

LETTER OF TRANSMITTAL

To: **Mr. Kevin McKnight**

Wisconsin Department of Natural Resources
625 E. County Road Y Suite 700
Oshkosh, WI 54901-9731

From: **Stephen Meer, P.E.**

The Sigma Group, Inc.
1300 W. Canal Street
Milwaukee, WI 53233

Please check the type(s) of documents you have enclosed. Submittals will be tracked and filed based on the information you provide. **Include the FID and BRRTS numbers which have been assigned to this site, and identify the intent of the document(s) you are submitting in order to speed processing.** Please attach any required fees to this checklist.

Date: June 3, 2020

Site Name: Former Chilton Plating Site and Adjacent Properties

Address: 415, 420 and 476 E. Main Street
Chilton, WI

FID#

BRRTS # 02-08-000632, 02-08-000040, 02-08-551794

IS THIS RELEASE PECFA-ELIGIBLE?

YES NO UNKNOWN AT THIS TIME

Type of Submittal:

LUST ERP VPLE OTHER

CHECK	Agreements	FEE
	Tax assignment agreement - ss.75.106(2)(d) & 292.55	\$700
	Tax cancellation agreement - ss. 75.106(2)(d) & 292.55	\$700
	Negotiated agreements - s. 292.11(7)(d)2	\$1,400
Technical Assistance (s. 292.55)		FEE
	NR 708 No Further Action Letter	\$350
	NR 716 No Further Investigation	\$700
x	NR 716 Site Investigation Workplan	\$700
	NR 716 Site Investigation Report	\$1,050
	NR 720 Soil Cleanup Standards/Reports	\$1,050
	NR 722 Remedial Action Options Report	\$1,050
	NR 724 Remedial Design Report	\$1,050
	NR 724 Operation and Maintenance Report	\$425
	NR 724 Construction Documentation Reports	\$350
	NR 724 Long-Term Monitoring Plan	\$425
	NR 726 Case Closure Action	\$1,050
	NR 506 Exemption for building on a historic waste site	\$700
	Other Technical Assistance	\$700
Liability Clarification Letters		FEE
	s. 292.13(3) Off-Site Exemption Letters	\$700
	s. 292.55 Lease Letters - Single Properties	\$700
	s. 292.55 Lease Letters - Multiple Properties	\$1,400
	s. 292.55 General Liability Clarification Letters	\$700
	s. 292.21(1)(c)1.d. Lender Assessments	\$700
Department Database Fees (ss. 292.12 and 292		FEE
	Sites with groundwater contamination that attains or exceeds ch. NR 140	\$350
	Sites with soil contamination that attains or exceeds ch. 720 RCLs	\$300
	Sites not otherwise addressed in this schedule, where the department imposes any other limitation or condition in accordance with s. 292.12(2)	\$350
	Cases submitted for closure with monitoring wells not properly abandoned, without residual groundwater contamination	\$350
	Modification or removal of a site or property from the database	\$1,050
Other / Miscellaneous		

Remarks: _____



June 3, 2020

Project Reference #19175

Mr. Kevin McKnight
Wisconsin Dept. of Natural Resources
625 E. County Road Y, Ste 700
Oshkosh, WI 54901-9731

Subject: Additional Site Investigation Work Plan
Former Chilton Plating Site and Adjacent Properties
415-476 East Main Street, Chilton, Wisconsin
BRRTS #02-08-000632, 02-08-000040, and 02-08-551794

Dear Mr. McKnight:

The Sigma Group, Inc. (Sigma) is pleased to present this *Site Investigation Work Plan (S/WP)* to the Wisconsin Department of Natural Resources (WDNR) to further investigate multiple properties acquired by the City of Chilton. These properties include Chilton Plating (BRRTS #02-08-000632), Chilton Plating Adjacent Property (BRRTS #02-08-000040), and the Schneider Property (BRRTS #02-08-551794 (**Figure 1**). The proposed work will be partially completed under a WEDC Site Assessment Grant.

SITE INFORMATION

Site Location

The subject property is comprised of four parcels which together make up an approximate 4.38-acre property referenced by 415, 420, and 476 East Main Street and located in the City of Chilton, Calumet County, Wisconsin. Please note the adjacent parcel to the west of the 420 East Main Street parcel does not have an established address and is referenced as the Main Street parcel. The subject properties are located in the northwest $\frac{1}{4}$ of the northeast $\frac{1}{4}$ of Section 18, in Township 18 North, Range 20 East, in Chilton, Calumet County, Wisconsin (**Figure 2**).

The approximate geographic coordinates (in the Wisconsin Transverse Mercator '91 system) of the property boundary corners are as follows:

- Northeast corner: 668241 E, 397262 N
- Southeast corner: 668250 E, 397235 N
- Southwest corner: 668065 E, 397180 N
- Northwest corner: 668085 E, 397305 N

The coordinates were determined by using the WDNR's interactive Geographic Information System (GIS) internet website (<http://dnrmmaps.wi.gov/sl/?Viewer=RR%20Sites>) and zooming in at a scale of approximately 1:500.

Property Owner / Responsible Party

City of Chilton
42 School Street
Chilton, WI 53014
Telephone: (920) 849-2451
Contact: Chris Marx, chiltondpw@chiltonwi.com

Environmental Consulting Firm

The Sigma Group, Inc.
1300 W. Canal Street
Milwaukee, WI 53233
Telephone: (414) 643-4200
Project Manager: Stephen Meer, P.E

Site Description

The site is comprised of four parcels which together total approximately 4.38-acres. Historically, the subject property parcels were occupied by Chilton Plating Company (1960-2008, Main Street, 415 and 420 East Main Street parcels) and a residence and salvage yard (prior to 1988, 476 East Main Street parcels). In addition, according to the historic Sanborn maps, the 415 Main Street parcel was historically occupied by a machine shop between 1898 and 1914 and a portion of a bulk oil company/gas station (pumps and building only) between 1926 and 1953. The oil tanks associated with the bulk oil operations appear to have been located immediately off-site to the east, south, and north of the 415 East Main Street subject property parcel.

According to the WDNR's October 18, 2019 *Site Investigation Review*¹ letter, BRRTS activities #02-08-551794 (Adjacent Property) and #02-08-000632 (Schneider Property) can be merged into one case with #02-08-000040 (Chilton Plating). All parcels are currently owned by the City of Chilton and the releases identified on these two parcels are associated with Chilton Plating. Additionally, a separate case will be created for the discharge at 415 E. Main Street.

Topography and Drainage

The site is relatively flat with surveyed ground surface elevations generally ranging between approximately 843 and 850 feet above Mean Sea Level (MSL). The site generally slopes to the east/northeast towards the South Branch Manitowoc River which bounds the site to the north and northeast.

Precipitation at the site primarily seeps into the ground or is routed to storm drains along E. Main Street. A storm sewer outfall is located along the South Branch Manitowoc River at the east side of the site.

Utility Review

Information regarding utilities is based on surveyed field markings provided by Diggers Hotline representatives and observations by Sigma personnel. Utilities serving the site enter

¹ Site Investigation Review, Chilton Plating, Chilton Plating Adjacent Property, and Schneider Property BRRTS# 02-08-000632, 02-08-000040, and 02-08-551794 prepared by Wisconsin Department of Natural Resources dated October 18, 2019.

from the E. Main Street right-of-way (ROW) to the south of the site. Utilities in the vicinity of the site include the following:

- Municipal water - The site and surrounding properties are serviced by the municipal water system operated by the City of Chilton which obtains water from municipal wells. A water main is located beneath the E. Main Street ROW.
- Sanitary sewer - A sanitary sewer line is located beneath the E. Main Street ROW to the south of the site. Two sanitary laterals convey sanitary discharge from the former Chilton Plating building to the sanitary line.
- Storm sewer - A storm sewer line is located along E. Main Street and discharges to the South Branch Manitowoc River at the northeast end of the site.
- Natural gas - Natural gas service for the former Chilton Plating buildings enters the site from the south, where a gas line is present along E. Main Street.
- Electric & Communication - Overhead power lines supply power to the former Chilton Plating building. Underground electric lines are present near the southwest corner of the site along E. Main Street, but the line terminates at a utility pole. An underground communication line enters the former Chilton Plating building from the E. Main Street ROW to the south.

SUMMARY OF ENVIRONMENTAL INVESTIGATION ACTIVITIES TO DATE

As summarized in Sigma's *Summary of Site Investigation & Conceptual Remedial Action Plan*², subsurface investigation activities related to the potential release of plating operation rinse water into site soil and the Manitowoc River were completed at the former Chilton Plating Company (McNeely) property (BRRTS #02-08-000040) in 1988 and 1992 by STS Consultants and Badger Laboratories and Engineers. Metals including nickel and cyanide and chlorinated volatile organic compounds (CVOCs) including 1,2-Dichloroethane, tetrachloroethene (PCE) and trichloroethene (TCE) were detected above WDNR RCLs in the soil and ch. NR 140 standards in the groundwater samples collected on the property. Soil analytical results are included in **Table 1**, sediment sample results are included in **Table 2** and groundwater analytical results are included in **Table 3**. Existing boring, monitoring well, and vapor sample locations are provided in **Figure 4**.

In an effort to determine the full extent of the soil/groundwater impacts, EDS, Inc. and Enchem, Inc. completed additional investigation activities at the adjacent Schneider property (BRRTS #02-08-000632) in 1995. Elevated concentrations of CVOCs exceeding WDNR RCLs were detected in soil samples collected along the south and west property boundaries and were most prevalent at depths between 6 to 12 feet below ground surface (bgs). Elevated concentrations of CVOCs were also detected in groundwater samples collected at the property, especially in the south-central portion of the property; it was concluded that the identified CVOC impacts were more likely associated with groundwater migrating from the adjacent Chilton Plating property.

² *Site Investigation & Conceptual Remedial Action Plan, Former Chilton Plating Co., Inc. & Adjacent Property, 420 E. Main Street, Chilton, Wisconsin, BRRTS #02-08-000040 & 02-08-551794 and Schneider Property 476 E. Main Street, Chilton, Wisconsin BRRTS #02-08-000632 prepared by The Sigma Group, Inc. and dated May 2019.*

Foth Infrastructure and Environment, LLC completed further site investigation activities at the McNeely property in 1999. Additional soil samples collected from around the perimeter of the Chilton Plating Company facility identified CVOC soil impacts exceeding WDNR RCLs again at depths generally greater than 6 feet bgs.

In 2015, Sigma completed site investigation activities consisting of soil boring advancement, soil sampling, groundwater monitoring well installation, and groundwater sampling. The results of this supplemental investigation were presented in an October 22, 2015 letter report³. In this letter report, Sigma recommended the completion of additional site investigation activities at the site.

In March 2018, Sigma completed 10 Geoprobe soil borings (SGP-26 through SGP-35) and collected 4 sediment samples (SED-1 through SED-4) to further define the degree and extent of impacts identified by previously completed site investigation work. Sediment sample results are included in **Table 2**. A total of 20 soil samples and 4 sediment samples (two per boring and one at each sediment sample location) were collected for laboratory analysis of select parameters depending on the location and purpose of each soil boring. Sigma collected five sub-slab vapor samples from within the footprint of the former Chilton Plating building and also collected three rounds of groundwater samples from the existing groundwater monitoring well network for laboratory analysis of select parameters.

Based on the supplemental soil sampling results, the petroleum impacts to soil at the 415 E. Main Street property appear to extend to the adjacent railroad ROW in the area of soil boring SGP-27. In addition, the CVOC impacts associated with the 420 E. Main Street property appear to extend into the E. Main Street ROW in the area of soil boring SGP-33.

Results of sediment sampling indicate a concentration of nickel greater than the Probably Effect Concentration (PEC) Consensus-Based Sediment Quality Guideline (CBSQG) was reported within a sediment sample collected within the South Branch of the Manitowoc River at a location adjacent to the 420 E. Main Street property. Concentrations of nickel did not exceed Threshold Effect Concentrations (TECs) within sediment samples collected upstream and downstream from the 420 E. Main Street property.

Results of sub-slab vapor sampling indicate a sub-slab vapor risk exists relative to the existing site building at the 420 E. Main Street parcel.

Physical Conditions

Site Geology

In general, the site is covered with approximately one foot of either topsoil or sand and gravel fill, or by building footprints and paved surfaces (depending on location within the site). The surficial topsoil or cover is generally underlain by native brown to reddish brown clay/silty clay to the maximum depth investigation (15 feet bgs). Sand and gravel lenses were observed within the clay. Localized areas of re-worked soil fill may be present adjacent to existing site structures (buildings and utilities).

³ *Phase II Environmental Site Assessment, McNeely & Schneider Properties, Chilton, Wisconsin*. The Sigma Group, Inc. (October 22, 2015)

Bedrock was not encountered in any of the soil borings that Sigma advanced at the site; dolomite is expected to be approximately 40 to 50 feet bgs based on the nearby historic well construction reports.

Site Hydrogeology

Depth to groundwater measurements from the monitoring well network collected by Sigma are summarized in **Table 4**. Static water level measurements collected to date indicate that the groundwater table varies across the site. Generally, shallow groundwater appears to be within 3 to 8 feet of the ground surface, with groundwater generally found at shallower depths closer to the South Branch Manitowoc River.

As stated in Sigma's *Summary of Site Investigation & Conceptual Remedial Action Plan*, the most recent static groundwater elevations indicate that shallow groundwater generally flows to the northeast toward the South Branch Manitowoc River. Based on the lithology observed during soil boring advancement activities, Sigma estimates that the hydraulic conductivity of saturated clay to clayey sand observed at the site ranges from 10^{-6} to 10^{-4} cm/sec⁴. The horizontal hydraulic gradient was calculated by inspection of water table contour maps, resulting in an estimated value between 0.025 and 0.040.

CONCEPTUAL MODEL

Sources

Potential sources of contamination identified in *Summary of Site Investigation & Conceptual Remedial Action Plan* and/or *Phase I Environmental Site Assessment*⁵ include:

- Possible sources of CVOCs include discharge of virgin or used solvents or process wastewater to floor drains, surfaces spills, leaky underground sewers, or improper materials handling during historic operations at the facility.
- Sources of lead and nickel are assumed to be related to releases of process wastewater through floor drains, surface spills, or leaky underground sewers.
- Sources of hexavalent chromium appear to be related to the historic uses as a plating facility.
- Cadmium impacted soil was found directly in two small areas: one directly north of the former Chilton Plating facility and another approximately 100-feet northwest of the facility. The area of impact directly north of the facility is likely related to a discharge of process wastewater, due to its association with nickel and cyanide within the same soil sample.
- The second area of cadmium impacted soil is likely associated with materials handling during historic plating operations.
- The source of CVOCs within the E. Main Street ROW is likely the migration of contaminants from the adjacent former Chilton Plating parcel, either in the vapor phase or within groundwater.

⁴ Bear, J. 1972. *Dynamics of Fluids in Porous Media*. American Elsevier, New York, pp. 15-24, 52-56, 85-90, 122-129, 136-148.

⁵ AAI Phase I Environmental Site Assessment Report, Former Chilton Plating and Schneider Properties, 415, 420, and 476 East Main Street and East Adjacent Property, Chilton, Wisconsin, prepared by The Sigma Group, Inc. dated December 8, 2014.

- The source of VOCs and PAHs at the 415 E. Main Street parcel is likely the historic fueling operation at the site.
- The South Branch of the Manitowoc River historically extended on to the northern portion of the 420 E. Main Street and Main Street parcels in the early 1900's. The quality of the fill material historically placed within the former river area on the northern portion of the 420 E. Main Street and Main Street subject property parcels is unknown and subsequently has the potential to negatively impact the subject property.
- Historic uses as a salvage yard, machine shop, and bulk oil facility.
- Fill materials may be located on site in areas of former building locations.

The historic features and approximate locations of potential sources of impacts are presented in **Figure 3**.

Receptors

Review of the current site conditions identifies the following potential receptors: the onsite buildings, utility corridors, monitoring wells, onsite/nearby potable wells, and the Manitowoc River.

- The buildings at the Site are not occupied and will likely be demolished as part of Site redevelopment.
- Utility corridors are located throughout the site. The underground utilities have the potential as a vapor and/or groundwater migration pathway.
- A review of well construction reports from the Wisconsin Geologic and Natural History Survey (WGNHS) identified nine historic well records located within 1,200 feet of the site. The open interval of each of the wells is located within the local bedrock aquifer, and not in the shallow unconsolidated aquifer which has been impacted locally by the releases from the former Chilton Plating site. Therefore, the wells are not considered receptors as it relates to the site.
- The closest surface water body is the Manitowoc River, which borders the north and northeast property boundaries.

Data Gaps

Data gaps identified within the WDNR's October 2019 *Site Investigation Review* include:

- Sampling for Per- and polyfluoroalkyl substances (PFAS) due to the historic use as a plating facility since 1960.
- Additional evaluation of utility corridors as conduits for groundwater and vapor migration.
- Additional sediment sampling needs to be conducted to determine the degree and extent of impacts within the Manitowoc River and to assess if a remedial action is necessary.
- Defining the degree and extent of petroleum VOC contamination associated with the 415 E. Main Street parcel.

- Defining the degree and extent of metal contamination in soil and groundwater in several areas east and west of the building and near the former plating lines at Chilton Plating.
- Evaluation of the potential source of MTBE at Chilton Plating and Schneider Properties.
- Defining the degree and extent of CVOCs in soil and groundwater in several areas west of the buildings at Chilton Plating, the east portion of the Schneider Properties, and south/southeast of E. Main Street.

PROPOSED SCOPE OF WORK

Site Investigation Work Plan

Sigma recommends the following additional investigation activities are proposed to address the comments WDNR provided in their October 2019 letter:

Additional Investigation – 415 E. Main Street (new BRRTS number to be assigned)

WDNR has requested completion of additional investigation to define the degree and extent of petroleum impacts identified at the 415 E. Main Street parcel. Sigma recommends the following scope of work to address WDNR concerns (proposed sampling locations are summarized in **Table 5** and illustrated on **Figure 5**):

- Request access from the adjacent property owner to the west (WIS CENTRAL LTD railroad) and coordinate access to the E. Main Street ROW to the north/northeast of the 415 E. Main Street parcel to allow completion of additional soil borings.
- Complete three additional Geoprobe soil borings within the railroad (RR) ROW to the west of the 415 E. Main Street parcel and three additional Geoprobe soil borings to the north/northeast of former borings GP-117 and SGP-30 within the E. Main Street ROW to depths of 12 feet below ground surface (bgs). Field screen soils during completion and collect and submit up to two soil samples from each boring for laboratory analysis of volatile organic compounds (VOCs) for 12 soil samples total. Soil samples selected for laboratory analyses will be based on field screening results.
- Soil samples will be collected with a hydraulically-driven 2.5-inch diameter by 4-foot long Macro-Core® sampler. Each soil sample will be described on the basis of color, texture, grain size, and plasticity, and classified in general accordance with the Unified Soil Classification System (USCS). A split portion of each soil sample will also be screened in the field with a calibrated photoionization detector (PID) equipped with a 10.6 electron volt (eV) lamp to measure for the presence of volatile organic vapors.
- Field and trip blanks will be submitted for QA/QC purposes with each soil sampling event.
- Install two additional ch. NR 141-compliant shallow groundwater monitoring wells: one well in the vicinity of previously completed soil boring SGP-7 and one well in the location of one of the additional proposed borings to the north/northeast of GP-117/SGP-30. The typical location will be determined pending field screening results.
- For laboratory QA/QC purposes, one out of every ten groundwater samples will be collected and submitted in triplicate as a duplicate sample. Equipment blanks will be collected during each sampling event if non-disposable equipment is utilized. Trip blanks will be submitted with each set of sample submitted for laboratory analysis. Each of the QA/QC samples will be submitted for VOC analysis.

- Survey the location and elevation of additional soil borings and monitoring wells. Develop the new monitoring wells in accordance with ch. NR 141 and collect one round of groundwater samples from monitoring wells associated with the 415 E. Main Street parcel for laboratory analysis of VOCs.

Additional Investigation – Chilton Plating Site and adjacent parcels to the east (Schneider Property) and to the west (BRRTS #02-08-000040)

WDNR has requested completion of additional investigation to define the degree and extent of VOC, metals and cyanide impacts identified at the former Chilton Plating Site and adjacent parcels to the east and west. In addition, WDNR has requested investigation to determine whether PFAS contamination potentially associated with former chromium metal plating operations is present at the former Chilton Plating Site. A summary of proposal sampling locations and rationale are provided in **Table 5** and illustrated on **Figure 5**.

Soil Sampling

Sigma recommends the following scope of work to allow collection of soil samples to further define the degree and extent of various impacts as requested in the WDNR's October 2019 letter:

- Complete seven additional Geoprobe soil borings within the former Chilton Plating building in the vicinity of previously completed soil boring SGP-13 and SGP-19 (area of highest reported concentrations of hexavalent chromium within soil and area where the former plating lines were likely to have been located to further define the degree and extent of metals, cyanide and VOC impacts within this portion of the site and to evaluate this portion of the site for the possible presence of PFAS contamination. The soil borings will be completed to depths of approximately 12 feet bgs. Up to two soil samples from each boring will be collected and submitted for laboratory analysis of VOCs, cyanide, hexavalent chromium, nickel and PFAS using the 537.1 Modified method for the Wisconsin list of 36 analytes. Soil samples selected for laboratory analyses will be based on field screening results but it is anticipated that samples submitted for laboratory analysis will be collected from a depth immediately beneath the floor slab (0 to 2 feet bgs) and a deeper interval (5 to 8 feet bgs).
- Complete 11 additional Geoprobe soil borings to the east and west of the existing site building to further define the extent of nickel and lead impacts within these areas of the site. The soil borings will be completed to depths of approximately 12 feet bgs. Up to two soil samples from each boring will be collected and submitted for laboratory analysis of nickel and lead. Soil samples selected for laboratory analysis will be collected from a depth within the top 4 feet and a deeper interval above the shallow water table interface.
- Complete 16 additional hand auger soil borings in the areas northeast and northwest of the existing building in the area of former samples B1 through B18 to allow collection of shallow soil samples (within 2 feet of the ground surface) for laboratory analysis of hexavalent chromium (not previously evaluated) and PFAS. Up to two soil samples from each boring will be collected and submitted for laboratory analysis of hexavalent chromium (samples will be submitted from depths between 0 to 1 feet and 1 to 2 feet bgs) and one sample per boring collected and submitted for laboratory analysis of PFAS using the 537.1 Modified method for the Wisconsin list of 36 analytes.

- Complete three additional Geoprobe soil borings in the vicinity of monitoring well SMW-3 and two additional Geoprobe soil borings in the vicinity of monitoring well CPMW03 to evaluate the area around these wells for a potential source of methyl-tert butyl ether (MTBE) present within groundwater samples collected from these wells. The soil borings will be completed to depths of 12 feet bgs. Field screen soils during completion and collect and submit up to two soil samples from each boring for laboratory analysis of VOCs for 10 soil samples total. Soil samples selected for laboratory analysis will be based on field screening results.
- Complete eight additional Geoprobe soil borings to the west of the existing site building, four additional Geoprobe soil borings within the eastern portion of the Schneider parcel and four additional Geoprobe soil borings to the south/southeast across E. Main Street to further define the extent of chlorinated VOC (CVOC) impact to soils. The soil borings will be completed to depths of approximately 12 feet bgs. Field screen soils during completion and collect and submit up to two soil samples from each boring for laboratory analysis of VOCs for 32 samples total. In addition, two soil samples from each of four additional soil borings (eight samples total) to be completed in the area west of the existing for further investigation of nickel and lead impacts will also be submitted for laboratory analysis of VOCs. Soil samples selected for laboratory analysis will be based on field screening results.
- Field and trip blanks will be submitted for QA/QC purposes with each soil sampling event. Each of the QA/QC samples will be submitted for VOC analysis.

Groundwater Sampling

Sigma recommends the following scope of work to allow collection of groundwater samples to further define the degree and extent of various impacts as requested in the WDNR's October 2019 letter:

- Install a ch. NR 141-compliant shallow groundwater monitoring well at one of the proposed boring locations to the south/southeast of the former Chilton Plating building across E. Main Street to determine the extent of CVOC impacts to shallow groundwater across the E. Main Street ROW.
- Install a double-cased piezometer at the location of CPMW-03 to define the vertical extent of CVOC impacts to groundwater within this portion of the site. Based on available well information for CPMW-03, Sigma anticipates that the piezometer will be installed through an outer steel casing set to an approximate depth of 20 feet bgs with the 2-inch PVC casing set to an approximate depth of 33 feet bgs with a 5-foot screen set between approximately 33 to 28 feet bgs.
- Pending results of additional soil sampling for the presence of nickel and lead to the east and west of the former Chilton Plating building as described above, possibly install additional ch. NR 141-compliant shallow groundwater monitoring wells to the east and west of the former Chilton Plating building to further define the degree and extent of metal groundwater contamination if warranted.
- Survey the location and elevation of additional soil borings and monitoring wells. Develop the new monitoring wells in accordance with ch. NR 141 and collect a round of groundwater samples from monitoring wells associated with the former Chilton Plating site and adjacent parcels for laboratory analysis of VOCs, cyanide, RCRA metals plus hexavalent chromium, copper, manganese, nickel and zinc.

- Collect a round of groundwater samples from monitoring wells SMW-1, SMW-2, SMW-5, CPMW02 and CPMW03 for laboratory analysis of PFAS using the 537.1 Modified method for the Wisconsin list of 36 analytes.
- Groundwater elevations will be collected prior to sampling of the monitoring wells.
- For laboratory QA/QC purposes, one out of every ten groundwater samples will be collected and submitted in triplicate as a duplicate sample. Equipment blanks will be collected during each sampling event if non-disposable equipment is utilized. Trip blanks will be submitted with each set of sample submitted for laboratory analysis. Each of the QA/QC samples will be submitted for VOC analysis.
- Field parameters (groundwater elevation, pH, temperature, turbidity, specific conductance, oxidation-reduction potential, dissolved oxygen) will be collected during the sampling events.

Supplemental Sediment Sampling

WDNR has requested completion of additional sediment sampling to further characterize potential sediment impacts adjacent to and downstream from the former Chilton Plating Site. Sigma recommends the following scope of work to address WDNR concerns:

- Collect additional sediment samples along the river cross-section (assumed three distinct sample locations at each cross section) at three locations: adjacent to previous soil sample B-3, at previously collected sediment sample SED-2 and downstream of previously collected sediment sample SED-2. Locations of anticipated sample collection are illustrated on **Figure 5**. Samples will be collected from the top six inches of sediment. If sediment is greater than six inches, a second sample may be collected.
- The sediment samples will be screened with a PID, logged using the Unified Soil Classification System to include soil type, color, consistency, odors, and visible evidence of discoloration or sheens, and then photographed.
- In addition to the sampling at designated sections described above, collect additional sediment samples from any areas of obvious depositions such as pools and bars in the vicinity of or downstream from the targeted sampling areas described above.
- Submit the additional sediment samples for laboratory analysis of cadmium, cyanide, hexavalent chromium, nickel and zinc (Sigma assumes 15 sediment samples will be collected and submitted, nine from the designated cross section sample locations and up to six from additional deposition areas).
- Survey the location and elevation of sediment sample locations.

All sampling will be conducted in accordance with Sigma's Standard Operating Procedures, which will be included in the final report.

Reporting

Following receipt of laboratory analytical results of the additional investigation activities described above, a summary report will be prepared for submittal to WDNR. The report will provide an evaluation of the additional results relative to applicable standards and recommendations based on those results for additional investigation or remediation, if warranted.

SCHEDULE

Sigma can initiate the scope of work upon authorization to proceed from the WDNR and the property owner. Upon authorization and throughout the project, Sigma will work with the WDNR to develop and maintain a schedule that meets the project needs. Sigma will notify the WDNR and City of Chilton representatives at least seven days prior to the proposed field activities requiring site access and again 48 hours prior to site access.

We appreciate the opportunity to assist you with this important project. If you have questions or need additional information, please call us at (414) 643-4200.

Sincerely,

THE SIGMA GROUP, INC.



Michelle L. Peed, P.G.
Project Hydrogeologist



Stephen Meer, P.E.
Senior Engineer

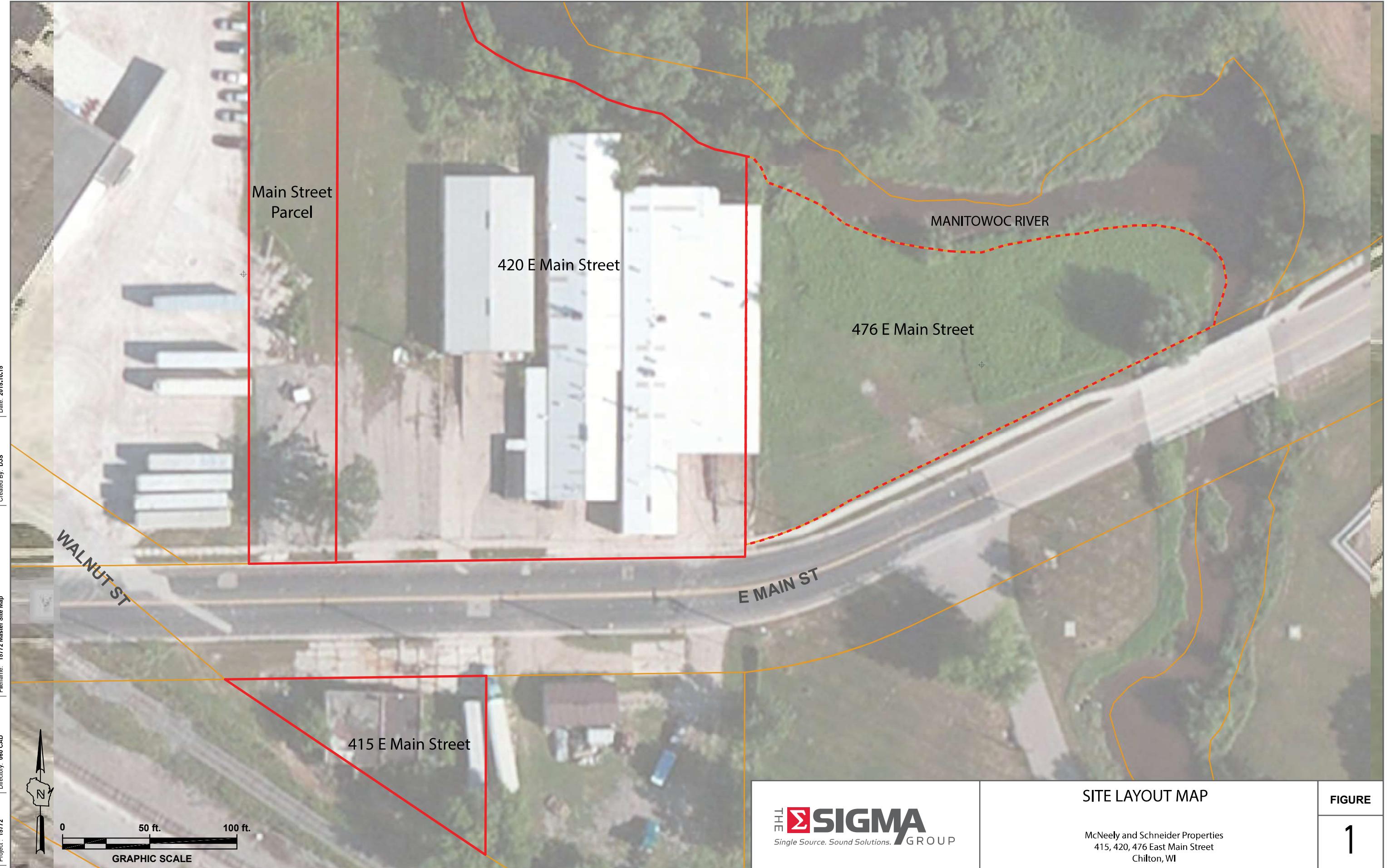


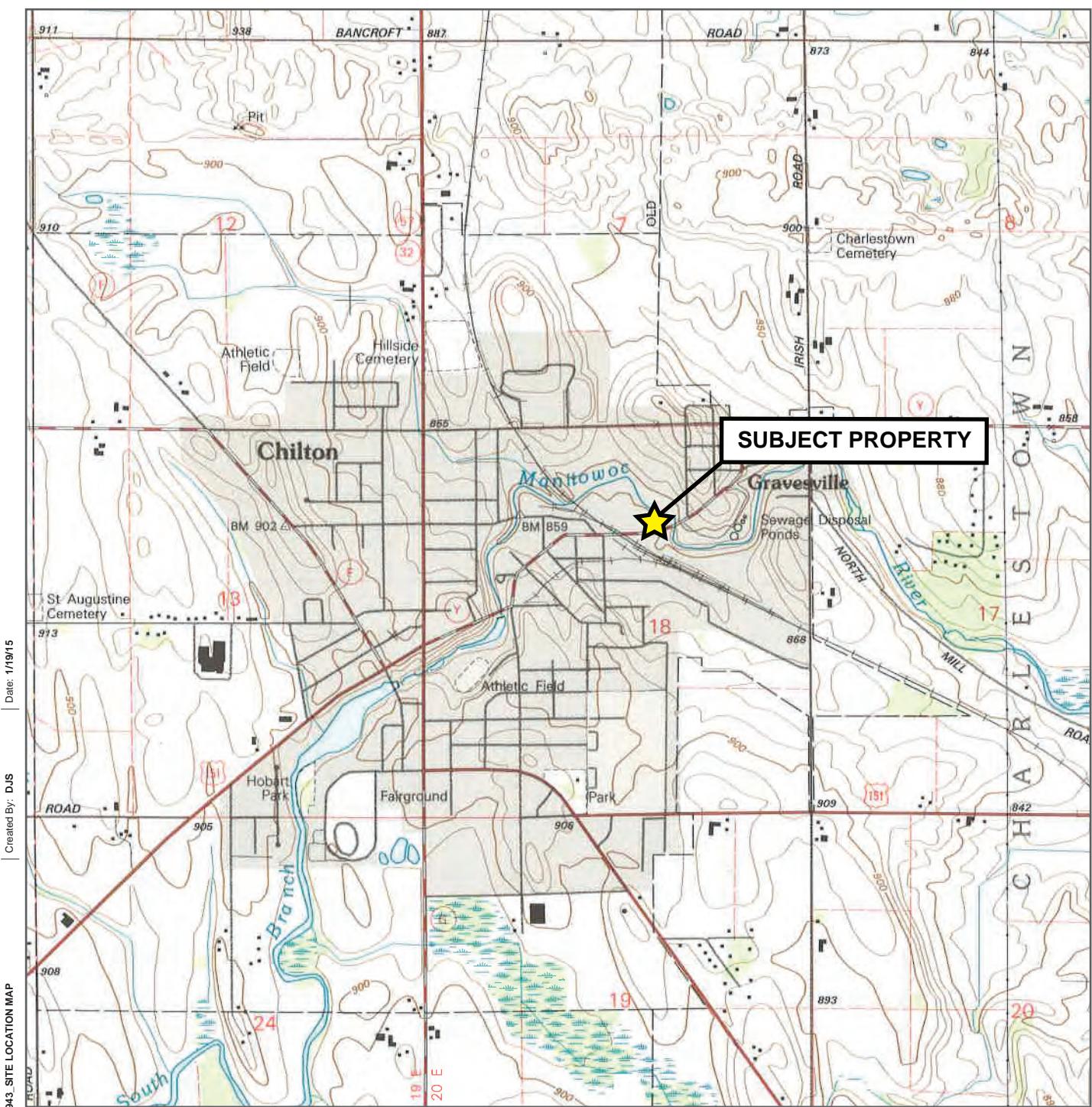
Kristin Kurzka, P.E., P.G.
Engineer & QA Manager

Attachments

- Figure 1 – Site Location Map
- Figure 2 – Site Layout Map
- Figure 3 – Known Historic Features
- Figure 4 – Soil Boring, Monitoring Well, and Vapor Sample Location Map
- Figure 5 – Proposed Soil Boring Location Map
- Table 1 – Soil Analytical Results
- Table 2 – Sediment Analytical Results
- Table 3 – Groundwater Analytical Results
- Table 4 – Water Level Elevations

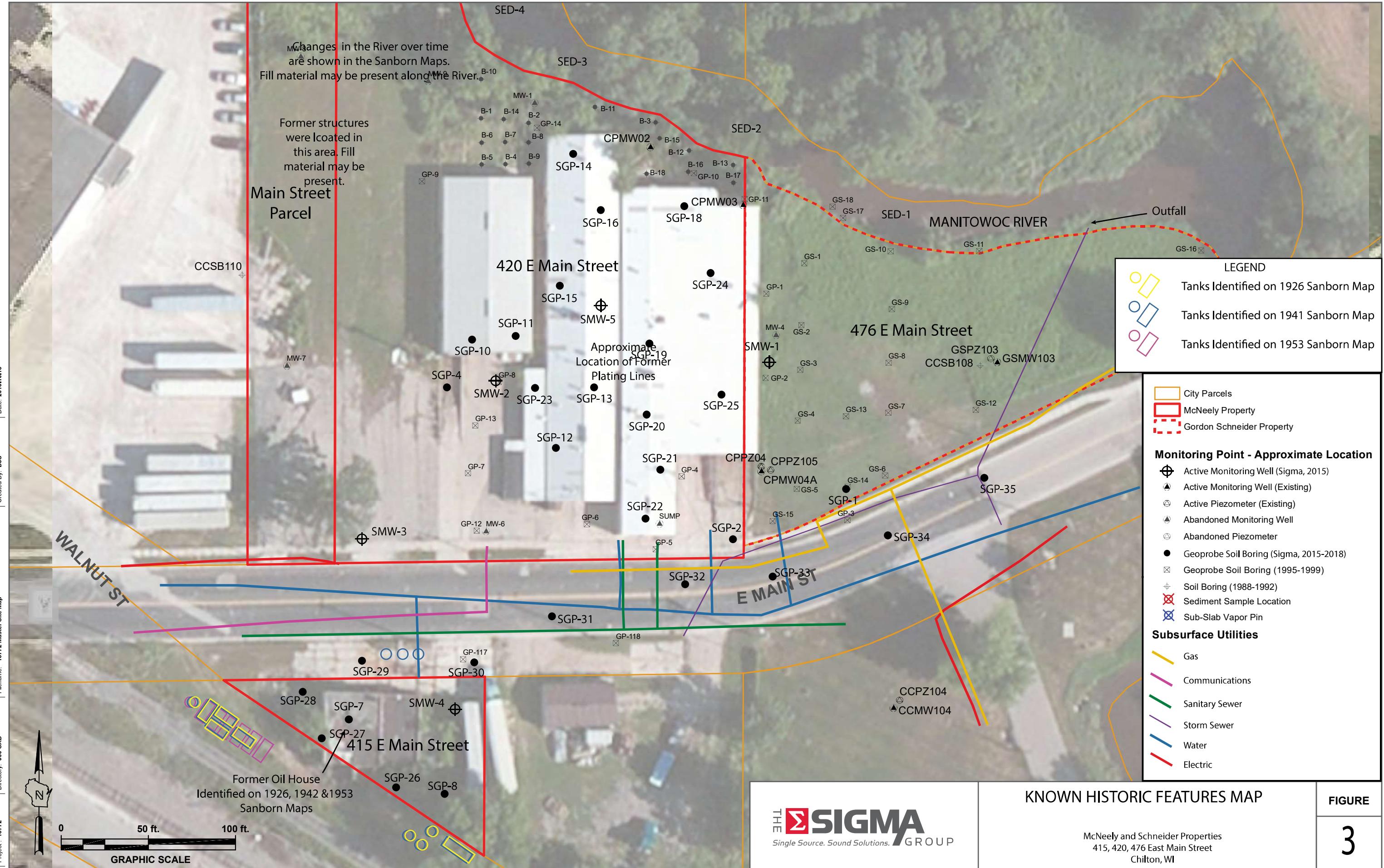
FIGURES

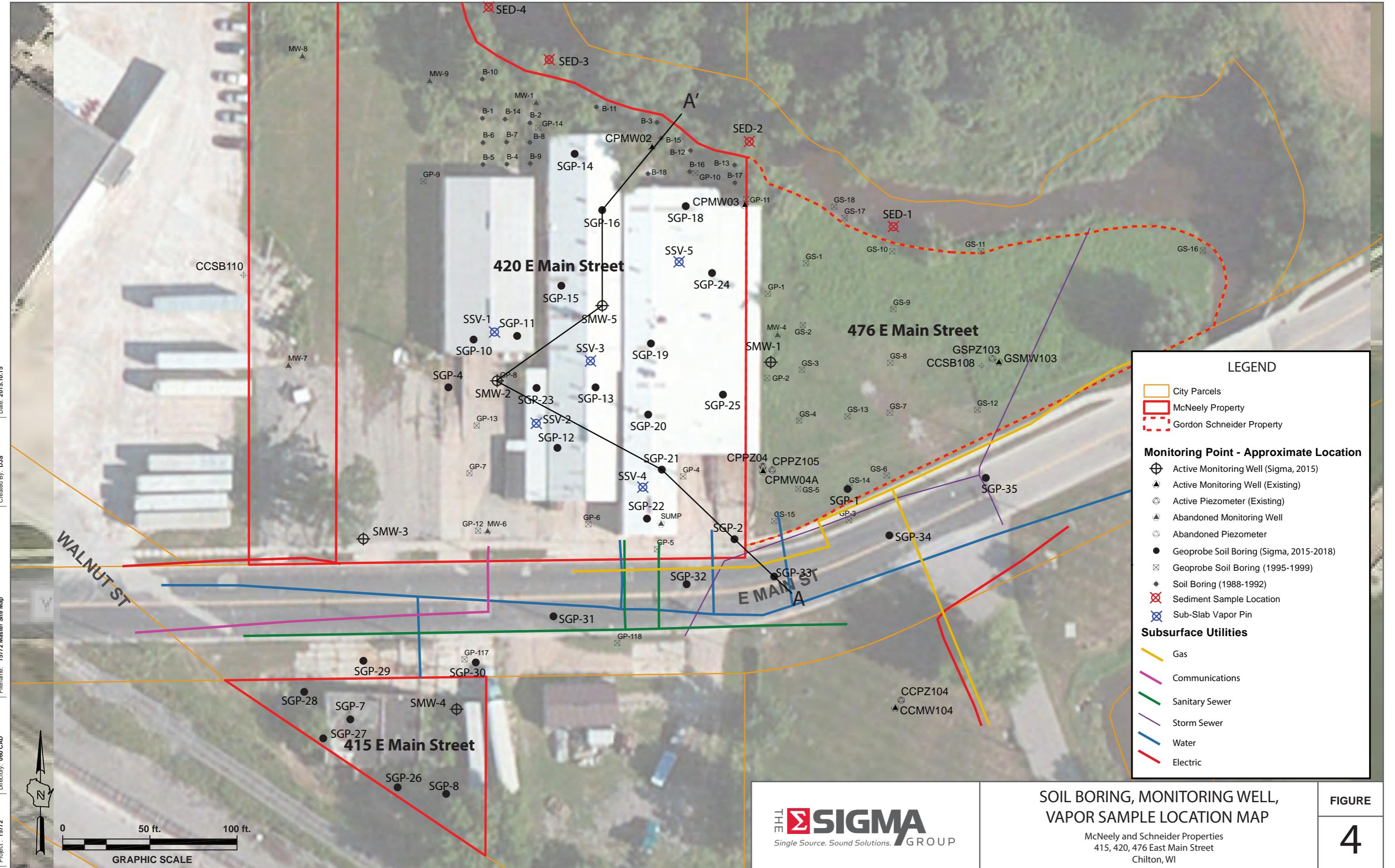


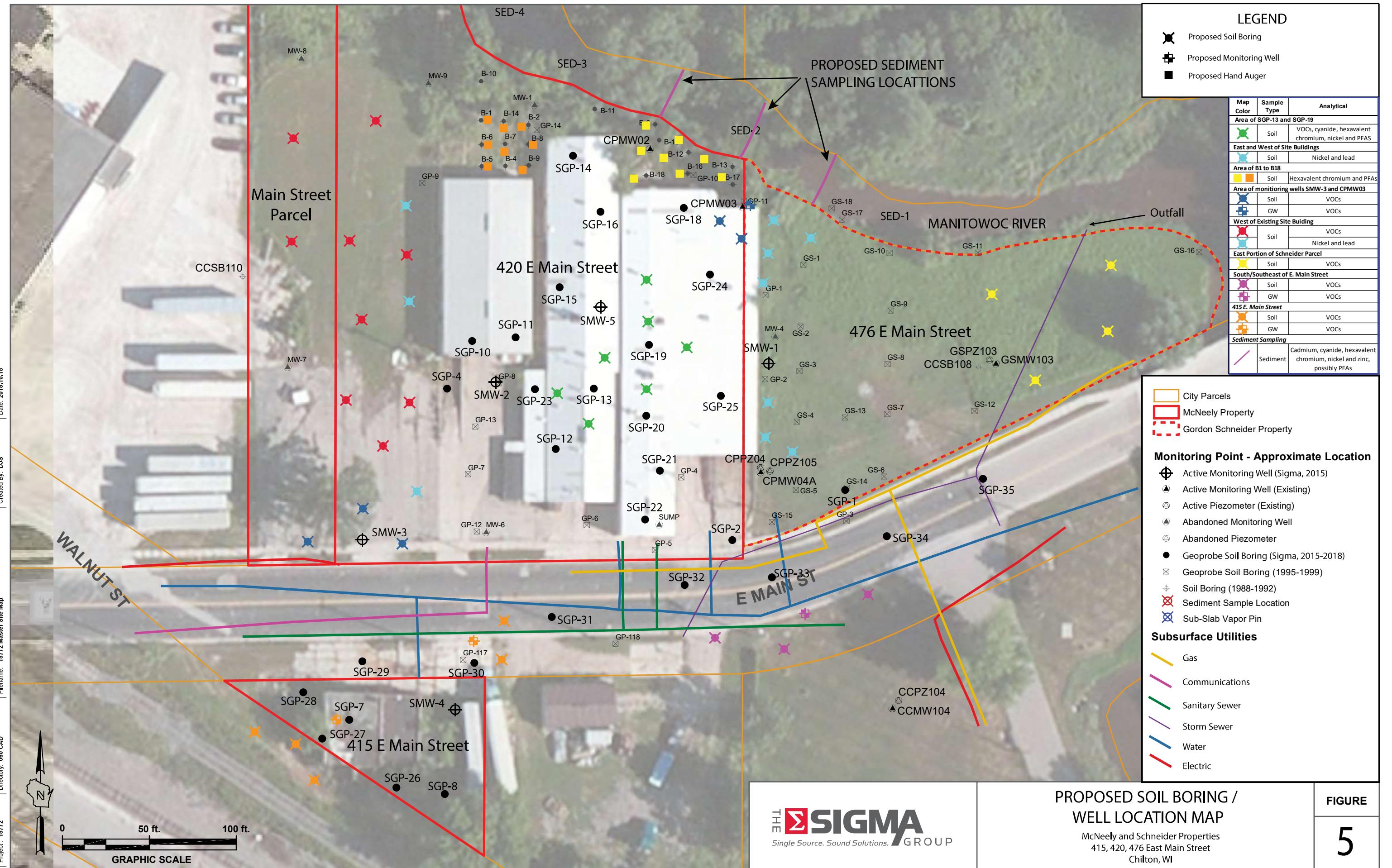


Scale 1 : 24,000
1 inch = 2,000 feet

Located in the SW 1/4 of the NE 1/4 of Sec 18, T18N, R20E
USGS Chilton Quadrangle (1973, photorevised 1992)
7.5 minute, 1 : 24,000 Topographic Map Collection







TABLES

Table 2
Sediment Analytical Data
McNeely and Schneider Properties - 415, 420 & 476 East Main Street, Chilton, Wisconsin
Sigma Project No. 19175

Soil Sample Location:	SED-1	SED-2	SED-3	SED-4	Threshold Effect Concentration (TEC) ⁴	Midpoint Effect Concentration (MEC) ⁵	Probable Effect Concentration (PEC) ⁶
Sample Depth (feet bgs):	NA	NA	NA	NA			
Sample Collection Date:	6/26/18	6/26/18	6/26/18	6/26/18			
Metals							
Chromium, Hexavalent	mg/kg	<0.64	<0.64	1.00 J	<0.64	NS	NS
Chromium, Total	mg/kg	NA	NA	NA	NA	43	76.5
Cadmium, Total	mg/kg	<0.07	0.493	0.251	0.178 J	0.99	3.0
Nickel, Total	mg/kg	3.09	78.4	10.7	4.7	23	36
Zinc, Total	mg/kg	16.2	115	98.9	44.3	120	290
Cyanide							
Cyanide, Total	mg/kg	0.108 J	0.0798 J	0.219	<0.039	NS	NS

Notes:

1. Unsaturated/smear zone versus saturated soil conditions based on: (1) measured water levels in adjacent/nearby monitoring wells, (2) soil moisture conditions recorded on soil boring logs, and/or (3) soil moisture contents reported on laboratory analytical reports.

2. Analytical units:
 mg/kg = micrograms per kilogram (equivalent to parts per billion, ppb)
 mg/kg = milligrams per kilogram (equivalent to parts per million, ppm)

3. NA = not analyzed

4. Threshold Effect Concentration = lower effect level (dry weight at 1% Total Organic Carbon (TOC) at which toxicity to benthic-dwelling organisms are predicted to be unlikely and probable as presented in Tables 1 through 4 in WDNR guidance document PUB-RR-088 "Consensus-Based Sediment Quality Guidelines - Recommendations for Use and Application", dated December 2003

5. Midpoint Effect Concentration = the concentration (dry weight at 1% Total Organic Carbon (TOC) midway between the TEC and PEC concentrations at which toxicity to benthic-dwelling organisms are predicted to be unlikely and probable as presented in Tables 1 through 4 in WDNR guidance document PUB-RR-088 "Consensus-Based Sediment Quality Guidelines - Recommendations for Use and Application", dated December 2003

6. Probable Effect Concentration = upper effect level (dry weight at 1% Total Organic Carbon (TOC) at which toxicity to benthic-dwelling organisms are predicted to be unlikely and probable as presented in Tables 1 through 4 in WDNR guidance document PUB-RR-088 "Consensus-Based Sediment Quality Guidelines - Recommendations for Use and Application", dated December 2003

7. Laboratory flags:
 "J" = Analyte detected between Limit of Detection and Limit of Quantitation

8. Exceedances:
BOLD = Concentration exceeds Probable Effect Concentration
 [] = Concentration exceeds Non-Industrial OR Industrial Direct Contact RCL (unsaturated soil samples only)

Table 5 - Proposed Sampling Locations and Rationale
Former Chilton Plating Site and Adjacent Properties
Project Reference #19175

Map Color	Number of Sampling Locations	Planned Boring Depth	Rationale	Sample Type	Analytical	Number of Samples	Proposed Sample Intervals
Chilton Plating Site and adjacent parcels to the east (Schneider Property) and to the west							
Area of SGP-13 and SGP-19							
Green	7 Borings	12	Area of highest reported concentrations of hexavalent chromium within soil and the area where former plating lines were likely to have been located. Additionally, evaluate for the presence pf PFAs.	Soil	VOCs, cyanide, hexavalent chromium, nickel and PFAS	2 (14 total)	Based on field screening results, potentially 0 to 2 ft bgs & 5 to 8 ft bgs
East and West of Site Buildings							
Cyan	11 Borings	12	To futher delineate the extent of nickel and lead impacts in these areas	Soil	Nickel and lead	2 (22 total)	0 to 4 ft bgs & highest PID or just above apparent water table
Area of B1 to B18							
Orange and Yellow	16 Hand Augers	2	The area was not previously analyzed for heavent chromium or PFAs.	Soil	hexavalent chromium and PFAs	2 for hexavalent chromium (32 total), 1 for PFAs (16 total)	0 to 1 ft bgs & 1 to 2 ft bgs
Area of monitoring wells SMW-3 and CPMW03							
Blue	5 (three near SMW-3 and two near CPMW03)	12	To try to determine presence of a source of the MTBE present within groundwater samples from these wells.	Soil	VOCs	2 (10 total)	Based on field screening results
	1 Double-cased Piezometer	33	To delineate vertical extent of CVOC impacts	GW	VOCs	1	Screen set between 28 and 33 feet bgs.
West of Existing Site Buiding							
Red	8 (total with 4 sampled for lead and nickel)	12	Delineate CVOC impacts	Soil	VOCs	2 (16 total)	Based on field screening results
Cyan			Delineate nickel and lead impacts		Nickel and lead	2 (8 total)	Based on field screening results
East Portion of Schneider Parcel							
Yellow	4	12	Delineate CVOC impacts	Soil	VOCs	2 (8 total)	Based on field screening results
South/Southeast of E. Main Street							
Magenta	4 Borings	12	Delineate CVOC impacts	Soil	VOCs	2 (8 total)	Based on field screening results
	1 Monitoring Well	12	Determine extent of CVOC impaxts to shallow groundwater	GW	VOCs	1	
415 E. Main Street							
Orange	6 Borings	12	Determine extent of petroleum impacts	Soil	VOCs	2 (12 total)	Based on field screening results
	2 Monitoring Wells	12		GW	VOCs	1	One blind drilled near SGP-7
Sediment Sampling							
magenta	9 Sediment samples	6 inches	Characterize potential sediment impacts	Sediment	cadmium, cyanide, hexavalent chromium, nickel and zinc, possibly PFAs (pending on-site soil results)	15 total	3 adjacent to B-3, 3 adjacent to Sed-2, and three downstream of Sed-2, plus 6 additional spots at areas of deposition (bars or pools) if present
	Sample at pools and bars downstream						

Notes:

VOCs = volatile organic compounds
CVOC = chloinated volatile organic compounds
bgs =below ground surface