State of Wisconsin
Department of Natural Resources
P.O. Box 7921, Madison, WI 53707-7921

GIS REGISTRY (Cover Sheet)

Form 4400-280 (R 6/13)

Source Property Information

CLOSURE DATE: 04/10/2014

BRRTS #: **02-41-535783**

FID #: 341104610

ACTIVITY NAME: One Hour Martinizing Former

DATCP #:

PROPERTY ADDRESS: 401 W Wisconsin Ave

PECFA#:

MUNICIPALITY: Milwaukee

PARCEL ID #: 3610726110

***WTM COORDINATES:**

X: **689671** Y: **287205**

** Coordinates are in WTM83, NAD83 (1991)*

WTM COORDINATES REPRESENT:

- (●) Approximate Center Of Contaminant Source
- ( ) Approximate Source Parcel Center

Please check as appropriate: (BRRTS Action Code)

CONTINUING OBLIGATIONS

Contaminated Media for Residual Contamination:

- [x] Groundwater Contamination > ES *(236)*
  - [ ] Contamination in ROW
  - [ ] Off-Source Contamination

  *(**note:** for list of off-source properties see "Impacted Off-Source Property Information, Form 4400-246")*

- [x] Soil Contamination > *RCL or **SSRCL *(232)*
  - [ ] Contamination in ROW
  - [ ] Off-Source Contamination

  *(**note:** for list of off-source properties see "Impacted Off-Source Property Information, Form 4400-246")*

Site Specific Obligations:

- [ ] Soil: maintain industrial zoning *(220)*

  *(**note:** soil contamination concentrations between non-industrial and industrial levels)*

- [ ] Structural Impediment *(224)*
- [ ] Site Specific Condition *(228)*
- [x] Cover or Barrier *(222)*
  - [x] Direct Contact
  - [x] Soil to GW Pathway
- [x] Vapor Mitigation *(226)*
- [ ] Maintain Liability Exemption *(230)*

  *(**note:** local government unit or economic development corporation was directed to take a response action)*

Monitoring Wells:

Are all monitoring wells properly abandoned per NR 141? *(234)*

(●) Yes ( ) No ( ) N/A

** Residual Contaminant Level*
***Site Specific Residual Contaminant Level*

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
2300 N. Dr. Martin Luther King, Jr. Drive
Milwaukee WI 53212-3128

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

April 10, 2014

Redevelopment Authority City of Milwaukee
Attn: Mathew Reimer
809 N Broadway Ave.
Milwaukee, WI 53202

KEEP THIS DOCUMENT WITH YOUR PROPERTY RECORDS

SUBJECT: Final Case Closure with Continuing Obligations
One Hour Martinizing (Former), 435 W. Wisconsin Ave., Milwaukee WI
DNR BRRTS Activity #: 02-41-535783
FID #: 341104610

Dear Mr. Reimer:

The Department of Natural Resources (DNR) considers the One Hour Martinizing (Former) site closed, with continuing obligations. No further investigation or remediation is required at this time. However, you, future property owners, and occupants of the property must comply with the continuing obligations as explained in the conditions of closure in this letter. Please read over this letter closely to ensure that you comply with all conditions and other on-going requirements. Provide this letter and any attachments listed at the end of this letter to anyone who purchases, rents or leases this property from you.

This final closure decision is based on the correspondence and data provided, and is issued under chs. NR 726 and 727, Wis. Adm. Code. The Southeast Regional (SER) Closure Committee reviewed the request for closure on April 3, 2014. The Closure Committee reviews environmental remediation cases for compliance with state laws and standards to maintain consistency in the closure of these cases.

This site was the location of the One Hour Martinizing Store a dry cleaning facility. Currently this site is used as a parking lot. An excavation of more than 3000 tons of contaminated soils was conducted along with monitored natural attenuation. The conditions of closure and continuing obligations required were based on the property being used for commercial purposes.

Continuing Obligations

The continuing obligations for this site are summarized below. Further details on actions required are found in the section Closure Conditions.

- Groundwater contamination is present above ch. NR 140, Wis. Adm. Code enforcement standards.
- Residual soil contamination exists that must be properly managed should it be excavated or removed.
- Pavement must be maintained over contaminated soil and the DNR must approve any changes to this barrier.

The DNR fact sheet, "Continuing Obligations for Environmental Protection", RR-819, helps to explain a property owner's responsibility for continuing obligations on their property. The fact sheet may be obtained at http://dnr.wi.gov/files/PDF/pubs/rr/RR819.pdf.

GIS Registry

This site will be included on the Bureau for Remediation and Redevelopment Tracking System (BRRTS on the Web) at http://dnr.wi.gov/topic/Brownfields/clean.html, to provide public notice of residual contamination and of any continuing obligations. The site can also be viewed on the Remediation and Redevelopment Sites Map (RRSM), a map view, under the Geographic Information System (GIS) Registry layer, at the same web address.

DNR approval prior to well construction or reconstruction is required for all sites shown on the GIS Registry, in accordance with s. NR 812.09 (4) (w), Wis. Adm. Code. This requirement applies to private drinking water wells and high capacity wells. To obtain approval, complete and submit Form 3300-254 to the DNR Drinking and Groundwater program's regional water supply specialist. This form can be obtained on-line at http://dnr.wi.gov/topic/wells/documents/3300254.pdf.

All site information is also on file at the Southeastern Regional DNR office, at 2300 North Doctor Martin Luther King Jr. Dr. Milwaukee, WI 53212. This letter and information that was submitted with your closure request application, including any maintenance plan and maps, can be found as a Portable Document Format (PDF) in BRRTS on the Web.

Prohibited Activities

Certain activities are prohibited at closed sites because maintenance of a barrier is intended to prevent contact with any remaining contamination. When a barrier is required, the condition of closure requires notification of the DNR before making a change, in order to determine if further action is needed to maintain the protectiveness of the remedy employed. The following activities are prohibited on any portion of the property where pavement is required, as shown on the attached map Engineered Barrier Map, Figure D.1, unless prior written approval has been obtained from the DNR:

- removal of the existing barrier or cover;
- replacement with another barrier or cover;
- excavating or grading of the land surface;
- filling on covered or paved areas;
- plowing for agricultural cultivation;
- construction or placement of a building or other structure;
- changing the use or occupancy of the property to a residential exposure setting, which may include certain uses, such as single or multiple family residences, a school, day care, senior center, hospital, or similar residential exposure settings

Closure Conditions

Compliance with the requirements of this letter is a responsibility to which the current property owner and any subsequent property owners must adhere. DNR staff will conduct periodic prearranged inspections to ensure that the conditions included in this letter and the attached maintenance plans are met. If these requirements are not followed, the DNR may take enforcement action under s. 292.11, Wis. Stats. to ensure compliance with the specified requirements, limitations or other conditions related to the property.

Residual Groundwater Contamination (ch. NR 140, 812, Wis. Adm. Code)
Groundwater contamination greater than enforcement standards is present as shown on the attached map Detailed Site Map, Figure B.1.b. If you intend to construct a new well, or reconstruct an existing well, you will need prior DNR approval.

Residual Soil Contamination (ch. NR 718, chs. 500 to 536, Wis. Adm. Code or ch. 289, Wis. Stats.)
Soil contamination remains at depth as indicated on the attached map Detailed Site Map, Figure B.1.b. If soil in the specific locations described above is excavated in the future, the property owner at the time of excavation must sample and analyze the excavated soil to determine if contamination remains. If sampling confirms that

contamination is present, the property owner at the time of excavation will need to determine whether the material is considered solid or hazardous waste and ensure that any storage, treatment or disposal is in compliance with applicable standards and rules. Contaminated soil may be managed in accordance with ch. NR 718, Wis. Adm. Code, with prior DNR approval.

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.

Depending on site-specific conditions, construction over contaminated soils or groundwater may result in vapor migration of contaminants into enclosed structures or migration along newly placed underground utility lines. The potential for vapor inhalation and means of mitigation should be evaluated when planning any future redevelopment, and measures should be taken to ensure the continued protection of public health, safety, welfare and the environment at the site.

Cover or Barrier (s. 292.12 (2) (a), Wis. Stats., s. NR 726.15, s. NR 727.07 Wis. Adm. Code)
The pavement, that exists in the location shown on the attached map Engineered Barrier Map, Figure D.1 shall be maintained in compliance with the attached maintenance plan in order to minimize the infiltration of water and prevent additional groundwater contamination that would violate the groundwater quality standards in ch. NR 140, Wis. Adm. Code, and to prevent direct contact with residual soil contamination that might otherwise pose a threat to human health.

A cover or barrier for industrial land uses, or certain types of commercial land uses may not be protective if the use of the property were to change such that a residential exposure would apply. This may include, but is not limited to single or multiple family residences, a school, day care, senior center, hospital or similar settings. In addition, a cover or barrier for multi-family residential housing use may not be appropriate for use at a single family residence.

A request may be made to modify or replace a cover or barrier. The replacement or modified cover or barrier must be protective of the revised use of the property, and must be approved in writing by the DNR prior to implementation.

The attached maintenance plan and inspection log (DNR form 4400-305) are to be kept up-to-date. Inspections shall be conducted annually, in accordance with the attached maintenance plan. Submit the inspection log to the DNR only upon request.

Future Concern: Chlorinated solvents remain in the groundwater and soil at the locations below the asphalt, as shown on the attached map Engineered Barrier Map, Figure D.1, at levels that may be of concern for vapor intrusion in the future, depending on construction and occupancy of a building. This site is a parking lot that is uninhabited. Therefore, before a building is constructed and/or an existing building is modified, the property owner must notify the DNR at least 45 days before the change. Vapor control technologies are required for construction of occupied buildings unless the property owner assesses the vapor pathway and DNR agrees that vapor control technologies are not needed.

In Closing

Please be aware that the case may be reopened pursuant to s. NR 727.13, Wis. Adm. Code, for any of the following situations:

- 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,
- if the property owner does not comply with the conditions of closure, with any deed restrictions

applied to the property, or with a certificate of completion issued under s. 292.15, Wis. Stats, or
- a property owner fails to maintain or comply with a continuing obligation (imposed under this closure approval letter).

The DNR appreciates your efforts to restore the environment at this site. If you have any questions regarding this closure decision or anything outlined in this letter, please contact Greg Michael at (262) 574-2176, or at Greg.Michael@Wisconsin.gov.

Sincerely,

Mark Drewz for

Pamela Mylotta, Team Supervisor
SER Remediation & Redevelopment Program

Attachments:
- remaining groundwater contamination map, Figure B.1.b
- remaining soil contamination map, Figure B.1.b
- extent of cap map, with extent of cap, Figure D.1
- maintenance plan, Attachment D
- inspection log, DNR Form 4400-305

cc: Sigma Environmental Services, Inc. Stephen Meer

COVER CAP MAINTENANCE PLAN

JANUARY 2014

Property Located at:

401-441 W. Wisconsin Avenue
Milwaukee, WI

FID #341104610, WDNR BRRTS/Activity #02-41-535783

Lots 1 through 10 in Block 68, in the Plat of Town of Milwaukee on the West Side of the River, in the Southeast ¼ of Section 29, in Township 7 North, Range 22 East, in the City and County of Milwaukee, State of Wisconsin, together with the vacated East-West alley and the vacated North-South alley abutting said lots. Tax ID# 361-0726-110-3

Introduction

This document is the Maintenance Plan for an asphalt and concrete pavement cap at the above-referenced property in accordance with the requirements of s. NR 724.13(2), Wisconsin Administrative Code. The maintenance activities relate to the existing asphalt and concrete pavement occupying the area over the contaminated soil on-site.

More site-specific information about this property may be found in:

- The case file in the DNR Southeast regional office
- BRRTS on the Web (DNR's internet based data base of contaminated sites): http://dnr.wi.gov/botw/SetUpBasicSearchForm.do
- GIS Registry PDF file for further information on the nature and extent of contamination: http://dnrmaps.wisconsin.gov/imf/imf.jsp?site=brrts2; and
- The DNR project manager for Milwaukee County.

Description of Contamination

Soil contaminated by select metals and polynuclear aromatic hydrocarbon constituents is located at depths within 4 feet of the ground surface at sporadic locations across the site. Soil contaminated by chlorinated VOC contamination is located at depths generally between 4 to 10 feet in the northwest portion of the site. Groundwater contaminated by chlorinated VOC constituents is located at a depth of 9 to 10 feet below the ground surface in the northwest portion of the site. The extent of the soil and groundwater contamination is shown on the attached Figure D.1.

Description of the Cap to be maintained

The Cap consists of asphalt pavement approximately 3.5 inches thick and concrete pavement approximately 4 inches thick. The two types of pavement cover the entire site as shown on the attached Figure D.1. A copy of the construction specifications for the new asphalt pavement in the remedial excavation area is attached.

Cover Barrier Purpose

The asphalt/concrete cap over the contaminated soil and groundwater serve as a barrier to prevent direct human contact with residual soil contamination that might otherwise pose a threat to human health. These asphalt/concrete pavement also act as a partial infiltration barrier to minimize future soil-to-groundwater contamination migration that would violate the groundwater standards in ch. NR 140, Wisconsin Administrative Code. Based on the current and future use of the property, the barrier should function as intended unless disturbed.

Annual Inspection

The asphalt or concrete pavement overlying the contaminated groundwater plume or soil and as depicted in Figure D.1 will be inspected once a year, normally in the spring after all snow and ice is gone, for deterioration, cracks and other potential problems that can cause additional infiltration into or exposure to underlying soils. The inspections will be performed by the property owner or their designated representative. The inspections will be performed to evaluate damage due to settling, exposure to the weather, wear from traffic, increasing age and other factors. Any area where soils have become or are likely to become exposed and where infiltration from the surface will not be effectively minimized will be documented. A log of the inspections and any repairs will be maintained by the property owner and is included as Exhibit B, Cap Inspection Log. The log will include recommendations for necessary repair of any areas where underlying soils are exposed and where infiltration from the surface will not be effectively minimized. Once repairs are completed, they will be documented in the inspection log. A copy of the inspection log will be kept at the address of the property owner and available for submittal or inspection by Wisconsin Department of Natural Resources ("WDNR") representatives upon their request.

Maintenance Activities

If problems are noted during the annual inspections or at any other time during the year, repairs will be scheduled as soon as practical. Repairs can include patching and filling or larger resurfacing or construction operations. In the event that necessary maintenance activities expose the underlying soil, the owner must inform maintenance workers of the direct contact exposure hazard and provide them with appropriate personal protection equipment ("PPE"). The owner must also sample any soil that is excavated from the site prior to disposal to ascertain if contamination remains. The soil must be treated, stored and disposed of by the owner in accordance with applicable local, state and federal law.

In the event the asphalt or concrete pavement overlying the contaminated groundwater plume or soil are removed or replaced, the replacement barrier must be equally impervious. Any replacement barrier will be subject to the same maintenance and inspection guidelines as outlined in this Maintenance Plan unless indicated otherwise by the WDNR or its successor.

The property owner, in order to maintain the integrity of the asphalt or concrete pavement will maintain a copy of this Maintenance Plan at their office and make it available to all interested parties (i.e. on-site employees, contractors, future property owners, etc.) for viewing.

Prohibition of Activities and Notification of DNR Prior to Actions Affecting a Cover or Cap

The following activities are prohibited on any portion of the property where pavement is required as shown on the attached map, unless prior written approval has been obtained from the Wisconsin Department of Natural Resources: 1) removal of the existing barrier; 2) replacement with another barrier; 3) excavating or grading of the land surface; 4) filling on capped or paved areas; 5) plowing for agricultural cultivation; or 6) construction or placement of a building or other structure.

Amendment or Withdrawal of Maintenance Plan

This Maintenance Plan can be amended or withdrawn by the property owner and its successors with the written approval of WDNR.

Contact Information
January 2014

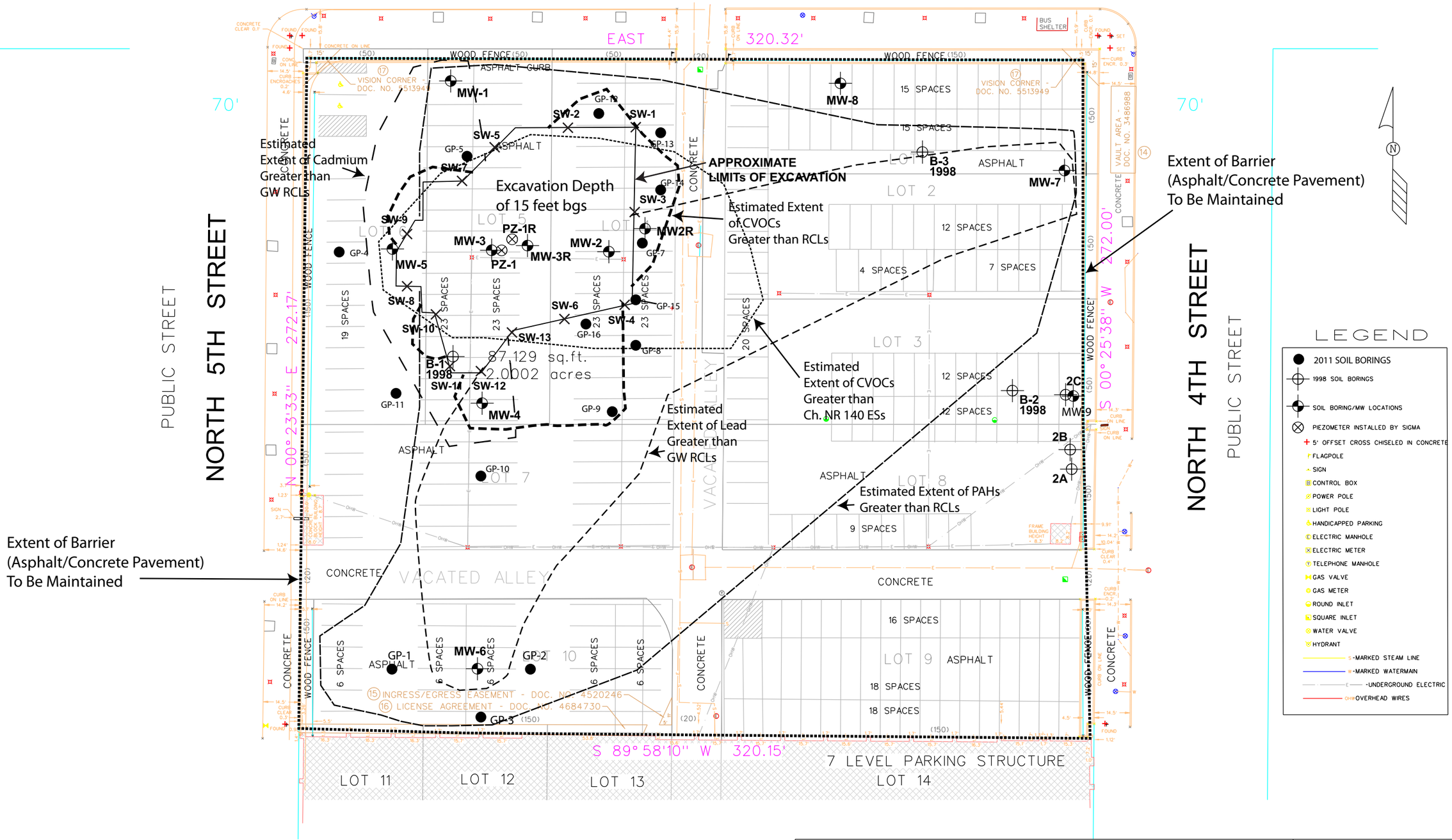
Property Owner: Redevelopment Authority of the City of Milwaukee
809 N. Broadway Ave.
Milwaukee, WI 53202
(414) 286-5693
Attention: Mr. Mat Reimer

Consultant: THE SIGMA GROUP, INC.
1300 W. Canal Street
Milwaukee, WI 53233
(414) 643-4200
Attention: Mr. Stephen Meer, P.E.

WDNR: Ms. Margaret Brunette
2300 N. Dr. Martin Luther King Jr. Drive
Milwaukee, WI 53212
(414) 263-8557

BARRIER INSPECTION and MAINTENANCE LOG

Inspection Date	Inspector	Condition of Cap	Recommendations	Has recommended maintenance from previous inspection been implemented?



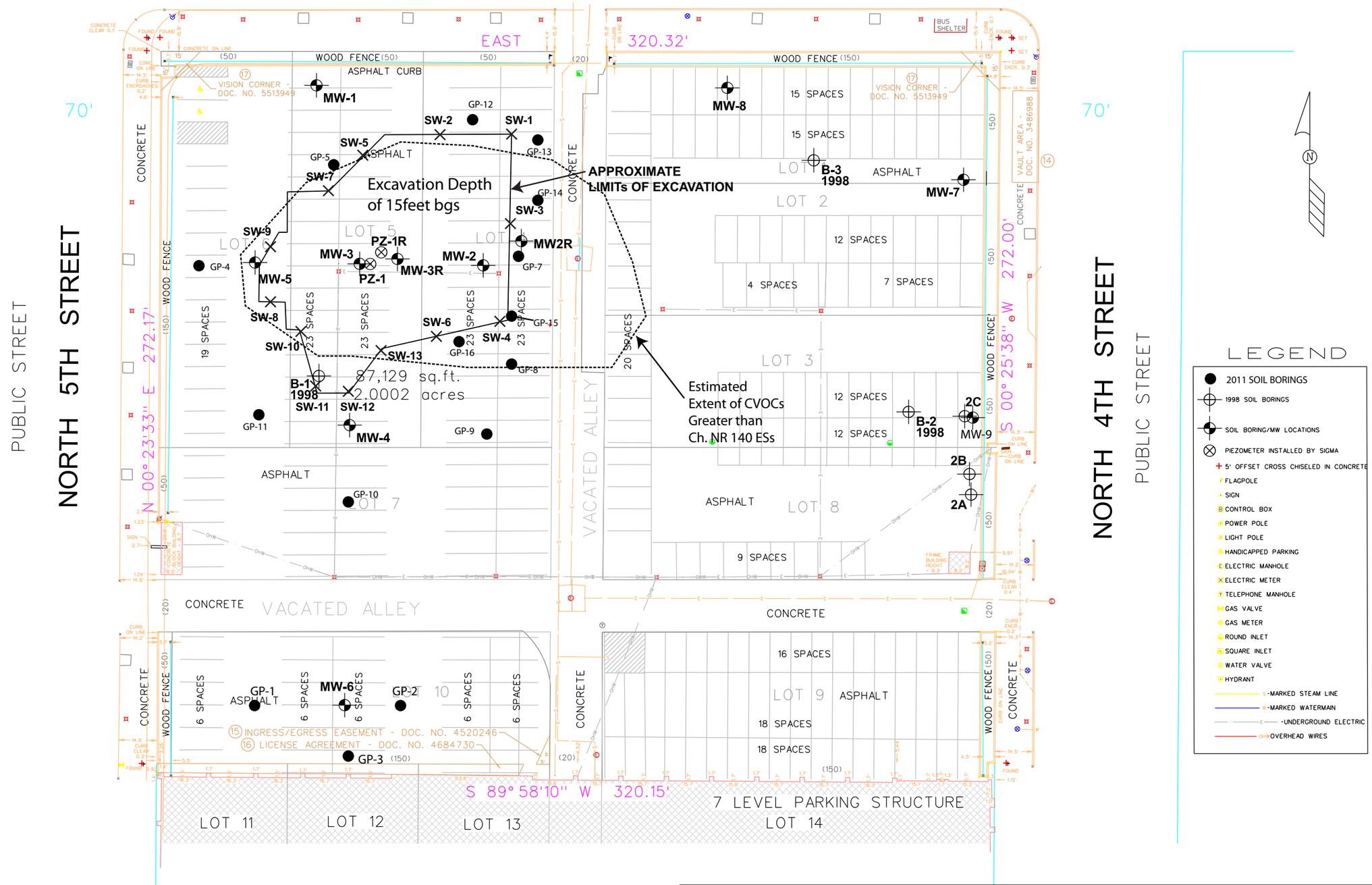
401-441 W. WISCONSIN AVENUE

SIGMA ENVIRONMENTAL SERVICES, INC.

DATE: 09-03-04	DR. BY: RMJ	DR.# 8823-001E-A	SCALE: 1" = 40'

ENGINEERED BARRIER MAP

FIGURE D.1



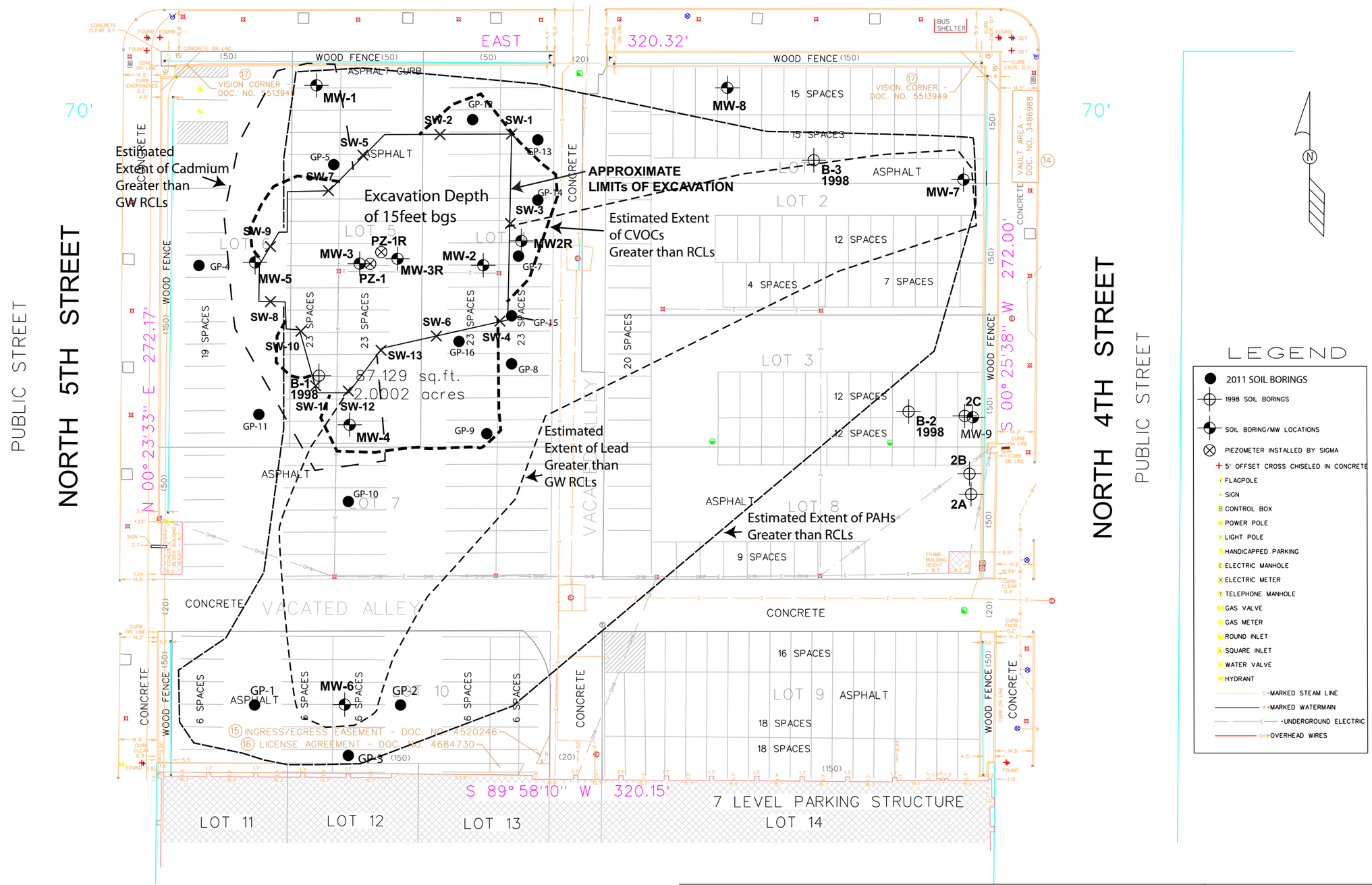
401-441 W. WISCONSIN AVENUE

SIGMA ENVIRONMENTAL SERVICES, INC.

DATE: 09-03-04	DR. BY: RMJ	DR.# 8823-001E-A	SCALE: 1" = 40'

GROUNDWATER ISOCONCENTRATION MAP

FIGURE B.3.b



401-441 W. WISCONSIN AVENUE

SIGMA ENVIRONMENTAL SERVICES, INC.

DATE: 09-03-04	DR. BY: RMJ	DR.# 8823-001E-A	SCALE: 1" = 40'

PRE/POST REMAINING SOIL CONTAMINATION MAP

FIGURE B.2.c

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Case Closure - GIS Registry

RECEIVED
JAN 30 2014
By

SUBMIT AS UNBOUND PACKAGE IN THE ORDER SHOWN

Notice: Pursuant to ch. 292, Wis. Stats., and chs. NR 726 and 746, Wis. Adm. Code, this form is required to be completed for case closure requests. The closure of a case means that the Department of Natural Resources (DNR) has determined that no further response is required at that time based on the information that has been submitted to the DNR. All sections of this form must be completed unless otherwise directed by the Department. Incomplete forms will be considered "administratively incomplete" and processing of the request will stop until required information is provided. Any section of the form not relevant to the case closure request must be fully filled out or explained on a separate page and attached to the relevant section of this form. DNR will consider your request administratively complete when the form and all sections are completed, all attachments are included, and the applicable fees required under ch. NR 749, Wis. Adm. Code, are included, and sent to the proper destinations. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Site Information

BRRTS No. 02-41-535783	Parcel ID No. 361-0726-110-3		
BRRTS Activity (Site) Name One Hour Martinizing (Former)	WTM Coordinates X 689671	Y 287205	
Street Address 435 W. Wisconsin Avenue	City Milwaukee	State WI	ZIP Code 53203
Responsible Party (RP) Name Redevelopment Authority of the City of Milw.			
Company Name Redevelopment Authority of the City of Milw.			
Street Address 809 North Broadway Avenue	City Milwaukee	State WI	ZIP Code 53202
Phone Number (414) 286-5693	Email mathew.reimer@milwaukee.gov		

☒ Check here if the RP is the owner of the source property.

Environmental Consultant Name Stephen Meer			
Consulting Firm Sigma Environmental			
Street Address 1300 West Canal Street	City Milwaukee	State WI	ZIP Code 53233
Phone Number (414) 643-4200	Email smeer@thesigmagroup.com		
Acres Ready For Use 2	Voluntary Party Liability Exemption Site? ○ Yes ○ No		

Fees and Mailing of Closure Request

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

1. **Send a copy of page one** of this form and the applicable ch. NR 749, Wis. Adm. Code, fee(s) to the DNR regional Environmental Program Associate at **http://dnr.wi.gov/topic/Brownfields/Contact.html**. Check all fees that apply:

   ☒ $750 Closure Fee $1,050 ☒ $200 GIS Registry Fee for Soil $300

   ☒ $250 GIS Registry Fee for Groundwater Lost Well(s) $350 Total Amount of Payment $ $1,700

2. **Send one paper copy and one e-copy on compact disk of the entire closure package** to the Regional Project Manager assigned to your site. Submit as *unbound, separate documents* in the order and with the titles prescribed by this form. For electronic document submittal requirements, see **http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf.**

Site Summary

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

1. **General Site Information and Site History**
   A. **Site Location**: Describe the physical location of the site, both generally and specific to its immediate surroundings.
   The site is located in the northwest 1/4 of Section 29, Town 7 North, Range 22 East. The lot is located on the south side of W. Wisconsin Avenue between N. 4th Street and N. 5th Street. Adjoining the site to the north is W. Wisconsin Avenue, North 4th Street to the east, an above-ground parking structure to the south, and N. 5th Street to the west.

   B. **Prior and current site usage**: Specifically describe the current and historic occupancy and types of use.
   The site is currently an asphalt-paved surface parking lot. Historic land uses of the property include dry cleaners, printers, sign painter, paint shop, tire center, and an envelope manufacturer.

   C. Describe how and when site contamination was discovered.
   Site contamination was discovered in August 1998 when Phase II ESA subsurface site investigation activities were completed by Graef Anhalt Schloemer.

   D. Describe the type(s) and source(s) or suspected source(s) of contamination.
   Identified soil impacts at the site include PAH impacts and CVOC impacts. PAH impacts are likely associated with fill material while CVOC impacts are likely associated with historic dry cleaning activities at the site.

   E. Other relevant site description information (or enter Not Applicable).
   Not Applicable

   F. List BRRTS activity site name and number for all other BRRTS activities at this property, including closed cases.
   No other BRRTS numbers are associated with the site.

   G. List BRRTS activity/site name(s) and number(s) for all properties immediately adjacent to this site, and those impacted by contamination from this site.
   The Wisconsin Center 03-41-272095
   Boston Store Bldg Site 02-41-264005
   Avenue Fabricare 02-41-378911

   H. **Current zoning** (e.g. industrial, commercial, residential) for the site and for neighboring properties, and how verified (Provide documentation in Attachment G).
   The site is zoned for commercial and this was confirmed through the City of Milwaukee Assessment Detail website.

2. **General Site Conditions**
   A. Soil/Geology
      i. Describe soil type(s) and relevant physical properties, thickness of soil column across the site, vertical and lateral variations in soil types.
      Based on information obtained during Sigma's subsurface investigation, the site appears to be covered with five to eleven feet of fill material comprised of soft clayey silt containing gravel and traces of sand along with variable amounts of concrete and brick debris in some areas. The lithology beneath the fill material generally consists of deposits of fine clayey silts and silty clays with intermittent seams of fine silty sands to the maximum depth investigated, 32 feet bgs.

      ii. Describe the composition, location and lateral extent, and depth of fill or waste deposits on the site.
      Fill material covers the site and appears to vary from five to eleven feet of fill material. The fill material is comprised of soft clayey silt containing gravel and traces of sand along with variable amounts of concrete and brick debris in some areas.

      iii. Depth to bedrock, bedrock type, and whether or not it was encountered during the investigation.
      Based on regional information, bedrock consists of dolomite that is greater than 50 feet below ground surface and was not encountered during investigation.

      iv. Describe the nature and locations of current surface cover(s) across the site (e.g. natural vegetation, landscaped areas, gravel, hard surfaces, and buildings).
      The site is currently a surface parking lot entirely covered by asphalt pavement.

   B. Groundwater

i. **Discuss depth to groundwater and piezometric elevations.** Describe and explain depth variations, and whether free product affects measurement or water table elevation. Describe the stratigraphic unit(s) where water table was found or which were measured for piezometric levels.

Based on water level measurements taken over the course of eight years, groundwater depths range from approximately 8 to 11.5 feet bgs. The groundwater table was found in the fill material as well as the underlying apparently native clayey silts, silty clays, and silty sand seams. No free product has been identified within the site monitoring wells.

ii. Discuss groundwater flow direction(s), shallow and deep. Describe and explain flow variations, including fracture flow if present.

Based on static groundwater elevations, groundwater consistently flows in an easterly direction across the site.

iii. Discuss groundwater flow characteristics: hydraulic conductivity, flow rate and permeability, or state why this information was not obtained.

This information was not obtained as it was not significant to evaluation of remedial action.

iv. Identify and describe locations/distance of potable and/or municipal Wells within 1200 feet of the site.

No potable wells are located within 1200 feet of the site.

3. Site Investigation Summary

A. General

i. Provide a brief summary of the site investigation history. Reference previous submittals by name and date. Describe site investigation activities undertaken since the last submittal for this project and attach the appropriate documentation in Attachment C, if not previously provided.

Site investigation activities completed prior to June 2011 were summarized in Sigma's report titled "Site Investigation Summary Report & Remedial Action Plan," dated July 2011.
Seven additional Geoprobe soil borings (GP-12 through GP-18) were completed on June 30, 2011 in the area of the proposed remedial excavation to further delineate chlorinated volatile organic compounds (CVOCs) impacts to soil. Three soil samples were collected from each soil boring and submitted for laboratory analysis of VOCs. Following completion, each soil boring was abandoned in accordance with ch. NR 141, Wisc. Admin. Code. Soil boring logs, borehole abandonment forms, and soil laboratory analytical reports for borings GP-12 through GP-18 are included in Attachment C.1.

ii. Identify whether contamination extends beyond the source property boundary, describe the off-site media (e.g., soil, groundwater, etc.) impacted, and the vertical and horizontal extent of off-site impacts.

Based on investigation activities completed to date, contamination does not extend beyond the source property boundaries.

iii. Identify any structural impediments to the completion of site investigation and/or remediation and whether these impediments are on the source property or off the source property. Identify the type and location of any structural impediment (e.g., structure) that also serves as the performance standard barrier for protection of the direct contact or the groundwater pathway.

No structural impediments to investigation or remediation are present at the site.

B. Soil

i. Describe degree and extent of **soil contamination** at and from this site. Relate this to known or suspected sources and known or potential receptors/migration pathways.

Cadmium and lead have been reported greater than RCLs for the protection of groundwater pathway within select shallow soil samples collected from across the site. Select PAH constituents were also reported greater than applicable RCLs for the direct contact and/or protection of groundwater pathway within shallow soil samples collected from across the site. The source of the metal and PAH impacts is likely the presence of historic fill. These impacts are currently located under the existing site pavement; in addition, significant cadmium, lead and PAH impacts to groundwater have not been observed through sampling of site monitoring wells.
Chlorinated volatile organic compound impacts to soil, likely associated with historic drycleaning operations at the site, have been identified within the northwest portion of the site. The identified impacts to soil are located primarily at depth (6 to 12 feet bgs). The identified impacts to soil are located beneath existing asphalt pavement at the site and have impacted shallow groundwater beneath the site. There are no structures located at the site; therefore the risk associated with vapor intrusion of the identified impacts is limited and has not been evaluated through the collection of soil gas samples.

ii. Describe the level and types of **soil contaminants** found in the upper four feet of the soil column.

Cadmium and lead have been reported greater than RCLs for the protection of groundwater pathway within select shallow soil samples collected from across the site. Select PAH constituents were also reported greater than applicable RCLs for the direct contact and/or protection of groundwater pathway within shallow soil samples collected from across

the site.
Detection of CVOC impacts within shallow soil samples at the site has been limited; the highest concentrations have been identified at depths greater than 4 feet.

iii. Identify the ch. NR 720, Wis. Adm. Code, method used to establish the soil cleanup standards for this site: for example, a Residual Contaminant Level (RCL) , a Site-Specific Residual Contaminant Level (SSRCL), or a Performance Standard as determined under ss NR 720.09, 720.11 and 720.19, Wis. Adm. Code. Identify the land use classification that was used to establish cleanup standards. Provide a copy of the supporting calculations/information in Attachment C.

Generic Residual Contaminant Levels as described in ch. NR 720 were used as the soil cleanup standards for this site.

C. Groundwater

i. Describe degree and extent of groundwater contamination at or from this site. Relate this to known or suspected sources and known or potential receptors/migration pathways. Specifically address any potential or existing impacts to water supply wells or interception with building foundation drain systems.

Shallow groundwater impacts associated with the site are limited to concentrations of CVOC constituents greater than applicable ch. NR 140 ESs or PALs within the northwest portion of the site in the area of monitoring wells MW-2R, MW-3R and MW-5. The impacts are limited to within the site property boundaries and are defined vertically by PZ-1R. There are no potable wells located within the vicinity of the site and there are no buildings located on the site.

ii. Describe the presence of free product at the site, including the thickness, depth, and locations.
Free product has never been observed at the site.

D. Vapor

i. Describe how the vapor migration pathway was assessed, including locations where vapor or indoor air samples were collected. If the vapor pathway was not assessed, explain reasons why.

Vapor and indoor air samples were not collected at the site. There are no buildings located on-site. The identified CVOC impacts to soil and groundwater are located more than 100 feet from any off-site structure. In addition, the completed remedial activities as discussed below have removed a significant portion of the subsurface impacts. Based on the degree and extent of the identified impacts and the distance between the impacts and buildings located on adjacent properties, the risk associated with the vapor migration pathway is negligible.

ii. Identify the applicable DNR action levels and the land use classification used to establish them. Describe where the DNR action levels were reached or exceeded (e.g., sub slab, indoor air or both).
No vapor or air samples were collected; therefore no action levels were calculated.

E. Surface Water and Sediment

i. Identify whether surface water and/or sediment was assessed and describe the impacts found. If this pathway was not assessed, explain why.

The surface water/sediment pathway was not assessed due to the large distance between the nearest surface water body and the identified impacts at the site.

ii. Identify any surface water and/or sediment action levels used to assess the impacts for this pathway and how these were derived. Describe where the DNR action levels were reached or exceeded.
No surface water/sediment samples were collected; therefore no action levels were used.

4. Remedial Actions Implemented and Residual Levels at Closure

A. General: Provide a brief summary of the remedial action history. List previous remedial action report submittals by name and date. Identify remedial actions undertaken since the last submittal for this project and provide the appropriate documentation in Attachment C.

Remedial excavation activities in accordance with the plan described in Sigma's July 2011 RAP were implemented in September 2011. The excavation activities were designed to target the portion of the site where the highest concentrations of CVOC constituents within soil had been identified, namely, the areas of soil borings B-1, MW-2, MW-3 and GP-6 between depths of 8 and 12 feet bgs. A total of 3,115 tons of impacted soil were removed and hauled off-site for disposal at Waste Management's Orchard Ridge landfill under profile 113368WI. Documentation of the disposal is included in Attachment C.4. Photos of the excavation activity are included in Attachment C.6.
Thirteen soil confirmation samples (SW-1 through SW-13) were collected from excavation sidewalls (the excavation base was located below the shallow groundwater interface) and submitted for laboratory analysis of VOCs. A copy of the laboratory analytical report associated with the confirmation samples is included in Attachment C.4.
The excavation was backfilled with select overburden material from the top 4 feet of the excavation area that did not contain contain CVOC impacts based on pre-remedial soil sampling and clean, imported backfill. New asphalt pavement was installed across the excavation area following placement and compaction of backfill.
Following completion of remedial excavation activities, two replacement groundwater monitoring wells (MW-2R and MW-3R), a replacement groundwater piezometer (PZ-1R) and an additional down-gradient monitoring well (MW-9) were installed at the site. Piezometer PZ-1 was installed using an outer steel casing grouted in place to a depth of 23 feet bgs. The

piezometer was installed through the outer casing with a final depth of 31 feet bgs.
An attempt was made to install monitoring well MW-9 further to the west than its final location; however concrete debris was encountered at several locations within this area of the site and the debris prevented installation of the well. Soil boring logs and monitoring well construction forms for the groundwater monitoring wells are included in Attachment C.4.
Following installation, each of the monitoring wells and the piezometer were developed in accordance with ch. NR 141, Wisc. Admin. Code. Monitoring well development forms are included in Attachment C.4.
Four rounds of post-remediation groundwater monitoring were completed within the site monitoring well network. During each groundwater monitoring event, static water levels were measured at each well location and in-situ parameters were measured. Groundwater samples from each monitoring well were collected and submitted for laboratory analysis of VOCs; in addition, samples from select wells were collected and submitted for laboratory analysis of natural attenuation parameters such as nitrate/nitrite, sulfate, dissolved manganese and dissolved gases including ethane, ethene and methane. Laboratory analytical reports for the post-remediation groundwater sampling activities are included in Attachment C.4.

B. Describe any immediate or interim actions taken at the site under ch NR 708, Wis. Adm. Code.
No immediate or interim actions were implemented at the site.

C. Describe the *active* remedial actions taken at the site, including: type of remedial system(s) used for each media impacted; the size and location of any excavation or in-situ treatment; the effectiveness of the systems to address the contaminated media and substances; operational history of the systems; and summarize the performance of the active remedial actions. Provide any system performance documentation in Attachment A.7.

The remedial excavation work was described in Section 4.A. The excavation removed 3,115 tons of impacted soil and extended to a depth of approximately 15 feet bgs. The location of the excavation is illustrated on figures included in Attachment B.

D. Provide a discussion of the nature, degree and extent of residual contamination that will remain at the site or on off-site affected properties after case closure.

Residual contamination will be limited to shallow cadmium, lead, and PAH impacts to shallow site soil that is limited to within the site property boundaries, CVOC impacts to soil located primarily at depths between 8 to 13 feet bgs around the limits of the completed remedial excavation and CVOC impacts to shallow groundwater that are limited primarily to the northwestern portion of the site and do not extent beyond the site property boundaries.

E. Describe the remaining soil contamination within four feet of ground surface (direct contact zone) that attains or exceeds the ch. NR720, Wis. Adm. Code, standard(s) for direct contact.

Contamination within four feet of the ground surface that exceeds direct contact standards is limited to concentrations of select PAH constituents reported within soil samples collected from borings MW-1, MW-4, MW-6, MW-7, GP-1, GP-2 and GP-3.

F. Describe the remaining soil contamination in the vadose zone that attains or exceeds the soil standard(s) for the groundwater pathway.

Concentrations of cadmium, lead, and select PAH constituents were reported at concentrations greater than RCLs for the protection of groundwater pathway within shallow soil samples collected at locations located sporadically across the site. Concentrations of CVOC constituents greater than RCLs for the protection of groundwater pathway within the northwest portion of the site outside the limits of the completed remedial excavation. The extent of the residual CVOC impacts are limited to the vicinity of the completed remedial excavation.

G. Describe how the residual contamination will be addressed, including but not limited to details concerning: covers, engineering controls or other barrier features; use of natural attenuation of groundwater; and vapor mitigation systems or measures.

Residual contamination at concentrations greater than RCLs for the direct contact pathway will be addressed through the existing asphalt/concrete pavement at the site which acts as a direct contact barrier. The existing pavement will also serve to limit precipitation infiltration from contacting residual cadmium, lead, PAH and CVOC impacts greater than protection of groundwater RCLs. Natural attenuation will address residual CVOC impacts to groundwater. Vapor mitigation measures are not required based on the current site use.

H. If using natural attenuation as a groundwater remedy, describe how the data collected supports the conclusion that natural attenuation is effective in reducing contaminant mass and concentration, (e.g. stable or receding groundwater plume).

Groundwater monitoring data indicate that concentrations of PCE, TCE, cis-1,2-DCE and vinyl chloride collected from monitoring well MW-2/MW-2R, located on the down-gradient edge of the groundwater plume, exhibit decreasing trends based on Mann-Kendall statistical analyses. Data from source area well MW-3/MW-3R also indicate a decreasing trend for PCE and a stable trend for cis-1,2-DCE. Although the trend in MW-3/MW-3R data for TCE is not stable, the decrease in reported TCE concentrations from samples collected from this well between pre-remediation (8/04 and 5/11) levels and post-remediation levels is clear. In addition, reported vinyl chloride concentrations within groundwater samples collected from MW-3/3R exhibit an increasing trend; however, the increase in vinyl chloride concentrations is indicative that reductive dechlorination processes are naturally occurring at the site. Mann-Kendall statistical analyses summaries are inlcuded in Attachment A.8.
Laboratory analysis indicate the highest concentrations of dissolved gasses (ethane, ethene and methane) were present within groundwater samples collected from source area well MW-3R, providing further documentation that contaminant breakdown

processes are naturally occurring at the site.

I. Identify how all exposure pathways were removed and/or adequately addressed by immediate and/or remedial action(s) described above in paragraphs, B, C, D, E and F.

The direct contact pathway associated with residual soil impacts is adequately addressed through the engineered barriers present at the site. The migration to groundwater pathway is also addressed through the presence of engineered barriers which serve to limit precipitation infiltration. The completed soil excavation activities have reduced the amount of subsurface contamination to the point where remaining groundwater impacts will naturally attenuate to acceptable levels over time. There are currently no buildings located at the site which limits the risk associated with potential vapor intrusion from residual soil and groundwater impacts. Off-site buildings are located at distances greater than 100 feet from the identified residual impacts and are not at risk for vapor intrusion. Subsurface utilities do not appear to intersect areas of residual contamination and are not likely to act as preferential migration pathways.

J. Identify any system hardware anticipated to be left in place after site closure, and explain the reasons why it will remain.

No system hardware was installed or will be left in place.

K. Identify the need for a ch. NR 140, Wis. Adm. Code, groundwater Preventive Action Limit (PAL) or Enforcement Standard (ES) exemption, and identify the affected monitoring points and applicable substances.

The most recent groundwater sample collected from well MW-2R contained reported concentrations of PCE, TCE and vinyl chloride greater than the ES and a reported concentration of cis-1,2-DCE greater than the PAL. The most recent groundwater sample collected from monitoring well MW-3R contained reported concentrations of PCE, TCE, cis-1,2-DCE and vinyl chloride greater than ch. NR 140 ESs. The most recent groundwater sample collected from monitoring well MW-5 contained a reported concentration of MW-5 greater than the ch. NR 140 ES.

L. If a DNR action level for vapor intrusion was exceeded (for indoor air, sub slab, or both) describe where it was exceeded and how the pathway was addressed.

A WDNR action level for vapor intrusion was not exceeded as no vapor or air samples were collected.

M. Describe the surface water and/or sediment contaminant concentrations and areas after remediation. If a DNR action level was exceeded, describe where it was exceeded and how the pathway was addressed.

No surface water or sediment samples were collected during the investigation or remediation.

5. Continuing Obligations: Situations where a maintenance plan(s) and inclusion on DNR's GIS Registry are required.

Directions: Check all that apply to this case closure request:

	This scenario Applies to this Case Closure		Case Closure Scenario: Maintenance Plans and GIS Registry	Maintenance Plan (s) Required in Attachment D	GIS Registry Listing
	A. On-Site	B. Off-Site			
i.	☒	☐	Engineering Control/Barrier for Direct Contact	✓	✓
ii.	☒	☐	Engineering Control/Barrier for Groundwater Infiltration	✓	✓
iii.	☐	☐	Vapor Mitigation - post closure passive system	✓	✓
iv.	☐	☐	Vapor Mitigation - post closure active system	✓	✓
v.	☐	☒	None of the above scenarios apply to this case closure	NA	NA

6. **Continuing Obligations: Situations where inclusion on DNR's GIS Registry is required.**

Directions: Check all that apply to this case closure request:

	This scenario Applies to this Case Closure		Case Closure Scenario: GIS Registry Only	GIS Registry Listing
	A. On-Site	B. Off-Site		
i.	☒	☐	Residual soil contamination exceeds ch. NR 720 generic or site-specific RCLs	✓
ii.	☒	☐	Sites with groundwater contamination equal to or greater than the ch. NR 140, enforcement standards (ES)	✓
iii.	☐	☐	Monitoring wells: lost, transferred or remaining in use	✓
iv.	☐	☐	Structural Impediment (not as a performance standard)	✓
v.	☐	☐	Residual soil contamination remaining at ch. NR 720 Industrial Use levels	✓
vi.	☒	☐	Vapor intrusion may be future, post-closure issue if building use or land use changes	✓
vii.	☐	☒	None of the above scenarios apply to this case closure	NA

7. **Underground Storage Tanks**

A. Were any tanks, piping or other associated tank system components removed as part of the investigation or remedial action? ○ Yes ◉ No

B. Do any upgraded tanks meeting the requirements of ch. SPS 310, Wis. Adm. Code, exist on the property? ○ Yes ◉ No

C. If the answer to question 7b is yes, is the leak detection system currently being monitored? ○ Yes ○ No

Data Tables (Attachment A)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form.All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

General directions for Data Tables:

- Use bold and italics font on information of importance on tables and figures. Use **bold font** for ch. NR 140, Wis. Adm. Code, groundwater enforcement standard (ES) attainments or exceedances, and *italicized font* for ch. NR 140, Wis. Adm. Code, groundwater preventive action limit (PAL) standard attainments or exceedances.
- Do not use shading or highlighting on the analytical tables.
- Include on Data Tables the level of detection for results which are below the detection level (i.e. do not just list as no detect (ND)).
- Include the units on data tables.
- Summaries of all data must include information collected by previous consultants.
- Do not submit lab data sheets unless these have not been submitted in a previous report. Tabulate all data required in s. NR 716.15 (2)(g)3, Wis. Adm. Code, in the format required in s. NR 716.15(2)(h)3, Wis. Adm. Code.
- Include in Attachment A all of the following tables, in the order prescribed below, with the specific Closure Form titles noted on the separate attachments (e.g., Title: A.1. Groundwater Analytical Table; A.2. Pre-remedial Soil Analytical Table, etc).
- For required documents, each table (e.g., A.1., A.2., etc.,) should be a separate PDF.

A. Data Tables

A.1. **Groundwater Analytical Table(s):** Table(s) showing the analytical results and collection dates, for all groundwater sampling points e.g. monitoring wells, temporary wells, sumps, extraction wells, any potable wells and any other wells, extraction wells and any potable wells for which samples have been collected.

A.2. **Pre-remedial Soil Analytical Table(s):** Table(s) showing the soil analytical results and collection dates - prior to conducting the interim and/or remedial action. Indicate if sample was collected above or below the all-time low water table (unsaturated verses saturated).

A.3. **Post-remedial Soil Analytical Table(s):** Table(s) showing the post-remedial action soil analytical results and collection dates. Indicate if sample was collected above or below the all-time low water table (unsaturated verses saturated).

A.4. **Pre and Post Remaining Soil Contamination Soil Analytical Table(s):** Table(s) showing only the pre and post remedial action soil analytical results that exceed a Residual Contaminate Level (RCL) or a Site-Specific Residual Level (SSRCL).

A.5. **Vapor Analytical Table**: Table(s) showing type(s) of samples, sample collection methods, analytical method, sample

results, date of sample collection, time period for sample collection, method and results of leak detection, and date, method and results of communication testing.

A.6. **Other Media of Concern (e.g., sediment or surface water):** Table(s) showing type(s) of sample, sample collection method, analytical method, sample results, date of sample collection, time period for sample collection, method and results sampling.

A.7. **Water Level Elevations:** Table(s) showing all water level elevation measurements and dates from all monitoring wells. If present, free product should be noted on the table.

A.8. **Other:** This attachment should include: 1) any available tabulated natural attenuation data; 2) data tables pertaining to engineered remedial systems that document operational history, demonstrate system performance and effectiveness, and display emissions data; and (3) any other data tables relevant to case closure not otherwise noted above. If this section is not applicable, please explain the reasons why.

Maps and Figures (Attachment B)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

General Directions for all Maps and Figures:

- If any map or figure is not relevant to the case closure request, you must fully explain the reason(s) why and attach that explanation (properly labeled with the map/ figure title) in Attachment B.
- Provide on paper no larger than 11 x 17 inches, unless otherwise directed by the Department. Maps and figures may be submitted in a larger electronic size than 11x17 inches, in a portable document format (pdf) readable by the Adobe Acrobat Reader. However, those larger-size documents must be legible when printed.
- Prepare visual aids, including maps, plans, drawings, fence diagrams, tables and photographs according to the applicable portions of ss. NR 716.15(2)(h)1 and 726.05(3)(a)4.d, Wis Adm. Code.
- Do not use shading or highlights on any of the analytical tables.
- Include all sample locations.
- Contour lines should be clearly labeled and defined.
- Include in Attachment B all of the following maps and figures, in the order prescribed below, with the specific Closure Form titles noted on the separate attachments (e.g., Title: B.1. Location Map; B.2. Detailed Site Map, etc).
- For the electronic copies that are required, each map (e.g., B.1.a., B.2.a, etc.,) should be a separate PDF.

B.1. Location Maps

B.1.a. **Location Map:** A map outlining all properties within the contaminated site boundaries on a U.S.G.S. topographic map or plat map in sufficient detail to permit easy location of all impacted and/or adjacent parcels. If groundwater standards are exceeded, include the location of all potable wells, including municipal wells, within 1200 feet of the area of contamination.

B.1.b. **Detailed Site Map:** A map that shows all relevant features (buildings, roads, current ground surface cover, individual property boundaries for on-site and applicable off-site properties, contaminant sources, utility lines, monitoring wells and potable wells) within the contaminated area. This map is to show the location of all contaminated public streets, and highway and railroad rights-of-way in relation to the source property and in relation to the boundaries of groundwater contamination exceeding a ch. NR 140 Enforcement Standard (ES), and/or in relation to the boundaries of soil contamination exceeding a Residual Contaminant Level (RCL) or a Site Specific Residual Contaminant Levels (SSRCL) as determined under ss. NR 720.09, 720.11 and 720.19, Wis. Adm. Code.

B.1.c. **RR Site Map:** From RR Sites Map (http://dnrmaps.wi.gov/imf/imf.jsp?site=brrts2) attach a map depicting the source property, and all open and closed BRRTS sites within a half-mile radius or less of the property.

B.2. Soil Figures

B.2.a. **Pre-remedial Soil Contamination:** Figure(s) showing the sample location of all pre-remedial, unsaturated contaminated soil and a single contour showing the horizontal extent of each area of contiguous residual soil contamination that exceeded a Residual Contaminant Level (RCL) or a Site-Specific Residual Contaminant Level (SSRCL) as determined under ss. NR 720.09, 720.11 and 720.19, Wis. Adm. Code.

B.2.b. **Post-remedial Soil Contamination :** Figure(s) showing the sample location of all post-remedial, unsaturated contaminated soil and a single contour showing the horizontal extent of each area of contiguous residual soil contamination that exceeds a Residual Contaminant Level (RCL) or a Site-Specific Residual Contaminant Level (SSRCL) as determined under ss. NR 720.09, 720.11 and 720.19, Wis. Adm. Code. A separate contour line should be used to indicate the extent of residual direct contact exceedances.

B.2.c. **Pre/Post Remaining Soil Contamination:** Figure(s) showing the only location of all pre and post remedial residual soil sample location(s) where unsaturated contaminated soil remains after remediation and a single contour showing the horizontal extent of each area of contiguous residual soil contamination that exceeds a Residual Contaminate Level (RCL) or a Site-Specific Residual Level (SSRCL) as determined under ss. NR 720.09, 720.11 and 720.19, Wis. Admin. Code. A separate contour line should be used to indicate the extent of residual direct contact exceedances.

B.3. Groundwater Figures

B.3.a. **Geologic Cross-Section Figure(s):** One or more cross-section diagrams showing soil types and correlations across the site, water table and piezometric elevations, and locations and elevations of geologic rock units, if encountered. Display on one or more figures all of the following:

- Source location(s) and vertical extent of residual soil contamination exceeding a Residual Contaminant Level (RCL) or a Site Specific Residual Contaminant Level (SSRCL).
- Source location(s) and lateral and vertical extent if groundwater contamination exceeds a ch. NR 140 Enforcement Standard (ES)
- Surface features, including buildings and basements, and show surface elevation changes.
- Any areas of active remediation within the cross section path, such as excavations or treatment zones.
- Include a map displaying the cross-section location(s), if they are not displayed on the Detailed Site Map (Map B.1b)

B.3.b. **Groundwater Isoconcentration:** Figure(s) showing the horizontal extent of the post-remedial groundwater contamination exceeding a ch. NR 140, Wis. Adm. Code, Preventive Action Limit (PAL) and/or an Enforcement Standard (ES). Indicate the date and direction of groundwater flow based on the most recent sampling data.

B.3.c. **Groundwater Flow Direction:** Figure(s) representing groundwater movement at the site. If the flow direction varies by more than 20° over the history of the site, submit two groundwater flow maps showing the maximum variation in flow direction.

B.3.d. **Monitoring Wells:** Figure(s) showing all monitoring wells, with well identification number. Clearly designate any wells that: (1) are proposed to be abandoned; (2) cannot be located; (3) are being transferred; (4) will be retained for further sampling, or (5) have been previously abandoned.

B.4. Vapor Maps and Other Media

B.4.a. **Vapor Intrusion Map:** Map(s) showing all locations and results for samples taken to investigate the vapor intrusion pathway, in relation to remaining soil and groundwater contamination, including sub-slab, indoor air, soil vapor, ambient air, and communication testing. Show locations and footprints of affected structures and utility corridors, and/or where residual contamination poses a future risk of vapor intrusion.

B.4.b. **Other media of concern (e.g., sediment or surface water):** Map(s) showing all sampling locations and results for other media investigation. Include the date of sample collection and identify where any standards are exceeded.

B.4.c. **Other:** Include any other relevant maps and figures not otherwise noted above. (This section may remain blank)

Documentation of Remedial Action (Attachment C)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

General Directions:

- Include in Attachment C all of the following documentation, in the order prescribed below, with the specific Closure Form titles noted on the separate attachments (e.g., Title: C.1. Site Investigation Documentation; C.2. Investigative Waste, etc).
- If the documentation requested below is "not applicable" to the site-specific circumstances, include a brief explanation to support that conclusion.
- If the documentation requested below has already been submitted to the Department, please note the title and date of the report for that particular document requested.

C.1. **Site investigation documentation,** that has not otherwise been previously submitted.

C.2. **Investigative waste** disposal documentation.

C.3. **NR 720.19 analysis**, assumptions and calculations for site specific RCLs (SSRCLs) , with justification, including EPA Soil Screening Level Model Calculations and results.

C.4. **Construction documentation** or as-built report for any constructed remedial action or portion of, or interim action specified in s. NR 724.02(1), Wis. Adm. Code.

C.5. **Decommissioning of Remedial Systems.** Include plans to properly abandon any systems or equipment upon receiving conditional closure.

C.6. **Photos.** For sites or facilities with a cover or other performance standard, a structural impediment or a vapor mitigation system. Include one or more photographs documenting the condition and extent of the feature at the time of the closure request. Pertinent features should be visible and discernible. Photographs must be labeled with the site name, the features shown, location and the date on which the photograph was taken.

C.7. **Other.** Include any other relevant documentation not otherwise noted above. (This section may remain blank)

Maintenance Plan(s) (Attachment D)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

When one or more "maintenance plans" are required for a site closure, include in each maintenance plan all required information in sections D.1. through D.5. below, and attach the plan(s) in Attachment D. The following "model" maintenance plans can be located at: (1) Maintenance plan for a engineering control or cover: http://dnr.wi.gov/topic/Brownfields/documents/maintenance-plan.pdf; and (2) Maintenance plan for vapor intrusion: http://dnr.wi.gov/topic/Brownfields/documents/appendix5_606.pdf.

D.1. **Location map(s)** which show(s): (1) the feature that requires maintenance; (2) the location of the feature(s) that require(s) maintenance - on and off the source property; (3) the extent of the structure or feature(s) to be maintained, in relation to other structures or features on the site; (4) the extent and type of residual contamination; and (5) and all property boundaries.

D.2. **Brief descriptions** of the type, depth and location of residual contamination.

D.3. **Description of maintenance action(s)** required for maximizing effectiveness of the engineered control, vapor mitigation system, feature or other action for which maintenance is required.

D.4. **Inspection log**, to be maintained on site, or at a location specified in the maintenance plan or approval letter.

D.5. **Contact information,** including the name, address and phone number of the individual or facility who will be conducting the maintenance.

Monitoring Well Information (Attachment E)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

General Directions:

Attach monitoring well construction and development forms (DNR FORM 4400-113 A and B: http://dnr.wi.gov/topic/groundwater/documents/forms/4400_113_1_2.pdf) for all wells that will remain in-use, be transferred to another party or that could not be located. A figure of these wells should be included in Attachment B.3.d.

Select One:

○ No monitoring wells were required as part of this response action.

◉ All monitoring wells have been located and will be properly abandoned upon the DNR granting conditional closure to the site

○ ***Select One or More:***

☐ Not all monitoring wells can be located, despite good faith efforts. Attachment E must include description of efforts made to locate the "lost" wells.

☐ One or more wells will be transferred to another owner upon case closure being granted. Attachment E should include documentation identifying the name, address and email for the new owner(s).

☐ One or more wells will remain in use at the site after this closure. Attachment E must include documentation as to the reason(s) the well(s) will remain in use.

Notifications to Owners of Impacted Properties (Attachment F)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

General Directions:

- State law requires that the responsible party provide a 30-day, written advance notice (i.e., a letter) to certain persons prior to applying for case closure. This requirement applies if: (1) the person conducting the response action does not own the source property; (2) the contamination has migrated onto another property; and/or (3) one or more monitoring wells will not be abandoned.
- A model "template letter" for these mandatory notifications can be downloaded at: http://dnr.wi.gov/files/PDF/pubs/rr/RR919.pdf.

Check all that apply to the site-specific circumstances of this case closure:

	A. Impacted Source Property and Owner is not Conducting Cleanup	B. Impacted Right of Way	C. Impacted Off-Site Property Owner	Impacted Property Notification Situations: Ch. NR 726 Appendix A Letter
1.	☐	☐	☐	Residual groundwater contamination exceeds Ch. NR 140 Wis. Administrative Code enforcement standards.
2.	☐	☐	☐	Residual soil contamination that attains or exceeds standards is present after the remedial action is complete, and must be properly managed should it be excavated or removed.
3.	☐	☐	☐	An engineered cover or a soil barrier (e.g. pavement) must be maintained over contaminated soil for direct contact or groundwater infiltration concerns.
4.	☐	☐	☐	Industrial land use soil standards were used for the clean-up standard.
5.	☐	☐	☐	A vapor mitigation system (or other specific vapor protection) must be operated and maintained.
6.	☐	☐	☐	Vapor assessment needed if use changes.
7.	☐	☐	☐	Structural impediment.
8.	☐	☐	☐	Lost, transferred or open monitoring wells.
9.	☒	☒	☒	Not Applicable.

If any of the previous boxes in rows 1 thru 8 were checked, include the following as part of Attachment F:

- FORM 4400-246;
- Copy of each letter sent, 30 days or more prior to requesting closure; and
- Proof of receipt for each letter.
- For this site closure, __0__ (number) property (ies) has/have been impacted, the owners have been notified, and copies of the letters and receipts are included in Attachment F.

Source Legal Documents (Attachment G)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form.All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

Include all of the following documents, in this order, in Attachment G:

G.1. **Deeds - Source Property and Other Impacted Properties:** The most recent deed with legal descriptions clearly labeled for (1) the **Source Property** (where the contamination originated) and (2) all **off-source** (off-site) properties where letters were required to be sent per the ch. NR 700, Wis. Adm. Code, rule series (e.g., off-site cover maintenance required, lost monitoring well, off-site cover property impacts to groundwater exceeding the ch. NR 140, Wis. Adm. Code.

Note: If a property has been purchased with a land contract and the purchaser has not yet received a deed, a copy of the land contract which includes the legal description shall be submitted instead of the most recent deed. If the property has been inherited, written documentation of the property transfer should be submitted along with the most recent deed.

G.2. ***Certified Survey Map:*** *A copy of the certified survey map or the relevant section of the recorded plat map for those properties where the legal description in the most recent deed refers to a certified survey map or a recorded plat map.* (Lots on subdivided or platted property (e.g. lot 2 of xyz subdivision)).

G.3. **Verification of Zoning**: Documentation (e.g., official zoning map or letter from municipality) of the property's or properties' current zoning status.

G.4. **Signed Statement:** A statement signed by the Responsible Party (RP), which states that he or she believes that the attached legal description(s) accurately describe(s) the correct contaminated property or properties.

Signatures and Findings for Closure Determination

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

Check the correct signature block below for this case closure request, and have the proper environmental professional(s) sign this document, in accordance with the ch. NR 700 Wis. Adm. Code rule series. Both boxes may be checked if applicable to this case closure.

☒ A response action(s) for this site addresses groundwater contamination (including natural attenuation remedies). In this situation, the closure request must be prepared by, or under the supervision of, a professional engineer and a hydrogeologist, as defined in ch. NR 712, Wis. Adm. Code. Include both signatures provided below with the submittal.

☐ The response action(s) for this site addresses media other than groundwater. In this situation, the case closure request must be prepared by, or under the supervision of, a professional engineer, as defined in ch. NR 712, Wis. Adm. Code. The "engineering certification" language below, at a minimum, must be signed.

Engineering Certification

I Stephen Meer hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this case closure request has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this case closure request is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code. All phases of work necessary to obtain data, develop conclusions, recommendations and prepare submittals for this case closure request have been prepared by me, or their preparation has been supervised by me. Specifically, with respect to compliance with the rules, in my professional opinion a site investigation has been conducted in accordance with ch. NR 716, Wis. Adm. Code, and all necessary remedial actions have been completed in accordance with chs. NR 140, NR 718, NR 720, NR 722, NR 724 and NR 726, Wis. Adm. Codes."

Stephen Meer		Project Engineer
Printed Name		Title
	3/10/2014	
Signature	Date	P.E. Stamp and Number

Hydrogeologist Certification

I Adam Roder hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this case closure request is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code. All phases of work necessary to address groundwater contamination including obtaining data, developing conclusions, recommendations and preparing submittals for this case closure request have been prepared by me, or their preparation has been supervised by me. Specifically, with respect to compliance with the rules, in my professional opinion a site investigation has been conducted in accordance with ch. NR 716, Wis. Adm. Code, and all necessary remedial actions have been completed in accordance with chs. NR 140, NR 718, NR 720, NR 722, NR 724 and NR 726, Wis. Adm. Codes."

Adam Roder	Senior Engineer
Printed Name	Title
	3/10/14
Signature	Date

Attachment A – Data Tables

Table A.1
Groundwater Analytical Tables - Former One-Hour Martinizing - 401-441 W. Wisconsin Avenue
Milwaukee, Wisconsin
Sigma Project No. 12422

Well ID:		MW-1					MW-2		MW-2R				MW-3		MW-3R					
Screened Interval (bgs)		6-16					6-16		'6-16				6-16		'6-16				NR 140	NR 140
Analytes	Date	08/18/04	05/05/11	01/06/12	04/05/12	07/10/12	08/18/04	05/05/11	01/06/12	04/05/12	07/10/12	10/19/12	08/18/04	05/05/11	01/06/12	04/05/12	07/10/12	10/19/12	ES	PAL
RCRA Metals - Soluble																				
Arsenic	µg/L	NA	NA	NA	NA	NA	**16**	*8*	NA	NA	NA	NA	<0.79	NA	NA	NA	NA	NA	10	1
Barium	µg/L	NA	NA	NA	NA	NA	71	NA	NA	NA	NA	NA	82	NA	NA	NA	NA	NA	2,000	400
Cadmium	µg/L	NA	<0.5	NA	NA	NA	*2.9*	<0.5	NA	NA	NA	NA	**3.9**	<0.5	NA	NA	NA	NA	5	0.5
Chromium	µg/L	NA	NA	NA	NA	NA	<2.1	NA	NA	NA	NA	NA	<2.1	NA	NA	NA	NA	NA	100	10
Lead	µg/L	NA	NA	NA	NA	NA	<1.4	NA	NA	NA	NA	NA	<1.4	NA	NA	NA	NA	NA	15	1.5
Mercury	µg/L	NA	NA	NA	NA	NA	<0.040	NA	NA	NA	NA	NA	<0.040	NA	NA	NA	NA	NA	2	0.2
Selenium	µg/L	NA	NA	NA	NA	NA	<3.2	NA	NA	NA	NA	NA	<3.2	NA	NA	NA	NA	NA	50	10
Silver	µg/L	NA	NA	NA	NA	NA	<1.3	NA	NA	NA	NA	NA	2.7	NA	NA	NA	NA	NA	50	10
PVOCs/Detected VOCs																				
Benzene	µg/L	0.28	<0.5	<0.5	<0.5	<0.5	*0.58*	*0.67 J*	<5	<0.5	<0.5	<0.5	0.26	<0.5	<5	<0.5	<0.5	<0.5	5	0.5
Chloroethane	µg/L	<0.20	<1.4	<1.4	<1.4	<1.4	<0.20	<1.4	<14	<1.4	<1.4	<1.4	<0.20	<1.4	<14	<1.4	<1.4	<1.4	400	80
1,2-Dichlorobenzene	µg/L	<0.20	<0.76	<0.76	<0.76	<0.76	<0.20	<0.76	<7.6	<0.76	<0.76	<0.76	0.31	<0.76	<7.6	<0.76	<0.76	<0.76	600	60
1,1-Dichloroethene	µg/L	<0.50	<0.6	<0.6	<0.6	<0.6	*0.71*	*0.98 J*	<6	0.63 J	0.69 J	0.66 J	0.62	*1.24 J*	<6	<0.6	<0.6	<0.6	7	0.7
cis-1,2-Dichloroethene	µg/L	<0.50	<0.74	<0.74	<0.74	<0.74	**100**	**216**	*26.6*	*26.8*	*18*	*17*	**210**	**88**	*25.7*	*34*	**70**	**90**	70	7
trans-1,2-Dichloroethene	µg/L	<0.50	<0.79	<0.79	<0.79	<0.79	6.9	**65**	<7.9	2.89	1.83 J	1.74 J	12	7.6	<7.9	1.21 J	2.8	5.8	100	20
Ethylbenzene	µg/L	<0.50	<0.78	<0.78	<0.78	<0.78	<0.50	<0.78	<7.8	<0.78	<0.78	<0.78	<0.50	<0.78	<7.8	<0.78	<0.78	<0.78	700	140
p-Isopropyltoluene	µg/L	0.45	<0.92	<0.92	<0.92	<0.92	<0.20	<0.92	<9.2	<0.92	<0.92	<0.92	<0.20	<0.92	<5.9	<0.92	<0.92	<0.92	NS	NS
Methyl-tert-butyl-ether	µg/L	<0.50	<0.8	<0.8	<0.8	<0.8	<0.50	<0.8	<8	<0.8	<0.8	<0.8	<0.50	<0.8	<8	<0.8	<0.8	<0.8	60	12
Naphthalene	µg/L	<0.25	<2.1	<2.1	<2.1	<2.1	<0.25	<2.1	<21	<2.1	<2.1	<2.1	<0.25	<2.1	<21	2.39 J	3.3 J	5.4 J	100	10
Tetrachloroethene	µg/L	<0.50	<0.44	<0.44	<0.44	<0.44	**79**	**93**	**44**	**47**	**46**	**38**	**2,700**	**283**	**28.8**	**21**	**20.8**	**20.4**	5	0.5
Toluene	µg/L	0.26	<0.53	<0.53	<0.53	<0.53	0.48	0.62 J	<5.3	<0.53	<0.53	<0.53	<0.20	<0.53	<5.3	<0.53	<0.53	<0.53	1,000	200
Trichloroethene	µg/L	<0.20	<0.47	<0.47	<0.47	<0.47	**55**	**144**	**43**	**33**	**35**	**40**	**82**	**77**	**8.3 J**	*4.8*	**8.9**	**11.2**	5	0.5
1,2,4-Trimethylbenzene	µg/L	<0.20	<0.8	<0.8	<0.8	<0.8	<0.20	<0.8	<8	<0.8	<0.8	<0.8	<0.20	<0.8	<8	<0.8	<0.8	<0.8	NS	NS
1,3,5-Trimethylbenzene	µg/L	<0.20	<0.74	<0.74	<0.74	<0.74	<0.20	<0.74	<7.4	<0.74	<0.74	<0.74	<0.20	<0.74	<7.4	<0.74	<0.74	<0.74	NS	NS
Total Trimethylbenzene	µg/L	<0.20	<1.54	<1.54	<1.54	<1.54	<0.20	<1.54	<15.4	<1.54	<1.54	<1.54	<0.20	<1.54	<15.4	<1.54	<1.54	<1.54	480	96
Vinyl Chloride	µg/L	<0.20	<0.18	<0.18	<0.18	<0.18	**14**	**51**	<1.8	**0.90**	**0.91**	**0.90**	**5.8**	**9.0**	**7.0**	**8.0**	**30.4**	**50.0**	0.2	0.02
Xylenes, Total	µg/L	<0.50	<1.9	<1.9	<1.9	<1.9	<0.50	<1.9	<19	<1.9	<1.9	<1.9	<0.50	<1.9	<19	<1.9	<1.9	<1.9	10,000	1,000
PAHs																				
Acenaphthene	µg/L	NA	NA	NA	NA	NA	<0.33	NA	NA	NA	NA	NA	<0.33	NA	NA	NA	NA	NA	NS	NS
Acenaphthylene	µg/L	NA	NA	NA	NA	NA	<0.69	NA	NA	NA	NA	NA	<0.69	NA	NA	NA	NA	NA	NS	NS
Anthracene	µg/L	NA	NA	NA	NA	NA	0.083	NA	NA	NA	NA	NA	<0.038	NA	NA	NA	NA	NA	3000	600
Benz(a)anthracene	µg/L	NA	NA	NA	NA	NA	<0.044	NA	NA	NA	NA	NA	<0.044	NA	NA	NA	NA	NA	NS	NS
Benzo(b)fluoranthene	µg/L	NA	NA	NA	NA	NA	<0.098	NA	NA	NA	NA	NA	<0.098	NA	NA	NA	NA	NA	0.2	0.02
Benzo(k)fluoranthene	µg/L	NA	NA	NA	NA	NA	<0.049	NA	NA	NA	NA	NA	<0.049	NA	NA	NA	NA	NA	NS	NS
Benzo(a)pyrene	µg/L	NA	NA	NA	NA	NA	<0.032	NA	NA	NA	NA	NA	<0.032	NA	NA	NA	NA	NA	0.2	0.02
Benzo(ghi)perylene	µg/L	NA	NA	NA	NA	NA	<0.12	NA	NA	NA	NA	NA	<0.12	NA	NA	NA	NA	NA	NS	NS
Chrysene	µg/L	NA	NA	NA	NA	NA	<0.041	NA	NA	NA	NA	NA	<0.041	NA	NA	NA	NA	NA	0.2	0.02
Dibenz(a,h)anthracene	µg/L	NA	NA	NA	NA	NA	<0.13	NA	NA	NA	NA	NA	<0.13	NA	NA	NA	NA	NA	NS	NS
Fluoranthene	µg/L	NA	NA	NA	NA	NA	0.099	NA	NA	NA	NA	NA	<0.081	NA	NA	NA	NA	NA	400	80
Fluorene	µg/L	NA	NA	NA	NA	NA	0.16	NA	NA	NA	NA	NA	<0.062	NA	NA	NA	NA	NA	400	80
Indeno(1,2,3-cd)pyrene	µg/L	NA	NA	NA	NA	NA	<0.062	NA	NA	NA	NA	NA	<0.062	NA	NA	NA	NA	NA	NS	NS
1-Methylnaphthalene	µg/L	NA	NA	NA	NA	NA	<0.32	NA	NA	NA	NA	NA	<0.32	NA	NA	NA	NA	NA	NS	NS
2-Methylnaphthalene	µg/L	NA	NA	NA	NA	NA	<0.31	NA	NA	NA	NA	NA	<0.31	NA	NA	NA	NA	NA	NS	NS
Naphthalene	µg/L	NA	NA	NA	NA	NA	0.5	NA	NA	NA	NA	NA	<0.40	NA	NA	NA	NA	NA	40	8
Phenanthrene	µg/L	NA	NA	NA	NA	NA	0.23	NA	NA	NA	NA	NA	<0.030	NA	NA	NA	NA	NA	NS	NS
Pyrene	µg/L	NA	NA	NA	NA	NA	0.045	NA	NA	NA	NA	NA	0.071	NA	NA	NA	NA	NA	250	50
Biofeasibility Measurements																				
pH	IU	NA	7	7.4	7.6	7.43	7.1	7	7.7	7.3	9.48	7.5	7.1	7	12	12.6	12.39	11.3	NS	NS
Temperature	° C	18	13	15.5	13.6	18.3	17	11.8	21.1	19.0	24.7	26.4	17	10.5	16.4	13.4	17.9	19.5	NS	NS
Ferrous Iron	mg/l	NA	3.6	1.8	1.4	0.8	0	0	0	0	0	NA	0	2	0	0	0	NA	NS	NS
Dissolved Oxygen	mg/l	5.03	0.72	1.5	1.0	0.9	2.49	0.75	2	0.95	2.7	1.3	4.41	0.8	0.3	0.80	2.60	0.50	NS	NS
Redox Potential	mV	NA	10	-20	52	-25	+78.6	-16	19	57	-40	204	+65.8	26	-109	-70	-123.8	42	NS	NS
Natural Attenuation Parameters																				
Dissolved Manganese	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	1740	NA	1950	NA	NA	NA	5.2 J	NA	<4.8	NS	NS
Nitrite/Nitrate	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	0.19 J	NA	<0.1	NA	NA	NA	1.22	NA	0.15J	NS	NS
Sulfate	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	294.0	NA	195.0	NA	NA	NA	18.8	NA	<3.4	NS	NS
Ethane	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	0.34	NA	0.34	NA	NA	NA	0.97	NA	1.60	NS	NS
Ethene	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	0.21	NA	0.11	NA	NA	NA	3.9	NA	46.0	NS	NS
Methane	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	92	NA	120	NA	NA	NA	170	NA	870	NS	NS

Notes:
NR 140 ES = Wisconsin Administrative Code, Chapter NR 140 Enforcement Standard.
NR 140 PAL = Wisconsin Administrative Code, Chapter NR 140 Preventive Action Limit.
NS = no standard
µg/L = micrograms per liter (equivalent to parts per billion, ppb)
mg/L = milligrams per liter (equivalent to parts per million, ppm)
NA = Not Analyzed
Q = Results
Exceedances: **bold** = Concentration exceeds NR 140 ES
italics = Concentration exceeds NR 140 PAL

Table A.1
Groundwater Analytical Tables - Former One-Hour Martinizing - 401-441 W. Wisconsin Avenue
Milwaukee, Wisconsin
Sigma Project No. 12422

Well ID:		Well ID:		MW-4						MW-5						MW-6						
Screened Interval (bgs)		Screened Interval (bgs)		6-16						6-16						6-16					NR 140	NR 140
Analytes	Date	Analytes	Date	08/18/04	05/05/11	01/06/12	04/05/12	07/10/12	10/19/12	08/18/04	05/05/11	01/06/12	04/05/12	07/10/12	10/19/12	08/18/04	05/05/11	01/06/12	04/05/12	07/10/12	ES	PAL
RCRA Metals - Soluble		***RCRA Metals - Soluble***																				
Arsenic	µg/L	Arsenic	µg/L	2.3	NA	NA	NA	NA	NA	<0.79	NA	NA	NA	NA	NA	2.9	NA	NA	NA	NA	10	1
Barium	µg/L	Barium	µg/L	120	NA	NA	NA	NA	NA	290	NA	NA	NA	NA	NA	220	NA	NA	NA	NA	2,000	400
Cadmium	µg/L	Cadmium	µg/L	**5.7**	<0.5	NA	NA	NA	NA	**6.3**	<0.5	NA	NA	NA	NA	*4.8*	<0.5	NA	NA	NA	5	0.5
Chromium	µg/L	Chromium	µg/L	<2.1	NA	NA	NA	NA	NA	<2.1	NA	NA	NA	NA	NA	<2.1	NA	NA	NA	NA	100	10
Lead	µg/L	Lead	µg/L	<1.4	NA	NA	NA	NA	NA	<1.4	NA	NA	NA	NA	NA	<1.4	NA	NA	NA	NA	15	1.5
Mercury	µg/L	Mercury	µg/L	<0.040	NA	NA	NA	NA	NA	<0.040	NA	NA	NA	NA	NA	<0.040	NA	NA	NA	NA	2	0.2
Selenium	µg/L	Selenium	µg/L	<3.2	NA	NA	NA	NA	NA	<3.2	NA	NA	NA	NA	NA	<3.2	NA	NA	NA	NA	50	10
Silver	µg/L	Silver	µg/L	<1.3	NA	NA	NA	NA	NA	<1.3	NA	NA	NA	NA	NA	<1.3	NA	NA	NA	NA	50	10
PVOCs/Detected VOCs		***PVOCs/Detected VOCs***																				
Benzene	µg/L	Benzene	µg/L	<0.20	<0.5	<0.5	<0.5	<0.5	<0.5	0.34	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.5	<0.5	<0.5	<0.5	5	0.5
Chloroethane	µg/L	Chloroethane	µg/L	<0.20	<1.4	<1.4	<1.4	<1.4	<1.4	<0.20	<1.4	<1.4	<1.4	<1.4	<1.4	<0.20	<1.4	<1.4	<1.4	<1.4	400	80
1,2-Dichlorobenzene	µg/L	1,2-Dichlorobenzene	µg/L	<0.20	<0.76	<0.76	<0.76	<0.76	<0.76	<0.20	<0.76	<0.76	<0.76	<0.76	<0.76	<0.20	<0.76	<0.76	<0.76	<0.76	600	60
1,1-Dichloroethene	µg/L	1,1-Dichloroethene	µg/L	<0.50	<0.6	<0.6	<0.6	<0.6	<0.6	<0.50	<0.6	<0.6	<0.6	<0.6	<0.6	<0.50	<0.6	<0.6	<0.6	<0.6	7	0.7
cis-1,2-Dichloroethene	µg/L	cis-1,2-Dichloroethene	µg/L	<0.50	<0.74	<0.74	<0.74	<0.74	<0.74	2.4	<0.74	2.14 J	1.24 J	2.1 J	5.8	<0.50	<0.74	<0.74	<0.74	<0.74	70	7
trans-1,2-Dichloroethene	µg/L	trans-1,2-Dichloroethene	µg/L	<0.50	<0.79	<0.79	<0.79	<0.79	<0.79	<0.50	<0.79	<0.79	<0.79	<0.79	<0.79	<0.50	<0.79	<0.79	<0.79	<0.79	100	20
Ethylbenzene	µg/L	Ethylbenzene	µg/L	<0.50	<0.78	<0.78	<0.78	<0.78	<0.78	<0.50	<0.78	<0.78	<0.78	<0.78	<0.78	<0.50	<0.78	<0.78	<0.78	<0.78	700	140
p-Isopropyltoluene	µg/L	p-Isopropyltoluene	µg/L	<0.20	<0.92	<0.92	<0.92	<0.92	<0.92	0.48	<0.92	<0.92	<0.92	<0.92	<0.92	<0.20	<0.92	<0.92	<0.92	<0.92	NS	NS
Methyl-tert-butyl-ether	µg/L	Methyl-tert-butyl-ether	µg/L	<0.50	<0.8	<0.8	<0.8	<0.8	<0.8	<0.50	<0.8	<0.8	<0.8	<0.8	<0.8	<0.50	<0.8	<0.8	<0.8	<0.8	60	12
Naphthalene	µg/L	Naphthalene	µg/L	<0.25	<2.1	<2.1	<2.1	<2.1	<2.1	<0.25	<2.1	<2.1	<2.1	<2.1	<2.1	<0.25	<2.1	<2.1	<2.1	<2.1	100	10
Tetrachloroethene	µg/L	Tetrachloroethene	µg/L	<0.50	<0.44	<0.44	<0.44	<0.44	<0.44	**56**	<0.44	<0.44	<0.44	<0.44	<0.44	<0.50	<0.44	<0.44	<0.44	<0.44	5	0.5
Toluene	µg/L	Toluene	µg/L	<0.20	<0.53	<0.53	<0.53	<0.53	<0.53	0.26	<0.53	<0.53	<0.53	<0.53	<0.53	<0.20	<0.53	<0.53	<0.53	<0.53	1,000	200
Trichloroethene	µg/L	Trichloroethene	µg/L	0.46	<0.47	<0.47	<0.47	<0.47	<0.47	**5.1**	<0.47	<0.47	<0.47	<0.47	<0.47	<0.20	<0.47	<0.47	<0.47	<0.47	5	0.5
1,2,4-Trimethylbenzene	µg/L	1,2,4-Trimethylbenzene	µg/L	<0.20	<0.8	<0.8	<0.8	<0.8	<0.8	<0.20	<0.8	<0.8	<0.8	<0.8	<0.8	<0.20	<0.8	<0.8	<0.8	<0.8	NS	NS
1,3,5-Trimethylbenzene	µg/L	1,3,5-Trimethylbenzene	µg/L	<0.20	<0.74	<0.74	<0.74	<0.74	<0.74	<0.20	<0.74	<0.74	<0.74	<0.74	<0.74	<0.20	<0.74	<0.74	<0.74	<0.74	NS	NS
Total Trimethylbenzene	µg/L	Total Trimethylbenzene	µg/L	<0.20	<1.54	<1.54	<1.54	<1.54	<1.54	<0.20	<1.54	<1.54	<1.54	<1.54	<1.54	<0.20	<1.54	<1.54	<1.54	<1.54	480	96
Vinyl Chloride	µg/L	Vinyl Chloride	µg/L	<0.20	<0.18	<0.18	<0.18	<0.18	<0.18	<0.20	<0.18	**1.5**	<0.18	**0.26 J**	**1.61**	<0.20	<0.18	<0.18	<0.18	<0.18	0.2	0.02
Xylenes, Total	µg/L	Xylenes, Total	µg/L	<0.50	<1.9	<1.9	<1.9	<1.9	<1.9	<0.50	<1.9	<1.9	<1.9	<1.9	<1.9	<0.50	<1.9	<1.9	<1.9	<1.9	10,000	1,000
PAHs		***PAHs***																				
Acenaphthene	µg/L	Acenaphthene	µg/L	<0.38	NA	NA	NA	NA	NA	<0.38	NA	NA	NA	NA	NA	<1.1	NA	NA	NA	NA	NS	NS
Acenaphthylene	µg/L	Acenaphthylene	µg/L	<0.79	NA	NA	NA	NA	NA	<0.79	NA	NA	NA	NA	NA	<2.3	NA	NA	NA	NA	NS	NS
Anthracene	µg/L	Anthracene	µg/L	<0.043	NA	NA	NA	NA	NA	<0.043	NA	NA	NA	NA	NA	<0.13	NA	NA	NA	NA	3000	600
Benz(a)anthracene	µg/L	Benz(a)anthracene	µg/L	<0.050	NA	NA	NA	NA	NA	<0.050	NA	NA	NA	NA	NA	<0.15	NA	NA	NA	NA	NS	NS
Benzo(b)fluoranthene	µg/L	Benzo(b)fluoranthene	µg/L	<0.11	NA	NA	NA	NA	NA	<0.11	NA	NA	NA	NA	NA	<0.33	NA	NA	NA	NA	0.2	0.02
Benzo(k)fluoranthene	µg/L	Benzo(k)fluoranthene	µg/L	<0.056	NA	NA	NA	NA	NA	<0.056	NA	NA	NA	NA	NA	<0.16	NA	NA	NA	NA	NS	NS
Benzo(a)pyrene	µg/L	Benzo(a)pyrene	µg/L	<0.036	NA	NA	NA	NA	NA	<0.036	NA	NA	NA	NA	NA	<0.11	NA	NA	NA	NA	0.2	0.02
Benzo(ghi)perylene	µg/L	Benzo(ghi)perylene	µg/L	<0.14	NA	NA	NA	NA	NA	<0.14	NA	NA	NA	NA	NA	<0.40	NA	NA	NA	NA	NS	NS
Chrysene	µg/L	Chrysene	µg/L	<0.047	NA	NA	NA	NA	NA	<0.047	NA	NA	NA	NA	NA	<0.14	NA	NA	NA	NA	0.2	0.02
Dibenz(a,h)anthracene	µg/L	Dibenz(a,h)anthracene	µg/L	<0.15	NA	NA	NA	NA	NA	<0.15	NA	NA	NA	NA	NA	<0.43	NA	NA	NA	NA	NS	NS
Fluoranthene	µg/L	Fluoranthene	µg/L	<0.092	NA	NA	NA	NA	NA	<0.092	NA	NA	NA	NA	NA	<0.27	NA	NA	NA	NA	400	80
Fluorene	µg/L	Fluorene	µg/L	<0.071	NA	NA	NA	NA	NA	<0.071	NA	NA	NA	NA	NA	<0.21	NA	NA	NA	NA	400	80
Indeno(1,2,3-cd)pyrene	µg/L	Indeno(1,2,3-cd)pyrene	µg/L	<0.071	NA	NA	NA	NA	NA	<0.071	NA	NA	NA	NA	NA	<0.21	NA	NA	NA	NA	NS	NS
1-Methylnaphthalene	µg/L	1-Methylnaphthalene	µg/L	<0.36	NA	NA	NA	NA	NA	<0.36	NA	NA	NA	NA	NA	<1.1	NA	NA	NA	NA	NS	NS
2-Methylnaphthalene	µg/L	2-Methylnaphthalene	µg/L	<0.35	NA	NA	NA	NA	NA	<0.35	NA	NA	NA	NA	NA	<1.0	NA	NA	NA	NA	NS	NS
Naphthalene	µg/L	Naphthalene	µg/L	<0.46	NA	NA	NA	NA	NA	<0.46	NA	NA	NA	NA	NA	<1.3	NA	NA	NA	NA	40	8
Phenanthrene	µg/L	Phenanthrene	µg/L	<0.034	NA	NA	NA	NA	NA	<0.034	NA	NA	NA	NA	NA	<0.10	NA	NA	NA	NA	NS	NS
Pyrene	µg/L	Pyrene	µg/L	<0.050	NA	NA	NA	NA	NA	<0.050	NA	NA	NA	NA	NA	<0.15	NA	NA	NA	NA	250	50
Biofeasibility Measurements		***Biofeasibility Measurements***																				
pH	IU	pH	IU	7	7	7.5	7.7	7.82	8.4	7.1	7	7.9	7.6	7.71	9	7.1	7	7.3	7.3	7.69	NS	NS
Temperature	°C	Temperature	°C	17	10	11.9	11.0	15.6	18.1	17	10.2	11.3	11.7	16.5	18.6	15	8.6	10.8	9.9	14.7	NS	NS
Ferrous Iron	mg/l	Ferrous Iron	mg/l	0.8	0	0	0	0	NA	0	3	2.4	2.2	0	NA	1.8	2	3	3.4	4	NS	NS
Dissolved Oxygen	mg/l	Dissolved Oxygen	mg/l	1.83	0.78	2	1.2	0.6	0.8	1.01	0.7	1	3.0	3.2	1.4	2.39	2.4	2.2	2.5	3.1	NS	NS
Redox Potential	mV	Redox Potential	mV	+80.3	114	130	83	-91.9	-147	+74.3	14	-145	82	-41.1	-213	+89.7	121	50	-16	16.8	NS	NS
Natural Attenuation Parameters		***Natural Attenuation Parameters***																				
Dissolved Manganese	µg/L	Dissolved Manganese	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	NS
Nitrite/Nitrate	mg/L	Nitrite/Nitrate	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	NS
Sulfate	mg/L	Sulfate	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	NS
Ethane	µg/L	Ethane	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	NS
Ethene	µg/L	Ethene	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	NS
Methane	µg/L	Methane	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	NS

Notes:
NR 140 ES = Wisconsin Administrative Code, Chapter NR 140 Enforcement Standard.
NR 140 PAL = Wisconsin Administrative Code, Chapter NR 140 Preventive Action Limit.
NS = no standard
µg/L = micrograms per liter (equivalent to parts per billion, ppb)
mg/L = milligrams per liter (equivalent to parts per million, ppm)
NA = Not Analyzed
Q = Results
Exceedances: **bold** = Concentration exceeds NR 140 ES
italics = Concentration exceeds NR 140 PAL

Table A.1
Groundwater Analytical Tables - Former One-Hour Martinizing - 401-441 W. Wisconsin Avenue
Milwaukee, Wisconsin
Sigma Project No. 12422

Well ID:		Well ID:		MW-7					MW-8					MW-9				PZ-1		PZ-1R					
Screened Interval (bgs)		Screened Interval (bgs)		6-16					5-15									26-31		'26-31				NR 140	NR 140
Analytes	Date	Analytes	Date	08/18/04	05/05/11	01/06/12	04/05/12	07/10/12	05/05/11	01/06/12	04/05/12	07/10/12	10/19/12	01/06/12	04/05/12	07/10/12	10/19/12	08/18/04	05/05/11	01/06/12	04/05/12	07/10/12	10/19/12	ES	PAL
RCRA Metals - Soluble		***RCRA Metals - Soluble***																							
Arsenic	µg/L	Arsenic	µg/L	<0.79	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.79	NA	NA	NA	NA	NA	10	1
Barium	µg/L	Barium	µg/L	42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	260	NA	NA	NA	NA	NA	2,000	400
Cadmium	µg/L	Cadmium	µg/L	**8**	<0.5	NA	NA	NA	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	*4.6*	<0.5	NA	NA	NA	NA	5	0.5
Chromium	µg/L	Chromium	µg/L	<2.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.1	NA	NA	NA	NA	NA	100	10
Lead	µg/L	Lead	µg/L	<1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.4	NA	NA	NA	NA	NA	15	1.5
Mercury	µg/L	Mercury	µg/L	<0.040	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.040	NA	NA	NA	NA	NA	2	0.2
Selenium	µg/L	Selenium	µg/L	<3.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3.2	NA	NA	NA	NA	NA	50	10
Silver	µg/L	Silver	µg/L	<1.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.3	NA	NA	NA	NA	NA	50	10
PVOCs/Detected VOCs		***PVOCs/Detected VOCs***																							
Benzene	µg/L	Benzene	µg/L	0.26	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.32	<0.5	<0.5	<0.5	<0.5	<0.5	5	0.5
Chloroethane	µg/L	Chloroethane	µg/L	<0.20	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<0.20	<1.4	<1.4	<1.4	<1.4	<1.4	400	80
1,2-Dichlorobenzene	µg/L	1,2-Dichlorobenzene	µg/L	<0.20	<0.76	<0.76	<0.76	<0.76	<0.76	<0.76	<0.76	<0.76	<0.76	<0.76	<0.76	<0.76	<0.76	<0.20	<0.76	<0.76	<0.76	<0.76	<0.76	600	60
1,1-Dichloroethene	µg/L	1,1-Dichloroethene	µg/L	<0.50	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.50	<0.6	<0.6	<0.6	<0.6	<0.6	7	0.7
cis-1,2-Dichloroethene	µg/L	cis-1,2-Dichloroethene	µg/L	<0.50	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	*14*	2.59	<0.74	<0.74	<0.74	<0.74	70	7
trans-1,2-Dichloroethene	µg/L	trans-1,2-Dichloroethene	µg/L	<0.50	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	<0.79	0.68	<0.79	<0.79	<0.79	<0.79	<0.79	100	20
Ethylbenzene	µg/L	Ethylbenzene	µg/L	0.5	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.50	<0.78	<0.78	<0.78	<0.78	<0.78	700	140
p-Isopropyltoluene	µg/L	p-Isopropyltoluene	µg/L	35	<0.92	<0.92	<0.92	<0.92	<0.92	<0.92	<0.92	<0.92	<0.92	<0.92	<0.92	<0.92	<0.92	<0.20	<0.92	<0.92	<0.92	<0.92	<0.92	NS	NS
Methyl-tert-butyl-ether	µg/L	Methyl-tert-butyl-ether	µg/L	<0.50	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.50	<0.8	<0.8	<0.8	<0.8	<0.8	60	12
Naphthalene	µg/L	Naphthalene	µg/L	*30*	3.8 J	6.1 J	5.4 J	3.9 J	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<0.25	<2.1	<2.1	<2.1	<2.1	<2.1	100	10
Tetrachloroethene	µg/L	Tetrachloroethene	µg/L	<0.50	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	**180**	**19.4**	<0.44	<0.44	<0.44	<0.44	5	0.5
Toluene	µg/L	Toluene	µg/L	0.37	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	<0.53	1.13 J	<0.53	0.32	<0.53	<0.53	<0.53	<0.53	<0.53	1,000	200
Trichloroethene	µg/L	Trichloroethene	µg/L	<0.20	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	**6.9**	**8.3**	<0.47	<0.47	<0.47	<0.47	5	0.5
1,2,4-Trimethylbenzene	µg/L	1,2,4-Trimethylbenzene	µg/L	0.23	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.20	<0.8	<0.8	<0.8	<0.8	<0.8	NS	NS
1,3,5-Trimethylbenzene	µg/L	1,3,5-Trimethylbenzene	µg/L	<0.20	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.20	<0.74	<0.74	<0.74	<0.74	<0.74	NS	NS
Total Trimethylbenzene	µg/L	Total Trimethylbenzene	µg/L	0.23	<1.54	<1.54	<1.54	<1.54	<1.54	<1.54	<1.54	<1.54	<1.54	<1.54	<1.54	<1.54	<1.54	<0.20	<1.54	<1.54	<1.54	<1.54	<1.54	480	96
Vinyl Chloride	µg/L	Vinyl Chloride	µg/L	<0.20	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	**0.26**	<0.18	<0.18	<0.18	<0.18	<0.18	0.2	0.02
Xylenes, Total	µg/L	Xylenes, Total	µg/L	<0.50	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<0.50	<1.9	<1.9	<1.9	<1.9	<1.9	10,000	1,000
PAHs		***PAHs***																							
Acenaphthene	µg/L	Acenaphthene	µg/L	1.9	0.217	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.36	NA	NA	NA	NA	NA	NS	NS
Acenaphthylene	µg/L	Acenaphthylene	µg/L	<0.69	<0.014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.76	NA	NA	NA	NA	NA	NS	NS
Anthracene	µg/L	Anthracene	µg/L	0.63	0.036	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.042	NA	NA	NA	NA	NA	3000	600
Benz(a)anthracene	µg/L	Benz(a)anthracene	µg/L	0.17	0.016 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.048	NA	NA	NA	NA	NA	NS	NS
Benzo(b)fluoranthene	µg/L	Benzo(b)fluoranthene	µg/L	*0.085*	<0.013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.11	NA	NA	NA	NA	NA	0.2	0.02
Benzo(k)fluoranthene	µg/L	Benzo(k)fluoranthene	µg/L	0.075	<0.015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.054	NA	NA	NA	NA	NA	NS	NS
Benzo(a)pyrene	µg/L	Benzo(a)pyrene	µg/L	*0.15*	<0.011	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.035	NA	NA	NA	NA	NA	0.2	0.02
Benzo(ghi)perylene	µg/L	Benzo(ghi)perylene	µg/L	0.16	<0.015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.13	NA	NA	NA	NA	NA	NS	NS
Chrysene	µg/L	Chrysene	µg/L	*0.075*	<0.013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.045	NA	NA	NA	NA	NA	0.2	0.02
Dibenz(a,h)anthracene	µg/L	Dibenz(a,h)anthracene	µg/L	<0.13	<0.016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.14	NA	NA	NA	NA	NA	NS	NS
Fluoranthene	µg/L	Fluoranthene	µg/L	1.3	0.109	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.089	NA	NA	NA	NA	NA	400	80
Fluorene	µg/L	Fluorene	µg/L	1.8	0.269	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.068	NA	NA	NA	NA	NA	400	80
Indeno(1,2,3-cd)pyrene	µg/L	Indeno(1,2,3-cd)pyrene	µg/L	0.085	<0.015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.068	NA	NA	NA	NA	NA	NS	NS
1-Methylnaphthalene	µg/L	1-Methylnaphthalene	µg/L	2.1	0.232	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.35	NA	NA	NA	NA	NA	NS	NS
2-Methylnaphthalene	µg/L	2-Methylnaphthalene	µg/L	9	0.296	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.34	NA	NA	NA	NA	NA	NS	NS
Naphthalene	µg/L	Naphthalene	µg/L	*29*	2.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.44	NA	NA	NA	NA	NA	40	8
Phenanthrene	µg/L	Phenanthrene	µg/L	4.8	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.033	NA	NA	NA	NA	NA	NS	NS
Pyrene	µg/L	Pyrene	µg/L	0.73	0.076	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.048	NA	NA	NA	NA	NA	250	50
Biofeasibility Measurements		***Biofeasibility Measurements***																							
pH	IU	pH	IU	7	7	7.4	7.9	7.2	7	7.9	7.7	7.51	7.8	7	NA	NA	7.8	7	7	9	9.4	8.54	7.7	NS	NS
Temperature	° C	Temperature	° C	15	9.8	14.4	10.8	16.8	9.7	15.4	13.7	19.7	21.3	NA	NA	NA	15.8	15	12.6	15.9	15.6	17.2	16.2	NS	NS
Ferrous Iron	mg/l	Ferrous Iron	mg/l	0	0	0	0	0	0	0	0	0	NA	0	0	NA	NA	0	0	0	0	0	NA	NS	NS
Dissolved Oxygen	mg/l	Dissolved Oxygen	mg/l	0.8	0.69	0.24	0.70	1.20	1.4	2.4	2.6	3.6	0.9	NA	NA	NA	2	7.51	1	0.5	1.0	2.0	0.8	NS	NS
Redox Potential	mV	Redox Potential	mV	-46.2	6	-88	-110	-139	74	31	23	-32.1	210	NA	NA	NA	214	+72.0	100	-42	-10	63.2	158	NS	NS
Natural Attenuation Parameters		***Natural Attenuation Parameters***																							
Dissolved Manganese	µg/L	Dissolved Manganese	µg/L	NA	NA	NA	NA	NA	NA	NA	12.7 J	NA	50.1	NA	NA	NA	NA	NA	NA	NA	24.5	NA	27.7	NS	NS
Nitrite/Nitrate	mg/L	Nitrite/Nitrate	mg/L	NA	NA	NA	NA	NA	NA	NA	0.48	NA	0.14 J	NA	NA	NA	NA	NA	NA	NA	0.20 J	NA	<0.1	NS	NS
Sulfate	mg/L	Sulfate	mg/L	NA	NA	NA	NA	NA	NA	NA	584	NA	653	NA	NA	NA	NA	NA	NA	NA	133	NA	145	NS	NS
Ethane	µg/L	Ethane	µg/L	NA	NA	NA	NA	NA	NA	NA	<0.025	NA	0.047	NA	NA	NA	NA	NA	NA	NA	0.12	NA	0.081	NS	NS
Ethene	µg/L	Ethene	µg/L	NA	NA	NA	NA	NA	NA	NA	<0.025	NA	0.49	NA	NA	NA	NA	NA	NA	NA	0.16	NA	0.10	NS	NS
Methane	µg/L	Methane	µg/L	NA	NA	NA	NA	NA	NA	NA	0.26	NA	3.10	NA	NA	NA	NA	NA	NA	NA	2.3	NA	1.4	NS	NS

Notes:
NR 140 ES = Wisconsin Administrative Code, Chapter NR 140 Enforcement Standard.
NR 140 PAL = Wisconsin Administrative Code, Chapter NR 140 Preventive Action Limit.
NS = no standard
µg/L = micrograms per liter (equivalent to parts per billion, ppb)
mg/L = milligrams per liter (equivalent to parts per million, ppm)
NA = Not Analyzed
Q = Results
Exceedances: **bold** = Concentration exceeds NR 140 ES
italics = Concentration exceeds NR 140 PAL

Table A.2 (page 1 of 5)
Pre-Remedial Soil Analytical Table - 401-441 W. Wisconsin Avenue
Milwaukee, Wisconsin
Sigma Project No. 12422

Soil Boring Identification:		**MW-1**		**MW-2**		**PZ-1 & MW-3**		**MW-4**	Groundwater Pathway RCL	Non-Industrial Direct Contact RCL
	Date	08/12/04		08/12/04		08/12/04		08/12/04		
Analytes	Depth	1-3	7-9	1-3	9-11	1-3	11-13	1-3		
Unsaturated/Saturated	U/S	U	U	U	S	U	S	U		
RCRA Metals										
Arsenic	mg/kg	***5.4***	***6.5***	***6***	***5.4***	***6***	***7***	***8.7***	0.58	0.39
Barium	mg/kg	27	29	48	74	50	44	45	165	15,300
Cadmium	mg/kg	**0.95**	**1.2**	0.73	**1.2**	0.5	**0.89**	**1.2**	0.75	70
Chromium	mg/kg	8.9	8.4	22	9	14	16	17	360,000	NS
Lead	mg/kg	21	5.2	**34**	**110**	25	11	**100**	27	400
Mercury	mg/kg	0.059	0.016	0.04	**0.4**	0.045	0.034	0.04	0.21	3.13
Selenium	mg/kg	<4.5	<4.5	<4.6	<4.8	<4.5	<5.0	<4.5	0.52	391
Silver	mg/kg	<0.12	<0.12	<0.13	**1.2**	<0.12	0.23	0.19	0.85	391
PVOCs/Detected VOCs										
Benzene	µg/kg	<28	<28	<29	<30	<28	<31	<28	5.1	1,490
cis-1,2-Dichloroethene	µg/kg	<28	<28	<29	312	<28	39	<28	41.2	156,000
trans-1,2-Dichloroethene	µg/kg	<28	<28	<29	180	<28	<31	<28	58.8	211,000
Ethylbenzene	µg/kg	<28	<28	<29	<30	<28	<31	<28	1,570	7,470
Methyl-tert-butyl-ether	µg/kg	<28	<28	<29	<30	<28	<31	<28	27	59,400
Naphthalene	µg/kg	<28	<28	<29	240	36	<31	38	659	5,150
Tetrachloroethene	µg/kg	<28	<28	<29	**2,640**	<28	**5,910**	**95**	4.5	30,700
Toluene	µg/kg	<28	<28	<29	<30	<28	<31	<28	1,107	818,000
Trichloroethene	µg/kg	<28	<28	<29	***839***	<28	**53**	<28	3.6	644
1,2,4-Trimethylbenzene	µg/kg	<28	<28	41	35	<28	<31	<28	1,379	89,800
1,3,5-Trimethylbenzene	µg/kg	<28	<28	<29	<30	<28	<31	<28	1,379	182,000
Xylenes, Total	µg/kg	<39	<40	57	<42	<40	<44	<39	3,940	258,000
PAHs										
Acenaphthene	µg/kg	66	<56	<57	<300	<56	<63	<56	NS	3,440,000
Acenaphthylene	µg/kg	<95	<96	<97	<500	<96	<110	<95	NS	487,000
Anthracene	µg/kg	123	<5.6	36	120	21	<6.3	9.8	196,744.20	17,200,000
Benz(a)anthracene	µg/kg	*212*	8.5	93	*288*	80	<6.3	49	NS	148
Benzo(b)fluoranthene	µg/kg	134	<5.6	61	132	52	<6.3	37	480	148
Benzo(k)fluoranthene	µg/kg	87	<5.6	37	95	33	<6.3	25	NS	1,480
Benzo(a)pyrene	µg/kg	*167*	<5.6	*77*	*180*	*62*	<6.3	*40*	470	15
Benzo(ghi)perylene	µg/kg	123	<5.6	71	144	53	<6.3	40	NS	NS
Chrysene	µg/kg	**190**	<5.6	73	**204**	67	<6.3	45	145.1	14,800
Dibenz(a,h)anthracene	µg/kg	12	<8.5	<8.6	<46	<8.5	<9.4	<8.4	NS	15
Fluoranthene	µg/kg	669	25	241	647	192	<13	123	88,817.90	2,290,000
Fluorene	µg/kg	52	<11	19	<60	<11	<13	<11	14,814.80	2,290,000
Indeno(1,2,3-cd)pyrene	µg/kg	123	<5.6	60	144	46	<6.3	35	NS	148
1-Methylnaphthalene	µg/kg	<33	<34	36	<180	<34	<38	<33	NS	15,600
2-Methylnaphthalene	µg/kg	190	<28	183	<150	64	<31	40	NS	229,000
Naphthalene	µg/kg	<33	<34	65	<180	<34	<38	<33	658.7	2,150
Phenanthrene	µg/kg	479	20	126	552	110	<6.3	58	NS	115,000
Pyrene	µg/kg	524	12	183	647	147	<6.3	97	54,473	1,720,000

Notes:
NS = no standard
NA = Not Analyzed
µg/kg = micrograms per kilogram (equivalent to parts per billion, ppb)
mg/kg = milligrams per kilogram (equivalent to parts per million, ppm)
Exceedances: **BOLD** = Groundwater Protection Exceedence ***BOLD*** = Groundwater & Direct Contact Exceedence
ITALICS = Direct Contact Exceedence

Table A.2 (page 2 of 5)
Pre-Remedial Soil Analytical Table - 401-441 W. Wisconsin Avenue
Milwaukee, Wisconsin
Sigma Project No. 12422

Soil Boring Identification:		**MW-5**	**MW-6**	**MW-7**	**B-1**		**B-2**	**B-3**		Groundwater Pathway RCL	Non-Industrial Direct Contact RCL
	Date	08/12/04	08/12/04	08/12/04	08/13/98		08/14/98	08/13/98			
Analytes	Depth	3-5	1-3	1-3	10-12	16-18	10-12	6-8	10-12		
Unsaturated/Saturated	U/S	U	U	U	S	S	S	U	S		
RCRA Metals					GAS 1998 Sample		GAS 1998 Sample	GAS 1998 Sample			
Arsenic	mg/kg	*3.2*	*10*	*8.4*	<9.2	<9.2	<9.2	<9.0	<9.6	0.58	0.39
Barium	mg/kg	48	42	92	126	36	28	28	14	165	15,300
Cadmium	mg/kg	**0.77**	**1.2**	**1.3**	<2.3	<2.4	<2.3	<2.2	<2.4	0.75	70
Chromium	mg/kg	17	7.2	7.7	14	12	13	12	7.9	360,000	NS
Lead	mg/kg	11	**48**	**100**	**298**	12	<11	<11	<12	27	400
Mercury	mg/kg	0.031	0.11	0.13	**0.33**	<0.024	<0.023	<0.022	<0.024	0.21	3.13
Selenium	mg/kg	<4.8	<4.5	<4.3	<17	<18	<17	<17	<18	0.52	391
Silver	mg/kg	<0.13	<0.12	<0.12	<2.3	<2.4	<2.3	<2.2	<2.4	0.85	391
PVOCs/Detected VOCs											
Benzene	µg/kg	<30	<28	<27	<29	<30	<29	<28	<30	5.1	1,490
cis-1,2-Dichloroethene	µg/kg	<30	<28	<27	<29	<30	<29	<28	<30	41.2	156,000
trans-1,2-Dichloroethene	µg/kg	<30	<28	<27	<29	<30	<29	<28	<30	58.8	211,000
Ethylbenzene	µg/kg	<30	<28	<27	<29	<30	<29	<28	<30	1,570	7,470
Methyl-tert-butyl-ether	µg/kg	<30	<28	<27	<29	<30	<29	<28	<30	27	59,400
Naphthalene	µg/kg	<30	487	76	172	<30	<29	82	<30	659	5,150
Tetrachloroethene	µg/kg	<30	<28	<27	**1,260**	<30	<29	<28	<30	4.5	30,700
Toluene	µg/kg	<30	<28	<27	<29	<30	<29	<28	<30	1,107	818,000
Trichloroethene	µg/kg	<30	<28	<27	**61**	<30	<29	<28	<30	3.6	644
1,2,4-Trimethylbenzene	µg/kg	<30	32	<27	49	<30	<29	<28	<30	1,379	89,800
1,3,5-Trimethylbenzene	µg/kg	<30	<28	<27	<29	<30	<29	<28	<30	1,379	182,000
Xylenes, Total	µg/kg	<42	77	<38	44	<30	<29	<28	<42	3,940	258,000
PAHs											
Acenaphthene	µg/kg	<60	883	1,080	<690	<61	<58	<120	<58	NS	3,440,000
Acenaphthylene	µg/kg	<100	<960	<92	<1,200	<102	<99	<210	<97	NS	487,000
Anthracene	µg/kg	<6.0	2,040	865	643	<6.1	<5.8	34	<5.8	196,744.20	17,200,000
Benz(a)anthracene	µg/kg	<6.0	*2,720*	*649*	*941*	<6.1	<5.8	<12	<5.8	NS	148
Benzo(b)fluoranthene	µg/kg	<6.0	***1,360***	*314*	*356*	<6.1	<5.8	<12	<5.8	480	148
Benzo(k)fluoranthene	µg/kg	<6.0	895	216	207	<6.1	<5.8	<12	<5.8	NS	1,480
Benzo(a)pyrene	µg/kg	<6.0	***1,700***	*422*	*884*	<6.1	<5.8	*60*	<5.8	470	15
Benzo(ghi)perylene	µg/kg	<6.0	1,130	227	930	<6.1	<5.8	54	<5.8	NS	NS
Chrysene	µg/kg	<6.0	**2,380**	551	643	<6.1	<5.8	<12	<5.8	145.1	14,800
Dibenz(a,h)anthracene	µg/kg	<8.9	*419*	*58*	<130	<12	<11	<24	<12	NS	15
Fluoranthene	µg/kg	17	6,570	2,270	3,440	<12	<11	179	16	88,817.90	2,290,000
Fluorene	µg/kg	<12	555	1,190	264	<12	<11	<24	<12	14,814.80	2,290,000
Indeno(1,2,3-cd)pyrene	µg/kg	<6.0	*1,030*	*238*	*482*	<6.1	<5.8	123	<5.8	NS	148
1-Methylnaphthalene	µg/kg	<36	<340	100	<410	<37	<35	<75	<35	NS	15,600
2-Methylnaphthalene	µg/kg	<30	2,380	3,460	1,150	<31	<30	<62	<29	NS	229,000
Naphthalene	µg/kg	<36	<340	162	631	<37	<35	<75	<35	658.7	2,150
Phenanthrene	µg/kg	<6.0	4,760	3,680	3,790	<6.1	<5.8	123	14	NS	115,000
Pyrene	µg/kg	11	7,250	1,950	2,180	<6.1	<5.8	146	9.7	54,473	1,720,000

Notes:
NS = no standard
NA = Not Analyzed
µg/kg = micrograms per kilogram (equivalent to parts per billion, ppb)
mg/kg = milligrams per kilogram (equivalent to parts per million, ppm)
Exceedances: **BOLD** = Groundwater Protection Exceedence ***BOLD*** = Groundwater & Direct Contact Exceedence
ITALICS = Direct Contact Exceedence

Table A.2 (page 3 of 5)
Pre-Remedial Soil Analytical Table - 401-441 W. Wisconsin Avenue
Milwaukee, Wisconsin
Sigma Project No. 12422

Soil Boring Identification:		**GP-1**	**GP-2**	**GP-3**	**GP-4**			**GP-5**			**GP-6**			Groundwater Pathway RCL	Non-Industrial Direct Contact RCL
	Date	04/07/11	04/07/11	04/07/11	04/07/11			04/07/11			04/07/11				
Analytes	Depth	1-3	1-3	1-3	4-6	10-12	14-16	6-8	10-12	14-16	4-6	8-10	18-20		
Unsaturated/Saturated	U/S	U	U	U	U	S	S	U	S	S	U	S	S		
PVOCs/Detected VOCs															
Benzene	µg/kg	NA	NA	NA	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	5.1	1,490
cis-1,2-Dichloroethene	µg/kg	NA	NA	NA	25.9 J	<14	<14	<14	18.9 J	<14	18.8 J	**142**	<14	41.2	156,000
trans-1,2-Dichloroethene	µg/kg	NA	NA	NA	<22	<22	<22	<22	<22	<22	<22	<22	<22	58.8	211,000
Ethylbenzene	µg/kg	NA	NA	NA	<55	<55	<55	<55	<55	<55	<55	<55	<55	1,570	7,470
Methyl-tert-butyl-ether	µg/kg	NA	NA	NA	<12	<12	<12	<12	<12	<12	<12	<12	<12	27	59,400
Naphthalene	µg/kg	NA	NA	NA	<107	164 J	<107	<107	<107	<107	<107	<107	<107	659	5,150
Tetrachloroethene	µg/kg	NA	NA	NA	<24	**430**	**61 J**	<24	<24	<24	<24	**1,970**	<24	4.5	30,700
Toluene	µg/kg	NA	NA	NA	<50	<50	<50	<50	<50	<50	<50	<50	<50	1,107	818,000
Trichloroethene	µg/kg	NA	NA	NA	<47	**74 J**	<47	<17	<17	<17	<17	**132 J**	<17	3.6	644
1,2,4-Trimethylbenzene	µg/kg	NA	NA	NA	<80	<80	<80	<80	<80	<80	<80	<80	<80	1,379	89,800
1,3,5-Trimethylbenzene	µg/kg	NA	NA	NA	<48	<48	<48	<48	<48	<48	<48	<48	<48	1,379	182,000
Xylenes, Total	µg/kg	NA	NA	NA	<136	<136	<136	<136	<136	<136	<136	<136	<136	3,940	258,000
PAHs															
Acenaphthene	µg/kg	500	186	25.7 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	3,440,000
Acenaphthylene	µg/kg	101	112	18.1 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	487,000
Anthracene	µg/kg	1,980	1,020	129	NA	NA	NA	NA	NA	NA	NA	NA	NA	196,744.20	17,200,000
Benzo(a)anthracene	µg/kg	*3,200*	*3,200*	*440*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	148
Benzo(b)fluoranthene	µg/kg	***3,500***	***3,900***	***560***	NA	NA	NA	NA	NA	NA	NA	NA	NA	480	148
Benzo(k)fluoranthene	µg/kg	1,040	1,020	187	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	1,480
Benzo(a)pyrene	µg/kg	***2,510***	***2,820***	*390*	NA	NA	NA	NA	NA	NA	NA	NA	NA	470	15
Benzo(ghi)perylene	µg/kg	1,640	1,680	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	NS
Chrysene	µg/kg	**2,660**	**2,490**	**390**	NA	NA	NA	NA	NA	NA	NA	NA	NA	145.1	14,800
Dibenz(a,h)anthracene	µg/kg	*420*	*460*	*53*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	15
Fluoranthene	µg/kg	6,200	5,500	890	NA	NA	NA	NA	NA	NA	NA	NA	NA	88,817.90	2,290,000
Fluorene	µg/kg	590	204	21.3 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	14,814.80	2,290,000
Indeno(1,2,3-cd)pyrene	µg/kg	*1,390*	*1,600*	*234*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	148
1-Methylnaphthalene	µg/kg	140	51 J	<17.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	15,600
2-Methylnaphthalene	µg/kg	226	70	<9.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	229,000
Naphthalene	µg/kg	410	68	<10.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	658.7	2,150
Phenanthrene	µg/kg	4,700	2,260	313	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	115,000
Pyrene	µg/kg	5,200	4,800	740	NA	NA	NA	NA	NA	NA	NA	NA	NA	54,473	1,720,000

Notes:
NS = no standard
NA = Not Analyzed
µg/kg = micrograms per kilogram (equivalent to parts per billion, ppb)
mg/kg = milligrams per kilogram (equivalent to parts per million, ppm)
Exceedances: **BOLD** = Groundwater Protection Exceedence ***BOLD*** = Groundwater & Direct Contact Exceedence
ITALICS = Direct Contact Exceedence

Table A.2 (page 4 of 5)
Pre-Remedial Soil Analytical Table - 401-441 W. Wisconsin Avenue
Milwaukee, Wisconsin
Sigma Project No. 12422

Soil Boring Identification:		GP-7			GP-8			GP-9			GP-10			GP-11			MW-8		Groundwater Pathway RCL	Non-Industrial Direct Contact RCL
	Date	04/07/11			04/07/11			04/07/11			04/07/11			04/07/11			04/19/11			
Analytes	Depth	4-6	10-12	14-16	2-4	6-8	18-20	2-4	6-8	10-12	4-6	10-12	14-16	2-4	10-12	14-16	3.5-5	8.5-10		
Unsaturated/Saturated	U/S	U	S	S	U	U	S	U	U	S	U	S	S	U	S	S	U	S		
PVOCs/Detected VOCs																				
Benzene	µg/kg	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	**25.2 J**	<8.9	<8.9	<8.9	5.1	1,490
cis-1,2-Dichloroethene	µg/kg	<14	**285**	**59**	<14	<14	<14	35 J	28 J	<14	<14	<14	<14	<14	<14	<14	<14	<14	41.2	156,000
trans-1,2-Dichloroethene	µg/kg	<22	34 J	<22	<22	<22	<22	<22	<22	<22	<22	<22	<22	<22	<22	<22	<22	<22	58.8	211,000
Ethylbenzene	µg/kg	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	1,570	7,470
Methyl-tert-butyl-ether	µg/kg	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	27	59,400
Naphthalene	µg/kg	<107	<107	<107	<107	<107	<107	<107	202 J	<107	<107	<107	<107	<107	<107	<107	<107	<107	659	5,150
Tetrachloroethene	µg/kg	**40 J**	**380**	**38 J**	<24	<24	<24	<24	**142**	<24	<24	<24	<24	<24	**94**	<24	<24	<24	4.5	30,700
Toluene	µg/kg	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	115 J	<50	<50	<50	1,107	818,000
Trichloroethene	µg/kg	<17	**180**	<17	<47	<47	<47	<47	<47	<47	<47	<47	<47	<47	**122 J**	<47	<47	<47	3.6	644
1,2,4-Trimethylbenzene	µg/kg	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	1,379	89,800
1,3,5-Trimethylbenzene	µg/kg	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	1,379	182,000
Xylenes, Total	µg/kg	<136	59 J	<136	<136	<136	<136	<136	<136	<136	<136	<136	<136	<136	179 J	<136	<136	<136	3,940	258,000

Notes:
NS = no standard
NA = Not Analyzed
µg/kg = micrograms per kilogram (equivalent to parts per billion, ppb)
mg/kg = milligrams per kilogram (equivalent to parts per million, ppm)
Exceedances: **BOLD** = Groundwater Protection Exceedence ***BOLD*** = Groundwater & Direct Contact Exceedence
ITALICS = Direct Contact Exceedence

Table 2 (page 5 of 5)
Pre-Remedial Soil Analytical Table - 401-441 W. Wisconsin Avenue
Milwaukee, Wisconsin
Sigma Project No. 12422

Soil Boring Identification:		GP-12			GP-13			GP-14			GP-15			GP-16			GP-17			GP-18			Groundwater Pathway RCL	Non-Industrial Direct Contact RCL
	Date	06/30/11			06/30/11			06/30/11			06/30/11			06/30/11			06/30/11			06/30/11				
Analytes	Depth	6-8	8-10	12-14	6-8	8-10	14-16	4-6	8-10	10-12	4-6	8-10	12-14	4-6	8-10	10-12	2-4	6-8	10-12	6-8	10-12	14-16		
Unsaturated/Saturated	U/S	U	U	S	U	U	S	U	U	S	U	U	S	U	U	S	U	U	S	U	S	S		
PVOCs/Detected VOCs																								
Benzene	µg/kg	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	**24.4 J**	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	5.1	1,490
cis-1,2-Dichloroethene	µg/kg	16.7 J	<14	**59**	<14	<14	<14	<14	<14	<14	**49**	39 J	34 J	<14	**109**	36 J	<14	<14	**480**	<14	**830**	**65**	41.2	156,000
trans-1,2-Dichloroethene	µg/kg	<22	<22	<22	<22	<22	<22	<22	<22	<22	<22	<22	<22	<22	<22	<22	<22	<22	**77**	<22	**430**	<22	58.8	211,000
Ethylbenzene	µg/kg	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	1,570	7,470
Methyl-tert-butyl-ether	µg/kg	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	27	59,400
Naphthalene	µg/kg	<107	<107	<107	131 J	152 J	<107	143 J	<107	<107	<107	<107	<107	<107	<107	<107	<107	<107	<107	<107	304 J	<107	659	5,150
Tetrachloroethene	µg/kg	<24	**135**	<24	<24	**41 J**	<24	**47 J**	**32 J**	**59 J**	<24	<24	**76 J**	<24	**360**	**75 J**	<24	<24	**218**	<24	**265**	<24	4.5	30,700
Toluene	µg/kg	<50	<50	<50	<50	<50	<50	102 J	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	1,107	818,000
Trichloroethene	µg/kg	<17	**18.8 J**	<17	**38 J**	**98**	<17	**45 J**	<17	<17	**17.8 J**	<17	<17	<17	**103**	<17	<17	<17	**27.2 J**	<47	**184**	<47	3.6	644
1,2,4-Trimethylbenzene	µg/kg	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	1,379	89,800
1,3,5-Trimethylbenzene	µg/kg	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	1,379	182,000
Vinyl Chloride	µg/kg	<16	<16	<16	<16	<16	<16	<16	<16	<16	<16	<16	<16	<16	<16	<16	<16	<16	<16	**37 J**	**35 J**	<16	0.1	67
Xylenes, Total	µg/kg	<136	<136	<136	<136	<136	<136	207 J	<136	<136	<136	<136	<136	<136	<136	<136	<136	<136	<136	<136	<136	<136	3,940	258,000

Notes:
NS = no standard
NA = Not Analyzed
µg/kg = micrograms per kilogram (equivalent to parts per billion, ppb)
mg/kg = milligrams per kilogram (equivalent to parts per million, ppm)
Exceedances: **BOLD** = Groundwater Protection Exceedence ***BOLD*** = Groundwater & Direct Contact Exceedence
ITALICS = Direct Contact Exceedence

Table A.3
Post Remedial Soil Analytical Table - 435 W. Wisconsin Avenue
Milwaukee, Wisconsin
Sigma Project No. 12422

Soil Boring Identification:		**SW-1**	**SW-2**	**SW-3**	**SW-4**	**SW-5**	**SW-6**	**SW-7**	**SW-8**	**SW-9**	**SW-10**	**SW-11**	**SW-12**	**SW-13**	Groundwater Pathway RCL	Non-Industrial Direct Contact RCL
	Date	09/09/11	09/09/11	09/09/11	09/09/11	09/12/11	09/12/11	09/12/11	09/13/11	09/13/11	09/13/11	09/13/11	09/13/11	09/13/11		
Analytes	Depth	10'	10'	10'	10'	9'	9'	9'	9'	9'	9'	9'	9'	9'		
Unsaturated/Saturated	U/S	S	S	S	S	U	U	U	U	U	U	U	U	U		
PVOCs/Detected VOCs																
Benzene	µg/kg	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	<8.9	5.1	1,490
cis-1,2-Dichloroethene	µg/kg	<14	<14	<14	<14	<14	<14	<14	<14	30 "J"	**284**	**59**	36 "J"	<14	41.2	156,000
trans-1,2-Dichloroethene	µg/kg	<22	<22	<22	<22	<22	<22	<22	<22	<22	39 "J"	<22	<22	<22	58.8	211,000
Ethylbenzene	µg/kg	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	<55	1,570	7,470
Methyl-tert-butyl-ether	µg/kg	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	27	59,400
Naphthalene	µg/kg	<107	<107	150 "J"	<107	<107	<107	<107	<107	<107	122 "J"	<107	<107	<107	659	5,150
Tetrachloroethene	µg/kg	<24	<24	**2,310**	<24	<24	**42 "J"**	**154**	<24	**120**	**780**	<24	<24	<24	4.5	30,700
Toluene	µg/kg	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	1,107	818,000
Trichloroethene	µg/kg	<17	<17	**143**	**32 "J"**	<17	<17	**33 "J"**	<17	**49 "J"**	**156**	<17	**28.7 "J"**	<17	3.6	644
1,2,4-Trimethylbenzene	µg/kg	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	<80	1,379	89,800
1,3,5-Trimethylbenzene	µg/kg	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	<48	1,379	182,000
Vinyl Chloride	µg/kg	<16	<16	<16	<16	<16	<16	<16	<16	<16	<16	<16	<16	<16	0.1	67
Xylenes, Total	µg/kg	<136	<136	<136	<136	<136	<136	<136	<136	<136	<136	<136	<136	<136	3,940	258,000

Notes:
NS = no standard
NA = Not Analyzed
µg/kg = micrograms per kilogram (equivalent to parts per billion, ppb)
mg/kg = milligrams per kilogram (equivalent to parts per million, ppm)
Exceedances: **BOLD** = Groundwater Protection Exceedence ***BOLD*** = Groundwater & Direct Contact Exceedence
ITALICS = Direct Contact Exceedence

Table A.4
Pre and Post Remaining Soil Contamination Soil Analytical Table - 401-441 W. Wisconsin Avenue
Milwaukee, Wisconsin
Sigma Project No. 12422

Soil Boring Identification:		**MW-1**		**MW-4**	Groundwater	Non-Industrial
	Date	08/12/04		08/12/04	Pathway	Direct Contact
Analytes	Depth	1-3	7-9	1-3	RCL	RCL
Unsaturated/Saturated	U/S	U	U	U		
RCRA Metals						
Arsenic	mg/kg	***5.4***	***6.5***	***8.7***	0.58	0.39
Barium	mg/kg	27	29	45	165	15,300
Cadmium	mg/kg	**0.95**	**1.2**	**1.2**	0.75	70
Chromium	mg/kg	8.9	8.4	17	360,000	NS
Lead	mg/kg	21	5.2	**100**	27	400
Mercury	mg/kg	0.059	0.016	0.04	0.21	3.13
Selenium	mg/kg	<4.5	<4.5	<4.5	0.52	391
Silver	mg/kg	<0.12	<0.12	0.19	0.85	391
PVOCs/Detected VOCs						
Benzene	µg/kg	<28	<28	<28	5.1	1,490
cis-1,2-Dichloroethene	µg/kg	<28	<28	<28	41.2	156,000
trans-1,2-Dichloroethene	µg/kg	<28	<28	<28	58.8	211,000
Ethylbenzene	µg/kg	<28	<28	<28	1,570	7,470
Methyl-tert-butyl-ether	µg/kg	<28	<28	<28	27	59,400
Naphthalene	µg/kg	<28	<28	38	659	5,150
Tetrachloroethene	µg/kg	<28	<28	**95**	4.5	30,700
Toluene	µg/kg	<28	<28	<28	1,107	818,000
Trichloroethene	µg/kg	<28	<28	<28	3.6	644
1,2,4-Trimethylbenzene	µg/kg	<28	<28	<28	1,379	89,800
1,3,5-Trimethylbenzene	µg/kg	<28	<28	<28	1,379	182,000
Xylenes, Total	µg/kg	<39	<40	<39	3,940	258,000
PAHs						
Acenaphthene	µg/kg	66	<56	<56	NS	3,440,000
Acenaphthylene	µg/kg	<95	<96	<95	NS	487,000
Anthracene	µg/kg	123	<5.6	9.8	196,744.20	17,200,000
Benz(a)anthracene	µg/kg	*212*	8.5	49	NS	148
Benzo(b)fluoranthene	µg/kg	134	<5.6	37	480	148
Benzo(k)fluoranthene	µg/kg	87	<5.6	25	NS	1,480
Benzo(a)pyrene	µg/kg	*167*	<5.6	*40*	470	15
Benzo(ghi)perylene	µg/kg	123	<5.6	40	NS	NS
Chrysene	µg/kg	**190**	<5.6	45	145.1	14,800
Dibenz(a,h)anthracene	µg/kg	12	<8.5	<8.4	NS	15
Fluoranthene	µg/kg	669	25	123	88,817.90	2,290,000
Fluorene	µg/kg	52	<11	<11	14,814.80	2,290,000
Indeno(1,2,3-cd)pyrene	µg/kg	123	<5.6	35	NS	148
1-Methylnaphthalene	µg/kg	<33	<34	<33	NS	15,600
2-Methylnaphthalene	µg/kg	190	<28	40	NS	229,000
Naphthalene	µg/kg	<33	<34	<33	658.7	2,150
Phenanthrene	µg/kg	479	20	58	NS	115,000
Pyrene	µg/kg	524	12	97	54,473	1,720,000

Notes:
NS = no standard
NA = Not Analyzed
µg/kg = micrograms per kilogram (equivalent to parts per billion, ppb)
mg/kg = milligrams per kilogram (equivalent to parts per million, ppm)
Exceedances: **BOLD** = Groundwater Protection Exceedence
ITALICS = Direct Contact Exceedence

Table A.4
Pre and Post Remaining Soil Contamination Soil Analytical Table - 401-441 W. Wisconsin Avenue
Milwaukee, Wisconsin
Sigma Project No. 12422

Soil Boring Identification:		**MW-5**	**MW-6**	**MW-7**	Groundwater Pathway RCL	Non-Industrial Direct Contact RCL
	Date	08/12/04	08/12/04	08/12/04		
Analytes	Depth	3-5	1-3	1-3		
Unsaturated/Saturated	U/S	U	U	U		
RCRA Metals						
Arsenic	mg/kg	*3.2*	*10*	*8.4*	0.58	0.39
Barium	mg/kg	48	42	92	165	15,300
Cadmium	mg/kg	**0.77**	**1.2**	**1.3**	0.75	70
Chromium	mg/kg	17	7.2	7.7	360,000	NS
Lead	mg/kg	11	**48**	**100**	27	400
Mercury	mg/kg	0.031	0.11	0.13	0.21	3.13
Selenium	mg/kg	<4.8	<4.5	<4.3	0.52	391
Silver	mg/kg	<0.13	<0.12	<0.12	0.85	391
PVOCs/Detected VOCs						
Benzene	µg/kg	<30	<28	<27	5.1	1,490
cis-1,2-Dichloroethene	µg/kg	<30	<28	<27	41.2	156,000
trans-1,2-Dichloroethene	µg/kg	<30	<28	<27	58.8	211,000
Ethylbenzene	µg/kg	<30	<28	<27	1,570	7,470
Methyl-tert-butyl-ether	µg/kg	<30	<28	<27	27	59,400
Naphthalene	µg/kg	<30	487	76	659	5,150
Tetrachloroethene	µg/kg	<30	<28	<27	4.5	30,700
Toluene	µg/kg	<30	<28	<27	1,107	818,000
Trichloroethene	µg/kg	<30	<28	<27	3.6	644
1,2,4-Trimethylbenzene	µg/kg	<30	32	<27	1,379	89,800
1,3,5-Trimethylbenzene	µg/kg	<30	<28	<27	1,379	182,000
Xylenes, Total	µg/kg	<42	77	<38	3,940	258,000
PAHs						
Acenaphthene	µg/kg	<60	883	1,080	NS	3,440,000
Acenaphthylene	µg/kg	<100	<960	<92	NS	487,000
Anthracene	µg/kg	<6.0	2,040	865	196,744.20	17,200,000
Benz(a)anthracene	µg/kg	<6.0	*2,720*	*649*	NS	148
Benzo(b)fluoranthene	µg/kg	<6.0	***1,360***	*314*	480	148
Benzo(k)fluoranthene	µg/kg	<6.0	895	216	NS	1,480
Benzo(a)pyrene	µg/kg	<6.0	***1,700***	*422*	470	15
Benzo(ghi)perylene	µg/kg	<6.0	1,130	227	NS	NS
Chrysene	µg/kg	<6.0	**2,380**	551	145.1	14,800
Dibenz(a,h)anthracene	µg/kg	<8.9	*419*	*58*	NS	15
Fluoranthene	µg/kg	17	6,570	2,270	88,817.90	2,290,000
Fluorene	µg/kg	<12	555	1,190	14,814.80	2,290,000
Indeno(1,2,3-cd)pyrene	µg/kg	<6.0	*1,030*	*238*	NS	148
1-Methylnaphthalene	µg/kg	<36	<340	100	NS	15,600
2-Methylnaphthalene	µg/kg	<30	2,380	3,460	NS	229,000
Naphthalene	µg/kg	<36	<340	162	658.7	2,150
Phenanthrene	µg/kg	<6.0	4,760	3,680	NS	115,000
Pyrene	µg/kg	11	7,250	1,950	54,473	1,720,000

Notes:
NS = no standard
NA = Not Analyzed
µg/kg = micrograms per kilogram (equivalent to parts per billion, ppb)
mg/kg = milligrams per kilogram (equivalent to parts per million, ppm)
Exceedances: **BOLD** = Groundwater Protection Exceedence
ITALICS = Direct Contact Exceedence

Table A.4
Pre and Post Remaining Soil Contamination Soil Analytical Table - 401-441 W. Wisconsin Avenue
Milwaukee, Wisconsin
Sigma Project No. 12422

Soil Boring Identification:		**GP-1**	**GP-2**	**GP-3**	Groundwater Pathway RCL	Non-Industrial Direct Contact RCL
	Date	04/07/11	04/07/11	04/07/11		
Analytes	Depth	1-3	1-3	1-3		
Unsaturated/Saturated	U/S	U	U	U		
PVOCs/Detected VOCs						
Benzene	µg/kg	NA	NA	NA	5.1	1,490
cis-1,2-Dichloroethene	µg/kg	NA	NA	NA	41.2	156,000
trans-1,2-Dichloroethene	µg/kg	NA	NA	NA	58.8	211,000
Ethylbenzene	µg/kg	NA	NA	NA	1,570	7,470
Methyl-tert-butyl-ether	µg/kg	NA	NA	NA	27	59,400
Naphthalene	µg/kg	NA	NA	NA	659	5,150
Tetrachloroethene	µg/kg	NA	NA	NA	4.5	30,700
Toluene	µg/kg	NA	NA	NA	1,107	818,000
Trichloroethene	µg/kg	NA	NA	NA	3.6	644
1,2,4-Trimethylbenzene	µg/kg	NA	NA	NA	1,379	89,800
1,3,5-Trimethylbenzene	µg/kg	NA	NA	NA	1,379	182,000
Xylenes, Total	µg/kg	NA	NA	NA	3,940	258,000
PAHs						
Acenaphthene	µg/kg	500	186	25.7 J	NS	3,440,000
Acenaphthylene	µg/kg	101	112	18.1 J	NS	487,000
Anthracene	µg/kg	1,980	1,020	129	196,744.20	17,200,000
Benzo(a)anthracene	µg/kg	*3,200*	*3,200*	*440*	NS	148
Benzo(b)fluoranthene	µg/kg	***3,500***	***3,900***	***560***	480	148
Benzo(k)fluoranthene	µg/kg	1,040	1,020	187	NS	1,480
Benzo(a)pyrene	µg/kg	***2,510***	***2,820***	*390*	470	15
Benzo(ghi)perylene	µg/kg	1,640	1,680	270	NS	NS
Chrysene	µg/kg	**2,660**	**2,490**	**390**	145.1	14,800
Dibenz(a,h)anthracene	µg/kg	*420*	*460*	*53*	NS	15
Fluoranthene	µg/kg	6,200	5,500	890	88,817.90	2,290,000
Fluorene	µg/kg	590	204	21.3 J	14,814.80	2,290,000
Indeno(1,2,3-cd)pyrene	µg/kg	*1,390*	*1,600*	*234*	NS	148
1-Methylnaphthalene	µg/kg	140	51 J	<17.9	NS	15,600
2-Methylnaphthalene	µg/kg	226	70	<9.6	NS	229,000
Naphthalene	µg/kg	410	68	<10.8	658.7	2,150
Phenanthrene	µg/kg	4,700	2,260	313	NS	115,000
Pyrene	µg/kg	5,200	4,800	740	54,473	1,720,000

Notes:
NS = no standard
NA = Not Analyzed
µg/kg = micrograms per kilogram (equivalent to parts per billion, ppb)
mg/kg = milligrams per kilogram (equivalent to parts per million, ppm)
Exceedances: **BOLD** = Groundwater Protection Exceedence
ITALICS = Direct Contact Exceedence

Table A.4
Pre and Post Remaining Soil Contamination Soil Analytical Table - 401-441 W. Wisconsin Avenue
Milwaukee, Wisconsin
Sigma Project No. 12422

Soil Boring Identification:		**GP-7**	**GP-9**	Groundwater Pathway RCL	Non-Industrial Direct Contact RCL
	Date	04/07/11	04/07/11		
Analytes	Depth	4-6	6-8		
Unsaturated/Saturated	U/S	U	U		
PVOCs/Detected VOCs					
Benzene	µg/kg	<8.9	<8.9	5.1	1,490
cis-1,2-Dichloroethene	µg/kg	<14	28 J	41.2	156,000
trans-1,2-Dichloroethene	µg/kg	<22	<22	58.8	211,000
Ethylbenzene	µg/kg	<55	<55	1,570	7,470
Methyl-tert-butyl-ether	µg/kg	<12	<12	27	59,400
Naphthalene	µg/kg	<107	202 J	659	5,150
Tetrachloroethene	µg/kg	**40 J**	**142**	4.5	30,700
Toluene	µg/kg	<50	<50	1,107	818,000
Trichloroethene	µg/kg	<17	<47	3.6	644
1,2,4-Trimethylbenzene	µg/kg	<80	<80	1,379	89,800
1,3,5-Trimethylbenzene	µg/kg	<48	<48	1,379	182,000
Xylenes, Total	µg/kg	<136	<136	3,940	258,000

Notes:
NS = no standard
NA = Not Analyzed
µg/kg = micrograms per kilogram (equivalent to parts per billion, ppb)
mg/kg = milligrams per kilogram (equivalent to parts per million, ppm)
Exceedances: **BOLD** = Groundwater Protection Exceedence
ITALICS = Direct Contact Exceedence

Table A.4
Pre and Post Remaining Soil Contamination Soil Analytical Table - 401-441 W. Wisconsin Avenue
Milwaukee, Wisconsin
Sigma Project No. 12422

Soil Boring Identification:		**GP-12**	**GP-13**		**GP-14**		**GP-15**	Groundwater Pathway RCL	Non-Industrial Direct Contact RCL
	Date	6/30/2011	06/30/11		06/30/11		06/30/11		
Analytes	Depth	8-10	6-8	8-10	4-6	8-10	4-6		
Unsaturated/Saturated	U/S	U	U	U	U	U	U		
PVOCs/Detected VOCs									
Benzene	µg/kg	<8.9	<8.9	<8.9	**24.4 J**	<8.9	<8.9	5.1	1,490
cis-1,2-Dichloroethene	µg/kg	<14	<14	<14	<14	<14	**49**	41.2	156,000
trans-1,2-Dichloroethene	µg/kg	<22	<22	<22	<22	<22	<22	58.8	211,000
Ethylbenzene	µg/kg	<55	<55	<55	<55	<55	<55	1,570	7,470
Methyl-tert-butyl-ether	µg/kg	<12	<12	<12	<12	<12	<12	27	59,400
Naphthalene	µg/kg	<107	131 J	152 J	143 J	<107	<107	659	5,150
Tetrachloroethene	µg/kg	**135**	<24	**41 J**	**47 J**	**32 J**	<24	4.5	30,700
Toluene	µg/kg	<50	<50	<50	102 J	<50	<50	1,107	818,000
Trichloroethene	µg/kg	**18.8 J**	**38 J**	**98**	**45 J**	<17	**17.8 J**	3.6	644
1,2,4-Trimethylbenzene	µg/kg	<80	<80	<80	<80	<80	<80	1,379	89,800
1,3,5-Trimethylbenzene	µg/kg	<48	<48	<48	<48	<48	<48	1,379	182,000
Vinyl Chloride	µg/kg	<16	<16	<16	<16	<16	<16	0.1	67
Xylenes, Total	µg/kg	<136	<136	<136	207 J	<136	<136	3,940	258,000

Notes:
NS = no standard
NA = Not Analyzed
µg/kg = micrograms per kilogram (equivalent to parts per billion, ppb)
mg/kg = milligrams per kilogram (equivalent to parts per million, ppm)
Exceedances: **BOLD** = Groundwater Protection Exceedence ***BOLD*** = Groundwater & Direct Contact Exceedence
ITALICS = Direct Contact Exceedence

Table A.4
Pre and Post Remaining Soil Contamination Soil Analytical Table - 401-441 W. Wisconsin Avenue
Milwaukee, Wisconsin
Sigma Project No. 12422

Soil Boring Identification:		**SW-6**	**SW-7**	**SW-9**	**SW-10**	**SW-12**	Groundwater Pathway RCL	Non-Industrial Direct Contact RCL
	Date	09/12/11	09/12/11	09/13/11	09/13/11	09/13/11		
Analytes	Depth	9'	9'	9'	9'	9'		
Unsaturated/Saturated	U/S	U	U	U	U	U		
PVOCs/Detected VOCs								
Benzene	µg/kg	<8.9	<8.9	<8.9	<8.9	<8.9	5.1	1,490
cis-1,2-Dichloroethene	µg/kg	<14	<14	30 "J"	**284**	36 "J"	41.2	156,000
trans-1,2-Dichloroethene	µg/kg	<22	<22	<22	39 "J"	<22	58.8	211,000
Ethylbenzene	µg/kg	<55	<55	<55	<55	<55	1,570	7,470
Methyl-tert-butyl-ether	µg/kg	<12	<12	<12	<12	<12	27	59,400
Naphthalene	µg/kg	<107	<107	<107	122 "J"	<107	659	5,150
Tetrachloroethene	µg/kg	**42 "J"**	**154**	**120**	**780**	<24	4.5	30,700
Toluene	µg/kg	<50	<50	<50	<50	<50	1,107	818,000
Trichloroethene	µg/kg	<17	**33 "J"**	**49 "J"**	**156**	**28.7 "J"**	3.6	644
1,2,4-Trimethylbenzene	µg/kg	<80	<80	<80	<80	<80	1,379	89,800
1,3,5-Trimethylbenzene	µg/kg	<48	<48	<48	<48	<48	1,379	182,000
Vinyl Chloride	µg/kg	<16	<16	<16	<16	<16	0.1	67
Xylenes, Total	µg/kg	<136	<136	<136	<136	<136	3,940	258,000

Notes:
NS = no standard
NA = Not Analyzed
µg/kg = micrograms per kilogram (equivalent to parts per billion, ppb)
mg/kg = milligrams per kilogram (equivalent to parts per million, ppm)
Exceedances: **BOLD** = Groundwater Protection Exceedence ***BOLD*** = Groundwater & Direct Contact Exceedence
ITALICS = Direct Contact Exceedence

A.5 Vapor Analytical Table

No data collected. Currently no structure is present at the site; therefore sampling to evaluate vapor intrusion was not completed.

A.6. Other Media of Concern (e.g. sediment or surface water)

No data collected. The large lateral distance between the site and surface bodies of water minimizes the potential risk of groundwater impacts migrating to off-site surface water.

Table A.7
Water Level Elevations
Former One Hour Martinizing, 401-441 W. Wisconsin Avenue
Milwaukee Wisconsin
Sigma Project #12422

Well Identification	Ground Surface Elevation (feet local datum)	Top of Casing Elevation (feet local datum)	Screen Interval (feet bgs)	Depth to Groundwater (feet toc)	Depth to Groundwater (feet bgs)	Groundwater Elevation (feet local datum)	Date
MW-1	598.46	598.10	5.4-15.4	14.90	15.26	583.20	08/18/2004
		Flush Mount		12.25	12.61	585.85	09/13/2004
				9.34	9.70	588.76	03/18/2011
				8.63	8.99	589.47	05/05/2011
				9.91	10.27	588.19	01/06/2012
				8.81	9.17	589.29	03/30/2012
				9.70	10.06	588.40	07/10/2012
				11.00	11.36	587.10	10/19/2012
MW-2	596.51	596.11	5.4-15.4	9.12	9.52	586.99	08/18/2004
		Flush Mount		9.35	9.75	586.76	09/13/2004
				9.14	9.54	586.97	03/18/2011
				8.57	8.97	587.54	05/05/2011
MW-2R	596.555	596.29	4.8-14.8	9.00	9.26	587.29	01/06/2012
				8.79	9.05	587.50	03/30/2012
		Flush Mount		9.18	9.44	587.11	07/10/2012
				9.14	9.40	587.15	10/19/2012
MW-3	597.5	597.13	5.3-15.3	9.98	10.35	587.15	08/18/2004
		Flush Mount		10.15	10.52	586.98	09/13/2004
				9.59	9.96	587.54	03/18/2011
				9.20	9.57	587.93	05/05/2011
MW-3R	597.49	597.09	4.55-14.55	9.38	9.78	587.71	01/06/2012
				8.92	9.32	588.17	03/30/2012
		Flush Mount		9.35	9.75	587.74	07/10/2012
				9.58	9.98	587.51	10/19/2012
PZ-1	597.71	597.32	25.9-30.9	10.08	10.47	587.24	08/18/2004
		Flush Mount		10.30	10.69	587.02	09/13/2004
				9.49	9.88	587.83	03/18/2011
				9.18	9.57	588.14	05/05/2011
PZ-1R	597.364	597.06	25.75-30.75	12.58	12.89	584.48	01/06/2012
				10.14	10.45	586.92	03/30/2012
		Flush Mount		10.59	10.90	586.47	07/10/2012
				11.61	11.92	585.45	10/19/2012
MW-4	597.2	596.80	5.5-15.5	7.96	8.36	588.84	08/18/2004
		Flush Mount		8.35	8.75	588.45	09/13/2004
				7.52	7.92	589.28	03/18/2011
				6.57	6.97	590.23	05/05/2011
				9.10	9.50	587.70	01/06/2012
				8.38	8.78	588.42	03/30/2012
				9.15	9.55	587.65	07/10/2012
				9.23	9.63	587.57	10/19/2012
MW-5	598.92	598.53	5.5-15.4	10.63	11.02	587.90	08/18/2004
		Flush Mount		11.13	11.52	587.40	09/13/2004
				10.25	10.64	588.28	03/18/2011
				9.42	9.81	589.11	05/05/2011
				10.85	11.24	587.68	01/06/2012
				10.20	10.59	588.33	03/30/2012
				10.92	11.31	587.61	07/10/2012
				10.82	11.21	587.71	10/19/2012
MW-6	596.89	596.48	5.3-15.3	9.48	9.89	587.00	08/18/2004
		Flush Mount		9.15	9.56	587.33	09/13/2004
				8.71	9.12	587.77	03/18/2011
				8.32	8.73	588.16	05/05/2011
				9.81	10.22	586.67	01/06/2012
				9.18	9.59	587.30	03/30/2012
				9.74	10.15	586.74	07/10/2012
				9.80	10.21	586.68	10/19/2012
MW-7	594.3	593.53	5.4-15.4	5.39	6.16	588.14	08/18/2004
		Flush Mount		8.19	8.96	585.34	09/13/2004
				7.23	8.00	586.30	03/18/2011
				7.57	8.34	585.96	05/05/2011
				8.18	8.95	585.35	01/06/2012
				7.89	8.66	585.64	03/30/2012
				8.52	9.29	585.01	07/10/2012
				8.40	9.17	585.13	10/19/2012
MW-8	595.99	595.45		8.61	9.15	586.84	05/05/2011
				8.85	9.39	586.60	01/06/2012
				8.68	9.22	586.77	03/30/2012
				9.32	9.86	586.13	07/10/2012
				9.08	9.62	586.37	10/19/2012
MW-9	593.77			8.18	NM	585.59	01/06/2012
				10.15	NM	583.62	03/30/2012
				12.77	NM	581.00	07/10/2012
				9.10	NM	584.67	10/19/2012

Notes: MSL = mean sea level
feet toc = feet below top of casing
feet bgs = feet below ground surface

Table A.8

Mann-Kendall results for MW-2R and MW-3R

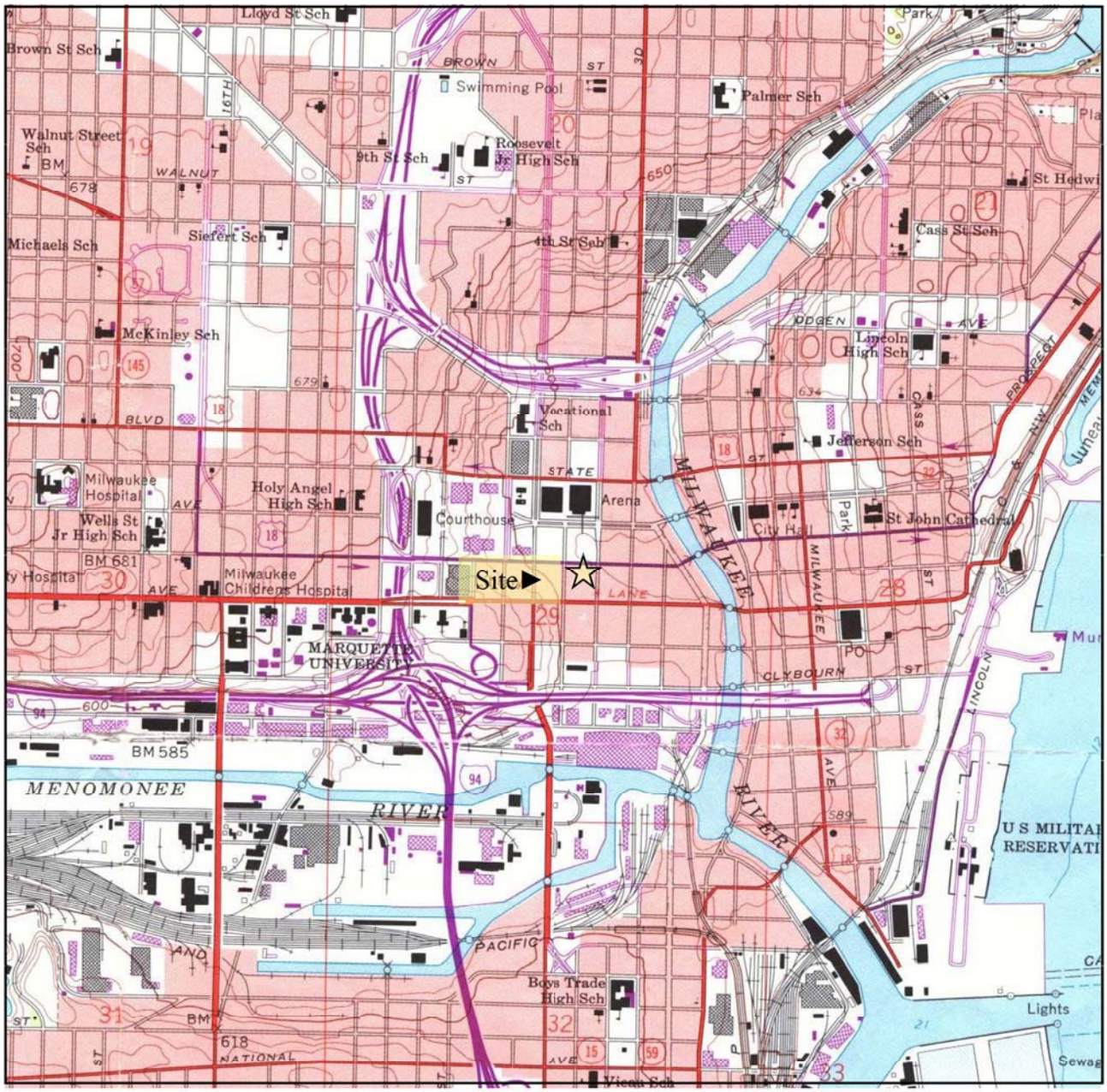
Mann-Kendall Statistical Test

Site Name = 401 W. Wisconsin Ave.				BRRTS No. = 0		Well Number = MW-2/MW-2R	
	Compound ->	PCE	TCE	1,2-DCE (cis)	Vinyl Chloride	0	0
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	18-Aug-04	79.00	55.00	100.00	14.00		
2	5-May-11	93.00	144.00	216.00	51.00		
3	6-Jan-12	44.00	43.00	26.60	0.90		
4	30-Mar-12	47.00	33.00	26.80	0.90		
5	10-Jul-12	46.00	35.00	18.00	0.91		
6	19-Oct-12	38.00	40.00	17.00	0.90		
7	#N/A						
8	#N/A						
9	#N/A						
10	#N/A						
	Mann Kendall Statistic (S) =	-9.0	-7.0	-11.0	-6.0	0.0	0.0
	Number of Rounds (n) =	6	6	6	6	0	0
	Average =	57.83	58.33	67.40	11.44	#DIV/0!	#DIV/0!
	Standard Deviation =	22.480	42.679	79.295	20.078	#DIV/0!	#DIV/0!
	Coefficient of Variation(CV)=	0.389	0.732	1.176	1.756	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected						n<4	n<4
Trend ≥ 80% Confidence Level		**DECREASING**	**DECREASING**	**DECREASING**	**DECREASING**	n<4	n<4
Trend ≥ 90% Confidence Level		**DECREASING**	No Trend	**DECREASING**	No Trend	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	NA	NA	NA	n<4 n<4	n<4 n<4
	Data Entry By = srm		Date = 21-Nov-11		Checked By = srm		

Mann-Kendall Statistical Test

Site Name =	401 W. Wisconsin Ave.			BRRTS No. =	0	Well Number =	MW-3/MW-3R
	Compound ->	PCE	TCE	1,2-DCE (cis)	Vinyl Chloride	0	0
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	18-Aug-04	2700.00	82.00	210.00	5.80		
2	5-May-11	283.00	77.00	88.00	9.00		
3	6-Jan-12	28.80	8.30	25.70	7.00		
4	5-Apr-12	21.00	4.80	34.00	8.00		
5	10-Jul-12	20.80	8.90	70.00	30.40		
6	19-Oct-12	20.40	11.20	90.00	50.00		
7	#N/A						
8	#N/A						
9	#N/A						
10	#N/A						
	Mann Kendall Statistic (S) =	-15.0	-5.0	-1.0	11.0	0.0	0.0
	Number of Rounds (n) =	6	6	6	6	0	0
	Average =	512.33	32.03	86.28	18.37	#DIV/0!	#DIV/0!
	Standard Deviation =	1076.782	36.859	66.320	18.043	#DIV/0!	#DIV/0!
	Coefficient of Variation(CV)=	2.102	1.151	0.769	0.982	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected						n<4	n<4
Trend ≥ 80% Confidence Level		**DECREASING**	No Trend	No Trend	**INCREASING**	n<4	n<4
Trend ≥ 90% Confidence Level		**DECREASING**	No Trend	No Trend	**INCREASING**	n<4	n<4
Stability Test, If No Trend Exists at 80% Confidence Level		NA	**CV > 1 NON-STABLE**	**CV <= 1 STABLE**	NA	n<4 n<4	n<4 n<4
	Data Entry By =	srm	Date =	21-Nov-11	Checked By =	srm	

Attachment B – Maps and Figures



SW ¼, NE ¼ of Sec. 29, T7N, R22E. Adapted from U.S.G.S. 7.5 minute series, Milwaukee, Wisconsin Quadrangle (dated 1958, photorevised 1971).

SCALE 1:24 000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

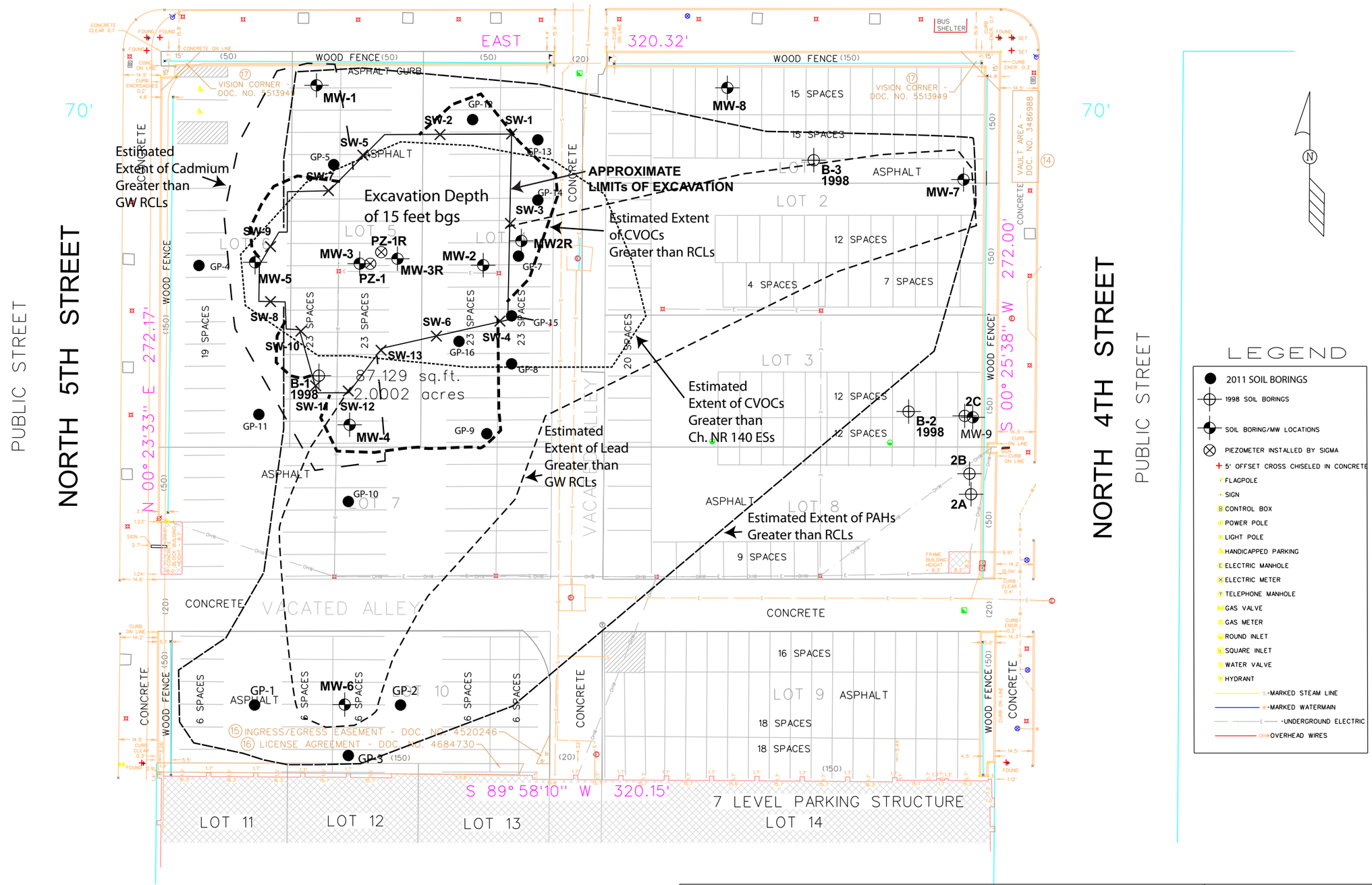
CONTOUR INTERVAL 10 FEET
DOTTED LINES REPRESENT 5-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

N

Figure B.1.A. Site Location Map
4th & Wisconsin Hotel Site
Milwaukee, Wisconsin

THE SIGMA GROUP
SIGMA ENVIRONMENTAL SERVICES, INC.
SIGMA DEVELOPMENT, INC.
SIGMA LEASING, INC.

8823fig1.ppt



401-441 W. WISCONSIN AVENUE

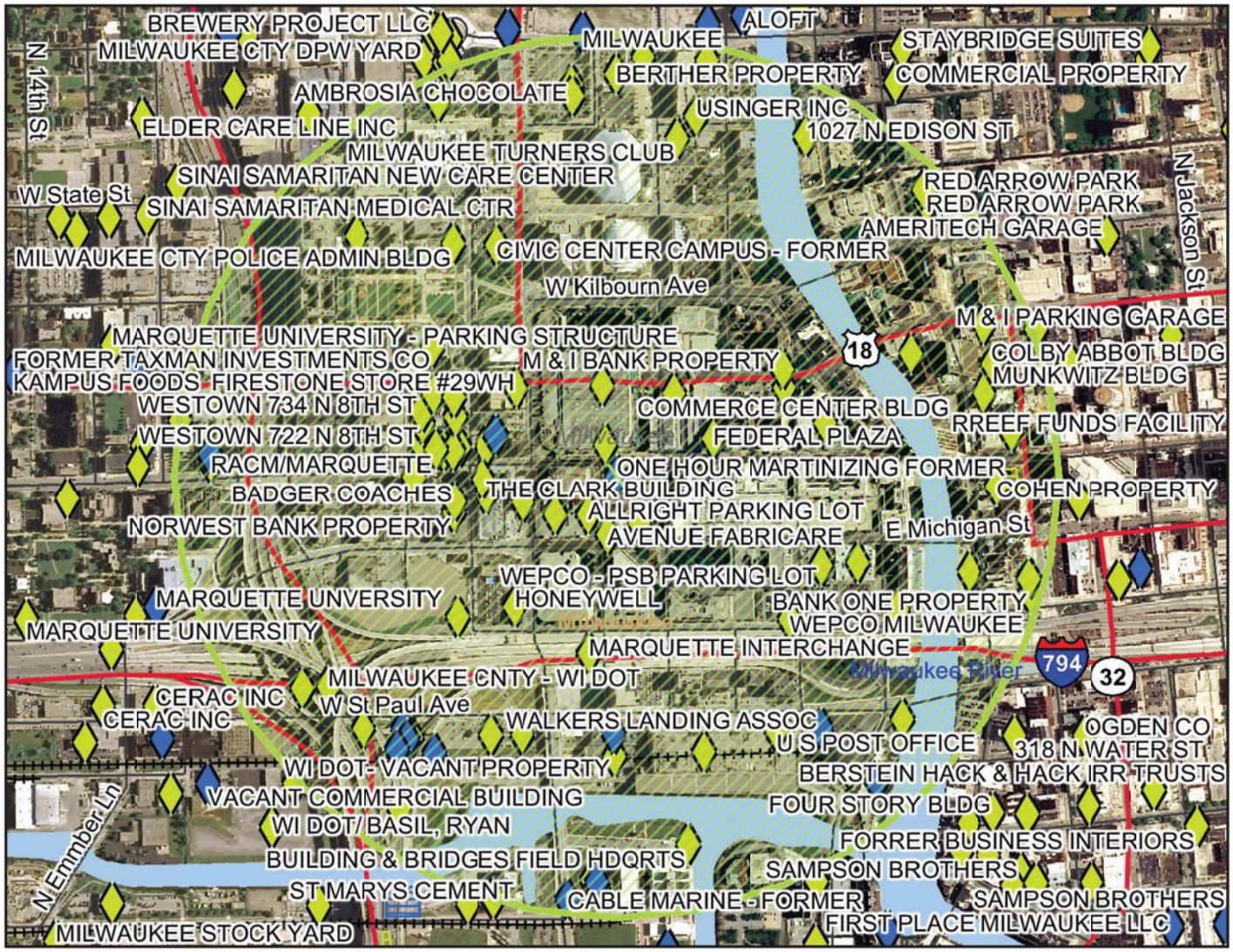
SIGMA ENVIRONMENTAL SERVICES, INC.

DATE: 09-03-04	DR. BY: RMJ	DR.# 8823-001E-A	SCALE: 1" = 40'

DETAILED SITE MAP

FIGURE B.1.b

Fig. B.1.c - RR Site Map



Legend

- Open Sites (ongoing cleanups)
- Open Sites (ongoing cleanups) - site boundaries shown
- Closed Sites (completed cleanups)
- Closed Sites (completed cleanups) - site boundaries shown
- County Boundary
- Railroads
- County Roads (WDOT)
- County Trunk Highway
- State and U.S. Highways (WDOT)
- State Trunk Highway
- US Highway
- Interstate Highways (WDOT)
- Interstate Highway
- Local Roads (WDOT)
- Civil Towns
- Civil Town
- 24K Open Water
- 24K Rivers and Shorelines
- Municipalities

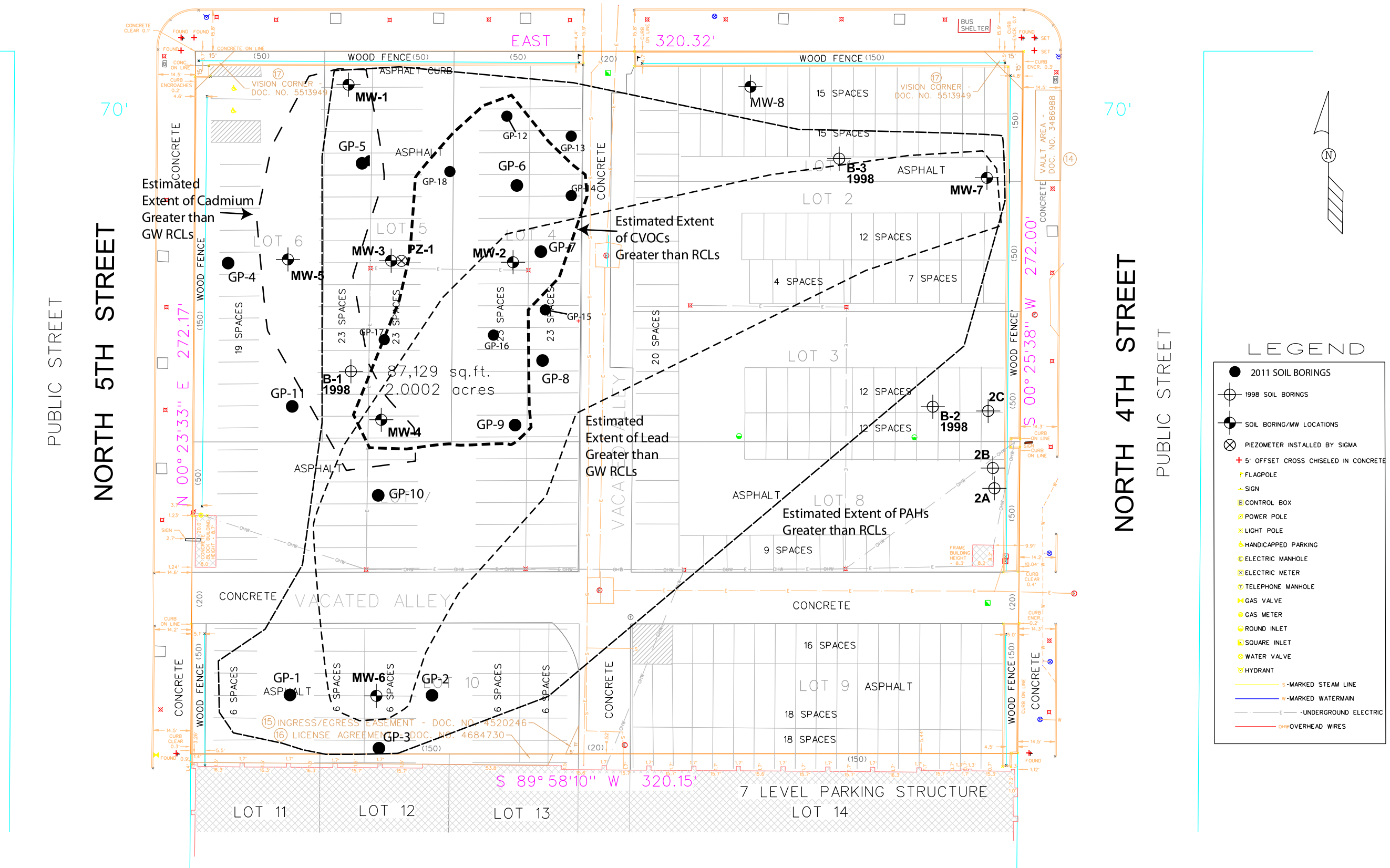
0 1200 2400 3600 ft.

Map created on Jul 30, 2013

Note: Not all RR Sites have been geo-located yet.

Scale: 1:11,999

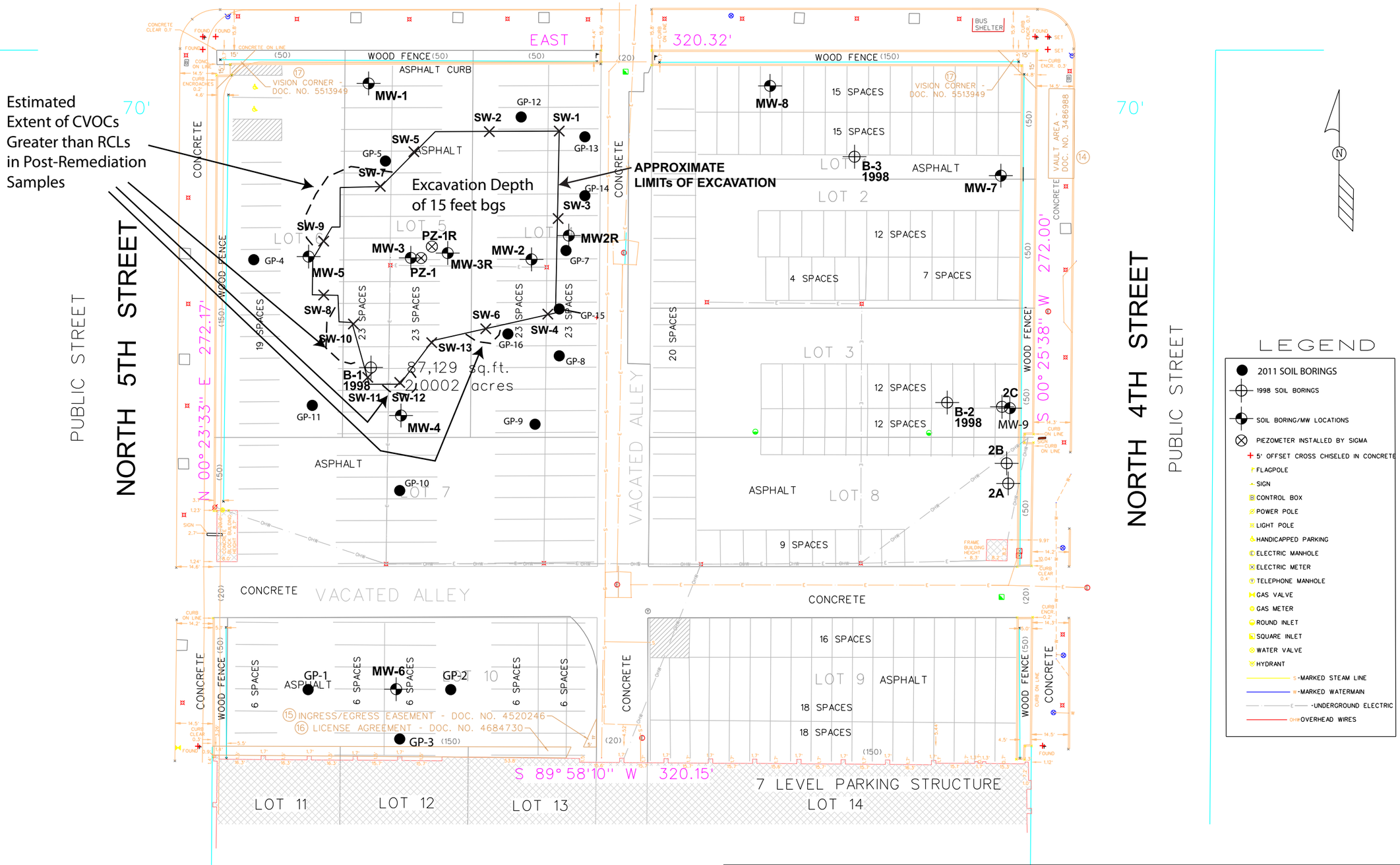
This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.



NOTE:
DIMENSIONS DEPICTED ON MAP ARE FOR REFERENCE ONLY.

0 20 40 60 80

401-441 W. WISCONSIN AVENUE			SIGMA ENVIRONMENTAL SERVICES, INC.
DATE: 09-03-04	DR. BY: RMJ	DR.# 8823-001E-A	SCALE: 1" = 40'
PRE-REMEDIAL SOIL CONTAMINATION MAP			**FIGURE B.2.a**



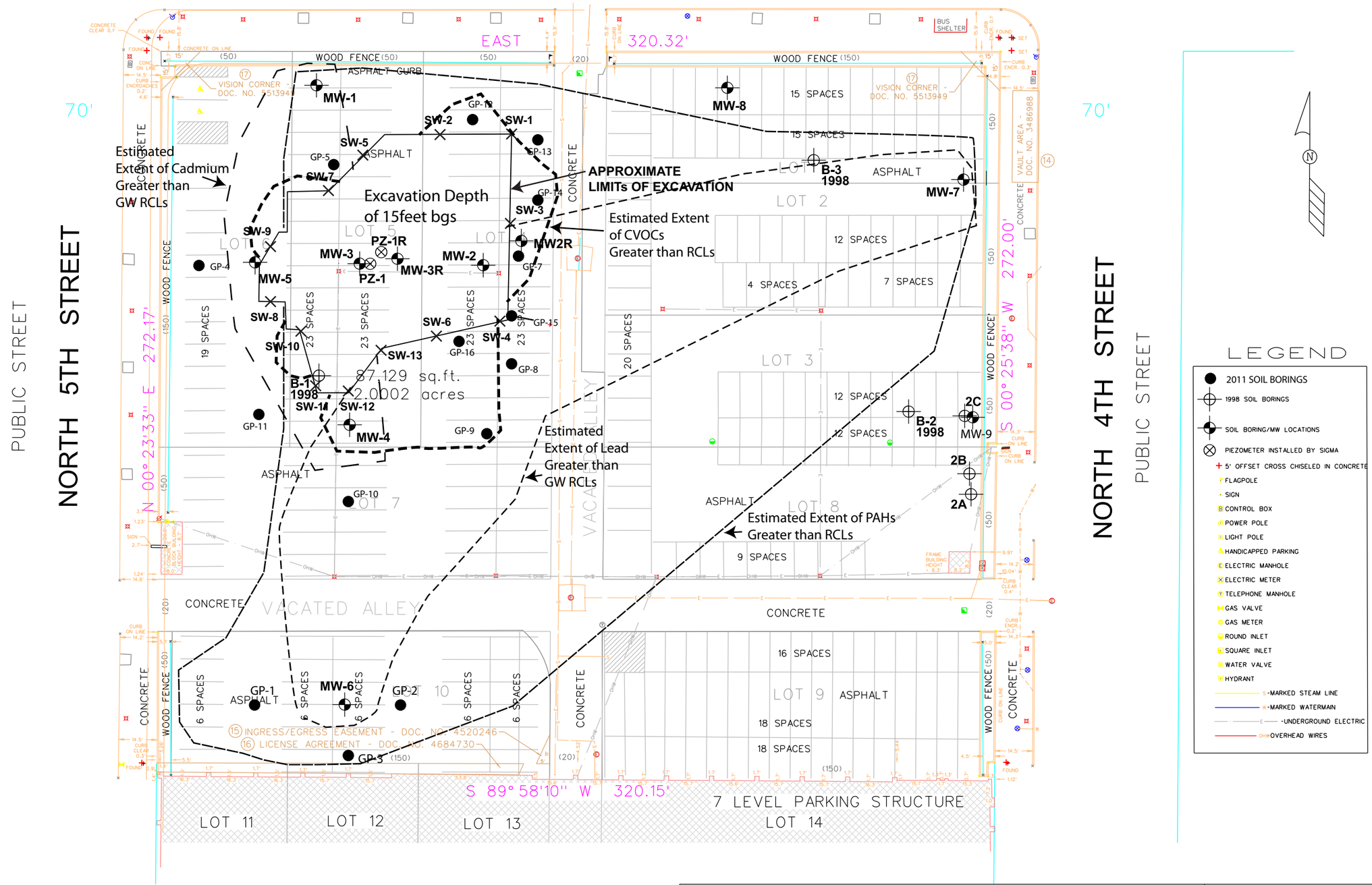
401-441 W. WISCONSIN AVENUE

SIGMA ENVIRONMENTAL SERVICES, INC.

DATE: 09-03-04	DR. BY: RMJ	DR.# 8823-001E-A	SCALE: 1" = 40'

POST-REMEDIAL SOIL CONTAMINATION

FIGURE B.2.b



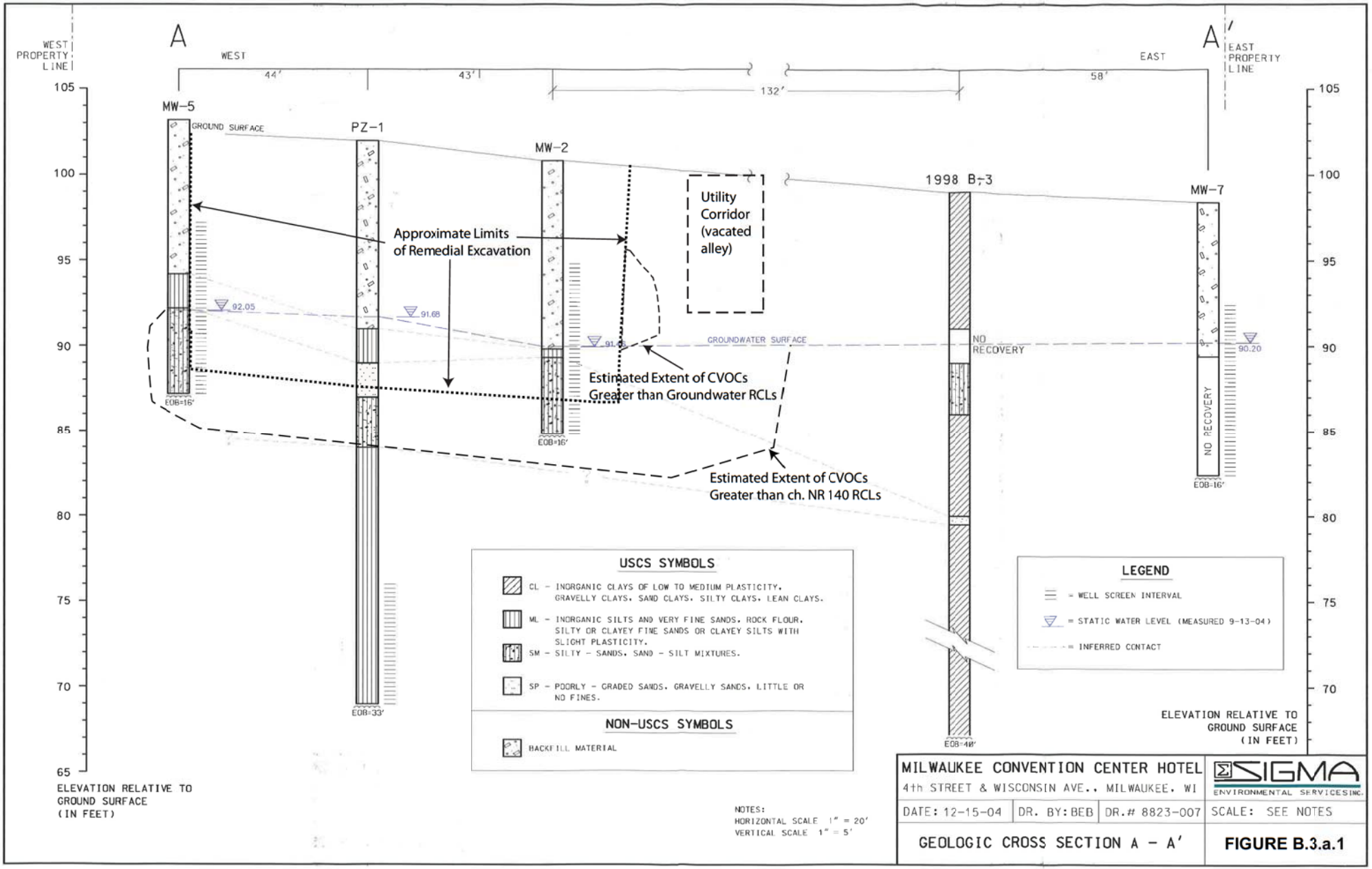
401-441 W. WISCONSIN AVENUE

SIGMA ENVIRONMENTAL SERVICES, INC.

DATE: 09-03-04	DR. BY: RMJ	DR.# 8823-001E-A	SCALE: 1" = 40'

PRE/POST REMAINING SOIL CONTAMINATION MAP

FIGURE B.2.c



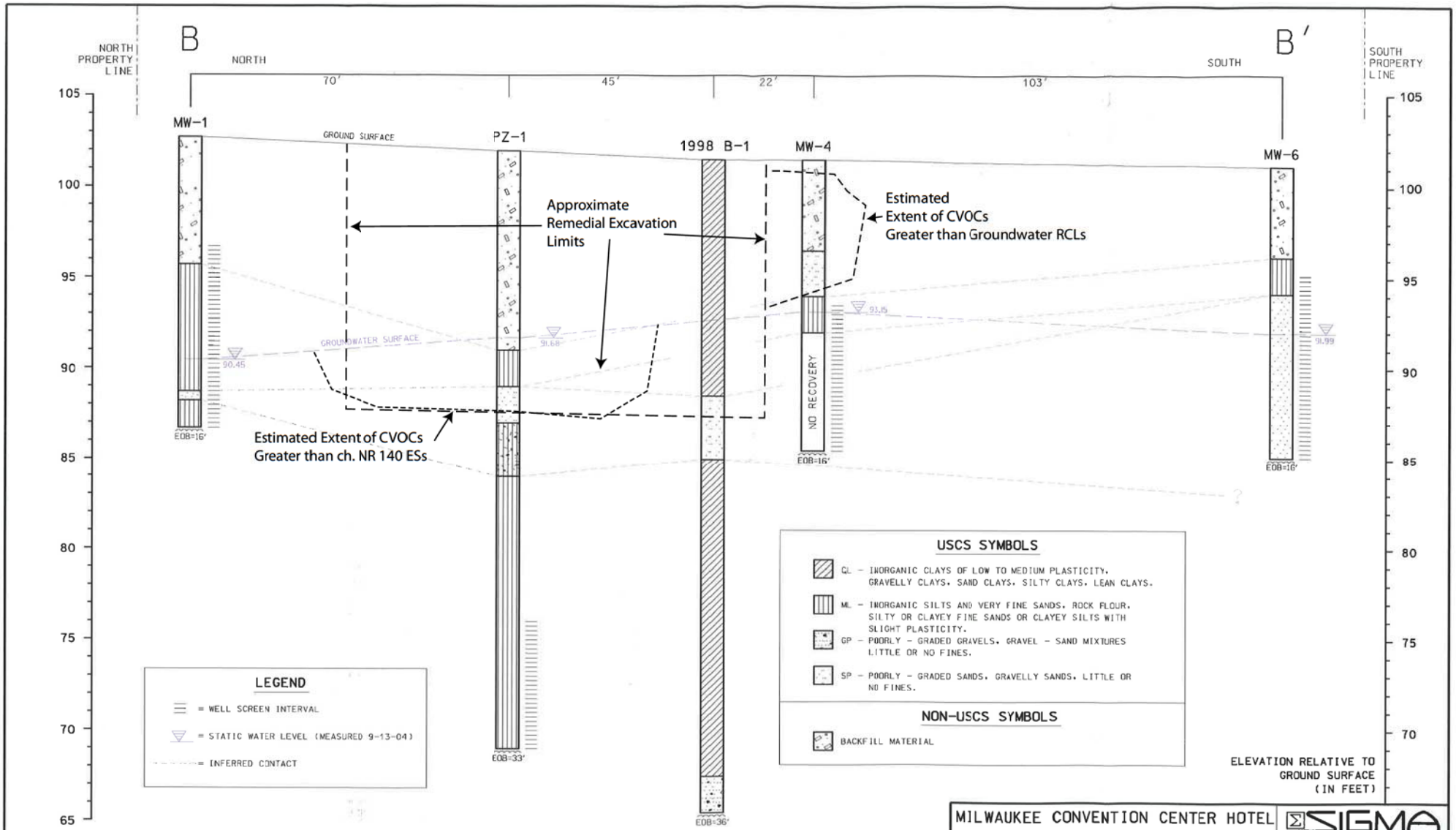
MILWAUKEE CONVENTION CENTER HOTEL
4th STREET & WISCONSIN AVE., MILWAUKEE, WI

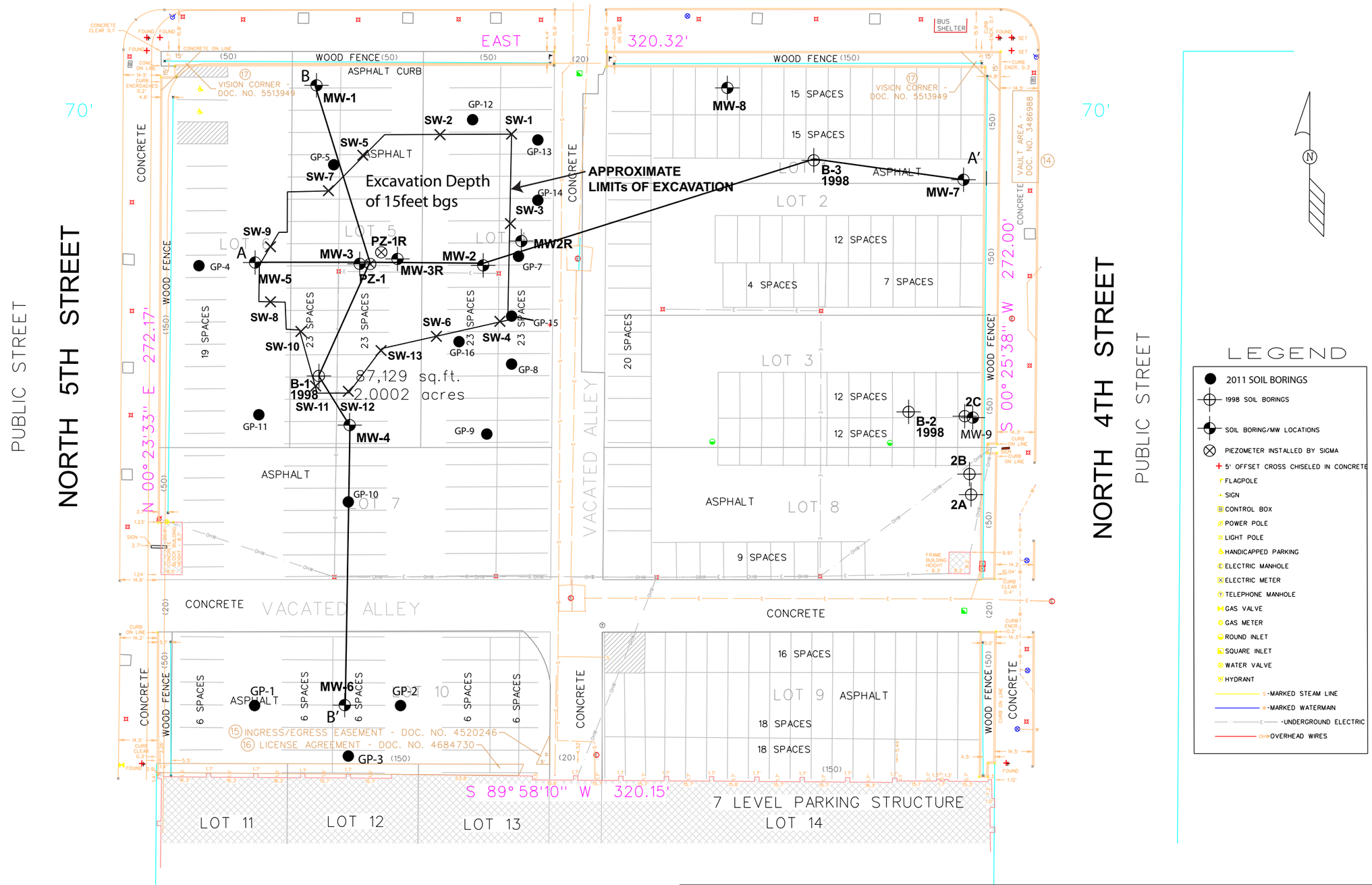
SIGMA ENVIRONMENTAL SERVICES INC.

DATE: 12-15-04	DR. BY: BEB	DR.# 8823-007	SCALE: SEE NOTES

GEOLOGIC CROSS SECTION A - A'

FIGURE B.3.a.1


B
B'
NORTH PROPERTY LINE
SOUTH PROPERTY LINE
NORTH
SOUTH
70'
45'
22'
103'
MW-1
PZ-1
1998 B-1
MW-4
MW-6
GROUND SURFACE
GROUNDWATER SURFACE
90.45
91.68
93.85
91.99
NO RECOVERY
EOB=16'
EOB=33'
EOB=36'
Approximate Remedial Excavation Limits
Estimated Extent of CVOCs Greater than Groundwater RCLs
Estimated Extent of CVOCs Greater than ch. NR 140 ESs
105
100
95
90
85
80
75
70
65
ELEVATION RELATIVE TO GROUND SURFACE (IN FEET)
LEGEND
= WELL SCREEN INTERVAL
= STATIC WATER LEVEL (MEASURED 9-13-04)
= INFERRED CONTACT
USCS SYMBOLS
CL - INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SAND CLAYS, SILTY CLAYS, LEAN CLAYS.
ML - INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY.
GP - POORLY - GRADED GRAVELS, GRAVEL - SAND MIXTURES LITTLE OR NO FINES.
SP - POORLY - GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES.
NON-USCS SYMBOLS
BACKFILL MATERIAL
NOTES:
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 5'
MILWAUKEE CONVENTION CENTER HOTEL
4th STREET & WISCONSIN AVE., MILWAUKEE, WI
SIGMA ENVIRONMENTAL SERVICES INC.
DATE: 12-15-04
DR. BY: BEB
DR.# 8823-007
SCALE: SEE NOTES
GEOLOGIC CROSS SECTION B - B'
FIGURE B.3.a.2



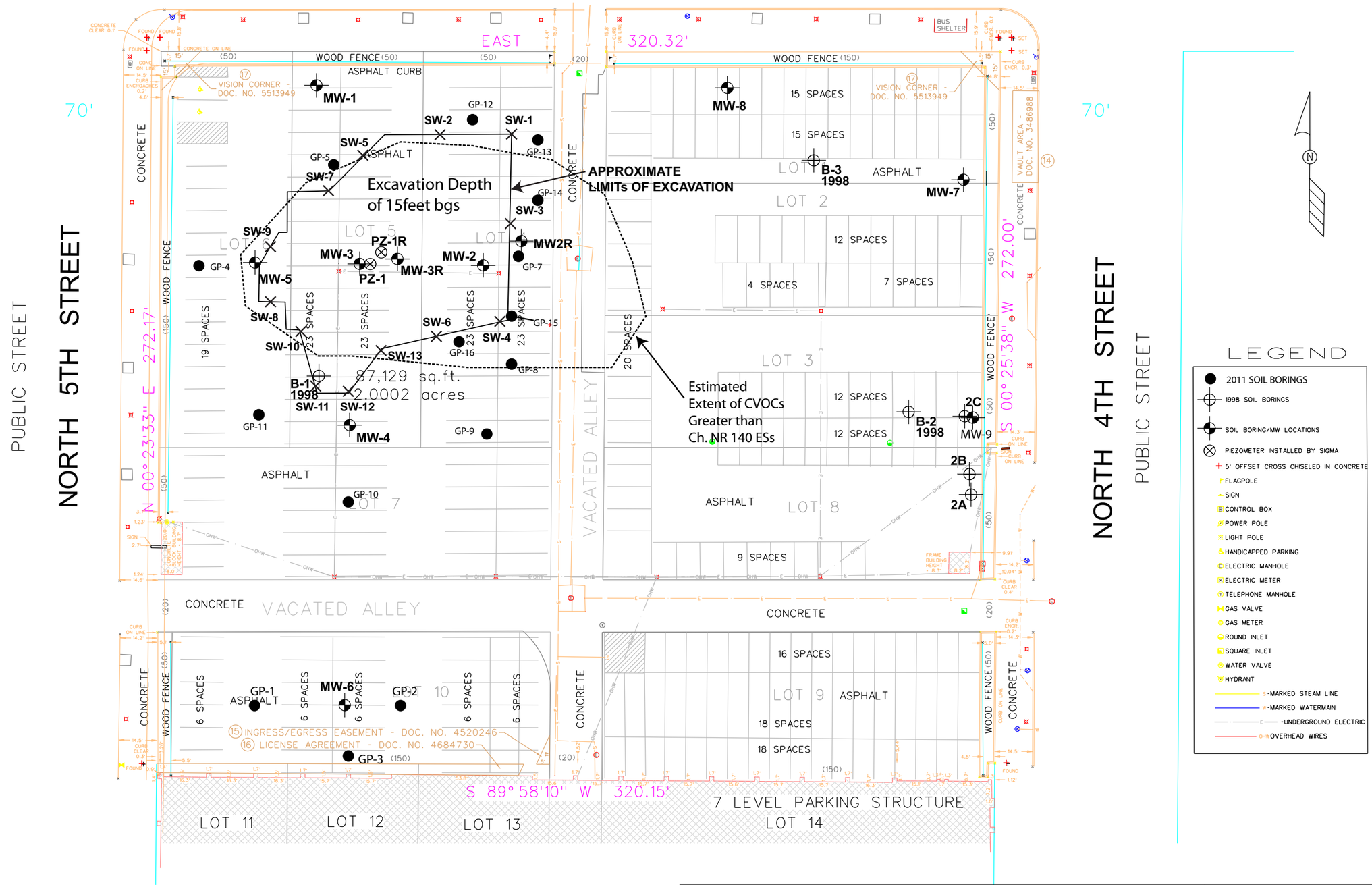
401-441 W. WISCONSIN AVENUE

SIGMA ENVIRONMENTAL SERVICES, INC.

DATE: 09-03-04	DR. BY: RMJ	DR.# 8823-001E-A	SCALE: 1" = 40'

CROSS-SECTION LOCATION MAP

FIGURE B.3.a.3



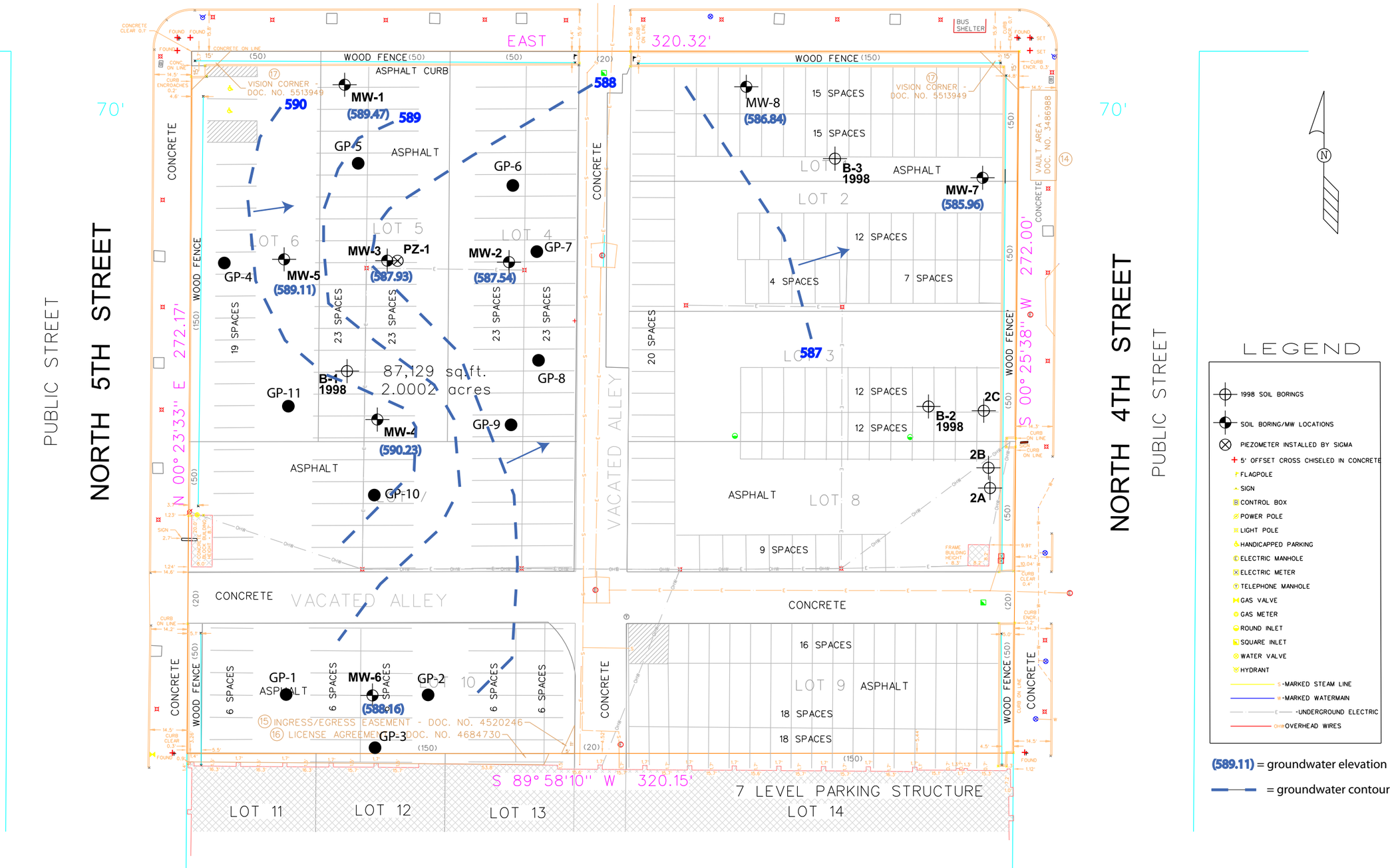
401-441 W. WISCONSIN AVENUE

SIGMA ENVIRONMENTAL SERVICES, INC.

DATE: 09-03-04	DR. BY: RMJ	DR.# 8823-001E-A	SCALE: 1" = 40'

GROUNDWATER ISOCONCENTRATION MAP

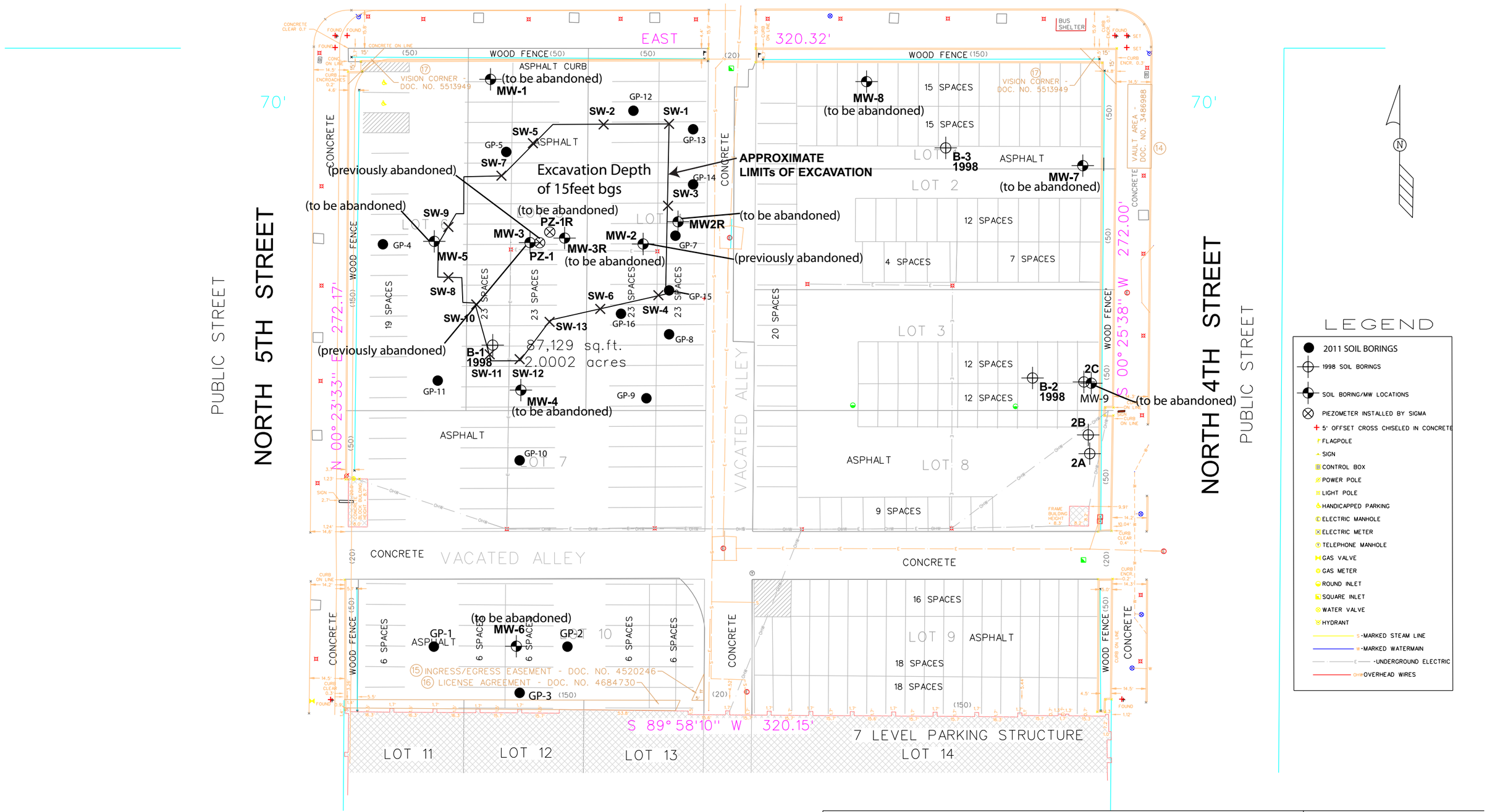
FIGURE B.3.b



NOTE:
DIMENSIONS DEPICTED ON MAP ARE FOR REFERENCE ONLY.

0 20 40 60 80

401-441 W. WISCONSIN AVENUE			SIGMA ENVIRONMENTAL SERVICES, INC.
DATE: 09-03-04	DR. BY: RMJ	DR.# 8823-001E-A	SCALE: 1" = 40'
GROUNDWATER FLOW DIRECTION (05/05/11)			**FIGURE B.3.c**



401-441 W. WISCONSIN AVENUE			SIGMA ENVIRONMENTAL SERVICES, INC.
DATE: 09-03-04	DR. BY: RMJ	DR.# 8823-001E-A	SCALE: 1" = 40'
MONITORING WELLS			FIGURE B.3.d

B.4.a Vapor Intrusion Map

No data collected. Currently no structure is present at the site; therefore sampling to evaluate vapor intrusion was not completed.

B.4.b. Other Media of Concern (e.g. sediment or surface water)

No data collected. The large lateral distance between the site and surface bodies of water minimizes the potential risk of groundwater impacts migrating to off-site surface water.

Documentation of Remedial Action (Attachment C)

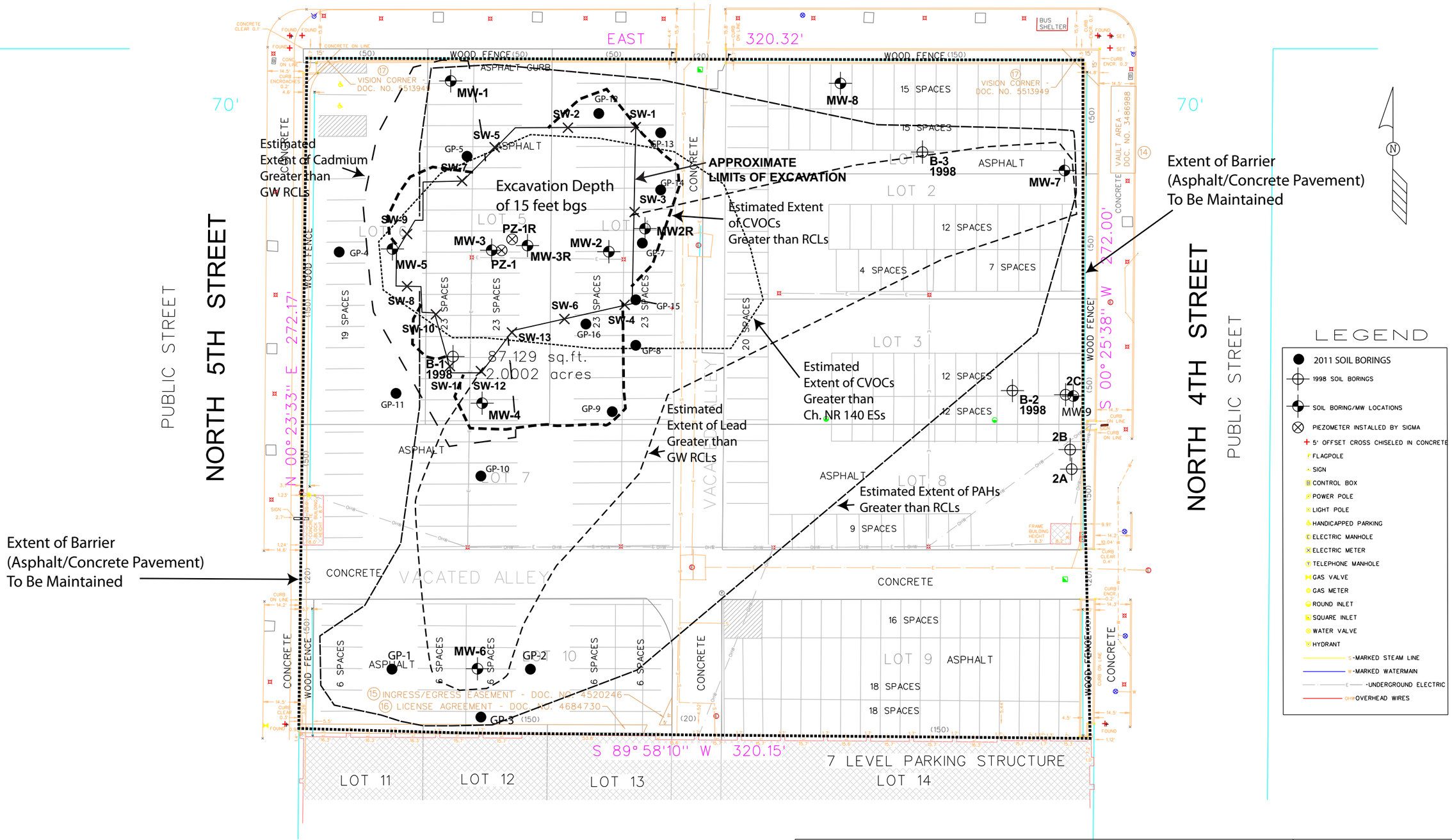
DISCLAIMER

Documents contained in Attachment C of the Case Closure – GIS Registry (Form 4400-202) are not included in the electronic version (GIS Registry Packet) available on RR Sites Map to limit file size.

For information on how to obtain a copy or to review the file, please contact the Remediation & Redevelopment (RR) Environmental Program Associate (EPA) at http://dnr.wi.gov/topic/Brownfields/Contact.html

WISCONSIN
DEPT. OF NATURAL RESOURCES

Attachment D– Maintenance Plan(s)



401-441 W. WISCONSIN AVENUE

SIGMA ENVIRONMENTAL SERVICES, INC.

DATE: 09-03-04	DR. BY: RMJ	DR.# 8823-001E-A	SCALE: 1" = 40'

ENGINEERED BARRIER MAP

FIGURE D.1

COVER CAP MAINTENANCE PLAN

JANUARY 2014

Property Located at:

401-441 W. Wisconsin Avenue
Milwaukee, WI

FID #341104610, WDNR BRRTS/Activity #02-41-535783

Lots 1 through 10 in Block 68, in the Plat of Town of Milwaukee on the West Side of the River, in the Southeast ¼ of Section 29, in Township 7 North, Range 22 East, in the City and County of Milwaukee, State of Wisconsin, together with the vacated East-West alley and the vacated North-South alley abutting said lots. Tax ID# 361-0726-110-3

Introduction

This document is the Maintenance Plan for an asphalt and concrete pavement cap at the above-referenced property in accordance with the requirements of s. NR 724.13(2), Wisconsin Administrative Code. The maintenance activities relate to the existing asphalt and concrete pavement occupying the area over the contaminated soil on-site.

More site-specific information about this property may be found in:

- The case file in the DNR Southeast regional office
- BRRTS on the Web (DNR's internet based data base of contaminated sites): http://**dnr.wi.gov/botw**/SetUpBasicSearchForm.do
- GIS Registry PDF file for further information on the nature and extent of contamination: http://dnrmaps.wisconsin.gov/imf/imf.jsp?site=brrts2; and
- The DNR project manager for Milwaukee County.

Description of Contamination

Soil contaminated by select metals and polynuclear aromatic hydrocarbon constituents is located at depths within 4 feet of the ground surface at sporadic locations across the site. Soil contaminated by chlorinated VOC contamination is located at depths generally between 4 to 10 feet in the northwest portion of the site. Groundwater contaminated by chlorinated VOC constituents is located at a depth of 9 to 10 feet below the ground surface in the northwest portion of the site. The extent of the soil and groundwater contamination is shown on the attached Figure D.1.

Description of the Cap to be maintained

The Cap consists of asphalt pavement approximately 3.5 inches thick and concrete pavement approximately 4 inches thick. The two types of pavement cover the entire site as shown on the attached Figure D.1. A copy of the construction specifications for the new asphalt pavement in the remedial excavation area is attached.

Cover Barrier Purpose

The asphalt/concrete cap over the contaminated soil and groundwater serve as a barrier to prevent direct human contact with residual soil contamination that might otherwise pose a threat to human health. These asphalt/concrete pavement also act as a partial infiltration barrier to minimize future soil-to-groundwater contamination migration that would violate the groundwater standards in ch. NR 140, Wisconsin Administrative Code. Based on the current and future use of the property, the barrier should function as intended unless disturbed.

Annual Inspection

The asphalt or concrete pavement overlying the contaminated groundwater plume or soil and as depicted in Figure D.1 will be inspected once a year, normally in the spring after all snow and ice is gone, for deterioration, cracks and other potential problems that can cause additional infiltration into or exposure to underlying soils. The inspections will be performed by the property owner or their designated representative. The inspections will be performed to evaluate damage due to settling, exposure to the weather, wear from traffic, increasing age and other factors. Any area where soils have become or are likely to become exposed and where infiltration from the surface will not be effectively minimized will be documented. A log of the inspections and any repairs will be maintained by the property owner and is included as Exhibit B, Cap Inspection Log. The log will include recommendations for necessary repair of any areas where underlying soils are exposed and where infiltration from the surface will not be effectively minimized. Once repairs are completed, they will be documented in the inspection log. A copy of the inspection log will be kept at the address of the property owner and available for submittal or inspection by Wisconsin Department of Natural Resources ("WDNR") representatives upon their request.

Maintenance Activities

If problems are noted during the annual inspections or at any other time during the year, repairs will be scheduled as soon as practical. Repairs can include patching and filling or larger resurfacing or construction operations. In the event that necessary maintenance activities expose the underlying soil, the owner must inform maintenance workers of the direct contact exposure hazard and provide them with appropriate personal protection equipment ("PPE"). The owner must also sample any soil that is excavated from the site prior to disposal to ascertain if contamination remains. The soil must be treated, stored and disposed of by the owner in accordance with applicable local, state and federal law.

In the event the asphalt or concrete pavement overlying the contaminated groundwater plume or soil are removed or replaced, the replacement barrier must be equally impervious. Any replacement barrier will be subject to the same maintenance and inspection guidelines as outlined in this Maintenance Plan unless indicated otherwise by the WDNR or its successor.

The property owner, in order to maintain the integrity of the asphalt or concrete pavement will maintain a copy of this Maintenance Plan at their office and make it available to all interested parties (i.e. on-site employees, contractors, future property owners, etc.) for viewing.

Prohibition of Activities and Notification of DNR Prior to Actions Affecting a Cover or Cap

The following activities are prohibited on any portion of the property where pavement is required as shown on the attached map, unless prior written approval has been obtained from the Wisconsin Department of Natural Resources: 1) removal of the existing barrier; 2) replacement with another barrier; 3) excavating or grading of the land surface; 4) filling on capped or paved areas; 5) plowing for agricultural cultivation; or 6) construction or placement of a building or other structure.

Amendment or Withdrawal of Maintenance Plan

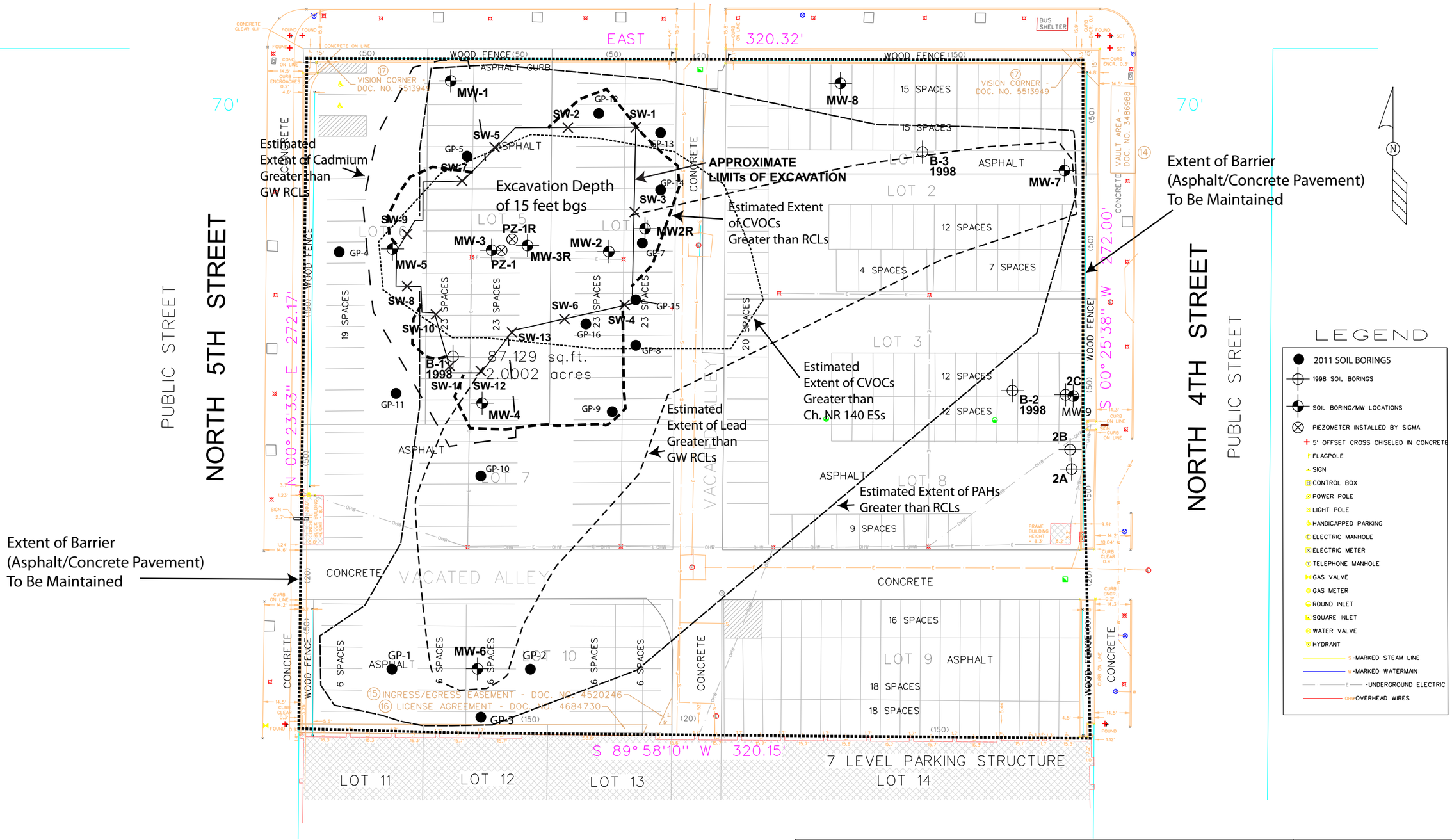
This Maintenance Plan can be amended or withdrawn by the property owner and its successors with the written approval of WDNR.

Contact Information
January 2014

Property Owner: Redevelopment Authority of the City of Milwaukee
809 N. Broadway Ave.
Milwaukee, WI 53202
(414) 286-5693
Attention: Mr. Mat Reimer

Consultant: THE SIGMA GROUP, INC.
1300 W. Canal Street
Milwaukee, WI 53233
(414) 643-4200
Attention: Mr. Stephen Meer, P.E.

WDNR: Ms. Margaret Brunette
2300 N. Dr. Martin Luther King Jr. Drive
Milwaukee, WI 53212
(414) 263-8557



401-441 W. WISCONSIN AVENUE

SIGMA ENVIRONMENTAL SERVICES, INC.

DATE: 09-03-04	DR. BY: RMJ	DR.# 8823-001E-A	SCALE: 1" = 40'

ENGINEERED BARRIER MAP

FIGURE D.1

ATTACHMENT A
Asphalt Specifications

Veritas Industrial Services Corporation
Subcontractor Work Order No. Sigma, 4th & Wisconsin

Subcontractor Name: Wolf Paving Company

Subcontractor Agreement Date: September 11, 2011

Job Name: Sigma, 4th & Wisconsin

This Work Order specifies the services, labor and materials to be provided by Subcontractor to Veritas for the Work Site/Job Name described above, pursuant to the Subcontractor Agreement between Veritas and the Subcontractor dated as shown above, into which this Work Order is incorporated. All of the terms and conditions of the Subcontractor Agreement apply to this Work Order.

Services, labor and materials to be provided by Subcontractor: (attach plans and specifications)

Commencement date: Estimated start September 20, 2011

Completion date: Friday September 30th, 2011

Price: $1.78 per square foot of parking lot asphalt pavement installed (plan quantity is 15,000 square feet)

Property is owned by the Redevelopment Authority of the City of Milwaukee. Permits for the paving work have already been secured from the City by Sigma Environmental (Veritas's customer).

Pavement base will be prepared by Veritas. An independent engineering firm (Gestra Engineering) will witness the compaction, test the base for proper compaction and document an acceptable proof-roll prior to the paving work to be performed by Wolf Paving.

Wolf Paving will furnish and machine pave a 3.5" hot-mix asphalt (HMA) pavement of a mix-type that is appropriately suited for a commercial parking lot application. The HMA will consist of a 2 inch lower course and a 1.5 inch surface course. Each course shall be compacted to produce the required thicknesses within the following tolerances: lower course = plus or minus ½ inch; surface course plus ¼ inch, no minus. Surface smoothness (10 foot straight edge) shall be ¼ inch for the lower course and 1/8 inch for the surface course.

Pricing listed above includes all costs associated with one mobilization for each of the two phases. Wolf is not responsible for pavement marking.

Laborers and mechanics employed on the work site will be paid at applicable Davis-Bacon wage rates according to the attached wage schedule. Subcontractor will provide a signed wage certification (attached) with the invoice to Veritas.

Veritas Industrial Services Corporation

John Budzinski

By John Budzinski, Authorized Agent
Date: 9-11-2011

Subcontractor: Wolf Paving Company

By:

Title:

Date:

BARRIER INSPECTION and MAINTENANCE LOG

Inspection Date	Inspector	Condition of Cap	Recommendations	Has recommended maintenance from previous inspection been implemented?

Attachment E – Monitoring Well Information

All groundwater monitoring wells associated with the site have been properly abandoned. ~~Well abandonment forms are attached.~~

Attachment F
Notification to Owners of Impacted Properties

This section is not relevant as the soil and groundwater contamination does not extend off-site.

Attachment G– Source Legal Documents

2

DOCUMENT NUMBER	LIMITED WARRANTY DEED Document Title

09062772

DOC.# 09062772

REGISTER'S OFFICE | SS
Milwaukee County, WI|

RECORDED 08/04/2005 09:54AM

JOHN LA FAVE
REGISTER OF DEEDS

AMOUNT:13.00

This deed does not convey homestead property.

TRANSFER
$ 2776.00
FEE

Recording Area

Name and Return Address:
Redevelopment Authority
Attn: Real Estate Section (Miller)
P.O. Box 324
Milwaukee, WI 53200-0324

Parcel Identification Number:
361-0726-110-3

MILWAUKEE CONVENTION CENTER HOTEL, LLC ("MCC") (having an address in care of Hunzinger Construction, 21100 Enterprise Ave., Brookfield, WI, 532045-5218), hereby conveys to the **REDEVELOPMENT AUTHORITY OF THE CITY OF MILWAUKEE**, an independent, separate and distinct public body and a body corporate and politic under Wis. Stat. § 66.1333(3)(f) ("RACM"), all of MCC's right, title, and interest in and to that certain property in the City and County of Milwaukee, State of Wisconsin described as follows (the "Property"): .

All that certain parcel in the City of Milwaukee, County of Milwaukee, State of Wisconsin, more particularly described as follows:

Lots 1 through 10 in Block 68, in the Plat of the Town of Milwaukee on the West Side of the River, in the Southeast 1/4 of Section 29, in Township 7 North, Range 22 East, in the City and County of Milwaukee, State of Wisconsin, together with the vacated East-West alley and the vacated North-South alley abutting said lots.
Address: 401-441 West Wisconsin Avenue, Milwaukee, WI.

THIS IS A LIMITED WARRANTY DEED. MCC WARRANTS THAT THE TITLE IS GOOD, INDEFEASIBLE IN FEE SIMPLE, AND FREE AND CLEAR OF ENCUMBRANCES EXCEPT, AND SUBJECT TO:

1. Applicable statutes, orders, rules and regulations of the Federal Government and State of Wisconsin, and laws and ordinances of the City of Milwaukee, including zoning, building and land subdivision laws and regulations; and

2. Land use, building and other covenants or restrictions of record, including those set forth in the Redevelopment Plan, as amended (the Redevelopment Plan was recorded in the Milwaukee County Register of Deeds Office as Document No. 5513949, and was amended by a document recorded as Document No. 5575434) to the extent not created by, through, or under MCC (and/or to the extent not created at any time from May 6, 2004 to the date of this Deed); and

3. All easements of record to the extent not created by, through, or under MCC (and/or to the extent not created at any time from May 6, 2004 to the date of this Deed); and

4. Any recorded or unrecorded rights or interests of any utility in any vacated alley or vacated public right-of-way at the Property – including, but not limited to: any interest of or relating to the steam tunnel in the vacated alley at the Property; any rights of any parties under Wis. Stat. § 80.32 (4) (but not including any rights or interests created by, through, or under MCC, and not including any rights or interests created at any time from May 6, 2004 to the date of this Deed); and

5. Rights of the following tenants in possession: Jay Curtiss and/or Systems Auto Parking under letter/lease agreement with RACM dated August 1, 2002 (the "Systems Auto Lease"), and rights of Gerald Robison and/or Central Parking, Inc. under letter/lease agreement with RACM dated October 29, 2002 (the "Central Parking Lease"); and

6. License Agreement recorded June 26, 1972 in the Milwaukee County Register of Deeds Office, as Document No. 4684730; and

7. Any and all matters not caused or created by, through, or under MCC.

Dated as of this 17th day of JUNE, 2005.

MCC: MILWAUKEE CONVENTION CENTER HOTEL, LLC

By: _____
Name Printed: John Hunzinger
Title: Partner

Attest: _____
Name Printed: Anthony A Klein
Title: _____

STATE OF WISCONSIN)
) ss:
COUNTY OF MILWAUKEE)

THE FOREGOING DEED WAS EXECUTED ON BEHALF OF MCC AND ACKNOWLEDGED BEFORE ME THIS 17th DAY OF JUNE, 2005, BY John C. Hunzinger AND Anthony A Klein, THE Partner AND Attest, RESPECTIVELY, OF MCC, TO ME PERSONALLY KNOWN.

[Notary Seal]

Beverly M Smith
Notary Public
Name Printed: Beverly M Smith

My commission expires: 2/5/06

DRAFTED BY:

Gregg C. Hagopian, Assistant City Attorney
City of Milwaukee City Attorney's Office
200 East Wells Street, Room 800
Milwaukee, WI 53202

Doc 94177 (6/17/05)

COMPILED AND DRAWN BY
INFRASTRUCTURE SERVICES
CITY OF MILWAUKEE

S.E. ¼ SEC. 29, T. 7 N., R. 22E.

Q:\englib\397.eng 02/06/2007 09:47:04 AM

G.3. Verification of Zoning

Assessment Detail and Listing Characteristics

Taxkey	Premise Address	Nbhd	Plat	Assessment County	Class
3610726110	401-441 W WISCONSIN AV	6475	39726	Milwaukee	Exempt

Ownership Information	Conveyance		Assessment Information		
	Deed Type	WD	Year	Current	Previous
CITY OF MILW REDEV AUTH 809 N BROADWAY MILWAUKEE WI 53202	Date	2005-06-17	Land	0	0
	Fee	7776.00	Imprv	0	0
	Name Change: 2005-11-15		Total	0	0

Org Year	Drop Year	Zoning	Ald. District	Census
		C9E	4	152-302

Legal Description

ORIGINAL PLAT OF THE TOWN OF MILW WEST OF THE RIVER IN SECS (20 & 29) -7-22 BLOCK 68 LOTS 1 THRU 10 & VAC ALLEYS ADJ BID #5, #21 TID #37

Exempt Property Attributes Not Available

Recent Permits | Sale History | Assessment History | Tax Balance | About Site

Data Provided By Assessor Query From: 98.103.53.250

Attachment G.4
401-441 W. Wisconsin Avenue, Milwaukee, WI

STATEMENT BY RESPONSIBLE PARTY

The Redevelopment Authority of the City of Milwaukee, the responsible party for the property located at 401-441 W. Wisconsin Avenue, Milwaukee, Wisconsin, states that the legal description for each property within the contaminated site boundaries for case file reference 02-41-535783 is attached.

FOR RACM

Signature of Representative for Responsible Party

1/23/19

Date