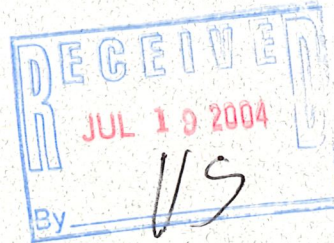




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June 24, 2004



Ms. Victoria Stovall
 Program Administrator
 Wisconsin Department of Natural Resources
 P.O. Box 12436
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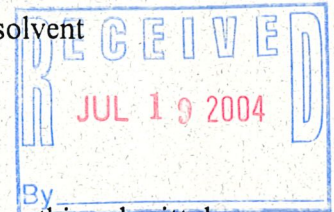
**RE: Case Closure and GIS Packet Submittal: BRRTS # 02-46-189401, BRRTS # 02-46-189396, BRRTS # 03-46-189407
 Former Plymouth Foundry, FID # 246148100
 1019 N. 11th Avenue
 Grafton, Wisconsin 53024**

The purpose of this document is to request closure for the two above-referenced ERP sites and provide the GIS packets for all three BRRTS numbers associated with this property. In addition, a request for review of an off-site liability exemption for the chlorinated VOC contamination is included. WDNR fees totaling \$1,200 are attached and were calculated as shown on the table below:

BRRTS #	Location	Soil GIS	Groundwater GIS	Other
02-46-189401	NW Corner of Property (former aboveground petroleum tanks)	NO \$0	YES \$250	
02-46-189396	West of Building (former aboveground petroleum tanks)	NO \$0	YES \$250	
03-46-189407	East of Building (Former underground gas tank)	YES \$200	NO \$0	Commerce closed 7/1/04
NONE 07-46-529254 Entering a new GP # here	Chlorinated VOCs from Neighboring Property	No \$0	Responsibility of Neighbor	Fee for Off-Site Exemption Review \$500
TOTAL WDNR FEES		\$200	\$500	\$500

A request for closure and \$750 closure review fee was previously submitted for these sites in a report dated May 18, 2000. The September 15, 2000 response from Ms. Nancy Ryan of the WDNR required additional information to support closure. The requested information was obtained in December 2001. Submittal of this closure request was delayed pending receipt of information from the adjacent property.

Based on the site conditions and the presence of off-site sources of chlorinated solvent contamination, no further action is considered necessary on this site.



Transfer of Monitoring Wells

Per the request of Ms. Monica Weiss of the Wisconsin Department of Commerce, this submittal also requests that the responsibility for the five monitoring wells related to the underground storage tank on the eastern portion of the site (MW-19, MW-22, MW-3, MW-31, and MW-32) be transferred to BRRTS # 02-46-189396 so WDCOM can close out the BRRTS # 03-46-189407. If closure is granted, it is expected responsibility for some or all of the monitoring wells can be transferred to Construction Forms for their continued use in evaluation of their chlorinated VOC release site.

ATTACHMENTS

Please refer to the previous closure request submittal for an extensive background on the site conditions and historic results. In addition, a letter from Alpha Terra Science to the WDNR dated September 6, 2002 contains information on the December 2001 borings and chemistry results.

Figures and tables referenced in this document immediately follow the text of this report. An updated WDNR case closure form is included in Attachment A, as is a completed Off-Site Discharge Exemption Request Application. The GIS registry information is included as three separate submittals in Attachment B. Attachment B1 and Attachment B2 are identical groundwater GIS packets for the two petroleum release areas where groundwater has been affected, and Attachment B3 is a soil GIS packet for the eastern portion of the site where soil contamination exceeds the NR 700 standards.

under separate cover in GP file just created

Attachment C includes select information from the neighboring Construction Forms (CF) site that supports closure via an off-site liability exemption. Attachment D includes documentation of disposal of drums of investigative waste.

SITE HISTORY

The former Plymouth Foundry facility ("Property") is located at 1019 11th Avenue in the Village of Grafton. The Property is on the west side of 11th Avenue and south of the intersection with North Street (Figure 1). The Canadian National Railroad is located on the west property boundary, and the CF site is located immediately west of the Railroad.

The Property was first developed in 1911 as the Junger Stove and Range Company, which became Plymouth Foundry in the 1960's. Both companies manufactured gray-iron castings (cast iron). In the 1980's, Plymouth Foundry ceased operation at the site. Since closure of the foundry,

the Property has been leased for office and warehouse space. The Property is zoned M-1 for manufacturing.

The Property includes two structures (Figure 2). The main structure is a two-story masonry block building containing approximately 51,000 square feet of floor space. A metal pole-shed is located on the northeast portion of the Property.

There were 17 underground and aboveground storage tanks (UST / AST) that contained petroleum products on the Property, including five ASTs ranging in size from 1,500 to 10,000 gallons on the northwest portion of the Property; four 4,000 gallon to 6,400 gallon ASTs at the northwest corner of the building, one 300 gallon UST and three 100 to 300 gallon ASTs containing diesel fuel and motor oil adjacent and within the northwest corner of the building, and four USTs containing gasoline and fuel oil on the east side of the building. The large ASTs contained fuel oil or diesel fuel that was used to power a large diesel engine. The furnace for the gray-iron castings was heated using coke; diesel fuel was used to operate a large diesel engine generator for electricity, and fuel oil / diesel was used to fire the enameling furnaces. The gasoline USTs were used to fill company vehicles.

One UST remains in use on the eastern corner of the Property adjacent to the building north wall. The 500-gallon tank contains fuel oil for heating purposes for the building.

Three releases of petroleum have been reported to the WDNR for the Property. The identification numbers and released substances are:

LUST Gasoline	BRRTS# 03-46-189407
NW Corner Fuel Oil	BRRTS# 02-46-189401
West Side Fuel Oil	BRRTS# 02-46-189396

All three have the same facility identification number FID # 246148100.

A request for case closure for the LUST portion of the Property (BRRTS # 03-46-189407) was submitted by Alpha Terra Science in January 2000. That file was transferred to WDCOM, who provided a conditional closure letter dated April 4, 2000. The closure is conditional on placement of a "Notice of Contamination to Property" on the property deed, and abandonment of the monitoring wells per NR 141 code. These actions have not yet been completed.

Recent discussions with Ms. Monica Weiss of WDCOM indicate placement of a Geographic Information System (GIS) notice on the Property should substitute for the deed notice requirement. The soil GIS packet for this portion of the site is included in Attachment B3.

In addition, transfer of responsibility for the monitoring wells related to the LUST portion of the site (Monitoring wells MW-3, MW-19, MW-22, MW-31, and MW-32) to the ERP # 02-46-

189396 should also occur so the LUST BRRTS case can be closed. A copy of this report has been sent to WDCOM for their records so the LUST file can be closed.

This closure request is for the two remaining environmental repair identification numbers on the Property. Based on the site conditions, a GIS notification for groundwater contamination should be placed on the Property for each of these two sites, and no further action should be required. The GIS packets are included in Attachment B1 and B2.

GEOLOGY AND HYDROGEOLOGY

A summary of the observed site hydrogeologic conditions is presented below. More complete details were provided in the previous closure request.

On the Property, the site soils consist of approximately 3 feet of silty clay topsoil fill or sandy clay to sand fill. The native soils underneath the fill consists of high plasticity silty clay glacial till with intermittent silt or sand seams to approximately 13 to 17 feet, and then silty sand to sandy gravel outwash. Based on information from the Village Well # 1 log and the neighboring CF site, the depth to bedrock at the site should be approximately 35 to 40 feet. Geologic cross sections were provided in the 2000 Closure Request, and cross sections through the CF site are included in Attachment C.

The depth to the permanent water table surface is approximately 13 to 18 feet below grade across the Property (Table 4). Groundwater is typically present within or near the contact with the sandy outwash unit. Perched groundwater is present in many locations on the Property at depths as shallow as 4 to 7 feet below grade. Perched water was observed at borings TW-7, 9, 10, 11, 12, 14, 16, 18, and B-46). Perched water has also been noted on the adjacent CF site (LD-11, possibly others).

The water table groundwater flow direction on the Property and on the adjacent CF site is to the east, southeast, and northeast (Figure 6, Attachment C). Groundwater flow in the bedrock is also to the east based on the CF investigation data (Attachment C).

The calculated groundwater velocity across the Property ranges from 66 to 165 feet per year. Vertical hydraulic gradients were not monitored on the Plymouth Foundry site, as there are no bedrock wells on the property.

PETROLEUM CHEMISTRY RESULTS

This discussion of the soil and groundwater chemistry results from the site does not include data obtained from the area of the Property that was previously closed by WDCOM. Data from the investigation on the eastern portion of the Property has been included on the tables and figures, but it is not considered necessary to discuss the data from the already closed portion of the Property.

Attachment B3 includes a soil GIS packet for the LUST portion of the site. No unsaturated soil contamination above relevant standards was detected on the Property at either one of the two ERP sites.

The extent of soil and groundwater contamination containing petroleum constituents has been defined. Tables 1 and 2 present all historic soil chemistry data that has been obtained for the property, and Figures 3 and 4 map relevant soil and groundwater petroleum chemistry data.

GRO / DRO

The Property results indicate gasoline range organics (GRO) and diesel range organics (DRO) are present at elevated concentrations in the soil. The WDNR NR 720 generic soil standard for GRO and DRO is 100 mg/kg, and soil from three distinct areas (the three release areas) exceed these standards.

At the two ERP sites, individual petroleum compounds are not present in unsaturated soil at concentrations above any of the NR720 or NR746 table values. Detections of ethylbenzene have been noted in saturated soil above the NR720 and NR746 standards, but these samples are below the water table and are not soil. Naphthalene has also been detected in saturated soil samples and in groundwater above the NR140 Enforcement Standards, and chrysene has been noted the groundwater at concentrations above the NR140 Enforcement Standards. Other petroleum-related compounds have been detected in the soil and groundwater, such as various butylbenzene and propylbenzene compounds, but the concentrations are not significantly elevated.

Ethylbenzene

At one boring location, saturated soil at TW-13 (16 to 18 feet) has a concentration of ethylbenzene that exceeds the NR720 soil standard for potential leaching to groundwater, as well as the NR 746 soil standard for potential free product. This sample is below the water table surface and reflects a saturated soil. Downgradient soil and/or groundwater samples from MW-26, B-46, TW-6, TW-29, and MW-22 (Tables 1,2,3, and Figures 3 and 4) indicate the extent is defined. There are no elevated concentrations of ethylbenzene above NR 140 Enforcement Standard or Preventive Action Limit Standard in the groundwater across the site.

Naphthalene

Naphthalene is present in saturated material at three locations above the theoretical concentration that would result in naphthalene leaching to groundwater (Figure 3, Table 2). All three locations (MW-1, TW-13, TW-17) are in soil samples that were obtained at or below the water table surface, and all locations are at the northwest corner of the building. These results do not reflect soil. Groundwater is also present at concentrations above the NR 140 enforcement standards (ES) for naphthalene in this area, at MW-1 (Figure 4, Table 3).

Naphthalene is also present in groundwater at concentrations that exceed the NR 140 ES at monitoring well MW-24 and TW-16, located on the northwest corner of the property. Results from nearby wells indicate the extent of naphthalene contamination in groundwater is defined.

Chrysene and PAHs

Chrysene is a polynuclear aromatic hydrocarbon (PAH) compound. Chrysene has not been detected at levels of concern in the soil. With the exception of naphthalene, which was previously discussed, no PAH compounds have been detected above levels of concern in any of the nine soil samples that have been analyzed for full PAHs from the Property. Although elevated concentrations of GRO and DRO have been detected in soil, elevated levels of PAHs and VOCs do not seem related to these detections (see results for MW-24 and MW-28).

Four soil samples were obtained from a depth of less than 4 feet at boring B-47 and B-48. These borings were installed at locations of elevated petroleum contamination on the northwest corner of the Property and at the northwest corner of the building. The shallow soil chemistry results from these borings indicate no contamination is present above levels of concern for any PAH exposure pathway.

Chrysene is present at concentrations slightly above the NR 140 ES in the groundwater at one location, MW-28, but has historically been detected at concentrations above the ES at three locations, MW-24, MW-28, and MW-30. The chrysene concentration has decreased below the ES in groundwater from monitoring well MW-30 and MW-24, and monitoring well MW-28 was not sampled for PAHs in the most recent sampling event from June 1999. The absence of chrysene in the groundwater from the northwest Property wells (MW-23 to MW-26) and the eastern wells (MW-3, MW-19, MW-22), and the low concentrations of chrysene in the groundwater indicate the extent of chrysene contamination is adequately defined.

Degradation of Petroleum Constituents in Groundwater

On the northwest corner of the Property, naphthalene is present at a concentration above the NR 140 ES in groundwater from wells MW-24 and TW-16. Groundwater from monitoring wells MW-23, MW-2, MW-26, and MW-25 contains little or no detectable naphthalene. These wells are located approximately 25 to 50 feet from the contaminated wells.

Assuming limited contaminant retardation in the sandy water table aquifer, the contaminants observed in groundwater from wells MW-24 and TW-16 should have resulted in a plume that has traveled a considerable distance from the source area. Based on the calculated groundwater velocity across the site (65 to 165 feet per year), biological degradation of the naphthalene contamination must be occurring. The tanks have been present since at least 1963, were not removed until 1987, and it can be assumed the petroleum contamination reached the water table at some point during the time the tanks were present. The fact that the contamination is limited to the immediate area of the former aboveground tanks indicates the magnitude of contamination

being contributed to the water table is minimal, and the natural degradation capabilities in this area are adequate to contain the plume.

A similar argument can be applied to the petroleum contamination on the northwest corner of the building, as significant petroleum contamination is not present in the groundwater on the eastern side of the building.

CHLORINATED CONTAMINATION AND OFF-SITE LIABILITY EXEMPTION

There are chlorinated solvents present in the groundwater at the Property above NR 140 enforcement standard concentrations. Based on a review of the Plymouth Foundry historical property use, and the soil and groundwater chemistry data for the Property and the adjacent CF site to the west, Alpha Terra Science believes the chlorinated solvents are present as a result of migration from the adjacent property. The presence of these contaminants in the groundwater beneath the Plymouth Foundry Property should not prevent closure from being granted. Although it may not be necessary, the WDNR form 4400-201, "off-Site Discharge Exemption Request Application" has been completed and is included in Attachment A.

Historical Use of Plymouth Foundry Site

The Property was first developed in 1911 as the Junger Stove and Range Company. In 1964, the Plymouth Foundry and Machine Company purchased the operation and property. In the 1980's, Plymouth Foundry ceased operation at the site.

Since closure of the Plymouth Foundry, the Property was leased for office and warehouse space. No manufacturing activities are being completed on the Property. The Property is zoned M-1 for manufacturing.

Junger Stove and Range manufactured coal and wood ranges, oil and gas heaters, and furnaces. Gray iron castings were fabricated on site, and enameling was performed. Enameling of gray iron castings (cast iron) involves sandblasting the surface of the metal, followed by application of the enamel (glass) powders. The enamel is then heated until vitreous. Degreasing of the metal is not required. The furnace for the gray-iron castings was heated using coke; diesel fuel was used to operate a large diesel engine generator for electricity, and fuel oil / diesel was used to fire the enameling furnaces.

Plymouth Foundry did not manufacture stoves; rather, they used the property as a gray iron foundry. Enameling of the gray iron castings was discontinued when Plymouth Foundry purchased the facility. The gray iron castings were finished using sandblasting and grinding wheels. Painting was not part of the manufacturing process under either Jungers Stove or Plymouth Foundry.

Chlorinated solvents were not known or suspected to have been used by either the Jungers Stove operation or the Plymouth Foundry operation. Subsequent property use as a warehouse and office space would also not likely have included use of significant quantities of chlorinated solvents.

Historical Use of Construction Forms Site

The Construction Forms site is located immediately west of the Plymouth Foundry Property at 1040 9th Avenue. Manufacturing has occurred at the facility since at least 1946, when ATACO Steel Products Company was founded. The business manufactured electric steam and dry irons, but became a metal stamping business in the 1950's. The main product manufactured was lawn mower housings, but commercial washing machines were also manufactured. The company is still in business as Construction Forms.

Information regarding the handling of chlorinated solvents was obtained via review of WDNR forms from 1984 and 1985 (Attachment C). The forms indicate ATACO performed degreasing and painting in paint booths at their 9th Avenue facility. Several types of degreasers were handled that contained PCE and other chlorinated solvents. The degreasing chemical tanks were batch discharged to the wastewater treatment plant three times per year. Areas for potential release of chlorinated solvents include the chemical tanks, sewer lines, drum storage areas, paint booths, rail spur delivery area, and any other area where these substances were handled, stored, or used.

Environmental investigation activities have been completed on the CF site related to releases of chlorinated solvents and petroleum compounds. The facility ID number is 246005210. Closure has been obtained for a petroleum investigation on the southwest corner of the CF main building (BRRTS # 03-46-105926). Investigation efforts continue (BRRTS # 02-46-171750) regarding documented releases of chlorinated solvents on the northwest corner of the CF site (North Garage Area) and near the eastern loading docks and interior former solvent tanks.

Chlorinated Solvent Contamination in Soil – Plymouth Foundry Facility

A total of 20 soil samples have been retained for laboratory analysis of VOCs from the Plymouth Foundry Property. Chlorinated VOCs, primarily tetrachloroethene (PCE) but also trichloroethene (TCE), were present in the soil from four borings located on the western edge of the Property (Borings TW-17, B-43, B-44, and B-45, Table 1, Figure 5).

The results from boring TW-17 were obtained at a depth of 19.5 to 20 feet below grade, which is below the water table surface. This saturated soil sample had a detection of 360 ug/kg PCE. The result likely reflects the influence of contaminated groundwater.

The results from boring B-43 indicate a trace detection of 26 parts per billion PCE in the shallow sample at 6 to 8 feet below grade, with no chlorinated compounds present in the deeper sample. At borings B-44 and B-45, soil samples from the shallow zone at a depth of approximately 4 to 8

feet below grade had much lower concentrations of PCE (180 to 330 ug/kg) than soil from the deeper sample interval (2,500 to 3,800 ug/kg PCE at 10 to 12 feet).

The shallow soil does not appear to be contaminated via a surface release, as the shallow concentrations of contaminants are significantly lower than the concentrations observed at depth. The presence of chlorinated VOCs in the shallow soil may be a result of vapor migration of contaminants from the water table or perched water surface.

Chlorinated Solvent Contamination in Soil – Construction Forms Facility

The soil chemistry results from the CF site located immediately west of the Plymouth Foundry site are not fully known. An investigation along the rail spur located on the southeastern portion of the CF site was performed in May 1996, but the results from this investigation could not be located in the WDNR case files.

Recent testing (2003) by GZA, Inc. Pewaukee, WI has been completed on behalf of CF (Attachment C). These results indicate concentrations of PCE are present on the CF site that are more than two orders of magnitude higher (up to 758,000 ug/kg PCE) than soil concentrations on the Plymouth Foundry Property (Figure 5).

The area of highest contamination appears related to former solvent tanks located beneath the building floor on the eastern half of the main building. Perched water has also been detected in the area of the most elevated detections, with water present at a depth of less than 10 feet in boring LD-11 on the Construction Forms site. The groundwater flow direction across this portion of the CF site is to the east or northeast. Based on these conditions, it is reasonable to assume the chlorinated VOC contamination observed in soil on the Plymouth Foundry Property at borings B-44 and B-45 is present as a result of migration from off-site sources, either via perched water flow, or vapor migration from the slightly deeper water table surface.

A second area of chlorinated solvent contamination on the CF site has been noted beneath the northern garage building, where soil containing up to 24,500 ug/kg of PCE has been detected in the shallow soil. Although the groundwater flow direction on this portion of the CF site trends to the southeast, it is unlikely the soil contamination on the Plymouth Foundry Property is related to the release on this portion of the CF site.

Chlorinated Solvent Groundwater Chemistry Results – Plymouth Foundry and Construction Forms Facilities

Groundwater chemistry results for chlorinated VOCs on both properties have been mapped by GZA and are shown in Attachment C. Chlorinated solvents and their degradation products, including PCE, TCE, cis-1,2-dichloroethene (DCE), and vinyl chloride, have been detected at concentrations above the NR 140 Enforcement Standards on both parcels. The presence of these compounds in the groundwater beneath the Plymouth Foundry Property is felt to be the result of contaminant migration from the Construction Forms site.

Groundwater chemistry results from the Plymouth Foundry Property are summarized on Table 3. With the exception of one grab water sample from boring B-46 in December 2001, no groundwater samples have been obtained from the Plymouth Foundry Property monitoring wells since 1999.

The results indicate concentrations of approximately 2,000 ug/L PCE has been detected in the groundwater east of the Construction Forms main building (MW-2, MW-10), and concentrations up to 560 ug/L PCE has been detected beneath the northern garage building (MW-7).

On the Plymouth Foundry Property, concentrations of up to 970 ug/L PCE have been detected on the west side of the Plymouth Foundry building (MW-27), and up to 200 ug/L PCE has been detected on the eastern side of the Plymouth Foundry building (MW-3). The location of these detected chlorinated compounds is on the southern half of the Plymouth Foundry Property, generally extending from the foundry building south. Seven groundwater samples obtained from wells located on the northwest portion of the Plymouth Foundry Property contain no detectable chlorinated VOCs. Based on the groundwater flow direction, soil chemistry results, and site conditions, it is likely the source of PCE and associated degradation products on the Plymouth Foundry Property is the CF site.

Reductive dechlorination of the chlorinated VOCs is occurring. Significant concentrations of PCE are present in the groundwater at the source areas on the CF property. Intermediate breakdown products, including TCE and DCE, are present on both properties, and a further degradation product, vinyl chloride, is present primarily beneath the eastern portion of the Plymouth Foundry site and east of the Plymouth Foundry site (MW-31). This pattern of degradation products is expected given the source area on the Construction Forms property and the groundwater flow direction to the east / northeast / southeast.

Based on the site groundwater chemistry, it is clear the parent contaminant concentrations are being reduced. The absence of vinyl chloride in most of the groundwater samples on the west side of the Plymouth Foundry Property, combined with the elevated concentrations of vinyl chloride in the groundwater on the east side of the property indicates reductive dechlorination of the parent compounds is occurring beneath the Plymouth Foundry building. This degradation process is likely being aided by the presence of the petroleum hydrocarbons, which act as a

source of carbon for the microbial degradation of the parent solvent contamination (Wiedemeier, 1997).

CONCLUSIONS

Based on the site conditions and remedial actions taken, no further action is necessary for the Plymouth Foundry Property. The case should be closed with two groundwater GIS listings for petroleum constituents and a soil GIS for petroleum related to the former LUST release on the eastern portion of the site.

At a later date, it is expected the chlorinated solvent contamination in the groundwater beneath the site will either be cleaned up or a groundwater GIS listing will be filed for the property by CF. When that occurs, the chlorinated solvent GIS listing should identify the Plymouth Foundry Property as an off-source contaminated property, with the contamination source identified as the CF site.

The following items support the closure request:

1. The source of petroleum contamination (the former petroleum tanks) have been removed and properly discarded.
2. Although elevated concentrations of DRO and GRO are present in soil, with the exception of soil on the eastern side of the site where WDCOM has already closed the site, there are no unsaturated soil contaminants present at levels above NR 700 soil standards. The extent of remaining petroleum soil contamination on the eastern side of the site is present at depth and poses little to no risk to human health or the environment. There are no PAHs present above direct contact levels of concern.
3. Groundwater chemistry results from the site indicate there are only minimal exceedences of NR 140 Enforcement Standards related to petroleum (naphthalene, chrysene) beneath the facility. The extent of the petroleum contamination in groundwater has been defined and is limited to the property boundaries.
4. Groundwater is used for municipal purposes, but the nearest operating municipal water supply well is located several thousand feet from the site. Former Municipal Well # 1 is no longer in operation. Due to the distance to the nearest operating municipal well, the absence of nearby private water supply wells, the very low levels of petroleum contaminants in groundwater, and the removal of the source areas, there is virtually no risk for human exposure from the release of petroleum from the former Plymouth Foundry Property.
5. Chlorinated solvent contamination has migrated to the Plymouth Foundry Property from the adjacent Construction Forms site. There is no evidence that chlorinated solvents were used or released on the Plymouth Foundry Property. Significant use and suspected releases of

chlorinated solvents have been documented on the Construction Forms site. The groundwater flow direction is to the east, toward the Plymouth Foundry Property, and the pattern of chlorinated solvent groundwater contamination supports migration of these compounds from the Construction Forms site to the Plymouth Foundry Property.

6. All 12 drums of investigative waste have been properly removed from the site for recycling at Waste Management's Orchard Ridge facility in Menomonee Falls, WI. Evidence of disposal is included in Attachment D.
7. Based on these findings, no further action related to the chlorinated solvent or petroleum contamination should be required by the Plymouth Foundry Property. Future work, if necessary, should be completed by facilities with known chlorinated solvent contamination.

RECOMMENDATIONS

1. The three separate soil and groundwater GIS information packets included in Attachment B should be filed for the Property.
2. Further investigation and remediation of chlorinated solvent contamination in groundwater should not be the responsibility of Plymouth Foundry, and the former Plymouth Foundry property should be identified as an off-source contaminated property.
3. Monitoring wells that are no longer needed for monitoring purposes should be properly abandoned per NR 141 Code. The WDNR should discuss future monitoring requirements with CF officials to determine which of the Plymouth Foundry wells should remain. The responsibility for maintenance and abandonment of those wells should be transferred to CF.
4. Upon submittal of documentation to the WDNR that these activities have been completed, BRRTS # 02-46-189401 and BRRTS #02-46-189396 should be closed.
5. Upon submittal of documentation to WDCOM that the wells have been either abandoned or transferred to the other Plymouth Foundry BRRTS #'s or to Construction Forms, and that the GIS information has been placed on the property, BRRTS # 03-46-189407 should be closed.

I hope this information meets your needs. If you have any question or comments or need any additional information regarding the site conditions, please don't hesitate to call. Thank you.

Sincerely,



Kendrick A. Ebbott
Project Manager
Senior Hydrogeologist

Attachments:

- Table 1: Soil Chemistry Results: GRO, DRO, VOCs and Lead
- Table 2: Soil Chemistry Results: Polyaromatic Hydrocarbons
- Table 3: Groundwater Chemistry Results
- Table 4: Survey Data
- Figure 1: Site Location and Local Topography
- Figure 2: Well and Boring Locations
- Figure 3: Soil Chemistry Results: Petroleum Compounds Above NR 700 Standards
- Figure 4: Most Recent Groundwater Chemistry Results: 1998 – 1999
- Figure 5: Soil Chemistry Results: Chlorinated Volatile Organic Compounds
- Figure 6: Groundwater Flow Direction: April 5, 1999
- Attachment A: WDNR Closeout Form and Off-Site Discharge Exemption Request Application
- Attachment B: GIS Registry Information: One Soil and Two Groundwater Packets
- Attachment C: Information From Construction Forms Site
- Attachment D: Documentation of Disposal of Investigative Waste

cc: Ms. Kris Hughes, N3820 County Road NN, Cascade, WI 53011, 2 Copies w/ Attachments
Mr. Steve Castner, 1650 Ninth Avenue, Grafton, WI 53024-0164 w/ Attachments
Ms. Monica Weiss, WDCOM, 101 W. Pleasant Street, Suite 100A, Milwaukee, WI 53212-3939 w/
Attachment B only

TABLE 1 : SOIL CHEMISTRY RESULTS
Former Plymouth Foundry Site, Grafton, Wisconsin

SOIL SAMPLE I.D.	DEPTH (feet)	FIELD PID (s.u.)	Wet ?	LABORATORY RESULTS															
				Lead (mg/kg)	GRO (mg/kg)		Petroleum Volatile Organic Compounds (ug/kg)												
					DRO (mg/kg)	Benzene	Ethyl benzene	Toluene	Xylenes	Methyl-t-butyl ether	124-Trimethyl benzene	135-Trimethyl benzene							
WI ADMIN CODE																			
NR 720 Residual Contaminant Levels (potential leach to GW)				NS	100 / 250	100 / 250	5.5	2,900	1,500	4,100	NS	NS	NS						
NR 746 Soil Screening Levels (free product potential)				NS	NS	NS	8,500	4,600	38,000	42,000	NS	83,000	11,000						
NR 746 Direct Contact Levels (top 4')				50/500 +	NS	NS	1,100	NS	NS	NS	NS	NS	NS						
1993 Investigation Results																			
MW-1, West of Building	16-17.5	225	YES***	*** See Results in Saturated Soil Section Below															
MW-2, East of ASTs	11-12.5	0.0	NO	7.5	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
MW-3, East of Building	8.5-10	0.0	NO	6.3	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
B-4, At ASTs	3.5-5	218	NO	NA	190	3,590	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
B-5, NE Corner Building	8.5-10	0.0	NO	NA	10.1	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1998-1999 Investigation Results																			
NORTH NEAR FOUNDRY BUILDING																			
TW-6, Parking Lot	15-16	11.2	NO	NA	<5.0	<5.0	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	
TW-29, By Building on North	13-14	22.7	NO	NA	40.0	67.7	<30	<30	<30	30	<30	<30	<30	<30	<30	<30	<30	<30	
TW-9, Former USTs, NE Corner	6.5-7	0.0	YES	NA	<5.0	<5.0	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	
NORTHWEST AST's																			
TW-7, at ASTs	9-10	4	YES	*** See Results in Saturated Soil Section Below															
MW-24, at ASTs	6-8	123	NO	NA	135	2,990	<28	32	<28	162	<28	740	475						
MW-24, at, ASTs	15	48	NO	NA	81	2,730	<29	31	<29	79	<29	318	435						
TW-16, West of ASTs	8-10	59	YES	*** See Results in Saturated Soil Section Below															
TW-10, East of ASTs	6-8	0.9	YES	NA	<5.0	<5.0	<29	<29	<29	<29	<29	<29	<29						
TW-10, East of ASTs	13-14	0.4	YES	NA	<5.0	<5.0	<28	<28	<28	<28	<28	<28	<28						
MW-26, SE of ASTs	9.0	0.0	NO	NA	<5.8	<5.8	<29	<29	<29	<29	<29	37*	<29						
TW-11, South of ASTs	7-8	0.4	YES	NA	<5.0	<5.0	<29	<29	<29	<29	<29	<29	<29						
TW-11, South of ASTs	13-14	0.6	YES	NA	<5.0	<5.0	<28	<28	<28	<28	<28	<28	<28						
MW-25, South of ASTs	9.0	1.9	NO	NA	11.0	102	<28	<28	<28	<28	<28	<28	<28						
TW-12, North of ASTs	6-8	4.0	YES	*** See Results in Saturated Soil Section Below															
MW-23, North of ASTs	7-9	NA	NO	NA	<5.7	<5.7	<28	<28	<28	<28	39*	<28	<28						
WEST OF FOUNDRY BUILDING : 1998																			
TW-13, NW Corner Bldg	9	3.5	NO	NA	105	50.8	<30	50	<30	221	<30	<30	<30						
TW-13, NW Corner Bldg	16-18	184	YES	*** See Results in Saturated Soil Section Below															
MW-28, NW Corner Bldg	6-8	9.8	NO	NA	118	383	<29	<29	<29	56	<29	<29	<29						
TW-14, South of MW-1	8-10	2.0	YES	NA	<5.0	<5.0	<30	<30	<30	<30	<30	<30	<30						
MW-27, South of MW-1	9-10	1.3	NO	NA	<5.7	<5.7	<29	<29	<29	<29	<29	<29	<29						
TW-15, North of MW-1	8-10	31	NO	NA	211	943	<31	207	<31	180	<31	1,906	1,548						
TW-15, North of MW-1	15-15.5	28	NO	NA	246	1,440	<209	<209	<418	<209	<209	2,597	1,415						
TW-15, North of MW-1	20-22	89	YES	*** See Results in Saturated Soil Section Below															
1 : UST Removal Under Tank	5-6'	NA	NO	NA	NA	1,200	<100	130	<100	580	<100	2800	1600						
TW-17, West of MW-1	13.5-14	29	NO	NA	74.4	878	<26	39	<26	36	<26	529	421						
TW-17, West of MW-1	19.5-20	42	YES	*** See Results in Saturated Soil Section Below															

TABLE 1: SOIL CHEMISTRY RESULTS : GRO, DRO, VOLATILE ORGANIC COMPOUNDS AND LEAD

TABLE 1 : SOIL CHEMISTRY RESULTS
Former Plymouth Foundry Site, Grafton, Wisconsin

SOIL SAMPLE I.D.	DEPTH (feet)	FIELD PID (s.u.)	Wet ?	Lead (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	LABORATORY RESULTS						
							Petroleum Volatile Organic Compounds (ug/kg)						
							Benzene	Ethyl benzene	Toluene	Xylenes	Methyl-L-butyl ether	124-Trimethyl benzene	135-Trimethyl benzene
WI ADMIN CODE													
NR 720 Residual Contaminant Levels (potential leach to GW)				NS	100 / 250	100 / 250	5.5	2,900	1,500	4,100	NS	NS	NS
NR 746 Soil Screening Levels (free product potential)				NS	NS	NS	8,500	4,600	38,000	42,000	NS	83,000	11,000
NR 746 Direct Contact Levels (top 4')				50/500 +	NS	NS	1,100	NS	NS	NS	NS	NS	
EAST OF FOUNDRY BUILDING @ GAS UST : 1998 CLOSED BY COMMERCE APRIL 2000													
TW-18, South	5 - 7	0.0	NO ?	3.0	<5.7	NA	<29	<29	<29	<29	34*	<29	<29
MW-19, West	5 - 7	0.0	NO	2.9	<5.7	NA	<28	<28	<28	<28	39*	<28	<28
TW-8, At Gas Dispenser	5 - 6	353.5	NO	NA	1340	NA	<1,190	11769	2963	60274	<1,190	100,655	32,619
TW-8, At Gas Dispenser	12.5-13.5	1.0	NO	NA	<5.0	NA	<30	<30	<30	<30	<30	<30	<30
TW-20, East in ROW	4.5-5	0.0	NO	2.3	<5.7	NA	<28	<28	<28	<28	29*	<28	<28
TW-20, East in ROW	9.0	2.3	NO	3.0	6.2	NA	<28	34	41	<28	28*	<28	<28
TW-20, East in ROW	11 - 12	0.0	NO	2.7	<5.6	NA	<28	35	<28	<28	39*	<28	<28
MW-22, North	9 - 10	0.7	NO	3.1	<5.8	NA	<29	<29	<29	<29	42*	<29	<29
SUMMARY OF BORINGS ALONG FORMER RAILROAD SPUR : DECEMBER 2001													
B41	4-6	0	Moist	NA	NA	NA	<15.0	<20	<21	<62	<14	<20	<11
B41	10-12	2.4	NO	NA	NA	NA	<15.0	<20	<21	<62	<14	<20	<11
B42	6-8	0	Moist	NA	NA	NA	<15.0	<20	<21	<62	<14	<20	<11
B42	10-12	0	NO?	NA	NA	NA	<15.0	<20	<21	<62	<14	<20	<11
B43	6-8	1.0	Moist	NA	NA	NA	<15.0	<20	<21	<62	<14	<20	<11
B43	10-12	15.5	NO	NA	NA	NA	<15.0	<20	<21	<62	<14	<20	<11
B44	4-6	112	Moist	NA	NA	NA	<15.0	<20	<21	<62	<14	<20	<11
B44	10-12	22.4	NO?	NA	NA	NA	<15.0	<20	<21	<62	<14	<20	<11
B45	6-8	1.0	Moist	NA	NA	NA	<15.0	<20	<21	<62	<14	<20	<11
B45	10-12	36.2	NO?	NA	NA	NA	<15.0	<20	<21	<62	<14	<20	<11
SUMMARY OF BORINGS TO DEFINE EXTENT OF PETROLEUM CONTAMINATION : DECEMBER 2001													
B46	10-12	2.4	Moist	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B47	0-2	0	Moist	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B47	2-4	0	Moist	NA	NA	NA	<150	<200	<210	<620	<140	<200	<110
B48	0-2	0	Moist	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B48	2-4	3.1	Moist	NA	NA	NA	<150	<200	<210	<620	<140	<200	<110
SUMMARY OF SATURATED SAMPLES INFLUENCED BY PERCHED OR PERMANENT GROUNDWATER													
MW-1, West of Building	16-17.5	225	YES	NA	261	887	<15.0	21.6	<15.0	402	<15.0	2,140	148
TW-7, at ASTs	9-10	4	YES	NA	38.7	96.6	<29	44	<29	184	<29	253	430
TW-12, North of ASTs	6-8	4.0	YES	NA	267	472	<233	242	<233	434	<233	2,053	1,000
TW-13, NW Corner Bldg	16-18	184	YES	NA	1,370	8,680	<2227	5,363	<2227	2,598	<2227	25,033	<2227
TW-15, North of MW-1	20-22	89	YES	NA	804	3,020	<219	342	<219	1,789	<219	5,256	5,897
TW-16, West of ASTs	8-10	59	YES	NA	234	838	<231	<231	<231	<462	<231	1,160	1,148
TW-17, West of MW-1	19.5-20	42	YES	NA	394	3,040	<221	<221	<221	<442	<221	2,031	<221

BOLD and BOX Exceeds NR 720 Generic Soil Standard

* : MTBE present in methanol used to preserve samples

NA : Not Analyzed

NS : No Standard

Xylenes is sum of m, p, and o xylene.

** : Generic Standard for Soils with Hydraulic Conductivity Greater than 10⁶

cm / sec (100), and less than 10⁶ (250)

+ : Direct Contact at Non-Industrial Site / Industrial Site

++ Standard for Naphthalene from 1997 WDNR PAH Guidance, See PAH Clean-up Levels

TABLE 1 : SOIL CHEMISTRY RESULTS
Former Plymouth Foundry Site, Grafton, Wisconsin

SOIL SAMPLE I.D.	DEPTH (feet)	FIELD PID (s.u.)	Wet ?	LABORATORY RESULTS Detected Volatile Organic Compounds (ug/kg)													
				Styrene	i-Propyl benzene	N-Propyl benzene	t-Butyl benzene	s-Butyl benzene	N-Butyl benzene	1,2- Dichloro benzene	Naphth alene	p- Isopropyl toluene	1,1,1,2- Tetrachloro ethane	Tetrachloro ethene	Trichloro ethene		
WI ADMIN CODE																	
NR 720 Residual Contaminant Levels (potential leach to GW)				NS	NS	NS	NS	NS	NS	NS	NS	400 ++	NS	NS	NS	NS	NS
NR 746 Soil Screening Levels (free product potential)				NS	NS	NS	NS	NS	NS	NS	NS	2,700 20000/ 100000/ 110000++	NS	NS	NS	NS	NS
NR 746 Direct Contact Levels (top 4')				NS	NS	NS	NS	NS	NS	NS	NS	110000++	NS	NS	NS	NS	NS
1993 Investigation Results																	
MW-1, West of Building	16-17.5	225	YES***	*** See Results in Saturated Soil Section Below													
MW-2, East of ASTs	11-12.5	0.0	NO	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-3, East of Building	8.5-10	0.0	NO	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
B-4, At ASTs	3.5-5	218	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-5, NE Corner Building	8.5-10	0.0	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1998-1999 Investigation Results																	
NORTH NEAR FOUNDRY BUILDING																	
TW-6, Parking Lot	15-16	11.2	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-29, By Building on North	13-14	22.7	NO	NA	NA	NA	NA	NA	NA	NA	NA	<2	NA	NA	NA	NA	NA
TW-9, Former USTs, NE Corner	6.5-7	0.0	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NORTHWEST AST's																	
TW-7, at ASTs	9-10	4	YES	*** See Results in Saturated Soil Section Below													
MW-24, at ASTs	6-8	123	NO	NA	NA	NA	NA	NA	NA	NA	NA	397	NA	NA	NA	NA	NA
MW-24, at, ASTs	15	48	NO	NA	NA	NA	NA	NA	NA	NA	NA	178	NA	NA	NA	NA	NA
TW-16, West of ASTs	8-10	59	YES	*** See Results in Saturated Soil Section Below													
TW-10, East of ASTs	6-8	0.9	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-10, East of ASTs	13-14	0.4	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-26, SE of ASTs	9.0	0.0	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-11, South of ASTs	7-8	0.4	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-11, South of ASTs	13-14	0.6	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-25, South of ASTs	9.0	1.9	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-12, North of ASTs	6-8	4.0	YES	*** See Results in Saturated Soil Section Below													
MW-23, North of ASTs	7-9	NA	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
WEST OF FOUNDRY BUILDING : 1998																	
TW-13, NW Corner Bldg	9	3.5	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-13, NW Corner Bldg	16-18	184	YES	*** See Results in Saturated Soil Section Below													
MW-28, NW Corner Bldg	6-8	9.8	NO	NA	NA	NA	NA	NA	NA	NA	NA	<2	NA	NA	NA	NA	NA
TW-14, South of MW-1	8-10	2.0	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-27, South of MW-1	9-10	1.3	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-15, North of MW-1	8-10	31	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-15, North of MW-1	15-15.5	28	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-15, North of MW-1	20-22	89	YES	*** See Results in Saturated Soil Section Below													
1 : UST Removal Under Tank	5-6'	NA	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-17, West of MW-1	13.5-14	29	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-17, West of MW-1	19.5-20	42	YES	*** See Results in Saturated Soil Section Below													

TABLE 1: SOIL CHEMISTRY RESULTS : GRO, DRO, VOLATILE ORGANIC COMPOUNDS AND LEAD

TABLE 1 : SOIL CHEMISTRY RESULTS
Former Plymouth Foundry Site, Grafton, Wisconsin

SOIL SAMPLE I.D.	DEPTH (feet)	FIELD PID (s.u.)	Wet ?	LABORATORY RESULTS Detected Volatile Organic Compounds (ug/kg)													
				Styrene	i-Propyl benzene	N-Propyl benzene	t-Butyl benzene	s-Butyl benzene	N-Butyl benzene	1,2-Dichloro benzene	Naphthalene	p-Isopropyl toluene	1,1,1,2-Tetrachloro ethane	Tetrachloro ethene	Trichloro ethene		
WI ADMIN CODE																	
NR 720 Residual Contaminant Levels (potential leach to GW)				NS	NS	NS	NS	NS	NS	NS	NS	400 ++	NS	NS	NS	NS	NS
NR 746 Soil Screening Levels (free product potential)				NS	NS	NS	NS	NS	NS	NS	NS	2,700	NS	NS	NS	NS	NS
												20000/ 100000/ 110000++	NS	NS	NS	NS	NS
EAST OF FOUNDRY BUILDING @ GAS UST : 1998 CLOSED BY COMMERCE APRIL 2000																	
TW-18, South	5 - 7	0.0	NO ?	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-19, West	5 - 7	0.0	NO	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28
TW-8, At Gas Dispenser	5 - 6	353.5	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-8, At Gas Dispenser	12.5-13.5	1.0	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-20, East in ROW	4.5-5	0.0	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-20, East in ROW	9.0	2.3	NO	<28	207	336	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28
TW-20, East in ROW	11 - 12	0.0	NO	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28
MW-22, North	9 - 10	0.7	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SUMMARY OF BORINGS ALONG FORMER RAILROAD SPUR : DECEMBER 2001																	
B41	4-6	0	Moist	<19	<20	<15	<12	<21	<22	<14	<25	<21	<15	<22	<23	<23	<23
B41	10-12	2.4	NO	<19	<20	<15	<12	<21	<22	<14	<25	<21	<15	<22	<23	<23	<23
B42	6-8	0	Moist	<19	<20	<15	<12	<21	<22	<14	<25	<21	<15	<22	<23	<23	<23
B42	10-12	0	NO?	<19	<20	<15	<12	<21	<22	<14	<25	<21	<15	<22	<23	<23	<23
B43	6-8	1.0	Moist	<19	<20	<15	<12	<21	<22	<14	<25	<21	<15	<22	26	<23	<23
B43	10-12	15.5	NO	<19	<20	18	<12	64	140	26	<25	<21	<15	<22	<23	<23	<23
B44	4-6	112	Moist	<19	<20	<15	<12	<21	<22	<14	<25	<21	<15	330	<23	<23	<23
B44	10-12	22.4	NO?	<19	<20	<15	<12	<21	<22	<14	<25	<21	<15	2500	38	<23	<23
B45	6-8	1.0	Moist	<19	<20	<15	<12	<21	<22	<14	<25	<21	<15	180	<23	<23	<23
B45	10-12	36.2	NO?	<19	<20	<15	<12	<21	<22	<14	<25	<21	23	3800	1500	<23	<23
SUMMARY OF BORINGS TO DEFINE EXTENT OF PETROLEUM CONTAMINATION : DECEMBER 2001																	
B46	10-12	2.4	Moist	NA	NA	NA	NA	NA	NA	NA	<18	NA	NA	NA	NA	NA	NA
B47	0-2	0	Moist	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B47	2-4	0	Moist	<190	<200	<150	<120	<210	<220	<140	<250	<210	<150	<220	<230	<230	<230
B48	0-2	0	Moist	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B48	2-4	3.1	Moist	<190	<200	<150	<120	<210	<220	<140	<250	<210	<150	<220	<230	<230	<230
SUMMARY OF SATURATED SAMPLES INFLUENCED BY PERCHED OR PERMANENT GROUNDWATER																	
MW-1, West of Building	16-17.5	225	YES	165	426	205	1,110	368	1,480	<100	1,810	<100	<100	<100	<100	<15	<15
TW-7, at ASTs	9-10	4	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-12, North of ASTs	6-8	4.0	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-13, NW Corner Bldg	16-18	184	YES	<2227	<2227	6,186	<2227	5,080	9,895	<2227	20,846	3,425	<2227	<2227	<2227	<2227	<2227
TW-15, North of MW-1	20-22	89	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-16, West of ASTs	8-10	59	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-17, West of MW-1	19.5-20	42	YES	<221	<221	<221	<221	2,733	<221	<221	414	<221	<221	360	<221	<221	<221

BOLD and BOX Exceeds NR 720 Generic Soil Standard

* : MTBE present in methanol used to preserve samples

NA : Not Analyzed

NS : No Standard

Xylenes is sum of m, p, and o xylene.

** : Generic Standard for Soils with Hydraulic Conductivity Greater than 10⁻⁶ cm / sec (100), and less than 10⁻⁶ (250)

+ : Direct Contact at Non-Industrial Site / Industrial Site

++ Standard for Naphthalene from 1997 WDNR PAH Guidance, See PAH Clean-up Levels

TABLE 2: SOIL CHEMISTRY RESULTS: POLYAROMATIC HYDROCARBONS

Former Plymouth Foundry Site, Grafton, Wisconsin				LABORATORY RESULTS								
SOIL SAMPLE I.D.	DEPTH (feet)	FIELD PID (s.u.)	Wet ?	GRO (mg/kg)	DRO (mg/kg)	Detected Polynuclear Aromatic Hydrocarbons (ug/kg)						
						Benzo (b) Fluoranthene	Fluoranthene	Fluorene	1-Methyl Naphthalene	2-Methyl Naphthalene	Naphthalene	Phenanthrene
Groundwater Pathway				100 / 250**	100 / 250**	360,000	500,000	100,000	23,000	20,000	400	1,800
NR746 Soil Screening Levels (free product potential)						NS	NS	NS	NS	NS	2,700	NS
Direct Contact - Industrial						3,900	40,000,000	40,000,000	70,000,000	40,000,000	110,000	390,000
Direct Contact - Non-Industrial						88	600,000	600,000	1,100,000	600,000	20,000	18,000
Direct Contact or Inhalation - Non-Industrial if calculate site-specific exposure values from NR720.19											100,000	
1993 Investigation Results												
MW-1, West of Building	16-17.5	225	YES***	NA	NA	*** See Results in Saturated Soil Section Below						
MW-2, East of ASTs	11-12.5	0.0	NO	NA	NA	NA	NA	NA	NA	NA	<1.0	NA
MW-3, East of Building	8.5-10	0.0	NO	NA	NA	NA	NA	NA	NA	NA	<1.0	NA
B-4, At ASTs	3.5-5	218	NO	190	3,590	NA	NA	NA	NA	NA	NA	NA
B-5, NE Corner Building	8.5-10	0.0	NO	10.1	<10	NA	NA	NA	NA	NA	NA	NA
1998-1999 Investigation Results												
NORTH NEAR FOUNDRY BUILDING												
TW-6, Parking Lot	15-16	11.2	NO	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA
TW-29, By Building on North	13-14	22.7	NO	40.0	67.7	<1.2	<1.5	63.1	<2.4	72.7	<2	79.1
TW-9, Former USTs, NE Corner	6.5-7	0.0	YES	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA
NORTHWEST AST's												
TW-7, at ASTs	9-10	4	YES			*** See Results in Saturated Soil Section Below						
MW-24, at ASTs	6-8	123	NO	135	2,990	45.2	<1.5	169	2,490	2,110	397	<3.1
MW-24, at, ASTs	15	48	NO	81	2,730	46.0	<1.5	161	1,740	2,230	178	<3.1
TW-16, West of ASTs	8-10	59	YES			*** See Results in Saturated Soil Section Below						
TW-10, East of ASTs	6-8	0.9	YES	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA
TW-10, East of ASTs	13-14	0.4	YES	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA
MW-26, SE of ASTs	9.0	0.0	NO	<5.8	<5.8	NA	NA	NA	NA	NA	NA	NA
TW-11, South of ASTs	7-8	0.4	YES	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA
TW-11, South of ASTs	13-14	0.6	YES	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA
MW-25, South of ASTs	9.0	1.9	NO	11.0	102	NA	NA	NA	NA	NA	NA	NA
TW-12, North of ASTs	6-8	4.0	YES	NA	NA	*** See Results in Saturated Soil Section Below						
MW-23, North of ASTs	7-9	NA	NO	<5.7	<5.7	NA	NA	NA	NA	NA	NA	NA
WEST OF FOUNDRY BUILDING : 1998												
TW-13, NW Corner Bldg	9	3.5	NO	105	50.8	NA	NA	NA	NA	NA	NA	NA
TW-13, NW Corner Bldg	16-18	184	YES			*** See Results in Saturated Soil Section Below						
MW-28, NW Corner Bldg	6-8	9.8	NO	118	383	<1.2	<1.5	42.3	23.4	38.7	<2	85.6
TW-14, South of MW-1	8-10	2.0	YES	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA
MW-27, South of MW-1	9-10	1.3	NO	<5.7	<5.7	NA	NA	NA	NA	NA	NA	NA
TW-15, North of MW-1	8-10	31	NO	211	943	NA	NA	NA	NA	NA	NA	NA
TW-15, North of MW-1	15-15.5	28	NO	246	1,440	NA	NA	NA	NA	NA	NA	NA
TW-15, North of MW-1	20-22	89	YES			*** See Results in Saturated Soil Section Below						
1 : UST Removal Under Tank	5-6'	NA	NO	NA	1,200	NA	NA	NA	NA	NA	NA	NA
TW-17, West of MW-1	13.5-14	29	NO	74.4	878	NA	NA	NA	NA	NA	NA	NA
TW-17, West of MW-1	19.5-20	42	YES			*** See Results in Saturated Soil Section Below						

TABLE 2: SOIL CHEMISTRY RESULTS: POLYAROMATIC HYDROCARBONS

Former Plymouth Foundry Site, Grafton, Wisconsin				LABORATORY RESULTS									
SOIL SAMPLE I.D.	DEPTH (feet)	FIELD PID (s.u.)	Wet ?	GRO (mg/kg)	DRO (mg/kg)	Detected Polynuclear Aromatic Hydrocarbons (ug/kg)							
						Benzo (b) Fluoranthene	Fluoranthene	Fluorene	1-Methyl Naphthalene	2-Methyl Naphthalene	Naphthalene	Phenanthrene	
Groundwater Pathway				100 / 250**	100 / 250**	360,000	500,000	100,000	23,000	20,000	400	1,800	
NR746 Soil Screening Levels (free product potential)						NS	NS	NS	NS	NS	2,700	NS	
Direct Contact - Industrial						3,900	40,000,000	40,000,000	70,000,000	40,000,000	110,000	390,000	
Direct Contact - Non-Industrial						88	600,000	600,000	1,100,000	600,000	20,000	18,000	
Direct Contact or Inhalation - Non-Industrial if calculate site-specific exposure values from NR720.19											100,000		
EAST OF FOUNDRY BUILDING @ GAS UST : 1998 CLOSED BY COMMERCE APRIL 2000													
TW-18, South	5 - 7	0.0	NO ?	<5.7	NA	NA	NA	NA	NA	NA	NA	NA	
MW-19, West	5 - 7	0.0	NO	<5.7	NA	NA	NA	NA	NA	NA	<28	NA	
TW-8, At Gas Dispenser	5 - 6	353.5	NO	1340	NA	NA	NA	NA	NA	NA	NA	NA	
TW-8, At Gas Dispenser	12.5-13.5	1.0	NO	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	
TW-20, East in ROW	4.5-5	0.0	NO	<5.7	NA	NA	NA	NA	NA	NA	NA	NA	
TW-20, East in ROW	9.0	2.3	NO	6.2	NA	NA	NA	NA	NA	NA	<28	NA	
TW-20, East in ROW	11 - 12	0.0	NO	<5.6	NA	NA	NA	NA	NA	NA	<28	NA	
MW-22, North	9 - 10	0.7	NO	<5.8	NA	NA	NA	NA	NA	NA	NA	NA	
SUMMARY OF BORINGS ALONG FORMER RAILROAD SPUR : December 2001													
B41	4-6	0	Moist	NA	NA	NA	NA	NA	NA	NA	NA	NA	
B41	10-12	2.4	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	
B42	6-8	0	Moist	NA	NA	NA	NA	NA	NA	NA	NA	NA	
B42	10-12	0	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	
B43	6-8	1.0	Moist	NA	NA	NA	NA	NA	NA	NA	NA	NA	
B43	10-12	15.5	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	
B44	4-6	112.0	Moist	NA	NA	NA	NA	NA	NA	NA	NA	NA	
B44	10-12	22.4	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	
B45	6-8	1.0	Moist	NA	NA	NA	NA	NA	NA	NA	NA	NA	
B45	10-12	36.2	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	
SUMMARY OF BORINGS TO DEFINE EXTENT OF PETROLEUM CONTAMINATION : 2001													
B46	10-12	2.4	Moist	NA	NA	<14	<15	<18	<18	<19	<18	<15	
B47	0-2	0	Moist	NA	NA	<14	24	<18	<18	<19	<18	<15	
B47	2-4	0	Moist	NA	NA	<28	<30	<36	<36	<38	<36	<30	
B48	0-2	0	Moist	NA	NA	<14	<15	<18	<18	<19	<18	<15	
B48	2-4	3.1	Moist	NA	NA	<14	<15	<18	<18	<19	<18	<15	
SUMMARY OF SATURATED SOIL SAMPLES INFLUENCED BY PERCHED OR PERMANENT GROUNDWATER													
MW-1, West of Building	16-17.5	225	YES	NA	NA	NA	NA	NA	NA	NA	1,810	NA	
TW-7, at ASTs	9-10	4	YES	38.7	96.6	NA	NA	NA	NA	NA	NA	NA	
TW-12, North of ASTs	6-8	4.0	YES	267	472	NA	NA	NA	NA	NA	NA	NA	
TW-13, NW Corner Bldg	16-18	184	YES	1,370	8,680	NA	NA	NA	NA	NA	20,846	NA	
TW-15, North of MW-1	20-22	89	YES	804	3,020	NA	NA	NA	NA	NA	NA	NA	
TW-16, West of ASTs	8-10	59	YES	234	838	NA	NA	NA	NA	NA	NA	NA	
TW-17, West of MW-1	19.5-20	42	YES	394	3,040	NA	NA	NA	NA	NA	414	NA	
Notes:													
BOLD Exceeds Soil Standards													
NA : Not Analyzed													
NS : No Standard													
** : Generic Standard for Soils with Hydraulic Conductivity Greater than 10 ⁻⁶ cm / sec (100), and less than 10 ⁻⁶ (250)													
Generic Cleanup Levels from Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAH) Interim Guidance, WDNR Publication RR-519-97, April 1997 (corrected)													

TABLE 3 : GROUNDWATER CHEMISTRY RESULTS													
Former Plymouth Foundry Site, Grafton, WI													
GROUNDWATER													
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Dissolved Lead	GRO	DRO	Petroleum Volatile Organic Compounds (ug/l = ppb)							
						Ft below grnd	(ug/l)	(ug/l = ppb)	Benzene	Ethylbenzene	Toluene	Xylenes	Methyl-t-butyl ether
WI ADMIN CODE			15 / 1.5	NS	NS	5.0 / 0.5	700 / 140	1000 / 200	10,000 / 1,000	60 / 12	480 / 96		
WEST OF BUILDING AT FOUR FORMER ASTs													
MW-1, West of Foundry @ ASTs	6/17/99	17.2 / 17.2	NA	NA	NA	NA : DRY							
MW-1, West of Foundry @ ASTs	4/6/99	17.2 / 16.9	NA	NA	NA	NA : DRY							
MW-1, West of Foundry @ ASTs	10/1/98	17.2 / 16.8	NA	NA	NA	NA : DRY							
MW-1, West of Foundry	1/20/98		NA	120,000	NA	<50	<100	<100	<200	<100	344	<100	
MW-1, West of Foundry	5/25/93		NA	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0	13.6	<5.0	
TW-14, South of MW-1	1/20/98	9.7 / 4.8	NA	<50.0	2547	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	
MW-27, South of West ASTs	6/17/99	23.8 / 12.61	NA	NA	<100	<2.7	<3.2	<2.7	<6.7	<3.2	<2.2	<2.7	
MW-27, South of West ASTs	4/6/99	23.8 / 16.1	NA	NA	130	<0.27	<3.2	98	<0.67	<3.2	<2.2	<2.7	
MW-27, South of West ASTs	10/1/98	23.8 / 16.9	NA	335	2570	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	
MW-30, Duplicate	6/17/99		NA	NA	13000	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	
MW-30, West of West ASTs	6/17/99	23.5 / 12.64	NA	NA	2800	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	
MW-30, West of West ASTs	4/6/99	23.5 / 16.2	NA	NA	4500	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	
MW-30DUP, West of West ASTs	4/6/99		NA	NA	7200	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	
MW-30, West of West ASTs	10/1/98	23.5 / 16.6	NA	156	31900	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	
TW-16, West of ASTs	1/20/98	17.2 / 5.9	NA	287	10811	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	
MW-28, North of West ASTs	6/17/99	23.9 / 12.21	NA	NA	1900	<0.27	17	<0.27	16.29	<0.32	0.71	0.35	
MW-28, North of West ASTs	4/6/99	23.9 / 15.3	NA	NA	3400	<0.27	3.50	<0.27	2.84	<0.32	0.27	<0.27	
MW-28, North of West ASTs	10/1/98	23.9 / 16.6	NA	231	67200	<0.5	1.49	<1.0	1.11	<1.0	5.17	1.44	
TW-15, North of MW-1	1/20/98	19.9 / 17.2	NA	1,060	246,000	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	

* Includes Detection of Chloromethane, 2.0 ug/L. ES is 3.0, PAL is 0.3 ug/L
NS : No Standard ; NA Not Analyzed
Xylenes Sum of m, p, o Xylene
BOLD Exceeds NR 140 ES
ITALICS Exceed Preventive Action Limit Standard

TABLE 3 : GROUNDWATER CHEMISTRY RESULTS												
Former Plymouth Foundry Site, Grafton, WI												
GROUNDWATER												
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Dissolved Lead	GRO	DRO	Petroleum Volatile Organic Compounds (ug/l = ppb)						
						Benzene	Ethylbenzene	Toluene	Xylenes	Methyl-t-butyl ether	124-Trimethyl benzene	135-Trimethyl benzene
		Ft below grnd	(ug/l)	(ug/l = ppb)								
WI ADMIN CODE NR 140 E.S. / P.A.L.			15 / 1.5	NS	NS	5.0 / 0.5	700 / 140	1000 / 200	10,000 / 1,000	60 / 12	480 / 96	
NORTHWEST AT FIVE FORMER ASTs												
MW-2, East of NW ASTs	6/17/99	17.9 / 14.61	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27
MW-2, East of NW ASTs	4/6/99	17.9 / 16.9	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27
MW-2, East of NW ASTs	9/17/98	17.9 / 16.1	NA	<50.0	<100	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
MW-2, East of NW ASTs	1/20/98		NA	<50.0	<100	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
MW-2, East of NW ASTs	5/25/93		NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-23, North of NW ASTs	6/17/99	23.2 / 13.47	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27
MW-23, North of NW ASTs	4/6/99	23.2 / 16.9	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27
MW-23, North of NW ASTs	9/17/98	23.2 / 17.9	NA	<50	<100	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
TW-12, North of ASTs	1/20/98	14.8 / 4.9	NA	291	5590	<0.5	1.49	<1.0	1.37	<1.0	7.11	1.76
MW-24, @ NW ASTs	6/17/99	22.9 / 12.88	NA	NA	23000	<0.27	6.0	<0.27	11.5	<0.32	34	14
MW-24, @ NW ASTs	4/6/99	22.9 / 16.4	NA	NA	1900	0.39	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27
MW-24 DUP, @ NW ASTs	4/6/99		NA	NA	22000	0.33	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27
MW-24, @ NW ASTs	9/17/98	22.9 / 17.2	NA	<50	321	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
MW-24 Dup, @ NW ASTs	9/17/98		NA	<50	265	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
TW-7, At Former ASTs	1/20/98	12.5 / 5.1	NA	148	159	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
MW-25, South of NW ASTs	6/17/99	23.1 / 12.35	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27
MW-25, South of NW ASTs	4/6/99	23.1 / 15.8	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27
MW-25, South of NW ASTs	9/17/98	23.1 / 16.7	NA	<50	<100	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
TW-11, South of ASTs	1/20/98	14.0 / 5.8	NA	<50.0	<100	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
MW-26, SE of NW ASTs	6/17/99	23.1 / 11.28	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27
MW-26, SE of NW ASTs	4/6/99	23.1 / 14.7	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.27	<0.27
MW-26, SE of NW ASTs	9/17/98	23.1 / 15.5	NA	<50	<100	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
TW-10, East of ASTs	1/20/98	14.8 / 3.9	NA	<50.0	4170	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0

* Includes Detection of Chloromethane, 2.0 ug/L. ES is 3.0, PAL is 0.3 ug/L

NS : No Standard ; NA Not Analyzed

Xylenes Sum of m, p, o Xylene

BOLD Exceeds NR 140 ES

ITALICS Exceed Preventive Action Limit Standard

TABLE 3 : GROUNDWATER CHEMISTRY RESULTS												
Former Plymouth Foundry Site, Grafton, WI												
GROUNDWATER												
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Dissolved Lead	GRO	DRO	Petroleum Volatile Organic Compounds (ug/l = ppb)						
						Benzene	Ethylbenzene	Toluene	Xylenes	Methyl-t-butyl ether	124-Trimethyl benzene	135-Trimethyl benzene
		Ft below grnd	(ug/l)		(ug/l = ppb)							
WI ADMIN CODE			15 / 1.5	NS	NS	5.0 / 0.5	700 / 140	1000 / 200	10,000 / 1,000	60 / 12	480 / 96	
GAS UST (EAST SIDE OF SITE)												
MW-3, East of Foundry	6/17/99	17.8 / 10.53	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27
MW-3, East of Foundry	4/6/99	17.8 / 13.8	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27
MW-3, East of Foundry	9/17/98	17.8 / 14.4	NA	NA	NA	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
MW-3, East of Foundry	2/5/98		NA	<50	<100	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
MW-3, East of Foundry	5/25/93		NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-19, West	6/17/99	20.7 / 10.76	NA	NA	660.0	1.3	0.94	<0.27	0.86	<0.32	0.38	<0.27
MW-19, West	4/6/99	20.7 / 14.1	NA	NA	480	<0.54	<0.64	<0.54	<1.34	<0.64	<0.44	<0.54
MW-19, West	9/17/98	20.7 / 14.9	<1.0	NA	756	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
MW-22, North	6/17/99	20.5 / 10.46	NA	NA	650.0	<0.27	0.76	<0.27	6.8	<0.32	<0.22	1.0
MW-22, North	4/6/99	20.5 / 13.7	NA	NA	280	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27
MW-22, North	9/17/98	20.5 / 14.3	<1.0	NA	575	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
TW-18, South	9/17/98	11.9 / 5.9	NA	NA	NA	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
TW-8, At Gas Dispenser	9/17/98	14.2 / 13.7	NA	NA	NA	NA : DRY						
TW-21, At Dispenser	9/17/98	13.2 / 13.2	NA	900	NA	3.98	4.22	3.27	187	<2.1	28.7	76.0
MW-31, north across 11th Ave	6/17/99	19.01 / 10.78	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.27	<0.27
MW-31, north across 11th Ave	5/17/99	19.01 / 11.11	NA	NA	240.0	<0.54	<0.64	<0.54	<1.34	<0.64	<0.44	<0.54
MW-32, south across 11th Ave.	6/17/99	20.44 / 10.35	NA	NA	380.0	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27
MW-32, south across 11th Ave.	5/17/99	20.44 / 10.85	NA	NA	100.0	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27
OTHER LOCATIONS												
B-46, Parking Lot*	12/26/01	NA / 12	NA	NA	NA	0.18	<0.16	0.33	<0.34	<0.29	<0.12	<0.14
TW-6, Parking Lot	1/20/98	18.8 / 16.7	NA	<50.0	<100	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
TW-9, at former USTs, NE Corner	1/20/98	9.1 / 4.9	NA	<50.0	368	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
TW-29, 60 ft E of NW Cmr of Bldg	10/1/98	16.5 / 16.4	NA	NA	NA	NA : DRY						
Trip Blank	6/17/99	NA	NA	NA	NA	<0.27	<0.32	0.36	<0.67	<0.32	<0.22	<0.27
Trip Blank	9/17/98	NA	NA	NA	NA	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
Trip Blank	10/1/98	NA	NA	<50	NA	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
Trip Blank	1/20/98	NA	NA	NA	NA	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0

* Includes Detection of Chloromethane, 2.0 ug/L. ES is 3.0, PAL is 0.3 ug/L
NS : No Standard ; NA Not Analyzed
Xylenes Sum of m, p, o Xylene
BOLD Exceeds NR 140 ES
ITALICS Exceed Preventive Action Limit Standard

TABLE 3 : GROUNDWATER CHEMISTRY RESULTS																				
Former Plymouth Foundry Site, Grafton, WI																				
GROUNDWATER																				
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Detected VOC's (ug/l = ppb)																	
			N-Butylbenzene	sec-Butylbenzene	Isopropyl Benzene	1,4-Dichloro benzene	p-Isopropyl toluene	Naphthalene	Tetrachloro ethylene	Trichloroethylene	1,1,1-Trichloroethane	Vinyl Chloride	Bromoform	trans-1,2-Dichloroethene	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloro Ethene	cis-1,2-Dichloroethene	N-Propylbenzene	
WI ADMIN CODE NR 140 E.S. / P.A.L.			NS	NS	NS	75 / 15	NS	40 / 8	5 / 0.5	5 / 0.5	200 / 40	0.2 / 0.02	4.4 / 0.44	100 / 20	850 / 85	5 / 0.5	7 / 0.7	70 / 7	NS	
WEST OF BUILDING AT FOUR FORMER ASTs																				
MW-1, West of Foundry @ ASTs	6/17/99	17.2 / 17.2	NA : DRY																	
MW-1, West of Foundry @ ASTs	4/6/99	17.2 / 16.9	NA : DRY																	
MW-1, West of Foundry @ ASTs	10/1/98	17.2 / 16.8	NA : DRY																	
MW-1, West of Foundry	1/20/98		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-1, West of Foundry	5/25/93		12.6	<5.0	<5.0	<5.0	<5.0	51.8	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TW-14, South of MW-1	1/20/98	9.7 / 4.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-27, South of West ASTs	6/17/99	23.8 / 12.61	<2.9	<2.9	<2.6	<3.0	<2.4	<3.5	740	140	<3.0	<2.0	<4.4	<7.9	<3.5	<3.7	<4.3	28	<7.6	
MW-27, South of West ASTs	4/6/99	23.8 / 16.1	<2.9	<2.9	<2.6	<3.0	<2.4	<3.5	970	140	<3.0	<2.0	<4.4	<7.9	<3.5	<3.7	<4.3	110	<7.6	
MW-27, South of West ASTs	10/1/98	23.8 / 16.9	NA	NA	NA	NA	NA	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-30, Duplicate	6/17/99		0.39	0.60	<0.26	<0.30	<0.24	0.46	22	7.5	<0.30	1.6	<0.44	5.2	<0.35	<0.37	<0.43	2.0	<0.76	
MW-30, West of West ASTs	6/17/99	23.5 / 12.64	0.45	<0.29	<0.26	<0.30	<0.24	<0.35	18	4.5	<0.30	1.2	<0.44	3.3	<0.35	<0.37	<0.43	1.4	<0.76	
MW-30, West of West ASTs	4/6/99	23.5 / 16.2	<0.29	0.6	<0.26	<0.30	<0.24	<0.35	68	36	<0.30	1.2	<0.44	9.7	<0.35	<0.37	<0.43	5.5	<0.76	
MW-30DUP, West of West ASTs	4/6/99		<0.29	0.6	<0.26	<0.30	<0.24	<0.35	71	37	<0.30	0.94	<0.44	8.1	<0.35	<0.37	<0.43	5.0	<0.76	
MW-30, West of West ASTs	10/1/98	23.5 / 16.6	NA	NA	NA	NA	NA	3.67	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-16, West of ASTs	1/20/98	17.2 / 5.9	4.17	1.98	<1.0	<1.0	1.71	58.3	<1.0	<0.5	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
MW-28, North of West ASTs	6/17/99	23.9 / 12.21	2.6	2.2	2.6	0.3	0.38	<0.35	<0.43	<0.37	<0.30	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	3.7	
MW-28, North of West ASTs	4/6/99	23.9 / 15.3	0.52	0.48	0.5	<0.30	<0.24	<0.35	0.59	0.55	<0.30	0.33	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	
MW-28, North of West ASTs	10/1/98	23.9 / 16.6	NA	NA	NA	NA	NA	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-15, North of MW-1	1/20/98	19.9 / 17.2	<5.0	6.2	<5.0	<5.0	<5.0	<5.0	36.3	7.5	<5.0	4.91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	

* Includes Detection of Chloromethane, 2.0 ug/L. ES is 3.0, PAL is 0.3 ug/L
 NS : No Standard ; NA Not Analyzed
 Xylenes Sum of m, p, o Xylene
 BOLD Exceeds NR 140 ES
 ITALICS Exceed Preventive Action Limit Standard

TABLE 3 : GROUNDWATER CHEMISTRY RESULTS																				
Former Plymouth Foundry Site, Grafton, WI																				
GROUNDWATER																				
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Detected VOC's (ug/l = ppb)																	
			Ft below grnd	N-Butylbenzene	sec-Butylbenzene	Isopropyl Benzene	1,4-Dichloro benzene	p-Isopropyl toluene	Naphthalene	Tetrachloro ethylene	Trichloro ethylene	1,1,1-Trichloroethane	Vinyl Chloride	Bromoform	trans-1,2-Dichloroethene	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloro Ethene	cis-1,2-Dichloroethene	N-Propylbenzene
WI ADMIN CODE NR 140 E.S. / P.A.L.			NS	NS	NS	75 / 15	NS	40 / 8	5 / 0.5	5 / 0.5	200 / 40	0.2 / 0.02	4.4 / 0.44	100 / 20	850 / 85	5 / 0.5	7 / 0.7	70 / 7	NS	
NORTHWEST AT FIVE FORMER ASTs																				
MW-2, East of NW ASTs	6/17/99	17.9 / 14.61	<0.29	<0.29	<0.29	<0.30	<0.24	<0.35	<0.43	<0.37	<0.37	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	
MW-2, East of NW ASTs	4/6/99	17.9 / 16.9	<0.29	<0.29	<0.29	<0.30	<0.24	<0.35	<0.43	<0.37	<0.37	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	
MW-2, East of NW ASTs	9/17/98	17.9 / 16.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-2, East of NW ASTs	1/20/98		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-2, East of NW ASTs	5/25/93		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
MW-23, North of NW ASTs	6/17/99	23.2 / 13.47	<0.29	<0.29	<0.29	<0.30	<0.24	<0.35	<0.43	<0.37	<0.37	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	
MW-23, North of NW ASTs	4/6/99	23.2 / 16.9	<0.29	<0.29	<0.29	<0.30	<0.24	<0.35	<0.43	<0.37	<0.37	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	
MW-23, North of NW ASTs	9/17/98	23.2 / 17.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-12, North of ASTs	1/20/98	14.8 / 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-24, @ NW ASTs	6/17/99	22.9 / 12.88	2.5	1.0	2.2	<0.30	2.3	75	<0.43	<0.37	<0.30	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	3.0	
MW-24, @ NW ASTs	4/6/99	22.9 / 16.4	<0.29	<0.29	<0.29	<0.30	<0.24	<0.35	<0.43	<0.37	<0.37	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	
MW-24 DUP, @ NW ASTs	4/6/99		<0.29	<0.29	<0.29	<0.30	<0.24	<0.35	<0.43	<0.37	<0.37	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	
MW-24, @ NW ASTs	9/17/98	22.9 / 17.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-24 Dup, @ NW ASTs	9/17/98		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-7, At Former ASTs	1/20/98	12.5 / 5.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
MW-25, South of NW ASTs	6/17/99	23.1 / 12.35	<0.29	<0.29	<0.29	<0.30	<0.24	<0.35	<0.43	<0.37	<0.37	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	
MW-25, South of NW ASTs	4/6/99	23.1 / 15.8	<0.29	<0.29	<0.29	<0.30	<0.24	<0.35	<0.43	<0.37	<0.37	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	
MW-25, South of NW ASTs	9/17/98	23.1 / 16.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-11, South of ASTs	1/20/98	14.0 / 5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-26, SE of NW ASTs	6/17/99	23.1 / 11.28	<0.32	<0.29	<0.29	<0.30	<0.24	<0.35	<0.43	<0.37	<0.37	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	
MW-26, SE of NW ASTs	4/6/99	23.1 / 14.7	<0.29	<0.29	<0.29	<0.30	<0.24	<0.35	<0.43	<0.37	<0.37	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	
MW-26, SE of NW ASTs	9/17/98	23.1 / 15.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-10, East of ASTs	1/20/98	14.8 / 3.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

* Includes Detection of Chloromethane, 2.0 ug/L. ES is 3.0, PAL is 0.3 ug/L
NS : No Standard ; NA Not Analyzed
Xylenes Sum of m, p, o Xylene
BOLD Exceeds NR 140 ES
ITALICS Exceed Preventive Action Limit Standard

TABLE 3 : GROUNDWATER CHEMISTRY RESULTS																				
Former Plymouth Foundry Site, Grafton, WI																				
GROUNDWATER																				
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Detected VOC's (ug/l = ppb)																	
			Ft below grd	N-Butylbenzene	sec-Butylbenzene	Isopropyl Benzene	1,4-Dichloro benzene	p-Isopropyl toluene	Naphthalene	Tetrachloro ethylene	Trichloroethylene	1,1,1-Trichloroethane	Vinyl Chloride	Bromoform	trans-1,2-Dichloroethene	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloro Ethene	cis-1,2-Dichloroethene	N-Propylbenzene
WI ADMIN CODE																				
NR 140 E.S. / P.A.L.			NS	NS	NS	75 / 15	NS	40 / 8	5 / 0.5	5 / 0.5	200 / 40	0.2 / 0.02	4.4 / 0.44	100 / 20	850 / 85	5 / 0.5	7 / 0.7	70 / 7	NS	
GAS UST (EAST SIDE OF SITE)																				
MW-3, East of Foundry	6/17/99	17.8 / 10.53	<0.29	<0.29	<0.26	<0.30	<0.24	<0.35	130	24	<0.30	0.57	<0.44	<0.79	<0.35	<0.37	<0.43	24	<0.76	
MW-3, East of Foundry	4/6/99	17.8 / 13.8	<0.29	<0.29	<0.26	<0.30	<0.24	<0.35	200	36	<0.30	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	27	<0.76	
MW-3, East of Foundry	9/17/98	17.8 / 14.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	164	25.4	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	41.4	<1.0	
MW-3, East of Foundry	2/5/98		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	151	37.1	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	22.9	<1.0	
MW-3, East of Foundry	5/25/93		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	185	26.7	<1.0	<1.0	81.9	<1.0	<1.0	<1.0	<1.0	16.1	<1.0	
MW-19, West	6/17/99	20.7 / 10.76	<0.29	0.34	<0.26	<0.30	<0.24	<0.35	1.1	2.1	<0.30	24	<0.44	7.5	<0.35	1.0	<0.43	1.8	<0.76	
MW-19, West	4/6/99	20.7 / 14.1	<0.58	<0.58	<0.52	<0.60	<0.48	<0.70	11	13	<0.60	250	<0.88	58	<0.70	<0.74	2.8	16	<1.5	
MW-19, West	9/17/98	20.7 / 14.9	1.65	3.49	<1.0	<1.0	<1.0	<1.0	6.12	5.53	<1.0	60.5	NA	15.9	<1.0	<1.0	<1.0	6.24	<1.0	
MW-22, North	6/17/99	20.5 / 10.46	<0.29	<0.29	<0.26	<0.30	<0.24	0.59	<0.43	<0.37	<0.30	<0.20	<0.44	<0.79	<0.35	0.58	<0.43	<0.28	<0.76	
MW-22, North	4/6/99	20.5 / 13.7	<0.29	1.40	0.31	<0.30	<0.24	<0.35	0.44	2.30	<0.30	0.97	<0.44	1.3	1.1	<0.37	<0.43	0.52	<0.76	
MW-22, North	9/17/98	20.5 / 14.3	<1.0	3.78	<1.0	<1.0	<1.0	1.19	<1.0	1.11	<1.0	0.613	NA	1.1	<1.0	<1.0	<1.0	<2.0	<1.0	
TW-18, South	9/17/98	11.9 / 5.9	<1.0	<1.0	<1.0	1.07	<1.0	<1.0	<1.0	<0.5	<1.0	<0.2	NA	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	
TW-8, At Gas Dispenser	9/17/98	14.2 / 13.7	NA : DRY																	
TW-21, At Dispenser	9/17/98	13.2 / 13.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-31, north across 11th Ave	6/17/99	19.01 / 10.78	<0.29	<0.29	<0.26	<0.30	<0.24	2.2	3.5	1.3	0.71	120	<0.44	6.3	1.0	<0.37	<0.43	20	<0.76	
MW-31, north across 11th Ave	5/17/99	19.01 / 11.11	<0.58	0.76	<0.52	<0.60	<0.48	<0.70	7.1	3.8	<0.60	210	<0.88	5.7	0.84	<0.74	<0.43	24	<1.5	
MW-32, south across 11th Ave.	6/17/99	20.44 / 10.35	<0.29	1.00	<0.26	<0.30	<0.24	<0.35	5.5	3.8	1.4	1.5	<0.44	1.8	0.82	<0.37	<0.43	1.1	<0.76	
MW-32, south across 11th Ave.	5/17/99	20.44 / 10.85	<0.29	0.81	<0.26	<0.30	<0.24	0.4	14	4.2	1.6	1.3	<0.44	1.2	0.68	<0.37	<0.43	1.1	<0.76	
OTHER LOCATIONS																				
B-46, Parking Lot*	12/26/01	NA / 12	<0.14	<0.14	<0.13	<0.13	<0.21	<0.29	1.1	0.31	<0.22	<0.17	<0.36	<0.22	<0.23	<0.20	<0.16	<0.24	<0.14	
TW-6, Parking Lot	1/20/98	18.8 / 16.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-9, at former USTs, NE Corner	1/20/98	9.1 / 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-29, 60 ft E of NW Cnr of Bld	10/1/98	16.5 / 16.4	NA : DRY																	
Trip Blank	6/17/99	NA	<0.29	<0.29	<0.26	<0.30	<0.24	<0.35	<0.43	<0.37	<0.30	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	
Trip Blank	9/17/98	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	
Trip Blank	10/1/98	NA	NA	NA	NA	NA	NA	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Trip Blank	1/20/98	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	

* Includes Detection of Chloromethane, 2.0 ug/L. ES is 3.0, PAL is 0.3 ug/L
NS : No Standard ; NA Not Analyzed
Xylenes Sum of m, p, o Xylene
BOLD Exceeds NR 140 ES
ITALICS Exceed Preventive Action Limit Standard

TABLE 3 : GROUNDWATER CHEMISTRY RESULTS															
Former Plymouth Foundry Site, Grafton, WI															
GROUNDWATER															
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Polynuclear Aromatic Hydrocarbons (ug/l)												
			Ft below grnd	Acenaphthene	Anthracene	Benzo (a) Anthracene	Benzo (g,h,i) perylene	Chrysene	Fluorene	Fluoranthene	Indeno (1,2,3-cd) Pyrene	1-Methyl Naphthalene	2-Methyl Naphthalene	Naphthalene	Pyrene
WI ADMIN CODE NR 140 E.S. / P.A.L.			NS	3000/600	NS	NS	0.2 / 0.02	NS	400 / 80	NS	NS	NS	40 / 8	250 / 50	NS
WEST OF BUILDING AT FOUR FORMER ASTs															
MW-1, West of Foundry @ ASTs	6/17/99	17.2 / 17.2	NA : DRY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-1, West of Foundry @ ASTs	4/6/99	17.2 / 16.9	NA : DRY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-1, West of Foundry @ ASTs	10/1/98	17.2 / 16.8	76.6	<1.0	<1.3	<1.6	<1.3	287	<1.3	1.51	189	<0.07	<0.05	<1.3	245
MW-1, West of Foundry	1/20/98		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-1, West of Foundry	5/25/93		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-14, South of MW-1	1/20/98	9.7 / 4.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-27, South of West ASTs	6/17/99	23.8 / 12.61	<0.47	<0.021	<0.05	<0.021	<0.016	<0.058	<0.015	<0.025	<0.36	<0.36	<0.42	<0.14	<0.046
MW-27, South of West ASTs	4/6/99	23.8 / 16.1	<4.7	<0.021	<0.05	<0.021	<0.016	<0.058	<0.015	<0.025	<0.36	<0.36	<0.42	<0.14	0.081
MW-27, South of West ASTs	10/1/98	23.8 / 16.9	<0.11	<0.03	<0.06	<0.05	<0.04	<0.04	<0.04	<0.04	<0.06	<0.07	<0.05	<0.17	0.226
MW-30, Duplicate	6/17/99		<1.4	<0.063	0.089	<0.80	0.06	<0.17	<0.045	<0.075	<1.1	<1.1	<1.3	<0.051	0.87
MW-30, West of West ASTs	6/17/99	23.5 / 12.64	<0.94	<0.042	0.051	<0.042	0.084	<0.12	<0.030	<0.050	<0.72	<0.72	<0.84	0.04	0.85
MW-30, West of West ASTs	4/6/99	23.5 / 16.2	<9.4	0.61	0.74	<0.42	1.1	<1.2	<0.030	<0.50	<7.2	<7.2	<8.4	0.50	6.7
MW-30DUP, West of West ASTs	4/6/99		<9.4	0.46	0.62	<0.42	0.79	<1.2	<0.030	<0.50	<7.2	<7.2	<8.4	<0.34	5.5
MW-30, West of West ASTs	10/1/98	23.5 / 16.6	0.437	<0.03	<0.06	<0.05	<0.04	1.32	<0.030	<0.04	<0.06	<0.07	<0.05	<0.17	<0.08
TW-16, West of ASTs	1/20/98	17.2 / 5.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-28, North of West ASTs	6/17/99	23.9 / 12.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-28, North of West ASTs	4/6/99	23.9 / 15.3	<3.8	<0.17	0.31	<0.17	0.5	<0.46	<0.12	<0.20	<2.9	<2.9	<3.4	<0.14	2.2
MW-28, North of West ASTs	10/1/98	23.9 / 16.6	3.88	<0.03	<0.06	<0.05	<0.04	8.55	<0.03	<0.04	6.69	2.67	1.78	<0.17	<0.08
TW-15, North of MW-1	1/20/98	19.9 / 17.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

* Includes Detection of Chloromethane, 2.0 ug/L. ES is 3.0, PAL is 0.3 ug/L

NS : No Standard ; NA Not Analyzed

Xylenes Sum of m, p, o Xylene

BOLD Exceeds NR 140 ES

ITALICS Exceed Preventive Action Limit Standard

TABLE 3 : GROUNDWATER CHEMISTRY RESULTS															
Former Plymouth Foundry Site, Grafton, WI															
GROUNDWATER															
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Polynuclear Aromatic Hydrocarbons (ug/l)												
			Acenaphthene	Anthracene	Benzo (a) Anthracene	Benzo (g,h,i) perylene	Chrysene	Fluorene	Fluoranthene	Indeno (1,2,3-cd) Pyrene	1-Methyl Naphthalene	2-Methyl Naphthalene	Naphthalene	Pyrene	Phenanthrene
Ft below grnd															
WI ADMIN CODE NR 140 E.S. / P.A.L.			NS	3000/600	NS	NS	0.2 / 0.02	NS	400 / 80	NS	NS	NS	40 / 8	250 / 50	NS
NORTHWEST AT FIVE FORMER ASTs															
MW-2, East of NW ASTs	6/17/99	17.9 / 14.61	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2, East of NW ASTs	4/6/99	17.9 / 16.9	<0.47	<0.021	<0.014	<0.021	<0.016	<0.058	<0.015	<0.025	<0.36	<0.36	<0.42	<0.017	<0.046
MW-2, East of NW ASTs	9/17/98	17.9 / 16.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2, East of NW ASTs	1/20/98		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2, East of NW ASTs	5/25/93		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-23, North of NW ASTs	6/17/99	23.2 / 13.47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-23, North of NW ASTs	4/6/99	23.2 / 16.9	<0.47	<0.021	<0.014	<0.021	<0.016	<0.058	<0.015	<0.025	<0.36	<0.36	<0.42	<0.017	<0.046
MW-23, North of NW ASTs	9/17/98	23.2 / 17.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-12, North of ASTs	1/20/98	14.8 / 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-24, @ NW ASTs	6/17/99	22.9 / 12.88	<9.4	<0.42	<0.28	<0.42	<0.32	<1.2	<0.30	<0.50	24.0	10.0	9.9	<0.34	4.6
MW-24, @ NW ASTs	4/6/99	22.9 / 16.4	<0.94	<0.042	0.043	<0.042	0.22	<0.12	<0.030	<0.050	<0.72	<0.72	<0.84	<0.034	0.280
MW-24 DUP, @ NW ASTs	4/6/99		<4.7	<0.21	0.210	<0.21	0.71	<5.8	<0.15	<0.25	<3.6	<3.6	<4.2	<0.17	2.500
MW-24, @ NW ASTs	9/17/98	22.9 / 17.2	<0.11	<0.03	<0.06	<0.05	<0.04	<0.04	<0.04	<0.04	0.114	0.112	<0.05	<0.17	0.089
MW-24 Dup, @ NW ASTs	9/17/98		<0.11	<0.03	<0.06	<0.05	<0.04	<0.04	<0.04	<0.04	<0.06	<0.07	<0.05	<0.17	<0.08
TW-7, At Former ASTs	1/20/98	12.5 / 5.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-25, South of NW ASTs	6/17/99	23.1 / 12.35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-25, South of NW ASTs	4/6/99	23.1 / 15.8	<0.47	<0.021	<0.014	<0.021	<0.016	<0.058	<0.015	<0.025	<0.36	<0.36	<0.42	<0.017	<0.046
MW-25, South of NW ASTs	9/17/98	23.1 / 16.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-11, South of ASTs	1/20/98	14.0 / 5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-26, SE of NW ASTs	6/17/99	23.1 / 11.28	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-26, SE of NW ASTs	4/6/99	23.1 / 14.7	<0.47	<0.021	<0.014	<0.021	<0.016	<0.058	<0.015	<0.025	<0.36	<0.36	<0.42	<0.017	<0.046
MW-26, SE of NW ASTs	9/17/98	23.1 / 15.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-10, East of ASTs	1/20/98	14.8 / 3.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

* Includes Detection of Chloromethane, 2.0 ug/L. ES is 3.0, PAL is 0.3 ug/L
NS : No Standard ; NA Not Analyzed
Xylenes Sum of m, p, o Xylene
BOLD Exceeds NR 140 ES
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TABLE 3 : GROUNDWATER CHEMISTRY RESULTS															
Former Plymouth Foundry Site, Grafton, WI															
GROUNDWATER															
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Polynuclear Aromatic Hydrocarbons (ug/l)												
			Ft below grnd	Acenaphthene	Anthracene	Benzo (a) Anthracene	Benzo (g,h,i) perylene	Chrysene	Fluorene	Fluoranthene	Indeno (1,2,3-cd) Pyrene	1-Methyl Naphthalene	2-Methyl Naphthalene	Naphthalene	Pyrene
WI ADMIN CODE NR 140 E.S. / P.A.L.			NS	3000/ 600	NS	NS	0.2 / 0.02	NS	400 / 80	NS	NS	NS	40 / 8	250 / 50	NS
GAS UST (EAST SIDE OF SITE)															
MW-3, East of Foundry	6/17/99	17.8 / 10.53	<0.47	<0.021	<0.014	0.021	<0.016	<0.058	<0.015	<0.025	<0.36	<0.36	<0.42	<0.017	<0.046
MW-3, East of Foundry	4/6/99	17.8 / 13.8	<0.47	<0.021	<0.014	<0.021	<0.016	<0.058	<0.015	<0.025	<0.36	<0.36	<0.42	<0.017	<0.046
MW-3, East of Foundry	9/17/98	17.8 / 14.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3, East of Foundry	2/5/98		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3, East of Foundry	5/25/93		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-19, West	6/17/99	20.7 / 10.76	1.1	0.12	<0.014	<0.021	<0.016	0.42	<0.015	<0.025	<0.36	0.55	<0.42	<0.017	1.7
MW-19, West	4/6/99	20.7 / 14.1	2.3	0.31	<0.014	<0.021	<0.016	1.10	0.032	<0.025	<0.36	0.99	<0.42	<0.017	2.6
MW-19, West	9/17/98	20.7 / 14.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-22, North	6/17/99	20.5 / 10.46	1.4	0.053	<0.014	<0.021	<0.016	0.98	<0.015	<0.025	<0.36	0.55	<0.42	<0.017	2.6
MW-22, North	4/6/99	20.5 / 13.7	2.1	0.230	<0.014	<0.021	<0.016	1.7	0.016	<0.025	<0.36	0.79	<0.42	<0.017	2.4
MW-22, North	9/17/98	20.5 / 14.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-18, South	9/17/98	11.9 / 5.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-8, At Gas Dispenser	9/17/98	14.2 / 13.7	NA : DRY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-21, At Dispenser	9/17/98	13.2 / 13.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-31, north across 11th Ave	6/17/99	19.01 / 10.78	<0.47	<0.021	<0.014	<0.021	<0.016	<0.058	<0.015	<0.025	<0.36	<0.36	<0.42	<0.017	0.12
MW-31, north across 11th Ave	5/17/99	19.01 / 11.11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-32, south across 11th Ave.	6/17/99	20.44 / 10.35	0.96	0.082	<0.014	<0.021	0.019	0.39	0.017	<0.025	<0.36	0.55	<0.42	<0.017	1.4
MW-32, south across 11th Ave.	5/17/99	20.44 / 10.85	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OTHER LOCATIONS															
B-46, Parking Lot*	12/26/01	NA / 12													
TW-6, Parking Lot	1/20/98	18.8 / 16.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-9, at former USTs, NE Corner	1/20/98	9.1 / 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-29, 60 ft E of NW Crnr of Bldg	10/1/98	16.5 / 16.4	NA : DRY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trip Blank	6/17/99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trip Blank	9/17/98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trip Blank	10/1/98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trip Blank	1/20/98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

* Includes Detection of Chloromethane, 2.0 ug/L. ES is 3.0, PAL is 0.3 ug/L

NS : No Standard ; NA Not Analyzed

Xylenes Sum of m, p, o Xylene

BOLD Exceeds NR 140 ES

ITALICS Exceed Preventive Action Limit Standard

TABLE 3 : GROUNDWATER CHEMISTRY RESULTS									
Former Plymouth Foundry Site, Grafton, WI									
GROUNDWATER									
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Natural Attenuation Parameters						
			Ft below grnd	Dissolved Oxygen	Sol. Sulfate	Nitrate plus Nitrite	Soluble Iron	Soluble Manganese	Methane
			(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(ug/l)	(mg/l)
WI ADMIN CODE			NS	250 / 125	10 / 2	0.3 / 0.15	0.05 / 0.025	NS	NS
NR 140 E.S. / P.A.L.									
WEST OF BUILDING AT FOUR FORMER ASTs									
MW-1, West of Foundry @ ASTs	6/17/99	17.2 / 17.2	NA : DRY	NA	NA	NA	NA	NA	NA
MW-1, West of Foundry @ ASTs	4/6/99	17.2 / 16.9	NA : DRY	NA	NA	NA	NA	NA	NA
MW-1, West of Foundry @ ASTs	10/1/98	17.2 / 16.8	NA : DRY	NA	NA	NA	NA	NA	NA
MW-1, West of Foundry	1/20/98		NA	NA	NA	NA	NA	NA	NA
MW-1, West of Foundry	5/25/93		NA	NA	NA	NA	NA	NA	NA
TW-14, South of MW-1	1/20/98	9.7 / 4.8	NA	NA	NA	NA	NA	NA	NA
MW-27, South of West ASTs	6/17/99	23.8 / 12.61	1.11	NA	NA	NA	NA	NA	NA
MW-27, South of West ASTs	4/6/99	23.8 / 16.1	2.00	46	1.2	0.057	0.015	<0.9	390
MW-27, South of West ASTs	10/1/98	23.8 / 16.9	0.63	44.1	3.24	<0.01	0.107	1.28	NA
MW-30, Duplicate	6/17/99		NA	NA	NA	NA	NA	NA	NA
MW-30, West of West ASTs	6/17/99	23.5 / 12.64	0.63	23	NA	NA	NA	NA	NA
MW-30, West of West ASTs	4/6/99	23.5 / 16.2	0.52	36	0.57	<0.047	<i>0.041</i>	25.0	420.0
MW-30DUP, West of West ASTs	4/6/99			100	1.1	<0.047	<i>0.041</i>	12.0	400.0
MW-30, West of West ASTs	10/1/98	23.5 / 16.6	NA	48.3	1.56	0.052	0.248	2.37	NA
TW-16, West of ASTs	1/20/98	17.2 / 5.9	NA	NA	NA	NA	NA	NA	NA
MW-28, North of West ASTs	6/17/99	23.9 / 12.21	0.57	NA	NA	NA	NA	NA	NA
MW-28, North of West ASTs	4/6/99	23.9 / 15.3	0.13	9.5	0.04	0.047	<i>0.032</i>	46.0	480
MW-28, North of West ASTs	10/1/98	23.9 / 16.6	NA	62.1	<0.3	0.42	0.273	3.88	NA
TW-15, North of MW-1	1/20/98	19.9 / 17.2	NA	NA	NA	NA	NA	NA	NA
NORTHWEST AT FIVE FORMER ASTs									
MW-2, East of NW ASTs	6/17/99	17.9 / 14.61	8.84	NA	NA	NA	NA	NA	NA
MW-2, East of NW ASTs	4/6/99	17.9 / 16.9	4.08	33.0	2.9	<0.047	0.0027	<0.9	410
MW-2, East of NW ASTs	9/17/98	17.9 / 16.1	2.97	33.0	1.04	<0.01	0.024	<1.0	382
MW-2, East of NW ASTs	1/20/98		NA	NA	NA	NA	NA	NA	NA
MW-2, East of NW ASTs	5/25/93		NA	NA	NA	NA	NA	NA	NA
MW-23, North of NW ASTs	6/17/99	23.2 / 13.47	6.69	NA	NA	NA	NA	NA	NA
MW-23, North of NW ASTs	4/6/99	23.2 / 16.9	4.14	38.0	0.17	<0.047	<i>0.039</i>	2.50	430
MW-23, North of NW ASTs	9/17/98	23.2 / 17.9	5.14	25.5	2.53	0.038	0.293	2.63	294
TW-12, North of ASTs	1/20/98	14.8 / 4.9	NA	NA	NA	NA	NA	NA	NA
MW-24, @ NW ASTs	6/17/99	22.9 / 12.88	0.60	NA	NA	NA	NA	NA	NA

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TABLE 3 : GROUNDWATER CHEMISTRY RESULTS									
Former Plymouth Foundry Site, Grafton, WI									
GROUNDWATER									
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Natural Attenuation Parameters						
			Ft below grnd	Dissolved Oxygen	Sol. Sulfate	Nitrate plus Nitrite	Soluble Iron	Soluble Manganese	Methane
			(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(ug/l)	(mg/l)
WI ADMIN CODE									
NR 140 E.S. / P.A.L.			NS	250 / 125	10 / 2	0.3 / 0.15	0.05 / 0.025	NS	NS
MW-24, @ NW ASTs	4/6/99	22.9 / 16.4	0.39	14.0	0.14	<0.047	0.38	7.70	510
MW-24 DUP, @ NW ASTs	4/6/99			14.0	0.17	<0.047	0.38	5.40	450
MW-24, @ NW ASTs	9/17/98	22.9 / 17.2	0.16	16.4	1.0	0.024	0.389	4.18	263
MW-24 Dup, @ NW ASTs	9/17/98		NA	17.7	0.854	0.022	0.422	4.25	268
TW-7, At Former ASTs	1/20/98	12.5 / 5.1	NA	NA	NA	NA	NA	NA	NA
MW-25, South of NW ASTs	6/17/99	23.1 / 12.35	0.85	NA	NA	NA	NA	NA	NA
MW-25, South of NW ASTs	4/6/99	23.1 / 15.8	0.80	12.0	0.37	<0.047	0.006	1.70	300
MW-25, South of NW ASTs	9/17/98	23.1 / 16.7	2.53	21.6	1.89	<0.01	0.002	<1.0	309
TW-11, South of ASTs	1/20/98	14.0 / 5.8	NA	NA	NA	NA	NA	NA	NA
MW-26, SE of NW ASTs	6/17/99	23.1 / 11.28	0.34	NA	NA	NA	NA	NA	NA
MW-26, SE of NW ASTs	4/6/99	23.1 / 14.7	0.38	52.0	0.037	<0.047	<i>0.049</i>	7.30	270
MW-26, SE of NW ASTs	9/17/98	23.1 / 15.5	0.20	21.3	1.65	0.072	0.051	<1.0	299
TW-10, East of ASTs	1/20/98	14.8 / 3.9	NA	NA	NA	NA	NA	NA	NA
GAS UST (EAST SIDE OF SITE)									
MW-3, East of Foundry	6/17/99	17.8 / 10.53	0.82	31.0	0.72	0.16	0.014	<10	NA
MW-3, East of Foundry	4/6/99	17.8 / 13.8	1.1	54.0	0.79	<0.047	<0.0025	<0.9	370.0
MW-3, East of Foundry	9/17/98	17.8 / 14.4	NA	NA	NA	NA	NA	NA	NA
MW-3, East of Foundry	2/5/98		0.31	NA	NA	NA	NA	NA	NA
MW-3, East of Foundry	5/25/93		NA	NA	NA	NA	NA	NA	NA
MW-19, West	6/17/99	20.7 / 10.76	0.26	31	0.72	0.16	0.014	<10	NA
MW-19, West	4/6/99	20.7 / 14.1	0.12	31	0.036	0.13	0.120	57.0	480.0
MW-19, West	9/17/98	20.7 / 14.9	NA	NA	NA	NA	NA	NA	NA
MW-22, North	6/17/99	20.5 / 10.46	0.35	19.0	2.3	1.5	0.22	53.0	NA
MW-22, North	4/6/99	20.5 / 13.7	0.38	30	0.086	<0.047	0.22	78.0	390.0
MW-22, North	9/17/98	20.5 / 14.3	0.17	24	<0.3	2.75	0.25	14.3	410.0
TW-18, South	9/17/98	11.9 / 5.9	0.13	NA	NA	NA	NA	NA	NA
TW-8, At Gas Dispenser	9/17/98	14.2 / 13.7	NA : DRY						
TW-21, At Dispenser	9/17/98	13.2 / 13.2	NA	NA	NA	NA	NA	NA	NA
MW-31, north across 11th Ave	6/17/99	19.01 / 10.78	0.46	32.0	0.056	1.0	0.42	61.0	NA
MW-31, north across 11th Ave	5/17/99	19.01 / 11.11	0.45	NA	NA	NA	NA	NA	NA

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Xylenes Sum of m, p, o Xylene

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Former Plymouth Foundry Site, Grafton, WI									
GROUNDWATER									
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Natural Attenuation Parameters						
			Ft below grnd	Dissolved Oxygen	Sol. Sulfate	Nitrate plus Nitrite	Soluble Iron	Soluble Manganese	Methane
			(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(ug/l)	(mg/l)
WI ADMIN CODE NR 140 E.S. / P.A.L.			NS	250 / 125	10 / 2	0.3 / 0.15	0.05 / 0.025	NS	NS
MW-32, south across 11th Ave.	6/17/99	20.44 / 10.35	0.24	21.0	0.058	1.0	0.33	72.0	NA
MW-32, south across 11th Ave.	5/17/99	20.44 / 10.85	0.25	NA	NA	NA	NA	NA	NA
OTHER LOCATIONS									
B-46, Parking Lot*	12/26/01	NA / 12							
TW-6, Parking Lot	1/20/98	18.8 / 16.7	NA	NA	NA	NA	NA	NA	NA
TW-9, at former USTs, NE Corne	1/20/98	9.1 / 4.9	NA	NA	NA	NA	NA	NA	NA
TW-29, 60 ft E of NW Crnr of Bld	10/1/98	16.5 / 16.4	NA	NA	NA	NA	NA	NA	NA
Trip Blank	6/17/99	NA	NA	NA	NA	NA	NA	NA	NA
Trip Blank	9/17/98	NA	NA	NA	NA	NA	NA	NA	NA
Trip Blank	10/1/98	NA	NA	NA	NA	NA	NA	NA	NA
Trip Blank	1/20/98	NA	NA	NA	NA	NA	NA	NA	NA

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Xylenes Sum of m, p, o Xylene

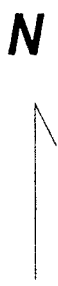
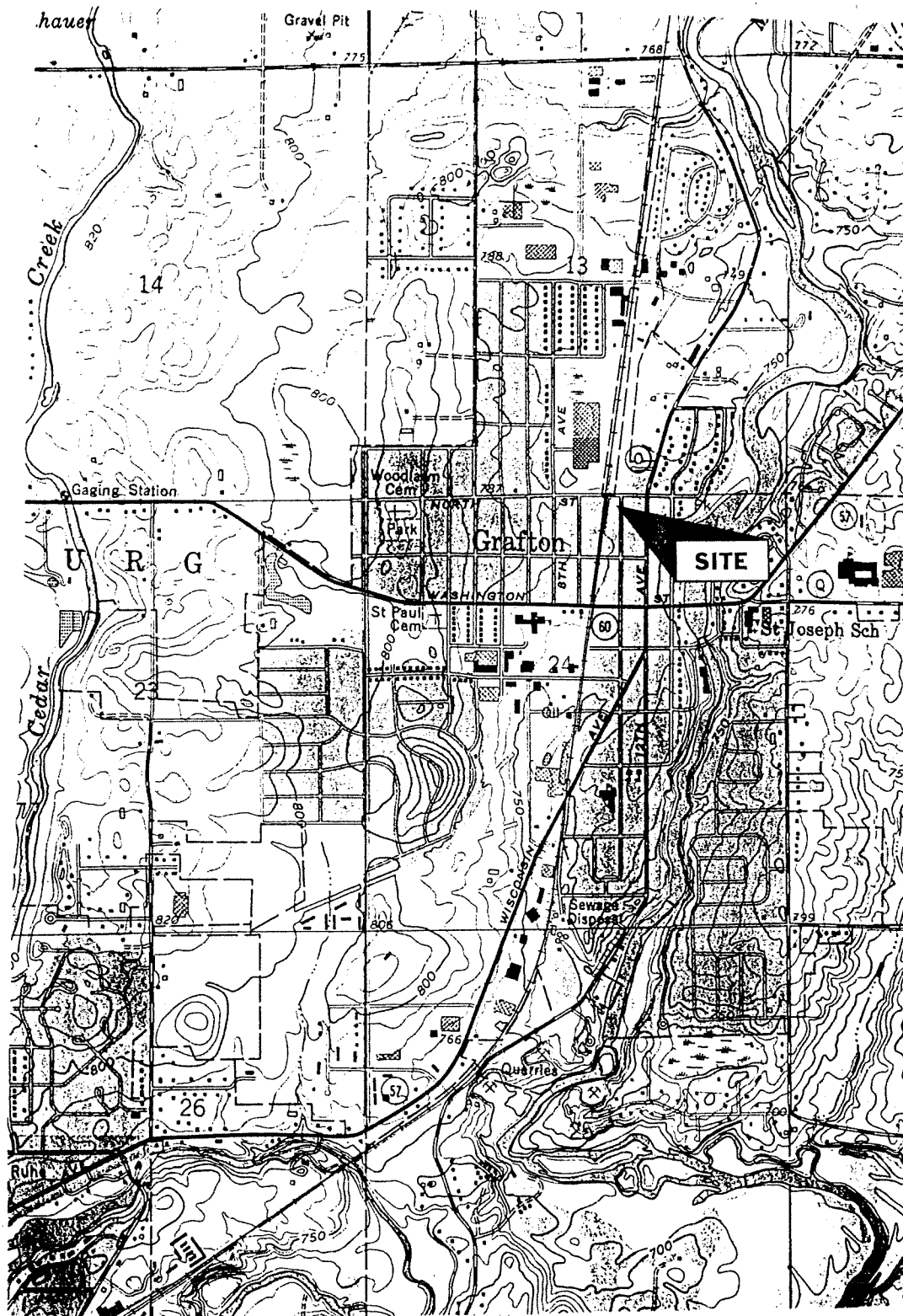
BOLD Exceeds NR 140 ES

ITALICS Exceed Preventive Action Limit Standard

OBJECT	LOCATION	Instrument Reading (feet)	Datum Elevation (ft MSL)	Eyepiece Elevation (ft MSL)	Object Elevation (ft MSL)	Well PVC Slickup (feet)	Water Level Measurements 10/1/98			Water Level Measurements 4/5/99		
							Ft below PVC Lip	Feet MSL	Feet below Grade	Ft below PVC Lip	Feet MSL	Feet below Grade
							STATION ONE					
DATUM : Hydrant Ground	SE Corner 9th & North	2.16	766.32	768.48	766.32							
DATUM : Hydrant Top Nut	SE Corner 9th & North	5.33+	769.49	768.48								
MW-23 PVC	North of ASTs	6.24		768.48	762.24	-0.46	17.46	744.78	17.92	16.98	745.26	17.44
MW-23 Grnd		5.78		768.48	762.70							
MW-24 PVC	At ASTs	6.98		768.48	761.50	-0.35	16.81	744.69	17.16	16.46	745.04	16.81
MW-24 Grnd		6.63		768.48	761.85							
MW-25 PVC	South of ASTs	7.57		768.48	760.91	-0.49	16.26	744.65	16.75	15.85	745.06	16.34
MW-25 Grnd		7.08		768.48	761.40							
MW-26 PVC	SE of ASTs	8.87		768.48	759.61	-0.45	15.10	744.51	15.55	14.71	744.90	15.16
MW-26 Grnd		8.42		768.48	760.06							
MW-2 Grnd	NE of ASTs	5.51		768.48	762.97	2.36	18.43	744.54	16.07	17.99	744.98	15.63
MW-2 PVC		7.87		768.48	760.61							
MW-28 PVC	NW Corner Bldg	7.65		768.48	760.83	-0.42	16.20	744.63	16.62	15.29	745.54	15.71
MW-28 Grnd		7.23		768.48	761.25							
MW-1 PVC	At Fuel Pump Vault	4.63		768.48	763.85	2.42	19.21	744.64	16.79	18.81	745.04	16.39
MW-1 Grnd		7.05		768.48	761.43							
MW-30 PVC	West of Fuel Pump	7.24		768.48	761.24	-0.34	16.59	744.65	16.93	16.70	744.54	17.04
MW-30 Grnd		6.90		768.48	761.58							
MW-27 PVC	South of Fuel Pump	7.32		768.48	761.16	-0.35	16.56	744.60	16.91	16.15	745.01	16.50
MW-27 Grnd		6.97		768.48	761.51							
TW-29 PVC	By Bldg N Wall	3.88		768.48	764.60	3.55	19.94	744.66	16.39	19.84	744.76	16.29
TW-29 Grnd		7.43		768.48	761.05		DRY ?	DRY ?				
TW-9 PVC Lip	NE Corner Bldg	9.21		768.48	759.27	0.44	5.39	753.88	4.95			
TW-9 Ground		9.65		768.48	758.83		Perched					
Railroad Rail at North Ave		4.03		768.48	764.45							
STATION TWO												
DATUM : Hydrant Ground	SE Corner 9th & North		769.49									
MW-2 PVC	Connect to Datum	0.80		763.77	762.97	2.38	18.43	744.54	16.05	17.99	744.98	15.61
MW-2 Grnd		3.18		763.77	760.59							
MW-26 PVC	Connect to Datum	4.14		763.77	759.63	-0.48	15.10	744.53	15.58	14.71	744.92	15.19
MW 26 Grnd		3.66		763.77	760.11							
TW-18 PVC	South of UST	2.79		763.77	760.98	2.16	8.10	752.88	5.94			
TW-18 Grnd		4.95		763.77	758.82		Perched					
MW-19 PVC	West of UST in Alley	4.86		763.77	758.91	-0.46	14.49	744.42	14.95	14.12	744.79	14.58
MW-19 Grnd		4.40		763.77	759.37							
TW-20 PVC	East of UST	5.32		763.77	758.45	0.02	13.60	744.85	13.58			
TW-20 Grnd		5.34		763.77	758.43		DRY ?					
TW-21 PVC	At UST	3.30		763.77	760.47	1.86	15.08	745.39	13.22			
TW-21 Grnd		5.16		763.77	758.61		DRY	DRY				
MW-22 PVC	North of UST	5.41		763.77	758.36	-0.24	14.10	744.26	14.34	13.74	744.62	13.98
MW-22 Grnd		5.17		763.77	758.60							
MW-3 PVC	Far South of UST	5.05		763.77	758.72	-0.17	14.28	744.44	14.45	13.84	744.88	14.01
MW-3 Grnd		4.88		763.77	758.89							
11th Street at TW-20	at Gutter	5.96		763.77	757.81							
Top of Conc Vault	At MW-19 (bldg Floor)	3.04		763.77	760.73							

+ : Survey Eyepiece below Datum. Surveyed Ground, measured with tape to top of hydrant, corrected elevation of eyepiece using tape reading.

TABLE 4 : SURVEY AND WATER LEVEL DATA											Page 2 of 2	
Former Plymouth Foundry Site, Grafton, WI												
OBJECT	LOCATION	Instrument	Datum	Eye-piece	Object	Well	Water Level Measurements					
		Reading	Elevation	Elevation	Elevation	PVC Stickup	1/20/98			2/5/98		
		(feet)	(Ft MSL)	(ft MSL)	(ft MSL)	(feet)	Ft below PVC Lip	Feet MSL	Feet below Grade	Ft below PVC Lip	Feet MSL	Feet below Grade
STATION ONE												
DATUM : Ground	NE Corner Foundry Building	8.60	100.00	108.60	100.00							
TW-7 PVC Lip	At AST's	4.23		108.60	104.37	1.83	8.40	95.97	6.57	6.91	97.46	5.08
TW-7 Ground		6.06		108.60	102.54							
TW-16 PVC Lip	West of ASTs	1.93		108.60	106.67	2.78	9.71	96.96	6.93	8.72	97.95	5.94
TW-16 Ground		4.71		108.60	103.89							
TW-12 PVC Lip	North of ASTs	4.54		108.60	104.06	0.19	6.22	97.84	6.03	5.11	98.95	4.92
TW-12 Ground		4.73		108.60	103.87							
MW-2 PVC Lip	East of ASTs	4.05		108.60	104.55	2.27	18.95	85.60	16.68	18.89	85.66	16.62
MW-2 Ground		6.32		108.60	102.28							
TW-10 PVC Lip	East of ASTs	6.38		108.60	102.22	0.19	4.95	97.27	4.76	4.13	98.09	3.94
TW-10 Ground		6.57		108.60	102.03							
TW-11 PVC Lip	South of ASTs	5.33		108.60	103.27	1.01	7.80	95.47	6.79	6.81	96.46	5.80
TW-11 Ground		6.34		108.60	102.26							
TW-13 PVC Lip	NW Corner Foundry Building	2.98		108.60	105.62	2.62	20.00	85.62	17.38	20.00	85.62	17.38
TW-13 Ground		5.60		108.60	103.00		DRY	DRY	DRY	DRY	DRY	DRY
TW-15 PVC Lip	North of MW-1	4.65		108.60	103.95	1.05	18.32	85.63	17.27	18.28	85.67	17.23
TW-15 Ground		5.70		108.60	102.90							
TW-17 Ground	West of MW-1	5.32		108.60	103.28							
MW-1 PVC Lip	West of Building	3.13		108.60	105.47	2.31	19.24	86.23	16.93	19.68	85.79	17.37
MW-1 Ground		5.44		108.60	103.16							
TW-14 PVC Lip	South of MW-1	5.35		108.60	103.25	0.12	6.33	96.92	6.21	4.91	98.34	4.79
TW-14 Ground		5.47		108.60	103.13							
TW-6 PVC Lip and Ground	Center Parking Lot	6.36		108.60	102.24		16.73	85.51	16.73	16.69	85.55	16.69
TW-9 PVC Lip	Former USTs at NE Corner Foundry Building	7.59		108.60	101.01	0.50	5.89	95.12	5.39	Removed		
TW-9 Ground		8.09		108.60	100.51							
STATION TWO												
DATUM	Ground at Foundry Building NE Corner	5.37	100.00	105.37	760.00							
TW-8 PVC Lip	Gas UST on East Side Building	4.96		105.37	100.41	0.20	14.42	85.99	14.22	13.90	86.51	13.70
TW-8 Ground		5.16		105.37	100.21		DRY	DRY	DRY	DRY	DRY	DRY
MW-3 Ground	East of Building	4.91		105.37	100.46		NA	NA	NA			
MW-3 PVC Lip	East of Building	5.41	Estimated	105.37	99.96	-0.50	NA	NA	NA	14.77	85.19	15.27
Survey Datum arbitrarily set to 100.00												



Base Map USGS 7.5' Cedarburg Quadrangle, Revised 1994

Title: **Site Location and Local Topography**

Project: **Site Investigation**

Client: **Former Plymouth Foundry Property, Grafton, WI**



SCALE: 1 : 24,000	DWG NO: FIGURE 1
DRAWN BY: KAE	DATE: Jan 12, 2000

NORTH STREET




Water Main

Sanitary Sewer

Storm Sewer

CONSTR. FORMS
CHLORINATED
SOLVENT ERP SITE
#02-46-171750

LEGEND

- MW-2  Existing NR-141 Monitoring Well
- TW-29  Previously Installed Temporary Well, Decommissioned
- B-5  Soil Boring

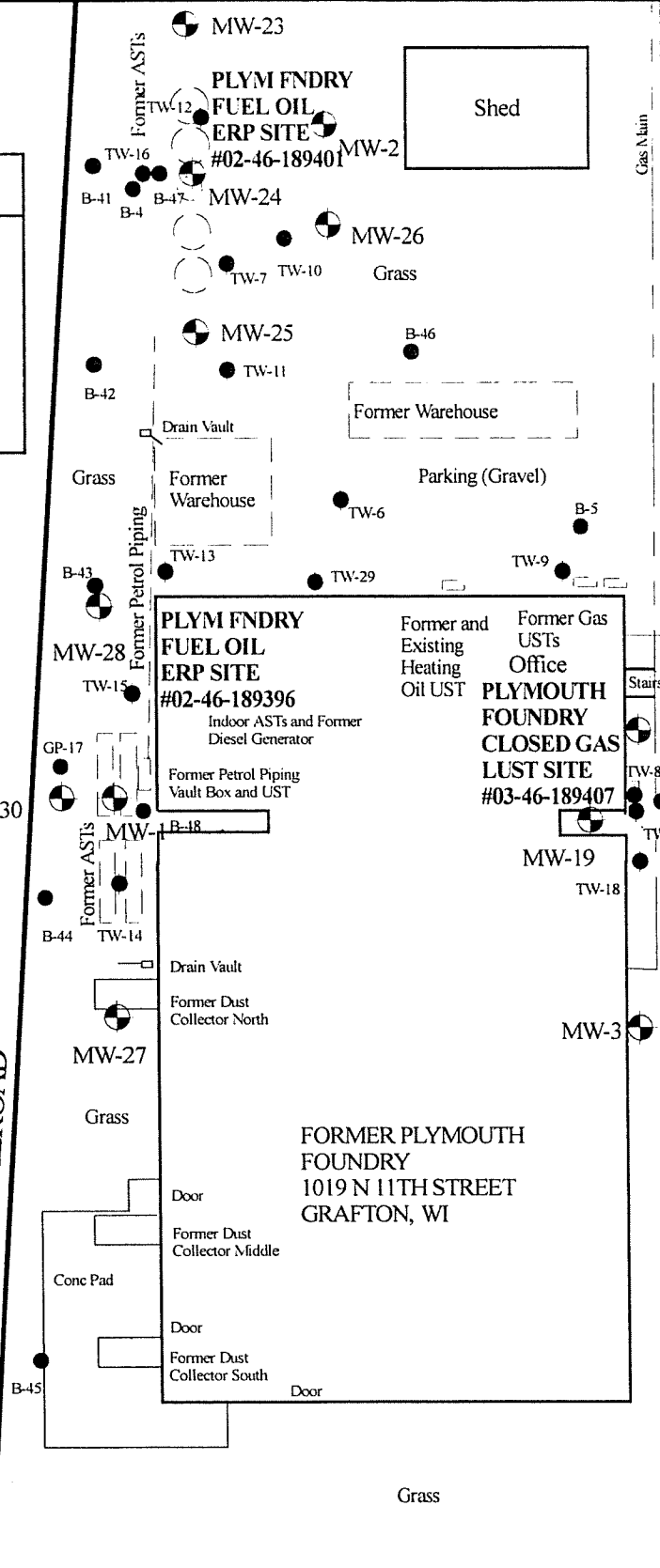
CONSTRUCTION FORMS
(FORMER ATACO STEEL)
1040 9TH AVENUE
SEE FIGURE 5 FOR
APPROXIMATE WELL AND
BORING LOCATIONS)

CONSTR FORMS
CHLORINATED
SOLVENT ERP SITE
#02-46-171750

CONSTR
FORMS
CLOSED
LUST
SITE
#03-46-105926

N

RAILROAD



11TH AVENUE

Borelocationfig2.skf

Title: Well and Boring Locations

Project: Site Closure

Client: Former Plymouth Foundry Property, Grafton, WI



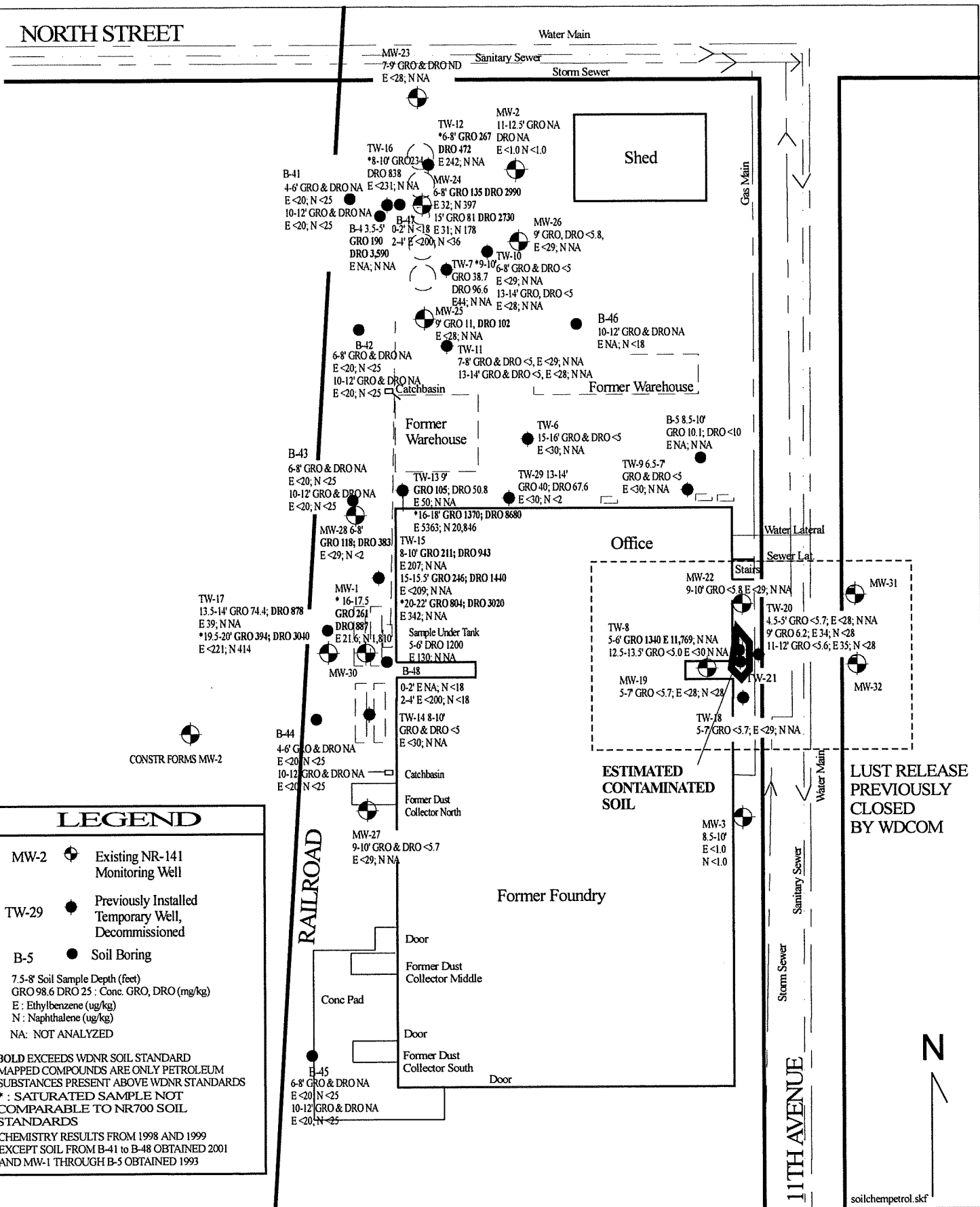
Scale: 1" = 60'

Figure: FIGURE 2

Author: K A E

Date: Feb 2, 2004

NORTH STREET



LEGEND

- MW-2 Existing NR-141 Monitoring Well
 - TW-29 Previously Installed Temporary Well, Decommissioned
 - B-5 Soil Boring
- 7.5-8' Soil Sample Depth (feet)
 GRO 98.6 DRO 25 : Conc. GRO, DRO (mg/kg)
 E : Ethylbenzene (ug/kg)
 N : Naphthalene (ug/kg)
 NA: NOT ANALYZED

BOLD EXCEEDS WDNR SOIL STANDARD
 MAPPED COMPOUNDS ARE ONLY PETROLEUM
 SUBSTANCES PRESENT ABOVE WDNR STANDARDS
 * : SATURATED SAMPLE NOT
 COMPARABLE TO NR700 SOIL
 STANDARDS
 CHEMISTRY RESULTS FROM 1998 AND 1999
 EXCEPT SOIL FROM B-41 to B-48 OBTAINED 2001
 AND MW-1 THROUGH B-5 OBTAINED 1993

Title: **SOIL CHEMISTRY RESULTS: PETROLEUM
 COMPOUNDS ABOVE NR 700 STANDARDS**

Project: **Site Closure Request**

Client: **Former Plymouth Foundry Property, Grafton, WI**



SCALE: 1" = 60'

FIGURE 3

CREATED BY: K A E

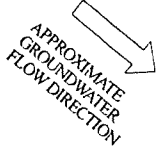
DATE: January 29, 2004

LUSTR RELEASE
 PREVIOUSLY
 CLOSED
 BY WDCOM

soilchempetrol.skf

NORTH STREET

**CONSTR FORMS
CHLORINATED
SOLVENT ERP SITE
#02-46-171750**



LEGEND

- MW-2 Existing NR-141 Monitoring Well
- TW-29 Temporary Well, Decommissioned
- B-5 Soil Boring
- B: <0.27 Groundwater Concentration (ug/l) of Benzene (select wells)
- TMB: 48 Sum of 1,2,4 and 1,3,5 Trimethylbenzene
- N: 75++ Naphthalene
- C: <0.032 Chrysene
- +: Exceeds NR 140 Preventive Action Limit
- ++ Exceeds NR 140 Enforcement Standard
- NA: Not Analyzed

Most samples obtained June 17, 1999 except data from Temp Wells and MW-1 Obtained 1998 and B-46 Obtained Dec 2001

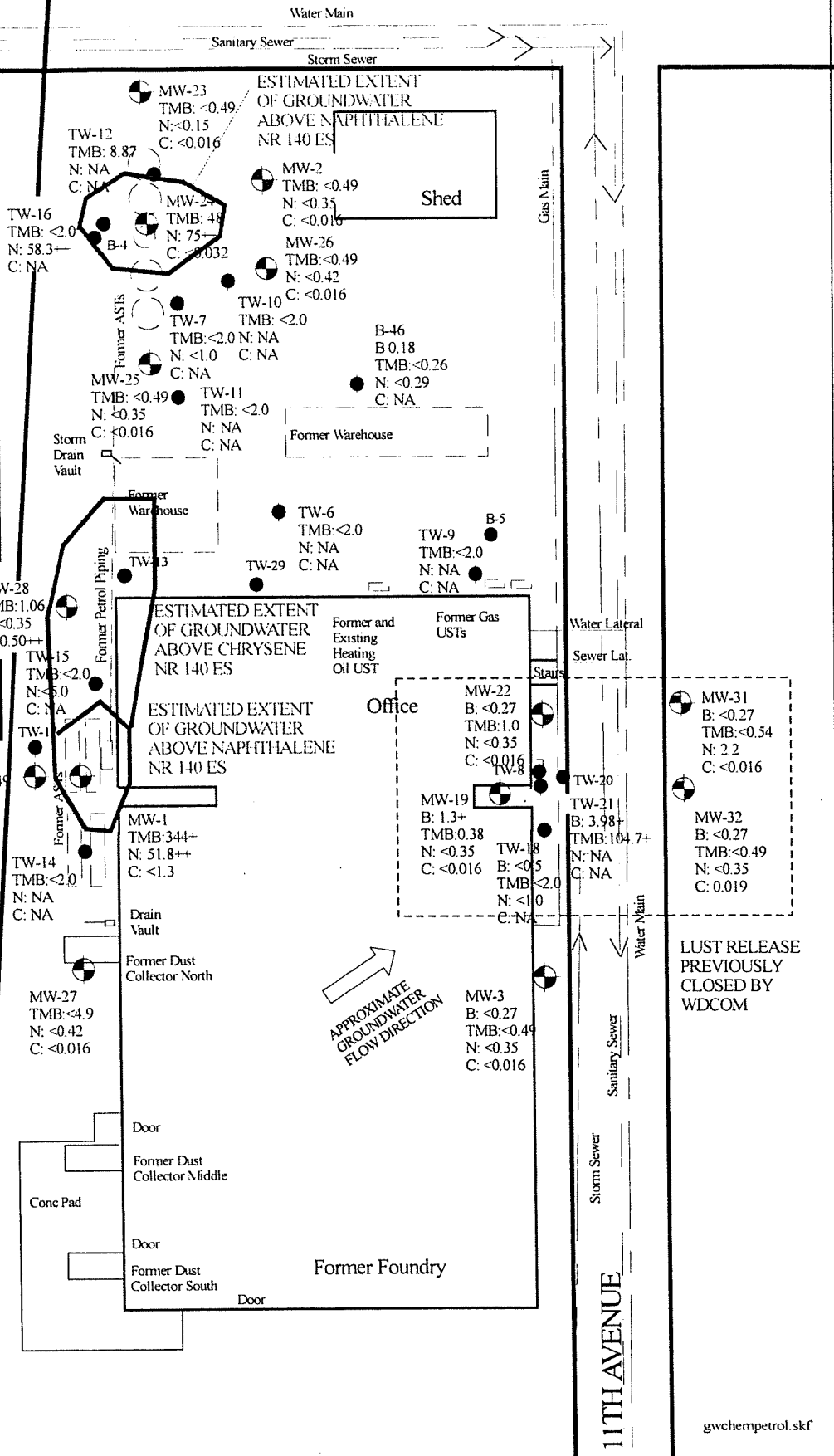
CONSTRUCTION FORMS (Former ATACO STEEL)

**CONSTR FORMS
CHLORINATED
SOLVENT ERP SITE
#02-46-171750**



N

RAILROAD



LUSTR RELEASE PREVIOUSLY CLOSED BY WDCOM

gvchempetrol.skf

<p>Title: MOST RECENT GROUNDWATER CHEMISTRY RESULTS: 1998 - 1999</p>	<p>ALPHA TERRA SCIENCE</p>	
<p>Project: Site Closure</p>		
<p>Client: Former Plymouth Foundry Property, Grafton, WI</p>	<p>Prepared by: K A E</p>	<p>Date: Jan 29, 2004</p>

NORTH STREET

CONSTR FORMS
CHLORINATED
SOLVENT ERP SITE
#02-46-171750

APPROXIMATE
GROUNDWATER
FLOW DIRECTION

LEGEND

- MW-2 Existing NR-141 Monitoring Well
 - TW-29 Previously Installed Temporary Well, Decommissioned
 - B-5 Soil Boring
- 7.5-8' Soil Sample Depth (feet)
PCE: Conc. of Tetrachloroethene (ug/kg)
TCE: Conc. of Trichloroethene (ug/kg)
- NA. NOT ANALYZED FOR CHLORINATED VOCs
- * SOIL SAMPLE LIKELY INFLUENCED BY GROUNDWATER CHEMISTRY

BORING LOCATIONS ON CF PROPERTY ESTIMATED FROM GZA SITE PLAN

- CF MW-2 11-13' PCE 2,150 TCE 613
- CFLD-10 6-8' 18-20' PCE 4870 PCE 40000 TCE <28 TCE 2810
- CFLD-6 10-12' 12-13' PCE 1850 PCE 195000 TCE <1390 TCE <2870
- CF MW-10D 4-6' PCE 514 TCE 76
- CF MW-10 12-14' PCE 40000 TCE 30100
- CF MW-7 8-10' 34-36' Various Earlier Borings Data Never Available
- CF MW-10 12-14' PCE 40000 TCE 30100
- CF MW-10 34-36' Various Earlier Borings Data Never Available
- CF MW-10 16-18' PCE 6550 TCE 977
- CF MW-10 16-18' PCE 6550 TCE 977
- CF MW-10 20-22' PCE 758000 TCE 15900
- CF MW-10 20-22' PCE 758000 TCE 15900
- CF MW-10 14-16' PCE 3700 TCE 219
- CF MW-10 14-16' PCE 3700 TCE 219
- CF MW-10 8-10' PCE 423 TCE <32
- CF MW-10 8-10' PCE 423 TCE <32
- CF MW-10 14-16' PCE 3700 TCE 219
- CF MW-10 14-16' PCE 3700 TCE 219
- CF MW-10 14-16' PCE 3700 TCE 219
- CF MW-10 14-16' PCE 3700 TCE 219

CONSTR FORMS
CHLORINATED
SOLVENT ERP SITE
#02-46-171750

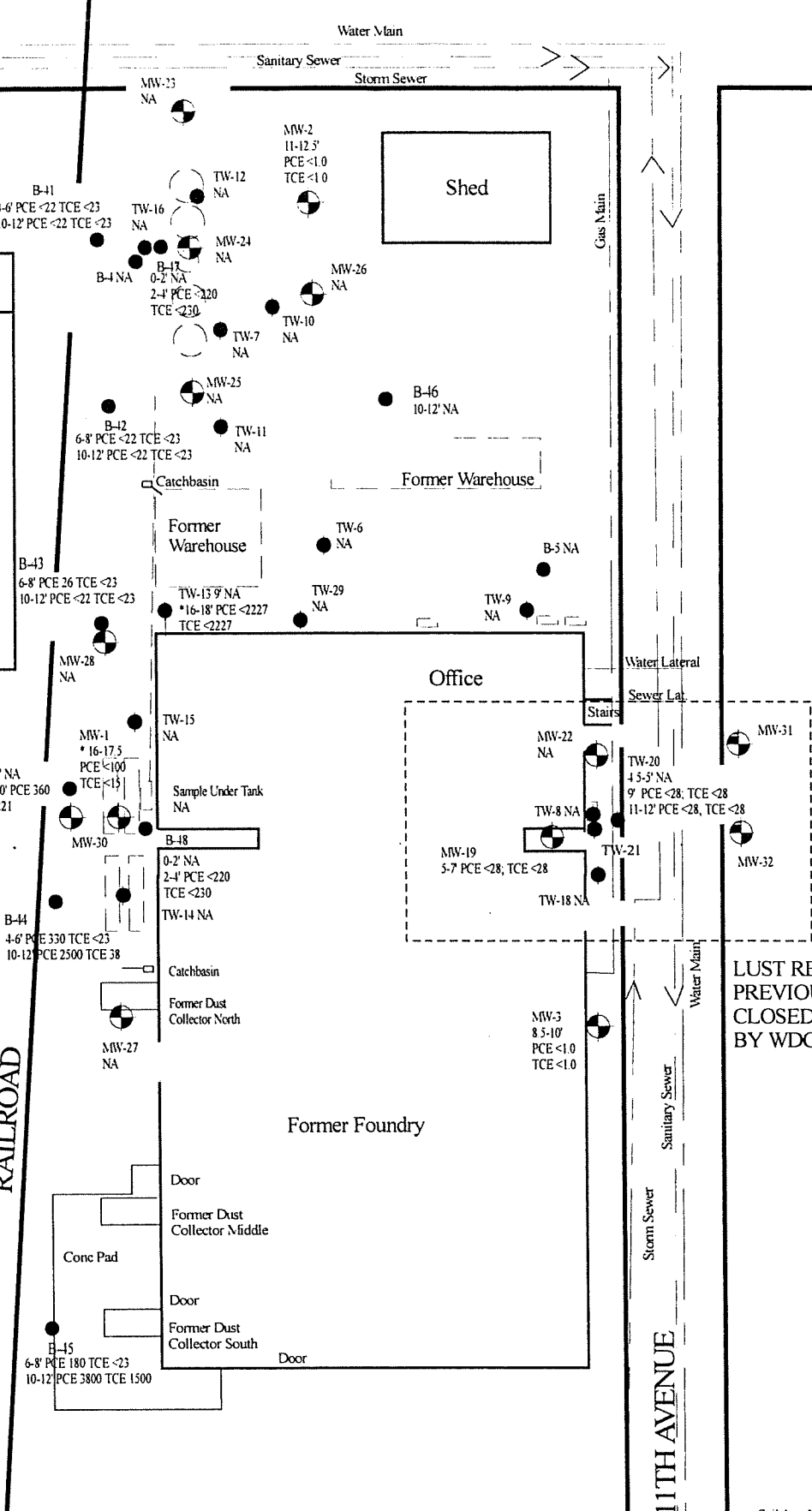
APPROXIMATE
GROUNDWATER
FLOW DIRECTION

RAILROAD

11TH AVENUE

LUSTR RELEASE
PREVIOUSLY
CLOSED
BY WDCOM

Soilchem VOCs.skf



Title: SOIL CHEMISTRY RESULTS: CHLORINATED VOLATILE ORGANIC COMPOUNDS

Project: Site Closure Request

Client: Former Plymouth Foundry Property, Grafton, WI



Scale: 1" = 60'

Fig No: FIGURE 5

Drawn By: K A E

Date: January 29, 2004

NORTH STREET

CONSTR FORMS
CHLORINATED
SOLVENT ERP SITE
#02-46-171750

APPROXIMATE
GROUNDWATER
FLOW DIRECTION
ON CFS SITE
OCT 29, 2002

LEGEND

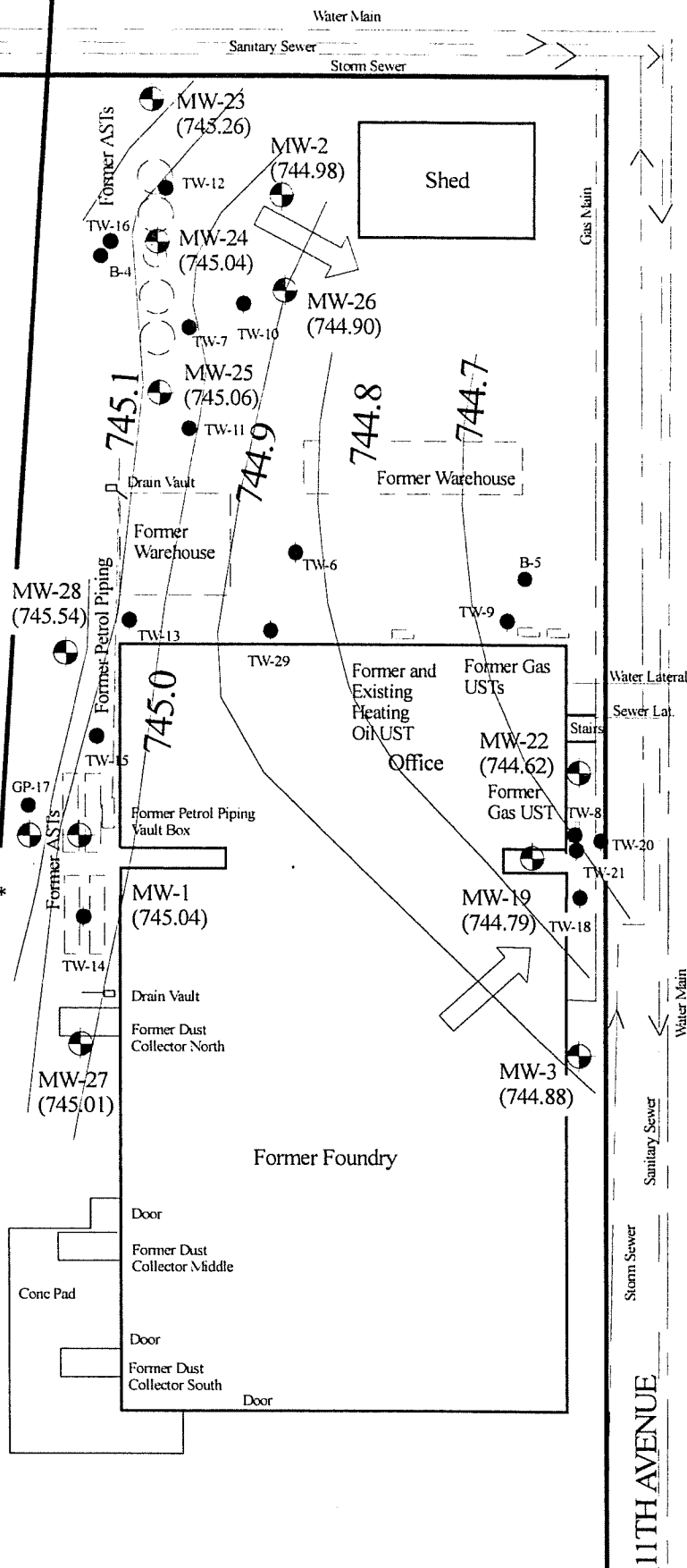
- MW-1 (745.04) Existing NR-141 Monitoring Well and Groundwater Elevation (ft msl)
- TW-29 Previously Installed Temporary Well, Decommissioned
- B-5 Soil Boring
- GROUNDWATER FLOW DIRECTION

* : Anomalous Value,
Data not used for Contouring

CONSTR FORMS
CHLORINATED
SOLVENT ERP SITE
#02-46-171750

APPROXIMATE
GROUNDWATER
FLOW DIRECTION
ON CFS SITE
OCT 29, 2002

RAILROAD



MW-31 (NA)
MW-32 (NA)

N

Gwflow499.skf

Title: Groundwater Flow Direction :
April 5, 1999

Project: Site Closure

Client: Former Plymouth Foundry Property, Grafton, WI



Scale: 1" = 60'

FIGURE 6

Author: K A E

Date: Feb 2, 2004

Letter Of Transmittal

Type of Submittal:

LUST XERP VPLE other (describe):

To: Program Assistant/BRR Program
Wisconsin Dept. of Natural Resources Box 12436
2300 N. Dr. Martin Luther King Jr. Dr.
Milwaukee, WI 53212

FROM: Name KEN EBBOTT
Company ALPHA TERRA SCIENCE
Address 1237 S. PILGRIM ROAD
PLYMOUTH, WA 53073
Phone (920) 892 2444
Date MAY 25, 2000
FOR: Site Name former Plymouth Foundry
Address 1019 N 11th Street
GRATON, WA
FID# 02-46-189401 FID 246178100
BRRTS# 02-46-189396

Check type(s) of documents enclosed. Submittals are tracked & filed based on information you provide. Include FID & BRRTS numbers assigned to this site. Identify the intent of document(s) you are submitting in order to speed processing. Please attach required fees to this form.

Are you requesting Department Review? Y N

√	TYPE OF DOCUMENT/REPORT	FEE	DNR (office use CODE only)
	Notification of Release	none	01
	Tank Closure/Site Assessment <i>where release(s) have been detected*</i>	none	33
	Site Investigation Workplan	\$500 if review is requested	35, 135~
	Site Investigation Report	\$750 if review is requested	37,
	<input type="checkbox"/> groundwater impacts above ES		137~,
	<input type="checkbox"/> no groundwater impacts or gw impacts below ES (if petroleum constituents only, case will be transferred to Department of Commerce)		76,
	Request to Transfer Case to Department of Commerce	none	96
	Off-Site Determination Request	\$500 mandatory	76
	Remedial Action Options Plan	\$500 mandatory	638~
	NR 720.19 Site Specific Clean-Up Goal Proposal	\$750 if review is requested	39, 143~
	NR 718 Landspreading Request	\$750 if review is requested	67, 68~
	"Notification to Treat or Dispose" of Contaminated Soil/Water	\$500 mandatory	61~
	Injection/Infiltration Request	none	99
	Quarterly Report or Update	\$500 mandatory	63~
	O & M Form 4400-194	\$500 if review is requested	43, 43~
	Remedial Action Options Report	\$300 if review is requested	92, 192~
<input checked="" type="checkbox"/>	Closure Review Request	\$750 if review is requested	41, 41~
	NR700.11 Simple Site Closure Request	\$750 mandatory	79~
	"Draft Deed Affidavit" or "Restriction required for close-out"	\$250 mandatory	183~
	"Well Abandonment Forms"	none	99
	Remedial Design Report	none	99
	Construction Documentation Reports	\$750 if review is requested	147, 148~
	Long Term Monitoring Plan	\$250 if review is requested	151, 152~
	Voluntary Party Liability Exemption (VPLE) Application	\$300 if review is requested	24, 25~
	VPLE "Phase I/II Assessments" or "Additional Reports"	\$250 mandatory	662
	Tax Cancellation Agreement	computed hourly	99
	Negotiated Agreement	\$500 mandatory	654
	Lender Assessment	\$1000 mandatory	630
	Negotiation and Cost Recovery (municipalities only)	\$500 mandatory	686
	General Liability Clarification Request	fee for each service, mandatory	90~
	Lease Letter Request - Single Property	\$500 mandatory	684
	Lease Letter Request -Multiple Properties	\$500 mandatory	646
	Request for Other Technical Assistance	\$1000 mandatory	646
	Other (please describe)	\$500 mandatory	90~

DELETED
JUN 2 2000
By [signature]

* Closure reports for sites where no releases have been detected should be sent directly to "Clean Closures" c/o DNR Remediation & Redevelopment Program, P.O. Box 7921, Madison WI 53707

Remarks:



Alpha Terra Science, Inc.
1237 S. Pilgrim Road, Plymouth, WI 53073-4969
TEL 920/892-2444 FAX 920/892-2620
E-mail-alphaterra@excel.net

May 18, 2000

Program Administrator
Wisconsin Department of Natural Resources
P.O. Box 12436
Milwaukee, WI 53212

**RE : Case Closure Summary: BRRTS # 02-46-189401 and # 02-46-189396
Former Plymouth Foundry, FID # 246148100
1019 N. 11th Avenue
Grafton, Wisconsin 53024**

The purpose of this report is to provide documentation and a narrative description so that case closure can be obtained for the two above-referenced ERP sites. A request for case closure for the LUST portion of this property (BRRTS # 03-46-189407) was submitted in January, 2000. That file was transferred to WDCOM, who provided a conditional closure letter dated April 4, 2000. The closure is conditional on placement of a "Notice of Contamination to Property" on the property deed, and abandonment of the monitoring wells per NR 141 code. These actions will not be completed until we hear a response from the WDNR regarding this case closure request.

This closure request is for two ERP areas on the property as follows :

NW Corner Diesel fuel	BRRTS# 02-46-189401	FID # 246148100
West Side Diesel fuel	BRRTS# 02-46-189396	FID # 246148100

No other WDNR case numbers are associated with this property.

The two environmental repair sites referenced above relate to petroleum releases associated with aboveground storage tanks that were present on the property at two separate areas. The LUST portion of the property is associated with a former underground gasoline storage tank located to the east. The three areas are shown on Figure 2.

Across the south and central portion of the property there are chlorinated solvents and their degradation products present in groundwater at levels above the State of Wisconsin NR 140 Enforcement Standards. Alpha Terra Science believes these solvents are present as a result of a regional problem in the vicinity of the subject site, and the presence of these contaminants should

not prevent the Plymouth Foundry property from receiving case closure. No chlorinated solvents or their degradation products have been detected in soil from the Plymouth Foundry site at depths above the water table surface (unsaturated zone).

The Plymouth Foundry site has residual contamination in the site soil and groundwater related to petroleum; however, the petroleum contamination is limited to within the property boundaries. We believe a deed restriction should be placed on the property related to the residual soil and groundwater petroleum contaminants, and no further investigation or remediation activities should be required on the Plymouth Foundry property.

Based on the presence of non-petroleum contaminants present in the groundwater, it is expected this closure request will be reviewed by the WDNR, and the WDNR closure review fee of \$750 is attached to this closure request.

Summary of Attachments

Because there has been no other submittal which summarizes all of the site investigation results, the attachments for this submittal are extensive. Essentially all information related to the site investigation on this property is attached.

The WDNR case closure form is included in Attachment 1. Relevant figures and tables for the above-referenced site are included in Attachment 2. Other attachments which are provided include soil and groundwater chemistry laboratory analytical results in Attachments 3 and 4, respectively, boring logs and other WDNR forms in Attachment 5, and selected information from the WDNR files on two neighboring properties in Attachment 6. Attachment 7 includes information on former underground and aboveground storage tanks that have been removed from the Plymouth Foundry site.

The site history, completed actions, and justification for case closure follows:

SITE HISTORY AND CONDITIONS

The site is located at 1019 11th Avenue in the Village of Grafton. The property is on the west side of 11th Avenue and south of the intersection with North Street (Figure 1). The Chicago/Milwaukee Railroad is located adjacent to the west of the property.

The property includes two structures at the above-cited address. The main structure is a two-story masonry block building containing approximately 51,000 square feet of floor space. A metal pole-shed is also located on the north portion of the property.

The property was first developed in 1911 as the Junger Stove and Range Company. In 1964, the Plymouth Foundry and Machine Company purchased the operation and property. In the 1980's, Plymouth Foundry ceased operation at the site. Since closure of the Plymouth Foundry, the site was leased by several other firms for short periods of time, including Draco Labs in 1984, Senn Tool Company in 1986, and Custom Display in 1987. The current occupants rent office and

warehouse space, and no manufacturing activities are being completed in the building at the present time. The property is zoned M-1 for manufacturing.

Junger Stove and Range manufactured coal and wood ranges, oil and gas heaters, and furnaces. Gray iron castings were fabricated on site, and enameling was performed. Enameling of gray iron castings (cast iron) involves sandblasting the surface of the metal, followed by application of the enamel (glass) powders. The enamel is then heated until vitreous. Degreasing of the metal is not required. The furnace for the gray-iron castings was heated using coke; diesel fuel was used to operate a large diesel engine generator for electricity, and fuel oil / diesel was used to fire the enameling furnaces.

Plymouth Foundry did not manufacture stoves; rather, they used the property as a gray iron foundry. Enameling of the gray iron castings was discontinued when Plymouth Foundry purchased the facility. The gray iron castings were finished using sandblasting and grinding wheels. Painting was not part of the manufacturing process under either Jungers Stove or Plymouth Foundry.

Under both the Jungers Stove operation and the Plymouth Foundry operation, chlorinated solvents were not known or suspected to have been used.

ENVIRONMENTAL CONCERNS ON FORMER PLYMOUTH FOUNDRY PROPERTY

Three areas of contamination have been reported to the WDNR regarding this property, including the northwest portion of the property which previously contained five aboveground storage tanks; the west portion of the site, where four ASTs and two small underground tanks were present; and the eastern portion of the site, where three USTs containing gasoline were at one time located. Figure 2 identifies the three areas and the former tank locations.

This closure request is related to the western half of the property, where diesel fuel from the aboveground storage tanks was handled. The reviewer is directed to the case closure request dated January 11, 2000 for detailed information regarding the underground storage tank situation on the eastern portion of the site (BRRTS # 03-46-189407). The WDNR transferred the file to the Wisconsin Department of Commerce on February 9, 2000, and WDCOM closed this site with a requirement for a deed notice on April 4, 2000. Some information regarding this portion of the site has been included in this closure request.

On the northwest area of the site (BRRTS # 02-46-189401), five former aboveground storage tanks, all containing diesel fuel or fuel oil, were present. The tanks ranged in size from 10,000 gallons to 1,500 gallons and were piped back to the northwest corner of the foundry building, where a vault box with a pump was present. These five aboveground tanks are present in the 1963 aerial photograph of the property. Based on building permits, these five aboveground tanks were removed in August 1987 by Mr. Joe Mintz. The piping connecting the tanks to the foundry was removed in 1999 by Pat Mand Excavating of Fond du Lac. Documentation of the tank registrations and removals is included in Attachment 7.

Four horizontal aboveground storage tanks ranging in size from 6,400 to 4,000 gallons were located west of the northwest corner of the foundry building (BRRTS # 02-46-189396). These tanks also contained diesel fuel or fuel oil and were installed some time after 1963. A map of the site from 1973 indicates the tanks were present at that time. These tanks were also removed in August 1987 by Mr. Joe Mintz. Four other storage tanks were present in this area, one 300-gallon underground tank enclosed in a vault box associated with the pumping apparatus for the diesel fuel, and three aboveground tanks located inside the building adjacent to the large diesel engine. These tanks were contained in a concrete vault. Two of the tanks were 100 gallons in size and contained motor oil, and the third tank was 300 gallons and contained diesel fuel. These three aboveground tanks were removed by Clearwater Technologies, Plymouth, WI in August 1999. Documentation of the tank registrations and closure is provided in Attachment 7.

On the east side of the site, there were four other underground storage tanks that have been removed. E & K Hazardous Waste of Sheboygan removed two gasoline tanks in 1989, and a 5,000-gallon gasoline tank and 500-gallon fuel oil tank is registered as having been removed (Attachment 7).

One underground tank remains in use on the eastern corner of the property. The 500-gallon tank contains diesel fuel for heating purposes for the building.

None of the tanks on site contained anything other than petroleum compounds. The facility used diesel fuel/fuel oil to fire their enameling furnaces in addition to running a large diesel for a facility electrical generator. The generator was located in the northwest corner of the building and supplied electricity for the foundry. Allegedly it was also periodically used to provide supplemental power to the Village of Grafton.

ENVIRONMENTAL CONCERNS ON NEIGHBORING PROPERTIES

The neighborhood is a mixture of residential, commercial retail and manufacturing establishments. There are several properties located adjacent or nearly adjacent to the 1019 11th Avenue site that have had environmental investigation and remediation work completed (Figure 3). This information is relevant to this closure request because the presence of solvent contamination in the groundwater on the Plymouth Foundry site is expected to be the result of contaminant migration and degradation from off-site sources. Some nearby sites and the contaminants detected on their properties include the following :

Property	Address / Direction from Plymouth Foundry Site	Groundwater Flow and Relationship to Plymouth Foundry Site	Contaminants	Status
Village of Grafton Well #1	Adjacent to the northwest	Groundwater flow easterly, site upgradient from Plymouth Foundry	Trichloroethylene, Tetrachloroethene, various degradation products (dichloroethenes and dichloroethanes), 1,1,1-Trichloroethane and others	Periodic pumping and sampling; no active investigation activities currently being performed
Construction Forms a.k.a. Ataco Steel FID # 246005210	1040 Ninth Avenue, Adjacent to the west /southwest	Groundwater flow southeasterly to northeasterly, site upgradient from Plymouth Foundry	Chlorinated solvents including many of those listed above, Petroleum hydrocarbons	Three sites of contamination on the property - petroleum UST area on southwest corner of property has received closure; two solvent areas on north and eastern portions of property are undergoing additional monitoring / investigation.
Tecumseh Products Co Inc.	900 North Street, Adjacent to the northwest	Groundwater flow southeasterly, site sidegradient from Plymouth Foundry	Chlorinated solvents including many of those listed above, Petroleum hydrocarbons, PAHs, others	Significant investigation has been completed, including off-site wells and several bedrock wells.

Relevant information obtained from WDNR file reviews for the Construction Forms and Tecumseh Products sites is included in Attachment 6. Additional information regarding these properties is also present in the WDNR files.

GEOLOGY AND HYDROGEOLOGY

Review of the work done on the Plymouth Foundry property and on the adjacent properties indicates the following site conditions. A map of the soil borings is shown on Figure 4, and geologic cross sections across the Plymouth Foundry and adjacent properties are shown on Figures 5, 6, and 7. Boring logs are included in Attachment 5.

On the Plymouth Foundry property, the site soils consist of approximately 3 feet of silty clay topsoil fill or sandy clay to sand fill. The native soils underneath the fill consists of high plasticity silty clay glacial till with intermittent silt or sand seams to approximately 13 to 17 feet, and then silty sand to sandy gravel outwash. Based on the information from the Village Well # 1 log, the depth to bedrock at the site should be approximately 40 feet.

The thickness of the unconsolidated deposits thins east of the site, and bedrock is present at the ground surface within the river bed of the Milwaukee River, located approximately 2,000 feet east of the site. An east / west cross section showing the regional geologic situation was completed for the Tecumseh investigation, and is included in Attachment 6.

Based on information from the nearby sites, the thickness of the unconsolidated sand and gravel outwash unit thins to the west, and is underlain by silty clay before bedrock is encountered at a depth of approximately 40 feet. To the east, there is no clay beneath the outwash, and the sand and gravel unit rests directly on the Niagara Dolomite bedrock.

The depth to the permanent water table surface is approximately 13 to 18 feet across the Plymouth Foundry site (Table 3). Groundwater at the site is typically present within or near the contact with the sandy outwash unit. Perched groundwater is present in some locations on the property at depths as shallow as 4 to 7 feet below grade, but the perched water is only sporadically present (at borings TW-7, 9, 10, 11, 12, 14, 16, and 18, Figure 4). The perched water represents infiltrating precipitation that has pooled on less dense clayey layers.

The groundwater flow direction on the Plymouth Foundry site is to the east, southeast, and northeast (Figure 8). Groundwater flow on nearby sites located west and north of the Plymouth Foundry property is to the east, southeast, or northeast. Groundwater flow continues to the east or southeast even east of the Milwaukee River, indicating the River is not a strong groundwater divide or discharge location (Attachment 6).

The calculated groundwater velocity across the Plymouth Foundry site ranges from 66 to 165 feet per year using the range of measured site horizontal hydraulic gradients across the Plymouth Foundry site (0.002 to 0.005), the average hydraulic conductivity in the sand and gravel unit of 8×10^{-3} cm/sec that was determined on the Tecumseh site, and an assumed porosity of 25 percent. Calculations of the groundwater velocity on the Construction Forms site to the west averaged 324 feet per year.

The bedrock aquifer is the Niagara Dolomite. Groundwater flow in the bedrock aquifer has been determined to be southeast (Attachment 6). The average hydraulic conductivity of the Niagara

Dolomite is 2×10^{-2} cm / sec, which is slightly greater than the hydraulic conductivity of the overlying sand and gravel unit. The groundwater flow velocity in the bedrock is estimated at 1,600 feet per year (Attachment 6).

Vertical hydraulic gradients are strongly downward, ranging from about 0.008 in the sand and gravel aquifer to approximately 0.02 to 0.08 in the Niagara Dolomite aquifer.

SOIL CHEMISTRY RESULTS

The soil and groundwater investigation results for the Plymouth Foundry site are summarized on Tables 1 and 2 and mapped on Figures 9 and 10, respectively. Laboratory analytical results for soil are included in Attachment 3 and the results for groundwater are included in Attachment 4. Soil and groundwater chemistry results from the Construction Forms property well MW-2 to the west is shown on cross section A-A' (Figure 5), and additional off-site soil and groundwater chemistry results are summarized on Figures 9 and 10 and included in Attachment 6.

The soil on the Plymouth Foundry property contains contamination with petroleum constituents. The total estimated volume of soil contamination on the property at concentrations above the NR 720 generic soil standards is 2,617 cubic yards. Contamination is estimated to be present in three distinct areas at depths ranging from 5 to 16 feet below grade (to the water table surface). Contamination with GRO and DRO at levels above the WDNR generic residual contaminant concentrations is present at the areas mapped on Figure 9. Table 4 presents a calculation of the residual contaminant mass remaining in the site soils.

Soil chemistry results have been obtained and reported for soil samples that were obtained below the water table surface. These samples are expected to have been influenced by the groundwater, and the results do not represent soil chemistry conditions. Given the groundwater flow characteristics and the presence of off-site contaminated areas, the soil chemistry results for samples obtained below the water table surface may not even be representative of contamination from on-site sources.

Full VOC analyses have been completed for eight soil samples on site. Full VOC analyses have also been completed on three perched-water samples, and 15 groundwater samples from the permanent water table surface.

Detected VOCs primarily consist of petroleum-related compounds, including naphthalene and several benzene derivatives (butylbenzene, propylbenzene). Chlorinated solvent contamination is not present in soil samples from the Plymouth Foundry site until the water table surface has been encountered. Only one soil sample at the site contains chlorinated solvents, boring TW-17 at a depth of 19.5 to 20 feet below grade, or approximately 2 to 3 feet below the water table surface. The soil at this location and depth contained 360 ppb of tetrachloroethene (PCE), a chlorinated solvent that is present in the soil on the Construction Forms site at a much higher concentration (2,150 ppb). Cross section A-A' shows these results diagrammatically.

Construction Forms Site

The soil chemistry results from the Construction Forms site located immediately west of the Plymouth Foundry site are not fully known. A site investigation along the rail spur located on the southeastern portion of the Construction Forms property (Figure 10) was performed in May 1996, but the results from this investigation could not be located in the WDNR case files. Additional investigation in this area has also been completed, including the installation of groundwater monitoring wells, but so far the results have not been reported to the WDNR. Reports of solvent contamination have been mentioned in correspondence regarding this area.

Soil chemistry data from monitoring well MW-2, located on the northeastern corner of the main Construction Forms building, indicates solvent contamination is present in the unsaturated soils in this area. Cross section A-A' indicates the sample depth relative to the water table surface at this location, and the detected contaminants. Tetrachloroethylene (PCE), trichloroethene (TCE), and two degradation products from these chlorinated solvents are present in the soil at elevated concentrations.

On the northwest corner of the Construction Forms property, additional soil contamination containing chlorinated solvents is present. Total volatile organic compounds (VOCs), including PCE, is present at concentrations ranging up to 24,500 ppb in this area. The VOC contamination is present at significant concentrations to depths of at least 11 to 13 feet below grade, although the groundwater chemistry in this area is not as contaminated.

Western Site : Plymouth Foundry

On the western portion of the site (ERP # 02-46-189396), petroleum soil contamination likely extends beneath the Plymouth Foundry building, extending over an area of approximately 3,970 square feet from an estimated depth of 5 to 16 feet below grade, for a calculated volume of 1,620 cubic yards. The known contamination includes DRO at concentrations of up to 1,440 ppm, but no individual compounds (PVOCs or PAHs) are present at concentrations above existing or proposed generic soil standards. The horizontal extent of contamination is defined by the soil and groundwater chemistry results from downgradient soil borings located northeast, east, and southeast. The vertical extent of contamination is limited by the presence of the water table surface.

The estimated mass of petroleum contamination present in this soil has been calculated using the average contaminant mass in the soil and the estimated volume of contaminated material (Table 4). For the western portion of the site, an estimated 3,965 pounds of contamination as DRO remains present in the site soils. Assuming a density of 7.5 pounds per gallon for petroleum, this corresponds to approximately 530 gallons of petroleum.

Northwest Site : Plymouth Foundry

On the northwestern portion of the site (ERP # 02-46-189401), petroleum soil contamination is well defined and appears primarily limited to the areas immediately beneath the former ASTs. The extent of contamination covers an area of approximately 2,584 square feet from an average estimated depth of 6 to 16 feet below grade, for a calculated volume of 957 cubic yards. The known contamination includes DRO at concentrations of up to 2,990 ppm, but no individual compounds (PVOCs or PAHs) are present at concentrations above existing or proposed generic soil standards. The PAH soil chemistry results are from the unsaturated soils containing the most elevated concentration of DRO on the site.

The horizontal extent of petroleum contamination is defined by the soil and groundwater chemistry results from downgradient soil borings located north, east, and south. The vertical extent of contamination is limited by the presence of the water table surface.

For the northwestern portion of the site, an estimated 5,130 pounds of contamination as DRO remains present in the site soils. Assuming a density of 7.5 pounds per gallon for petroleum, this corresponds to approximately 685 gallons of petroleum.

East Gasoline UST Area : Plymouth Foundry

Petroleum contamination on the east portion of the site related to the former gasoline UST (03-46-189407) was discussed in the previous closure request which was conditionally approved for closure by WDCOM. The gasoline UST area contains an estimated 40 cubic yards of soil from a depth of 5 to 10 feet below grade containing contamination with GRO, ethylbenzene, toluene, and xylenes at concentrations above the generic NR 720 soil standards.

For the east portion of the site, an estimated 161 pounds of contamination as GRO remains present in the site soils. Assuming a density of 7.5 pounds per gallon for petroleum, this corresponds to approximately 21 gallons of petroleum.

GROUNDWATER CHEMISTRY RESULTS

Groundwater samples have been obtained on several occasions at the site monitoring wells, and the results are summarized on Table 2. Figure 10 displays the results from the latest round of samples, obtained in June 1999, and selected results are also presented on the three geologic cross sections.

The historic groundwater chemistry results indicate that with the exception of naphthalene and chrysene, petroleum compounds are not present in the site groundwater at levels above the NR 140 Enforcement Standards (ES). In the most recent event from June 1999, naphthalene was the only petroleum compound present above the ES.

Chlorinated solvents and their degradation products, including PCE, TCE, cis-1,2-dichloroethene, and vinyl chloride, have been detected at concentrations above the NR 140

Enforcement Standards. The presence of these compounds in the groundwater beneath the Plymouth Foundry site is felt to be the result of contaminant migration from off-site sources.

Petroleum Contamination in Groundwater

Petroleum contamination in groundwater at the Plymouth Foundry site is limited to the presence of naphthalene at concentrations above the NR 140 ES of 40 ppb. Naphthalene is only present at concentrations above the ES in the groundwater from the northwest portion of the site, at concentrations of approximately 60 to 75 ppb. The horizontal extent of the naphthalene contamination is defined by the clean groundwater from wells MW-23, MW-2, MW-26, and MW-25.

No petroleum contamination is present at levels above the NR 140 ES in any of the other site groundwater, including shallow perched water zones.

Diesel range organics (DRO) have been detected in groundwater at the site at concentrations up to 246 mg/l (ppm). Analysis of the groundwater for individual polynuclear aromatic hydrocarbon compounds (PAHs) has been completed, and with the exception of chrysene in groundwater from monitoring wells MW-24, MW-28, and MW-30, no PAHs have been present at concentrations above any NR-140 ES. The most recent groundwater chemistry from these wells indicates no enforcement standard detection of chrysene.

Chlorinated Solvents

Groundwater samples have been obtained from 18 site monitoring wells and temporary wells for the analysis of full volatile organic compounds. The compounds PCE, TCE, vinyl chloride, and cis 1,2-Dichloroethene have been detected in the groundwater at concentrations above the NR 140 Enforcement Standards. Bromoform was also detected in one groundwater sample in 1993 at a concentration above the NR 140 ES, but this compound has not been detected in four subsequent rounds of sampling.

The location of these detected chlorinated compounds is on the southern half of the property, from the foundry building south. Seven groundwater samples obtained from wells located on the northwest portion of the property contain no detectable chlorinated VOCs.

Chlorinated solvents utilized by industry typically include PCE and TCE. Degradation of these compounds in the environment generate other compounds, including cis and trans-DCE, other DCE compounds, and eventually vinyl chloride.

At the Plymouth Foundry site, the parent compounds are present in their highest concentrations on the western portion of the property, and the degradation compounds are present at their greatest concentration on the eastern portion of the site, hydraulically downgradient.

On the Construction Forms property, chlorinated solvent parent compounds and some degradation products are present in unsaturated soil and groundwater from monitoring well

MW-2, located hydraulically upgradient from the Plymouth Foundry site. The detected chlorinated solvents include concentrations of PCE and TCE at similar or greater concentrations as those present on the Plymouth Foundry site.

NATURAL ATTENUATION PARAMETERS

Groundwater samples have been obtained on two occasions from the site monitoring wells for analysis of natural attenuation parameters. These compounds include dissolved oxygen, sulfate, nitrate plus nitrite, iron, manganese, and methane. The results are summarized on Table 2.

Dissolved oxygen is an indicator of whether the groundwater conditions are aerobic or anaerobic. With the exception of the far northern portion of the property at wells MW-23 and MW-2, the groundwater contains very little dissolved oxygen. These results indicate reducing chemical conditions are dominant beneath most of the site. The reducing conditions are likely to be a result of the microbial degradation of contaminants, either from the Plymouth Foundry site or from upgradient sources.

Petroleum Compounds

On the northwest corner of the property, naphthalene is present at a concentration above the NR 140 ES in groundwater from wells MW-24 and TW-16. Groundwater from monitoring wells MW-23, MW-2, MW-26, and MW-25 contains little or no detectable naphthalene. These wells are located approximately 25 to 50 feet from the contaminated wells.

Assuming limited contaminant retardation in the sandy water table aquifer, the contaminants observed in groundwater from wells MW-24 and TW-16 should have resulted in a plume that has traveled a considerable distance from the source area. Based on the calculated groundwater velocity across the site (65 to 165 feet per year), biological degradation of the naphthalene contamination must be occurring. The tanks have been present since at least 1963, were not removed until 1987, and it can be assumed the petroleum contamination reached the water table at some point during the time the tanks were present. The fact that the contamination is limited to the immediate area of the former aboveground tanks indicates the magnitude of contamination being contributed to the water table is minimal, and the natural degradation capabilities in this area are adequate to contain the plume.

Chlorinated Solvents

The presence of breakdown products of PCE and TCE provide direct evidence that the parent solvents have degraded and may continue to degrade beneath the facility. The degradation is most likely to be biologically mediated since natural abiotic degradation rates for these substances are very low.

Based on the calculated groundwater migration rates and the observed concentration of the parent compounds (PCE and TCE) and breakdown products (VC and others), degradation of the chlorinated solvents is occurring. PCE and TCE are present on the east side of the site at

concentrations approximately 10 to 100 times lower than on the west side of the facility. The monitoring wells on the west and east side are located approximately 175 to 225 feet apart. If no contaminant degradation were occurring in the groundwater, at the calculated advective groundwater migration rates of 65 to 165 feet per year, higher concentrations of the parent compounds should be present on the east side of the building.

Although some of the parent compound is likely being eliminated from the groundwater by attenuation due to adsorption, this process is not expected to be significant due to the sandy nature of the water table aquifer. Adsorption of organic compounds is principally a function of the percent of organic carbon in the aquifer, and the sand and gravel unit beneath the site does not likely contain high concentrations of organic carbon.

Based on the site groundwater chemistry, it is clear the parent contaminant concentrations are being reduced. The absence of vinyl chloride in most of the groundwater samples on the west side of the Plymouth Foundry Property, combined with the elevated concentrations of vinyl chloride in the groundwater on the east side of the property indicates reductive dechlorination of the parent compounds is occurring beneath the Plymouth Foundry building. This degradation process is likely being aided by the presence of the petroleum hydrocarbons, which act as a source of carbon for the microbial degradation of the parent solvent contamination (Wiedemeier, 1997).

Similar groundwater chemistry conditions were reported for the Tecumseh facility, with natural microbial degradation and cometabolism reported to be occurring in the groundwater, primarily under anaerobic conditions.

GROUNDWATER CONTAMINATION AT VILLAGE WELL # 1

The bedrock aquifer is utilized as the drinking water supply for residents of Grafton. Village Well # 1 is located approximately 200 feet west / northwest from the Plymouth Foundry facility. This well has had significant chlorinated solvent contamination since testing was initiated in 1982. The contamination consists primarily trichloroethene (TCE), although a complete list of detected contaminants has not been obtained. Village Well # 1 is no longer in use for supply purposes, but is still pumped periodically for sampling and possible contaminant containment purposes. Ms. Sharon Schaver of the WDNR likely has detailed information regarding the contaminants present in Municipal Well # 1.

To the best of our knowledge, contamination with petroleum constituents has not historically been noted in Village Well # 1. According to the Village of Grafton Water Department, the well still is pumped periodically, but is no longer used for supply purposes. The well reportedly continues to contain elevated levels of chlorinated solvents, 18 years since the initial detection, at concentrations similar to the initial concentrations.

Village Well # 1 was drilled in 1939 and is completed from 142 to 530 feet below grade in the Niagara Dolomite bedrock. The well was originally constructed with a 20 foot diameter caisson to a depth of 38 feet, which is the bedrock surface. Casing was subsequently installed to a depth

of 142 feet and cemented in place. When operating, well # 1 is pumped at a rate of approximately 280 gallons per minute.

Village Well # 1 is located hydraulically upgradient from the Plymouth Foundry property. Significant investigation of the near-site hydrogeology has been completed by Tecumseh as part of their investigation into chlorinated solvent contamination on their property located immediately north of Village Well # 1. As part of this effort, some evaluation of the groundwater flow and the fracture patterns in the bedrock has been completed (Attachment 6).

Groundwater flow and primary fracture patterns in the bedrock aquifer are to the southeast and east. A secondary fracture pattern perpendicular to the primary fractures is also present in the bedrock. This secondary fracture orientation is southwest. Contaminant migration from known chlorinated solvent release areas on Tecumseh property could have migrated along the prevailing bedrock fracture pattern to the east / southeast and have been drawn to Village Well # 1 along the intersecting perpendicular fractures oriented southwest.

One bedrock well (MW-22BR) has recently been installed between Village Well # 1 and the Tecumseh spill areas. The monitoring well was only screened at a depth of 70 to 80 feet below grade, nowhere near the 140 to 500 foot completion interval of Village Well # 1. Contaminated groundwater was present in this well containing elevated levels of TCE far above the NR 140 standards.

Contaminated soil and groundwater containing chlorinated solvents is also present at the Construction Forms property located west and southwest of Village Well # 1.

COMPLETED REMEDIAL ACTIONS

The source of petroleum contamination on the Plymouth Foundry site has been addressed by removal of 17 tanks from the Plymouth Foundry property. The following table summarizes the tanks removed from the property.

Tank I.D. #	Contents	Size	AST / UST	Date Removed
319040	Diesel fuel	500-gallon	UST	9/21/89
319103	Leaded Gasoline	5,000-gallon	UST	9/21/89
319158	Leaded Gasoline	500-gallon	UST	9/20/89
319159	Leaded Gasoline	500-gallon	UST	9/20/89
460597	Diesel	5,600-gallons	AST	1/1/87
460603	Diesel	5,600-gallons	AST	1/1/87
460604	Diesel	1,500-gallons	AST	1/1/87
460605	Diesel	10,000-gallons	AST	1/1/87
460606	Diesel	10,000-gallons	AST	1/1/87
460607	Diesel	4,000-gallons	AST	1/1/87
460608	Diesel	4,000-gallons	AST	1/1/87
460609	Diesel	6,400-gallons	AST	1/1/87
460610	Diesel	6,400-gallons	AST	1/1/87
473895	Diesel	300-gallon and piping from ASTs	UST	3/17/99
646886	Diesel	250-gallon	AST	8/30/99
Not Registered	Motor Oil	100-gallon	AST in Vault Inside Bldg	8/30/99
Not Registered	Motor Oil	100-gallon	AST in Vault Inside Bldg	8/30/99

CONTAMINANT RECEPTORS

Potential contaminant receptors in the vicinity of the Plymouth Foundry site are few. There are no users of the groundwater in the immediate vicinity of the site. Alpha Terra contacted the Village of Grafton Water and Wastewater Utility, Mr. Tom Krueger, regarding the presence of private water supply wells that may be present in the area. The nearest wells are located

approximately 1,000 feet to the north / northeast, located in the Town of Grafton. Testing of these wells has been performed as part of the Tecumseh investigation. Within the Village of Grafton, the Village has removed all private wells, and municipal water is provided to all homes and businesses.

The Village of Grafton has seven water supply wells, but only obtains water from a few of them due to solvent contamination problems at many of the wells. Village Well # 1 is located within 200 to 300 feet of the Plymouth Foundry site, but it is not used for supply purposes due to the presence of solvent contamination. Presently, Village Well # 1 is only pumped for sampling purposes. None of the other Village of Grafton supply wells are located within 3,000 feet of the Plymouth Foundry site.

Village Well # 1 is completed from 142 to 530 feet below grade in the Niagara Dolomite bedrock. Well # 1 is pumped at a rate of approximately 280 gallons per minute. Contamination with petroleum constituents has not historically been noted in Village Well # 1. Village Well # 1 is located hydraulically upgradient from the former gasoline UST on the Plymouth Foundry property.

The Milwaukee River is located approximately 1,000 feet east of the Plymouth Foundry building. Shallow groundwater from the site likely discharges to the River. Deeper groundwater in the bedrock aquifer has been demonstrated on other nearby sites to flow beneath the River to the east.

Utilities servicing the site are located under 11th Avenue, located east of the Plymouth Foundry building. The storm sewer flows to the north and east along North Street. The water main and sanitary sewer run along the center of 11th Avenue. The sanitary sewer flows to the south. The laterals for the water and sanitary sewer lines are located approximately 40 feet north of the former UST. The depth to the utilities is less than the depth to the water table surface, which is approximately 12 to 17 feet in this area. As such, the utilities are not expected to provide a conduit for significant contaminant migration in this area.

The residual petroleum soil contamination related to the former tanks UST is present at depth. Based on the observed individual contaminant concentrations and the depth of contamination, dermal contact, ingestion, or inhalation of petroleum is not a contaminant migratory pathway of concern.

CONCLUSIONS

Based on the site conditions and remedial actions taken, no further action is necessary for this facility. The case should be closed with a deed restriction notifying future property owners of the location and nature of the remaining soil and groundwater contamination. The following items support the closure request :

1. The source of petroleum contamination (the former petroleum tanks) have been removed and properly discarded.

2. The extent of remaining soil contamination is present at depth and poses little to no risk to human health or the environment. Although the contaminated soil extends to the water table surface, significant petroleum contamination is not widespread in the groundwater beneath the facility.
3. Groundwater chemistry results from the site indicate there are only minimal exceedences of the NR 140 Enforcement Standards related to petroleum (naphthalene, chrysene) beneath the facility. The petroleum contamination in groundwater is limited to the property boundaries.
4. The use of municipal water from supply wells located far from the site, the absence of nearby private water supply wells, the very low levels of petroleum contaminants in groundwater, and the removal of the source areas indicates there is virtually no risk for human exposure from the release of petroleum from the former Plymouth Foundry site.
5. Chlorinated solvent contamination has spread from off-site properties onto the Plymouth Foundry site and beyond at concentrations above NR 140 Enforcement Standards.
6. There is no evidence that chlorinated solvents were used in any significant quantity, nor that they were used at all, at the Plymouth Foundry site. There have been no detections of chlorinated solvents in site soils obtained above the permanent water table surface. There have been no detections of chlorinated solvents in perched groundwater samples obtained above the permanent water table surface. The presence of chlorinated solvents on the Plymouth Foundry property is limited to samples obtained at or below the water table surface, in locations that are hydraulically downgradient from known off-site chlorinated solvent releases.
7. Off-site sources of chlorinated solvents are present on properties located generally west of the Plymouth Foundry property. The same compounds and/or degradation products of these compounds have been detected in the off-site areas and on the Plymouth Foundry property. Chlorinated solvent contamination of groundwater has been a recognized problem in this area since at least 1982.
8. Natural attenuation of the petroleum and chlorinated solvent compounds in the groundwater is occurring. Degradation of the chlorinated compounds is suspected to be occurring primarily via reductive dechlorination. The presence of the petroleum hydrocarbon contamination in the groundwater may be assisting in this process by providing a carbon source for the reductive dechlorination process.
9. Based on these findings, no further action related to the chlorinated solvent contamination issues should be required by the Plymouth Foundry facility. Future work, if necessary, should be completed by facilities with known chlorinated solvent contamination.

I hope this information meets your needs. If you have any question or comments or need any additional information regarding the site conditions, please don't hesitate to call. Thank you.

Sincerely,



Kendrick A. Ebbott
Project Manager
Senior Hydrogeologist

Attachments

cc : Ms. Kris Hughes, N3820 County Road NN, Waldo, WI 53093, 2 Copies
Mr. Chris Jaekels, Cook and Franke, S.C., 660 E. Mason Street, Milwaukee, WI 53202-3877, 2 Copies

ATTACHMENT 1

WDNR CASE CLOSURE FORM

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
CASE SUMMARY AND CLOSE OUT FORM

Form _____ - _____
Rev. 1/98

FOR DEPARTMENT USE ONLY

Type of Case: LUST Spill ER Land Recycling Other _____ DNR Reviewer: _____

WDNR Site Name: Former Plymouth Foundry Site

Complete Site Address : 1019 N. 11th Street, Grafton, WI 53024

WDNR BRRTS Case #: 02-46-189401 and 02-46-189396 FID #: 246148100

PECFA Claim #: 53024-1902-19 (NA)

Responsible Party Name: Kris Hughes / Estate of Richard Goldberg

Complete Responsible Party Address: Box 228, Grafton, WI 53024

Site Legal Description : NW 1/4, NE 1/4, Sec 24, T 10 N, R 21 E Town: Grafton

County: Ozaukee Latitude: ____° ____' ____" Longitude: ____° ____' ____"

Type Of Closure Requested: Soil Groundwater
____ < NR 720.09/720.11 Generic RCLs ____ < NR 140.10 Table 1 & Table 2 Values
____ NR 720.19(2) Soil Performance Stds ____ NR 140.28(2) PAL Exemption
____ NR 720.19(3) Site Specific Stds. ____ NR 726.05(2)(b) Natural Attenuation

Contaminant Type(s): Diesel / Fuel Oil, Off-site Solvents present on Property Quantity Released: Unknown

Date of Incident/Discovery: 1998 Zoning of Property: M1 : Manufacturing

Enforcement Actions Closed Out? _____ No NA Permits Closed Out? _____ No NA

Form 4 Pending? ___ Yes ___ No NA Date Closure Submitted to DNR : May 18, 2000

I certify that, to the best of my knowledge, the information presented on and attached to this form is true and accurate. This recommendation for case closure is based upon all available data as of May 18, 2000. I have read the Case Summary and Close Out Form Instructions and all required information has been included.

Form Completed By:

Kendrick A. Ebbott

(Signature)

May 18, 2000

(Date)

Printed Name: Kendrick A. Ebbott Company Name: Alpha Terra Science

If not site owner, relationship to site owner: Consultant

Address : 1237 S. Pilgrim Road, Plymouth, WI 53073

Telephone Number: (920) 892-2444 FAX Number: (920) 892-2620

Environmental Consultant (if different then above : SAME

Address:

Telephone Number: (____) FAX Number: (____)

WDNR BRRTS Case #: 03-46-189407 WDNR Site Name: Former Plymouth Foundry

1. CASE HISTORY AND JUSTIFICATION FOR CLOSURE ATTACHED? Yes ___ No

2. SOIL PRE-REMEDIAL OR INVESTIGATION ANALYTICAL RESULTS

Extent Defined? Yes ___ No Soil Type(s): Silty Clay, Silty Sand Depth to Bedrock: ~40 ft

Potential Receptors for Direct Contact (i.e. vapor migration, contaminated soil left in place) : Contamination at depth, no direct contact, inhalation or ingestion exposure factors. No utilities cross the contaminated zone.

Tables of Pre-remedial Analytical Results Attached? Yes ___ No

Maps of Pre-remedial Sample Locations Attached? Yes ___ No

3. SOIL POST REMEDIATION ANALYTICAL RESULTS

Remedial Action Completed? ___ Yes No 720.19 Analysis? ___ Yes No (If yes, attach supporting documentation)

Were Soils Excavated? ___ Yes No Quantity: _____ Disposal Method: _____

Final Confirmation Sampling Methods:

Soil Disposal Form Attached? ___ Yes No Final Disposal Location :

Estimated volume of insitu soils exceeding NR 720 RCLs: Remaining contaminated soil volume conservatively estimated at 2,557 cubic yards from 5 to 16 feet below grade.

Tables for Post Remedial Analytical Results Attached? ___ Yes No Maps of Post Remedial Sample Locations Attached? ___ Yes No

Brief Description of Remedial Action Taken: All USTs and ASTs except one small in-use heating oil UST were cleaned and removed from 1986 to 1999; source of petroleum contaminants gone. Solvent contamination no present in soils above water table.

did not analyze for VOCs in unsat. soil

4. GROUNDWATER ANALYTICAL RESULTS

Potential Receptors for Groundwater Migration Pathway : None for Petroleum Constituents. Solvents from Off-site sources have migrated to Municipal Well # 1.

Extent of Contamination Defined? Petroleum Yes Solvents No ___ NA Remedial Action Completed? ___ Yes No ___ NA

of Sample Rounds: Two to Five, Depending on Location Depth(s) to Groundwater/Flow Direction(s): 11 to 15 feet / Overall East/Northeast

Field Analyses? Yes ___ No Lab Analyses? Yes ___ No # of Sampling Points: 27

NR 141 Monitoring Wells Sampled: 14 # Temporary Groundwater Sampling Points Sampled: 13

Recovery Sumps Sampled: None # Municipal Wells Sampled: None # Private Wells Sampled: None

Has DNR Been Notified of Substances in Groundwater w/o Standards? ___ Yes No

Any Potable Wells Within 1200 Feet of Site? Yes ___ No If Yes, How Many? 1 to 5

Have They Been Sampled? ___ Yes ___ No (By WDNR and Village Grafton) Have Well Owners/Occupants Been Notified of Results? Yes ___ No

PETROLEUM Preventive Action Limit Exceeded? Yes ___ No (If Yes, identify location(s) MW-19, TW-21, MW-1, TW-16, MW-24, MW-30, MW-28 Solvents present above PAL from off-site sources, see Text.

PETROLEUM Enforcement Standard Exceeded? Yes ___ No (If Yes, identify location(s). TW-16, MW-24, MW-1, MW-30, MW-28 Solvents present above ES from off-site sources, see Text

Tables of Analytical Results Attached? Yes ___ No Map of Groundwater Sample Locations Attached? Yes ___ No

Brief Description of Remedial Action Taken:

Site has three case files with the WDNR, one LUST which was recently closed by WDCOM pending placement of a deed restriction and well abandonment, and these two ERP cases. Closure request is for the two ERP cases, which would complete the environmental investigation and remediation activities at the site.

USTs and ASTs containing diesel, fuel oil, and gasoline removed in from 1986 to 1999. Samples indicate soil contamination (dominantly DRO) present from a depth of 5 to 16 feet, where groundwater is encountered. Groundwater chemistry contains naphthalene and chrysene above NR 140 ES, benzene and trimethylbenzenes above NR 140 PAL, and several PAHs above calculated NR 140 standards from WDNR guidance. Monitoring wells define extent of soil and groundwater petroleum contamination as being limited to the property limits.

Adjacent to site, extensive investigation activities have been completed at other LUST and solvent release sites. Village of Grafton municipal well # 1 is located 300 feet northwest of site has had solvent contamination problem since early 1980's. Well is no longer used as supply well, only maintained for periodic sampling.

Solvents (PCE, TCE, VC, and others) are present in groundwater at the site and off-site to the east at concentrations above NR 140 ES, but no source of solvent contamination has been detected or is thought to be present from site. Solvent contamination expected to be from off-site sources.

Based on the defined extent of petroleum contamination, low contaminant concentrations in the groundwater, long duration since the source was present, and the absence of at-risk receptors, the remaining impacted soil and groundwater at this site can remain-in-place. The residual contamination will undergo natural attenuation over time. The contamination may even be of some help with the remediation of the solvent contamination issues, providing a food source for microbes that can co-metabolize chlorinated solvent contamination.

ATTACHMENT 2

TABLE 1 : SOIL CHEMISTRY RESULTS

TABLE 2 : GROUNDWATER CHEMISTRY RESULTS

TABLE 3 : SURVEY DATA

**TABLE 4 : CALCULATED RESIDUAL CONTAMINANT
MASS IN SOILS ABOVE WATER TABLE
SURFACE**

**FIGURE 1 : SITE LOCATION AND LOCAL
TOPOGRAPHY**

FIGURE 2 : WELL AND BORING LOCATIONS

FIGURE 3 : NEAR SITE FEATURES

FIGURE 4 : CROSS SECTION LOCATIONS

FIGURE 5 : EAST WEST CROSS SECTION A-A'

FIGURE 6 : EAST WEST CROSS SECTION B-B'

FIGURE 7 : NORTH SOUTH CROSS SECTION C-C'

**FIGURE 8 : GROUNDWATER FLOW DIRECTION :
April 5, 1999**

FIGURE 9 : SOIL CHEMISTRY RESULTS

**FIGURE 10 : ENTIRE SITE GROUNDWATER
CHEMISTRY RESULTS : June 1999**

TABLE 1 : SOIL CHEMISTRY RESULTS																
Former Plymouth Foundry Site, Grafton, Wisconsin																
SOIL SAMPLE I.D.	DEPTH (feet)	FIELD PID (s.u.)	Wet ?	LABORATORY RESULTS												
				Lead (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	Petroleum Volatile Organic Compounds (ug/kg)									Total Detected PVCOCs
							Benzene	Ethylbenzene	Toluene	Xylenes	Methyl-t-butyl ether	124-Trimethylbenzene	135-Trimethylbenzene			
WI ADMIN CODE																
NR 720 Generic Standards				500 / 50	100 / 250**	100 / 250**	5.5	2,900	1,500	4,200	NS	NS	NS	NS		
1993 Investigation Results																
MW-1, West of Building	16-17.5	225	YES***	*** See Results in Saturated Soil Section Below												
MW-2, East of ASTs	11-12.5	0.0	NO	7.5	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0		
MW-3, East of Building	8.5-10	0.0	NO	6.3	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0		
B-4, At ASTs	3.5-5	218	NO	NA	190	3,590	NA	NA	NA	NA	NA	NA	NA	NA		
B-5, NE Corner Building	8.5-10	0.0	NO	NA	10.1	<10	NA	NA	NA	NA	NA	NA	NA	NA		
1998-1999 Investigation Results																
NORTH NEAR FOUNDRY BUILDING																
TW-6, Parking Lot	15-16	11.2	NO	NA	<5.0	<5.0	<30	<30	<30	<30	<30	<30	<30	0		
TW-29, By Building on North	13-14	22.7	NO	NA	40.0	67.7	<30	<30	<30	30	<30	<30	<30	30		
TW-9, Former USTs, NE Corner	6.5-7	0.0	YES	NA	<5.0	<5.0	<30	<30	<30	<30	<30	<30	<30	0		
NORTHWEST AST's																
TW-7, at ASTs	9-10	4	YES	*** See Results in Saturated Soil Section Below												
MW-24, at ASTs	6-8	123	NO	NA	135	2,990	<28	32	<28	162	<28	740	475	1,409		
MW-24, at, ASTs	15	48	NO	NA	81	2,730	<29	31	<29	79	<29	318	435	863		
TW-16, West of ASTs	8-10	59	YES	*** See Results in Saturated Soil Section Below												
TW-10, East of ASTs	6-8	0.9	YES	NA	<5.0	<5.0	<29	<29	<29	<29	<29	<29	<29	0		
TW-10, East of ASTs	13-14	0.4	YES	NA	<5.0	<5.0	<28	<28	<28	<28	<28	<28	<28	0		
MW-26, SE of ASTs	9.0	0.0	NO	NA	<5.8	<5.8	<29	<29	<29	<29	37*	<29	<29	0		
TW-11, South of ASTs	7-8	0.4	YES	NA	<5.0	<5.0	<29	<29	<29	<29	<29	<29	<29	0		
TW-11, South of ASTs	13-14	0.6	YES	NA	<5.0	<5.0	<28	<28	<28	<28	<28	<28	<28	0		
MW-25, South of ASTs	9.0	1.9	NO	NA	11.0	102	<28	<28	<28	<28	<28	<28	<28	0		
TW-12, North of ASTs	6-8	4.0	YES	*** See Results in Saturated Soil Section Below												
TW-13, North of ASTs	7-9	NA	NO	NA	<5.7	<5.7	<28	<28	<28	<28	39*	<28	<28	0		
WEST OF FOUNDRY BUILDING																
TW-13, NW Corner Bldg	9	3.5	NO	NA	105	50.8	<30	50	<30	221	<30	<30	<30	271		
TW-13, NW Corner Bldg	16-18	184	YES	*** See Results in Saturated Soil Section Below												
MW-28, NW Corner Bldg	6-8	9.8	NO	NA	118	383	<29	<29	<29	56	<29	<29	<29	56		
TW-14, South of MW-1	8-10	2.0	YES	NA	<5.0	<5.0	<30	<30	<30	<30	<30	<30	<30	0		
MW-27, South of MW-1	9-10	1.3	NO	NA	<5.7	<5.7	<29	<29	<29	<29	<29	<29	<29	0		
TW-15, North of MW-1	8-10	31	NO	NA	211	943	<31	207	<31	180	<31	1,906	1,548	3,841		
TW-15, North of MW-1	15-15.5	28	NO	NA	246	1,440	<209	<209	<209	<418	<209	2,597	1,415	4,012		
TW-15, North of MW-1	20-22	89	YES	*** See Results in Saturated Soil Section Below												
1 : UST Removal Under Tank	5-6'	NA	NO	NA	NA	1,200	<100	130	<100	580	<100	2800	1600	5,110		
TW-17, West of MW-1	13.5-14	29	NO	NA	74.4	878	<26	39	<26	36	<26	529	421	1,025		
TW-17, West of MW-1	19.5-20	42	YES	*** See Results in Saturated Soil Section Below												
EAST OF FOUNDRY BUILDING																
TW-18, South	5 - 7	0.0	NO ?	3.0	<5.7	NA	<29	<29	<29	<29	34*	<29	<29	0		
MW-19, West	5 - 7	0.0	NO	2.9	<5.7	NA	<28	<28	<28	<28	39*	<28	<28	0		
TW-8, At Gas Dispenser	5 - 6	353.5	NO	NA	1340	NA	<1,190	11769	2963	60274	<1,190	100,655	32,619	208,280		
TW-8, At Gas Dispenser	12.5-13.5	1.0	NO	NA	<5.0	NA	<30	<30	<30	<30	<30	<30	<30	0		
TW-20, East in ROW	4.5-5	0.0	NO	2.3	<5.7	NA	<28	<28	<28	<28	29*	<28	<28	0		
TW-20, East in ROW	9.0	2.3	NO	3.0	6.2	NA	<28	34.0	41.0	<28	28*	<28	<28	75		
TW-20, East in ROW	11 - 12	0.0	NO	2.7	<5.6	NA	<28	35.0	<28	<28	39*	<28	<28	35		
MW-22, North	9 - 10	0.7	NO	3.1	<5.8	NA	<29	<29	<29	<29	42*	<29	<29	0		
SUMMARY OF SATURATED SOIL SAMPLES INFLUENCED BY PERCHED OR PERMANENT GROUNDWATER CHEMISTRY																
MW-1, West of Building	16-17.5	225	YES	NA	NA	NA	<15.0	21.6	<15.0	402	<15.0	2,140	148	2,712		
TW-7, at ASTs	9-10	4	YES	NA	38.7	96.6	<29	44	<29	184	<29	253	430	911		
TW-12, North of ASTs	6-8	4.0	YES	NA	267	472	<233	242	<233	434	<233	2053	1,000	3,729		
TW-13, NW Corner Bldg	16-18	184	YES	NA	1,370	8,680	<2227	5,363	<2227	2,598	<2227	25033	<2227	32,994		
TW-15, North of MW-1	20-22	89	YES	NA	804	3,020	<219	342	<219	1,789	<219	5,256	5,897	13,284		
TW-16, West of ASTs	8-10	59	YES	NA	234	838	<231	<231	<231	<462	<231	1,160	1,148	2,308		
TW-17, West of MW-1	19.5-20	42	YES	NA	394	3,040	<221	<221	<221	<442	<221	2,031	<221	2,031		
<p>and BOX Exceeds NR 720 Generic Soil Standard</p> <p>E present in methanol used to preserve samples</p> <p>NA : Not Analyzed</p> <p>NS : No Standard</p> <p>Xylenes is sum of m, p, and o xylene.</p> <p>*** : Generic Standard for Soils with Hydraulic Conductivity Greater than 10 -6 cm / sec (100), and less than 10-6 (250)</p>																

TABLE 1 - SOIL CHEMISTRY RESULTS							LABORATORY RESULTS										
Former Plymouth Foundry Site, Graton, Wisconsin							Detected Volatile Organic Compounds (ug/kg)										
SOIL SAMPLE I.D.	DEPTH (feet)	FIELD PID (s.u.)	Met?	Styrene	1-Propylbenzene	N-Propylbenzene	1,2-Dichloroethane	1,1,1-Trichloroethane	1,2-Dichloroethane	N-Propylbenzene	Naphthalene	Isopropyltoluene	p-Toluene	Tetrachloroethene	Trichloroethene	Total Detected VOCs (w/out PVOCS)	
1993 Investigation Results																	
MW-1, West of Building	16-17.5	225	YES**	*** See Results in Saturated Soil Section Below	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0	
MW-2, East of ASTs	11-12.5	0.0	NO	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0	
MW-3, East of Building	8.5-10	0.0	NO	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0	
B-4, AT ASTs	3.5-5	218	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
B-5, NE Corner Building	8.5-10	0.0	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1998-1999 Investigation Results																	
NORTH NEAR FOUNDRY BUILDING																	
TW-6, Parking Lot	15-16	11.2	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-29, By Building on North	13-14	22.7	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-9, Former USTs, NE Corner	6.5-7	0.0	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
NORTHWEST ASTs																	
TW-7, at ASTs	9-10	4	YES	*** See Results in Saturated Soil Section Below													
MW-24, at ASTs	6-8	123	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-24, at ASTs	15	48	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-16, West of ASTs	8-10	89	YES	*** See Results in Saturated Soil Section Below													
TW-10, East of ASTs	6-8	0.9	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-10, East of ASTs	13-14	0.4	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-26, SE of ASTs	9.0	0.0	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-11, South of ASTs	7-8	0.4	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-25, South of ASTs	13-14	0.6	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-12, North of ASTs	9.0	1.9	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-23, North of ASTs	6-8	4.0	YES	*** See Results in Saturated Soil Section Below													
	7-9	NA	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
WEST OF FOUNDRY BUILDING																	
TW-13, NW Corner Bldg	9	3.5	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-43, NW Corner Bldg	16-18	184	YES	*** See Results in Saturated Soil Section Below													
MW-28, NW Corner Bldg	6-8	9.8	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-14, South of MW-1	8-10	2.0	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-27, South of MW-1	9-10	1.3	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-15, North of MW-1	8-10	3.1	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-15, North of MW-1	15-15.5	28	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-15, North of MW-1	20-22	89	YES	*** See Results in Saturated Soil Section Below													
1 - UST Removal Under Tank	5-6	NA	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-17, West of MW-1	13.5-14	29	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-17, West of MW-1	19.5-20	42	YES	*** See Results in Saturated Soil Section Below													
EAST OF FOUNDRY BUILDING																	
TW-18, South	5-7	0.0	NO?	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	
MW-19, West	5-7	0.0	NO	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	0	
TW-8, At Gas Dispenser	5-6	353.5	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	
TW-8, At Gas Dispenser	12.5-13.5	1.0	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	
TW-20, East in ROW	4.5-5	0.0	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	
TW-20, East in ROW	9.0	2.3	NO	<28	207.0	336.0	<28	<28	<28	<28	<28	<28	<28	<28	<28	543	
TW-20, East in ROW	11-12	0.0	NO	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	0	
MW-22, North	9-10	0.7	NO	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	
SUMMARY OF SATURATED SOIL SAMPLES INFLUENCED BY PERCHED OR PERMANENT GROUNDWATER CHEMISTRY																	
MW-1, West of Building	16-17.5	225	YES	165	426	205	1,110	368	1,480	1,810	<100	<100	<15	5,564			
TW-7, at ASTs	9-10	4	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
TW-12, North of ASTs	6-8	4.0	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
TW-13, NW Corner Bldg	16-18	184	YES	<2227	<2227	6,186	<2227	5,080	9,895	20,846	3,425	<2227	<2227	45,432			
TW-15, North of MW-1	8-10	89	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
TW-16, West of ASTs	20-22	59	YES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
TW-17, West of MW-1	19.5-20	42	YES	<221	<221	<221	<221	2,733	<221	414	<221	360	<221	3,507			
BOLD and BOX Exceeds NR 720 Generic Soil Standard																	
* : MTBE present in methanol used to preserve samples																	
NA : Not Analyzed																	
NS : No Standard																	
Xylenes is sum of m, p, and o xylene.																	
* : Generic Standard for Soils with Hydraulic Conductivity Greater than 10^-5 cm / sec (100), and less than 10^-6 (250)																	

TABLE 1 : SOIL CHEMISTRY RESULTS
Former Plymouth Foundry Site, Grafton, Wisconsin

SOIL				LABORATORY RESULTS						
SAMPLE I.D.	DEPTH (feet)	FIELD PID (s.u.)	Wet ?	Detected Polynuclear Aromatic Hydrocarbons (ug/kg)						Total Detected PAHs
				Benzo (b) Fluoranthene	Fluorene	1-Methyl Naphthalene	2-Methyl Naphthalene	Naphthalene	Phenanthrene	
WI ADMIN CODE										
NR 720 Generic Standards				3900/ 88/ 360000	4000000/ 600000/ 100000	7000000/ 1100000/ 23000	4000000/ 600000/ 20000	110000/ 20000/ 400	390000/ 18000/ 1800	NS
1993 Investigation Results										
MW-1, West of Building	16-17.5	225	YES***	*** See Results in Saturated Soil Section Below						
MW-2, East of ASTs	11-12.5	0.0	NO	NA	NA	NA	NA	<1.0	NA	NA
MW-3, East of Building	8.5-10	0.0	NO	NA	NA	NA	NA	<1.0	NA	NA
B-4, At ASTs	3.5-5	218	NO	NA	NA	NA	NA	NA	NA	NA
B-5, NE Corner Building	8.5-10	0.0	NO	NA	NA	NA	NA	NA	NA	NA
1998-1999 Investigation Results										
NORTH NEAR FOUNDRY BUILDING										
TW-6, Parking Lot	15-16	11.2	NO	NA	NA	NA	NA	NA	NA	NA
TW-29, By Building on North	13-14	22.7	NO	<1.2	63.1	<2.4	72.7	<2	79.1	215
TW-9, Former USTs, NE Corner	6.5-7	0.0	YES	NA	NA	NA	NA	NA	NA	NA
NORTHWEST AST's										
TW-7, at ASTs	9-10	4	YES	*** See Results in Saturated Soil Section Below						
MW-24, at ASTs	6-8	123	NO	45.2	169	2,490	2,110	397	<3.1	5,211
MW-24, at, ASTs	15	48	NO	46.0	161	1,740	2,230	178	<3.1	4,355
TW-16, West of ASTs	8-10	59	YES	*** See Results in Saturated Soil Section Below						
TW-10, East of ASTs	6-8	0.9	YES	NA	NA	NA	NA	NA	NA	NA
TW-10, East of ASTs	13-14	0.4	YES	NA	NA	NA	NA	NA	NA	NA
MW-26, SE of ASTs	9.0	0.0	NO	NA	NA	NA	NA	NA	NA	NA
TW-11, South of ASTs	7-8	0.4	YES	NA	NA	NA	NA	NA	NA	NA
TW-11, South of ASTs	13-14	0.6	YES	NA	NA	NA	NA	NA	NA	NA
MW-25, South of ASTs	9.0	1.9	NO	NA	NA	NA	NA	NA	NA	NA
TW-12, North of ASTs	6-8	4.0	YES	*** See Results in Saturated Soil Section Below						
MW-23, North of ASTs	7-9	NA	NO	NA	NA	NA	NA	NA	NA	NA
WEST OF FOUNDRY BUILDING										
TW-13, NW Corner Bldg	9	3.5	NO	NA	NA	NA	NA	NA	NA	NA
TW-13, NW Corner Bldg	16-18	184	YES	*** See Results in Saturated Soil Section Below						
MW-28, NW Corner Bldg	6-8	9.8	NO	<1.2	42.3	23.4	38.7	<2	85.6	190
TW-14, South of MW-1	8-10	2.0	YES	NA	NA	NA	NA	NA	NA	NA
MW-27, South of MW-1	9-10	1.3	NO	NA	NA	NA	NA	NA	NA	NA
TW-15, North of MW-1	8-10	31	NO	NA	NA	NA	NA	NA	NA	NA
TW-15, North of MW-1	15-15.5	28	NO	NA	NA	NA	NA	NA	NA	NA
TW-15, North of MW-1	20-22	89	YES	*** See Results in Saturated Soil Section Below						
1 : UST Removal Under Tank	5-6'	NA	NO							
TW-17, West of MW-1	13.5-14	29	NO	NA	NA	NA	NA	NA	NA	NA
TW-17, West of MW-1	19.5-20	42	YES	*** See Results in Saturated Soil Section Below						
EAST OF FOUNDRY BUILDING										
TW-18, South	5 - 7	0.0	NO ?	NA	NA	NA	NA	NA	NA	NA
MW-19, West	5 - 7	0.0	NO	NA	NA	NA	NA	<28	NA	NA
TW-8, At Gas Dispenser	5 - 6	353.5	NO	NA	NA	NA	NA	NA	NA	NA
TW-8, At Gas Dispenser	12.5-13.5	1.0	NO	NA	NA	NA	NA	NA	NA	NA
TW-20, East in ROW	4.5-5	0.0	NO	NA	NA	NA	NA	NA	NA	NA
TW-20, East in ROW	9.0	2.3	NO	NA	NA	NA	NA	<28	NA	NA
TW-20, East in ROW	11 - 12	0.0	NO	NA	NA	NA	NA	<28	NA	NA
MW-22, North	9 - 10	0.7	NO	NA	NA	NA	NA	NA	NA	NA
SUMMARY OF SATURATED SOIL SAMPLES INFLUENCED BY PERCHED OR PERMANENT GROUNDWATER CHEMISTRY										
MW-1, West of Building	16-17.5	225	YES	NA	NA	NA	NA	1,810	NA	NA
TW-7, at ASTs	9-10	4	YES	NA	NA	NA	NA	NA	NA	NA
TW-12, North of ASTs	6-8	4.0	YES	NA	NA	NA	NA	NA	NA	NA
TW-13, NW Corner Bldg	16-18	184	YES	NA	NA	NA	NA	20,846	NA	NA
TW-15, North of MW-1	20-22	89	YES	NA	NA	NA	NA	NA	NA	NA
TW-16, West of ASTs	8-10	59	YES	NA	NA	NA	NA	NA	NA	NA
TW-17, West of MW-1	19.5-20	42	YES	NA	NA	NA	NA	414	NA	NA
BOLD and BOX Exceeds NR 720 Generic Soil Standard										
* : MTBE present in methanol used to preserve samples										
NA : Not Analyzed										
NS : No Standard										
Xylenes is sum of m, p, and o xylene.										
** : Generic Standard for Soils with Hydraulic Conductivity Greater than 10 -6 cm / sec (100), and less than 10-6 (250)										

TABLE 2 : GROUNDWATER CHEMISTRY RESULTS AND SATURATED SOILS

Former Plymouth Foundry Site, Grafton, WI

GROUNDWATER													
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Dissolved Lead	GRO	DRO	Petroleum Volatile Organic Compounds (ug/l = ppb)							
						Benzene	Ethylbenzene	Toluene	Xylenes	Methyl-t-butyl ether	124-Trimethyl benzene	135-Trimethyl benzene	Total Detected PVOCs
		Ft below grnd	(ug/l)		(ug/l = ppb)								
WI ADMIN CODE NR 140 E.S. / P.A.L.			15 / 1.5	NS	NS	5.0 / 0.5	700 / 140	1000 / 200	10,000 / 1,000	60 / 12	480 / 96		NS
WEST OF BUILDING AT FOUR FORMER ASTs													
MW-1, West of Foundry @ AST	6/17/99	17.2 / 17.2	NA	NA	NA	NA : DRY							
MW-1, West of Foundry @ AST	4/6/99	17.2 / 16.9	NA	NA	NA	NA : DRY							
MW-1, West of Foundry @ AST	10/1/98	17.2 / 16.8	NA	NA	NA	NA : DRY							
MW-1, West of Foundry	1/20/98		NA	120,000	NA	<50	<100	<100	<200	<100	344	<100	344.0
MW-1, West of Foundry	5/25/93		NA	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0	13.6	<5.0	13.6
TW-14, South of MW-1	1/20/98	9.7 / 4.8	NA	<50.0	2547	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
MW-27, South of West ASTs	6/17/99	23.8 / 12.61	NA	NA	<100	<2.7	<3.2	<2.7	<6.7	<3.2	<2.2	<2.7	0.0
MW-27, South of West ASTs	4/6/99	23.8 / 16.1	NA	NA	130	<0.27	<3.2	98	<0.67	<3.2	<2.2	<2.7	98.0
MW-27, South of West ASTs	10/1/98	23.8 / 16.9	NA	335	2570	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
MW-30, Duplicate	6/17/99		NA	NA	13000	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	0.0
MW-30, West of West ASTs	6/17/99	23.5 / 12.64	NA	NA	2800.0	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	0.0
MW-30, West of West ASTs	4/6/99	23.5 / 16.2	NA	NA	4500.0	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	0.0
MW-30DUP, West of West AST	4/6/99		NA	NA	7200.0	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	0.0
MW-30, West of West ASTs	10/1/98	23.5 / 16.6	NA	156.0	31900.0	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
TW-16, West of ASTs	1/20/98	17.2 / 5.9	NA	287	10811	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
MW-28, North of West ASTs	6/17/99	23.9 / 12.21	NA	NA	1900.0	<0.27	17	<0.27	16.29	<0.32	0.71	0.35	34.4
MW-28, North of West ASTs	4/6/99	23.9 / 15.3	NA	NA	3400.0	<0.27	3.50	<0.27	2.84	<0.32	0.27	<0.27	6.6
MW-28, North of West ASTs	10/1/98	23.9 / 16.6	NA	231.0	67200.0	<0.5	1.49	<1.0	1.11	<1.0	5.17	1.44	9.2
TW-15, North of MW-1	1/20/98	19.9 / 17.2	NA	1,060	246,000	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0

NS : No Standard ; NA Not Analyzed

Xylenes Sum of m, p, o Xylene

BOLD Exceeds State NR 140 ES

** : Calculated Standards from WDNR April 1997 PAH Guidance Document

TABLE 2 : GROUNDWATER CHEMISTRY RESULTS AND SATURATED SOILS													
Former Plymouth Foundry Site, Grafton, WI													
GROUNDWATER													
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Dissolved Lead	GRO	DRO	Petroleum Volatile Organic Compounds (ug/l = ppb)							
						Benzene	Ethylbenzene	Toluene	Xylenes	Methyl-t-butyl ether	124-Trimethyl benzene	135-Trimethyl benzene	Total Detected PVOCs
		Ft below grnd	(ug/l)	(ug/l = ppb)									
WI ADMIN CODE NR 140 E.S. / P.A.L.			15 / 1.5	NS	NS	5.0 / 0.5	700 / 140	1000 / 200	10,000 / 1,000	60 / 12	480 / 96	NS	
NORTHWEST AT FIVE FORMER ASTs													
MW-2, East of NW ASTs	6/17/99	17.9 / 14.61	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	0.0
MW-2, East of NW ASTs	4/6/99	17.9 / 16.9	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	0.0
MW-2, East of NW ASTs	9/17/98	17.9 / 16.1	NA	<50.0	<100	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
MW-2, East of NW ASTs	1/20/98		NA	<50.0	<100	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
MW-2, East of NW ASTs	5/25/93		NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.0
MW-23, North of NW ASTs	6/17/99	23.2 / 13.47	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	0.0
MW-23, North of NW ASTs	4/6/99	23.2 / 16.9	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	0.0
MW-23, North of NW ASTs	9/17/98	23.2 / 17.9	NA	<50	<100	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
TW-12, North of ASTs	1/20/98	14.8 / 4.9	NA	291	5590	<0.5	1.49	<1.0	1.37	<1.0	7.11	1.76	11.7
MW-24, @ NW ASTs	6/17/99	22.9 / 12.88	NA	NA	23000	<0.27	6.0	<0.27	11.5	<0.32	34.0	14.0	65.5
MW-24, @ NW ASTs	4/6/99	22.9 / 16.4	NA	NA	1900	0.39	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	0.39
MW-24 DUP, @ NW ASTs	4/6/99		NA	NA	22000	0.33	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	0.33
MW-24, @ NW ASTs	9/17/98	22.9 / 17.2	NA	<50	321	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
MW-24 Dup, @ NW ASTs	9/17/98		NA	<50	265	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
TW-7, At Former ASTs	1/20/98	12.5 / 5.1	NA	148	159	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
MW-25, South of NW ASTs	6/17/99	23.1 / 12.35	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	0.0
MW-25, South of NW ASTs	4/6/99	23.1 / 15.8	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	0.0
MW-25, South of NW ASTs	9/17/98	23.1 / 16.7	NA	<50	<100	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
TW-11, South of ASTs	1/20/98	14.0 / 5.8	NA	<50.0	<100	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
MW-26, SE of NW ASTs	6/17/99	23.1 / 11.28	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	0.0
MW-26, SE of NW ASTs	4/6/99	23.1 / 14.7	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.27	<0.27	0.0
MW-26, SE of NW ASTs	9/17/98	23.1 / 15.5	NA	<50	<100	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
TW-10, East of ASTs	1/20/98	14.8 / 3.9	NA	<50.0	4170	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0

NS : No Standard ; NA Not Analyzed

Xylenes Sum of m, p, o Xylene

BOLD Exceeds State NR 140 ES

** : Calculated Standards from WDNR April 1997 PAH Guidance Document

TABLE 2 : GROUNDWATER CHEMISTRY RESULTS AND SATURATED SOILS													
Former Plymouth Foundry Site, Grafton, WI													
GROUNDWATER													
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Dissolved Lead	GRO	DRO	Petroleum Volatile Organic Compounds (ug/l = ppb)							
						Benzene	Ethylbenzene	Toluene	Xylenes	Methyl-t-butyl ether	124-Trimethylbenzene	135-Trimethylbenzene	Total Detected PVOCs
		Ft below grnd	(ug/l)	(ug/l = ppb)									
WI ADMIN CODE NR 140 E.S. / P.A.L.			15 / 1.5	NS	NS	5.0 / 0.5	700 / 140	1000 / 200	10,000 / 1,000	60 / 12	480 / 96		NS
GAS UST (EAST SIDE OF SITE)													
MW-3, East of Foundry	6/17/99	17.8 / 10.53	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	0.0
MW-3, East of Foundry	4/6/99	17.8 / 13.8	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	0.0
MW-3, East of Foundry	9/17/98	17.8 / 14.4	NA	NA	NA	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
MW-3, East of Foundry	2/5/98		NA	<50	<100	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
MW-3, East of Foundry	5/25/93		NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.0
MW-19, West	6/17/99	20.7 / 10.76	NA	NA	660.0	1.3	0.94	<0.27	0.86	<0.32	0.38	<0.27	3.5
MW-19, West	4/6/99	20.7 / 14.1	NA	NA	480	<0.54	<0.64	<0.54	<1.34	<0.64	<0.44	<0.54	0.0
MW-19, West	9/17/98	20.7 / 14.9	<1.0	NA	756	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
MW-22, North	6/17/99	20.5 / 10.46	NA	NA	650.0	<0.27	0.76	<0.27	6.8	<0.32	<0.22	1.0	8.6
MW-22, North	4/6/99	20.5 / 13.7	NA	NA	280	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	0.0
MW-22, North	9/17/98	20.5 / 14.3	<1.0	NA	575	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
TW-18, South	9/17/98	11.9 / 5.9	NA	NA	NA	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
TW-8, At Gas Dispenser	9/17/98	14.2 / 13.7	NA	NA	NA	NA : DRY							
TW-21, At Dispenser	9/17/98	13.2 / 13.2	NA	900	NA	3.98	4.22	3.27	187	<2.1	28.7	76.0	303.2
MW-31, north across 11th Ave	6/17/99	19.01 / 10.78	NA	NA	<100	<0.27	<0.32	<0.27	<0.67	<0.32	<0.27	<0.27	0.0
MW-31, north across 11th Ave	5/17/99	19.01 / 11.11	NA	NA	240.0	<0.54	<0.64	<0.54	<1.34	<0.64	<0.44	<0.54	0.0
MW-32, south across 11th Ave.	6/17/99	20.44 / 10.35	NA	NA	380.0	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	0.0
MW-32, south across 11th Ave.	5/17/99	20.44 / 10.85	NA	NA	100.0	<0.27	<0.32	<0.27	<0.67	<0.32	<0.22	<0.27	0.0
OTHER LOCATIONS													
TW-6, Parking Lot	1/20/98	18.8 / 16.7	NA	<50.0	<100	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
TW-9, at former USTs, NE Corn	1/20/98	9.1 / 4.9	NA	<50.0	368	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
TW-29, 60 ft E of NW Cmr of Bld	10/1/98	16.5 / 16.4	NA	NA	NA	NA : DRY							
Trip Blank	6/17/99	NA	NA	NA	NA	<0.27	<0.32	0.36	<0.67	<0.32	<0.22	<0.27	0.36
Trip Blank	9/17/98	NA	NA	NA	NA	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
Trip Blank	10/1/98	NA	NA	<50	NA	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0
Trip Blank	1/20/98	NA	NA	NA	NA	<0.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.0

NS : No Standard ; NA Not Analyzed

Xylenes Sum of m, p, o Xylene

BOLD Exceeds State NR 140 ES

** : Calculated Standards from WDNR April 1997 PAH Guidance Document

TABLE 2 : GROUNDWATER CHEMISTRY RESULTS AND																					
Former Plymouth Foundry Site, Grafton, WI																					
GROUNDWATER																					
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Detected VOC's (ug/l = ppb)																		
			Ft below grnd	N-Butylbenzene	sec-Butylbenzene	Isopropyl Benzene	1,4-Dichlorobenzene	p-Isopropyl toluene	Naphthalene	Tetrachloro ethylene	Trichloroethylene	1,1,1-Trichloroethane	Vinyl Chloride	Bromoform	trans-1,2-Dichloroethene	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	N-Propylbenzene	Total Detected VOC Excluding PVOCS
WI ADMIN CODE NR 140 E.S. / P.A.L.			NS	NS	NS	75 / 15	NS	40 / 8	5 / 0.5	5 / 0.5	200 / 40	0.2 / 0.02	4.4 / 0.44	100 / 20	850 / 85	5 / 0.5	7 / 0.7	70 / 7	NS	NS	
WEST OF BUILDING AT FOUR FORMER ASTs																					
MW-1, West of Foundry @ AST	6/17/99	17.2 / 17.2	NA : DRY																		
MW-1, West of Foundry @ AST	4/6/99	17.2 / 16.9	NA : DRY																		
MW-1, West of Foundry @ AST	10/1/98	17.2 / 16.8	NA : DRY																		
MW-1, West of Foundry	1/20/98		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-1, West of Foundry	5/25/93		12.6	<5.0	<5.0	<5.0	<5.0	51.8	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	64.4
TW-14, South of MW-1	1/20/98	9.7 / 4.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-27, South of West ASTs	6/17/99	23.8 / 12.61	<2.9	<2.9	<2.6	<3.0	<2.4	<3.5	740	140	<3.0	<2.0	<4.4	<7.9	<3.5	<3.7	<4.3	28.0	<7.6	908.0	
MW-27, South of West ASTs	4/6/99	23.8 / 16.1	<2.9	<2.9	<2.6	<3.0	<2.4	<3.5	970	140	<3.0	<2.0	<4.4	<7.9	<3.5	<3.7	<4.3	110	<7.6	1220.0	
MW-27, South of West ASTs	10/1/98	23.8 / 16.9	NA	NA	NA	NA	NA	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-30, Duplicate	6/17/99		0.39	0.60	<0.26	<0.30	<0.24	0.46	22.0	7.5	<0.30	1.6	<0.44	5.2	<0.35	<0.37	<0.43	2.0	<0.76	39.8	
MW-30, West of West ASTs	6/17/99	23.5 / 12.64	0.45	<0.29	<0.26	<0.30	<0.24	<0.35	18.0	4.5	<0.30	1.2	<0.44	3.3	<0.35	<0.37	<0.43	1.4	<0.76	28.9	
MW-30, West of West ASTs	4/6/99	23.5 / 16.2	<0.29	0.6	<0.26	<0.30	<0.24	<0.35	68.0	36.0	<0.30	1.2	<0.44	9.7	<0.35	<0.37	<0.43	5.5	<0.76	121.0	
MW-30DUP, West of West AST	4/6/99		<0.29	0.6	<0.26	<0.30	<0.24	<0.35	71.0	37.0	<0.30	0.94	<0.44	8.1	<0.35	<0.37	<0.43	5.0	<0.76	122.6	
MW-30, West of West ASTs	10/1/98	23.5 / 16.6	NA	NA	NA	NA	NA	3.67	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-16, West of ASTs	1/20/98	17.2 / 5.9	4.17	1.98	<1.0	<1.0	1.71	58.3	<1.0	<0.5	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	66.2	
MW-28, North of West ASTs	6/17/99	23.9 / 12.21	2.6	2.2	2.6	0.3	0.38	<0.35	<0.43	<0.37	<0.30	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	3.7	11.8	
MW-28, North of West ASTs	4/6/99	23.9 / 15.3	0.52	0.48	0.5	<0.30	<0.24	<0.35	0.59	0.55	<0.30	0.33	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	3.0	
MW-28, North of West ASTs	10/1/98	23.9 / 16.6	NA	NA	NA	NA	NA	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-15, North of MW-1	1/20/98	19.9 / 17.2	<5.0	6.2	<5.0	<5.0	<5.0	<5.0	36.3	7.5	<5.0	4.91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	54.9	

NS : No Standard ; NA Not Analyzed

Xylenes Sum of m, p, o Xylene

BOLD Exceeds State NR 140 ES

** : Calculated Standards from WDNR April 1997 PAH Guidance Document

TABLE 2 : GROUNDWATER CHEMISTRY RESULTS AND																					
Former Plymouth Foundry Site, Grafton, WI																					
GROUNDWATER																					
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Detected VOC's (ug/l = ppb)																		Total Detected VOC Excluding PVOCs
			Ft below gmd	N-Butylbenzene	sec-Butylbenzene	Isopropyl Benzene	1,4-Dichloro benzene	p-Isopropyl toluene	Naphthalene	Tetrachloro ethylene	Trichloro ethylene	1,1,1-Trichloroethane	Vinyl Chloride	Bromoform	trans-1,2-Dichloroethene	1,1-Dichloro ethane	1,2-Dichloro ethane	1,1-Dichloro Ethene	cis-1,2-Dichloroethene	N-Propylbenzene	
WI ADMIN CODE NR 140 E.S. / P.A.L.			NS	NS	NS	75 / 15	NS	40 / 8	5 / 0.5	5 / 0.5	200 / 40	0.2 / 0.02	4.4 / 0.44	100 / 20	850 / 85	5 / 0.5	7 / 0.7	70 / 7	NS	NS	
NORTHWEST AT FIVE FORMER ASTs																					
MW-2, East of NW ASTs	6/17/99	17.9 / 14.61	<0.29	<0.29	<0.29	<0.30	<0.24	<0.35	<0.43	<0.37	<0.37	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	0.0	
MW-2, East of NW ASTs	4/6/99	17.9 / 16.9	<0.29	<0.29	<0.29	<0.30	<0.24	<0.35	<0.43	<0.37	<0.37	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	0.0	
MW-2, East of NW ASTs	9/17/98	17.9 / 16.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-2, East of NW ASTs	1/20/98		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-2, East of NW ASTs	5/25/93		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.0	
MW-23, North of NW ASTs	6/17/99	23.2 / 13.47	<0.29	<0.29	<0.29	<0.30	<0.24	<0.35	<0.43	<0.37	<0.37	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	0.0	
MW-23, North of NW ASTs	4/6/99	23.2 / 16.9	<0.29	<0.29	<0.29	<0.30	<0.24	<0.35	<0.43	<0.37	<0.37	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	0.0	
MW-23, North of NW ASTs	9/17/98	23.2 / 17.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-12, North of ASTs	1/20/98	14.8 / 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-24, @ NW ASTs	6/17/99	22.9 / 12.88	2.5	1.0	2.2	<0.30	2.3	75	<0.43	<0.37	<0.30	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	3.0	86.0	
MW-24, @ NW ASTs	4/6/99	22.9 / 16.4	<0.29	<0.29	<0.29	<0.30	<0.24	<0.35	<0.43	<0.37	<0.37	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	0.0	
MW-24 DUP, @ NW ASTs	4/6/99		<0.29	<0.29	<0.29	<0.30	<0.24	<0.35	<0.43	<0.37	<0.37	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	0.0	
MW-24, @ NW ASTs	9/17/98	22.9 / 17.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-24 Dup, @ NW ASTs	9/17/98		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-7, At Former ASTs	1/20/98	12.5 / 5.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.0	
MW-25, South of NW ASTs	6/17/99	23.1 / 12.35	<0.29	<0.29	<0.29	<0.30	<0.24	<0.35	<0.43	<0.37	<0.37	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	0.0	
MW-25, South of NW ASTs	4/6/99	23.1 / 15.8	<0.29	<0.29	<0.29	<0.30	<0.24	<0.35	<0.43	<0.37	<0.37	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	0.0	
MW-25, South of NW ASTs	9/17/98	23.1 / 16.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-11, South of ASTs	1/20/98	14.0 / 5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-26, SE of NW ASTs	6/17/99	23.1 / 11.28	<0.32	<0.29	<0.29	<0.30	<0.24	<0.35	<0.43	<0.37	<0.37	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	0.0	
MW-26, SE of NW ASTs	4/6/99	23.1 / 14.7	<0.29	<0.29	<0.29	<0.30	<0.24	<0.35	<0.43	<0.37	<0.37	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	0.0	
MW-26, SE of NW ASTs	9/17/98	23.1 / 15.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TW-10, East of ASTs	1/20/98	14.8 / 3.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

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Xylenes Sum of m, p, o Xylene

BOLD Exceeds State NR 140 ES

** : Calculated Standards from WDNR April 1997 PAH Guidance Document

TABLE 2 : GROUNDWATER CHEMISTRY RESULTS AND																				
Former Plymouth Foundry Site, Grafton, WI																				
GROUNDWATER																				
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Detected VOC's (ug/l = ppb)																	
			Ft below gmd	N-Butylbenzene	sec-Butylbenzene	Isopropyl Benzene	1,4-Dichloro benzene	p-Isopropyl toluene	Naphthalene	Tetrachloro ethylene	Trichloro ethylene	1,1,1-Trichloro ethane	Vinyl Chloride	Bromoform	trans-1,2-Dichloroethene	1,1-Dichloro ethane	1,2-Dichloro ethane	1,1-Dichloro Ethene	cis-1,2-Dichloroethene	N-Propylbenzene
WI ADMIN CODE NR 140 E.S. / P.A.L.			NS	NS	NS	75 / 15	NS	40 / 8	5 / 0.5	5 / 0.5	200 / 40	0.2 / 0.02	4.4 / 0.44	100 / 20	850 / 85	5 / 0.5	7 / 0.7	70 / 7	NS	NS
GAS UST (EAST SIDE OF SITE)																				
MW-3, East of Foundry	6/17/99	17.8 / 10.53	<0.29	<0.29	<0.26	<0.30	<0.24	<0.35	130	24	<0.30	0.57	<0.44	<0.79	<0.35	<0.37	<0.43	24	<0.76	178.6
MW-3, East of Foundry	4/6/99	17.8 / 13.8	<0.29	<0.29	<0.26	<0.30	<0.24	<0.35	200	36.0	<0.30	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	27	<0.76	263.0
MW-3, East of Foundry	9/17/98	17.8 / 14.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	164	25.4	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	41.4	<1.0	230.8
MW-3, East of Foundry	2/5/98		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	151	37.1	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	22.9	<1.0	211.0
MW-3, East of Foundry	5/25/93		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	185	26.7	<1.0	<1.0	81.9	<1.0	<1.0	<1.0	<1.0	16.1	<1.0	309.7
MW-19, West	6/17/99	20.7 / 10.76	<0.29	0.34	<0.26	<0.30	<0.24	<0.35	1.1	2.1	<0.30	24.0	<0.44	7.5	<0.35	1.0	<0.43	1.8	<0.76	37.8
MW-19, West	4/6/99	20.7 / 14.1	<0.58	<0.58	<0.52	<0.60	<0.48	<0.70	11.0	13.0	<0.60	250.0	<0.88	58.0	<0.70	<0.74	2.8	16.0	<1.5	350.8
MW-19, West	9/17/98	20.7 / 14.9	1.65	3.49	<1.0	<1.0	<1.0	<1.0	6.12	5.53	<1.0	60.5	NA	15.9	<1.0	<1.0	<1.0	6.24	<1.0	99.4
MW-22, North	6/17/99	20.5 / 10.46	<0.29	<0.29	<0.26	<0.30	<0.24	0.59	<0.43	<0.37	<0.30	<0.20	<0.44	<0.79	<0.35	0.58	<0.43	<0.28	<0.76	1.2
MW-22, North	4/6/99	20.5 / 13.7	<0.29	1.40	0.31	<0.30	<0.24	<0.35	0.44	2.30	<0.30	0.97	<0.44	1.3	1.1	<0.37	<0.43	0.52	<0.76	8.3
MW-22, North	9/17/98	20.5 / 14.3	<1.0	3.78	<1.0	<1.0	<1.0	1.19	<1.0	1.11	<1.0	0.613	NA	1.1	<1.0	<1.0	<1.0	<2.0	<1.0	7.8
TW-18, South	9/17/98	11.9 / 5.9	<1.0	<1.0	<1.0	1.07	<1.0	<1.0	<1.0	<0.5	<1.0	<0.2	NA	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	1.1
TW-8, At Gas Dispenser	9/17/98	14.2 / 13.7	NA : DRY																	
TW-21, At Dispenser	9/17/98	13.2 / 13.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-31, north across 11th Ave	6/17/99	19.01 / 10.78	<0.29	<0.29	<0.26	<0.30	<0.24	2.2	3.5	1.3	0.71	120	<0.44	6.3	1.0	<0.37	<0.43	20	<0.76	155.0
MW-31, north across 11th Ave	5/17/99	19.01 / 11.11	<0.58	0.76	<0.52	<0.60	<0.48	<0.70	7.1	3.8	<0.60	210	<0.88	5.7	0.84	<0.74	<0.43	24	<1.5	252.2
MW-32, south across 11th Ave.	6/17/99	20.44 / 10.35	<0.29	1.00	<0.26	<0.30	<0.24	<0.35	5.5	3.8	1.4	1.5	<0.44	1.8	0.82	<0.37	<0.43	1.1	<0.76	16.9
MW-32, south across 11th Ave.	5/17/99	20.44 / 10.85	<0.29	0.81	<0.26	<0.30	<0.24	0.4	14	4.2	1.6	1.3	<0.44	1.2	0.68	<0.37	<0.43	1.1	<0.76	25.3
OTHER LOCATIONS																				
TW-6, Parking Lot	1/20/98	18.8 / 16.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-9, at former USTs, NE Corn	1/20/98	9.1 / 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-29, 60 ft E of NW Cmr of BI	10/1/98	16.5 / 16.4	NA : DRY																	
Trip Blank	6/17/99	NA	<0.29	<0.29	<0.26	<0.30	<0.24	<0.35	<0.43	<0.37	<0.30	<0.20	<0.44	<0.79	<0.35	<0.37	<0.43	<0.28	<0.76	0.0
Trip Blank	9/17/98	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	0.0
Trip Blank	10/1/98	NA	NA	NA	NA	NA	NA	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trip Blank	1/20/98	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	0.0

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Xylenes Sum of m, p, o Xylene

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TABLE 2 : GROUNDWATER CHEMISTRY RESULTS AND
Former Plymouth Foundry Site, Grafton, WI

GROUNDWATER																
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Polynuclear Aromatic Hydrocarbons (ug/l)													
			Ft below grnd	Acenaphthene	Anthracene	Benzo (a) Anthracene	Benzo (g,h,i) perylene	Chrysene	Fluorene	Fluoranthene	Indeno (1,2,3-cd) Pyrene	1-Methyl Naphthalene	2-Methyl Naphthalene	Naphthalene	Pyrene	Phenanthrene
WI ADMIN CODE NR 140 E.S. / P.A.L.			600 / 120**	3000 / 600	0.048 / 0.0048 **	0.48 / 0.096**	0.2 / 0.02	400 / 80**	400 / 80	0.048 / 0.0048**	700 / 140**	400 / 80**	40 / 8	250 / 50	4.8 / 0.96 **	
WEST OF BUILDING AT FOUR FORMER ASTs																
MW-1, West of Foundry @ AST	6/17/99	17.2 / 17.2	NA : DRY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-1, West of Foundry @ AST	4/6/99	17.2 / 16.9	NA : DRY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-1, West of Foundry @ AST	10/1/98	17.2 / 16.8	76.6	<1.0	<1.3	<1.6	<1.3	287	<1.3	1.51	189	<0.07	<0.05	<1.3	245	
MW-1, West of Foundry	1/20/98		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-1, West of Foundry	5/25/93		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-14, South of MW-1	1/20/98	9.7 / 4.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-27, South of West ASTs	6/17/99	23.8 / 12.61	<0.47	<0.021	<0.05	<0.021	<0.016	<0.058	<0.015	<0.025	<0.36	<0.36	<0.42	<0.14	<0.046	
MW-27, South of West ASTs	4/6/99	23.8 / 16.1	<4.7	<0.021	<0.05	<0.021	<0.016	<0.058	<0.015	<0.025	<0.36	<0.36	<0.42	<0.14	0.081	
MW-27, South of West ASTs	10/1/98	23.8 / 16.9	<0.11	<0.03	<0.06	<0.05	<0.04	<0.04	<0.04	<0.04	<0.06	<0.07	<0.05	<0.17	0.226	
MW-30, Duplicate	6/17/99		<1.4	<0.063	0.089	<0.80	0.06	<0.17	<0.045	<0.075	<1.1	<1.1	<1.3	<0.051	0.87	
MW-30, West of West ASTs	6/17/99	23.5 / 12.64	<0.94	<0.042	0.051	<0.042	0.08	<0.12	<0.030	<0.050	<0.72	<0.72	<0.84	0.040	0.85	
MW-30, West of West ASTs	4/6/99	23.5 / 16.2	<9.4	0.61	0.74	<0.42	1.10	<1.2	<0.030	<0.50	<7.2	<7.2	<8.4	0.50	6.7	
MW-30DUP, West of West AST	4/6/99		<9.4	0.46	0.62	<0.42	0.79	<1.2	<0.030	<0.50	<7.2	<7.2	<8.4	<0.34	5.5	
MW-30, West of West ASTs	10/1/98	23.5 / 16.6	0.437	<0.03	<0.06	<0.05	<0.04	1.32	<0.030	<0.04	<0.06	<0.07	<0.05	<0.17	<0.08	
TW-16, West of ASTs	1/20/98	17.2 / 5.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-28, North of West ASTs	6/17/99	23.9 / 12.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-28, North of West ASTs	4/6/99	23.9 / 15.3	<3.8	<0.17	0.31	<0.17	0.50	<0.46	<0.12	<0.20	<2.9	<2.9	<3.4	<0.14	2.2	
MW-28, North of West ASTs	10/1/98	23.9 / 16.6	3.88	<0.03	<0.06	<0.05	<0.04	8.55	<0.03	<0.04	6.69	2.67	1.78	<0.17	<0.08	
TW-15, North of MW-1	1/20/98	19.9 / 17.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

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Former Plymouth Foundry Site, Grafton, WI															
GROUNDWATER															
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			Ft below grnd	Acenaphthene	Anthracene	Benzo (a) Anthracene	Benzo (g,h,i) perylene	Chrysene	Fluorene	Fluoranthene	Indeno (1,2,3-cd) Pyrene	1-Methyl Naphthalene	2-Methyl Naphthalene	Naphthalene	Pyrene
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NORTHWEST AT FIVE FORMER ASTs															
MW-2, East of NW ASTs	6/17/99	17.9 / 14.61	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2, East of NW ASTs	4/6/99	17.9 / 16.9	<0.47	<0.021	<0.014	<0.021	<0.016	<0.058	<0.015	<0.025	<0.36	<0.36	<0.42	<0.017	<0.046
MW-2, East of NW ASTs	9/17/98	17.9 / 16.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2, East of NW ASTs	1/20/98		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2, East of NW ASTs	5/25/93		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-23, North of NW ASTs	6/17/99	23.2 / 13.47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-23, North of NW ASTs	4/6/99	23.2 / 16.9	<0.47	<0.021	<0.014	<0.021	<0.016	<0.058	<0.015	<0.025	<0.36	<0.36	<0.42	<0.017	<0.046
MW-23, North of NW ASTs	9/17/98	23.2 / 17.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-12, North of ASTs	1/20/98	14.8 / 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-24, @ NW ASTs	6/17/99	22.9 / 12.88	<9.4	<0.42	<0.28	<0.42	<0.32	<1.2	<0.30	<0.50	24.0	10.0	9.9	<0.34	4.6
MW-24, @ NW ASTs	4/6/99	22.9 / 16.4	<0.94	<0.042	0.043	<0.042	0.22	<0.12	<0.030	<0.050	<0.72	<0.72	<0.84	<0.034	0.280
MW-24 DUP, @ NW ASTs	4/6/99		<4.7	<0.21	0.210	<0.21	0.71	<5.8	<0.15	<0.25	<3.6	<3.6	<4.2	<0.17	2.500
MW-24, @ NW ASTs	9/17/98	22.9 / 17.2	<0.11	<0.03	<0.06	<0.05	<0.04	<0.04	<0.04	<0.04	0.114	0.112	<0.05	<0.17	0.089
MW-24 Dup, @ NW ASTs	9/17/98		<0.11	<0.03	<0.06	<0.05	<0.04	<0.04	<0.04	<0.04	<0.06	<0.07	<0.05	<0.17	<0.08
TW-7, At Former ASTs	1/20/98	12.5 / 5.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-25, South of NW ASTs	6/17/99	23.1 / 12.35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-25, South of NW ASTs	4/6/99	23.1 / 15.8	<0.47	<0.021	<0.014	<0.021	<0.016	<0.058	<0.015	<0.025	<0.36	<0.36	<0.42	<0.017	<0.046
MW-25, South of NW ASTs	9/17/98	23.1 / 16.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-11, South of ASTs	1/20/98	14.0 / 5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-26, SE of NW ASTs	6/17/99	23.1 / 11.28	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-26, SE of NW ASTs	4/6/99	23.1 / 14.7	<0.47	<0.021	<0.014	<0.021	<0.016	<0.058	<0.015	<0.025	<0.36	<0.36	<0.42	<0.017	<0.046
MW-26, SE of NW ASTs	9/17/98	23.1 / 15.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-10, East of ASTs	1/20/98	14.8 / 3.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NS : No Standard ; NA Not Analyzed

Xylenes Sum of m, p, o Xylene

BOLD Exceeds State NR 140 ES

** : Calculated Standards from WDNR April 1997 PAH Guidance Document

TABLE 2 : GROUNDWATER CHEMISTRY RESULTS AND S															
Former Plymouth Foundry Site, Grafton, WI															
GROUNDWATER															
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Polynuclear Aromatic Hydrocarbons (ug/l)												
			Ft below grnd	Acenaphthene	Anthracene	Benzo (a) Anthracene	Benzo (g,h,i) perylene	Chrysene	Fluorene	Fluoranthene	Indeno (1,2,3-cd) Pyrene	1-Methyl Naphthalene	2-Methyl Naphthalene	Naphthalene	Pyrene
WI ADMIN CODE NR 140 E.S. / P.A.L.			600 / 120**	3000/ 600	0.048/ 0.0048 **	0.48/ 0.096**	0.2 / 0.02	400 / 80**	400 / 80	0.048 / 0.0048**	700 / 140**	400 / 80**	40 / 8	250 / 50	4.8 / 0.96 **
GAS UST (EAST SIDE OF SITE)															
MW-3, East of Foundry	6/17/99	17.8 / 10.53	<0.47	<0.021	<0.014	0.021	<0.016	<0.058	<0.015	<0.025	<0.36	<0.36	<0.42	<0.017	<0.046
MW-3, East of Foundry	4/6/99	17.8 / 13.8	<0.47	<0.021	<0.014	<0.021	<0.016	<0.058	<0.015	<0.025	<0.36	<0.36	<0.42	<0.017	<0.046
MW-3, East of Foundry	9/17/98	17.8 / 14.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3, East of Foundry	2/5/98		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3, East of Foundry	5/25/93		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-19, West	6/17/99	20.7 / 10.76	1.1	0.12	<0.014	<0.021	<0.016	0.42	<0.015	<0.025	<0.36	0.55	<0.42	<0.017	1.7
MW-19, West	4/6/99	20.7 / 14.1	2.3	0.31	<0.014	<0.021	<0.016	1.10	0.032	<0.025	<0.36	0.99	<0.42	<0.017	2.6
MW-19, West	9/17/98	20.7 / 14.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-22, North	6/17/99	20.5 / 10.46	1.4	0.053	<0.014	<0.021	<0.016	0.98	<0.015	<0.025	<0.36	0.55	<0.42	<0.017	2.6
MW-22, North	4/6/99	20.5 / 13.7	2.1	0.230	<0.014	<0.021	<0.016	1.7	0.016	<0.025	<0.36	0.79	<0.42	<0.017	2.4
MW-22, North	9/17/98	20.5 / 14.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-18, South	9/17/98	11.9 / 5.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-8, At Gas Dispenser	9/17/98	14.2 / 13.7	NA : DRY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-21, At Dispenser	9/17/98	13.2 / 13.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-31, north across 11th Ave	6/17/99	19.01 / 10.78	<0.47	<0.021	<0.014	<0.021	<0.016	<0.058	<0.015	<0.025	<0.36	<0.36	<0.42	<0.017	0.12
MW-31, north across 11th Ave	5/17/99	19.01 / 11.11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-32, south across 11th Ave.	6/17/99	20.44 / 10.35	0.96	0.082	<0.014	<0.021	0.019	0.39	0.017	<0.025	<0.36	0.55	<0.42	<0.017	1.4
MW-32, south across 11th Ave.	5/17/99	20.44 / 10.85	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
OTHER LOCATIONS															
TW-6, Parking Lot	1/20/98	18.8 / 16.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-9, at former USTs, NE Corn	1/20/98	9.1 / 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TW-29, 60 ft E of NW Cmr of Bld	10/1/98	16.5 / 16.4	NA : DRY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trip Blank	6/17/99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trip Blank	9/17/98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trip Blank	10/1/98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trip Blank	1/20/98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Xylenes Sum of m, p, o Xylene

BOLD Exceeds State NR 140 ES

** : Calculated Standards from WDNr April 1997 PAH Guidance Document

TABLE 2 : GROUNDWATER CHEMISTRY RESULTS AND									
Former Plymouth Foundry Site, Grafton, WI									
GROUNDWATER									
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Natural Attenuation Parameters						
			Dissolved Oxygen	Sol. Sulfate	Nitrate plus Nitrite	Soluble Iron	Soluble Manganese	Methane	Alkalinity
		Ft below grnd	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(ug/l)	(mg/l)
WI ADMIN CODE NR 140 E.S. / P.A.L.			NS	250 / 125	10 / 2	0.3 / 0.15	0.05 / 0.025	NS	NS
WEST OF BUILDING AT FOUR FORMER ASTs									
MW-1, West of Foundry @ AST	6/17/99	17.2 / 17.2	NA : DRY	NA	NA	NA	NA	NA	NA
MW-1, West of Foundry @ AST	4/6/99	17.2 / 16.9	NA : DRY	NA	NA	NA	NA	NA	NA
MW-1, West of Foundry @ AST	10/1/98	17.2 / 16.8	NA : DRY	NA	NA	NA	NA	NA	NA
MW-1, West of Foundry	1/20/98		NA	NA	NA	NA	NA	NA	NA
MW-1, West of Foundry	5/25/93		NA	NA	NA	NA	NA	NA	NA
TW-14, South of MW-1	1/20/98	9.7 / 4.8	NA	NA	NA	NA	NA	NA	NA
MW-27, South of West ASTs	6/17/99	23.8 / 12.61	1.11	NA	NA	NA	NA	NA	NA
MW-27, South of West ASTs	4/6/99	23.8 / 16.1	2.00	46.0	1.20	0.057	0.015	<0.9	390
MW-27, South of West ASTs	10/1/98	23.8 / 16.9	0.63	44.1	3.24	<0.01	0.107	1.28	NA
MW-30, Duplicate	6/17/99		NA	NA	NA	NA	NA	NA	NA
MW-30, West of West ASTs	6/17/99	23.5 / 12.64	0.63	23.0	NA	NA	NA	NA	NA
MW-30, West of West ASTs	4/6/99	23.5 / 16.2	0.52	36.0	0.57	<0.047	0.041	25.0	420.0
MW-30DUP, West of West AST	4/6/99			100	1.10	<0.047	0.041	12.0	400.0
MW-30, West of West ASTs	10/1/98	23.5 / 16.6	NA	48.3	1.56	0.052	0.248	2.37	NA
TW-16, West of ASTs	1/20/98	17.2 / 5.9	NA	NA	NA	NA	NA	NA	NA
MW-28, North of West ASTs	6/17/99	23.9 / 12.21	0.57	NA	NA	NA	NA	NA	NA
MW-28, North of West ASTs	4/6/99	23.9 / 15.3	0.13	9.5	0.04	0.047	0.032	46.0	480
MW-28, North of West ASTs	10/1/98	23.9 / 16.6	NA	62.1	<0.3	0.42	0.273	3.88	NA
TW-15, North of MW-1	1/20/98	19.9 / 17.2	NA	NA	NA	NA	NA	NA	NA

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TABLE 2 : GROUNDWATER CHEMISTRY RESULTS AND									
Former Plymouth Foundry Site, Grafton, WI									
GROUNDWATER									
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Natural Attenuation Parameters						
			Dissolved Oxygen	Sol. Sulfate	Nitrate plus Nitrite	Soluble Iron	Soluble Manganese	Methane	Alkalinity
		Ft below grnd	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(ug/l)	(mg/l)
WI ADMIN CODE NR 140 E.S. / P.A.L.			NS	250 / 125	10 / 2	0.3 / 0.15	0.05 / 0.025	NS	NS
NORTHWEST AT FIVE FORMER ASTs									
MW-2, East of NW ASTs	6/17/99	17.9 / 14.61	8.84	NA	NA	NA	NA	NA	NA
MW-2, East of NW ASTs	4/6/99	17.9 / 16.9	4.08	33.0	2.90	<0.047	0.0027	<0.9	410
MW-2, East of NW ASTs	9/17/98	17.9 / 16.1	2.97	33.0	1.04	<0.01	0.024	<1.0	382
MW-2, East of NW ASTs	1/20/98		NA	NA	NA	NA	NA	NA	NA
MW-2, East of NW ASTs	5/25/93		NA	NA	NA	NA	NA	NA	NA
MW-23, North of NW ASTs	6/17/99	23.2 / 13.47	6.69	NA	NA	NA	NA	NA	NA
MW-23, North of NW ASTs	4/6/99	23.2 / 16.9	4.14	38.0	0.17	<0.047	0.039	2.50	430
MW-23, North of NW ASTs	9/17/98	23.2 / 17.9	5.14	25.5	2.53	0.038	0.293	2.63	294
TW-12, North of ASTs	1/20/98	14.8 / 4.9	NA	NA	NA	NA	NA	NA	NA
MW-24, @ NW ASTs	6/17/99	22.9 / 12.88	0.60	NA	NA	NA	NA	NA	NA
MW-24, @ NW ASTs	4/6/99	22.9 / 16.4	0.39	14.0	0.14	<0.047	0.38	7.70	510
MW-24 DUP, @ NW ASTs	4/6/99			14.0	0.17	<0.047	0.38	5.40	450
MW-24, @ NW ASTs	9/17/98	22.9 / 17.2	0.16	16.4	1.0	0.024	0.389	4.18	263
MW-24 Dup, @ NW ASTs	9/17/98		NA	17.7	0.854	0.022	0.422	4.25	268
TW-7, At Former ASTs	1/20/98	12.5 / 5.1	NA	NA	NA	NA	NA	NA	NA
MW-25, South of NW ASTs	6/17/99	23.1 / 12.35	0.85	NA	NA	NA	NA	NA	NA
MW-25, South of NW ASTs	4/6/99	23.1 / 15.8	0.80	12.0	0.37	<0.047	0.006	1.70	300
MW-25, South of NW ASTs	9/17/98	23.1 / 16.7	2.53	21.6	1.89	<0.01	0.002	<1.0	309
TW-11, South of ASTs	1/20/98	14.0 / 5.8	NA	NA	NA	NA	NA	NA	NA
MW-26, SE of NW ASTs	6/17/99	23.1 / 11.28	0.34	NA	NA	NA	NA	NA	NA
MW-26, SE of NW ASTs	4/6/99	23.1 / 14.7	0.38	52.0	0.037	<0.047	0.049	7.30	270
MW-26, SE of NW ASTs	9/17/98	23.1 / 15.5	0.20	21.3	1.65	0.072	0.051	<1.0	299
TW-10, East of ASTs	1/20/98	14.8 / 3.9	NA	NA	NA	NA	NA	NA	NA

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TABLE 2 : GROUNDWATER CHEMISTRY RESULTS AND S									
Former Plymouth Foundry Site, Grafton, WI									
GROUNDWATER									
SAMPLE I.D.	Date Sampled	Total Depth / Depth to Water	Natural Attenuation Parameters						
			Dissolved Oxygen	Sol. Sulfate	Nitrate plus Nitrite	Soluble Iron	Soluble Manganese	Methane	Alkalinity
		Ft below grnd	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(ug/l)	(mg/l)
WI ADMIN CODE NR 140 E.S. / P.A.L.			NS	250 / 125	10 / 2	0.3 / 0.15	0.05 / 0.025	NS	NS
GAS UST (EAST SIDE OF SITE)									
MW-3, East of Foundry	6/17/99	17.8 / 10.53	0.82	31.0	0.72	0.16	0.014	<10	NA
MW-3, East of Foundry	4/6/99	17.8 / 13.8	1.1	54.0	0.79	<0.047	<0.0025	<0.9	370.0
MW-3, East of Foundry	9/17/98	17.8 / 14.4	NA	NA	NA	NA	NA	NA	NA
MW-3, East of Foundry	2/5/98		0.31	NA	NA	NA	NA	NA	NA
MW-3, East of Foundry	5/25/93		NA	NA	NA	NA	NA	NA	NA
MW-19, West	6/17/99	20.7 / 10.76	0.26	31.0	0.72	0.16	0.014	<10	NA
MW-19, West	4/6/99	20.7 / 14.1	0.12	31.0	0.036	0.13	0.120	57.0	480.0
MW-19, West	9/17/98	20.7 / 14.9	NA	NA	NA	NA	NA	NA	NA
MW-22, North	6/17/99	20.5 / 10.46	0.35	19.0	2.3	1.5	0.22	53.0	NA
MW-22, North	4/6/99	20.5 / 13.7	0.38	30	0.086	<0.047	0.22	78.0	390.0
MW-22, North	9/17/98	20.5 / 14.3	0.17	24	<0.3	2.75	0.25	14.3	410.0
TW-18, South	9/17/98	11.9 / 5.9	0.13	NA	NA	NA	NA	NA	NA
TW-8, At Gas Dispenser	9/17/98	14.2 / 13.7	NA : DRY						
TW-21, At Dispenser	9/17/98	13.2 / 13.2	NA	NA	NA	NA	NA	NA	NA
MW-31, north across 11th Ave	6/17/99	19.01 / 10.78	0.46	32.0	0.056	1.0	0.42	61.0	NA
MW-31, north across 11th Ave	5/17/99	19.01 / 11.11	0.45	NA	NA	NA	NA	NA	NA
MW-32, south across 11th Ave.	6/17/99	20.44 / 10.35	0.24	21.0	0.058	1.00	0.33	72.0	NA
MW-32, south across 11th Ave.	5/17/99	20.44 / 10.85	0.25	NA	NA	NA	NA	NA	NA
OTHER LOCATIONS									
TW-6, Parking Lot	1/20/98	18.8 / 16.7	NA	NA	NA	NA	NA	NA	NA
TW-9, at former USTs, NE Corn	1/20/98	9.1 / 4.9	NA	NA	NA	NA	NA	NA	NA
TW-29, 60 ft E of NW Cmr of Bld	10/1/98	16.5 / 16.4	NA	NA	NA	NA	NA	NA	NA
Trip Blank	6/17/99	NA	NA	NA	NA	NA	NA	NA	NA
Trip Blank	9/17/98	NA	NA	NA	NA	NA	NA	NA	NA
Trip Blank	10/1/98	NA	NA	NA	NA	NA	NA	NA	NA
Trip Blank	1/20/98	NA	NA	NA	NA	NA	NA	NA	NA

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Xylenes Sum of m, p, o Xylene

BOLD Exceeds State NR 140 ES

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LE 3 : SURVEY AND WATER LEVEL DATA

les Plymouth Foundry Site

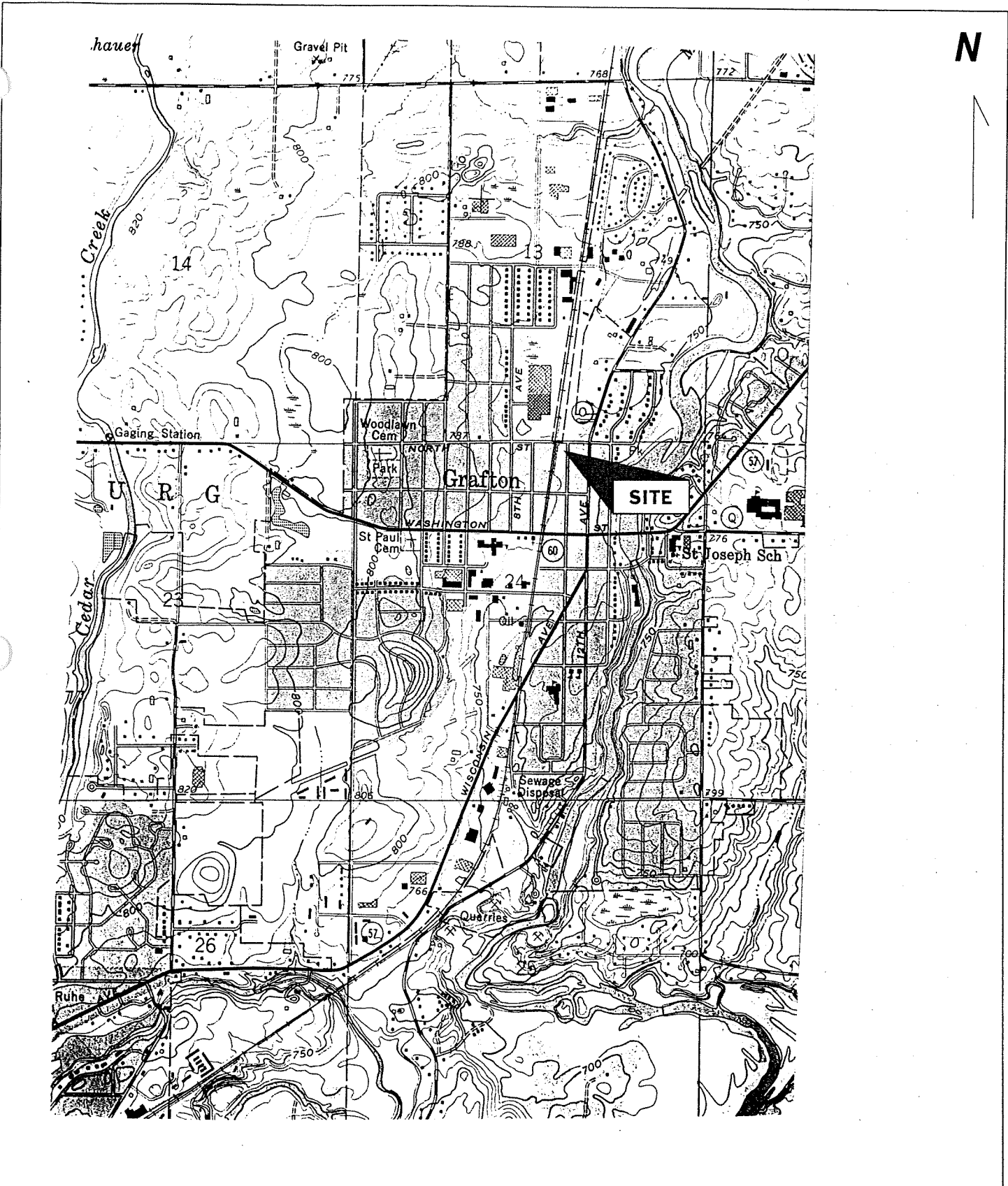
Survey Completed October 1, 1998

OBJECT	LOCATION	Instrument Reading (feet)	Datum Elevation (ft MSL)	Eyepiece Elevation (ft MSL)	Object Elevation (ft MSL)	Well PVC Stickup (feet)	Water Level Measurements			Water Level Measurements		
							10/1/98			4/5/99		
							Ft below PVC Lip	Feet MSL	Feet below Grade	Ft below PVC Lip	Feet MSL	Feet below Grade
STATION ONE												
DATUM : Hydrant Ground	SE Corner 9th & North	2.16	766.32	768.48	766.32							
DATUM : Hydrant Top Nut	SE Corner 9th & North	5.33+	769.49	768.48								
MW-23 PVC	North of ASTs	6.24		768.48	762.24	-0.46	17.46	744.78	17.92	16.98	745.26	17.44
MW-23 Grnd		5.78		768.48	762.70							
MW-24 PVC	At ASTs	6.98		768.48	761.50	-0.35	16.81	744.69	17.16	16.46	745.04	16.81
MW-24 Grnd		6.63		768.48	761.85							
MW-25 PVC	South of ASTs	7.57		768.48	760.91	-0.49	16.26	744.65	16.75	15.85	745.06	16.34
MW-25 Grnd		7.08		768.48	761.40							
MW-26 PVC	SE of ASTs	8.87		768.48	759.61	-0.45	15.10	744.51	15.55	14.71	744.90	15.16
MW-26 Grnd		8.42		768.48	760.06							
MW-2 Grnd	NE of ASTs	5.51		768.48	762.97	2.36	18.43	744.54	16.07	17.99	744.98	15.63
MW-2 PVC		7.87		768.48	760.61							
MW-28 PVC	NW Corner Bldg	7.65		768.48	760.83	-0.42	16.20	744.63	16.62	15.29	745.54	15.71
MW-28 Grnd		7.23		768.48	761.25							
MW-1 PVC	At Fuel Pump Vault	4.63		768.48	763.85	2.42	19.21	744.64	16.79	18.81	745.04	16.39
MW-1 Grnd		7.05		768.48	761.43							
MW-30 PVC	West of Fuel Pump	7.24		768.48	761.24	-0.34	16.59	744.65	16.93	16.70	744.54	17.04
MW-30 Grnd		6.90		768.48	761.58							
MW-27 PVC	South of Fuel Pump	7.32		768.48	761.16	-0.35	16.56	744.60	16.91	16.15	745.01	16.50
MW-27 Grnd		6.97		768.48	761.51							
TW-29 PVC	By Bldg N Wall	3.88		768.48	764.60	3.55	19.94	744.66	16.39	19.84	744.76	16.29
TW-29 Grnd		7.43		768.48	761.05							
TW-9 PVC Lip	NE Corner Bldg	9.21		768.48	759.27	0.44	5.39	753.88	4.95			
TW-9 Ground		9.65		768.48	758.83		Perched					
Railroad Rail at North Ave		4.03		768.48	764.45							
STATION TWO												
DATUM : Hydrant Ground	SE Corner 9th & North		769.49									
MW-2 PVC	Connect to Datum	0.80		763.77	762.97	2.38	18.43	744.54	16.05	17.99	744.98	15.61
MW-2 Grnd		3.18		763.77	760.59							
MW-26 PVC	Connect to Datum	4.14		763.77	759.63	-0.48	15.10	744.53	15.58	14.71	744.92	15.19
MW-26 Grnd		3.66		763.77	760.11							
TW-18 PVC	South of UST	2.79		763.77	760.98	2.16	8.10	752.88	5.94			
TW-18 Grnd		4.95		763.77	758.82		Perched					
MW-19 PVC	West of UST in Alley	4.86		763.77	758.91	-0.46	14.49	744.42	14.95	14.12	744.79	14.58
MW-19 Grnd		4.40		763.77	759.37							
TW-20 PVC	East of UST	5.32		763.77	758.45	0.02	13.60	744.85	13.58			
TW-20 Grnd		5.34		763.77	758.43		DRY ?					
TW-21 PVC	At UST	3.30		763.77	760.47	1.86	15.08	745.39	13.22			
TW-21 Grnd		5.16		763.77	758.61		DRY	DRY				
MW-22 PVC	North of UST	5.41		763.77	758.36	-0.24	14.10	744.26	14.34	13.74	744.62	13.98
MW-22 Grnd		5.17		763.77	758.60							
MW-3 PVC	Far South of UST	5.05		763.77	758.72	-0.17	14.28	744.44	14.45	13.84	744.88	14.01
MW-3 Grnd		4.88		763.77	758.89							
11th Street at TW-20	at Gutter	5.96		763.77	757.81							
Top of Conc Vault	At MW-19 (bldg Floor)	3.04		763.77	760.73							

Survey Eyepiece below Datum. Surveyed Ground, measured with tape to top of hydrant, corrected elevation of eyepiece using tape reading.

TABLE 3 : SURVEY DATA											Page 2 of 2	
Hughes Plymouth Foundry Site												
OBJECT	LOCATION	Instrument Reading (feet)	Datum Elevation (Ft MSL)	Eyepiece Elevation (ft MSL)	Object Elevation (ft MSL)	Well PVC Stickup (feet)	Water Level Measurements					
							1/20/98			2/5/98		
							Ft below PVC Lip	Feet MSL	Feet below Grade	Ft below PVC Lip	Feet MSL	Feet below Grade
STATION ONE												
DATUM : Ground	NE Corner Foundry Building	8.60	100.00	108.60	100.00							
TW-7 PVC Lip	At AST's	4.23		108.60	104.37	1.83	8.40	95.97	6.57	6.91	97.46	5.08
TW-7 Ground		6.06		108.60	102.54							
TW-16 PVC Lip	West of ASTs	1.93		108.60	106.67	2.78	9.71	96.96	6.93	8.72	97.95	5.94
TW-16 Ground		4.71		108.60	103.89							
TW-12 PVC Lip	North of ASTs	4.54		108.60	104.06	0.19	6.22	97.84	6.03	5.11	98.95	4.92
TW-12 Ground		4.73		108.60	103.87							
MW-2 PVC Lip	East of ASTs	4.05		108.60	104.55	2.27	18.95	85.60	16.68	18.89	85.66	16.62
MW-2 Ground		6.32		108.60	102.28							
TW-10 PVC Lip	East of ASTs	6.38		108.60	102.22	0.19	4.95	97.27	4.76	4.13	98.09	3.94
TW-10 Ground		6.57		108.60	102.03							
TW-11 PVC Lip	South of ASTs	5.33		108.60	103.27	1.01	7.80	95.47	6.79	6.81	96.46	5.80
TW-11 Ground		6.34		108.60	102.26							
TW-13 PVC Lip	NW Corner Foundry Building	2.98		108.60	105.62	2.62	20.00	85.62	17.38	20.00	85.62	17.38
TW-13 Ground		5.60		108.60	103.00							
TW-15 PVC Lip	North of MW-1	4.65		108.60	103.95	1.05	DRY	DRY	DRY	DRY	DRY	DRY
TW-15 Ground		5.70		108.60	102.90		18.32	85.63	17.27	18.28	85.67	17.23
TW-17 Ground	West of MW-1	5.32		108.60	103.28							
MW-1 PVC Lip	West of Building	3.13		108.60	105.47	2.31	19.24	86.23	16.93	19.68	85.79	17.37
MW-1 Ground		5.44		108.60	103.16							
TW-14 PVC Lip	South of MW-1	5.35		108.60	103.25	0.12	6.33	96.92	6.21	4.91	98.34	4.79
TW-14 Ground		5.47		108.60	103.13							
TW-6 PVC Lip and Gro	Center Parking Lot	6.36		108.60	102.24		16.73	85.51	16.73	16.69	85.55	16.69
TW-9 PVC Lip	Former USTs at NE Corner Foundry Building	7.59		108.60	101.01	0.50	5.89	95.12	5.39		Removed	
TW-9 Ground		8.09		108.60	100.51							
STATION TWO												
DATUM	Ground at Foundry Building NE Corner	5.37	100.00	105.37	760.00							
TW-8 PVC Lip	Gas UST on East Side Building	4.96		105.37	100.41	0.20	14.42	85.99	14.22	13.90	86.51	13.70
TW-8 Ground		5.16		105.37	100.21		DRY	DRY	DRY	DRY	DRY	DRY
MW-3 Ground	East of Building	4.91		105.37	100.46		NA	NA	NA			
MW-3 PVC Lip	East of Building	5.41	Estimated	105.37	99.96	-0.50	NA	NA	NA	14.77	85.19	15.27
Survey Datum arbitrarily set to 100.00												

Petroleum Volatile Organic Compounds (ug/kg)								Detected Polynuclear Aromatic Hydrocarbons (ug/kg)						
ene	Ethylbenzene	Toluene	Xylenes	Methyl-t-butyl ether	124-Trimethyl benzene	135-Trimethyl benzene	Total Detected PVOCs	Benzo (b) Fluoranthene	Fluorene	1-Methyl Naphthalene	2-Methyl Naphthalene	Naphthalene	Phenanthrene	Total Detected PAHs
.5	2,900	1,500	4,200	NS	NS	NS	NS	3900/ 88/ 360000	40000000/ 600000/ 100000	70000000/ 1100000/ 23000	40000000/ 600000/ 20000	1100000/ 20000/ 400	3900000/ 18000/ 1800	NS
							41.4							14.7
							5.5							2.0
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
233	242	<233	434	<233	2053	1,000	3,729	NA	NA	NA	NA	NA	NA	NA
231	<231	<231	<462	<231	1,160	1,148	2,308	NA	NA	NA	NA	NA	NA	NA
28	32	<28	162	<28	740	475	1,409	45.2	169	2,490	2,110	397	<3.1	5,211
29	31	<29	79	<29	318	435	863	46.0	161	1,740	2,230	178	<3.1	4,355
28	<28	<28	<28	<28	<28	<28	0	NA	NA	NA	NA	NA	NA	NA
							1661.8							4783.1
							957.0							957.0
							1435.5							1435.5
							4.8							13.7
							0.64							1.83
<30	50	<30	221	<30	<30	<30	271	NA	NA	NA	NA	NA	NA	NA
<29	<29	<29	56	<29	<29	<29	56	<1.2	42.3	23.4	38.7	<2	85.6	190
<31	207	<31	180	<31	1,906	1,548	3,841	NA	NA	NA	NA	NA	NA	NA
<209	<209	<209	<418	<209	2,597	1,415	4,012	NA	NA	NA	NA	NA	NA	NA
<100	130	<100	580	<100	2800	1600	5,110							
<26	39	<26	36	<26	529	421	1,025	NA	NA	NA	NA	NA	NA	NA
							2385.8							190.0
							1620							1620.0
							2430.0							2430.0
							11.6							0.92
							1.5							0.12
<1,190	11769	2963	60274	<1,190	100,655	32,619	208,280	NA	NA	NA	NA	NA	NA	NA
							208280.0							NA
							40.0							NA
							60.0							NA
							25.0							NA
							3.3							NA



Base Map USGS 7.5' Cedarburg Quadrangle, Revised 1994

Title: **Site Location and Local Topography**

Project: **Site Investigation**

Client: **Former Plymouth Foundry Property, Grafton, WI**



SCALE: 1 : 24,000

DWG NO: **FIGURE 1**




DRAWN BY: **KAE**

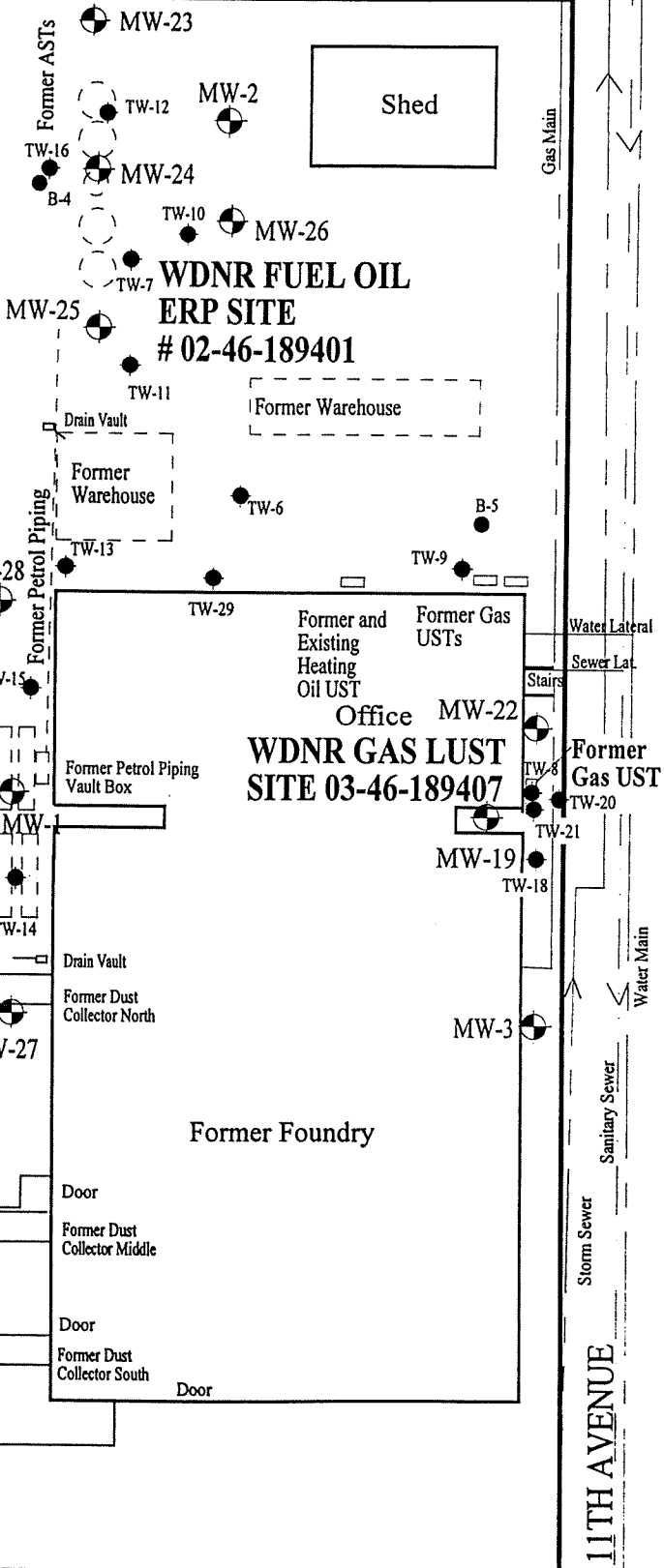
DATE: **Jan 12, 2000**

NORTH STREET

Water Main
Sanitary Sewer
Storm Sewer

LEGEND

- MW-2  Existing NR-141 Monitoring Well
- TW-29  Previously Installed Temporary Well, Decommissioned
- B-5  Soil Boring



**WDNR FUEL OIL
ERP SITE
02-46-189396**

**WDNR FUEL OIL
ERP SITE
02-46-189401**

**WDNR GAS LUST
SITE 03-46-189407**

RAILROAD

11TH AVENUE

N

title: **Well and Boring Locations**

Project: **Site Investigation**

Client: **Former Plymouth Foundry Property, Grafton, WI**



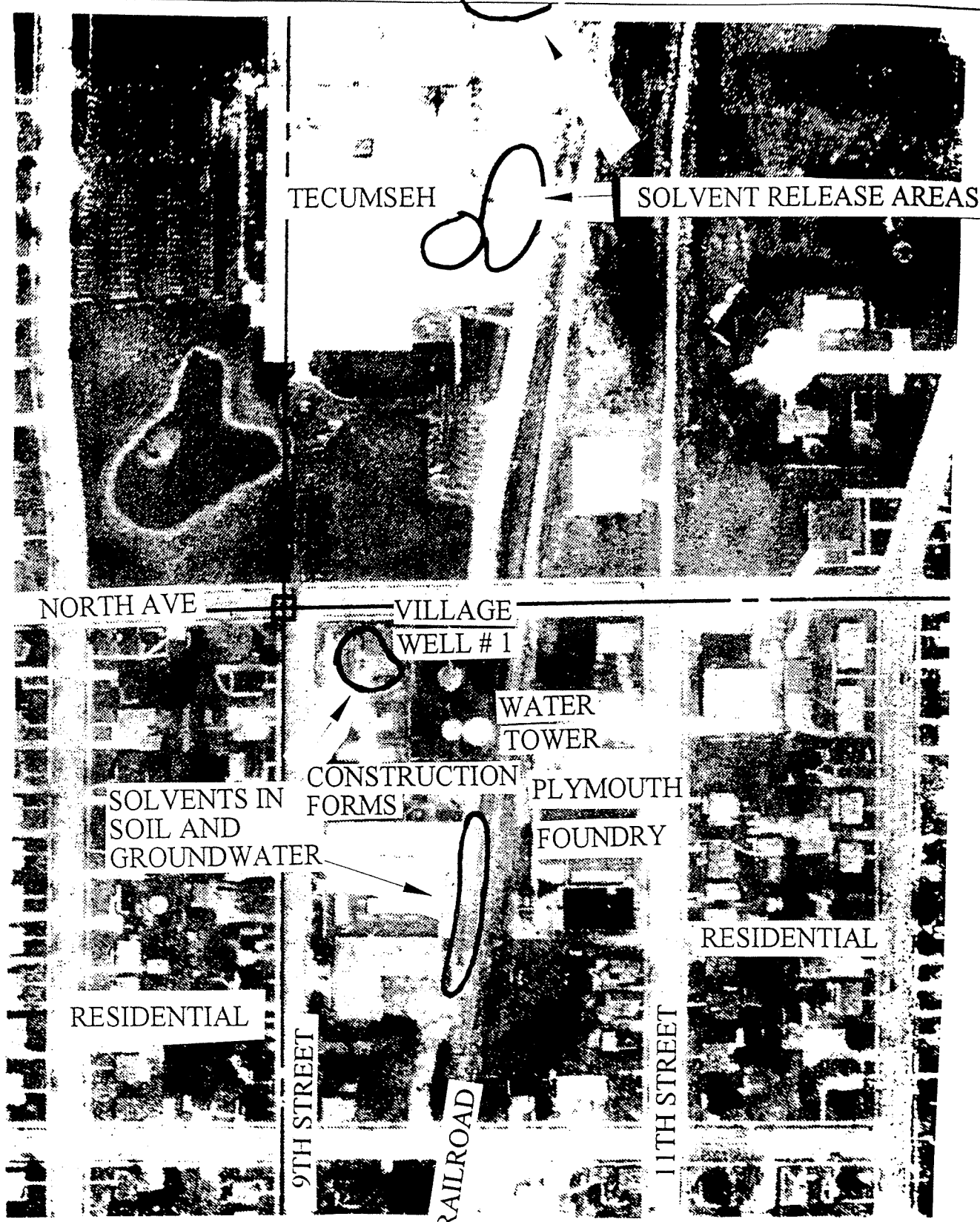
SCALE: 1" = 60'

DWG NO: **FIGURE 2**

DRAWN BY: **K A E**

DATE: **Jan 5, 2000**

N



Base Map : Aerial Photograph, SEWRPC, April 23, 1995, Photoenlarged 200%

Title: **NEAR SITE FEATURES**

Project: **Site Investigation**

Client: **Former Plymouth Foundry Property, Grafton, WI**

AT
ALPHA TERRA
 SCIENCE

SCALE: 1" = 200'

DWG NO: **FIGURE 3**

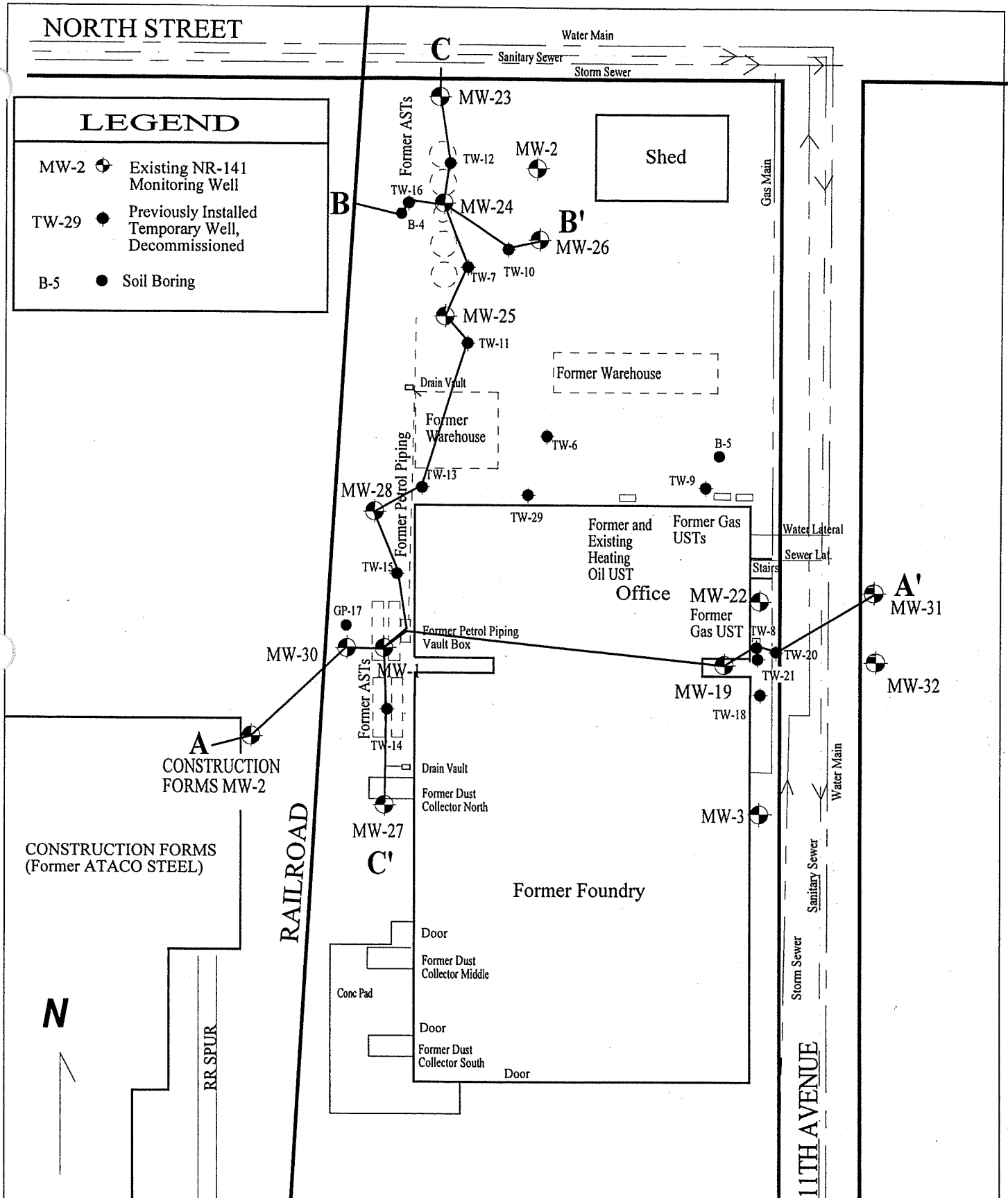
DRAWN BY: **K A E**

DATE: **Jan 5, 2000**

NORTH STREET

LEGEND

- MW-2 Existing NR-141 Monitoring Well
- TW-29 Previously Installed Temporary Well, Decommissioned
- B-5 Soil Boring



Title: **CROSS SECTION LOCATIONS**

Project: **Site Investigation**

Client: **Former Plymouth Foundry Property, Grafton, WI**

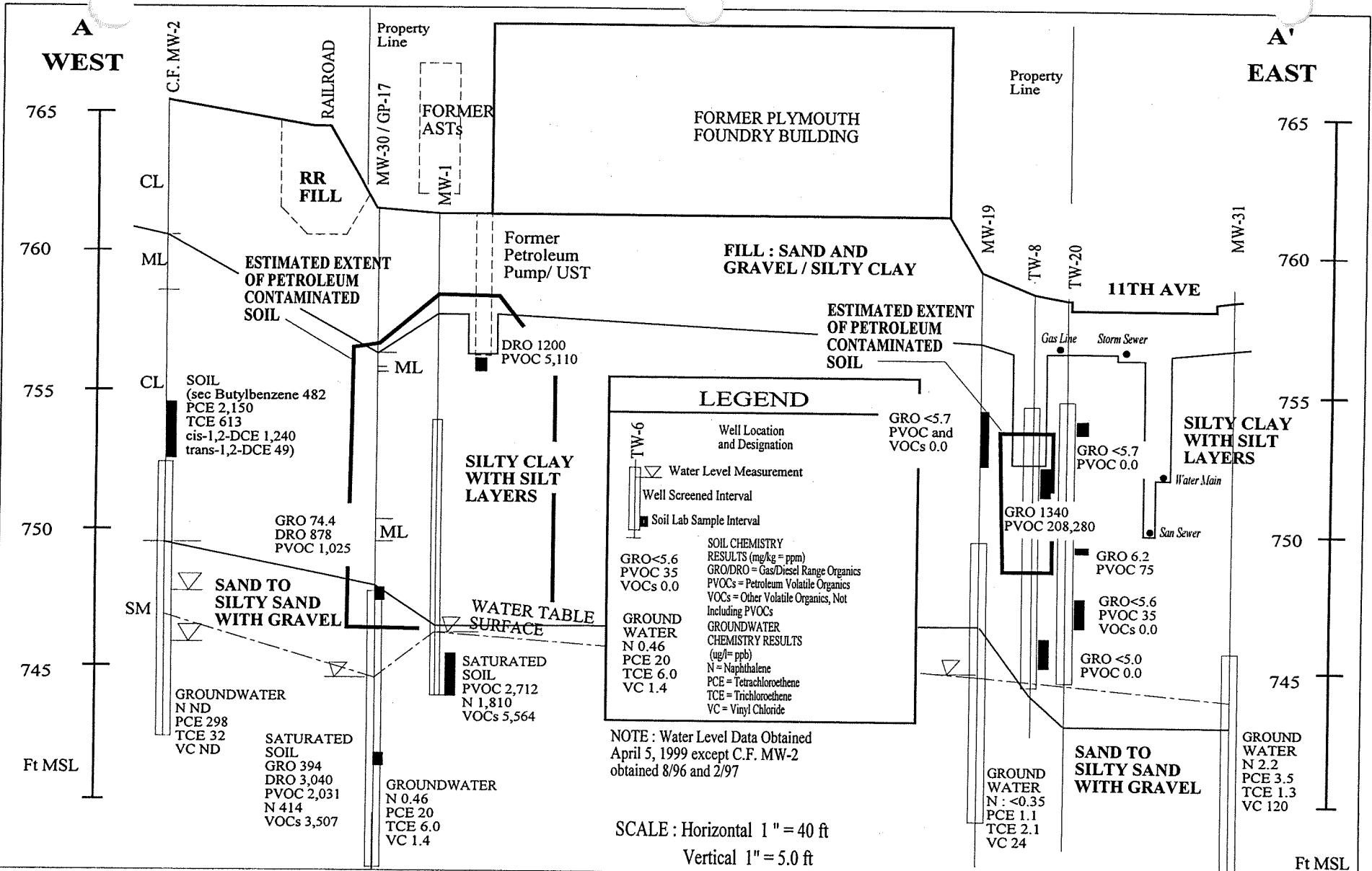


SCALE: 1" = 60'

DWG NO: **FIGURE 4**

DRAWN BY: **KAE**

DATE: **Jan 5, 2000**



Title: **EAST WEST CROSS SECTION A-A'**

Project: **SITE INVESTIGATION**

Client: **FORMER PLYMOUTH FOUNDRY, GRAFTON, WI**



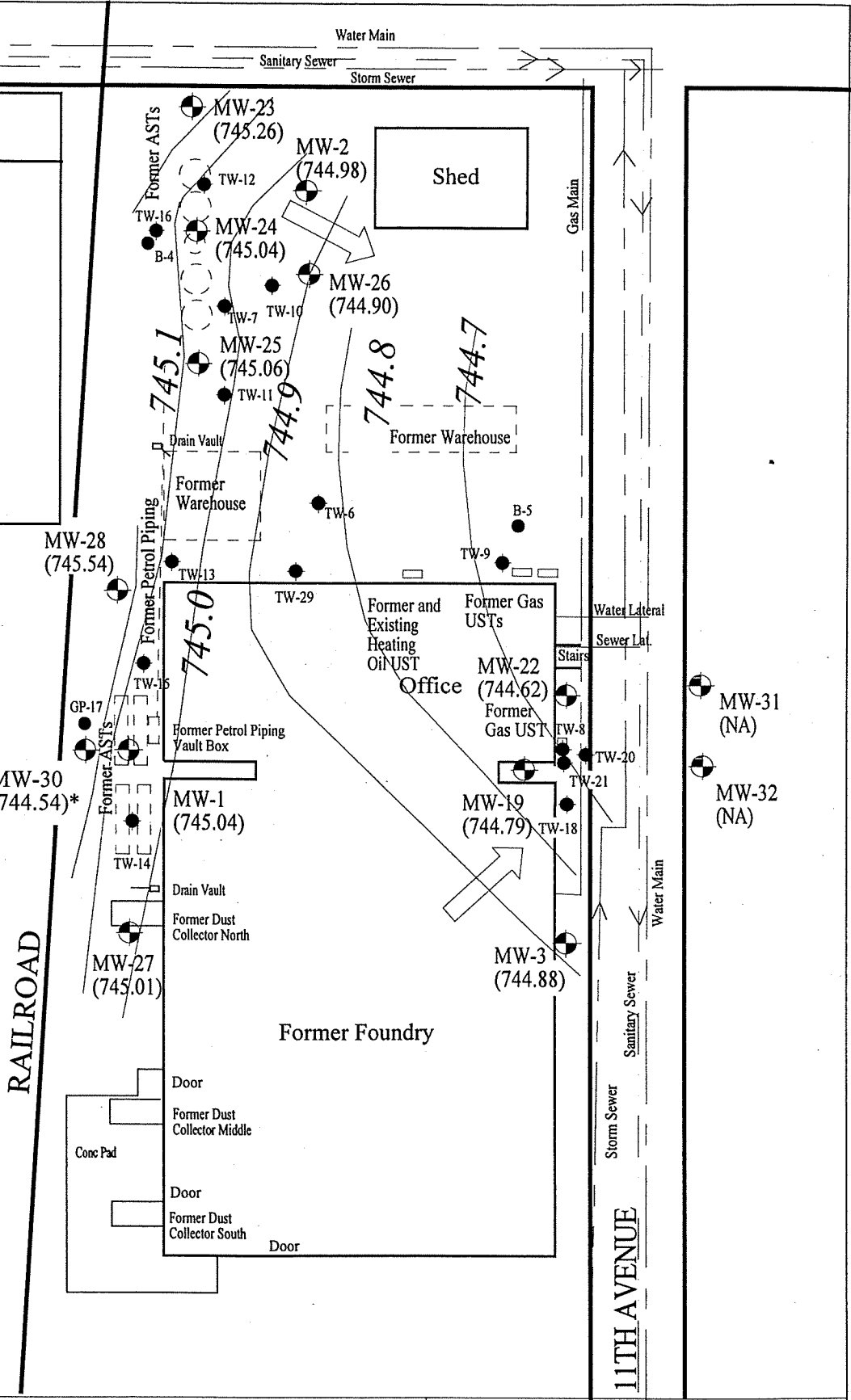
SCALE: **See Figure**
 DRAWN BY: **K A E**

DWG NO: **FIGURE 5**
 DATE: **APR 5, 2000**

NORTH STREET

LEGEND

- MW-1 (745.04) Existing NR-141 Monitoring Well and Groundwater Elevation (ft msl)
 - TW-29 Previously Installed Temporary Well, Decommissioned
 - B-5 Soil Boring
 - GROUNDWATER FLOW DIRECTION
- * : Anomalous Value, Data not used for Contouring



Approximate Flow Direction as Determined on this portion of Construction Forms Property



Title: **Groundwater Flow Direction : April 5, 1999**

Project: **Site Investigation**

Client: **Former Plymouth Foundry Property, Grafton, WI**



SCALE: 1" = 60'

DWG NO: **FIGURE 8**

DRAWN BY: **K A E**

DATE: **Jan 5, 2000**

NORTH STREET

CONSTR FORMS
NORTHWEST AREA
VOCs: 1-3' UP TO 24,500
VOCs: 11-13' UP TO 2,660

ESTIMATED CONTAMINATED SOIL :
957 cu yards from an average
of 6 to 16' below grade

LEGEND

MW-2 Existing NR-141
Monitoring Well

TW-29 Previously Installed
Temporary Well,
Decommissioned

B-5 Soil Boring

7.5-8' Soil Sample Depth (feet)
GRO 98.6 DRO 25 : Conc. GRO, DRO (mg/kg)
PVCOCs : Sum of Detected PVCOCs (ug/kg)
N : Naphthalene (ug/kg)
VOCs Sum of Detected VOCs (ug/kg)
other than PVCOCs

* : SOIL SAMPLE INFLUENCED BY
GROUNDWATER CHEMISTRY

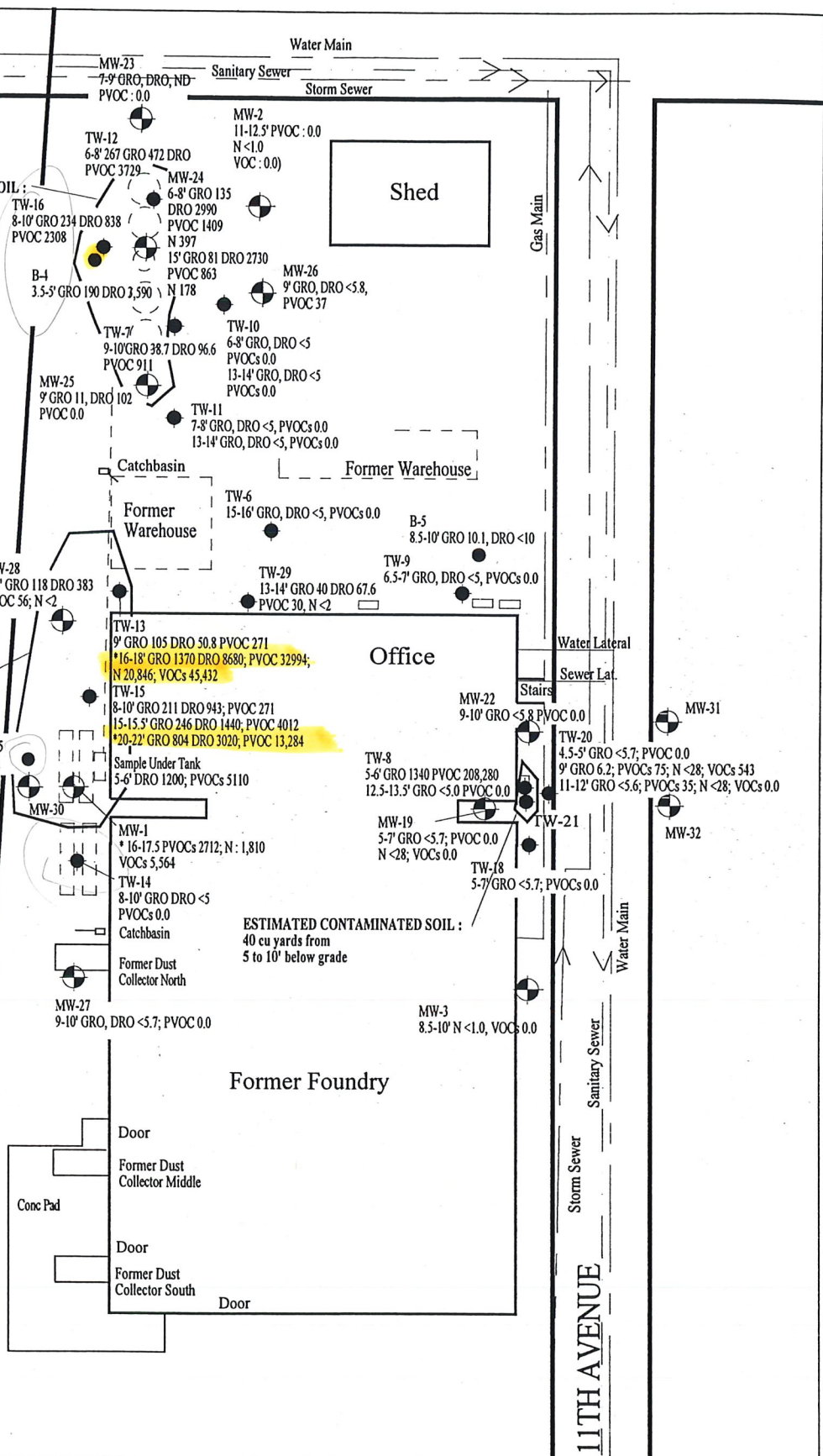
ESTIMATED CONTAMINATED SOIL :
1,620 cu yards from
5 to 16' below grade

GP-17
13.5-14' GRO 74.4 DRO 878 PVCOC 1025
*19.5-20' GRO 394 DRO 3040 PVCOC 2031
N 414 VOC 3507
Dry to 19.5'

CONSTR FORMS MW-2
11-13' GRO 17 PVCOC 0.0 VOCs 4,694

N

RAILROAD



Title: **Soil Chemistry Results**

Project: **Site Investigation**

Client: **Former Plymouth Foundry Property, Grafton, WI**



SCALE: 1" = 60'

DWG NO: **FIGURE 9**

DRAWN BY: **K A E**

DATE: **April 4, 2000**

NORTH STREET

LEGEND

- MW-2 Existing NR-141 Monitoring Well
 - TW-29 Previously installed Temporary Well, Decommissioned
 - B-5 Soil Boring
 - TW-16 Groundwater Concentration (ug/l) of
 VOCs : 66.2
 N : 58.3
 PCE : ND
 TCE : ND
 VC : ND
 ND : Not Detected
 - VOCs : Total Volatile Organic Compounds
 N : Naphthalene
 PCE : Tetrachloroethene
 TCE : Trichloroethene
 VC : Vinyl Chloride
- Samples Obtained June 17, 1999
 Except Data from Temp Wells,
 Obtained Jan 20, 1998 and Data from Constr. Forms
 Well MW-2, Obtained Sept 17, 1996
 Perched Water Results not Mapped, Included on Table 2

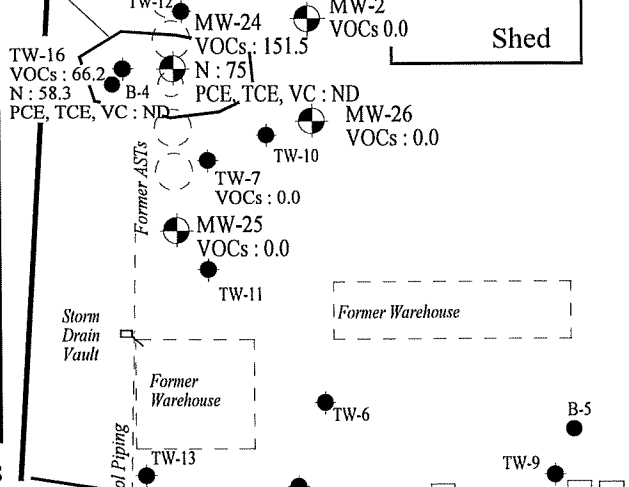
**NORTHWEST CORNER
 OF PROPERTY :**
 (AREA OF SOIL AND
 GROUNDWATER IMPACTS :
 Primarily PCE)

CONSTR. FORMS
 MW-2
 VOCs : 344.7
 N : ND
 PCE : 298
 TCE : 32
 VC : ND

**CONSTRUCTION
 FORMS
 (Former
 ATACO
 STEEL)**

APPROXIMATE
 GROUNDWATER
 FLOW DIRECTION

**ESTIMATED EXTENT OF GROUNDWATER
 ABOVE NR 140 ENFORCEMENT STANDARDS**



**ESTIMATED EXTENT
 OF GROUNDWATER
 ABOVE NR 140
 ENFORCEMENT
 STANDARDS FOR
 VARIOUS VOCs
 AND PAHs**

APPROXIMATE
 GROUNDWATER
 FLOW DIRECTION

N

Title: **Entire Site Groundwater Chemistry Results :
 Water Table Surface : June 1999**

Project: **Site Investigation**

Client: **Former Plymouth Foundry Property, Grafton, WI**



SCALE: 1" = 60'	DWG NO: FIGURE 10
DRAWN BY: K A E	DATE: Jan 5, 2000

ATTACHMENT 3

SOIL CHEMISTRY

LABORATORY ANALYTICAL RESULTS

LABORATORY REPORT

3307 - 14th Avenue
Kenosha, Wisconsin 53140
Phone (414) 652-5656

Fax (414) 652-5902
1-800-236-3823

gabriel - midwest, ltd.
Environmental & Technical Services

TO: Mr. Ken Wein, Key Environmental Services, Inc., Cedarburg, WI
SUBJECT: Analysis of Soil Samples, Plymouth Foundry, 1019 11th Avenue,
Grafton, WI

GML WI CERTIFICATION ID: 252087440

GL WI CERTIFICATION ID: 999520940

P.O. #:

SAMPLE DATE: 05/20/93

DATE RECEIVED: 05/21/93

GML SAMPLE CODE: GIVEN BELOW

ANALYSIS COMPLETED: 06/11/93

REPORT NUMBER: 0588

PAGE 7 OF 9

REPORT DATE: 06/11/93

VOLATILE ORGANIC ANALYSIS DATA

METHOD 8021

1511K-93

B-1 S-7 16'-17.5' 05/20/93 PM PID <1

<u>ANALYTE</u>	<u>RESULTS (ug/kg)</u>	<u>DET. LIMIT (ug/kg)</u>
Dichlororodifluoromethane	<15.0	15.0
Chloromethane	<15.0	15.0
Vinyl chloride	<15.0	15.0
Bromomethane	<15.0	15.0
Chloroethane	<15.0	15.0
Trichlorofluoromethane	<15.0	15.0
1,1-Dichloroethene	<15.0	15.0
Methylene chloride	<15.0	15.0
1,2-Dichloroethene	<15.0	15.0
1,1-Dichloroethane	<15.0	15.0
2,2-Dichloropropane	<15.0	15.0
c-1,2-Dichloroethene	<15.0	15.0
Chloroform	<15.0	15.0
Bromochloromethane	<15.0	15.0
1,1,1-Trichloroethane	<15.0	15.0
1,1-Dichloropropene	<15.0	15.0
Tetrachloroethene	<15.0	15.0
1,3-Dichloropropane	<15.0	15.0
Dibromochloromethane	<15.0	15.0
1,2-Dibromoethane	<15.0	15.0
Chlorobenzene	<15.0	15.0
1,1,1,2-Tetrachloroethane	<15.0	15.0
Bromoform	<15.0	15.0
1,1,2,2,-Tetrachloroethane	<15.0	15.0
Bromobenzene	<15.0	15.0
1,2,3-Trichloropropane	<15.0	15.0
2-Chlorotoluene	<15.0	15.0
4-Chlorotoluene	<15.0	15.0

VOC Analyzed 06/03/93

LAB DIRECTOR DR. GREGORY R. DAIGNEAULT

NOTE: Water Samples are disposed of 30 days after receipt;
Non-Water Samples will be returned 6 weeks after receipt.

LABORATORY REPORT

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Kenosha, Wisconsin 53140
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gabriel - midwest, ltd.

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TO: Mr. Ken Wein, Key Environmental Services, Inc., Cedarburg, WI
SUBJECT: Analysis of Soil Samples, Plymouth Foundry, 1019 11th Avenue,
Grafton, WI

GML WI CERTIFICATION ID: 252087440

GL WI CERTIFICATION ID: 999520940

P.O. #:

SAMPLE DATE: 05/20/93

DATE RECEIVED: 05/21/93

GML SAMPLE CODE: GIVEN BELOW

ANALYSIS COMPLETED: 06/11/93

REPORT NUMBER: 0588

PAGE 8 OF 9

REPORT DATE: 06/11/93

VOLATILE ORGANIC ANALYSIS DATA

METHOD 8021

1511K-93

B-3 S-4 8.5-10' 05/20/93 PM PID <1

ANALYTE	RESULTS (ug/kg)	DET. LIMIT (ug/kg)
1,3-Dichlorobenzene	<15.0	15.0
1,4-Dichlorobenzene	<15.0	15.0
1,2-Dichlorobenzene	<15.0	15.0
1,2-Dibromo-3-chloropropane	<15.0	15.0
Tetrachloromethane	<15.0	15.0
1,2-Dichloroethane	<15.0	15.0
Trichloroethene	<15.0	15.0
1,2-Dichloropropane	<15.0	15.0
Bromodichloromethane + Dibromomethane	<15.0	15.0
c-1,3-Dichloropropene	<15.0	15.0
t-1,3-Dichloropropene	<15.0	15.0
1,1,2-Trichloroethane	<15.0	15.0
1,2,4-Trichlorobenzene	<15.0	15.0
Hexachlorobutadiene	<15.0	15.0
1,2,3-Trichlorobenzene	<15.0	15.0
t-Butylmethyl ether	<15.0	15.0
Benzene	<15.0	15.0
Toluene	<15.0	15.0
Ethylbenzene	21.6	15.0
Total Xylenes	402	15.0
Styrene	165	15.0
i-Propylbenzene	426	15.0
n-Propylbenzene	205	15.0
1,3,5-Trimethylbenzene	148	15.0
t-Butylbenzene	1110	15.0
1,2,4-Trimethylbenzene	2140	15.0
s-Butylbenzene	368	15.0
4-i-Propyltoluene	<15.0	15.0
N-Butylbenzene	1480	15.0
naphthalene	1810	15.0

LAB DIRECTOR DR. GREGORY R. DAIGNEAULT

NOTE: Water Samples are disposed of 30 days after receipt;
Non-Water Samples will be returned 6 weeks after receipt.

039 41 MUL

LABORATORY REPORT

3307 - 14th Avenue
Kenosha, Wisconsin 53140
Phone (414) 652-5656

Fax (414) 652-5902
1-800-236-3823

gabriel - midwest, ltd.

Environmental & Technical Services

TO: Mr. Ken Wein, Key Environmental Services, Inc., Cedarburg, WI
SUBJECT: Analysis of Soil Samples, Plymouth Foundry, 1019 11th Avenue,
Grafton, WI

GML WI CERTIFICATION ID: 252087440

GL WI CERTIFICATION ID: 999520940

P.O. #:

SAMPLE DATE: 05/20/93

DATE RECEIVED: 05/21/93

GML SAMPLE CODE: GIVEN BELOW

ANALYSIS COMPLETED: 06/11/93

REPORT NUMBER: 0588


PAGE 9 OF 9

REPORT DATE: 06/11/93

SAMPLE DESCRIPTION:		1511K-93		MIN. QUANT. LIMIT	
		B-1 S-7			
		16'-17.5'			
		05/20/93 AM			
		PID 225			
GRO (Dry Weight Basis)	261	mg/kg	1.0	mg/kg	
DRO (Dry Weight Basis)	887	mg/kg	1.00	mg/kg	
% T. Solids	85.0	%			
T. Arsenic	4.73	mg/kg	0.10	mg/kg	
T. Barium	15.9	mg/kg	1.00	mg/kg	
T. Cadmium	<0.050	mg/kg	0.050	mg/kg	
T. Chromium	13.9	mg/kg	0.50	mg/kg	
T. Lead	5.80	mg/kg	1.00	mg/kg	
T. Mercury	<0.067	mg/kg	0.067	mg/kg	
T. Selenium	<0.020	mg/kg	0.020	mg/kg	
T. Silver	0.15	mg/kg	0.10	mg/kg	

GRO Analyzed: 05/28/93
Gasoline Range Organics (GRO) analyzed by Wisconsin DNR Modified GRO Method, April, 1992.

DRO Analyzed: 06/03/93
Method Blank <10.0, Cont.1 68.0 %, Cont. 2 75.0 %
Diesel Range Organics (DRO) analyzed by Wisconsin DNR Modified DRO Method, April, 1992.

LAB DIRECTOR 

NOTE: Water Samples are disposed of 30 days after receipt;
Non-Water Samples will be returned 6 weeks after receipt.

WOL

LABORATORY REPORT

3307 - 14th Avenue
Kenosha, Wisconsin 53140
Phone (414) 652-5656

Fax (414) 652-5902
1-800-236-3823

gabriel - midwest, ltd.

Environmental & Technical Services

TO: Mr. Ken Wein, Key Environmental Services, Inc., Cedarburg, WI
SUBJECT: Analysis of Soil Samples, Plymouth Foundry, 1019 11th Avenue,
Grafton, WI

GML WI CERTIFICATION ID: 252087440
GL WI CERTIFICATION ID: 999520940

P.O. #:

SAMPLE DATE: 05/20/93

DATE RECEIVED: 05/21/93

GML SAMPLE CODE: GIVEN BELOW

ANALYSIS COMPLETED: 06/11/93

REPORT NUMBER: 0588

PAGE 4 OF 9

REPORT DATE: 06/11/93

VOLATILE ORGANIC ANALYSIS DATA

METHOD 8021

1509K-93

B-2 S-5 11'-12.5' 05/20/93 PM PID <1

<u>ANALYTE</u>	<u>RESULTS (ug/kg)</u>	<u>DET. LIMIT (ug/kg)</u>
Dichlororodifluoromethane	<1.0	1.0
Chloromethane	<1.0	1.0
Vinyl chloride	<1.0	1.0
Bromomethane	<1.0	1.0
Chloroethane	<1.0	1.0
Trichlorofluoromethane	<1.0	1.0
1,1-Dichloroethene	<1.0	1.0
Methylene chloride	<1.0	1.0
t-1,2-Dichloroethene	<1.0	1.0
1,1-Dichloroethane	<1.0	1.0
2,2-Dichloropropane	<1.0	1.0
c-1,2-Dichloroethene	<1.0	1.0
Chloroform	<1.0	1.0
Bromochloromethane	<1.0	1.0
1,1,1-Trichloroethane	<1.0	1.0
1,1-Dichloropropene	<1.0	1.0
Tetrachloroethene	<1.0	1.0
1,3-Dichloropropane	<1.0	1.0
Dibromochloromethane	<1.0	1.0
1,2-Dibromoethane	<1.0	1.0
Chlorobenzene	<1.0	1.0
1,1,1,2-Tetrachloroethane	<1.0	1.0
Bromoform	<1.0	1.0
1,1,2,2,-Tetrachloroethane	<1.0	1.0
Bromobenzene	<1.0	1.0
1,2,3-Trichloropropane	<1.0	1.0
2-Chlorotoluene +		
4-Chlorotoluene	<1.0	1.0

LAB DIRECTOR DR. GREGORY R. DAIGNEAULT

NOTE: Water Samples are disposed of 30 days after receipt;
Non-Water Samples will be returned 6 weeks after receipt.

LABORATORY REPORT

3307 - 14th Avenue
Kenosha, Wisconsin 53140
Phone (414) 652-5658

Fax (414) 652-5902
1-800-236-3823

gabriel - midwest, ltd.

Environmental & Technical Services

TO: Mr. Ken Wein, Key Environmental Services, Inc., Cedarburg, WI
SUBJECT: Analysis of Soil Samples, Plymouth Foundry, 1019 11th Avenue,
Grafton, WI

GML WI CERTIFICATION ID: 252087440
GL WI CERTIFICATION ID: 999520940

P.O. #:

SAMPLE DATE: 05/20/93

DATE RECEIVED: 05/21/93

GML SAMPLE CODE: GIVEN BELOW

ANALYSIS COMPLETED: 06/11/93

REPORT NUMBER: 0588

PAGE 5 OF 9

REPORT DATE: 06/11/93

VOLATILE ORGANIC ANALYSIS DATA

METHOD 8021

1509K-93

B-2 S-5 11'-12.5' 05/20/93 PM PID <1

<u>ANALYTE</u>	<u>RESULTS (ug/kg)</u>	<u>DET. LIMIT (ug/kg)</u>
1,3-Dichlorobenzene	<1.0	1.0
1,4-Dichlorobenzene	<1.0	1.0
1,2-Dichlorobenzene	<1.0	1.0
1,2-Dibromo-3-chloropropane	<1.0	1.0
Tetrachloromethane	<1.0	1.0
1,2-Dichloroethane	<1.0	1.0
Trichloroethene	<1.0	1.0
1,2-Dichloropropane	<1.0	1.0
Bromodichloromethane + Dibromomethane	<1.0	1.0
c-1,3-Dichloropropene	<1.0	1.0
t-1,3-Dichloropropene	<1.0	1.0
1,1,2-Trichloroethane	<1.0	1.0
1,2,4-Trichlorobenzene	<1.0	1.0
Hexachlorobutadiene	<1.0	1.0
1,2,3-Trichlorobenzene	<1.0	1.0
t-Butylmethyl ether	<1.0	1.0
Benzene	<1.0	1.0
Toluene	<1.0	1.0
Ethylbenzene	<1.0	1.0
Total Xylenes	<1.0	1.0
Styrene	<1.0	1.0
i-Propylbenzene	<1.0	1.0
n-Propylbenzene	<1.0	1.0
1,3,5-Trimethylbenzene	<1.0	1.0
t-Butylbenzene	<1.0	1.0
1,2,4-Trimethylbenzene	<1.0	1.0
s-Butylbenzene	<1.0	1.0
4-i-Propyltoluene	<1.0	1.0
N-Butylbenzene	<1.0	1.0
Naphthalene	<1.0	1.0

LAB DIRECTOR DR. GREGORY R. DAIGNEAULT

NOTE: Water Samples are disposed of 30 days after receipt;
Non-Water Samples will be returned 6 weeks after receipt.

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LABORATORY REPORT

3307 - 14TH AVENUE
Kenosha, Wisconsin 53140
Phone (414) 652-5656
Fax (414) 652-5902
1-800-236-3823

gabriel - midwest, ltd.

Environmental & Technical Services

TO: Mr. Ken Wein, Key Environmental Services, Inc., Cedarburg, WI
SUBJECT: Analysis of Soil Samples, Plymouth Foundry, 1019 11th Avenue,
Grafton, WI

GML WI CERTIFICATION ID: 252087440

GL WI CERTIFICATION ID: 999520940

P.O. #:

SAMPLE DATE: 05/20/93

DATE RECEIVED: 05/21/93

GML SAMPLE CODE: GIVEN BELOW

ANALYSIS COMPLETED: 06/11/93

REPORT NUMBER: 0588

PAGE 6 OF 9

REPORT DATE: 06/11/93

SAMPLE DESCRIPTION:	1509K-93 B-2 S-5 11'-12.5' 05/20/93 PM PID <1	MIN. QUANT. LIMIT	
% T. Solids	82.1	%	
T. Arsenic	0.93	mg/kg	0.10 mg/kg
T. Barium	67.9	mg/kg	1.00 mg/kg
T. Cadmium	<0.050	mg/kg	0.050 mg/kg
T. Chromium	13.6	mg/kg	0.50 mg/kg
T. Lead	7.50	mg/kg	1.00 mg/kg
T. Mercury	<0.067	mg/kg	0.067 mg/kg
T. Selenium	0.109	mg/kg	0.020 mg/kg
T. Silver	0.22	mg/kg	0.10 mg/kg

LAB DIRECTOR DR. GREGORY R. DAIGNEAULT

NOTE: Water Samples are disposed of 30 days after receipt;
Non-Water Samples will be returned 6 weeks after receipt.

White Copy - Client
Yellow Copy - Control
Pink Copy - Billing

LABORATORY REPORT

3307 - 14th Avenue
Kenosha, Wisconsin 53140
Phone (414) 652-5656

Fax (414) 652-5902
1-800-236-3823

gabriel - midwest, ltd.

Environmental & Technical Services

TO: Mr. Ken Wein, Key Environmental Services, Inc., Cedarburg, WI
SUBJECT: Analysis of Soil Samples, Plymouth Foundry, 1019 11th Avenue,
Grafton, WI

GML WI CERTIFICATION ID: 252087440

GL WI CERTIFICATION ID: 999520940

P.O. #:

SAMPLE DATE: 05/20/93

DATE RECEIVED: 05/21/93

GML SAMPLE CODE: GIVEN BELOW

ANALYSIS COMPLETED: 06/11/93

REPORT NUMBER: 0588

PAGE 1 OF 9

REPORT DATE: 06/11/93

VOLATILE ORGANIC ANALYSIS DATA

METHOD 8021

1507K-93

B-3 S-4 8.5'-10' 05/20/93 PM PID <1

<u>ANALYTE</u>	<u>RESULTS (ug/kg)</u>	<u>DET. LIMIT (ug/kg)</u>
Dichlororodifluoromethane	<1.0	1.0
Chloromethane	<1.0	1.0
Vinyl chloride	<1.0	1.0
Bromomethane	<1.0	1.0
Chloroethane	<1.0	1.0
Trichlorofluoromethane	<1.0	1.0
1,1-Dichloroethene	<1.0	1.0
Methylene chloride	<1.0	1.0
t-1,2-Dichloroethene	<1.0	1.0
1,1-Dichloroethane	<1.0	1.0
2,2-Dichloropropane	<1.0	1.0
c-1,2-Dichloroethene	<1.0	1.0
Chloroform	<1.0	1.0
Bromochloromethane	<1.0	1.0
1,1,1-Trichloroethane	<1.0	1.0
1,1-Dichloropropene	<1.0	1.0
Tetrachloroethene	<1.0	1.0
1,3-Dichloropropane	<1.0	1.0
Dibromochloromethane	<1.0	1.0
1,2-Dibromoethane	<1.0	1.0
Chlorobenzene	<1.0	1.0
1,1,1,2-Tetrachloroethane	<1.0	1.0
Bromoform	<1.0	1.0
1,1,2,2,-Tetrachloroethane	<1.0	1.0
Bromobenzene	<1.0	1.0
1,2,3-Trichloropropane	<1.0	1.0
2-Chlorotoluene +		
4-Chlorotoluene	<1.0	1.0

VOC Analyzed 06/03/93

LAB DIRECTOR DR. GREGORY R. DAIGNEAULT

NOTE: Water Samples are disposed of 30 days after receipt;
Non-Water Samples will be returned 6 weeks after receipt.

LABORATORY REPORT

3307 - 14th Avenue
Kenosha, Wisconsin 53140
Phone (414) 652-5656

Fax (414) 652-5902
1-800-236-3823

gabriel - midwest, ltd.

Environmental & Technical Services

TO: Mr. Ken Wein, Key Environmental Services, Inc., Cedarburg, WI
SUBJECT: Analysis of Soil Samples, Plymouth Foundry, 1019 11th Avenue,
Grafton, WI

GML WI CERTIFICATION ID: 252087440

GL WI CERTIFICATION ID: 999520940

P.O. #:

SAMPLE DATE: 05/20/93

DATE RECEIVED: 05/21/93

GML SAMPLE CODE: GIVEN BELOW

ANALYSIS COMPLETED: 06/11/93

REPORT NUMBER: 0588

PAGE 2 OF 9

REPORT DATE: 06/11/93

VOLATILE ORGANIC ANALYSIS DATA

METHOD 8021

1507K-93

B-3 S-4 8.5'-10' 05/20/93 PM PID <1

<u>ANALYTE</u>	<u>RESULTS (ug/kg)</u>	<u>DET. LIMIT (ug/kg)</u>
1,3-Dichlorobenzene	<1.0	1.0
1,4-Dichlorobenzene	<1.0	1.0
1,2-Dichlorobenzene	<1.0	1.0
1,2-Dibromc-3-chloropropane	<1.0	1.0
Tetrachloromethane	<1.0	1.0
1,2-Dichloroethane	<1.0	1.0
Trichloroethene	<1.0	1.0
1,2-Dichloropropane	<1.0	1.0
Bromodichloromethane + Dibromomethane	<1.0	1.0
c-1,3-Dichloropropene	<1.0	1.0
t-1,3-Dichloropropene	<1.0	1.0
1,1,2-Trichloroethane	<1.0	1.0
1,2,4-Trichlorobenzene	<1.0	1.0
Hexachlorobutadiene	<1.0	1.0
1,2,3-Trichlorobenzene	<1.0	1.0
t-Butylmethyl ether	<1.0	1.0
Benzene	<1.0	1.0
Toluene	<1.0	1.0
Ethylbenzene	<1.0	1.0
Total Xylenes	<1.0	1.0
Styrene	<1.0	1.0
i-Propylbenzene	<1.0	1.0
n-Propylbenzene	<1.0	1.0
1,3,5-Trimethylbenzene	<1.0	1.0
t-Butylbenzene	<1.0	1.0
1,2,4-Trimethylbenzene	<1.0	1.0
s-Butylbenzene	<1.0	1.0
4-i-Propyltoluene	<1.0	1.0
N-Butylbenzene	<1.0	1.0
naphthalene	<1.0	1.0

LAB DIRECTOR DR. GREGORY R. DAIGNEAULT

NOTE: Water Samples are disposed of 30 days after receipt;
Non-Water Samples will be returned 6 weeks after receipt.

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LABORATORY REPORT

3307 - 14th Avenue
Kenosha, Wisconsin 53140
Phone (414) 652-5656

Fax (414) 652-5902
1-800-236-3823

gabriel - midwest, ltd.

Environmental & Technical Services

TO: Mr. Ken Wein, Key Environmental Services, Inc., Cedarburg, WI
SUBJECT: Analysis of Soil Samples, Plymouth Foundry, 1019 11th Avenue,
Grafton, WI

GML WI CERTIFICATION ID: 252087440

GL WI CERTIFICATION ID: 999520940

P.O. #:

SAMPLE DATE: 05/20/93

GML SAMPLE CODE: GIVEN BELOW

REPORT NUMBER: 0588

REPORT DATE: 06/11/93

DATE RECEIVED: 05/21/93

ANALYSIS COMPLETED: 06/11/93

PAGE 3 OF 9

SAMPLE DESCRIPTION:		1507K-93		MIN. QUANT. LIMIT	
		B-3 S-4			
		8.5'-10'			
		05/20/93 PM			
		PID <1			

% T. Solids	81.3	%			
T. Arsenic	1.86	mg/kg	0.10	mg/kg	
T. Barium	51.7	mg/kg	1.00	mg/kg	
T. Cadmium	<0.050	mg/kg	0.050	mg/kg	
T. Chromium	12.5	mg/kg	0.50	mg/kg	
T. Lead	6.30	mg/kg	1.00	mg/kg	
T. Mercury	<0.067	mg/kg	0.067	mg/kg	
T. Selenium	0.090	mg/kg	0.020	mg/kg	
T. Silver	0.20	mg/kg	0.10	mg/kg	

LAB DIRECTOR DR. GREGORY R. DAIGNEAULT

NOTE: Water Samples are disposed of 30 days after receipt;
Non-Water Samples will be returned 6 weeks after receipt.

White Copy - Client
Yellow Copy - Control
Pink Copy - Billing

Note: This form is required by the Department of Natural Resources for leaking underground storage tank sites in compliance with ch. RIR 500.540, RIR 158 and RIR 419, Wis. Adm. Code.

Sample Collector(s) Clay Leischer
 Property Owner Former Plymouth Foundry
 Title/Work Station/Company Key Envir. Svcs
 Property Address 1019 11th Ave Grafton, WI
 Telephone Number (include area code) (414) 375-4750
 Telephone Number (include area code) 01122

I hereby certify that I received, properly handled, and disposed of these samples as noted below:

Date/Time	Received By (Signature)	Date/Time	Received By (Signature)
5/29/93 11:27 AM	<u>[Signature]</u>	5/29/93 12:55	<u>[Signature]</u>

Temperature of temperature blanks: 01122
 If samples were received on ice and there was ice remaining, you may report the temperature as "received on ice". If all of the ice was melted, the temperature of the well may be substituted for a temperature blank.

Field ID	Number	Date Collected	Time Collected	Sample Type	Device	Preserv. Type	Location/Description (see footnote 2)	Analysis Type	Lab ID Number	Vol/Type of Containers	Cracked/Broken	Improperly Sealed	Good Condition	Other Comments
B-4		5/21/93	1:43 PM	Soil		SS	B1:52 (3.5-5')	Meth	1515K	1-60ml			X	PID 218
B-4		5/21/93	1:45 PM	Soil		SS	B1:52 (3.5-5')	DRD		1-60ml			X	218
3-3		5/21/93	2:17 PM	Soil		SS	B2:54 (8.5-10')	Meth	1516K	1-60ml			X	>1
3-3		5/21/93	2:19 PM	Soil		SS	B2:54 (8.5-10')	DRD		1-60ml			X	>1

Specify groundwater, surface water, soil, leachate, sludge, etc.
 Sample description must clearly correlate the sample ID to the sampling location.

DEPARTMENT USE ONLY FOR SOIL SAAMPLERS

DEPARTMENT USE ONLY

position of unsealed portion of sample
 Laboratory should

Max
 Retain for _____ days

Spill samples: Offered Yes No (Check one)
 Accepted Yes No (Check one)

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LABORATORY REPORT

3307 - 14th Avenue
Kenosha, Wisconsin 53140
Phone (414) 652-5656

Fax (414) 652-5902
1-800-236-3823

gabriel - midwest, ltd. Environmental & Technical Services

TO: Mr. Ken Wein, Key Environmental Services, Inc., Cedarburg, WI
SUBJECT: Analysis of Soil Samples, Former Plymouth Foundry, 1019 11th Ave., Grafton, WI

GML WI CERTIFICATION ID: 252087440
GL WI CERTIFICATION ID: 999520940

P.O. #: VERBAL
SAMPLE DATE: 05/21/93
GML SAMPLE CODE: GIVEN BELOW
REPORT NUMBER: 0570
REPORT DATE: 06/04/93

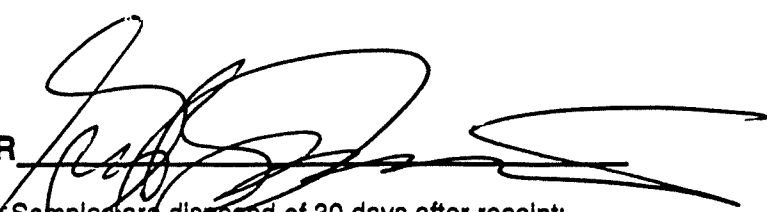
DATE RECEIVED: 05/24/93
TOTAL SOLIDS SAMPLE RECEIVED: 06/03/93
ANALYSIS COMPLETED: 06/04/93

GML SAMPLE CODE	1515K-93			
SAMPLE DESCRIPTION	B-1 S-2	<i>Should be</i>		MIN. QUANT. LIMIT
	3.5'-5'	<i>Boring 4</i>		
	05/21/93 13:45			
GRO (Dry Weight Basis)	190	mg/kg	1.0	mg/kg
DRO (Dry Weight Basis)	3590	mg/kg	100	mg/kg
% T. Solids	87.4	%		

GML SAMPLE CODE	1516K-93			
SAMPLE DESCRIPTION	B-2 S-4	<i>Should be</i>		MIN. QUANT. LIMIT
	8.5'-10'	<i>Boring 5</i>		
	05/21/93 14:17			
GRO (Dry Weight Basis)	10.1	mg/kg	1.0	mg/kg
DRO (Dry Weight Basis)	<10.0	mg/kg	10.0	mg/kg
% T. Solids	87.0	%		

GRO: Analyzed 05/29/93
Gasoline Range Organics (GRO) analyzed by Wisconsin DNR Modified GRO Method, April, 1992.

DRO: Analyzed 05/27/93
Method Blank <10; Cont. 1 68.0 % Rec., Cont. 2 75.0 % Rec.
Diesel Range Organics (DRO) analyzed by Wisconsin DNR Modified DRO Method, April, 1992.

LAB DIRECTOR 

NOTE: Water Samples are disposed of 30 days after receipt;
Non-Water Samples will be returned 6 weeks after receipt.

CHAIN OF CUSTODY RECORD
 LUST PROGRAM
 Form 4-100-151 11-91

Note: This form is required by the Department of Natural Resources for leaking underground storage tank sites in compliance with ch. NR 500 5.10, NR 158 and NR 419, Wis. Adm. Code.

Sample Collector(s) <i>Kee Environmental</i>	Title/Work Station/Company <i>Kee Env.</i>	Telephone Number (include area code) <i>414 375 4750</i>
Property Owner <i>Farmer Plymouth Family</i>	Property Address <i>1019 11th Ave</i>	Telephone Number (include area code)

I hereby certify that I received, properly handled, and disposed of these samples as noted below:

Relinquished By (Signature) <i>[Signature]</i>	Date/Time <i>5/3/93 10:00</i>	Received By (Signature) <i>Wally Kula</i>	Date/Time <i>6/3/93 10:00</i>
Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time
Relinquished By (Signature)	Date/Time	Received for Laboratory By (Signature)	

Temperature of temperature blank: _____

If samples were received on ice and there was ice remaining, you may report the temperature as "received on ice". If all of the ice was melted, the temperature of the melt may be substituted for a temperature blank.

Field ID Number	Date Collected	Time Collected	Sample		Preserv. Type	Location/Description (see footnote 2)	Analysis Type	Lab ID Number	No./Type of Containers	Sample Condition			
			Type	Device						Cracked /Broken	Improperly Sealed	Good Condition	Other Comments
<i>BZ52</i>	<i>5/21</i>	<i>pm</i>	<i>soil</i>	<i>SS</i>	<i>-</i>	<i>B1 3/2-5</i>	<i>SYO solids</i>		<i>1</i>				
<i>BZ54</i>	<i>5/21</i>	<i>pm</i>	<i>soil</i>	<i>SS</i>	<i>-</i>	<i>B2 8/2-10</i>	<i>SYO solids</i>		<i>1</i>				

¹Specify groundwater, surface water, soil, leachate, sludge, etc.
²Sample description must clearly correlate the sample ID to the sampling location.

DEPARTMENT USE, OPTIONAL FOR SOIL SAMPLERS	DEPARTMENT USE ONLY
Disposition of unused portion of sample Laboratory should:	Split samples: Offered? <input type="checkbox"/> Yes <input type="checkbox"/> No (Check one)
<input type="checkbox"/> Dispose	Accepted? <input type="checkbox"/> Yes <input type="checkbox"/> No (Check one)
<input type="checkbox"/> Retain for ___ days	Accepted by: _____
<input type="checkbox"/> Return	Signature
<input type="checkbox"/> Other	

Note: This form is required by the Department of Natural Resources for leaking underground storage tank sites in compliance with ch. NRS 500-540, NRS 158 and NRS 419, Wis. Stat. Code.

Sample Collector(s) Virendra S. Verma	Title/Work Station/Company Key-Environmental Services Inc.	Telephone Number (include area code) 314-375-4750
Property Owner Plymouth Laundry	Property Address 1019 11th Avenue Grafton, Wisconsin	Telephone Number (include area code)

I hereby certify that I received, properly handled, and disposed of these samples as noted below:

Relinquished By (Signature) V.S. Verma	Date/Time 05/25/93 4:30 PM	Received By (Signature) Bill [Signature]
Relinquished By (Signature) [Signature]	Date/Time 1:20	Received By (Signature) [Signature]
Relinquished By (Signature) [Signature]	Date/Time 5-26-93	Received for Laboratory By (Signature) [Signature]

Temperature of temperature blank: ICE
 If samples were received on ice and there was ice remaining, you may report the temperature as "received on ice". If all of the ice was melted, the temperature of the melt may be substituted for a temperature blank.

Field ID Number	Date Collected	Time Collected	Sample		Preserv. Type	Location/Description (see footnote 2)	Analysis Type	Lab ID Number	No./Type of Containers	Sample Condition			
			Type ¹	Device						Cracked/Broken	Improperly Sealed	Good Condition	Other Comments
MW-1	05/25/93		GW		HCl	MW-1	VOC, PCB, METALS	1564K	5			X	
MW-2	05/25/93		GW		HCl	MW-2	VOC, PCB, METALS	1565K	5			✓	
MW-3	05/25/93		GW		HCl	MW-3	VOC, METALS	1566K	4			✓	
TRIP BLANK	25/5/93				HCl	Trip Blank	VOC	1567K	2			✓	

¹ Specify groundwater, surface water, soil, leachate, sludge, etc.

² Sample description must closely correlate the sample ID to the sampling location.

* Metals - RCRA

DEPARTMENT USE ONLY FOR SOIL SAMPLERS

Disposition of unused portion of sample
 Laboratory should:

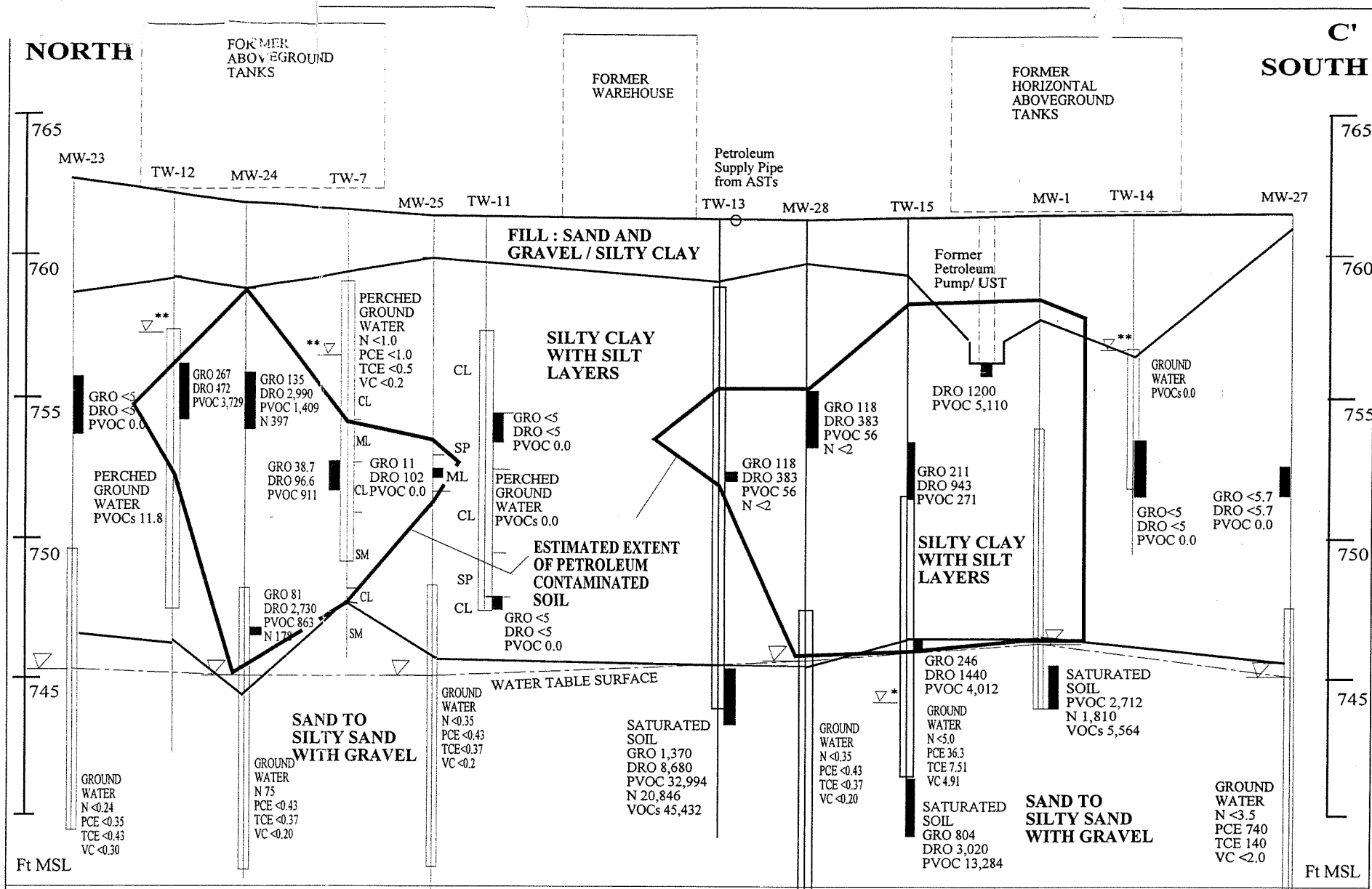
Dispose Retain for 10 days

Return Other

DEPARTMENT USE ONLY

Split samples: Offered? Yes No (Check one)

Accepted? Yes No (Check one)



LEGEND

<p>Well Location and Designation</p> <p>Water Level Measurement</p> <p>Well Screened Interval</p> <p>Soil Lab Sample Interval</p>	<p>SOIL CHEMISTRY RESULTS (mg/kg = ppm)</p> <p>GRO/DRO = Gas/Diesel Range Organics PVOCs = Petroleum Volatile Organics VOCs = Other Volatile Organics, Not Including PVOCs</p>
<p>GROUND WATER CHEMISTRY RESULTS (ug/l = ppb)</p> <p>N = Naphthalene PCE = Tetrachloroethene TCE = Trichloroethene VC = Vinyl Chloride</p>	

NOTE: Water Level Data Obtained April 5, 1999 except Value from TW-15 Obtained 1998

*: Value not used in Water Elevation because reading obtained 1998

** : Values Reflect Perched Water Readings Obtained 1998

SCALE: Horizontal 1" = 40 ft
 Vertical 1" = 5.0 ft

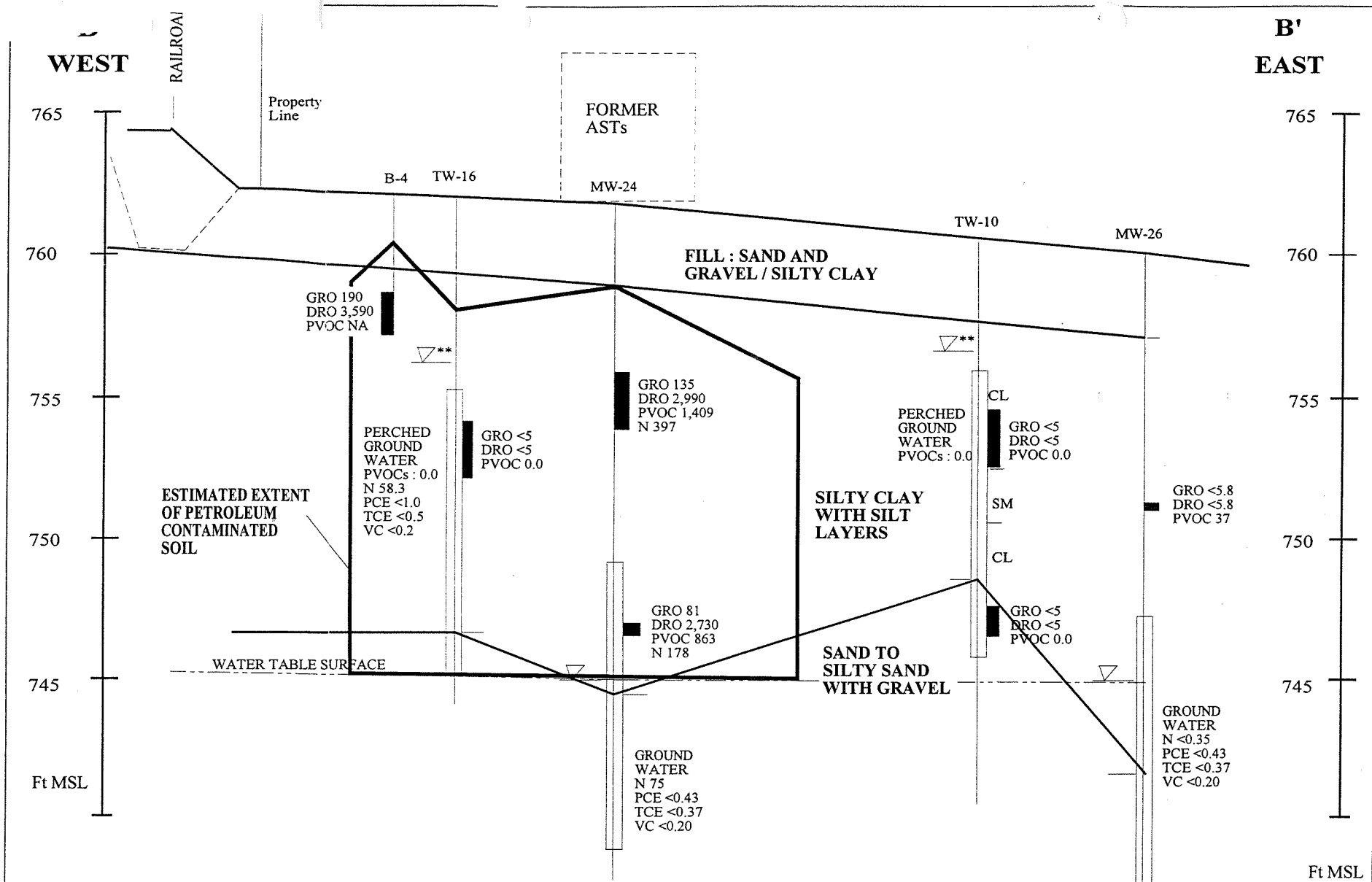
Title: **NORTH SOUTH CROSS SECTION C-C'**

Project: **SITE INVESTIGATION**

Client: **FORMER PLYMOUTH FOUNDRY, GRAFTON, WI**



SCALE: See Figure DWG NO: **FIGURE 7**
 DRAWN BY: **K A E** DATE: **APR 5, 2000**



LEGEND	
	Well Location and Designation
	Water Level Measurement
	Well Screened Interval
	Soil Lab Sample Interval
GRO <5.6 DRO 3.590 PVOC NA	SOIL CHEMISTRY RESULTS (mg/kg = ppm) GRO/DRO = Gas/Diesel Range Organics PVOCs = Petroleum Volatile Organics VOCs = Other Volatile Organics, Not Including PVOCs
PERCHED GROUND WATER PVOCs : 0.0 N 58.3 PCE <1.0 TCE <0.5 VC <0.2	GROUNDWATER CHEMISTRY RESULTS (ug/l= ppb) N = Naphthalene PCE = Tetrachloroethene TCE = Trichloroethene VC = Vinyl Chloride
GRO <5 DRO <5 PVOC 0.0	
GRO 135 DRO 2,990 PVOC 1,409 N 397	
PERCHED GROUND WATER PVOCs : 0.0	
GRO <5 DRO <5 PVOC 0.0	
GRO 81 DRO 2,730 PVOC 863 N 178	
GROUND WATER N 75 PCE <0.43 TCE <0.37 VC <0.20	
GRO <5.8 DRO <5.8 PVOC 37	
GRO <5 DRO <5 PVOC 0.0	
GROUND WATER N <0.35 PCE <0.43 TCE <0.37 VC <0.20	

NOTE : Water Level Data Obtained April 5, 1999

** : Values Reflect Perched Water Readings Obtained 1998

SCALE : Horizontal 1" = 13.3 ft
Vertical 1" = 5.0 ft

Title: **EAST WEST CROSS SECTION B-B'**

Project: **SITE INVESTIGATION**

Client: **FORMER PLYMOUTH FOUNDRY, GRAFTON, WI**

ALPHA TERRA
SCIENCE

SCALE: See Figure	DWG NO: FIGURE 6
DRAWN BY: K A E	DATE: APR 5, 2000