-SW-141, Wisconsin DNR, April 1992.

Wisconsin DNR Modified GRO, PUBL-SW-140, Wisconsin DNR, April 1992.

\* With Modifications

WARZ

- \*\* With Modfications for Oil Matrix.
- \*\*\* With Modfications for Soil Gas Matrix.

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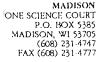
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# GROUNDWATER ANALYTICAL RESULTS

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Balancia a constant



#### LABORATORY RESULTS VOLATILE ORGANIC REPORT

#### **Project:** Shop Rite Food Store

VARZ

**Project #: 27337.01** 

#### Location: Milwaukee, Wisconsin

#### Date Sampled: 10/1/91

	1	1		
	Reporting	3407-001	3407-002	3407-003
Compound	Limits (ug/L)	Well, B1 (Groundwater)	Well B2 (Groundwater)	<u>Bailer Blank</u>
Compound				
Benzene	1.0	< 1.0	<1.0	<1.0
Bromodichloromethane	1.0	<1.0	<1.0	<1.0
Bromoform	1.0	<1.0	<1.0	<1.0
Bromomethane	2.0	<2.0	<2.0	<2.0
Carbon tetrachloride	1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	1.0	2.0	<1.0	< 1.0
Chlorodibromomethane	1.0	<250 (a)	< 1.0	< 1.0
Chloroethane	2.0	<2.0	<2.0	< 2.0
2-Chloroethylvinyl ether	10	< 10	<10	<10
Chloroform	1.0	<1.0	< 1.0	<1.0
Chloromethane	2.0	<2.0	<2.0	<2.0
1,2-Dichlorobenzene	1.0	<1.0	<1.0	< 1.0
1,3-Dichlorobenzene	1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	1.0	< 1.0	<1.0	< 1.0
1,2-Dichloroethane	1.0	<1.0	<1.0	< 1.0
1,1-Dichloroethene	1.0	1.8	< 1.0	< 1.0
cis-1,2-Dichloroethene	1.0	560	< 1.0	< 1.0
trans-1,2-Dichloroethene		5.8	<1.0	<1.0
1,2-Dichloropropane	1.0	1.3	<1.0	< 1.0
cis-1,3-Dichloropropene	1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloroproper		<1.0	<1.0	< 1.0
Ethylbenzene	1.0	<1.0	< 1.0	< 1.0
Methylene chloride	3.0	<3.0	<3.0	< 3.0
1,1,2,2-Tetrachloroethan		<1.0	<1.0	< 1.0
Tetrachloroethene	1.0	14000	< 1.0	< 1.0
Toluene	1.0	16	<1.0	< 1.0
1,1,1-Trichloroethane	1.0	<1.0	<1.0	< 1.0
1,1,2-Trichloroethane	1.0	<1.0	<1.0	< 1.0
Trichloroethene	1.0	220	<1.0	<1.0
Trichlorofluoromethane	1.0	< 1.0	< 1.0	< 1.0
Vinyl chloride	1.0	11	<1.0	<1.0
m and p-Xylene	2.0	< 2.0	<2.0	<2.0
o-Xylene	1.0	<1.0	<1.0	, <1.0

(a) Elevated quantitation limit necessary to overcome interference.

Method Reference: EPA-600, "Methods for Organic Chemical Analysis of Municipal and Industrial Wastewaters", July 1982. Method 601/602.

WI Lab Certification ID#: 113138300 [var-Oct-092] 27337.01-lab Ck'd: 2001 App'd: 666 Date Issued: joj16/91

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CHAIN O	OF CUSTOE	DY RECORD	,	Madison, Wisconsin 53705 (608) 273-0440
PROJ. NO. PROJECT NAME Shop Rite food Store 27337.0/ IJOCATION: MILLIGGUE GOOD STORE SAMPLERS: (signature) LABNO. DATE TIME 27 24/D7-001 10/1/9/ 7!15Am X Well BI (groundcate) 1-003 10/1/9/ 7!25Am X Baila Blank V-002 (0/1/9/ 7:25Am X Well B2(groundwote) V-002 (0/1/9/ 7:359m X Well B2(groundwote)	NO. OF CON- TAINERS		× Vialo y	REMARKS SW Meserwed w/ Hel
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#### VOLATILE ORGANIC REPORT TILTON PROPERTY MILWAUKEE WI Project Number: 2733702

Sample #	Site	Test	Result	RL	Matrix	Units	Footnot	es
6561-0001	 ЖW1	Benzene	< 1	1	GroundH20	ug/L		
		Bromodichloromethane	< 2.6	1	GroundH20	ug/L	A2	,
		Bromoform	< 1	1	GroundH2O	ug/L		1
•		Bromomethane	< 2	2	GroundH20	ug/L		
		Carbon tetrachloride	< 1	1	GroundH2O	ug/L		
		Chlorobenzene	< 1	1	GroundH20	ug/L		
		Chlorodibromomethane	< 100	1	GroundH20	ug/L	A2	
		Chloroetháne	< 2	2	GroundH20	ug/L		
		2-Chloroethylvinyl ether	< 10	10	GroundH20	ug/L		
		Chloroform	< 20	1	GroundH20	úg/L	A2	
		Chloromethane	< 2	2	GroundH20	ug/L		
		1,2-Dichlorobenzene	< 1	1	GroundH20	ug/L		/ * ·
		1,3-Dichlorobenzene	< 1	1	GroundH20	ug/L		
		1,4-Dichlorobenzene	` < 1	1	GroundH20	ug/L		
		1,1-Dichloroethane	< 1	1	GroundH20	ug/L		
		1,2-Dichloroethane	< 1	1	GroundH20	ug/L		
		1,1-Dichloroethene	5.9	- 1	GroundH2O	ug/L		
		cis-1,2-Dichloroethene	960	1	GroundH20	ug/L		
		trans-1,2-Dichloroethene	10	1	GroundH20	ug/L		
		1,2-Dichloropropane	< 10	1	GroundH20	ug/L	A2	
		cis-1,3-Dichloropropene	< 1	1	GroundH2O	ug/L		
		trans-1,3-Dichloropropene	· < 1	, 1	GroundH20	ug/L	,	
		Ethylbenzene	< 1	່ 1	GroundH2O	ug/L		
		Methylene chloride	< 3	3	GroundH2O	ug/L		
		1,1,2,2-Tetrachloroethane	< 1	1	GroundH20	ug/L		
		Tetrachloroethene	38000	1	GroundH20	ug/L		л
		Toluene	4.1	· 1	GroundH20	ug/L		
		1,1,1-Trichloroethane	< 4	' 1	GroundH20	ug/L	A2	. `
		1,1,2-Trichloroethane	< 1	1	GroundH20	ug/L		
		Trichloroethene	960		1 GroundH20	ug/L		
		Trichlorofluoromethane	< 1		1 GroundH20	ug/L	·	
		Vinyl chloride	33		1 GroundH2O	ug/L		
		m + p-Xylene	< 2	i	2 GroundH2O	ug/L		
		o-Xylene	< 1		1 _GroundH2O	ug/L		

Sample Date: Analysis Date:

20, 21-APR-93

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Ck'd: The App'd: The Date Issued: 4/25/93

RL = Reporting Limit WI Lab Certification ID#: 113138300

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#### VOLATILE ORGANIC REPORT TILTON PROPERTY MILWAUKEE WI Project Number: 2733702

Sample #	Site	Test	Result	RL.	Matrix	Units	Footnotes
6561-0002	MW2	Benzene	< 1	1	GroundH20	ug/L	
		Bromodichloromethane	< 1	1	GroundH20	ug/L	
		Bromoform	< 1	1	GroundH20	ug/L	
		Bromomethane	· < 2	2	GroundH2O	ug/L	
		Carbon tetrachloride	< 1	1	GroundH2O	ug/L	
		Chlorobenzene	< 1	1	GroundH20	ug/L	
	/	Chlorodibromomethane	< 1	. 1	GroundH2O	ug/L	
,		Chloroethane	< 2	2	GroundH2O	ug/L	
		2-Chloroethylvinyl ether	< 10	10	GroundH20	ug/L	
		Chloroform	< 1	1	GroundH2O	ug/L	
		Chloromethane	< 2	2	GroundH20	ug/L	
		1,2-Dichlorobenzene	< 1	1	GroundH20	ug/L	
		1,3-Dichlorobenzene	< 1	1	GroundH20	ug/L	
		1,4-Dichlorobenzene	< 1	1	GroundH2O	ug/L	
		1,1-Dichloroethane	< 1	1	GroundH20	ug/L	
		1,2-Dichloroethane	< 1	1	GroundH2O	ug/L	
		1,1-Dichloroethene	< 1	1	GroundH20	ug/L	
		cis-1,2-Dichloroethene	< 1	. 1	GroundH20	ug/L	
		trans-1,2-Dichloroethene	< 1	1	GroundH2O	ug/L	
		1,2-Dichloropropane	< 1	1	GroundH20	ug/L	
		cis-1,3-Dichloropropene	< 1	1	GroundH20	ug/L	
>		trans-1,3-Dichloropropene	× <b>1</b>	1	GroundH2O	ug/L	
		Ethylbenzene	< 1	1	GroundH20	ug/L	
		Methylene chloride	< 3	-3	GroundH20	ug/L	
		1,1,2,2-Tetrachloroethane	< 1	1	GroundH2O	ug/L	
	× /	Tetràchloroethene	< 1	1	GroundH20	ug/L	
		Toluene	< 1	1	GroundH2O	ug/L	•
		1,1,1-Trichloroethane	< 1	1	GroundH20	ug/L	
		1,1,2-Trichloroethane	< 1	1	GroundH20	ug/L	
		Trichloroethene	< 1	1	GroundH20	ug/L	
		Trichlorofluoromethane	< 1		GroundH20	ug/L	
		Vinyl chloride	< 1		GroundH20	ug/L	
		m + p-Xylene	< 2	i	2 GroundH2O	ug/L	
		o-Xylene	< 1		1 GroundH20	ug/L	

Sample Date: Analysis Date: 14-APR-93 ' 21, 22, 23-APR-93

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Ck'd: 110 App'd: Fr Date Issued: 4/38/93

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#### VOLATILE ORGANIC REPORT TILTON PROPERTY MILWAUKEE WI Project Number: 2733702

Sample #	Site	Test	Result	RL	Matrix	Units	Footnotes
6561-0003	MW3	Benzene	< 1	1	GroundH20	ug/L	
		Bromodichloromethane	< 1	1	GroundH20	ug/L	
		Bromoform	< 1	1	GroundH20	ug/L	X
		Bromomethane	< 2	2	GroundH2O	ug/L	
		Carbon tetrachloride	< 1	11	GroundH20	ug/L	
		Chlorobenzene	< 1	1	GroundH2O	ug/L	
		Chlorodibromomethane	< 1	1	GroundH2O	ug/L	
		Chloroethane	< 2	2	GroundH2O	ug/L	
		2-Chloroethylvinyl ether	< 10	10	GroundH20	ug/L	
		Chloroform	< 1	1	GroundH20	ug/L	
		Chloromethane	< 2	2	GroundH20	ug/L	
		1,2-Dichlorobenzene	< 1	1	GroundH20	ug/L	•.
		1,3-Dichlorobenzene	< 1	1	GroundH20	ug/L	
		1,4-Dichlorobenzene	< 1	1	GroundH2O	ug/L	
		1,1-Dichloroethane	< 1	1	GroundH2O	ug/L	
		1,2-Dichloroethane	< 1	1	GroundH2O	ug/L	
		1,1-Dichloroethene	< 1	1	GroundH20	ug/L	
		cis-1,2-Dichloroethene	180	1	GroundH20	ug/L	
		trans-1,2-Dichloroethene	1.8	1	GroundH2O	ug/L	
i I		1,2-Dichloropropane	< 1	1	GroundH20	ug/L	
		cis-1,3-Dichloropropene	· · · · · · · · · · · · · · · · · · ·	1	GroundH2O	ug/L	
		trans-1,3-Dichloropropene	< 1	1	GroundH20	ug/L	
	,	Ethylbenzene	< 1	1	GroundH2O	ug/L	
		Methylene chloride	< 3	3	GroundH2O	ug/Ł	
		. 1,1,2,2-Tetrachloroethane	< 1	1	GroundH2O	ug/L	
		Tetrachloroethene	< 1	. 1	GroundH2O	ug/L	
		Toluene	< 1	1	GroundH20	ug/L	
		1,1,1-Trichloroethane	< 1	1	GroundH20	ug/L	
		1,1,2-Trichloroethane	< 1	1	GroundH20	ug/L	
		Trichloroethene	< 1	1	GroundH20	ug/L	
		Trichlorofluoromethane	< 1	1	GroundH2O	ug/L	
		Vinyl chloride	< 1	1	GroundH2O	ug/L	
		m + p-Xylene	< 2	2	GroundH20	ug/L	
		o-Xylene	< 1		GroundH20	ug/L	-

Sample Date:14-APR-93Analysis Date:21, 22, 23-APR-93

RL = Reporting Limit WI Lab Certification ID#: 113138300

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#### VOLATILE ORGANIC REPORT TILTON PROPERTY MILWAUKEE WI Project Number: 2733702

Sample #	Site	Test	Result	RL	Matrix	Units	Footnotes
6561-0004	MW4	Benzene	< 1	1	GroundH20	ug/L	
		Bromodichloromethane	< 20	1	GroundH20	ug/L	A2
		Bromoform	< 1	1	GroundH20	ug/L	
		Bromomethane	< 2	2	GroundH2O	ug/L	
		Carbon tetrachloride	< 10	1	GroundH20	ug/L	A2
1		Chlorobenzene	< 1	1	GroundH2O	ug/L	
		Chlorodibromomethane	< 100	<b>1</b>	GroundH20	ug/L	A2
		Chloroethane	< 2	2	GroundH20	ug/L	
		2-Chloroethylvinyl ether	< 10	10	GroundH20	ug/L	
	1	Chloroform	< 100	1	GroundH20	ug/L	A2
		Chloromethane	< 2	2	GroundH20	ug/L	
		1,2-Dichlorobenzene	< 1	1	GroundH20	ug/L	
	7	1,3-Dich(orobenzene	< 1	- 1	GroundH20	ug/L	
		1,4-Dichlorobenzene	< 1	1	GroundH2O	ug/L	
		1,1-Dichloroethane	< 1	1	GroundH20	ug/L	
		1,2-Dichloroethane	< 2	1	GroundH2O	ug/L	A2
		1,1-Dichloroethene	2	1	GroundH2O	ug/L	
		cis-1,2-Dichloroethene	1100	1	GroundH20	ug/L	
		trans-1,2-Dichloroethene	9.2	1	GroundH20	ug/L	X
		1,2-Dichloropropane	< 100	1	GroundH2O	ug/L	A2
		cis-1,3-Dichloropropene	< 1	<sup>k</sup> 1	GroundH2O	ug/L	1
		trans-1,3-Dichloropropene	< 1	1	GroundH2O	ug/L	
		Ethylbenzene	· < 1 ·	1	GroundH2O	ug/L	
		Methylene chloride	< 3	3	GroundH2O	ug/L	
		1,1,2,2-Tetrachloroethane	< 1	1	GroundH2O	ug/L	
		Tetrachloroethene	2900	1	GroundH20	ug/L	
		Toluene	10	1	GroundH20	ug/L	
		1,1,1-Trichloroethane	< 20	1	GroundH2O	ug/L	A2
		1,1,2-Trichloroethane	< 1	1	GroundH20	ug/L	7
		'Trichloroethene	440	1	GroundH20	ug/L	
i		Trichlorofluoromethane	< 1	1	GroundH20	ug/L	
	i.	Vinyl chloride	42	1	GroundH20	ug/L	
		m + p-Xylene	.< 2	ā	GroundH20	ug/L	
		o-Xylene	< 1		l GroundH20	ug/L	

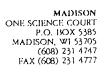
Sample Date: 14-APR-93 Analysis Date:

21, 22-APR-93

RL = Reporting Limit WI Lab Certification ID#: 113138300

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#### VOLATILE ORGANIC REPORT TILTON PROPERTY MILWAUKEE WI Project Number: 2733702

Site	Test	Result	RL	Matrix	Units	Footnotes
FIELD BLANK	Benzene	< 1	/	GroundH20	ug/L	
,	Bromodichloromethane	< 1	1	GroundH20	ug/L	
	Bromoform	< 1	1	GroundH20	ug/L	
	Bromomethane	< 2	2	GroundH20	ug/L	
	Carbon tetrachloride	< 1	1	GroundH20	ug/L	
	Chlorobenzene	< 1	<u>1</u>	GroundH20	ug/L	·
	Chlorodibromomethane	< 1	1	GroundH20	ug/L	
	Chloroethane	< 2	2	GroundH20	_ug/L	
<i>,</i> .	2-Chloroethylvinyl ether	< 10	10	GroundH20	ug/L	
	Chloroform	< 1	1	GroundH20	ug/L	
	Chloromethane	< 2	2	GroundH20	ug/L	
	1,2-Dichlorobenzene	< 1	1	GroundH20	ug/L	
	1,3-Dichlorobenzene	< 1	1	GroundH20	ug/L	
	1,4-Dichlorobenzene	< 1	1	GroundH2O	ug/L	
	1,1-Dichloroethane	< 1	1	GroundH20	ug/L	
	1,2-Dichloroethane	< 1	1	GroundH20	ug/L	
	1,1-Dichloroethene	< 1	1	GroundH20	ug/L	
	cis-1,2-Dichloroethene	< 1	1	GroundH2O	ug/L	
	trans-1,2-Dichloroethene	< 1	1	GroundH20	ug/L	
	1,2-Dichloropropane	< 1	. 1	GroundH2O	ug/L\	
	cis-1,3-Dichloropropene	< 1	1	GroundH2O	ug/L	- ,
	trans-1,3-Dichloropropene	< 1	1	GroundH2O	ug/L	
	Ethylbenzene	< 1	1	GroundH2O	ug/L	
	Methylene chloride	< 3	3	GroundH20	ug/L	
	1,1,2,2-Tetrachloroethane	< 1	. 1	GroundH20	ug/L	
	Tetrachloroethene	< 1	1	GroundH20	ug/L	
	Toluene	< 1	1	GroundH20	ug/L	
	1,1,1-Trichloroethane	< 1	1	GroundH20	ug/L	
	1,1,2-Trichloroethane	< 1		GroundH20	ug/L	х
	Trichloroethene	< 1		I GroundH20	ug/L	
	Trichlorofluoromethane	< 1		GroundH20	ug/L	
	Vinyl chloride	< 1		1 ,GroundH20	ug/L	
	m + p-Xylene	< 2	i	2 GroundH2O	ug/L	
	o-Xylene	< 1		1 GroundH20	ug/L	· · ·

Sample Date: Analysis Date: 14-APR-93 21, 22-APR-93

RL = Reporting Limit WI Lab Certification ID#: 113138300

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Sample #

6561-0005

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Ck'd: JAG App'd: 34 Date Issued: 4/38/23

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#### VOLATILE ORGANIC REPORT TILTON PROPERTY MILWAUKEE WI Project Number: 2733702

Sample #	Site	Test	Result	RL	Matrix	Units	Footnotes
6561-0006	TRIP BLANK	Benzene	< 1	1	GroundH20	ug/L	
	, I	Bromodichloromethane	5.4	1	GroundH20	ug/L	
		Bromoform	< 1	1	GroundH20	ug/L	
		Bromomethane	< 2	2	GroundH20	ug/L	ν.
		Carbon tetrachloride	< 1	1	GroundH20	ug/L	
		Chlorobenzene	< 1	1	GroundH20	ug/L	
x		Chlorodibromomethane	1.6	1	GroundH20	ug/L	
a .	•	Chloroethane	< 2	2	GroundH20	ug/L	
		2-Chloroethylvinyl ether	< 10	10	GroundH20	ug/L	λ.
		Chloroform	8.8	1	GroundH20	ug/L	
		Chloromethane	< 2	2	GroundH20	ug/L	
		1,2-Dichlorobenzene	< 1	1	GroundH20	ug/L	
1		1,3-Dichlorobenzene	< 1	1	GroundH20	ug/L	
		1,4-Dichlorobenzene	< 1	1	GroundH20	ug/L	,
	7	1,1-Dichloroethane	< 1	1	GroundH20	ug/L	
~		1,2-Dichloroethane	< 1	1	GroundH2O	ug/L	
		1,1-Dichloroethene	< 1	1	GroundH20	ug/L	
		cis-1,2-Dichloroethene	< 1	1	GroundH20	ug/L	
		trans-1,2-Dichloroethene	< 1	1	GroundH20	ug/L	
		1,2-Dichloropropane	< 1	. 1	GroundH20	ug/L	
		cis-1,3-Dichloropropene	< 1	1	GroundH2O	ug/L	
		trans-1,3-Dichloropropene	< 1	1	GroundH2O	ug/L	
		Ethylbenzene	< 1	1	GroundH2O	ug/L	
		Methylene chloride	< 3	3	GroundH2O	ug/L	
		1,1,2,2-Tetrachloroethane	< 1	1	GroundH20	ug/L	
		Tetrachloroethene	` < 1	1	GroundH20	ug/L	
		Toluene	< 1	1	GroundH20	ug/L	
		1,1,1-Trichloroethane	< 1	1	GroundH20	ug/L	
		1,1,2-Trichloroethane	< 1	1	GroundH20	ug/L	
		Trichloroethene	< 1	1	GroundH20	ug/L	-
		Trichlorofludromethane	< 1	1	GroundH20	ug/L	
		Vinyl chloride	< 1		1 GroundH2O	ug/L	
		m + p-Xylene	< 2	2	2 GroundH2O	ug/L	· ·
		o-Xylene	< 1		1 GroundH20	ug/L	
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Sample Date: Analysis Date: 14-APR-93 21, 22-APR-93

RL = Reporting Limit WI Lab Certification ID#: 113138300

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Ck'd: Hb App'd: ifm Date Issued: 4/28/93

#### STANDARD REPORT FOOTNOTES

A1 Elevated quantitation limit due to low sample volume.

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- A2 Elevated quantitation limit necessary to overcome interference.
- A3 Elevated quantitation limit necessary to overcome difficult matrix.
- A4 Result should be considered estimated with possible low bias due to unknown interference.
- A5 Result should be considered estimated with possible low bias due to difficult matrix.
- A6 Result should be considered estimated with possible low bias as indicated by method QC.
- A7 Result should be considered estimated with possible high bias due to unknown interference.
- A8 Result should be considered estimated with possible high bias due to difficult matrix.
- A9 Result should be considered estimated with possible high bias as indicated by method QC.
- A10 Result should be considered estimated due to non-homogeneous sample matrix.
- A11 Sample received past recommended hold time.
- A12 Analysis requested past recommended hold time.
- A13 Initial analysis performed within hold time; confirmation analysis performed past recommended hold time. Results from repeat analysis are reported.
- A14 Initial analysis performed within hold time; necessary dilution performed past recommended hold time. Results from repeat analysis are reported.
- A15 Result should be considered estimated with possible high bias; analyte detected in method blank.
- A16 Elevated quantitation limit indicated by batch QC.
- W1 Sample contained <0.5% solids; filtered sample was analyzed as the TCLP extract.
- W2 Analysis performed on a 10% sample solution (10 grams sample + 90 mL calcium chloride solution).
- W3 There is no regulatory holdtime for sulfite. Analysis is recommended as soon as possible after collection.
- M1 Results are qualitative only, as requested.
- M2 Total analysis performed; total concentration indicates that TCLP regulatory level could not be exceeded.
- G1 Result should be considered estimated, concentration exceeds working calibration range.
- G2 Elevated quantitation limit due to the concentration of petroleum hydrocarbons in the sample.
- G3 Elevated quantitation limit due to the concentration of non-specific hydrocarbons in the sample.
- G4 Analyte coelutes with \_\_\_\_\_; result calculated from calibration standards in a 1:1 ratio of these two compounds.
- G5 Sample required extensive cleanup; Endrin Aldehyde is not recovered from these techniques.
- G6 Petroleum-type odor detected from this sample.
- G7 Elevated quantitation limit due to the concentration of PCBs in the sample.
- G8 Result should be considered estimated with possible high bias due to coelution with an additional hydrocarbon product.
- G9 Results are influenced by the presence of extraneous peaks which are not representative of petroleum hydrocarbon products.
- G10 Presence of one or more unidentified peaks eluting earlier than the retention time window.
- G11 Presence of one or more unidentified peaks eluting later than the retention time window.
- G12 Result is estimated. The method used is a screening procedure for this compound.
- G13 Measurement performed using test strips.
- G14 Measurement upon receipt performed using test strips.
- G15 n-Nitrosodiphenylamine decomposes in the GC inlet and cannot be separated from Diphenylamine.
- G16 Measurement upon receipt performed using test strips. Adjusted to pH <2.

[QA-448a]



#### METHOD REFERENCES

MADISON ONE SCIENCE COURT P.O. BOX 5385 MADISON, WI 53705 (608) 231 4747 FAX (608) 231 4777

	I	
Compounds	Soil/Groundwater	Wastewater
Alcohol	8015*	8015*
BEXT	8020***	602
DRO	Modified DRO	Modified DRO
GRO	Modified GRO***	Modified GRO
Herbicides	8150	8150
Pesticides	8080	608
Pesticide/PCBs	8080	608
PCBs	8080**	608
PCBs	8080****	608
PCP Screen	8040****	8040****
PNA (GC/MS)	8270	8270
PNA (HPLC)	8310	8310
PVOCs	8020***	8020
SVOCs	8270	8270
ТРН	D-3328-78*	D-3328-78*
TRPH	418.1 & 9073	418.1 & 9073
VOCs	8021	8021
VOCs	8010/8020***	601/602

SW846, "Test Methods for Evaluating Solid Waste", 3rd Ed., December 1987.

EPA-600, "Methods for Organic Chemical Analysis of Water and Wastes", March, 1984.

ASTM, "Annual Book of ASTM Standards", 1990.

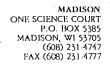
Wisconsin DNR Modified 9073 TRPH, PUBL-SW-140, Wisconsin DNR, April 1992.

Wisconsin DNR Modified DRO, PUBL-SW-141, Wisconsin DNR, April 1992.

Wisconsin DNR Modified GRO, PUBL-SW-140, Wisconsin DNR, April 1992.

- \* With Modifications
- \*\* With Modfications for Oil Matrix
- \*\*\* With Modfications for Soil Gas Matrix
- \*\*\*\* With Modifications for Wipe Matrix

WARZYN CHAIN OF CUSTODY RECORD	Sampler MUST check one box: Is this a PECFA job that must be Subcontracted?	Yes ZNO		Nº 015827 `
$\begin{array}{c c c c c c c c c c c c c c c c c c c $				GW with Hel, 1 water Samples
Relinquished by: (Signature) Relinquished by: (Signature) Relinquished by: (Signature) Remarks Shipped A VIA DUNHAM TO WAN	y: (Signature) Relinquished by: (Signature) (Signature) Relinquished by: (Signature) r Laboratory by: (Signature) Phoject ManaGER: $22 y_{W}$ ANA yticht VeriN D.	Date / Date / Date / Date / (-(5-93) Shave r Shave r	Time Time /.'30,	Received by: (Signature) Received by: (Signature)



Footnotes

Units

#### VOLATILE ORGANIC REPORT TILTON PROPERTY MILWAUKEE WI Project Number: 2733702

Result

Sample #	Site

Test

6729-0001 MW1

WARZY

						,	
Benzene	- < 1	1	GroundH20	ug/L			
Bromodichloromethane	< 5	1	GroundH20	ug/L	A2		
Bromoform	< 5	1	GroundH2O	ug/L	A2		
Bromomethane	< 2	2	GroundH20	ug/L			
Carbon tetrachloride	< 20	1	GroundH20	ug/L	A2		
Chlorobenzene	< 1	1	GroundH20	ug/L			
Chlorodibromomethane	< 25	1	GroundH2O	ug/L	A2		
Chloroethane	< 2	2	GroundH20	ug/L			
2-Chloroethylvinyl ether	< 10	. 10	GroundH20	ug/L		A.	
Chloroform	< 25	1	GroundH2O	ug/L	A2		
Chloromethane	< 2	2	GroundH2O	ug/L			
1,2-Dichlorobenzene	< 1	1	GroundH20	ug/L			
1,3-Dichlorobenzene	< 1	1	GroundH20	ug/L			
1,4-Dichlorobenzene	< 1	1	GroundH20	ug/L			
1,1-Dichloroethane	< 1	1	GroundH20	ug/L			
1,2-Dichloroethane	< 1	1	GroundH20	ug/L			
1,1-Dichloroethene	3.6	1	GroundH20	ug/L			
cis-1,2-Dichloroethene	780	1	GroundH20	ug/L			
trans-1,2-Dichloroethene	7.8	1		ug/L			
1,2-Dichloropropane	< 25	1			AŻ		
cis-1,3-Dichloropropene	< 1	1					
trans-1,3-Dichloropropene	< 1	1	GroundH20				. ,
Ethylbenzene	< 1		1 GroundH20				
Methylene chloride	< 3	3	3 GroundH20	ug/L			
1,1,2,2-Tetrachloroethane	< 1		1 GroundH2O	ug/L			
Tetrachloroethene	34000		1 GroundH2O	ug/L			
Toluene	12		1 GroundH20	) ug/L			
1,1,1-Trichloroethane	< 25		1 GroundH20	) ug/L	A2		
1,1,2-Trichloroethane	< 1		1 GroundH2C	) ug/L			
Trichloroethene	700	ļ	1 GroundH20	) ug/L	,		
Trichlorofluoromethane	< 1		1 GroundH20	) ug/L			
Vinyl chloride	14	ł	1 GroundH20	) ug/L			
m + p-Xylene	< 2	2	2 GroundH20	) ug/L			
o-Xylene	< '		1 GroundH20	o ug/L			

RL Matrix

Sample Date: Analysis Date: 19-MAY-93

Date: 22

22, 25, 26, 27-MAY-93

1

RL = Reporting Limit WI Lab Certification ID#: 113138300

Ck'd: Kar App'd: Jun Date Issued: (1/193



Sample #

6729-0002

#### VOLATILE ORGANIC REPORT TILTON PROPERTY MILWAUKEE WI Project Number: 2733702

1

Site	Test	Result	RL	Matrix	Units	Footnotes
	Benzene	< 1	1	GroundH20	ug/L	
MW2	Bromodichloromethane	< 1	1	GroundH2O	ug/L	
	Bromoform	< 1	1	GroundH2O	ug/L	
	Bromomethane	< 2	2	GroundH20	ug/L	
	Carbon tetrachloride	< 1	1	GroundH20	ug/L	
	Chlorobenzene	< 1	1	GroundH20	ug/L	
	Chlorodibromomethane	< 1	1	GroundH20	ug/L	
	Chloroethane	< 2	2	GroundH20	ug/L	
	2-Chloroethylvinyl ether	< 10	10	GroundH20	ug/L	×.
	Chloroform	< 1	1	GroundH20	ug/L	
ł	Chloromethane	< 2	2	GroundH20	ug/L	
	1,2-Dichlorobenzene	< 1	. 1	GroundH20	ug/L	
	1,3-Dichlorobenzene	< 1	1	GroundH20	ug/L	
	1,4-Dichlorobenzene	< 1	1	GroundH20	ug/L	· · · ·
	1,1-Dichloroethane	< 1	1	GroundH20	ug/L	
	1,2-Dichloroethane	< 1		GroundH20	ug/L	
	1,1-Dichloroethene	< 1		GroundH2O	ug/L	
	cis-1,2-Dichloroethene	< 1		1 GroundH20	ug/L	
	trans-1,2-Dichloroethene	< 1		1 GroundH20	ug/L	Υ.
	1,2-Dichloropropane	< 1		1 GroundH2O	ug/L	
	cis-1,3-Dichloropropene	< 1		1 GroundH2O	ug/L	,
ſ	trans-1,3-Dichloropropene	< 1		1 GroundH2O	ug/L	
	Ethylbenzene	< 1		1 GroundH20	ug/L	
	Methylene chloride	< 3		3 GroundH20	ug/L	
	1,1,2,2-Tetrachloroethane	< 1		1 GroundH20	ug/L	
Ŕ	Tetrachloroethene	< 1		1 GroundH20	ug/L	χ.
	Toluene	< 1		1 GroundH20	ug/L	
	1,1,1-Trichloroethane	< 1		1 GroundH20	ug/L	
	1,1,2-Trichloroethane	< 1		1 GroundH20	ug/L	
	Trichloroethene	< 1		1 GroundH20	ug/L	¢
	Trichlorofluoromethane	_ < _1		1 GroundH20	ug/L	· · ·
	Vinyl chloride	< 1		1 GroundH20		
	m + p-Xylene	< 2		2 GroundH20		1
	o-Xylene	、 < 1		1 GroundH20	ug/L	
4						

Sample Date: Analysis Date: 19-MAY-93 22, 25-MAY-93

RL = Reporting Limit WI Lab Certification ID#: 113138300 Ck'd: Ket App'd: Apr Date Issued: 6/1/93

# WARZYN

Sample #

6729-0003

#### VOLATILE ORGANIC REPORT TILTON PROPERTY MILWAUKEE WI Project Number: 2733702

Site	Test	Result	RL	Matrix	Units	Footnotes
	Benzene	< 1	1	GroundH20	ug/L	
MW3	Bromodichloromethane	< 1	1	GroundH20	ug/L	
	Bromoform	< 1	- 1	GroundH20	ug/L	
	Bromomethane	< 2	2	GroundH20	ug/L	
	Carbon tetrachloride	< 1	1	GroundH20	ug/L	
	Chlorobenzene	< 1	1	GroundH20	ug/L	
	Chlorodibromomethane	< 1	1	GroundH20	ug/L	
	Chloroethane	< 2	2	GroundH20	ug/L	
	2-Chloroethylvinyl ether	< 10	10	GroundH20	ug/L	•
	Chloroform	< 1	1	GroundH20	ug/L	
	Chloromethane	< 2	2	GroundH20	ug/L	
	1,2-Dichlorobenzene	< 1	1	GroundH20	ug/L	٠
	1,3-Dichlorobenzene	< 1	1	GroundH20	ug/L	
	1,4-Dichlorobenzene	< 1	1	GroundH20	ug/L	
_	1,1-Dichloroethane	⊤ <sup>†</sup> < 1	. 1	GroundH20	ug/L	
	1,2-Dichloroethane	< 1	1	GroundH20	ug/L	
	1,1-Dichloroethene	· < 1	1	GroundH20	ug/L	
	cis-1,2-Dichloroethene	190	1	GroundH20	ug/L	
	trans-1,2-Dichloroethene	3.6	1	GroundH20	ug/L	
	1,2-Dichloropropane	< 1	1	GroundH20	ug/L	
	cis-1,3-Dichloropropene	< 1		GroundH20	ug/L	
	trans-1,3-Dichloropropene	< 1	' '	1 GroundH20	ug/L.	,
	Ethylbenzene	< 1		1 GroundH20	ug/L	1
	Methylene chloride	< 3		3 GroundH20	ug/L	
	1,1,2,2-Tetrachloroethane	< 1		1 GroundH20	ug/L	
	Tetrachloroethene	< 1		1 GroundH20	,	
	Toluene	< 1		1 GroundH2C		
1	1,1,1-Trichloroethane	< 1		1 GroundH20		
	1,1,2-Trichloroethane	< 1		1 GroundH20		
	Trichloroethene	< 1		1 GroundH20		
	Trichlorofluoromethane	< 1		1 GroundH20		
	Vinyl chloride	4.8	5	1 GroundH20		
	m + p-Xylene	< 2	2	2 GroundH2		
	o-Xyl ene	< 1		1 GroundH2	0 ug/L	
					4	8 - L

Sample Date: Analysis Date: 19-MAY-93 22, 25, 26-MAY-93

RL = Reporting Limit WI Lab Certification ID#: 113138300

Ck'd: KLJ App'd: Apr Date Issued: 6/1/93



Sample # 6729-0004

#### MADISON ONE SCIENCE: COURT P.O. IXX 5385 MADISON, WI 53705 (608) 231-4747 FAX (608) 231-4777

#### VOLATILE ORGANIC REPORT TILTON PROPERTY MILWAUKEE WI Project Number: 2733702

Site	Test	Result	RL	Matrix	Units	Footnotes	
			1	GroundH20	ug/L		
MW4	Benzene Bromodichloromethane	< 1	1	GroundH20	ug/L		•
	Bromoform	< 1	1	GroundH20	ug/L		
	Bromomethane	< 2	2	GroundH20	ug/L		
	Carbon tetrachloride	< 1	1	GroundH20	ug/L		
	Chlorobenzene	< 1	1	GroundH20	ug/L		
	Chlorodibromomethane	< 25	1	GroundH20	ug/L	A2	
	Chloroethane	< 2	2	GroundH20	ug/L		
	2-Chloroethylvinyl ether	< 10	10	GroundH20	ug/L		
	Chloroform	< 25	1	GroundH20	ug/L	A2	
	Chloromethane	< 2	2	GroundH20	ug/L		
·	1,2-Dichlorobenzene	< 1	1	GroundH20	ug/L		
	1,3-Dichlorobenzene	< 1	1	GroundH20	ug/L		
	1,4-Dichlorobenzene	< 1	1	GroundH2O	ug/L		
	1,1-Dichloroethane	< 1	1	GroundH20	ug/L		
	1,2-Dichloroethane	< 1	.1	GroundH20	ug/L		
	1,1-Dichloroethene	2	1	GroundH2O	ug/L		
	cis-1,2-Dichloroethene	920	1	GroundH20	ug/L		
	trans-1,2-Dichloroethene	16	1	GroundH20	ug/L		
	1,2-Dichloropropane	< 25	1	GroundH2O	ug/L	A2	
	cis-1,3-Dichloropropene	< 1	1	GroundH2O	ug/L		
	trans-1,3-Dichloropropene	< 1	1	GroundH20	ug/L		
	Ethylbenzene	< 1		1 GroundH2O	ug/L	<u>^</u>	1
	Methylene chloride	< 3	3	3 GroundH2O	ug/l.	3	
	1,1,2,2-Tetrachloroethane	< 1		1 GroundH2O	ug/L		*
	Tetrachloroethene	2400		1 GroundH2O	ug/L		
2	Toluene	8.2		1 GroundH2O	ug/L		
	1,1,1-Trichloroethane	< 10		1 GroundH20	`ug∕L	A2	
	1,1,2-Trichloroethane	< 1		1 GroundH20	ug/L		
	Trichloroethene	380		1 GroundH20	ug/L		
	Trichlorofluoromethane	< 1		1 GroundH20	ug/L		
	Vinyl chloride	48		1 GroundH20	ug/L		
	m + p-Xylene	< 2		2 GroundH20			
i	o-Xylene	< 1		1 GroundH20	ug/L		

Sample Date: Analysis Date: 19-MAY-93 22, 25-MAY-93

4

RL = Reporting Limit WI Lab Certification ID#: 113138300 Ck'd: Krt App'd: Am Date Issued: 6/1/93



#### VOLATILE ORGANIC REPORT TILTON PROPERTY MILWAUKEE WI Project Number: 2733702

Sample #	Site	Test	Result	· RL	Matrix	Units	Footnotes
6729-0005	FIELD BLANK	Benzene	< 1	1	GroundH20	ug/L	
6729-0005	FIELD BLANK	Bromodichloromethane	< 1	1	GroundH20	ug/L	
		Bromoform	< 1	1	GroundH2O	ug/L	
		Bromomethane	< 2	2	GroundH2O	ug/L	
		Carbon tetrachloride	< 1	1	GroundH20	ug/L	
		Chlorobenzene	< 1	- 1	GroundH2O	ug/L	
		Chlorodibromomethane	< 1	1	GroundH20	ug/L	
		Chloroethane	< 2	2	GroundH20	ug/L	
		2-Chloroethylvinyl ether	< 10	10	GroundH20	ug/L	1
		Chloroform	< 1	1	GroundH2O	úg∕L	· ·
		Chloromethane	< 2	2	GroundH2O	ug/L	
		1,2-Dichlorobenzene	< 1	1	GroundH20	ug/L	-
		1,3-Dichlorobenzene	< 1	1	GroundH2O	ug/L	
	·	1,4-Dichlorobenzene	< 1	1	GroundH20	ug/L	
		1,1-Dichloroethane	< 1	1	GroundH20	ug/L	
		1,2-Dichloroethane	< 1	1	GroundH20	ug/L	
	'	1,1-Dichloroethene	, < 1	. 1	GroundH20	ug/L	
		cis-1,2-Dichloroethene	< 1		GroundH20	ug/L	
		trans-1,2-Dichloroethene	< 1		GroundH20	ug/L	
		1,2-Dichloropropane	< 1		GroundH20	ug/L	
		cis-1,3-Dichloropropene	< 1		1 GroundH2O	ug/L	
		trans-1,3-Dichloropropene	< 1		1 GroundH2O	ug/L	
		Ethylbenzene	< 1		1 GroundH20	ug/L	
		Methylene chloride	< 3		3 GroundH2O	ug/L	
		1,1,2,2-Tetrachloroethane	< 1		1 GroundH20	ug/L	
i		Tetrachloroethene	< 1		1 GroundH20	ug/L	
	1	Toluene	< 1		1 GroundH2C	) ug/L	
		1,1,1-Trichloroethane	< 1		1 GroundH2C	) ug/L	
		1,1,2-Trichloroethane	< 1		1 GroundH20	) ug/L	
		Trichloroethene	< 1		1 GroundH20	) ug/L	
		Trichlorofluoromethane	< 1		1 GroundH20	) ug/L	
,		Vinyl chloride	< '	1	1 GroundH20	) ug/L	
		m + p-Xylene	< 2		2 GroundH20	) ug/L	
		o-Xylene	< '		1 GroundH2	0 ug/L	

Sample Date: Analysis Date: 19-MAY-93 24, 25-MAY-93

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RL = Reporting Limit WI Lab Certification ID#: 113138300 Ck'd: K4 App'd: *Afm* Date Issued: 6/1/93



Sample #

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6729-0006

#### MADISON ONE SCIENCI: COURT P.O. IVOX 5385 MADISON, WI 53705 (608) 231-4747 FAX (608) 231-4777

#### VOLATILE ORGANIC REPORT TILTON PROPERTY MILWAUKEE WI Project Number: 2733702

	Site	Test	Result	RL	Matrix	Units	Footnotes
-					GroundH20	ug/L	· · · · · · · · · · · · · · · · · · ·
>	TRIP BLANK	Benzene	< 1	1	GroundH20	ug/L	
		Bromodichloromethane	< 1	1	GroundH20	ug/L	/
	Δ.	Bromoform	< 2	2	GroundH20	ug/L	
		Bromomethane	< 1	1	GroundH20	ug/L	· · ·
		Carbon tetrachloride	< 1	1	GroundH20	ug/L	
		Chlorobenzene	< 1	1	GroundH20	ug/L	
		Chlorodibromomethane		2	GroundH20	ug/L	
		Chloroethane	< 2	-			
	x	2-Chloroethylvinyl ether	< 10	10		ug/L	
		Chloroform	< 1	1	GroundH20	ug/L	
		Chloromethane	< 2	2		ug/L	ν.
		1,2-Dichlorobenzene	< 1	1	GroundH20	ug/L	
		1,3-Dichlorobenzene	< 1	1		ug/L	
		1,4-Dichlorobenzene	< 1	1		ug/L	
		1,1-Dichloroethane	< 1	1		ug/L	
		1,2-Dichloroethane	< 1	1	-	ug/L	
		1,1-Dichloroethene	< 1	1	GroundH2O	ug/L	
		cis-1,2-Dichloroethene	< 1		GroundH20	ug/L	- X
		trans-1,2-Dichloroethene	< 1	• •	GroundH2O	ug/L	
		1,2-Dichloropropane	< 1		GroundH20	ug/L	
		cis-1,3-Dichloropropene	< 1	. •	GroundH20	ug/L	~
		trans-1,3-Dichloropropene	. < 1		1 GroundH2O	ug/L	
		Ethylbenzene	< 1		1 GroundH20	ug/L	
		Methylene chloride	· < 3		3 GroundH2O	uą/L	
		1,1,2,2-Tetrachloroethane	· < 1		1 GroundH2O	ug/L	
		Tetrachloroethene	< 1		1 GroundH20	ug/L	
		Toluene	< 1		1 GroundH20	ug/L	
		1,1,1-Trichloroethane	< 1		1 GroundH2O	ug/L	
			< 1		1 GroundH20	ug/L	
		1,1,2-Trichloroethane	< 1		1 GroundH20	ug/L	
		Trichloroethene	< 1		1 GroundH20	ug/L	
	X	Trichlorofluoromethane	< 1		1 GroundH20	ug/L	
		Vinyl chloride	< 2		2 GroundH20	ug/L	
		m + p-Xylene	< 2		1 GroundH20		
		o-Xylene	< 1			49/ L	

Sample Date: Analysis Date: 19-MAY-93 25-MAY-93

RL = Reporting Limit WI Lab Certification ID#: 113138300 Ck'd: Kad App'd: 3fm Date Issued: 6/1/93

#### STANDARD REPORT FOOTNOTES

Elevated quantitation limit due to low sample volume. A1

WARZY

- Elevated quantitation limit necessary to overcome interference. A2
- Elevated quantitation limit necessary to overcome difficult matrix. A3
- Result should be considered estimated with possible low bias due to unknown interference.
- A4 Result should be considered estimated with possible low bias due to difficult matrix.
- A5 Result should be considered estimated with possible low bias as indicated by method QC.
- A6 Result should be considered estimated with possible high bias due to unknown interference.
- A7 Result should be considered estimated with possible high bias due to difficult matrix.
- A8 Result should be considered estimated with possible high bias as indicated by method QC.
- A9 A10 Result should be considered estimated due to non-homogeneous sample matrix.
- A11 Sample received past recommended hold time.
- A12 Analysis requested past recommended hold time.
- Initial analysis performed within hold time; confirmation analysis performed past recommended hold time. Results from repeat analysis are reported. A13
- A14 Initial analysis performed within hold time; necessary dilution performed past recommended hold time. Results from repeat analysis are reported.
- A15 Result should be considered estimated with possible high bias; analyte detected in method blank.
- A16 Elevated quantitation limit indicated by batch QC.
- Sample contained <0.5% solids; filtered sample was analyzed as the TCLP extract.
- W1 Analysis performed on a 10% sample solution (10 grams sample + 90 mL calcium chloride solution).
- W2 There is no regulatory holdtime for sulfite. Analysis is recommended as soon as possible after collection. W3
- Results are qualitative only, as requested. M1
- Total analysis performed; total concentration indicates that TCLP regulatory level could not be exceeded.
- M2 Result should be considered estimated, concentration exceeds working calibration range.
- **G1** Elevated quantitation limit due to the concentration of petroleum hydrocarbons in the sample.
- G2 Elevated quantitation limit due to the concentration of non-specific hydrocarbons in the sample.
- G3 Analyte coelutes with \_\_\_\_\_; result calculated from calibration standards in a 1:1 ratio of these two compounds.
- G4 Sample required extensive cleanup; Endrin Aldehyde is not recovered from these techniques.
- Petroleum-type odor detected from this sample. G6
- Elevated quantitation limit due to the concentration of PCBs in the sample. G7
- Result should be considered estimated with possible high bias due to coelution with an additional hydrocarbon G8 product.
- Results are influenced by the presence of extraneous peaks which are not representative of petroleum hydrocarbon G9 products.
- G10 Presence of one or more unidentified peaks eluting earlier than the retention time window.
- G11 Presence of one or more unidentified peaks eluting later than the retention time window.
- G12 Result is estimated. The method used is a screening procedure for this compound.
- G13 Measurement performed using test strips.
- G14 Measurement upon receipt performed using test strips.
- G15 n-Nitrosodiphenylamine decomposes in the GC inlet and cannot be separated from Diphenylamine.
- G16 Measurement upon receipt performed using test strips. Adjusted to pH <2.

[QA-448a]

G5



#### METHOD REFERENCES

MADISON ONE SCIENCE COURT P.O. IKOX 5385 MADISON, WI 53705 (608) 231 4747 FAX (608) 231-4777

<b>2</b>	Soil/Groundwater	Wastewater	
Compounds	8015*	8015*	
Alcohol	8020***	602	
BEXT	Modified DRO	Modified DRO	
DRO	Modified GRO***	Modified GRO	
GRO		8150	
Herbicides	8150	608	
Pesticides	8080		
Pesticide/PCBs	8080	608	
PCBs	8080**	608	
PCBs	8080****	608	
PCP Screen	8040****	8040****	
PNA (GC/MS)	8270	8270	
PNA (HPLC)	8310	8310	
PVOCs	8020***	8020	
SVOCs	8270	8270	
ТРН	D-3328-78*	D-3328-78*	
TRPH	418.1 & 9073	418.1 & 9073	
VOCs	8021	8021	
VOCs	8010/8020***	601/602	

SW846, "Test Methods for Evaluating Solid Waste", 3rd Ed., December 1987.

EPA-600, "Methods for Organic Chemical Analysis of Water and Wastes", March, 1984.

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- With Modifications
- \*\* With Modfications for Oil Matrix
- \*\*\* With Modfications for Soil Gas Matrix
- \*\*\*\* With Modifications for Wipe Matrix

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WARZYN CHAIN OF CUSTODY RECORD					Nº 003793
ROJECT NO. 2733702/ 1/32 AMPLERS (Signature) AMPLERS (Signature) CITY & STATE Milwaukee, Wi	У	. OF CONTAINERS	Jo Policy Market Market		Gw
	STATION LOCATION	No	Jo Lo		REMARKS
729-000 5-19-93 1110 X mw1		2			Solvent odor
Tou?     1040     mw2       Tou?     1210     mw3       Tou?     1210     mw3       Tou?     1150     mw4       Trip     1120     Trip					solvent odor
1-005 1215 Field 1300 Temp	Slank Blank Blank				NO GAJALYSIS
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