## GIS REGISTRY INFORMATION

APR 2 2008

| | | | |
|---|---|---|---|
| **SITE NAME:** | Old Engine House #35 | | |
| **BRRTS #:** | 03-41-208829 | **FID # (if appropriate): 241682760** | |
| **COMMERCE # (if appropriate):** | 53213-4234-07 | | |
| **CLOSURE DATE:** | ~~02-Mar-2008~~ 02-APR-08 | | |
| **STREET ADDRESS:** | 407 North Hawley Road | | |
| **CITY:** | Milwaukee | | |
| **SOURCE PROPERTY GPS COORDINATES** (meters in WTM91 projection): | X= 684162 | Y= 286746 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **CONTAMINATED MEDIA:** | Groundwater | | Soil | | Both | X |
| **OFF-SOURCE GW CONTAMINATION >ES:** | | | Yes | X | No | |
| **IF YES, STREET ADDRESS 1:** | | | | | | |
| **GPS COORDINATES** (meters in WTM91 projection): | X= | | Y= | | | |
| **OFF-SOURCE SOIL CONTAMINATION >Generic or Site-Specific RCL (SSRCL):** | | | Yes | X | No | |
| **IF YES, STREET ADDRESS 1:** | | | | | | |
| **GPS COORDINATES** (meters in WTM91 projection): | X= | | Y= | | | |
| **CONTAMINATION IN RIGHT OF WAY:** | | X | Yes | | No | |

**DOCUMENTS NEEDED:**

| | |
|---|---|
| **Closure Letter, and any conditional closure letter or denial letter issued** | X |
| **Copy of most recent deed, including legal description, for all affected properties: SEE PAGES 24** | X |
| **Certified survey map or relevant portion of the recorded plat map (*if referenced in the legal description*) for all affected properties** | X |
| **County Parcel ID number, *if used for county*, for all affected properties** | X |
| **Location Map** which outlines all properties within contaminated site boundaries on USGS topographic map or plat map in sufficient detail to permit the parcels to be located easily (8.5x14" if paper copy). If groundwater standards are exceeded, the map must also include the location of all municipal and potable wells within 1200' of the site. | X |
| **Detailed Site Map(s) for all affected properties,** showing buildings, roads, property boundaries, contaminant sources, utility lines, monitoring wells and potable wells. (8.5x14", if paper copy) This map shall also show the location of all contaminated public streets, highway and railroad rights-of-way in relation to the source property and in relation to the boundaries of groundwater contamination exceeding ch. NR 140 ESs and soil contamination exceeding ch. NR 720 generic or SSRCLs. | X |
| **Tables of Latest Groundwater Analytical Results (no shading or cross-hatching)** | X |
| **Tables of Latest Soil Analytical Results (no shading or cross-hatching)** | X |
| **Isoconcentration map(s), *if required for site investigation (SI)* (**8.5x14" if paper copy**).** The isoconcentration map should have flow direction and extent of groundwater contamination defined. **If not available, include the latest extent of contaminant plume map.** | X |
| **GW: Table of water level elevations, with sampling dates, and free product noted if present** | X |
| **GW: Latest groundwater flow direction/monitoring well location map (should be 2 maps if maximum variation in flow direction is greater than 20 degrees)** | X |
| **SOIL: Latest horizontal extent of contamination exceeding generic or SSRCLs, with one contour** | X |
| **Geologic cross-sections, *if required for SI.*** (8.5x14' if paper copy) | X |
| **RP certified statement that legal descriptions are complete and accurate** | X |
| **Copies of off-source notification letters (if applicable)** | N/A |
| **Letter informing ROW owner of residual contamination (if applicable)**(public, highway or railroad ROW) | X |
| **Any maintenance plan enclosed with closure letter - SEE CLOSURE LETTER** | N/A |
| | |

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Gloria L. McCutcheon, Regional Director

Southeast Region Headquarters
2300 N. Dr. Martin Luther King, Jr. Drive
Milwaukee, Wisconsin 53212-3128
FAX 414-263-8606
Telephone 414-263-8500
TTY Access via relay - 711

April 2, 2008

RACM
Attn: Karen Dettmer
841 North Broadway
Milwaukee, WI 53213

Subject: Final Case Closure with Land Use Limitations or Conditions for Old Engine House #35, North Hawley Road, Milwaukee, WI

FID: 241682760
BRRTS: 03-41-208829
PECFA: 53213-4234-07

Dear Ms Dettmer:

On July 6, 2006, he Wisconsin Department of Natural Resources ("the Department") Southeast Region Closure Committee reviewed your request for closure for the case described above. On November 15, 2007, the Department received the additional remediation and supplemental monitoring activities required in the Department's letter dated July 6, 2007. On January 29, 2008, you were notified that the Closure Committee had granted conditional closure to this case.

On March 19, 2008, the Department received correspondence indicating that you have complied with the requirements of closure by submitting the well abandonment forms. Based on the correspondence and data provided, it appears that your case meets the requirements of ch. NR 726, Wisconsin Administrative Code. The Department considers this case closed and no further investigation or remediation is required at this time.

**GIS Registry**

The conditions of case closure set out below in this letter require that your site be listed on the Remediation and Redevelopment Program's GIS Registry. The specific reasons are summarized below:

- Residual soil contamination exists that must be properly managed should it be excavated or removed
- If a structural impediment that obstructs a complete site investigation or cleanup is removed or modified, additional environmental work must be completed
- Groundwater contamination is present above Chapter NR 140 enforcement standards

Information that was submitted with your closure request application will be included on the GIS Registry. To review the sites on the GIS Registry web page, visit http://dnr.wi.gov/org/aw/rr/gis/index.htm. If your property is listed on the GIS Registry because of remaining contamination and you intend to construct or reconstruct a well, you will need prior

Department approval in accordance with s. NR 812.09(4)(w), Wis. Adm. Code. To obtain approval, Form 3300-254 needs to be completed and submitted to the DNR Drinking and Groundwater program's regional water supply specialist. This form can be obtained on-line http://www.dnr.state.wi.us/org/water/dwg/3300254.pdf or at the web address listed above for the GIS Registry.

**Closure Conditions**

Please be aware that pursuant to s. 292.12 Wisconsin Statutes, compliance with the requirements of this letter is a responsibility to which the current property owner and any subsequent property owners must adhere. If these requirements are not followed or if additional information regarding site conditions indicates that contamination on or from the site poses a threat to public health, safety, welfare, or the environment, the Department may take enforcement action under s. 292.11 Wisconsin Statutes to ensure compliance with the specified requirements, limitations or other conditions related to the property or this case may be reopened pursuant to s. NR 726.09, Wis. Adm. Code. It is the Department's intent to conduct inspections in the future to ensure that the conditions included in this letter including compliance with referenced maintenance plans are met.

**Remaining Residual Soil Contamination**

Residual soil contamination remains at locations B-1 and S-4 (see enclosed map) as indicated in the information submitted to the Department of Natural Resources. If soil in the specific locations described above is excavated in the future, then pursuant to ch. NR 718 or, if applicable, ch. 289, Stats., and chs. 500 to 536, the property owner at the time of excavation must sample and analyze the excavated soil to determine if residual contamination remains. If sampling confirms that contamination is present the property owner at the time of excavation will need to determine whether the material would be considered solid or hazardous waste and ensure that any storage, treatment or disposal is in compliance with applicable standards and rules. In addition, all current and future owners and occupants of the property need to be aware that excavation of the contaminated soil may pose an inhalation or other direct contact hazard and as a result special precautions may need to be taken to prevent a direct contact health threat to humans.

**Structural Impediments**

Structural impediments existing at the time of cleanup, the sidewalk and Old Engine House 35, made complete investigation and remediation of the soil contamination on this property impracticable. Pursuant to s. 292.12(2)(b), Wis. Stats., if the structural impediments on this property that are described above are removed, the property owner shall conduct an investigation of the degree and extent of petroleum contamination. If contamination is found at that time, the Wisconsin Department of Natural Resources shall be immediately notified and the contamination shall be properly remediated in accordance with applicable statutes and rules. If soil in the specific locations described above is excavated, the property owner at the time of excavation must sample and analyze the excavated soil to determine if residual contamination remains. If sampling confirms that contamination is present the property owner at the time of excavation will need to determine whether the material would be considered solid or hazardous waste and ensure that any storage, treatment or disposal is in compliance with applicable statutes and rules. In addition, all current and future owners and occupants of the property need to be aware that excavation of the contaminated soil may pose an inhalation or other direct contact hazard and as a result special precautions may need to be taken during excavation activities to prevent a health threat to humans.

**Remaining Residual Groundwater Contamination**

Groundwater impacted by petroleum-related contamination greater than enforcement standards set forth in ch. NR140, Wis. Adm. Code, is present both on the contaminated property and off the contaminated property. Off-property owners have been notified of the presence of groundwater contamination. For more detailed information regarding the locations where groundwater samples have been collected (i.e., monitoring well locations) and the associated contaminant concentrations, refer to the Remediation and Redevelopment Program's GIS Registry at http://dnr.wi.gov/org/aw/rr/gis/index.htm.

**PECFA**

Section 101.143, Wis. Stats., requires that PECFA claimants seeking reimbursement of interest costs, for sites with petroleum contamination, submit a final reimbursement claim within 120 days after they receive a closure letter on their site. For claims not received by the PECFA Program within 120 days of the date of this letter, interest costs after 60 days of the date of this letter will not be eligible for PECFA reimbursement. If there is equipment purchased with PECFA funds remaining at the site, contact the Commerce PECFA Program to determine the method for salvaging the equipment.

Please be aware that the case may be reopened pursuant to s. NR 726.09, Wis. Adm. Code, if additional information regarding site conditions indicates that contamination on or from the site poses a threat to public health, safety, or welfare, or to the environment.

The Department appreciates the actions you have taken to investigate and remediate the contamination at this site. If you have any questions or comments, please feel free to contact me at the above address or at (414) 263-8644. Please refer to the FID number at the top of this letter in any future correspondence. Future correspondence should be sent directly to the Remediation and Redevelopment Program Assistant Vicky Stovall (414-263-8688) at the above address.

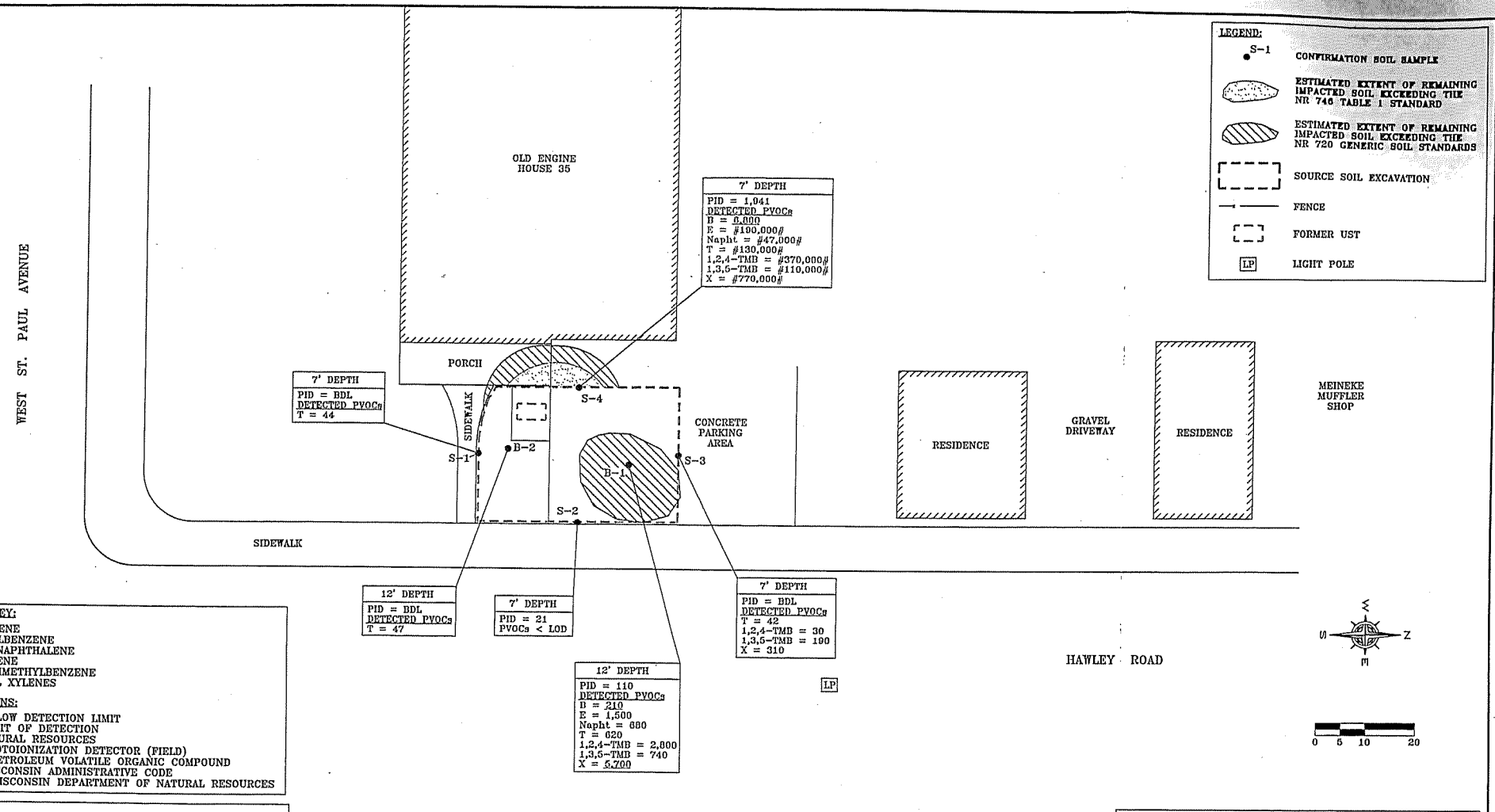
Sincerely,

James A. Schmidt

James A. Schmidt
Southeast Region
Remediation and Redevelopment Team Supervisor

Enclosure: Figure 2, Confirmation Soil Sample Analytical Results Map

C: Lee Delcore, Commerce
Erika Biemann, Giles Engineering
WDNR SER Files




CHEMICAL KEY:

- -B: BENZENE
- -E: ETHYLBENZENE
- -Napht: NAPHTHALENE
- -T: TOLUENE
- -TMB: TRIMETHYLBENZENE
- -X: TOTAL XYLENES

ABBREVIATIONS:

- -BDL: BELOW DETECTION LIMIT
- -LOD: LIMIT OF DETECTION
- -NR: NATURAL RESOURCES
- -PID: PHOTOIONIZATION DETECTOR (FIELD)
- -PVOC: PETROLEUM VOLATILE ORGANIC COMPOUND
- -WAC: WISCONSIN ADMINISTRATIVE CODE
- -WDNR: WISCONSIN DEPARTMENT OF NATURAL RESOURCES

NOTES:

FIELD PID RESULTS EXPRESSED IN INSTRUMENT UNITS

PVOC RESULTS EXPRESSED IN MICROGRAMS PER KILOGRAM (ug/kg) EQUIVALENT TO PARTS PER BILLION (ppb)

RESULTS INDICATED IN RED/UNDERLINED EXCEED THE WAC NR 720.00 GENERIC RESIDUAL CONTAMINANT LEVEL BASED ON GROUNDWATER PROTECTION

RESULTS INDICATED IN BROWN/# EXCEED THE WAC NR 746-TABLE 1 RESIDUAL PETROLEUM PRODUCT IN SOIL PORES SCREENING LEVELS

GILES ENGINEERING ASSOCIATES, INC.
N8 W22350 JOHNSON DRIVE, SUITE A1
WAUKESHA, WI 53186 (262)544-0118

FIGURE 2
CONFIRMATION SOIL SAMPLE ANALYTICAL RESULTS
OLD ENGINE HOUSE 35
407 NORTH HAWLEY ROAD
MILWAUKEE, WISCONSIN

| DESIGNED | DRAWN | SCALE | DATE | REVISED |
|---|---|---|---|---|
| TJB | JSZ | 1"=20' | 11-30-06 | 11-06-07 |
| PROJECT NO.: 1E-9811040 | | | CAD No. 1E9811040E | |

**State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES**

Jim Doyle, Governor
Matthew J. Frank, Secretary
Gloria L. McCutcheon, Regional Director

Southeast Region Headquarters
2300 N. Dr. Martin Luther King, Jr. Drive
Milwaukee, Wisconsin 53212-3128
FAX 414-263-8606
Telephone 414-263-8500
TTY Access via relay - 711

January 29, 2008

Ms Karen Dettmer
RACM
841 North Broadway
Milwaukee, WI 53213

Subject: Conditional Closure Decision with Requirements to Achieve Final Closure for Old Engine House #35, 407 North Hawley Road, Milwaukee, WI

FID: 241682760
BRRTS: 03-41-208829
PECFA: 53213-4234-07

Dear Ms Dettmer:

On July 6, 2006, the Wisconsin Department of Natural Resources ("the Department") Southeast Regional Closure Committee reviewed your request for closure of the case described above. On November 15, 2007, the Department received from Giles Engineering the request for case closure submittal based on the additional remediation and supplemental monitoring activities required in the Department's letter dated July 6, 2007. The Department environmental remediation cases for compliance with state rules and statutes to maintain consistency in the closure of these cases. After careful review, the Department has determined that the petroleum and chlorinated solvent contamination on the site from the underground storage tank that was located on the property appears to have been investigated and remediated to the extent practicable under site conditions. Your case meets the screening criteria of s. NR 746.07 or s. NR 746.08, Wis. Adm. Code, and the requirements of ch. NR 726, Wis. Adm. Code and will be closed if the following conditions are satisfied:

- The groundwater monitoring wells and any other remediation systems at the site must be properly abandoned in compliance with ch. NR 141, Wis. Admin. Code. Documentation of well abandonment must be submitted to this office on Form 3300-5B found at www.dnr.state.wi.us/org/water/dgw/gw within 60-days on receipt of this letter as required in s. NR 726.05(8)(a)1 and s. NR 141.25 Wis. Admin. Code. The Department requires the abandonment of these wells before issuing a final closure letter.

When the above conditions have been satisfied, please submit the appropriate documentation (for example, well abandonment forms, disposal receipts, copies of correspondence, etc.) to verify that applicable conditions have been met, and your case will be closed.

Your site will be listed on the DNR Remediation and Redevelopment GIS Registry of Closed Remediation Sites. Information that was submitted with your closure request application will be included on the GIS Registry. To review the site on the GIS Registry web page, visit the RR Sites Map page at: http://dnr.wi.gov/org/aw/rr/gis/index.htm.

Section 101.143, Wis. Stats., requires that PECFA claimants seeking reimbursement of interest costs, for sites with petroleum contamination, submit a final reimbursement claim within 120 days after they receive a closure letter on their site. For claims not received by the PECFA Program within 120 days of the date of this letter, interest costs after 60 days of the date of this letter will not be eligible for PECFA reimbursement. If there is equipment purchased with PECFA funds remaining at the site, contact the Commerce PECFA Program to determine the method for salvaging the equipment.

Please be aware that the case may be reopened pursuant to s. NR 726.09, Wis. Adm. Code, if additional information regarding site conditions indicates that contamination on or from the site poses a threat to public health, safety, or welfare or to the environment.

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Sincerely,

John J. Hnat, P. G.
Project Manager\Senior Hydrogeologist
Southeast Region
Remediation and Redevelopment

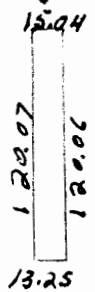
C: Erika L. Biemann, Giles Engineering
WDNR SER Files

## Survey of City Property.

P

**Description:** Lots 13 and 14, block 5, in Resubdivision of Government Heights in Southwest 1/4 26-7-21.

Dedicated for street - Res. 65-2065 - Nov. 2-1965




**Atlas Page:** 404 09 **Key:**

**¼ section:** S.W. 26-7-21

**Assmt Dist.:** 25 **Ward:** 16

**Grantor:** C. Harrod

**Type of Document:** Warranty Deed **Date:** 2-7-27

**Recorded:** 2-21-27 **Vol.** 1105 **P.** 618 **No.** 1499305

**Consideration $** 2500.00

**Deed conditions:** None

**Location:** N.W. corner of N. Hawley Rd. and W. St. Paul Ave.

**Size of land:** 120x128.29- 15394 sq.ft.

**Purchase Price: $** 2500.00 **Resn. No.** 33755 **Adptd::** 11-22-26 P.932 **Purpose:** Fire Station Site

**Part needed by City:** All

**Remnant:** none

**Surveyed by:**

**Appraisal of:** 120.03 front ft. on Hawley Road

**Present use of property:** Fire Station

| | | | | |
|---|---|---|---|---|
| Land | $ 7202.00 | = | $ 60.00 | per front ft. on Hawley |
| Bldgs. | $ 31319.00 | = | $ | per cu. foot |
| Total | $ 38521.00 | | | |

**Date:** 5-21-1936 **Appraised by:** L. F. Faulkner, R. W. Wilde

**Disposition recommended:** Retain

**Date:** 5-21-1936 **By:** L. F. & R. W.

**Bldgs. consist of:** 1 1/2 story new brick fire house. This is a new bldg. built in 1928 at a cost of $34789.00
Figures taken from Bridges and Bldgs. Dept. Dep. 10% - $3478.0 - Present Value - $31319.00

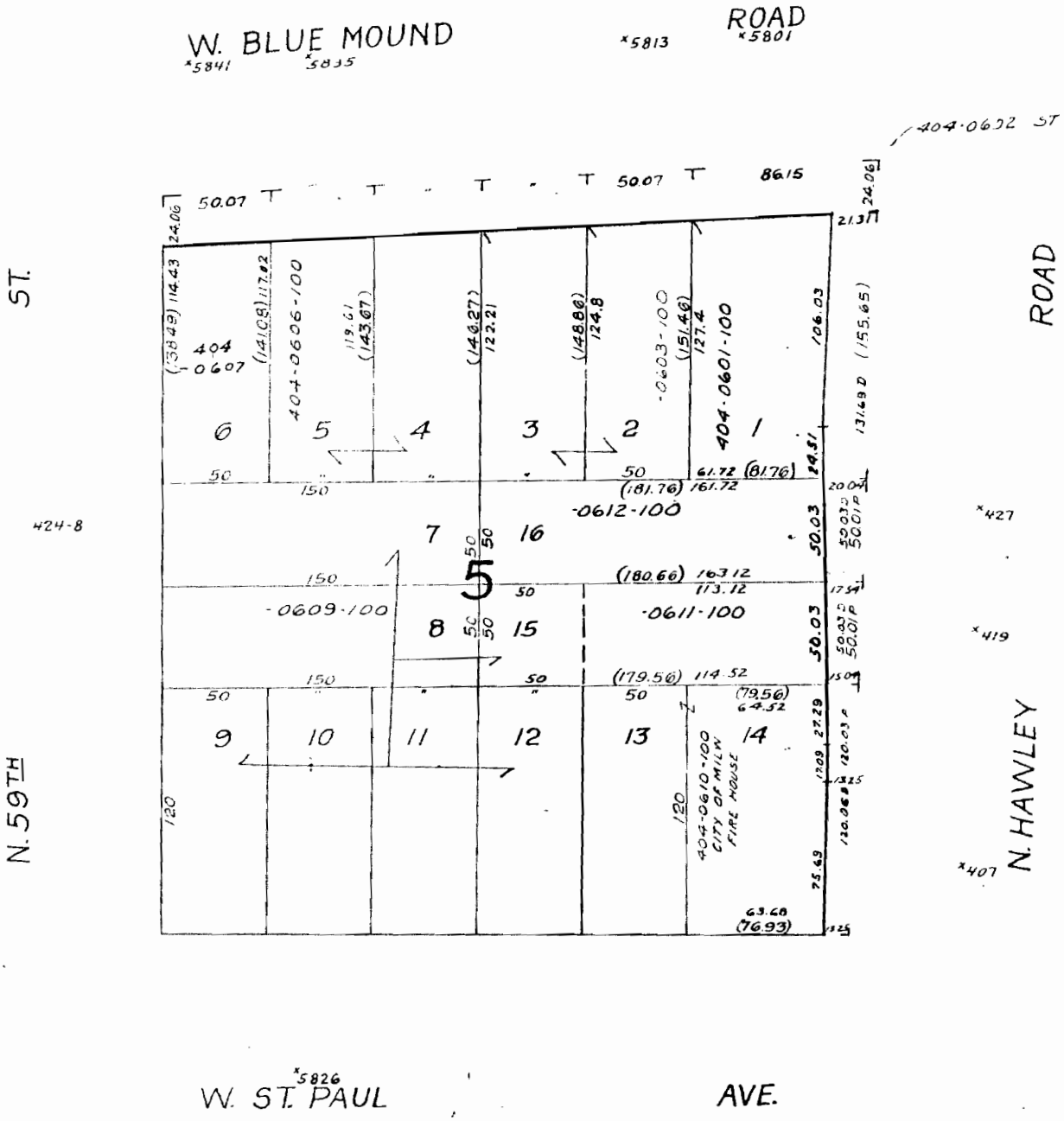
**Assessed Value in 1934** **R. E. $** 3700.00 **IMP. $** 27000.00 **TOTAL $** 30700.00

S.W.-26-7-21
ATLAS P.404

404

404-09

MANUFACTURING PLOT-STATE RESUBD. OF GOVERNMENT HEIGHTS



City of Milwaukee

**PROPERTY ASSESSMENT RESULTS**

TAX ACCOUNT BALANCE

## GENERAL INFORMATION

| | |
|---|---|
| **ADDRESS** | 407 THRU 407 N HAWLEY RD |
| **TAXKEY** | 404-0610-100-4 |
| **OWNER** | CITY OF MILWAUKEE<br>C/O CITY REAL ESTATE |
| **OWNER ADDRESS** | 809 N BROADWAY<br>MILWAUKEE, WISCONSIN 532020000 |

## ASSESSMENT

| | 2006 | 2005 |
|---|---|---|
| **LAND** | $0 | $0 |
| **IMPROVEMENTS** | $0 | $0 |
| **TOTAL** | $0 | $0 |
| **CURRENT CLASS** | EXEMPT | |

Assessments reflect the estimated value on January 1st .of the indicated year.

## OTHER PROPERTY INFORMATION

- LAST CONVEYANCE:
  - DATE: 00/00
  - TRANSFER FEE: $0.00 (CLICK HERE FOR FEE EXPLANATION)
- STORIES: 0.0
- RESIDENTIAL BUILDING STYLE:
- EXTERIOR WALL TYPE:
- YEAR BUILT: 0000
- DWELLING UNITS: 1 (CLICK HERE FOR DWELLING UNITS EXPLANATION)
- TOTAL SQUARE FEET FLOOR AREA: 0
  - FIRST FLOOR AREA:
  - SECOND FLOOR AREA:
  - THIRD FLOOR AREA:
  - FINISHED ATTIC AREA:
  - FINISHED HALF STORY AREA:
  - BASEMENT LIVING AREA:
- ROOM-COUNTS
  - TOTAL ROOMS: 0
  - BEDROOMS: 0
  - BATHS: 0
  - HALF BATHS: 0
- CENTRAL AIR CONDITIONING: NO

- BASEMENT: NONE
- FIRE PLACE:
- GARAGE TYPE: NONE
- LOT SIZE: 0
- PLAT PAGE: 40409
- ZONING: LB2 (CLICK HERE FOR ZONING EXPLANATION)
  (For zoning information contact Milwaukee Development Center at 286-8211.)
- ASSESSMENT NEIGHBORHOOD 6272
- ALDERMANIC DISTRICT: 10
- CENSUS TRACT: 126
- LEGAL DESCRIPTION:
  LEGALS RE-SUBD OF GOVERNMENT HEIGHTS IN SW 1/4 SEC 26-7-21
  DESCRIPTION BLOCK 5 LOT 13 & PART LOT 14 COM NW COR LOT 14-TH S 120'-TH
  E 63.68'-TH N 75.69'-TH NELY ALG A CUR 17.09'-TH NLY 27.29'
  -TH W 64.52' TO BEG

*For more information contact the Assessor's office at 414-286-3651*

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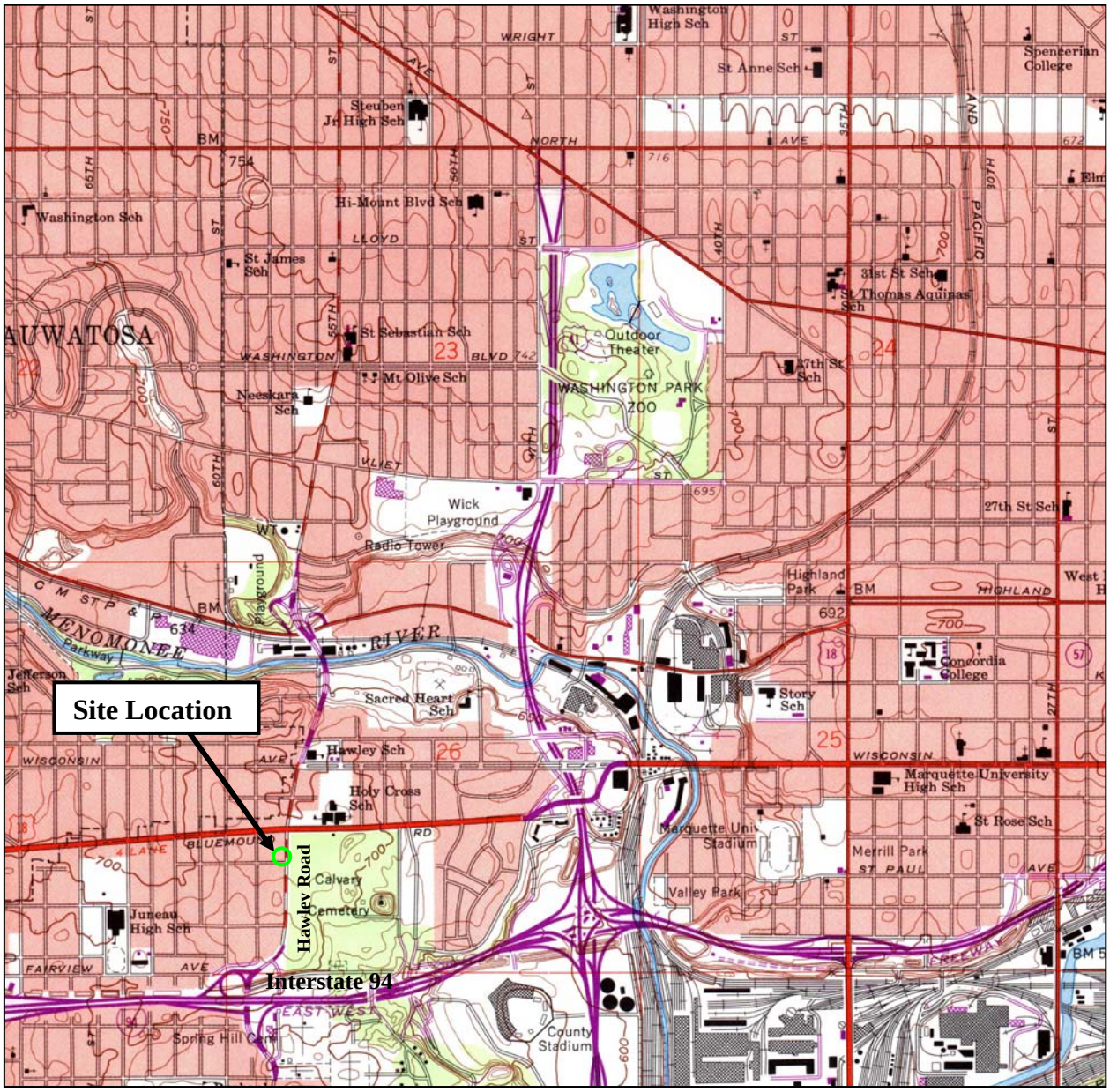


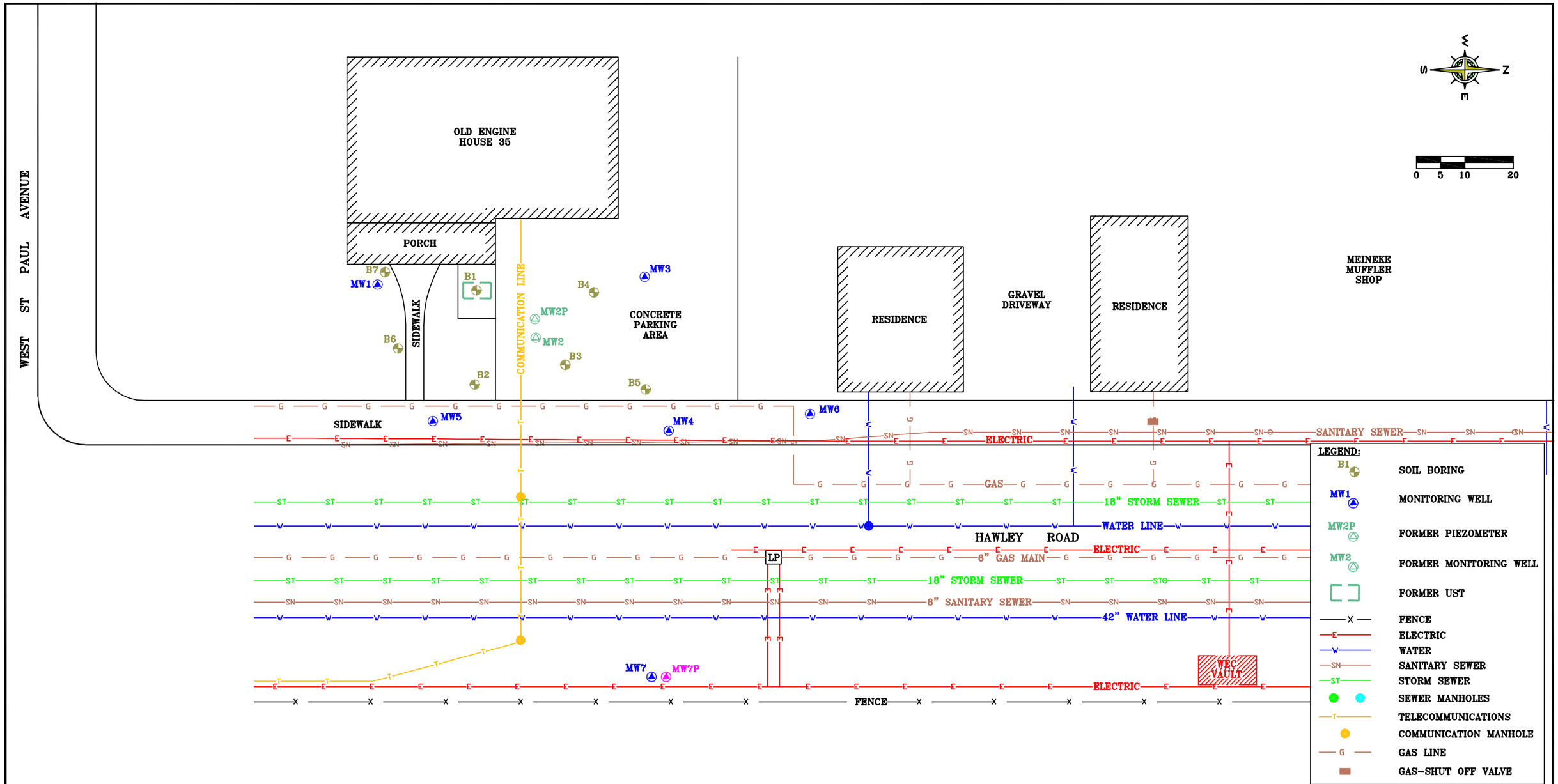

Source: USGS Milwaukee, Wisconsin (1958; photorevised 1971) 7.5 Minute Series (topographic) Quadrangle Maps

Scale: 1”=2,000’

Contour Interval: 10 Feet

**FIGURE 1**
**Site Location**
**Engine House No. 35**
**407 North Hawley Road**
**Milwaukee, Wisconsin**
**Project No. 1E-9811040**

GILES ENGINEERING ASSOCIATES, INC.




GILES ENGINEERING ASSOCIATES, INC.
N8 W22350 JOHNSON DRIVE, SUITE A1
WAUKESHA, WI 53186 (262)544-0118

FIGURE 1
SITE FEATURES AND BORING LOCATION PLAN
OLD ENGINE HOUSE 35
407 NORTH HAWLEY ROAD
MILWAUKEE, WISCONSIN

| DESIGNED | DRAWN | SCALE | DATE | REVISED |
|---|---|---|---|---|
| DSP/TJB | JSZ | 1"=20' | 03-03-03 | 11-06-07 |
| PROJECT NO.: 1E-9811040 | | | CAD No. 1E9811040F | |

**TABLE 3**

**GROUNDWATER ANALYTICAL RESULTS**
**(Pb and VOCs)**

Old Engine House 35
407 North Hawley Road
Milwaukee, Wisconsin
Project No. 1E-9811040

| Sample Location | Sample Date | GRO (ug/L) | DRO (ug/L) | Lead (Pb) (ug/L) | Detected VOCs/PVOCs (ug/L) | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Benzene | t-BuBz | s-BuBz | E | MTBE | Napht | n-BuBz | n-PBz | Toluene | TMBs | Xylenes | p-IPT | IPBz | TCE | 1,2,3-TCP | 1,1,1-TCA | cis-1,2-DCE | 1,2-DCA | CBz | 1,1-DCA |
| **MW-1** | 8/27/1999 | <14 | <18 | -- | <0.19 | <0.2 | <0.3 | <0.16 | <0.21 | <0.46 | <0.23 | <0.25 | <0.33 | <0.52 | <0.54 | <0.18 | <0.16 | <0.16 | <0.6 | <0.23 | <0.2 | <0.19 | <0.2 | <0.15 |
| | 11/18/1999 | <14 | 40j | -- | <0.19 | <0.2 | <0.3 | <0.16 | <0.21 | <0.46 | <0.23 | <0.25 | <0.33 | <0.52 | <0.54 | <0.18 | <0.16 | <0.16 | <0.6 | <0.23 | <0.2 | (0.65)* | 0.3j* | <0.15 |
| | 1/2/2001 | -- | -- | <1.5 | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 4/16/2001 | -- | -- | <1.5 | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 11/6/2001 | -- | -- | -- | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 5/7/2002 | -- | -- | -- | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 10/10/2005 | -- | -- | -- | <0.443 | -- | -- | <0.568 | <0.298 | 7.083 | -- | -- | <0.442 | <1.248 | 1.484 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 12/29/2006 | -- | -- | -- | <0.25 | -- | -- | <0.22 | <0.23 | <0.50 | -- | -- | <0.11 | <0.44 | <0.39 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 3/28/2007 | -- | -- | -- | <0.25 | -- | -- | <0.22 | <0.23 | <0.50 | -- | -- | <0.11 | <0.44 | <0.39 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 7/19/2007 | -- | -- | -- | <0.25 | -- | -- | <0.22 | <0.23 | <0.50 | -- | -- | 0.19j | <0.44 | <0.39 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/8/2007 | -- | -- | -- | <0.25 | -- | -- | <0.22 | <0.23 | <0.50 | -- | -- | <0.11 | <0.44 | <0.39 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **MW-2** | 8/27/1999 | 74,600 | 5,310 | -- | 15,100 | <100 | <150 | 3,360 | <105 | 515j | <115 | 290j | 35,400 | 2,060 | 13,150 | <90 | <80 | 190j | <300 | 305j | 270j | 440 | <100 | (280) |
| | 11/18/1999 | 85,000 | 6,170 | -- | 15,800 | 205j | <150 | 3,120 | <105 | 395j | <115 | 265j | 34,900 | 1,775 | 12,510 | <90 | <80 | 135j | <300 | <115 | <100 | 500* | <100* | <75 |
| | 1/2/2001 | -- | -- | (7.6) | 7,100 | <750 | 9,180 | 6,980 | <975 | <1,880 | 114,000 | 26,500 | 23,500 | 414,100 | 56,100 | 14,400 | 3,230 | <850 | <1,280 | <775 | <675 | <875 | <650 | <800 |
| | 4/16/2001 | -- | -- | (7.7) | 10,300 | <75 | <85 | 2,880 | <98 | 570j | <90 | 168j | 27,500 | 1,403 | 12,040 | <78 | <83 | <85 | <128 | <78 | <68 | <88 | <65 | <80 |
| | 11/6/2001 | -- | -- | (3.6j) | 12,800 | <30 | <34 | 3,220 | <39 | 938 | <36 | 262 | 28,500 | 2,242 | 12,290 | <31 | 91 | <34 | <51 | <31 | <27 | <35 | <26 | <32 |
| | 5/7/2002 | -- | -- | (7.7) | 8,540 | <15 | 32j | 2,520 | <20 | 806 | <18 | 305 | 15,800 | 2,727 | 10,140 | 20j | 95 | <17 | <26 | <16 | <14 | <18 | <13 | <16 |
| | 9/23/2002 | -- | -- | -- | 5,170 | <6.0 | <6.8 | 2,360 | <7.8 | 673 | <7.2 | 246 | 10,400 | 2,088 | 10,030 | 6.6j | 83 | <6.8 | 12j | <6.2 | <5.4 | <7.0 | <5.2 | <6.4 |
| | 1/27/2003 | -- | -- | -- | 5,050 | -- | -- | 2,630 | 9.8 | 629 | -- | -- | 3,700 | 2,453 | (7,130) | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/10/2005 | -- | -- | -- | 8,600 | <1,500 | <1,400 | 7,400 | <1,600 | 2,200j | 1,400j | 3,100j | 30,000 | 27,400 | 35,000 | <1,450 | <1,550 | <1,300 | <4,450 | <1,900 | <2,200 | <1,800 | <1,550 | <1,600 |
| | 11/3/2006 | Abandonded prior to source soil removal | | | | | | | | | | | | | | | | | | | | | | |
| **MW-2P** | 4/16/2001 | -- | -- | -- | (1.2) | <0.30 | <0.34 | 8.9 | <0.39 | 2j | <0.36 | 1.9 | 12 | 25.9 | 46 | <0.31 | 0.68j | <0.34 | <0.51 | 0.31 | <0.27 | <0.35 | <0.26 | <0.34 |
| | 11/6/2001 | -- | -- | -- | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 5/7/2002 | -- | -- | -- | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 10/10/2005 | -- | -- | -- | 18 | <0.300 | <0.340 | 4.810 | (17) | 5.540 | <0.360 | 0.530j | 11 | 1.240 | 14.540 | <0.310 | <0.330 | <0.340 | <0.510 | <0.310 | <0.270 | <0.460 | <0.260 | <0.320 |
| | 11/3/2006 | Abandonded prior to source soil removal | | | | | | | | | | | | | | | | | | | | | | |
| **MW-3** | 8/27/1999 | <14 | 71 | -- | <0.19 | <0.2 | <0.3 | <0.16 | <0.21 | <0.46 | <0.23 | <0.25 | <0.33 | <0.52 | <0.54 | <0.18 | <0.16 | <0.16 | <0.6 | <0.23 | 0.32j | <0.19 | <0.2 | <0.15 |
| | 11/18/1999 | <14 | 50j | -- | <0.19 | <0.2 | <0.3 | <0.16 | <0.21 | <0.46 | <0.23 | <0.25 | <0.33 | <0.52 | <0.54 | <0.18 | <0.16 | <0.16 | <0.6 | <0.23 | <0.2 | (0.74)* | 0.4j* | <0.15 |
| | 1/2/2001 | -- | -- | <1.5 | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 4/16/2001 | -- | -- | -- | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 11/6/2001 | -- | -- | -- | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 5/7/2002 | -- | -- | -- | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | 1 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 10/10/2005 | -- | -- | -- | (0.780j) | <0.300 | <0.340 | <0.250 | 0.520j | 0.770j | <0.360 | <0.280 | <0.290 | <0.640 | 0.830j | <0.310 | <0.330 | <0.340 | <0.510 | <0.310 | <0.270 | <0.350 | <0.260 | <0.320 |
| | 12/29/2006 | -- | -- | -- | <0.25 | -- | -- | <0.22 | <0.23 | <0.50 | -- | -- | <0.11 | <0.44 | <0.39 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 3/28/2007 | -- | -- | -- | <0.25 | -- | -- | <0.22 | <0.23 | <0.50 | -- | -- | <0.11 | <0.44 | <0.39 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 7/19/2007 | -- | -- | -- | <0.25 | -- | -- | <0.22 | <0.23 | <0.50 | -- | -- | <0.11 | <0.44 | <0.39 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/8/2007 | -- | -- | -- | <0.25 | -- | -- | <0.22 | <0.23 | <0.50 | -- | -- | <0.11 | <0.44 | <0.39 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **MW-4** | 8/27/1999 | 10,200 | 4,820 | -- | 1,090 | <4 | 11j | 948 | <4.2 | 262 | <4.6 | 178 | (231) | 1,548 | (2,946) | 5j | 49 | <3.2 | <3.2 | <4.6 | <4 | <3.8 | <4 | <3 |
| | 11/18/1999 | 8,190 | 2,120 | -- | 3,390 | 80 | <6 | (542) | <4.2 | 100 | <4.6 | 100 | (264) | 681 | (1,474) | <3.6 | 34 | <3.2 | <12 | <4.6 | <4 | 93* | <4* | <3 |
| | 1/2/2001 | -- | -- | (7) | 1,800 | <7.5 | <8.5 | (374) | <9.8 | 95 | <9.0 | 136 | 91 | 1,052 | (1,221) | <7.8 | 35 | <7.8 | <13 | <7.8 | <6.8 | <8.8 | <6.5 | <8.0 |
| | 4/16/2001 | -- | -- | 63 | 756 | <7.5 | 22j | 989 | <9.8 | 318 | <9.0 | 263 | 161 | 3,375 | (3,210) | 37 | 66 | <8.5 | <13 | <7.8 | <6.8 | <8.8 | <6.5 | <8.0 |
| | 11/6/2001 | -- | -- | (4.8) | 1,050 | <6.0 | 34 | 1,490 | <7.8 | 183 | <7.2 | 353 | 102 | 3,379 | (3,146) | 58 | 106 | <6.8 | <10 | <6.2 | <5.4 | <7.0 | <5.2 | <6.4 |
| | 5/7/2002 | -- | -- | 17 | 318 | <3.0 | 30 | 706 | <3.9 | 359 | <3.6 | 333 | 24 | 2,273 | (1,409) | 19 | 89 | <3.4 | <5.1 | <3.1 | <2.7 | <3.5 | <2.6 | <3.2 |
| | 9/23/2002 | -- | -- | -- | 863 | <6.0 | 34 | 1,440 | <7.8 | 702 | <7.2 | 405 | 84 | 3,401 | (3,656) | 66 | 118 | <6.8 | <10 | <6.2 | <5.4 | <7.0 | <5.2 | <6.4 |
| | 1/27/2003 | -- | -- | -- | 573 | -- | -- | (214) | <1.5 | 108 | -- | -- | 18 | 542 | 437 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/10/2005 | -- | -- | -- | 638 | <0.300 | <0.340 | (280) | <0.390 | 182 | <0.360 | 82 | 19 | 641 | 531 | 15 | 33 | <0.340 | <0.510 | <0.310 | <0.270 | <0.350 | <0.260 | <0.320 |
| | 12/29/2006 | -- | -- | 0.0022j | 600 | <2.0 | 7.9j | (500) | <5.0 | 220 | <2.0 | 72 | 32 | 1,350 | (1,200) | 5.9j | 30 | <2.0 | <5.0 | <5.0 | <5.0 | <5.0 | <2.0 | <5.0 |
| | 3/28/2007 | -- | -- | -- | 520 | -- | -- | (430) | <4.6 | 240 | -- | -- | 39 | 1,430 | (1,000) | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 7/19/2007 | -- | -- | -- | 530 | -- | -- | (660) | <2.3 | 280 | -- | -- | 33 | 1,230 | (1,300) | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/8/2007 | -- | -- | -- | 670 | -- | -- | 870 | <2.3 | 430 | -- | -- | 34 | 1,990 | (1,900) | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **NR 140 PAL** | | -- | -- | 1.5 | 0.5 | NS | NS | 140 | 12 | 8 | NS | NS | 200 | 96 | 1,000 | NS | NS | 0.5 | 12 | 40 | 7 | 0.5 | NS | 85 |
| **NR 140 ES** | | -- | -- | 15 | 5 | NS | NS | 700 | 60 | 40 | NS | NS | 1,000 | 480 | 10,000 | NS | NS | 5 | 60 | 200 | 70 | 5 | NS | 850 |

**Footnotes are listed on page 2 of this table.**

**TABLE 3 (continued)**

**GROUNDWATER ANALYTICAL RESULTS**
**(Pb and VOCs)**

Old Engine House 35
407 North Hawley Road
Milwaukee, Wisconsin
Project No. 1E-9811040

| Sample Location | Sample Date | GRO (ug/L) | DRO (ug/L) | Lead (Pb) (ug/L) | Detected VOCs/PVOCs (ug/L) | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Benzene | t-BuBz | s-BuBz | E | MTBE | Napht | n-BuBz | n-PBz | Toluene | TMBs | Xylenes | p-IPT | IPBz | TCE | 1,2,3-TCP | 1,1,1-TCA | cis-1,2-DCE | 1,2-DCA | ClBz | 1,1-DCA |
| **MW-5** | 11/18/1999 | <14 | 35j | -- | <0.19 | <0.2 | <0.3 | <0.16 | <0.21 | <0.46 | <0.23 | <0.25 | <0.33 | <0.54 | <0.54 | <0.18 | <0.16 | <0.16 | <0.6 | <0.23 | <0.2 | (0.6j)* | 0.33j* | <0.15 |
| | 1/2/2001 | -- | -- | (5.2) | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 4/16/2001 | -- | -- | <1.5 | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 11/6/2001 | -- | -- | <1.5 | 130 | <0.30 | <0.34 | 0.71j | <0.39 | (36) | <0.36 | 0.28 | <0.29 | 2.19j | 1.62j | <0.31 | 0.62j | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 5/7/2002 | -- | -- | <1.5 | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 10/10/2005 | -- | -- | -- | 41 | -- | -- | 1.183j | <0.298 | 3.839j | -- | -- | <0.442 | <1.248 | 3.241j | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 12/29/2006 | -- | -- | -- | (3.5) | -- | -- | <0.22 | <0.23 | 0.54j | -- | -- | <0.11 | <0.44 | <0.39 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 3/28/2007 | -- | -- | -- | 35 | -- | -- | 30 | <0.92 | <2.0 | -- | -- | 18 | 5.6 | 64 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 7/19/2007 | -- | -- | -- | 730 | -- | -- | (450) | (29) | 59 | -- | -- | (630) | (340) | (1,400) | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/8/2007 | -- | -- | -- | 480 | -- | -- | (550) | <2.3 | 150 | -- | -- | (970) | (680) | (1,600) | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **MW-6** | 11/18/1999 | <14 | <18 | -- | <0.19 | <0.2 | <0.3 | <0.16 | <0.21 | <0.46 | <0.23 | <0.25 | <0.33 | <0.52 | <0.54 | <0.18 | <0.16 | <0.16 | <0.6 | <0.23 | <0.2 | (0.72)* | 0.37j* | <0.15 |
| | 1/2/2001 | -- | -- | <1.5 | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 4/16/2001 | -- | -- | <1.5 | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 11/6/2001 | -- | -- | -- | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 5/7/2002 | -- | -- | -- | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 10/10/2005 | -- | -- | -- | (0.861j) | -- | -- | <0.568 | <0.298 | <1.214 | -- | -- | <0.442 | <1.248 | <1.484 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 12/29/2006 | -- | -- | -- | <0.25 | -- | -- | <0.22 | <0.23 | <0.50 | -- | -- | <0.11 | <0.44 | <0.39 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 3/28/2007 | -- | -- | -- | <0.25 | -- | -- | <0.22 | <0.23 | <0.50 | -- | -- | 0.11j | <0.44 | <0.39 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 7/19/2007 | -- | -- | -- | <0.25 | -- | -- | <0.22 | <0.23 | <0.50 | -- | -- | <0.11 | <0.44 | <0.39 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/8/2007 | -- | -- | -- | <0.25 | -- | -- | <0.22 | <0.23 | <0.50 | -- | -- | <0.11 | <0.44 | <0.39 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **MW-7** | 1/2/2001 | -- | -- | <1.5 | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 4/16/2001 | -- | -- | <1.5 | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 11/6/2001 | -- | -- | -- | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 5/7/2002 | -- | -- | -- | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 10/10/2005 | -- | -- | -- | <0.443 | -- | -- | <0.568 | <0.298 | <1.214 | -- | -- | <0.442 | <1.248 | <1.484 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 12/29/2006 | -- | -- | -- | <0.25 | -- | -- | <0.22 | <0.23 | <0.50 | -- | -- | <0.11 | <0.44 | <0.39 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 3/28/2007 | -- | -- | -- | <0.50 | -- | -- | <0.44 | <0.46 | <1.0 | -- | -- | <0.22 | <0.88 | <0.78 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 7/19/2007 | -- | -- | -- | <0.25 | -- | -- | <0.22 | <0.23 | <0.50 | -- | -- | 0.13j | <0.44 | <0.39 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/8/2007 | -- | -- | -- | <0.25 | -- | -- | <0.22 | <0.23 | <0.50 | -- | -- | <0.11 | <0.44 | <39 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **MW-7P** | 1/2/2001 | -- | -- | <1.5 | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 4/16/2001 | -- | -- | <1.5 | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 11/6/2001 | -- | -- | -- | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | <0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 5/7/2002 | -- | -- | -- | <0.27 | <0.30 | <0.34 | <0.25 | <0.39 | <0.75 | <0.36 | <0.28 | 0.29 | <0.64 | <0.78 | <0.31 | <0.33 | <0.34 | <0.51 | <0.31 | <0.27 | <0.35 | <0.26 | <0.32 |
| | 10/10/2005 | -- | -- | -- | <0.443 | -- | -- | <0.568 | <0.298 | <1.214 | -- | -- | <0.442 | <1.248 | <1.484 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 12/29/2006 | -- | -- | -- | <0.25 | -- | -- | <0.22 | <0.23 | <0.50 | -- | -- | <0.11 | <0.44 | <0.39 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 3/28/2007 | -- | -- | -- | <0.50 | -- | -- | <0.44 | <0.46 | <1.0 | -- | -- | 0.24j | <0.88 | <0.78 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 7/19/2007 | -- | -- | -- | <0.25 | -- | -- | <0.22 | <0.23 | <0.5 | -- | -- | <0.11 | <0.44 | <0.39 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/8/2007 | -- | -- | -- | <0.25 | -- | -- | <0.22 | <0.23 | <0.50 | -- | -- | <0.11 | <0.44 | <0.39 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **NR 140 PAL** | | NS | NS | 1.5 | 0.5 | NS | NS | 140 | 12 | 8 | NS | NS | 200 | 96 | 1,000 | NS | NS | 0.5 | 12 | 40 | 7 | 0.5 | NS | 85 |
| **NR 140 ES** | | NS | NS | 15 | 5 | NS | NS | 700 | 60 | 40 | NS | NS | 1,000 | 480 | 10,000 | NS | NS | 5 | 60 | 200 | 70 | 5 | NS | 850 |

**VOCs:** Volatile organic compounds
**PVOCs:** Petroleum volatile organic compounds
**TCA:** Trichloroethane
**t-BuBz:** tert-Butylbenzene
**s-BuBz:** sec-Butlybenzene
**E:** Ethylbenzene
**IPBz:** Isopropylbenzene

**p-IPT:** p-Isopropyltoluene
**Napht:** Naphthalene
**n-PBz:** n-Propylbenzene
**TMB:** 1,2,4 & 1,3,5-Trimethylbenzene
**TCE:** Trichloroethene
**DCA:** Dichloroethane
**MTBE:** Methyl tert-butyl ether

**ClBz:** Chlorobenzene
**DCE:** Dichloroethene
**TCP:** Trichloropropane
**--:** Not Analyzed
**NS:** No Established Standard
**j:** Result is between the laboratory limit of detection and the limit of quantitation
**ug/L:** Micrograms per liter; equivalent to parts per billion (ppb)

**NR:** Natural Resources Chapter of the Wisconsin Administrative Code (WAC)
***:** 1,2 DCA (**0.64**/**0.76** ug/l) and CBz (0.34j/0.45j ug/l) were detected in field/trip blanks, respectively, during the November 18, 1999 sampling round.
**Results indicated in Blue/Parenthesis exceed the WAC NR 140 Preventive Action Limits (PAL)**
**Results indicated in Red/Underline exceed the WAC NR 140 Enforcement Standards (ES)**

# TABLE 6
# GROUNDWATER ANALYTICAL RESULTS
# POLYNUCLEAR AROMATIC HYDROCARBONS

Old Engine House 35
407 Hawley Road
Milwaukee, Wisconsin
Project No. 1E-9811040

| Analytes | | Sample Locations | | | | | | | | NR 140 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MW-1 | MW-2 | MW-3 | MW-4 | MW-5 | MW-6 | MW-7 | MW-7P | | |
| Sample Date | | 1/2/2001 | 1/2/2001 | 1/2/2001 | 1/2/2001 | 1/2/2001 | 1/2/2001 | 1/2/2001 | 1/2/2001 | PAL (ug/L) | ES (ug/L) |
| Detected Polynuclear Aromatic Hydrocarbons (PAHs) (ug/L) [1] | 1-Methyl Naphthalene | <3.6 | 189 | <3.6 | 50 | <3.6 | <3.6 | 7j | <3.6 | NS | NS |
| | 2-Methyl Naphthalene | <3.2 | 2290 | 4.6j | 105 | <3.2 | <3.2 | <3.2 | <3.2 | NS | NS |
| | Acenaphthene | <3.0 | 159 | <3.0 | 46 | <3.0 | <3.0 | <3.0 | <3.0 | NS | NS |
| | Acenaphthylene | <4.6 | 351 | <4.6 | 103 | <4.6 | <4.6 | <4.6 | <4.6 | NS | NS |
| | Anthracene | <0.30 | 60 | <0.3 | 0.51j | <0.30 | <0.3 | <0.30 | <0.30 | 600 | 3000 |
| | Benzo(a)anthracene | 0.05j | 0.07j | 0.07j | 0.12j | 0.07j | 0.05j | 0.07j | 0.1j | NS | NS |
| | Fluoranthene | <1.2 | **(89)** | <1.2 | <1.2 | <1.2 | <1.2 | <1.2 | <1.2 | 80 | 400 |
| | Fluorene | <0.8 | 44 | <0.8 | 7 | <0.8 | <0.80 | <0.80 | <0.80 | 80 | 400 |
| | Indeno (1,2,3-cd) pyrene | <0.2 | 1.7 | <0.2 | <0.20 | <0.2 | <0.20 | <0.20 | 0.23j | NS | NS |
| | Naphthalene | <3.1 | **2,650** | <3.1 | **123** | <3.1 | <3.1 | <3.1 | <3.1 | 8 | 40 |
| | Phenanthrene | <0.3 | 190 | 0.34j | 1.1 | <0.3 | <0.30 | <0.30 | <0.30 | NS | NS |

**BDL:** Below the detection limit

**ug/L:** Micrograms per liter; equivalent to parts per billion (ppb)

**NR:** Natural Resources Chapter of the Wisconsin Administrative Code

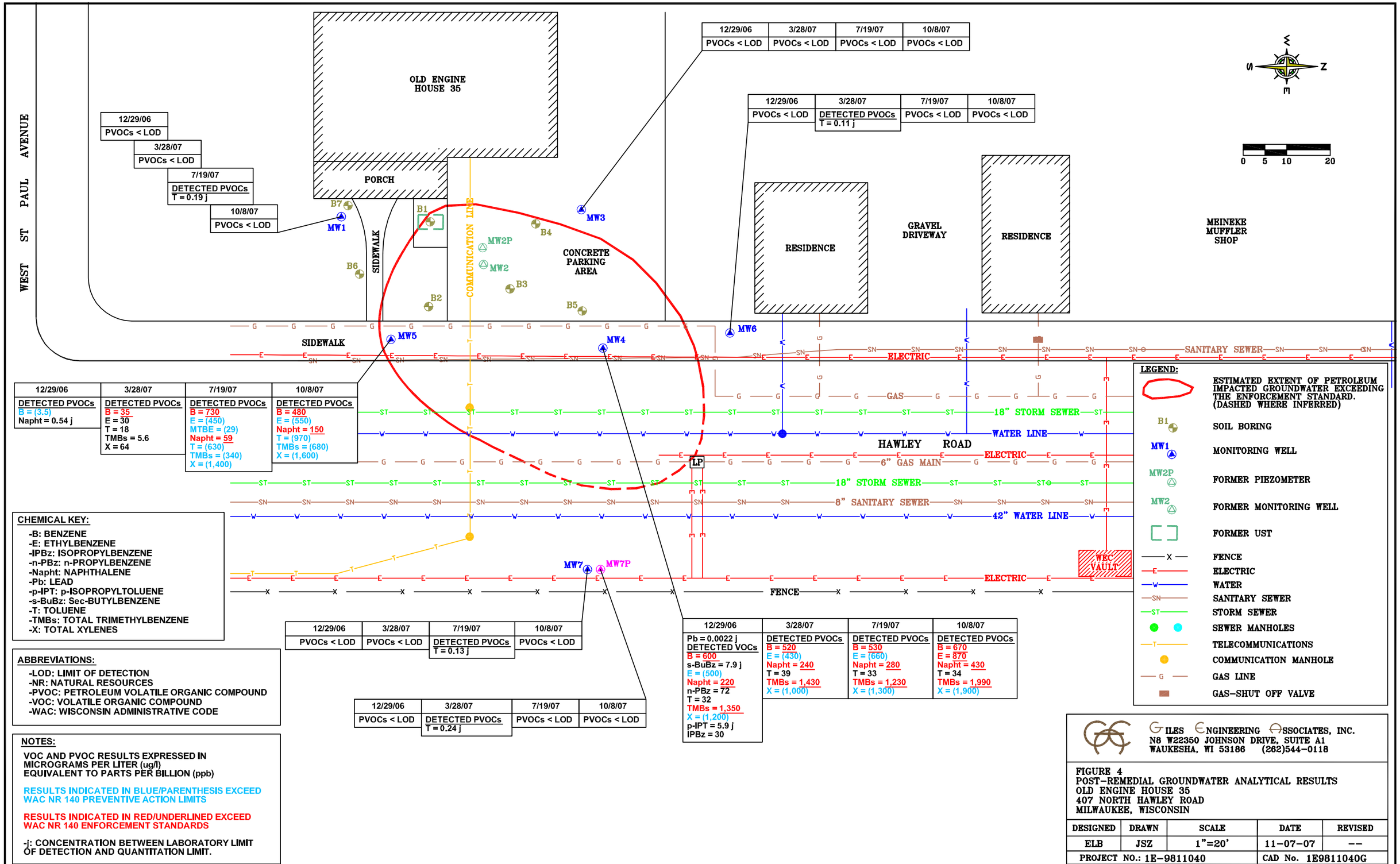
**NS:** No Established Standard

**j:** Result detected between the laboratory limit of detection and the limit of quantitation

[1] For a complete list of PAHs analyzed and the laboratory detection limits, see Appendix K.

**Results indicated in Blue/Parenthesis are above the NR 140 Wisconsin Administrative Code Preventive Action Limits (PAL)**

**Results indicated in Red/Underline exceed the NR 140 Wisconsin Administrative Code Enforcement Standard (ES)**




| 12/29/06 | 3/28/07 | 7/19/07 | 10/8/07 |
|---|---|---|---|
| PVOCs < LOD | PVOCs < LOD | PVOCs < LOD | PVOCs < LOD |

| 12/29/06 | 3/28/07 | 7/19/07 | 10/8/07 |
|---|---|---|---|
| PVOCs < LOD | DETECTED PVOCs<br>T = 0.11 j | PVOCs < LOD | PVOCs < LOD |

| 12/29/06 | 3/28/07 | 7/19/07 | 10/8/07 |
|---|---|---|---|
| PVOCs < LOD | PVOCs < LOD | PVOCs < LOD | PVOCs < LOD |

| 12/29/06 | 3/28/07 | 7/19/07 | 10/8/07 |
|---|---|---|---|
| DETECTED PVOCs<br>B = (3.5)<br>Napht = 0.54 j | DETECTED PVOCs<br>B = 35<br>E = 30<br>T = 18<br>TMBs = 5.6<br>X = 64 | DETECTED PVOCs<br>B = 730<br>E = (450)<br>MTBE = (29)<br>Napht = 59<br>T = (630)<br>TMBs = (340)<br>X = (1,400) | DETECTED PVOCs<br>B = 480<br>E = (550)<br>Napht = 150<br>T = (970)<br>TMBs = (680)<br>X = (1,600) |

| 12/29/06 | 3/28/07 | 7/19/07 | 10/8/07 |
|---|---|---|---|
| PVOCs < LOD | PVOCs < LOD | DETECTED PVOCs<br>T = 0.13 j | PVOCs < LOD |

| 12/29/06 | 3/28/07 | 7/19/07 | 10/8/07 |
|---|---|---|---|
| PVOCs < LOD | DETECTED PVOCs<br>T = 0.24 j | PVOCs < LOD | PVOCs < LOD |

| 12/29/06 | 3/28/07 | 7/19/07 | 10/8/07 |
|---|---|---|---|
| Pb = 0.0022 j<br>DETECTED VOCs<br>B = 600<br>s-BuBz = 7.9 j<br>E = (500)<br>Napht = 220<br>n-PBz = 72<br>T = 32<br>TMBs = 1,350<br>X = (1,200)<br>p-IPT = 5.9 j<br>IPBz = 30 | DETECTED PVOCs<br>B = 520<br>E = (430)<br>Napht = 240<br>T = 39<br>TMBs = 1,430<br>X = (1,000) | DETECTED PVOCs<br>B = 530<br>E = (660)<br>Napht = 280<br>T = 33<br>TMBs = 1,230<br>X = (1,300) | DETECTED PVOCs<br>B = 670<br>E = 870<br>Napht = 430<br>T = 34<br>TMBs = 1,990<br>X = (1,900) |

**CHEMICAL KEY:**

- -B: BENZENE
- -E: ETHYLBENZENE
- -IPBz: ISOPROPYLBENZENE
- -n-PBz: n-PROPYLBENZENE
- -Napht: NAPHTHALENE
- -Pb: LEAD
- -p-IPT: p-ISOPROPYLTOLUENE
- -s-BuBz: Sec-BUTYLBENZENE
- -T: TOLUENE
- -TMBs: TOTAL TRIMETHYLBENZENE
- -X: TOTAL XYLENES

**ABBREVIATIONS:**

- -LOD: LIMIT OF DETECTION
- -NR: NATURAL RESOURCES
- -PVOC: PETROLEUM VOLATILE ORGANIC COMPOUND
- -VOC: VOLATILE ORGANIC COMPOUND
- -WAC: WISCONSIN ADMINISTRATIVE CODE

**NOTES:**

VOC AND PVOC RESULTS EXPRESSED IN MICROGRAMS PER LITER (ug/l) EQUIVALENT TO PARTS PER BILLION (ppb)

RESULTS INDICATED IN BLUE/PARENTHESIS EXCEED WAC NR 140 PREVENTIVE ACTION LIMITS

RESULTS INDICATED IN RED/UNDERLINED EXCEED WAC NR 140 ENFORCEMENT STANDARDS

-j: CONCENTRATION BETWEEN LABORATORY LIMIT OF DETECTION AND QUANTITATION LIMIT.

GILES ENGINEERING ASSOCIATES, INC.
N8 W22350 JOHNSON DRIVE, SUITE A1
WAUKESHA, WI 53186 (262)544-0118

FIGURE 4
POST-REMEDIAL GROUNDWATER ANALYTICAL RESULTS
OLD ENGINE HOUSE 35
407 NORTH HAWLEY ROAD
MILWAUKEE, WISCONSIN

| DESIGNED | DRAWN | SCALE | DATE | REVISED |
|---|---|---|---|---|
| ELB | JSZ | 1"=20' | 11-07-07 | -- |

PROJECT NO.: 1E-9811040 | CAD No. 1E9811040G

## TABLE 2

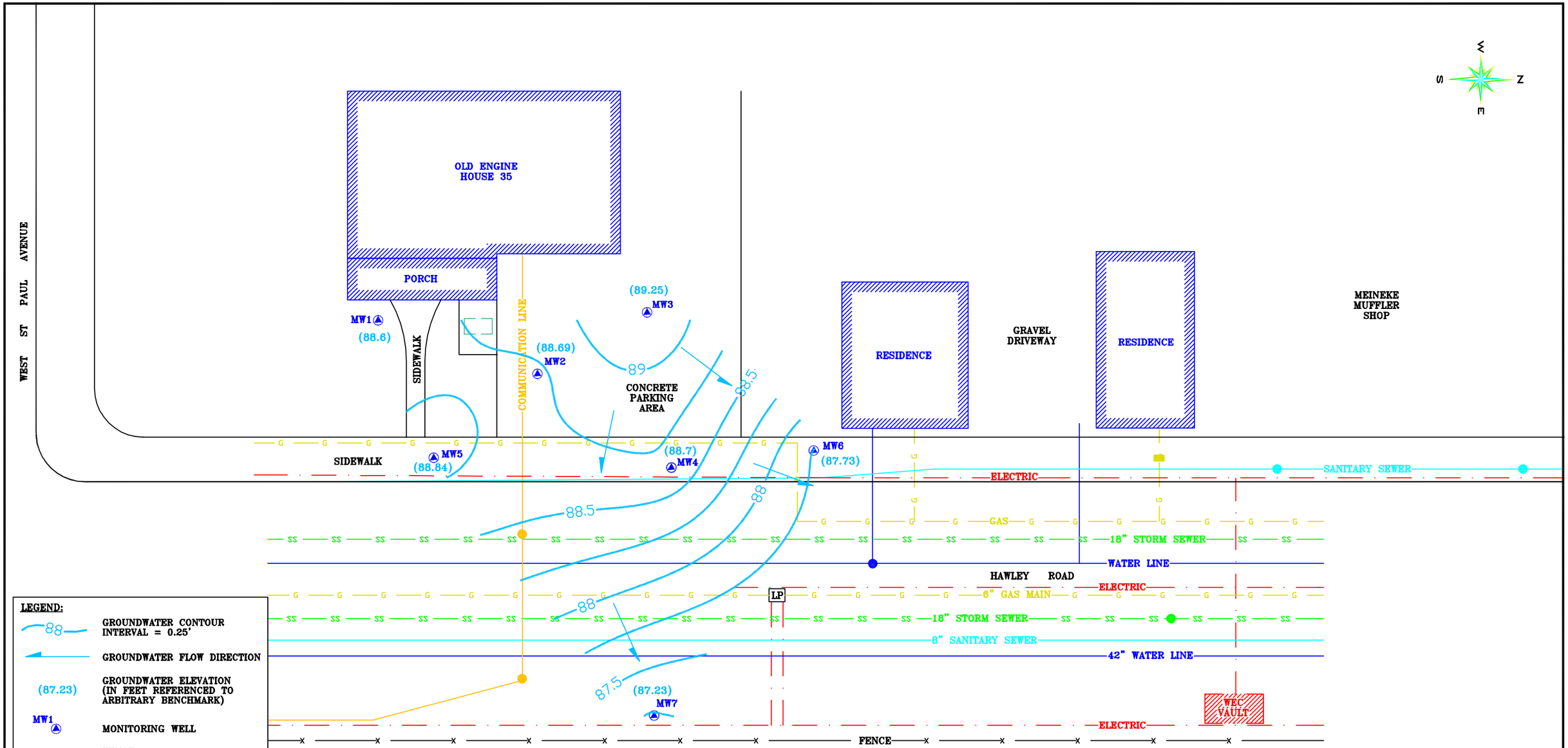
## GROUNDWATER TABLE ELEVATIONS

Old Engine House 35
407 North Hawley Road
Milwaukee, Wisconsin
Project No. 1E-9811040

| Sample Location | Sample Date | Elevation Top of PVC (ft) | Ground Elevation (ft) | Screen Length (ft) | Bottom of Screen Elevation (ft) | Top of Screen Elevation (ft) | Depth to Water from PVC Pipe (ft) | Depth to Groundwater from Surface | Groundwater Elevation (ft) |
|---|---|---|---|---|---|---|---|---|---|
| **MW-1** | 9/16/1999 | 97.69 | 98.13 | 10.00 | 84.13 | 94.13 | 9.08 | 9.52 | 88.61 |
| | 11/3/1999 | | | | | | 9.12 | 9.56 | 88.57 |
| | 11/18/1999 | | | | | | 9.26 | 9.70 | 88.43 |
| | 1/2/2001 | | | | | | 8.69 | 9.13 | 89.00 |
| | 4/16/2001 | | | | | | 7.49 | 7.93 | 90.20 |
| | 11/7/2001 | | | | | | 8.21 | 8.65 | 89.48 |
| | 5/7/2002 | | | | | | 8.11 | 8.55 | 89.58 |
| | 12/19/2002 | | | | | | 9.08 | 9.52 | 88.61 |
| | 10/10/2005 | | | | | | 9.09 | 9.53 | 88.60 |
| | 12/29/2006 | | | | | | 7.59 | 8.03 | 90.10 |
| | 3/28/2007 | | | | | | 7.28 | 7.72 | 90.41 |
| | 7/19/2007 | | | | | | 8.88 | 9.32 | 88.81 |
| | 10/8/2007 | | | | | | 8.81 | 9.25 | 88.88 |
| | | | | | | | | | |
| **MW-2** | 9/16/1999 | 97.71 | 98.05 | 10.00 | 84.05 | 94.05 | 8.87 | 9.21 | 88.84 |
| | 11/3/1999 | | | | | | 8.98 | 9.32 | 88.73 |
| | 11/18/1999 | | | | | | 9.14 | 9.48 | 88.57 |
| | 1/2/2001 | | | | | | 9.05 | 9.39 | 88.66 |
| | 4/16/2001 | | | | | | 7.9 | 8.24 | 89.81 |
| | 11/7/2001 | | | | | | 8.28 | 8.62 | 89.43 |
| | 5/7/2002 | | | | | | 8.17 | 8.51 | 89.54 |
| | 9/23/2002 | | | | | | 8.95 | 9.29 | 88.76 |
| | 12/19/2002 | | | | | | 9.13 | 9.47 | 88.58 |
| | 10/10/2005 | | | | | | 9.02 | 9.36 | 88.69 |
| | 11/3/2006 | Abandonded prior to source soil removal | | | | | | | |
| **MW-2P** | 1/2/2001 | 97.93 | 98.28 | 5.00 | 68.30 | 73.30 | dry | -- | -- |
| | 4/16/2001 | | | | | | 25.39 | 25.74 | 72.54 |
| | 11/7/2001 | | | | | | 26.10 | 26.45 | 71.83 |
| | 5/7/2002 | | | | | | 26.13 | 26.48 | 71.80 |
| | 12/19/2002 | | | | | | 27.04 | 27.39 | 70.89 |
| | 10/10/2005 | | | | | | 26.50 | 26.85 | 71.43 |
| | 11/3/2006 | Abandonded prior to source soil removal | | | | | | | |
| **MW-3** | 9/16/1999 | 97.18 | 97.58 | 10.00 | 83.18 | 93.18 | 7.99 | 8.39 | 89.19 |
| | 11/3/1999 | | | | | | 8.13 | 8.53 | 89.05 |
| | 11/18/1999 | | | | | | 8.30 | 8.70 | 88.88 |
| | 1/2/2001 | | | | | | 8.01 | 8.41 | 89.17 |
| | 4/16/2001 | | | | | | 6.90 | 7.30 | 90.28 |
| | 11/7/2001 | | | | | | 7.39 | 7.79 | 89.79 |
| | 5/7/2002 | | | | | | 7.12 | 7.52 | 90.06 |
| | 12/19/2002 | | | | | | 8.35 | 8.75 | 88.83 |
| | 10/10/2005 | | | | | | 7.93 | 8.33 | 89.25 |
| | 12/29/2006 | | | | | | 7.41 | 7.81 | 89.77 |
| | 3/28/2007 | | | | | | 7.14 | 7.54 | 90.04 |
| | 7/19/2007 | | | | | | 8.34 | 8.74 | 88.84 |
| | 10/8/2007 | | | | | | 8.28 | 8.68 | 88.90 |
| | | | | | | | | | |
| **MW-4** | 9/16/1999 | 96.26 | 96.73 | 10.00 | 82.73 | 92.73 | 7.72 | 8.19 | 88.54 |
| | 11/3/1999 | | | | | | 7.80 | 8.27 | 88.46 |
| | 11/18/1999 | | | | | | 7.94 | 8.41 | 88.32 |
| | 1/2/2001 | | | | | | 7.55 | 8.02 | 88.71 |
| | 4/16/2001 | | | | | | 6.62 | 7.09 | 89.64 |
| | 11/7/2001 | | | | | | 7.05 | 7.52 | 89.21 |
| | 5/7/2002 | | | | | | 6.89 | 7.36 | 89.37 |
| | 9/23/2002 | | | | | | 7.26 | 7.73 | 89.00 |
| | 12/19/2002 | | | | | | 7.69 | 8.16 | 88.57 |
| | 10/10/2005 | | | | | | 7.56 | 8.03 | 88.70 |
| | 12/29/2006 | | | | | | 6.69 | 7.16 | 89.57 |
| | 3/28/2007 | | | | | | 6.45 | 6.92 | 89.81 |
| | 7/19/2007 | | | | | | 7.56 | 8.03 | 88.70 |
| | 10/8/2007 | | | | | | 7.48 | 7.95 | 88.78 |
| | | | | | | | | | |
| **MW-5** | 11/18/1999 | 96.96 | 97.30 | 10.00 | 83.30 | 93.30 | 8.42 | 8.76 | 88.54 |
| | 1/2/2001 | | | | | | 7.98 | 8.32 | 88.98 |
| | 4/16/2001 | | | | | | 7.28 | 7.62 | 89.68 |
| | 11/7/2001 | | | | | | 7.66 | 8.00 | 89.30 |
| | 5/7/2002 | | | | | | 7.52 | 7.86 | 89.44 |
| | 12/19/2002 | | | | | | 8.11 | 8.45 | 88.85 |
| | 10/10/2005 | | | | | | 8.12 | 8.46 | 88.84 |
| | 12/29/2006 | | | | | | 7.20 | 7.54 | 89.76 |
| | 3/28/2007 | | | | | | 6.97 | 7.31 | 89.99 |
| | 7/19/2007 | | | | | | 8.01 | 8.35 | 88.95 |
| | 10/8/2007 | | | | | | 7.94 | 8.28 | 89.02 |
| | | | | | | | | | |
| **MW-6** | 11/18/1999 | 95.92 | 96.30 | 10.00 | 82.30 | 92.30 | 9.06 | 9.44 | 86.86 |
| | 1/2/2001 | | | | | | 8.33 | 8.71 | 87.59 |
| | 4/16/2001 | | | | | | 7.07 | 7.45 | 88.85 |
| | 11/7/2001 | | | | | | 7.70 | 8.08 | 88.22 |
| | 5/7/2002 | | | | | | 7.28 | 7.66 | 88.64 |
| | 12/19/2002 | | | | | | 8.49 | 8.87 | 87.43 |
| | 10/10/2005 | | | | | | 8.19 | 8.57 | 87.73 |
| | 12/29/2006 | | | | | | 7.22 | 7.60 | 88.70 |
| | 3/28/2007 | | | | | | 6.99 | 7.37 | 88.93 |
| | 7/19/2007 | | | | | | 8.32 | 8.70 | 87.60 |
| | 10/8/2007 | | | | | | 8.17 | 8.55 | 87.75 |
| | | | | | | | | | |
| **MW-7** | 1/2/2001 | 96.20 | 96.51 | 10.00 | 81.50 | 91.50 | 7.46 | 7.77 | 88.74 |
| | 4/16/2001 | | | | | | 6.10 | 6.41 | 90.10 |
| | 11/7/2001 | | | | | | 7.26 | 7.57 | 88.94 |
| | 5/7/2002 | | | | | | 6.73 | 7.04 | 89.47 |
| | 12/19/2002 | | | | | | 8.74 | 9.05 | 87.46 |
| | 10/10/2005 | | | | | | 8.97 | 9.28 | 87.23 |
| | 12/29/2006 | | | | | | 7.13 | 7.44 | 89.07 |
| | 3/28/2007 | | | | | | 5.41 | 5.72 | 90.79 |
| | 7/19/2007 | | | | | | 7.98 | 8.29 | 88.22 |
| | 10/8/2007 | | | | | | 8.23 | 8.54 | 87.97 |
| | | | | | | | | | |
| **MW-7P** | 1/2/2001 | 96.17 | 96.51 | 5.00 | 66.50 | 71.50 | 24.99 | 25.33 | 71.18 |
| | 4/16/2001 | | | | | | 24.00 | 24.34 | 72.17 |
| | 11/7/2001 | | | | | | 25.75 | 26.09 | 70.42 |
| | 5/7/2002 | | | | | | 26.29 | 26.63 | 69.88 |
| | 12/19/2002 | | | | | | 26.46 | 26.80 | 69.71 |
| | 10/10/2005 | | | | | | 26.42 | 26.76 | 69.75 |
| | 12/29/2006 | | | | | | 24.31 | 24.65 | 71.86 |
| | 3/28/2007 | | | | | | 23.55 | 23.89 | 72.62 |
| | 7/19/2007 | | | | | | 24.09 | 24.43 | 72.08 |
| | 10/8/2007 | | | | | | 24.29 | 24.63 | 71.88 |
| | | | | | | | | | |

**Benchmark:** Elevations are referenced to the top bolt of the fire hydrant at the northeast corner of St. Paul and Hawley Rd ; Assume elevation = 100.00'

--: Not Measured




**LEGEND:**

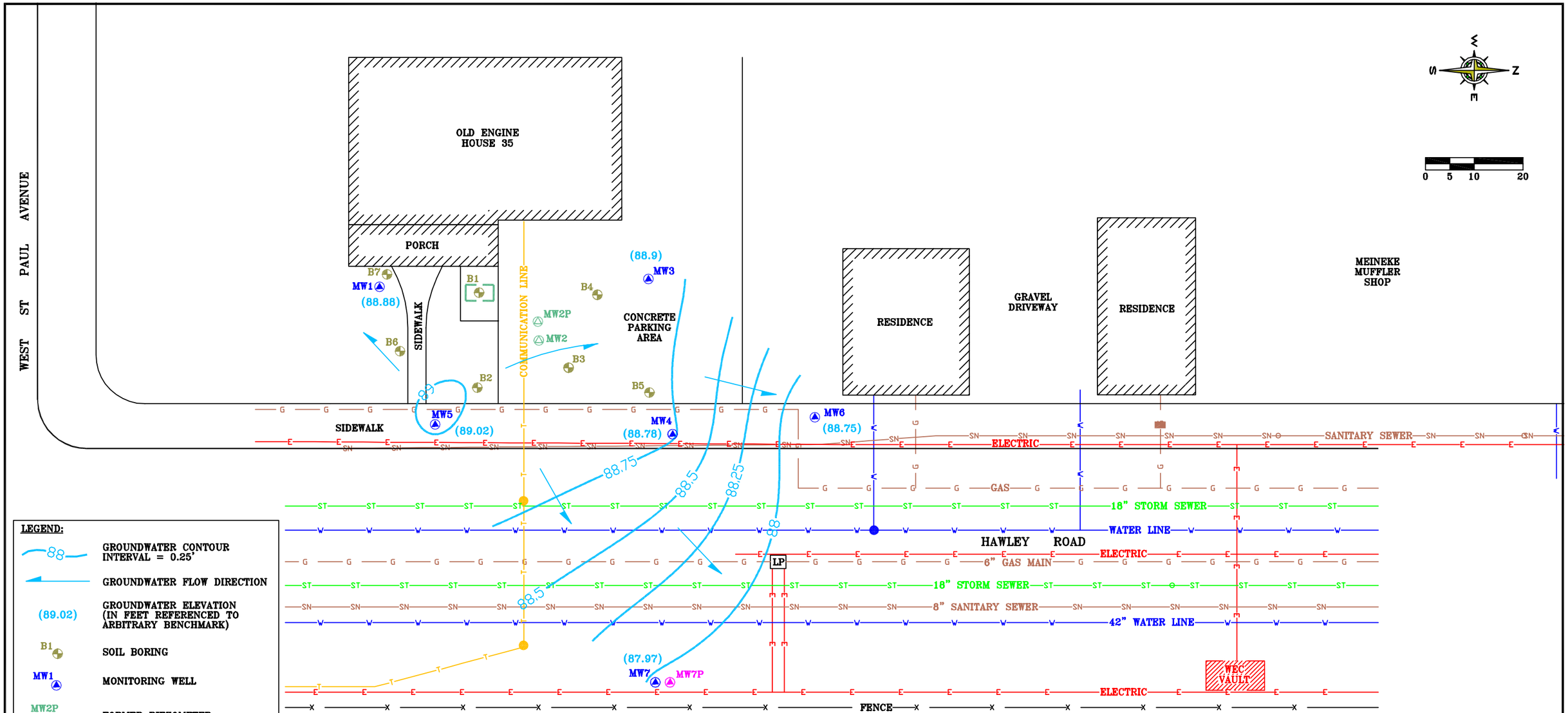
- 88 — GROUNDWATER CONTOUR INTERVAL = 0.25'
- GROUNDWATER FLOW DIRECTION
- (87.23) — GROUNDWATER ELEVATION (IN FEET REFERENCED TO ARBITRARY BENCHMARK)
- MW1 — MONITORING WELL
- FENCE
- ELECTRIC
- WATER
- SANITARY SEWER
- STORM SEWER
- TELECOMMUNICATIONS
- GAS LINE
- SUBJECT PROPERTY
- CURB LINE
- COMMUNICATION MANHOLE
- SEWER MANHOLE
- GAS-SHUT OFF VALVE
- UST TANK

GILES ENGINEERING ASSOCIATES, INC.
N8 W22350 JOHNSON RD.; WAUKESHA, WI, 53186
(262)-544-0118

FIGURE 5
GROUNDWATER CONTOUR MAP (10/10/05)
OLD ENGINE HOUSE 35
407 NORTH HAWLEY ROAD
MILWAUKEE, WISCONSIN

| DESIGNED | DRAWN | APPROVED | SCALE | DATE |
|---|---|---|---|---|
| TJB | JSZ | X | 1" = 20' | 04-25-06 |

PROJECT NO.: 1E-9811040 | CAD NO.: 1E9811040A




**LEGEND:**

- GROUNDWATER CONTOUR INTERVAL = 0.25'
- GROUNDWATER FLOW DIRECTION
- (89.02) GROUNDWATER ELEVATION (IN FEET REFERENCED TO ARBITRARY BENCHMARK)
- B1 SOIL BORING
- MW1 MONITORING WELL
- MW2P FORMER PIEZOMETER
- MW2 FORMER MONITORING WELL
- FORMER UST
- FENCE
- ELECTRIC
- WATER
- SANITARY SEWER
- STORM SEWER
- SEWER MANHOLES
- TELECOMMUNICATIONS
- COMMUNICATION MANHOLE
- GAS LINE
- GAS-SHUT OFF VALVE

GILES ENGINEERING ASSOCIATES, INC.
N8 W22350 JOHNSON DRIVE, SUITE A1
WAUKESHA, WI 53186 (262)544-0118

FIGURE 3
GROUNDWATER CONTOUR MAP (10/8/07)
OLD ENGINE HOUSE 35
407 NORTH HAWLEY ROAD
MILWAUKEE, WISCONSIN

| DESIGNED | DRAWN | SCALE | DATE | REVISED |
|---|---|---|---|---|
| ELB | JSZ | 1"=20' | 11-07-07 | -- |
| PROJECT NO.: 1E-9811040 | | | CAD No. 1E9811040H | |

# TABLE 2
# SOIL ANALYTICAL RESULTS
# PETROLEUM VOLATILE ORGANIC COMPOUNDS/VOLATILE ORGANIC COMPOUNDS

Old Engine House 35
407 Hawley Road
Milwaukee, Wisconsin
Project No. 1E-9811040

| Parameters | Sample location | | | | | | | | | | | | | | | | | | | | | | Generic NR 720 RCLs | NR 746 Table 1 Product Indicator Values |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | S1 | S2 | S3 | B-1a | B-1b | B-2 | B-3a | B-3b | B-4 | B-5a | B-5b | B-6 | B-7 | MW-4a | MW-4b | MW-5 | MW-6 | MW-2P | MW-2P | MW-7 | MW-7P | MeoH Blanks | | |
| Depth Interval (feet) | 2.5 | 8* | 8* | 8-9* | 19* | 6-7 | 6-7 | 11-12* | 7-8 | 6-7 | 9-11* | 6-8 | 8-10* | 4-6 | 12-14* | 6-8 | 4-6 | 2-4 | 8-10* | 8-10* | 28-30* | --- | | |
| Date Collected | 12/1/98 | 12/1/98 | 12/1/98 | 5/10/99 | 5/10/99 | 5/10/99 | 5/10/99 | 5/10/99 | 5/10/99 | 5/10/99 | 5/10/99 | 5/10/99 | 5/10/99 | 8/26/99 | 8/26/99 | 11/16/99 | 11/16/99 | 12/20/00 | 12/20/00 | 12/20/00 | 12/20/00 | 11/16/99 | | |
| **PID (Instrument Units)** | BDL | 700 | 275 | 300 | BDL | BDL | 200 | 550 | BDL | 64 | 8 | BDL | BDL | 700 | 300 | BDL | BDL | 2 | 700 | BDL | BDL | --- | --- | --- |
| **GRO (mg/kg)** | --- | --- | --- | 5,320 | 4.1 | <0.58 | 106 | 1,340 | 0.93j | 5.8 | <0.58 | <0.61 | <0.60 | <0.56 | 0.72j | <0.58 | <0.62 | 3.7 | 5,460 | 0.81j | 2.3 | 0.72j | 100 | --- |
| **DRO (mg/kg)** | 2.2 | 3,210 | 5.8 | 21,500 | 120 | 26 | 91 | 5,770 | 29 | 12 | 83 | 112 | 97 | 34 | 5.9 | 2.8j | 3j | 2.8 | 455 | 1.2 | 3.1 | --- | 100 | --- |
| **Detected PVOCs/VOCs (ug/kg)[1]** | | | | | | | | | | | | | | | | | | | | | | | | |
| Benzene | <19 | 6,090 | 637 | # 14,700 # | <25 | <25 | 3,030 | # 9,700 # | <25 | <50 | <25 | <25 | <25 | <72 | <19 | <25 | <25 | 48j | # 87,500 #[2] | <15 | <15 | <25 | 5.5 | 8,500 |
| Ethylbenzene | <18 | # 18,000 # | 513 | # 118,000 # | <25 | <25 | 3,370 | # 31,800 # | <25 | <50 | <25 | <25 | <25 | 1,720 | <18 | <25 | <25 | <16 | # 208,000 #[2] | <15 | <14 | <25 | 2,900 | 4,600 |
| Methyl-tert-butyl-ether | <14 | <267 | <14 | <2,500 | <25 | <25 | <50 | <500 | <25 | <50 | <25 | <25 | <25 | <53 | <14 | <25 | <25 | <24 | <2,310 | <22 | <22 | <25 | --- | --- |
| Toluene | <21 | # 39,000 # | 411 | # 100,000 # | <25 | <25 | 10,100 | # 76,500 # | <25 | 98j | <25 | <25 | <25 | <79 | <21 | <25 | <25 | 38j | # 650,000 #[2] | <17 | <16 | <25 | 1,500 | 38,000 |
| 1,2,4-Trimethylbenzene | <28 | 32,200 | 821 | # 300,000 # | <25 | <25 | 5,370 | 54,300 | <25 | <50 | <25 | <25 | <25 | 3,620 | <27 | <25 | <25 | <19 | # 336,000 #[2] | <17 | <17 | <25 | --- | 83,000 |
| 1,3,5-Trimethylbenzene | <22 | # 29,100 # | 688 | # 279,000 # | <25 | <25 | 4,570 | # 14,400 # | <25 | <50 | <25 | <25 | <25 | 1,440 | <22 | <25 | <25 | 47j | # 106,000 #[2] | <20 | <19 | <25 | --- | 11,000 |
| Xylene (total) | <60 | # 56,100 # | 1,060 | # 574,000 # | <58 | <58 | 14,400 | # 141,300 # | <58 | <117 | <58 | <58 | <58 | 2,416 | <59 | <50 | <50 | <49 | # 835,000 #[2] | <45 | <44 | <25 | 4,100 | 42,000 |
| Isopropylbenzene | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | <25 | <25 | <20 | 15,900 [2] | <19 | <18 | <25 | --- | --- |
| n-Propylbenzene | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | <25 | <25 | <17 | 65,200 [2] | <16 | <16 | <25 | --- | --- |
| Naphthalene | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | <25 | <25 | <47 | # 56,600 #[2] | <43 | <42 | <25 | --- | 2,700 |
| Sec-Butylbenzene | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | <25 | <25 | <21 | 7,350 [2] | <19 | <19 | <25 | --- | --- |

PID: Photoionization Detector
GRO: Gasoline Range Organics
BDL: Below detection limit
DRO: Diesel Range Organics
VOCs: Volatile Organic Compounds
PVOCs: Petroleum Volatile Organic Compounds
*: Soil sample collected at or below the groundwater table
---: Not Applicable/Not Analyzed

ug/kg: Micrograms per kilogram; equivalent to parts per billion (ppb)
mg/kg: Milligrams per kilogram; equivalent to parts per million (ppm)
j: Result detected between the laboratory limit of detection and the limit of quantitation
[1] For a complete list of VOCs analyzed and the laboratory detection limits, see Appendix K.
[2] Exceeded Calibration Curve
**Results indicated in red/underlined exced the NR 720 Residual Contaminant Level (RCL) based on groundwater protection**
**Results indicated in Brown/# Exceed the NR 746 Free Product Indicator Value**
Soil samples S1, S2, and S3 were collected during UST Closure Assessment on December 1, 1998.

# TABLE 3
# SOIL ANALYTICAL RESULTS
# POLYNUCLEAR AROMATIC HYDROCARBONS

Old Engine House 35
407 Hawley Road
Milwaukee, Wisconsin
Project No. 1E-9811040

| Analytes | | Sample Locations | | | | | | WDNR RCLs | |
|---|---|---|---|---|---|---|---|---|---|
| | | B-1a | B-3a | MW-2P | | MW-7 | MW-7P | Groundwater Pathway (ug/kg) | Direct Contact Non-Industrial (ug/kg) |
| Sample Date | | 5/10/1999 | 5/10/1999 | 12/20/2000 | | 12/20/2000 | 12/20/2000 | | |
| Sample Depth (feet) | | 8-9 | 6-7 | 2-4 | 8-10 | 8-10 | 28-30 | | |
| PID (Instrument Units) | | 300 | 200 | 2 | 700 | BDL | BDL | | |
| Polynuclear Aromatic Hydrocarbons (PAHs) (ug/kg)[1] | 1-Methyl Naphthalene | 16,500 | 109j | <58 | **43,200** [2] | <54 | <529 | 23,000 | 1,100,000 |
| | 2-Methyl Naphthalene | **26,900** | 184 | <55 | **51,200** [2] | <51 | <495 | 20,000 | 600,000 |
| | Acenaphthene | 16,000 | <70 | <74 | 15,700 | <69 | <675 | 38,000 | 900,000 |
| | Acenaphthylene | **15,400** | <61 | <65 | **31,400** [2] | <60 | <585 | 700 | 18,000 |
| | Anthracene | 303j | <11 | <12 | 405 | <11 | <110 | 3,000,000 | 5,000,000 |
| | Benzo (a) anthracene | 61 | 2.3j | <1.5 | 47 | <1.4 | <13 | 17,000 | 88 |
| | Benzo (a) pyrene | <31 | 3.3j | <3.3 | <32 | <3.1 | <30 | 48,000 | 9 |
| | Benzo (b) fluoranthene | <22 | <2.2 | <2.4 | 33j | <2.2 | <21 | 360,000 | 88 |
| | Benzo (ghi) perylene | <29 | 3.1j | <3.2 | <31 | <3.0 | 29 | 6,800,000 | 1,800 |
| | Benzo (k) fluoranthene | <5.7 | 0.65j | <0.62 | <5.9 | 0.73j | 7.9j | 870,000 | 880 |
| | Chrysene | 217 | <6.9 | <7.3 | 152j | <6.8 | <66 | 37,000 | 8,800 |
| | Dibenzo (a,h) anthracene | <10 | 1.6j | <1.1 | <11 | <1 | <10 | 38,000 | 9 |
| | Fluoranthene | 5,050 | <28 | <30 | 1,140 | <28 | <270 | 500,000 | 600,000 |
| | Fluorene | 2,260 | <7.6 | 21j | 3,830 | 8.8j | <73 | 100,000 | 600,000 |
| | Indeno (1,2,3-cd) pyrene | <88 | <9.1 | <9.7 | <92 | <9 | 119j | 680,000 | 88 |
| | Naphthalene | **24,300** | 260j | <102 | **52,000** [2] | <94 | <922 | 400 | 20,000 |
| | Phenanthrene | 1,030 | 9.1j | <6.9 | 1,770 | <6.4 | <63 | 1,800 | 18,000 |
| | Pyrene | 908 | <9.8 | <10 | 1,280 | <9.6 | <94 | 8,700,000 | 500,000 |

**ug/kg:** Micrograms per kilogram; equivalent to parts per billion (ppb)

**PID:** Photoionization Detector

**BDL:** Below Detection Limit

**WDNR:** Wisconsin Department of Natural Resources

**j:** Result detected between the laboratory limit of detection and the limit of quantitation

[1] For a complete list of the laboratory detection limits, see Appendix K.

[2] Exceeded Calibration Curve

**Results indicated in red/underlined exceed the Suggested Residual Contaminant Level (RCL) based on groundwater protection**

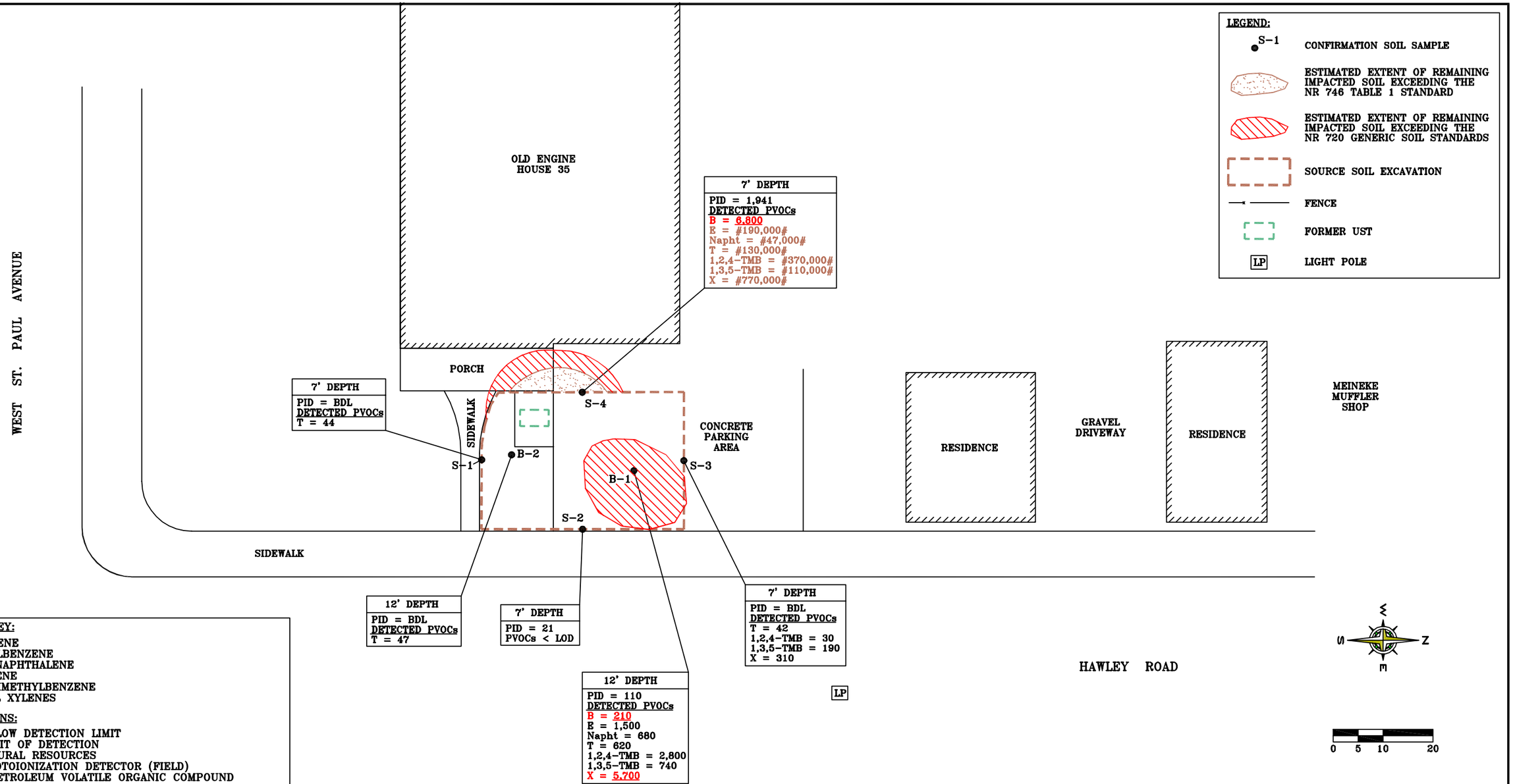
# TABLE 1

## CONFIRMATION SOIL SAMPLE ANALYTICAL RESULTS

Old Engine House 35
407 North Hawley Road
Milwaukee, Wisconsin
Project No. 1E-9811040

| Analyte | Sample Location | | | | | | NR 720.09 RCLs | NR 746.06 Table 1 (Product Indicator) |
|---|---|---|---|---|---|---|---|---|
| | S-1 | S-2 | S-3 | S-4 | B-1 | B-2 | | |
| **Sample Depth (feet)** | 7 | 7 | 7 | 7 | 12 | 12 | | |
| **Sample Date** | 11/3/2006 | 11/3/2006 | 11/3/2006 | 11/3/2006 | 11/3/2006 | 11/3/2006 | | |
| **PID (HNU)** | BDL | 21 | BDL | 1941 | 110 | BDL | | |
| **PVOCs plus Naphthalene (ug/kg)** | | | | | | | | |
| Benzene | <30 | <31 | <27 | **6,800** | **210** | <31 | 5.5 | 8,500 |
| Ethylbenzene | <30 | <31 | <27 | **# 190,000 #** | 1,500 | <31 | 2,900 | 4,600 |
| Methyl tert-Butyl Ether | <30 | <31 | <27 | <2,900 | <30 | <31 | NS | NS |
| Naphthalene | <60 | <62 | <54 | **# 47,000 #** | 680 | <61 | NS | 2,700 |
| Toluene | 44 | <31 | 42 | **# 130,000 #** | 620 | 47 | 1,500 | 38,000 |
| 1,2,4-Trimethylbenzene | <30 | <31 | 30 | **# 370,000 #** | 2,800 | <31 | NS | 83,000 |
| 1,3,5-Trimethylbenzene | <30 | <31 | 190 | **# 110,000 #** | 740 | <31 | NS | 11,000 |
| Total Xylene | <100 | <110 | 310 | **# 770,000 #** | **5,700** | <100 | 4,100 | 42,000 |

**PVOCs:** Petroleum Volatile Organic Compounds
**BDL:** Below Detectable Limits
**NS:** No Established Standard
**ug/kg:** Micrograms per kilogram; equivalent to parts per billion (ppb)
**NR:** Natural Resources Chapter of the Wisconsin Administrative Code (WAC)
**RCLs:** Residual Contaminant Levels
**PID:** Photoionization Detector
**Results indicated in red/underlined exceed the WAC NR 720.09 generic RCLs based on groundwater protection**
**Results indicated in brown/#.....# exceed the WAC NR 746.06 Table 1 Residual Petroleum Product in Soil Pores Screening Levels**




**CHEMICAL KEY:**

- -B: BENZENE
- -E: ETHYLBENZENE
- -Napht: NAPHTHALENE
- -T: TOLUENE
- -TMB: TRIMETHYLBENZENE
- -X: TOTAL XYLENES

**ABBREVIATIONS:**

- -BDL: BELOW DETECTION LIMIT
- -LOD: LIMIT OF DETECTION
- -NR: NATURAL RESOURCES
- -PID: PHOTOIONIZATION DETECTOR (FIELD)
- -PVOC: PETROLEUM VOLATILE ORGANIC COMPOUND
- -WAC: WISCONSIN ADMINISTRATIVE CODE
- -WDNR: WISCONSIN DEPARTMENT OF NATURAL RESOURCES

**NOTES:**

FIELD PID RESULTS EXPRESSED IN INSTRUMENT UNITS

PVOC RESULTS EXPRESSED IN MICROGRAMS PER KILOGRAM (ug/kg) EQUIVALENT TO PARTS PER BILLION (ppb)

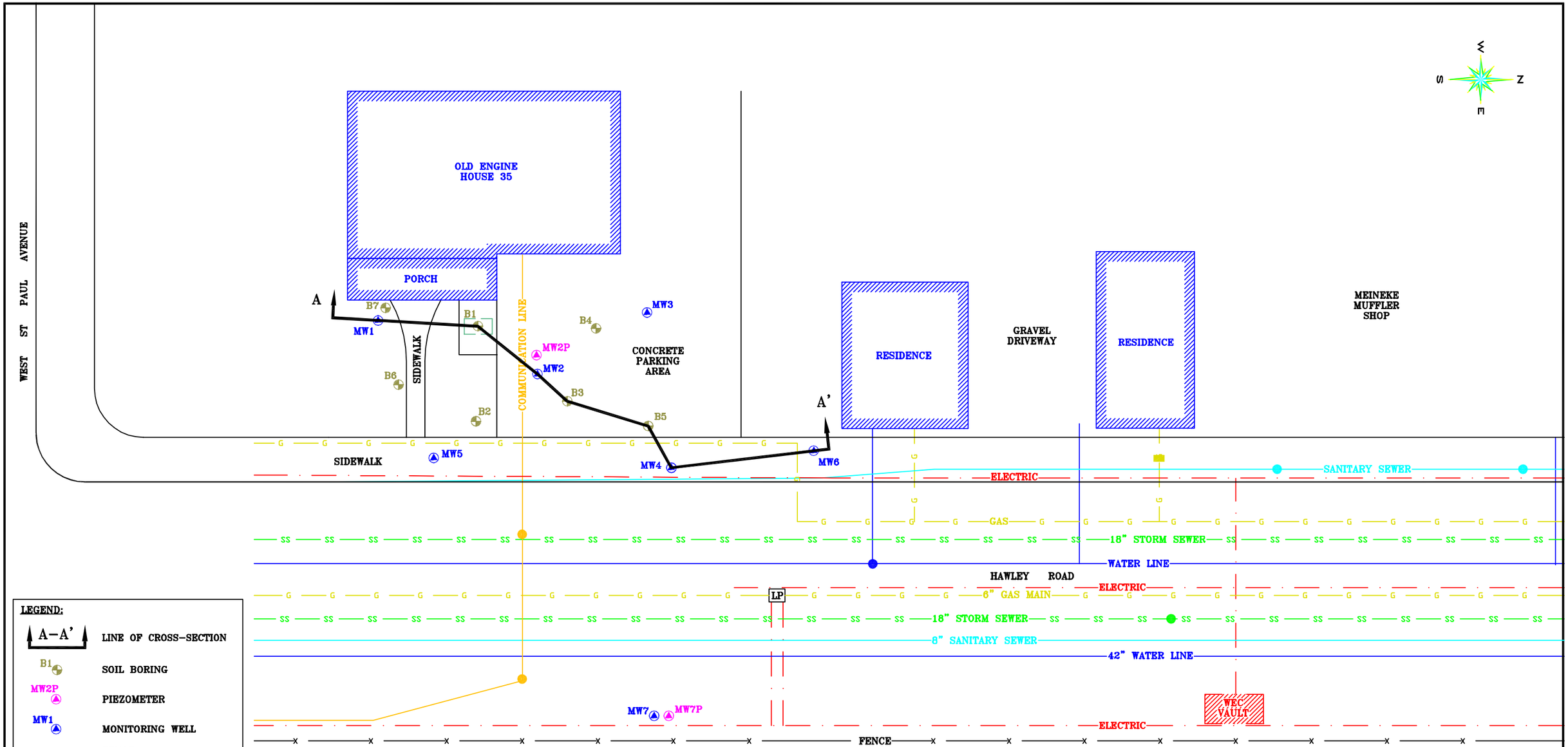
RESULTS INDICATED IN RED/UNDERLINED EXCEED THE WAC NR 720.09 GENERIC RESIDUAL CONTAMINANT LEVEL BASED ON GROUNDWATER PROTECTION

RESULTS INDICATED IN BROWN/# EXCEED THE WAC NR 746-TABLE 1 RESIDUAL PETROLEUM PRODUCT IN SOIL PORES SCREENING LEVELS

GILES ENGINEERING ASSOCIATES, INC.
N8 W22350 JOHNSON DRIVE, SUITE A1
WAUKESHA, WI 53186 (262)544-0118

FIGURE 2
CONFIRMATION SOIL SAMPLE ANALYTICAL RESULTS
OLD ENGINE HOUSE 35
407 NORTH HAWLEY ROAD
MILWAUKEE, WISCONSIN

| DESIGNED | DRAWN | SCALE | DATE | REVISED |
|---|---|---|---|---|
| TJB | JSZ | 1"=20' | 11-30-06 | 11-06-07 |
| PROJECT NO.: 1E-9811040 | | | CAD No. 1E9811040E | |




LEGEND:

- A–A' — LINE OF CROSS-SECTION
- B1 — SOIL BORING
- MW2P — PIEZOMETER
- MW1 — MONITORING WELL
- FENCE
- ELECTRIC
- WATER
- SANITARY SEWER
- STORM SEWER
- TELECOMMUNICATIONS
- GAS LINE
- SUBJECT PROPERTY
- CURB LINE
- COMMUNICATION MANHOLE
- SEWER MANHOLE
- GAS-SHUT OFF VALVE
- UST TANK

GILES ENGINEERING ASSOCIATES, INC.
N8 W22350 JOHNSON RD.; WAUKESHA, WI, 53186
(262)-544-0118

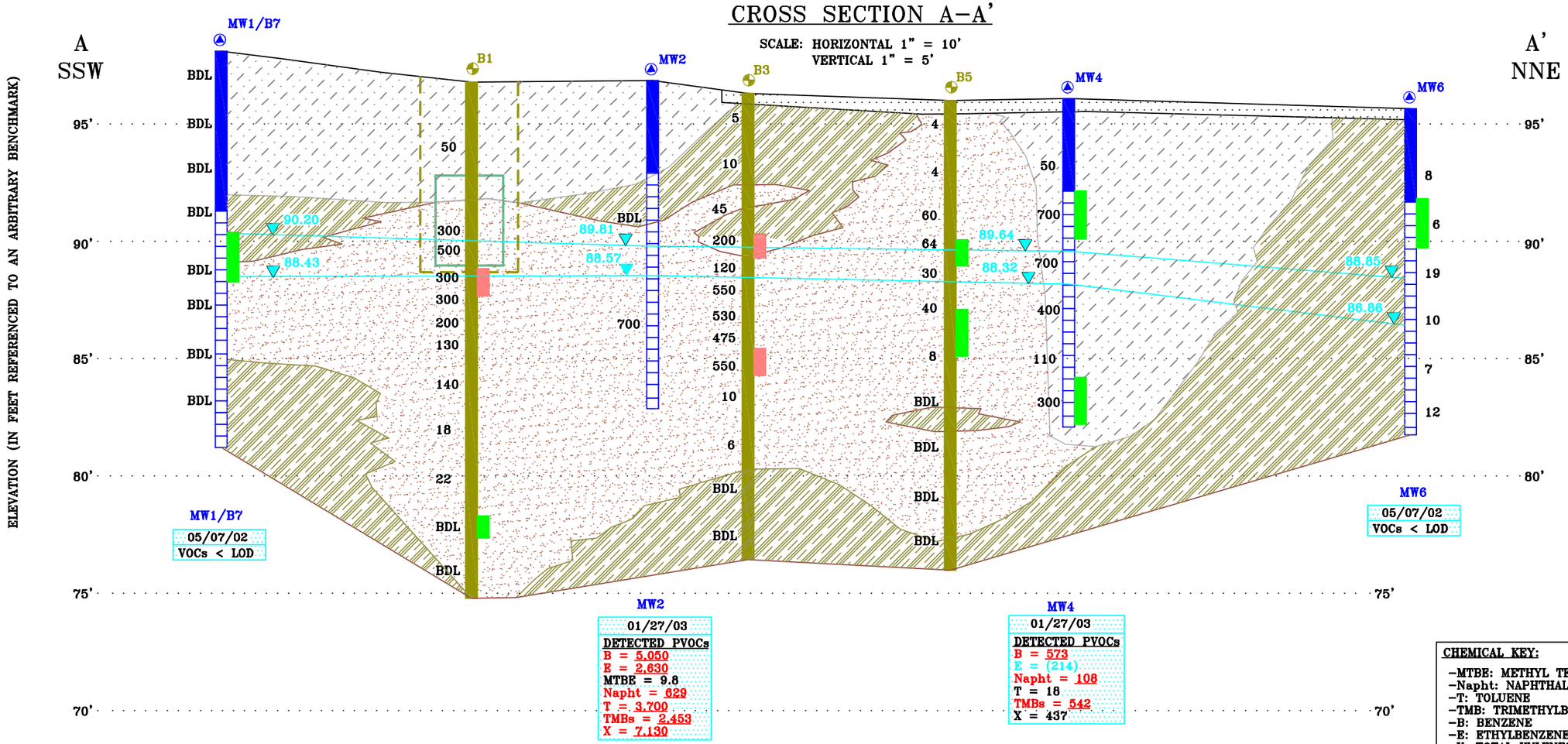
FIGURE 3
CROSS-SECTION LOCATION PLAN
OLD ENGINE HOUSE 35
407 NORTH HAWLEY ROAD
MILWAUKEE, WISCONSIN

| DESIGNED | DRAWN | APPROVED | SCALE | DATE |
|---|---|---|---|---|
| TJB | JSZ | X | 1" = 20' | 04-25-06 |

PROJECT NO.: 1E-9811040 | CAD NO.: 1E9811040B

# CROSS SECTION A–A'

SCALE: HORIZONTAL 1" = 10'
VERTICAL 1" = 5'




**CHEMICAL KEY:**

- –MTBE: METHYL TERT BUTYL ETHER
- –Napht: NAPHTHALENE
- –T: TOLUENE
- –TMB: TRIMETHYLBENZENE
- –B: BENZENE
- –E: ETHYLBENZENE
- –X: TOTAL XYLENES

**ABBREVIATIONS:**

- –LOD: LIMIT OF DETECTION
- –VOC: VOLATILE ORGANIC COMPOUNDS

**NOTES:**

VOC, PAH AND Pb RESULTS EXPRESSED IN MICROGRAMS PER LITER (ug/l) EQUIVALENT TO PARTS PER BILLION (ppb)

RESULTS INDICATED IN BLUE ARE ABOVE THE WISCONSIN ADMINISTRATIVE CODE PREVENTIVE ACTION LIMITS (PAL)

RESULTS INDICATED IN RED ARE ABOVE THE WISCONSIN ADMINISTRATIVE CODE ENFORCEMENT STANDARD (ES)

**LEGEND:**

- B4 — SOIL BORING
- MW2 — MONITORING WELL
- 90.20 — HIGH GROUNDWATER LEVEL (04/16/01)
- 88.43 — LOW GROUNDWATER LEVEL (11/18/99)
- WELL SCREEN
- SAMPLE INTERVAL FOR LABORATORY ANALYSIS
- UST REMOVAL EXCAVATION
- FORMER 550 GALLON GASOLINE/DIESEL UST

**LEGEND:**

- SOIL SAMPLE CONTAINING PVOC CONCENTRATIONS ABOVE NR 720 AND/OR NR 746 LEVELS
- SOIL SAMPLE CONTAINING PVOC CONCENTRATIONS BELOW NR 720 LEVELS
- 22 — PHOTOIONIZATION DETECTOR (PID) READING
- BDL — BELOW PID DETECTION LIMIT
- 05/07/02 / VOCs < LOD — INDICATED THE MOST RECENT GROUNDWATER QUALITY DATA AT WELL LOCATION

**SOIL KEY:**

- CONCRETE
- FILL
- SILTY FINE SAND TO FINE SANDY SILT
- SILTY CLAY


GILES ENGINEERING ASSOCIATES, INC.
N8 W22350 JOHNSON RD.; WAUKESHA, WI, 53186
(262)–544–0118


FIGURE 4
CROSS SECTION A–A'
OLD ENGINE HOUSE 35
407 NORTH HAWLEY ROAD
MILWAUKEE, WISCONSIN

| DESIGNED | DRAWN | APPROVED | SCALE | DATE |
|---|---|---|---|---|
| TJB | JSZ | X | 1" = 10' | rev. 04–25–06 |
| PROJECT NO.: 1E–9811040 | | | CAD No. E8110403 | |

City of Milwaukee

Department of City Development

Housing Authority
Redevelopment Authority
City Plan Commission
Historic Preservation Commission

**Julie A. Penman**
**Commissioner**

**Michal A. Dawson**
**Deputy Commissioner**

I, Gregory J. Shelko, Special Deputy Commissioner of the Department of City Development, state that the City of Milwaukee is the fee owner of the property now known as 407 North Hawley Road, Milwaukee, Wisconsin. The City acquired the property by a Warranty Deed dated February 7, 1927 and recorded with the Register of Deeds on February 21, 1927 as Document No. 1499805 on Volume 1105, Page 618. A portion of the property was subsequently dedicated as public right of way in 1965. The remaining property is contaminated as identified in BRRTS No. 03-41-208829. The portion of property lies between the eastside of the building and North Hawley Road. The full property is described as Lots 13 and 14, Block 5, in Resubdivision of Government Heights in the Southwest ¼ of Section 26, Town 7 North, Range 21 East, in the City of Milwaukee, Milwaukee Country, State of Wisconsin excluding that part dedicated as public right of way.

City of Milwaukee

By: _____
Gregory J. Shelko
Special Deputy Commissioner
Department of City Development

Date: 5/5/3

809 North Broadway, Milwaukee, Wisconsin, Phone (414) 286-5900
Mailing Address: P.O. Box 324, Milwaukee, WI, 53201-0324
Internet Address: www.mkedcd.org Business Information: www.milwaukeebiz.com
T.D.D. Numbers: Rent Assistance 286-2921 and Community Services 286-3504

GILES
ENGINEERING ASSOCIATES, INC.
GEOTECHNICAL, ENVIRONMENTAL & CONSTRUCTION MATERIALS CONSULTANTS

• Atlanta, GA
• Dallas, TX
• Los Angeles, CA
• Milwaukee, WI
• Orlando, FL
• Washington, D.C.

April 26, 2006

Mr. Ronald Leonhardt
City Clerk, City of Milwaukee
200 E. Wells Street, Room 205
Milwaukee, WI 53202

RE: **Notice of Residual Petroleum Impacts Within Public Street or Right-of-Way**
Old Engine House #35
407 North Hawley Road
Milwaukee, Wisconsin
WDNR BRRTS #03-41-208829
Project No. 1E-9811040

Dear Mr. Leonhardt:

Enclosed please find a copy of the Notice of Residual Petroleum Impacts letter which was submitted to the City of Milwaukee-Department of Public Works. Chapter NR 726.05 (2)(b)(4) of the Wisconsin Administrative Code requires the Municipal Clerk and Municipal Department responsible for maintaining the street or highway be given written notification of the potential presence of petroleum impacts within the right-of-way. The attached letter serves as this notification. Please place a copy of this notification in the appropriate files.

If you have any questions or comments regarding this notification, please feel free to contact us at (262) 544-0118.

Sincerely,

**GILES ENGINEERING ASSOCIATES, INC.**

Thomas J. Bauman, P.G.
Hydrogeologist

Richard A. Kormanik, P.E.
Senior Project Manager

Distribution: City Clerk, City of Milwaukee
Attn: Mr. Ronald Leonhardt (1)
City of Milwaukee
Attn: Mr. Dennis Nelson (1)
Wisconsin Department of Natural Resources
Attn: Ms. Victoria Stovall (1)

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N8 W22350 Johnson Drive • Suite A1 • Waukesha, WI 53186
262 / 544-0118 • Fax 262 / 549-5868 • E-Mail milwauke@gilesengr.com

GILES
ENGINEERING ASSOCIATES, INC.
GEOTECHNICAL, ENVIRONMENTAL & CONSTRUCTION MATERIALS CONSULTANTS

• Atlanta, GA
• Dallas, TX
• Los Angeles, CA
• Milwaukee, WI
• Orlando, FL
• Washington, D.C.

April 26, 2006

Mr. Jeffrey Polenske
City Engineer, City of Milwaukee
Department of Public Works
Infrastructure Services Division
841 North Broadway
Milwaukee, WI 53202

RE: **Notice of Residual Petroleum Impacts Within Public Street or Right-of-Way**
Old Engine House #35
407 North Hawley Road
Milwaukee, Wisconsin
WDNR BRRTS #03-41-208829
Project No. 1E-9811040

Dear Mr. Polenske:

On behalf of of the City of Milwaukee, Giles Engineering Associates, Inc. (Giles) is notifying the City of Milwaukee Department of Public Works regarding the potential presence of residual petroleum hydrocarbon impacts within soil and groundwater located along the east property line (adjacent to North Hawley Road) at the above referenced site. Giles has petitioned the Wisconsin Department of Natural Resources (WDNR) for case closure for the site, conditional upon filing of the appropriate GIS registry information and notifying municipal authorities of petroleum impacts potentially extending into public right-of-ways.

Giles is notifying your department pursuant to Wisconsin Administrative Code, Chapter NR 726.05 (2)(b)(4), of the potential presence of soil and groundwater impacts beneath the right-of-way, which may exceed applicable Wisconsin Administrative Code, Chapter NR 720 and NR 140 standards for soil and groundwater, respectively.

Giles has enclosed Groundwater and Soil Quality Maps showing soil boring and monitoring well locations and historical soil and groundwater quality. Petroleum-impacted groundwater above Wisconsin Administrative Code (WAC), Chapter NR 140 standards is present at the location of Monitoring Wells MW4 and MW5 in the Hawley Road right-of-way. Petroleum impacted soil above WAC NR 720 Soil Standards are also present near the Hawley Street right-of-way.

If future construction activities disturb soil in the vicinity of the above referenced site, the excavated soil may be considered a solid waste and require proper disposal. In addition, if future construction activities require dewatering, or if groundwater is to be otherwise extracted in the vicinity of the above-referenced

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ENGINEERING ASSOCIATES, INC.

site, the groundwater shall be sampled and managed in compliance with applicable statutes and rules.

If you have any questions or comments, please contact us at (262) 544-0118.

Sincerely,

**GILES ENGINEERING ASSOCIATES, INC.**

Thomas J. Bauman, P.G.
Hydrogeologist

Richard A. Kormanik, P.E.
Senior Project Manager

Enclosure: Groundwater and Soil Quality Maps (2)

Distribution: City Engineer, City of Milwaukee
Attn: Mr. Jeffrey Polenske (1)
City of Milwaukee
Attn: Mr. Dennis Nelson (1)
Wisconsin Department of Natural Resources
Attn: Ms. Victoria Stovall (1)
City of Milwaukee City Clerk
Attn: Mr. Ronald Leonhardt (1)

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