

**From:** Beggs, Tauren R - DNR  
**Sent:** Thursday, October 6, 2022 3:58 PM  
**To:** Que El-Amin  
**Cc:** Matt Dahlem; Elizabeth Runge; Harris Byers  
**Subject:** RE: SSSAP for 1621 14th Street

Thanks Que

**We are committed to service excellence.**

Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

**Tauren R. Beggs**

Phone: (920) 510-3472

[Tauren.Beggs@wisconsin.gov](mailto:Tauren.Beggs@wisconsin.gov) (preferred contact method during work at home)

---

**From:** Que El-Amin <[que@scott-crawford.com](mailto:que@scott-crawford.com)>  
**Sent:** Friday, September 30, 2022 6:54 PM  
**To:** Beggs, Tauren R - DNR <[Tauren.Beggs@wisconsin.gov](mailto:Tauren.Beggs@wisconsin.gov)>  
**Cc:** Matt Dahlem <[mdahlem@fehrgraham.com](mailto:mdahlem@fehrgraham.com)>; Elizabeth Runge <[elirun@two-rivers.org](mailto:elirun@two-rivers.org)>; Harris Byers <[Harris.Byers@stantec.com](mailto:Harris.Byers@stantec.com)>  
**Subject:** SSSAP for 1621 14th Street

Good evening,

Please see the attached SSSAP for 1621 14th Street. If you have any questions, please feel free to reach out.

Thank you,

Que El-Amin  
Principal, Scott Crawford, Inc.  
414-678-1723 | 414-736-9036  
[Scott-Crawford.com](http://Scott-Crawford.com)

---

IMPORTANT: The contents of this email and any attachments are confidential. They are intended for the named recipient(s) only. If you have received this email by mistake, please notify the sender immediately and do not disclose the contents to anyone or make copies thereof.

# **SITE-SPECIFIC SAMPLING AND ANALYSIS PLAN**

## **ENVIRONMENTAL SITE INVESTIGATION**

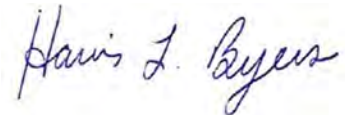
**1621 14<sup>th</sup> Street**  
**Two Rivers, Wisconsin**

**U.S. EPA Brownfields Assessment Cooperative Agreement No.: BF00E03040**  
**Assessment, Cleanup and Redevelopment Exchange System ID: *Pending***

**WDNR BRRTS ID: 02-36-589295 (Open ERP)**



Jiyan Hatami, M.S.  
Contaminant Hydrogeologist



Harris L. Byers, Ph.D.  
Senior Brownfields Project Manager



Richard J. Binder, P.G.  
Project Quality Assurance Manager

**September 30, 2022**  
**Project Number: 193708490**



# TABLE OF CONTENTS

- 1.0 INTRODUCTION ..... 2**
  - 1.1 GENERAL ..... 2
  - 1.2 SITE DESCRIPTION/BACKGROUND ..... 2
  - 1.3 SUPPLEMENTAL REVIEW OF HISTORIC SANBORN® FIRE INSURANCE MAPS ..... 3
  - 1.4 WDNR REVIEW OF FEHR GRAHAM SITE WORKPLAN ..... 3
- 2.0 DATA QUALITY OBJECTIVES ..... 6**
  - 2.1 PROBLEM STATEMENT ..... 6
  - 2.2 CONCEPTUAL SITE MODEL ..... 6
- 3.0 SITEWIDE GEOPHYSICAL SURVEY ..... 7**
  - 3.1 GENERAL ..... 7
  - 3.2 OBJECTIVES ..... 7
- 4.0 SOIL ASSESSMENT ..... 8**
  - 4.1 GENERAL ..... 8
  - 4.2 OBJECTIVES ..... 8
  - 4.3 SOIL BORING AND SUBSURFACE ASSESSMENT ..... 8
  - 4.4 SPECIAL HANDLING CONSIDERATIONS AND QA/QC SAMPLES ..... 9
  - 4.5 CHAIN-OF-CUSTODY ..... 9
  - 4.6 FIELD LOG BOOK ..... 9
- 5.0 GROUNDWATER ASSESSMENT ..... 10**
  - 5.1 GENERAL ..... 10
  - 5.2 OBJECTIVES ..... 10
  - 5.3 GROUNDWATER ASSESSMENT ..... 10
  - 5.4 SPECIAL HANDLING CONSIDERATIONS AND QA/QC SAMPLES ..... 11
  - 5.5 CHAIN-OF-CUSTODY ..... 11
  - 5.6 FIELD LOG BOOK ..... 11
- 6.0 REPORT ..... 12**
- 7.0 REFERENCES ..... 13**
- 8.0 LIMITATIONS ..... 14**

**FIGURES**

- Figure 1: Property and Regional Topography
- Figure 2: Certified Survey Map of the Property
- Figure 3: 2020 Orthophotograph of the Property
- Figure 4a: Sanborn Fire Insurance Maps from the 19<sup>th</sup> Century
- Figure 4b: Sanborn Fire Insurance Maps from the 20<sup>th</sup> Century
- Figure 5: Select Historic 20th Century Site Features
- Figure 6: Proposed Sample Locations

**APPENDICES**

- Appendix A: Fehr Graham 2022 Site Investigation Work Plan
- Appendix B: WDNR Review of Fehr Graham Site Investigation Work Plan
- Appendix C: Site-Specific Health and Safety Plan (Stantec RMS-1)

## 1.0 INTRODUCTION

### 1.1 GENERAL

This Site-Specific Sampling and Analysis Plan (SSSAP) has been prepared on behalf of the City of Manitowoc (hereinafter referred to as the “City”) by Stantec Consulting Services Inc. (Stantec) for field sampling and associated laboratory analyses to be performed as part of a Site Investigation (SI) of the vacant parcel of land owned by West River Lofts, LLC, located at 1621 14<sup>th</sup> Street in Two Rivers, Wisconsin (herein referred to as the “Property” and the “Site”). The Property consists of 3.15 acres of land recently defined as “Lot 2” within a larger 5.73-acre parcel of former industrial property located at 1702 13th Street in Two Rivers, Wisconsin. The location of the Property, illustrated by the green outlined area, relative to regional and local topography is shown in Figure 1. A Certified Survey Map of the Property is adapted as Figure 2, and the 2020 orthophotograph of the Property is shown in Figure 3. Per the City of Two Rivers Tax Assessors’ website, the Property is zoned as “Industrial”.

The proposed SI is being completed using funds from the City of Manitowoc Community-Wide Assessment Grant awarded to the City by the United States Environmental Protection Agency (USEPA) on June 15, 2021. The Stantec (2022) hazardous substances brownfield eligibility determination for the Property was submitted to USEPA on April 1, 2022 and is pending approval.

### 1.2 SITE DESCRIPTION/BACKGROUND

**Historic Uses and Ownership.** According to the Phase I Environmental Site Assessment (ESA) completed for the Property by Fehr Graham & Associates, LLC (Fehr Graham) on November 17, 2021, the Property was developed for mixed industrial purposes prior to 1885. Industrial operations on the Property included chair manufacturing from 1885-1904 and Sanborn® Fire Insurance Maps from this time period are illustrated on Figure 4a. The Property was redeveloped for aluminum goods manufacturing in 1913 which operated through 1984 (Fehr Graham, 2021a). Historic features illustrated on Sanborn® Fire Insurance Maps from this time period are illustrated on Figure 4a and discussed further in Section 1.3. Additionally, a small mitten factory and glass works factory operated on the northern portion of the Property in the early 20<sup>th</sup> Century. Historic operations on the Property involved the storage and handling of various hazardous materials and petroleum products including, but not limited to the following: paints, paint thinners, solvents, lubricants, cutting oil, fuel oil, gasoline, polish, and metal compounds (Fehr Graham, 2021a).

Based on a review of records available on the Wisconsin Department of Natural Resources Bureau for Remediation and Redevelopment Tracking System (WDNR BRRTS) website, the Property was owned by Two Rivers Manufacturing Company by 1885 through 1897. Consolidation of industrial activity and significant redevelopment as an aluminum foundry occurred between 1897 and 1913 with foundry operations continuing through 1984 as the “Aluminum Goods Manufacturing Company Plant No. 4” and “Standard Aluminum Company”, which were rebranded as Mirro Aluminum Company in 1917 and eventually acquired by The Newell Companies (Newell Brands) in 1983 (Fehr Graham, 2021a).

The Property appears to have been briefly acquired in June of 1984 by the City of Two Rivers (presumably for the purpose of blight elimination) who immediately transferred ownership (on June 13, 1984) to Eggers Industries, Inc. The former industrial buildings on the Target Property were razed between 1985 and 1986. Eggers Industries, Inc. (which was acquired by VT Industries, Inc. in 2018) owned and operated on the Property until 2018, when Bright Horizon Properties, LLC acquired the property. The property was sold to West River Lofts, LLC on February 9, 2022. The Property is currently used as a parking lot, vacant lot/greenspace, and is bound to the east by a river walkway/right of way (Figure 3). The current Property owner intends to redevelop the Property for multifamily affordable housing.

**Previous Environmental Assessments.** Fehr Graham completed a (2021b) Phase II ESA to investigate the RECs on the Property identified in the Fehr Graham (2021a) Phase I ESA. Soil borings and temporary groundwater monitoring wells were installed on the Property to investigate soil and groundwater quality. Analytical results from soil and groundwater detected various contaminants, primarily on the eastern portion of the Property. Additional site investigation included test pits to delineate contamination observed during the (2021b) Phase II ESA, as well as additional soil borings placed around the perimeter of the proposed

apartment building. Sample locations completed by Fehr Graham through 2022 are illustrated on Figure 6, relative to Site features described in Section 1.3 and proposed sample locations described in Section 4 and 5.

As a result of the (2021b) Phase II ESA and subsequent work at the Property, Fehr Graham prepared a (2022) Site Investigation Work Plan (SIWP), which attached as Appendix A. The proposed scope included the following:

- *Task 1: Wetland delineation investigation prior to site redevelopment activities.*
- *Task 2: Additional soil and groundwater investigation to define the extent and degree of impacts in the soil and groundwater.*
- *Task 3: Assess all contaminant migration pathways and receptors which includes a vapor investigation, surface water and sediment evaluation, and an emerging contaminants evaluation.*
- *Task 4: Data Evaluation and NR 716 Site Investigation Report.*

This SSSAP focuses on Task 2, as described further herein.

### 1.3 SUPPLEMENTAL REVIEW OF HISTORIC SANBORN® FIRE INSURANCE MAPS

As noted previously, the property was redeveloped as an aluminum foundry by 1913, with operations continuing through 1984. Historic orthophotographs confirm the former foundry was razed by 1986 and the Property appears to have remained vacant since that time. As such, historic Sanborn ® Fire Insurance Maps are likely the best source of information related to specific operations. Sanborn ® Fire Insurance Maps published in the 20<sup>th</sup> Century are illustrated on Figure 4b.

Stantec georeferenced full-color high-resolution scans of Sanborn ® Fire Insurance Maps published in 1922, 1934, and 1967 based on a georeferenced high-resolution orthophotograph taken of the Property in 1976. The alignment between the 1976 orthophotograph and the 2020 orthophotograph is excellent (total error of 4 feet) and the alignment between the 1976 orthophotograph and the Sanborn ® Map library is outstanding (average total error of 2.6 feet). Therefore, Site features apparent on historic Sanborn ® Fire Insurance maps were digitized in a geographic information system (GIS) database and are illustrated on Figure 5.

The 1922 Sanborn ® map indicates the foundry served was “Plant 4” and operated as a multi-story aluminum rolling mill, with a machine shop on the northern portion of the plant, melting operations located on the southeastern portion of the plant, rolling operations located near the center of the plant, and stamping operations located on the western portion of the plant. The map indicates there were three naphtha USTs with a combined storage capacity of 1,560 gallons, nine fuel oil USTs with a combined storage capacity of 69,000 gallons, and a 65-gallon gasoline UST present at the Property in 1922. Two railroad spurs were present at the Property during this time. The locations of these features are illustrated on Figure 5. Of note, these USTs were not illustrated on subsequent Sanborn ® Maps published in the 20<sup>th</sup> Century.

As illustrated on Figure 4b, plant operations expanded through 1934; though unfortunately, specific operations were not specified on the 1934 map. With the expansion of the plant southwesterly, an additional railroad spur was constructed. Additionally, an oil house was added to the southeastern portion of the Property (Figure 5), though it is unclear if the oil house served the aluminum plant or another user.

The facility expanded further between 1934 and 1967, and of critical note, a “degreaser” was added near the south-central portion of the foundry (Figure 5). Although the Sanborn ® Map from 1967 does not clarify the type of solvent used, chlorinated solvent impacts were identified by Fehr Graham at MW-7. The location of MW-7 relative to the degreaser is illustrated on Figure 6.

### 1.4 WDNR REVIEW OF FEHR GRAHAM SITE WORKPLAN

The Fehr Graham (2022) SIWP was submitted to the WDNR for review. The WDNR responded in a letter dated July 29, 2022, which is provided in Appendix B. WDNR’s comments are provided below in Times New Roman font, with Stantec’s responses following in indented italics font. Please note that two sample locations (SB-19/MW-19 and SB-20/MW-20) were proposed in the adjacent rights of way by Fehr Graham (2022). As

illustrated on Figure 6, this SSSAP recommends the two sample locations be adjusted to evaluate potential source areas identified during a supplemental review of historic Sanborn ® Fire Insurance Maps.

### General Comment

The DNR review of the SIWP has determined that the general code requirements have been met. However, the well variance is not granted for 1-inch wells due to PAH variability in groundwater across the site even in areas where PAHs were not found in soil. Follow code for installation of 2-inch monitoring wells to evaluate PAH exceedances in groundwater.

*As described in Section 4 of this SSSAP, all existing 1-inch diameter groundwater monitoring wells will be abandoned and replaced with ch. NR-141 compliant 2-inch groundwater monitoring wells. Table 2 provides a summary of constituents to be sampled at each newly installed well.*

### Media-Specific Comments

#### Soil:

- Additional soil sampling needed in areas of the former rail line and the 65-gallon gas tank to evaluate potential impacts from recognized environmental conditions (RECs).

*As illustrated on Figure 6, Stantec digitized the locations of the three former rail lines drawn on Sanborn® Fire Insurance Maps published in the early/mid 20<sup>th</sup> Century. As described in Section 4 with target constituents summarized on Table 1 of this SSSAP, numerous soil borings will be advanced along the former rail lines to further evaluate these historic Property features.*

*As illustrated on Figure 6 with target constituents summarized on Table 1 of this SSSAP, soil borings SB-38 through SB-41 will be advanced either to a depth of 10 ft bgs or to the water table to evaluate potential impacts from RECs associated with the former 65-gallon gas tank.*

*As described in Section 1.3, additional historic features of significance were identified during a supplemental review of historic Sanborn ® Fire Insurance Maps. As illustrated on Figure 6, soil borings were placed in/near these features to evaluate current conditions.*

- Additional soil sampling needed in the area near MW-7 where trichloroethylene (TCE) was detected above groundwater pathway and non-industrial direct contact residual contaminant levels (RCLs).

*As described in Section 1.3, additional historic features of significance were identified during a supplemental review of historic Sanborn ® Fire Insurance Maps. As illustrated on Figure 6, additional sample locations are proposed in the vicinity of MW-7 to further evaluate solvent impacts in this area.*

- Additional soil sample needed between B-8 and MW-11. Analyze for volatile organic compounds (VOCs) and polychlorinated biphenyls (PCBs).

*As described in Section 3 with target constituents summarized on Table 1 of this SSSAP, Stantec will advance one soil boring (SB-22) to a depth of 10 ft bgs, sampling soil for VOCs and PCBs. The depth interval with the highest PID above the water table will be sampled for VOCs and PCBs, and an additional sample will be collected above the water table to vertically delineate possible VOC and PCB impacts to soil.*

- Evaluate if polycyclic aromatic hydrocarbon (PAH) and metal contamination should be considered site wide and the implications on extent of site investigation sampling needed.

*As described in Section 3 and Table 1 of this SSSAP, Stantec will preferentially sample soils from depth intervals containing anthropogenic fill materials and soils directly above the water table to delineate the horizontal and vertical extents of PAH and metal impacts.*

- Evaluation of aluminum in areas of former aluminum operations.

*As illustrated on Figure 6, Stantec digitized the location/extent of the former foundry drawn on Sanborn® Fire Insurance Maps published in the early/mid 20<sup>th</sup> Century. As described in Section 3 and Table 1 of this SSSAP, Stantec will advance numerous soil borings to a depth of 10 ft bgs or to the water table to investigate possible aluminum impacts to soil associated with former aluminum operations on the Property.*

#### Groundwater:

- Provide evaluation of existing one inch monitoring wells and potential replacement of those monitoring wells with 2-inch wells after the next comprehensive groundwater monitoring event.

*As described in Section 4 of this SSSAP, all existing 1-inch diameter groundwater monitoring wells will be abandoned and replaced with ch. NR-141 compliant 2-inch groundwater monitoring wells. Table 2 provides a summary of constituents to be sampled at each newly installed well.*

- Evaluate whether MW-6 should be replaced with a 2-inch well as part of the site investigation since groundwater was only sampled once before the monitoring well was destroyed.

*As described in Section 4 of this SSSAP, all existing 1-inch diameter groundwater monitoring wells will be abandoned and replaced with ch. NR-141 compliant 2-inch groundwater monitoring wells. Table 2 provides a summary of constituents to be sampled at each newly installed well.*

#### Sediment:

- While there may have been no direct discharge to the river historically, the data from MW-5 for PAHs, metals, and PCBs is above the probable effects concentration (PEC) Consensus Based Sediment Quality Guidelines (CBSQGs). Provide more historical information of building construction, operations adjacent to the river, any potential discharge pipes, potential for overland flow, etc. Provide additional justification or conduct sediment sampling within the river for PAHs, metals, and PCBs. Justification or sediment sampling will either need to be conducted at this time or will need to be evaluated after further upland investigation is completed.

*As the industrial buildings were razed many years ago, confirming prior Site operations will be very difficult. As part of this work, Stantec will conduct a supplemental file review at the City to determine if record drawings exist for the former industrial facility. In addition, Stantec will conduct a sitewide geophysical survey to determine if infrastructure remains which could indicate a direct discharge to the River. A discussion on the need for sediment sampling will be provided to WDNR in a future transmittal.*

## 2.0 DATA QUALITY OBJECTIVES

### 2.1 PROBLEM STATEMENT

The current Property owner is preparing to redevelop the Property for multifamily residential housing. Soil and groundwater impacts were identified in Fehr Graham (2021), however the extent and/or nature of subsurface impacts were not delineated. Therefore, this SI is warranted to further delineate the magnitude and extent of impacts to soil and groundwater quality at the Property.

### 2.2 CONCEPTUAL SITE MODEL

The “Triad approach” for characterization and remediation of contaminated sites was developed by the Environmental Protection Agency and others with a goal of increasing confidence that project decisions about contaminant presence or absence, location, fate, exposure, and risk reduction choices, are made correctly and cost effectively. The foundation for site-related decisions that are both correct and optimized (from a cost-benefit standpoint) is the “Conceptual Site Model” (CSM) (Crumbling, 2004). CSM uses all available historical and current information to estimate:

- where contamination is (or might be) located;
- how much is (or might be) there;
- how variable concentrations may be and how much spatial patterning may be present;
- what is happening to contaminants as far as fate and migration;
- who might be exposed to contaminants or harmful degradation products; and,
- what might be done to manage risk by mitigating exposure.

As described in Sections 1.2, Fehr Graham have completed environmental investigations on the Property and prepared a SIWP. Comments provided by WDNR following agency review of the Fehr Graham (2022) SIWP are addressed in Section 1.4. A supplemental review of potential source areas completed by Stantec in preparation of this SSSAP is described in Section 1.3.

In summary, industrial development of the Property occurred by the late 19<sup>th</sup> Century. The Property was redeveloped for use as an aluminum foundry in the early 20<sup>th</sup> Century and continued to operate as a foundry through the mid-1980s. Historic operations on the Property involved the storage and handling of various hazardous materials and petroleum products including, but not limited to the following: paints, paint thinners, solvents, lubricants, cutting oil, fuel oil, gasoline, polish, and metal compounds (Fehr Graham, 2021a).

Site assessment work completed to date identified a variety of petroleum and/or hazardous substances in soil and groundwater at concentrations greater than health-based standards. Based on previous assessments and previous industrial operations, constituents of concern include VOCs, PAHs, PCBs, and heavy metals.



## 3.0 SITEWIDE GEOPHYSICAL SURVEY

### 3.1 GENERAL

As described in Section 1.2 and illustrated on the Sanborn® Fire Insurance Map drawn in 1922, multiple USTs previously existed on the Property (Figure 4b and Figure 5). However, closure records appear to exist for only one UST. Therefore, it is possible USTs (or other features of environmental significance) may remain on the Property which could serve as potential source areas and/or complicate the sampling proposed in Section 4 and 5.

Therefore, a geophysical survey using a combination of ground penetrating radar (GPR) and frequency domain electromagnetic induction (EMI) surveying techniques is warranted.

### 3.2 OBJECTIVES

A sitewide geophysical survey will be conducted to confirm the location/orientation of remaining onsite utilities; locate/delineate anomalies consistent with remaining USTs and/or UST removal excavations; and identify possible outfalls leading to the river associated with the historic industrial use of the Property. The GPR survey will be focused on the perimeter of the Property adjoining the river and will be supplemented by a sitewide survey using a (EMI) surveying techniques.

Results of the GPRS surveys will be provided as an appendix to the SI Report and will be illustrated on an attached figure(s). Anomalies and utilities marked during the geophysical survey will be surveyed by Stantec personnel with a sub-meter global positioning system (GPS) unit and will be included on the figure illustrating survey results.

Flowing outfalls/pipes may be dye tested following SOP No. 31.

## 4.0 SOIL ASSESSMENT

### 4.1 GENERAL

Proposed soil sampling locations are illustrated on Figure 6, and analyses to be performed are based on the environmental concerns and the CSM detailed in Section 2.0. Diggers Hotline will be contacted to locate and mark the locations of registered utilities in the project area. A private utility locate will be completed to further confirm utilities at the Site. A site-specific Health and Safety Plan (HASP) to be utilized by Stantec personnel during the assessment activities is presented in Appendix C.

### 4.2 OBJECTIVES

Stantec will conduct soil sampling activities to characterize the subsurface materials at the Property to facilitate future multifamily residential Property redevelopment. SOPs for tasks associated with this work plan are presented in the Quality Assurance Project Plan (QAPP; Stantec, 2015) and associated addenda (Stantec, 2016a, 2016b, 2016c, 2018a, 2018b, 2018c, 2019b, 2019c, and 2021).

Soil quality data will be compared to ch. NR 720 WAC soil standards for the direct contact pathway at non-industrial properties and to soil standards for the soil to groundwater exposure pathway.

### 4.3 SOIL BORING AND SUBSURFACE ASSESSMENT

As illustrated on Figure 6 and described in Table 1, the proposed soil assessment includes advancing up to 40 soil borings using direct-push dual-tube Geoprobe® drilling methods. Additional borings may be installed and/or proposed boring locations adjusted in the field based on field observations. The soil borings will be extended downward to 10 feet below ground surface if no field evidence of release is observed. The borings may extend deeper to delineate the vertical extent of impacts if field indications of a release are observed, or if groundwater is not encountered in the first ten feet. Per section NR 141.25 WAC requirements, borings will be decommissioned by filling with bentonite when the drilling and sampling are complete, and the surface repaired to match the surrounding area. The horizontal location and elevation of the ground surface at each soil boring will be surveyed by a registered professional land surveyor per SOP No. 15.

Soil sampling and field classification will be conducted according to SOP No. 02 (Stantec, 2015). Soil samples will be collected continuously with four to five-foot samplers. Soil will be screened in the field on one-foot depth intervals for the presence of VOCs using a photoionization detector (PID). Soil samples will be visually and physically examined by a Stantec field geologist, and observations made of the general soil type (percentages of gravel, sand, silt, and clay), any visible layering, evidence of non-native fill materials (with estimated percentages of these materials contained in the soil matrix), indications of chemical or other staining, odors, and any other distinctive features as described in SOP No. 02 (Stantec, 2015). In addition, pertinent observations noted during installation of the soil borings will be documented on the soil boring logs. Soil samples will be collected based on indications of impact(s) and/or directly above the water table to delineate the horizontal and vertical extents of impacts to soil.

Soil samples will be collected and preserved in accordance with SOP No. 02 and Table 3 of the QAPP. Given the history and known subsurface impacts on the Property, the following are considered constituents of concern for soil: VOCs, PCBs, PAHs, and select heavy metals. Soil samples will be placed in laboratory-supplied containers (per SOP No. 02), preserved as appropriate, stored on ice, and submitted under chain-of-custody procedures to TestAmerica (Chicago, Illinois), a State of Wisconsin-certified laboratory for analysis as described in the QAPP using protocols outlined in SOP No. 07. Analysis will include the following: VOC (SW846 Method 8260B), PCB (SW846 Method 8082A), PAH (SW846 Method 8270C), and heavy metals (SW846 Method 6010). The number of proposed soil samples is summarized on Table 1.

For planning purposes, we estimate collecting up to two soil samples per boring. However, more samples may be collected based on field indications of impact. We anticipate collecting one discrete soil sample from the depth interval of concern for direct contact (0-4 feet below ground surface) and one sample from the depth interval with the greatest indications of impacts (or from the capillary fringe). Additional samples may be collected if historic fill units are encountered.

Each soil sample will be assigned a sample identification number (SIN) based on the following format:

Sample Type	Label for Type of Sample	Location Number	Sample Interval (ft bgs)	SIN	Location ID
Soil boring	SB	1	(0-2)	SB-1 (0-2)	SB-1
Field Duplicate	FD	---	---	FD-1	---
Matrix Spike/Matrix Spike Duplicate	MS/MSD	---	---	MS/MSD-1	---
Trip blank	TB	---	---	TB-1	---

Soil sampling equipment such as drilling tools will be decontaminated prior to arrival onsite and between each sampling location (SOP No. 08) to prevent sample cross-contamination. Soil cuttings generated during the subsurface investigation will be managed per SOP No. 10 (Stantec, 2015).

**4.4 SPECIAL HANDLING CONSIDERATIONS AND QA/QC SAMPLES**

Appropriate quality assurance and quality control (QA/QC) procedures will be followed during investigative activities, including those specified in section NR 716.13 WAC, to ensure that accurate data will be collected. All soil samples will be collected and preserved in accordance with SOP No. 02 and Table 3 of the QAPP (Stantec, 2015). The laboratory will supply the appropriate containers with preservation chemicals as needed. Samples will be submitted to the laboratory as soon as possible after collection (i.e., daily).

QA/QC samples to be collected and analyzed will include trip blanks and field replicate/duplicate samples. Trip blanks prepared by the analytical laboratory will accompany the sample bottles from the time of shipment from the laboratory through the time the samples are returned for analysis. Trip blanks will be used to document any contamination detected in samples that may be attributable to shipping and field handling procedures or contaminated sample containers. Trip blanks will be provided by the laboratory and will be subject to the same handling and transportation procedures as the investigative samples.

De-identified field duplicate samples will be collected and analyzed to evaluate sample variability and overall data precision. Duplicate samples will be collected from soil borings and depth intervals representing the range of site conditions. Duplicate samples will be collected and analyzed for constituents at a rate of one sample for every 20 or fewer investigative samples.

Matrix spike/matrix spike duplicate samples will be collected and analyzed for constituents at a rate of one sample for every 20 or fewer investigative samples.

**4.5 CHAIN-OF-CUSTODY**

Chain-of-custody procedures will be utilized to track possession and handling of individual samples from the time of collection in the field through the time of delivery to the analytical laboratory. The chain-of-custody program will include use of sample labels, custody seals, field logbooks, chain-of-custody forms, and laboratory logbooks. All chain-of-custody procedures will be performed in accordance with SOP No. 07 (Stantec, 2021).

**4.6 FIELD LOG BOOK**

Each sampling team will maintain an up-to-date field logbook to document daily activities (if more than one group of individuals is sampling). The logbook will include a general list of tasks performed, additional data, or observations not listed on field data sheets and document communications with on-site personnel or visitors as these apply to the project. A table identifying sample duplicates will be recorded in the field book.

## 5.0 GROUNDWATER ASSESSMENT

### 5.1 GENERAL

Proposed groundwater monitoring well locations are illustrated on Figure 6, and analyses to be performed are based on the environmental concerns and the CSM detailed in Section 2.0. Diggers Hotline will be contacted to locate and mark the locations of registered utilities in the project area. A private utility locate will be completed to further confirm utilities at the Site. A site-specific Health and Safety Plan (HASP) to be utilized by Stantec personnel during the assessment activities is presented in Appendix C.

### 5.2 OBJECTIVES

Stantec will conduct groundwater sampling activities to characterize groundwater quality at the Property as necessary to facilitate Property redevelopment. In addition, the sampling will be used to evaluate appropriate future actions, if any, to obtain closure from the WDNR per the ch. NR 700 WAC. SOPs for tasks associated with this work plan are presented in the QAPP (Stantec, 2015) and associated addenda (Stantec, 2016a, 2016b, 2016c, 2018a, 2018b, 2018c, 2019b, 2019c, and 2021).

Groundwater quality data will be compared to promulgated and proposed ch. NR 140 WAC groundwater standards.

### 5.3 GROUNDWATER ASSESSMENT

The groundwater assessment will include abandoning and replacing eight 1-inch temporary wells on the Property with 2-inch diameter permanent groundwater monitoring wells installed in conformance with ch. NR 141 WAC and Stantec SOP No. 30. In addition, 2-inch diameter groundwater monitoring wells will be installed adjacent to 11 soil borings. The depths for the wells will depend on the actual depth at which groundwater is encountered at the Property but are anticipated to have a total depth of approximately 15 ft bgs. The wells will be constructed using two-inch diameter polyvinyl chloride casing with 10-foot long, 0.010-inch slotted screens. Rationale for each sample location is outlined on Table 2.

The horizontal location, elevation of the ground surface, and top of casing for each newly installed permanent groundwater monitoring well and permanent well will be surveyed by a registered professional land surveyor following SOP No. 15.

Following installation and recovery, and prior to purging and collection of groundwater samples, the elevation of the groundwater table will be measured and the volume of water present within each well will be calculated using the procedures set forth in SOP No. 04 (Stantec, 2015). Groundwater elevation data will also be used to document the gradient in potentiometric surface. The hydraulic conductivity of the aquifer will be measured with pressure transducers following the slug-out method per SOP Nos. 18 and 19.

Each well will be purged prior to sampling in accordance with SOP No. 04 (Stantec, 2015). If the geologic materials surrounding the well are low yielding, then the wells will be completely evacuated, and groundwater samples collected after the water level recovers sufficiently to provide the volume of water needed to fill sample containers for the desired analyses. The well may be purged using any of the following methods: a peristaltic pump, a low-flow Micro-Purge Sampling System (or equivalent), a Voss disposable polyethylene bailer (or equivalent), or a Waterra hand pump (or equivalent) or similar equipment. Non-disposable purging equipment will be decontaminated in accordance with SOP No. 08 (Stantec, 2015).

After purging, groundwater samples will be collected from the monitoring wells as summarized in Table 2. All groundwater samples will be collected and preserved per SOP Nos. 04 and 29 (Stantec, 2015). All VOC (SW846 Method 8260B), PCB (SW846 Method 8082A), PAH (SW846 Method 8270C), and dissolved/field-filtered RCRA metal (SW846 Method 6010) samples will be placed in laboratory-supplied containers (per SOP No. 04), preserved as appropriate, stored on ice, and submitted under chain-of-custody procedures to TestAmerica (Chicago, Illinois), a State of Wisconsin-certified laboratory for analysis as described in the QAPP using protocols outlined in SOP No. 07. Proposed groundwater sampling is summarized on Table 2.

Each groundwater sample will be assigned a SIN based on the following format:

Sample Type	Label for Type of Sample	Location Number	(SIN)	Location ID
Monitoring Well	MW	1	MW-1	MW-1
Field Duplicate	FD	---	FD-1	---
Trip Blank	TB	---	TB-1	---

Decontamination procedures for any non-dedicated or non-disposable equipment used for collection of groundwater samples will also be performed using the procedures set forth in SOP No. 08 (Stantec, 2015).

Purged groundwater generated during the investigation will be managed per SOP No. 10 (Stantec, 2015). When appropriate, the groundwater monitoring wells will be decommissioned in accordance with SOP No. 04 (Stantec, 2015) and sealed in accordance with ch. NR 141.25 WAC.

#### 5.4 SPECIAL HANDLING CONSIDERATIONS AND QA/QC SAMPLES

Collection and preservation of groundwater samples for VOC analysis will be performed in accordance with SOP No. 04 and VOC samples will be collected last (SOP No. 29). Headspace should not be present in the sample container, thus minimizing the volatilization of organics from the sample. The laboratory will supply the pre-preserved 40-ml glass vials with Teflon™-lined lids.

Trip blanks prepared by the analytical laboratory will accompany the sample bottles from the time of shipment from the laboratory through the time the samples are returned for analysis. Trip blanks will be used to document any contamination detected in samples that may be attributable to shipping and field handling procedures, or contaminated sample containers. Trip blanks will be provided by the laboratory and will be subject to the same handling and transportation procedures as the investigative samples. At least one trip blank sample will accompany each shipping container that contains samples for VOC analysis.

De-identified field duplicate samples will be collected and analyzed to evaluate sample variability and overall data precision. For groundwater samples, the duplicate samples will be “field replicate samples” collected at the same time from the same well. To the extent practicable, multiple bottles associated with a set of duplicate samples will be filled in two or three stages such that each bottle receives a portion of the water from each section of the bailer, or each interval of sample pump operation. In recognition that data for duplicate samples are most meaningful when there are detectable concentrations present of constituents of concern, if there are existing groundwater data, or other data by which to anticipate wells with greater levels of contamination, duplicate samples will be preferentially collected from wells where detectable concentrations of constituents of concern are most likely to be present. Otherwise, duplicate samples will be collected from a randomly selected well or wells. Duplicate samples will be collected and analyzed for constituents at a rate of one sample for every 20 or fewer investigative samples.

Matrix spike/matrix spike duplicate samples will be collected and analyzed for constituents at a rate of one sample for every 20 or fewer investigative samples.

#### 5.5 CHAIN-OF-CUSTODY

Chain-of-custody procedures will be utilized to track possession and handling of individual samples from the time of collection in the field through the time of delivery to the analytical laboratory. The chain-of-custody program will include use of sample labels, custody seals, field logbooks, chain-of-custody forms and laboratory logbooks. All chain-of-custody procedures will be performed in accordance with SOP No. 07 (Stantec, 2021).

#### 5.6 FIELD LOG BOOK

Each sampling team will maintain an up-to-date field log book to document daily activities (if more than one group of individuals is sampling). The log book will include a general list of tasks performed, additional data, or observations not listed on field data sheets and document communications with on-site personnel or visitors as these apply to the project. A table identifying sample duplicates will be recorded in the field book.

## 6.0 REPORT

The results of field activities will be documented in a SI Report. The report will include:

- Tables summarizing analytical results for soil and groundwater samples compared to applicable state standards,
- Figures illustrating the extent(s) of impacts,
- Laboratory analytical reports,
- Sitewide geophysical survey results, and
- Photographic documentation

Recommendations for future actions, if warranted, to facilitate residential redevelopment of the Property will be provided in the SI Report.

## 7.0 REFERENCES

- Crumbling, D., March 25, 2004. Summary of the Triad Approach. White Paper, U.S. EPA, Office of Superfund Remediation and Technology Innovation.
- Fehr Graham and Associates, LLC, 2021a, November 17, 2021. Phase I Environmental Site Assessment.
- Fehr Graham and Associates, LLC, 2021b, November 17, 2021. Phase II Environmental Site Assessment.
- Fehr Graham and Associates, LLC, June 22, 2022. Site Investigation Work Plan.
- Stantec, 2015. Quality Assurance Project Plan (Revision 0), Implementation of U.S. EPA Assessment Grants for Petroleum and Hazardous Substance Brownfields, City of Manitowoc, WI, U.S. EPA Cooperative Agreement Nos. BF- BF-00E01529-0, August 19, 2015.
- Stantec, 2016a, June 3, 2016, Quality Assurance Project Plan Addendum 1.
- Stantec, 2016b, August 15, 2016. Quality Assurance Project Plan Update and Addendum 2.
- Stantec, 2016c, October 18, 2016. Quality Assurance Project Plan Update.
- Stantec, 2018a. Quality Assurance Project Plan Update and Addendum 3, June 17, 2018.
- Stantec, 2018b. QAPP 2018 Update - Current WDNR Laboratory Certificates, September 11, 2018.
- Stantec, 2018c. Quality Assurance Project Plan Addendum, November 18, 2018.
- Stantec, 2019a. Quality Assurance Project Plan Addendum, January 1, 2019.
- Stantec, 2019b. Quality Assurance Project Plan Addendum, January 7, 2019.
- Stantec, 2021. Quality Assurance Project Plan Update and Addendum, September 28, 2021.
- Stantec, 2022, Site Eligibility Determination for USEPA Community-Wide Brownfields Assessment Grant for Hazardous Substances, April 1, 2022.
- Wisconsin Department of Natural Resources (WDNR, 2022), reviewed by Jiyan Hatami (Stantec) September 5, 2022, Bureau of Remediation and Redevelopment Tracking System (BRRTS) website.

## 8.0 LIMITATIONS

The SSSAP was developed in accordance with generally accepted practices for the environmental consulting profession, undertaking similar studies at the same time and in the same geographical area as the work conducted by Stantec. Stantec observed the degree of care and skill that are generally exercised by the profession under similar circumstances and conditions. No other warranty is expressed or implied.

Stantec's observations, findings, and opinions should not be considered as scientific certainties, but only as opinion based upon our professional judgment concerning the significance of the data gathered during the development of the SSSAP. Specifically, Stantec cannot represent that the Property does not contain or potentially contain any hazardous or toxic materials or other latent conditions beyond that identified by Stantec during the development of the SSSAP. Additionally, due to limitations of the SSSAP development process and the necessary use of data furnished by others, Stantec and its subcontractors cannot assume liability if actual conditions differ from the information presented in this SSSAP.

This document was prepared by Stantec for the City of Manitowoc. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Stantec accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.



## FIGURES



Figure No.  
**1**  
 Title  
**Property and Regional Topography**

Client/Project  
 1621 14th Street  
 Two Rivers, Wisconsin  
 Prepared by HLB on 3/29/2022



**Legend**

 Target Property



Notes  
 1. Coordinate System: NAD 1983 HARN WISCRS Manitowoc County Feet

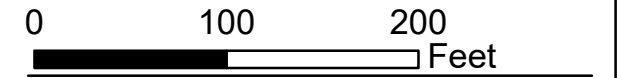




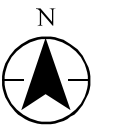





Figure No.  
**3**  
 Title  
**2020 Orthophotograph of  
 the Property**

Client/Project  
 West River Lofts, LLC  
 1621 14th Street  
 Two Rivers, Wisconsin  
 Prepared by HLB on 11/15/2021



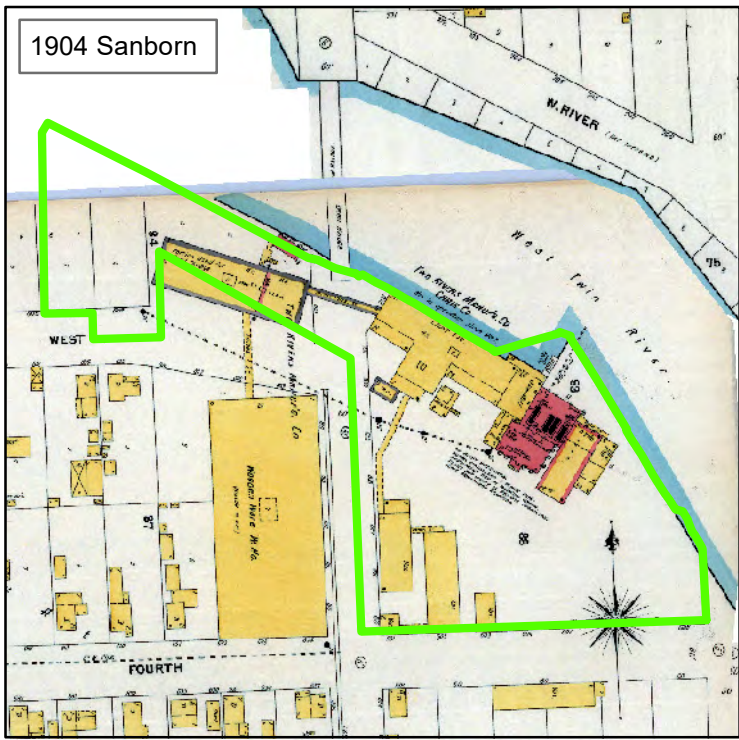
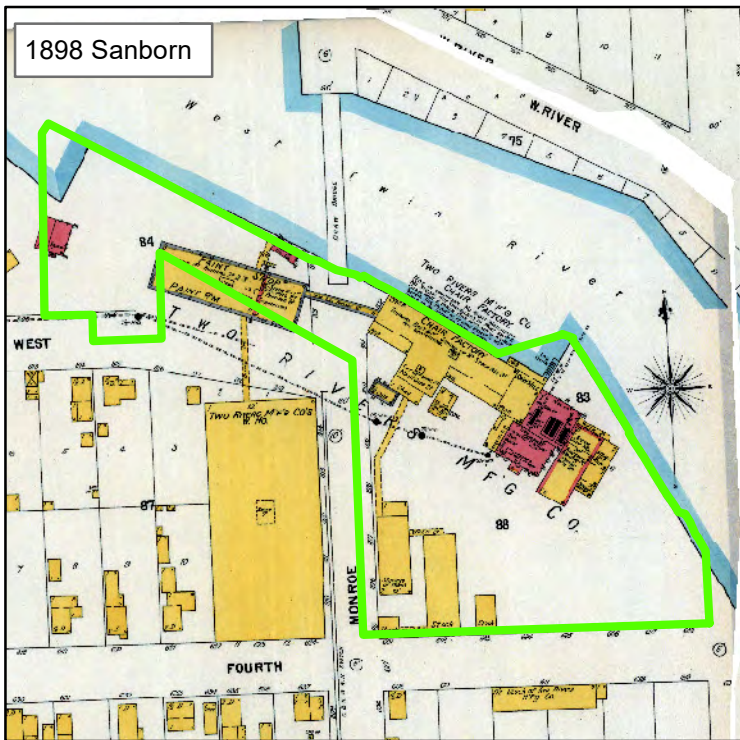
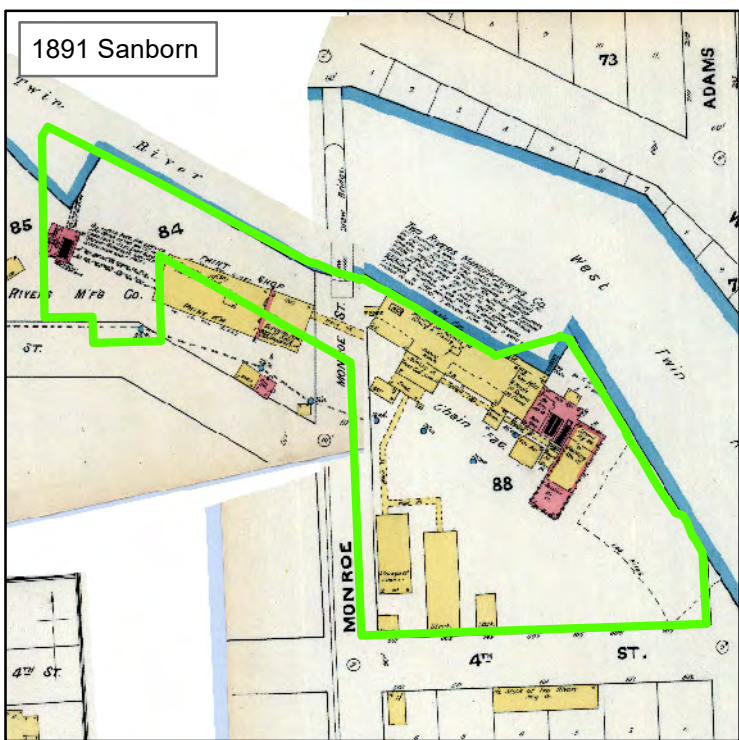
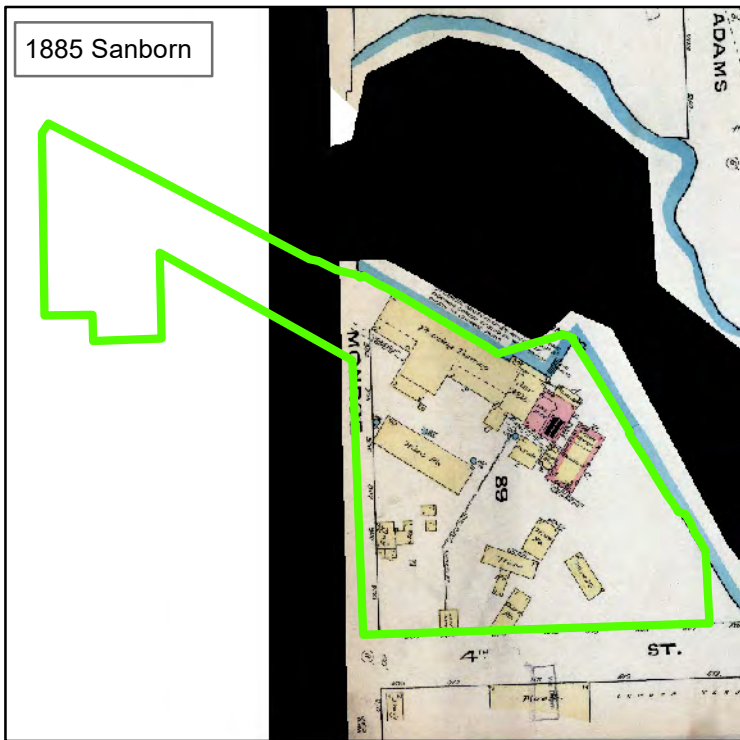
## Legend



-  1621 14th Street (Lot 2)
-  1702 13th Street (Lot 1)
-  Parcels

Notes  
 1. Coordinate System: NAD 1983 HARN WISCRS Manitowoc County Feet  
 2. Orthophotograph: Manitowoc County, 2020

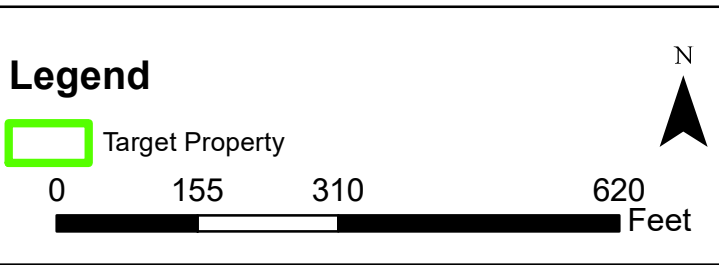




State Location



County Location



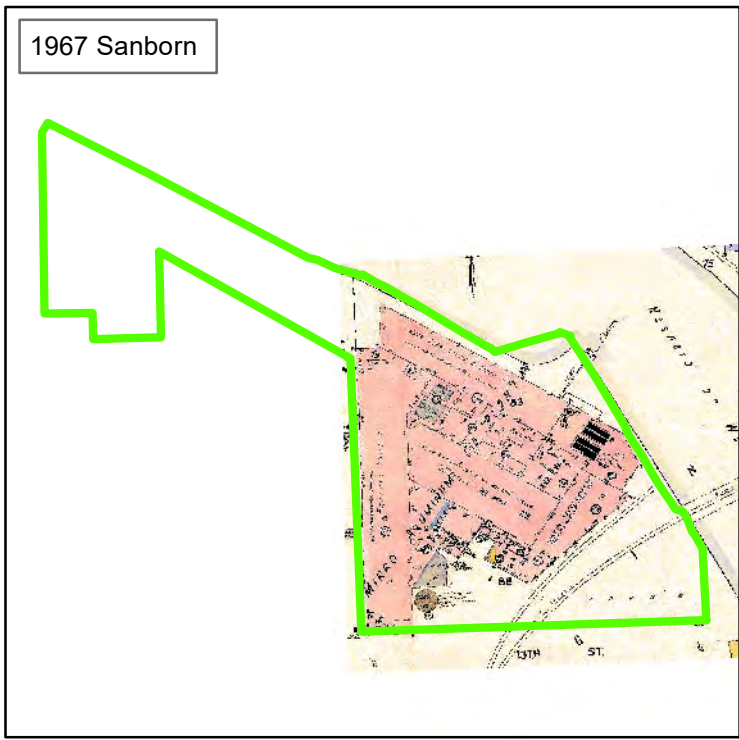
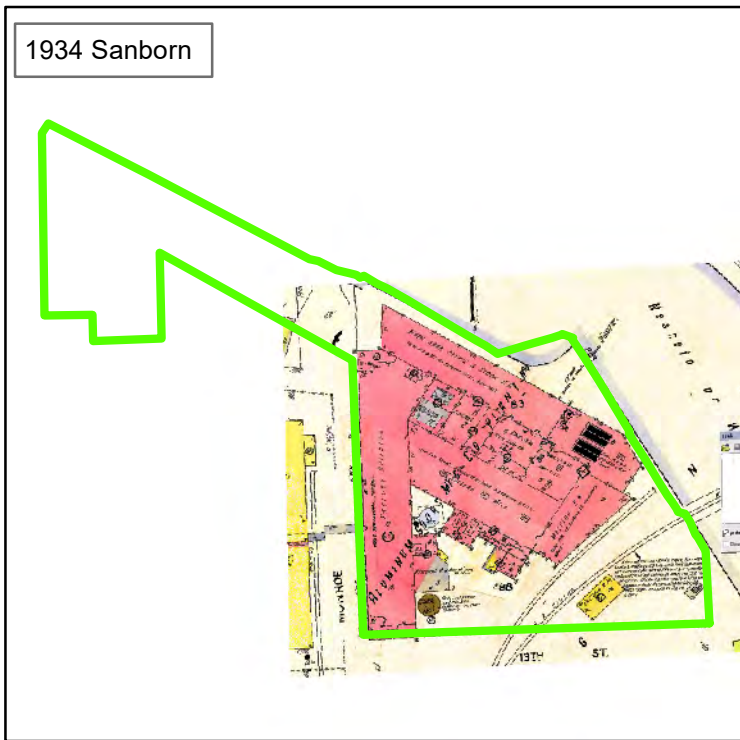
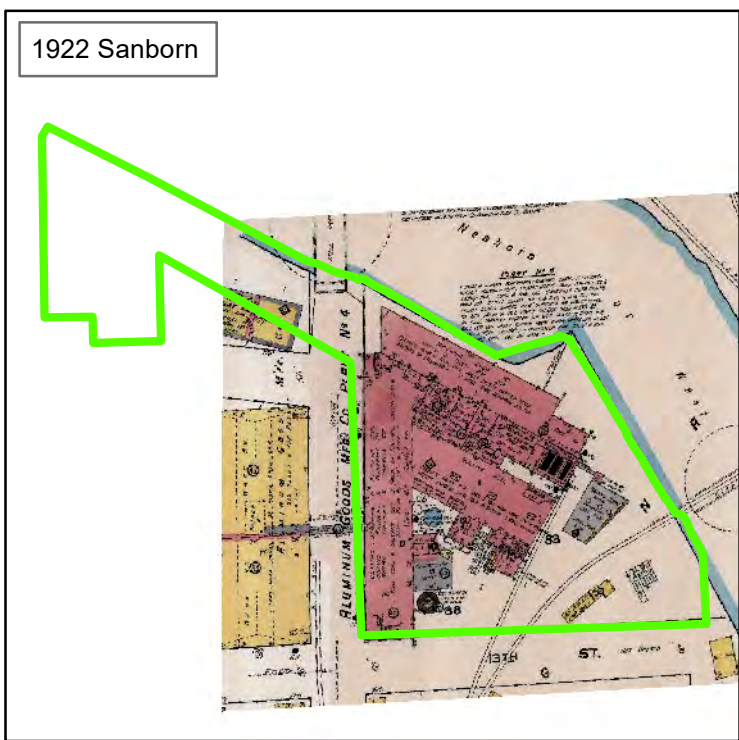
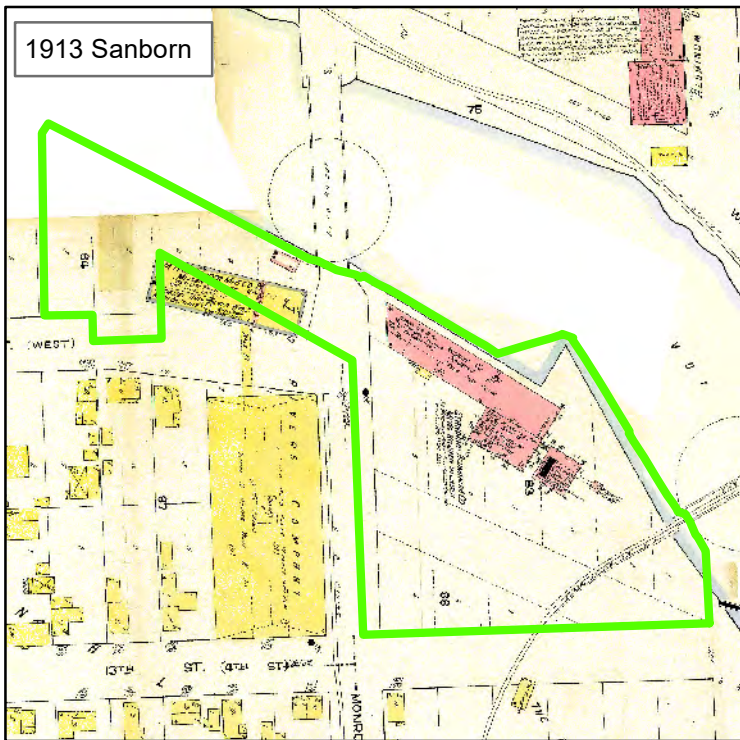
Stantec  
12075 Corporate Parkway  
Suite 200  
Mequon, WI 53092  
(262) 643-9174

The information on this map has been compiled by Stantec staff from a variety of sources and is subject to change without notice. Stantec makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information.

1621 14th Street  
Two Rivers, Wisconsin

Figure 4a  
Sanborn Fire  
Insurance Maps  
from the 19th Century

DWG: 03.mxd  
DATE: March 2022  
PROJ NO: 193708490



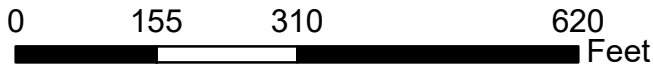
State Location



County Location

**Legend**

 Target Property



Stantec  
12075 Corporate Parkway  
Suite 200  
Mequon, WI 53092  
(262) 643-9174

The information on this map has been compiled by Stantec staff from a variety of sources and is subject to change without notice. Stantec makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information.

**1621 14th Street  
Two Rivers, Wisconsin**

**Figure 4b  
Sanborn Fire  
Insurance Maps  
from the 20th Century**

DWG: 03.mxd  
DATE: March 2022  
PROJ NO: 193708490

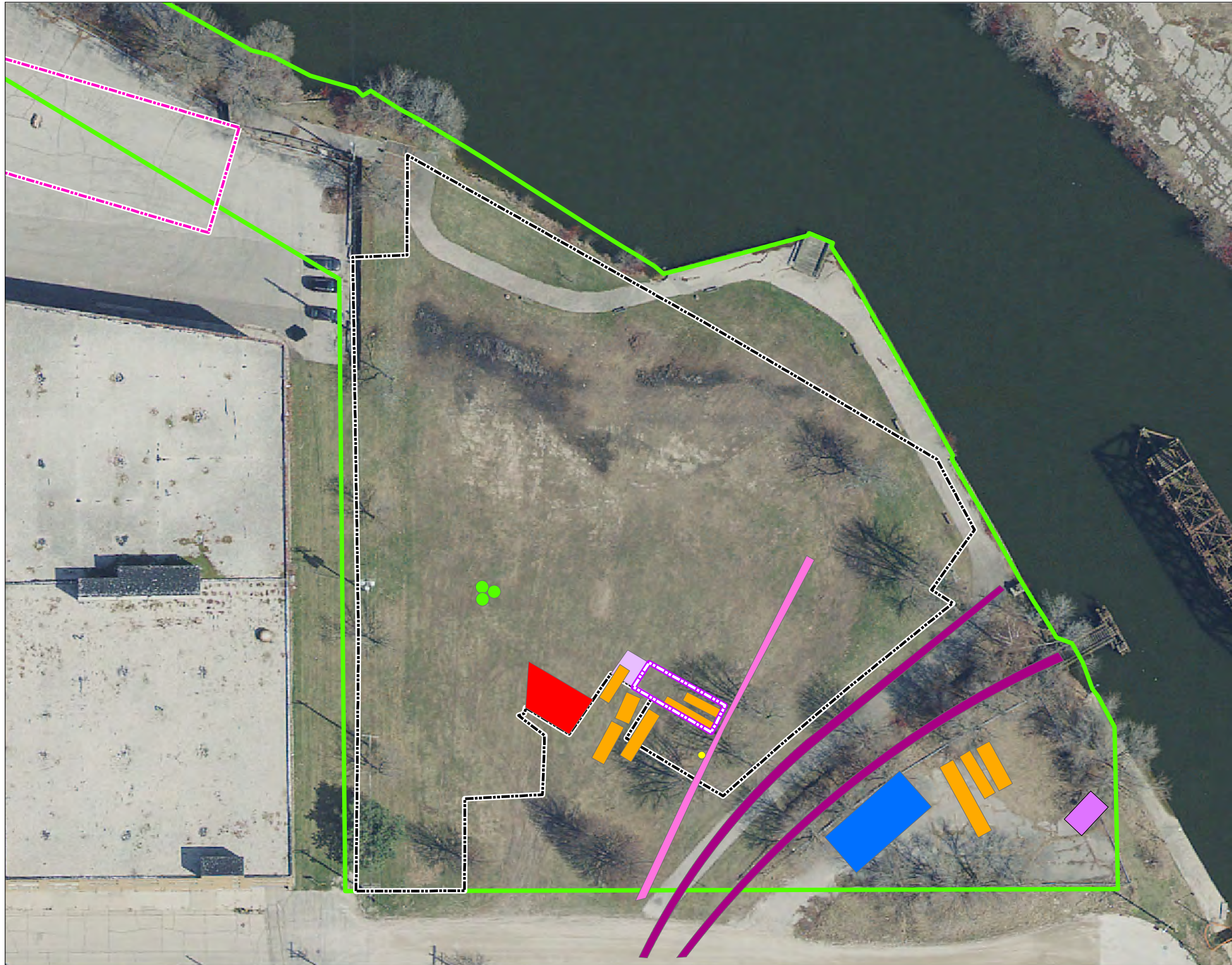
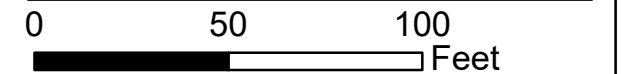


Figure No.  
**5**  
 Title  
**Select Historic 20th Century  
 Site Features**  
 Client/Project  
 West River Lofts, LLC  
 1621 14th Street  
 Two Rivers, Wisconsin  
 Prepared by HLB on 9/15/2022



- ### Legend
- Historic Site Features**
- Degreaser (1967)
  - Factory/Warehouse (1922, 1934, 1967)
  - Former Mirro Plant (1922-1967)
  - Fuel Oil UST (1922)
  - Gasoline UST (1922)
  - Naptha UST (1922)
  - Oil House (1922)
  - Oil House (1934)
  - Oil Room (1934, 1967)
  - Railroad Spur (1922)
  - Railroad Spur (1934, 1967)
  - Warehouse (1934)



Notes  
 1. Coordinate System: NAD 1983 HARN WISCRS Manitowoc County Feet  
 2. Orthophotograph: Manitowoc County, 2020  
 3. Historic Site Features were digitized from georeferenced Sanborn (R) Fire Insurance Maps published in 1922, 1934, and 1967 based on a georeferenced orthophotograph basemap from 1976.





Figure No. **6**  
 Title  
**Proposed Sample Locations**

---

Client/Project  
 West River Lofts, LLC  
 1621 14th Street  
 Two Rivers, Wisconsin  
 Prepared by HLB on 9/15/2022

---

0 50 100 Feet

- ### Legend
- Proposed Sample Locations (Stantec) (29)
  - Proposed Sample Locations (FG, 2022) (11)
- Previous Sample Locations (FG, 2022)**
- Soil Boring (18)
  - Test Pit (28)
  - Soil Boring/Temp Well (9)
- Historic Site Features**
- Degreaser (1967)
  - Factory/Warehouse (1922, 1934, 1967)
  - Former Mirro Plant (1922-1967)
  - Fuel Oil UST (1922)
  - Gasoline UST (1922)
  - Naptha UST (1922)
  - Oil House (1922)
  - Oil House (1934)
  - Oil Room (1934, 1967)
  - Railroad Spur (1922)
  - Railroad Spur (1934, 1967)
  - Warehouse (1934)

Notes

1. Coordinate System: NAD 1983 HARN WISCRS Manitowoc County Feet
2. Orthophotograph: Manitowoc County, 2020
3. Previous sample locations as illustrated in a CAD file provided by Fehr Graham.
4. Historic Site Features were digitized from georeferenced Sanborn (R) Fire Insurance Maps published in 1922, 1934, and 1967 based on a georeferenced orthophotograph basemap from 1976.





## TABLES

Table 1  
Proposed Laboratory Analysis for Soil  
1621 14th Street  
Two Rivers, Wisconsin

Soil Boring ID	Estimated Sample Depths (ft)	Rationale	VOCs (8260 B)	RCRA Metals (6010)	PAHs (8270D)	PCBs (8082A)
SB-5R1/MW-5R1	0 - 4 ft (DC interval) 7 - 9 ft (above WT)	Define the northern extent of contamination observed at MW-5 and associated test pits.	2	2 (Lead only)	2	2
SB-5R2/MW-5R2	0 - 4 ft (DC interval) 7 - 9 ft (above WT)	Define the eastern extent of contamination observed at MW-5 and associated test pits.	2	2 (Lead only)	2	2
SB-13/MW-13	0 - 4 ft (DC interval) 7 - 9 ft (above WT)	Evaluate soil quality near the western Site boundary, west of building perimeter boring B-4. This boring will also provide information on impacts migrating on or offsite.	2	2 (Lead only)	2	0
SB-14/MW-14	0 - 4 ft (DC interval) 7 - 9 ft (above WT)	Evaluate soil quality near the western Site boundary, west of building perimeter boring B-10. This boring will also provide information on impacts migrating on or offsite.	2	0	2	0
SB-15/MW-15	0 - 4 ft (DC interval) 7 - 9 ft (above WT)	Evaluate soil quality near the western Site boundary, west of building perimeter boring B-11. This boring will also provide information on impacts migrating on or offsite.	2	0	2	0
SB-16/MW-16	0 - 4 ft (DC interval) 7 - 9 ft (above WT)	Evaluate soil quality near the western Site boundary, west of MW-11. This boring will also provide information on impacts migrating on or offsite.	2	0	0	0
SB-17/MW-17	0 - 4 ft (DC interval) 7 - 9 ft (above WT)	Delineate subsurface impacts to the southeast of MW-7, near the southern Site boundary. This boring will also provide information on impacts migrating on or offsite.	2	0	2	0
SB-18/MW-18	0 - 4 ft (DC interval) 7 - 9 ft (above WT)	Delineate subsurface impacts to the southwest of MW-7, near the southern Site boundary. This boring will also provide information on impacts migrating on or offsite.	2	0	2	0
SB-20/MW-20	0 - 4 ft (DC interval) 7 - 9 ft (above WT)	Evaluate soil quality near the southeastern site boundary, downgradient of MW-9, at the site of a former oil house. Soil will preferentially be sampled from the interval with the highest PID reading and/or obvious indications of contamination and directly above the water table.	2	2 (Lead only)	2	0
SB-21/MW-21	0 - 4 ft (DC interval) 7 - 9 ft (above WT)	Evaluate soil quality to the northwest of the former rail line. Sample surface or near surface interval to capture potential surface releases, and directly above water table to assess impacts at the soil and groundwater interface.	2	2	2	0
SB-22	0-4 ft (DC interval) 4-8 ft (above WT)	Evaluating soil quality between B-8 and MW-11 for VOCs and PCBs to address WDNR's comments to the Fehr Graham (2022) SIWP. Sample surface or near surface interval to capture potential surface releases, and directly above water table to assess impacts at the soil and groundwater interface.	2	0	0	2
SB-23	0-4 ft (DC interval) 4-8 ft (above WT)	Evaluate soil quality at the site of historical aluminum plant operations, preferentially sampling intervals of anthropogenic fill material or intervals with obvious indications of contamination. Sampling at this location will address WDNR's comments to the Fehr Graham (2022) SIWP.	2	2 (Aluminum Only)	2	2
SB-24	0-4 ft (DC interval) 4-8 ft (above WT)	Evaluate soil quality at the site of historical aluminum plant operations, preferentially sampling intervals of anthropogenic fill material or intervals with obvious indications of contamination. Sampling at this location will address WDNR's comments to the Fehr Graham (2022) SIWP.	0	2 (Aluminum Only)	0	0
SB-25/TW-25	0-4 ft (DC interval) 4-8 ft (above WT)	Evaluate soil quality at the site of historical aluminum plant operations, preferentially sampling intervals of anthropogenic fill material or intervals with obvious indications of contamination. Sampling at this location will address WDNR's comments to the Fehr Graham (2022) SIWP.	0	2 (Aluminum Only)	0	0
SB-26	0-4 ft (DC interval) 4-8 ft (above WT)	Evaluate soil quality at the site of historical aluminum plant operations, specifically the former oil house. Focus on preferentially sampling intervals of anthropogenic fill material or intervals with obvious indications of contamination. Sampling at this location will address WDNR's comments to the Fehr Graham (2022) SIWP.	0	2 (Aluminum Only)	0	0
SB-27	0-4 ft (DC interval) 4-8 ft (above WT)	Evaluate soil quality at the site of historical aluminum plant operations, preferentially sampling intervals of anthropogenic fill material or intervals with obvious indications of contamination. Sampling at this location will address WDNR's comments to the Fehr Graham (2022) SIWP.	0	2 (Aluminum Only)	0	0
SB-28	0-4 ft (DC interval) 4-8 ft (above WT)	Evaluate soil quality at the site of the two former rail lines identified in the early/mid 20th century Sanborn® Fire Insurance Maps, preferentially sampling intervals of anthropogenic fill material or intervals with obvious indications of contamination. Sampling at this location will address WDNR's comments to the Fehr Graham (2022) SIWP.	0	2 (Aluminum Only)	0	0
SB-29	0.5-2.5 ft (directly below top soil) 3-5 ft (above WT)	Evaluate soil quality at the site of the two former rail lines identified in the early/mid 20th century Sanborn® Fire Insurance Maps, preferentially sampling intervals of anthropogenic fill material or intervals with obvious indications of contamination. Sampling at this location will address WDNR's comments to the Fehr Graham (2022) SIWP.	2	2	2	0

Table 1  
Proposed Laboratory Analysis for Soil  
1621 14th Street  
Two Rivers, Wisconsin

Soil Boring ID	Estimated Sample Depths (ft)	Rationale	VOCs (8260 B)	RCRA Metals (6010)	PAHs (8270D)	PCBs (8082A)
SB-30	0.5-2.5 ft (directly below top soil) 3-5 ft (above WT)	Evaluate soil quality at the site of the two former rail lines identified in the early/mid 20th century Sanborn® Fire Insurance Maps, preferentially sampling intervals of anthropogenic fill material or intervals with obvious indications of contamination. Sampling at this location will address WDNR's comments to the Fehr Graham (2022) SIWP.	2	2	2	0
SB-31	0.5-2.5 ft (directly below top soil) 7-9 ft (above WT)	Evaluate soil quality at the site of the two former rail lines identified in the early/mid 20th century Sanborn® Fire Insurance Maps, preferentially sampling intervals of anthropogenic fill material or intervals with obvious indications of contamination. Sampling at this location will address WDNR's comments to the Fehr Graham (2022) SIWP.	2	2	2	0
SB-32	0.5-2.5 ft (directly below top soil) 7-9 ft (above WT)	Evaluate soil quality at the site of the two former rail lines identified in the early/mid 20th century Sanborn® Fire Insurance Maps, preferentially sampling intervals of anthropogenic fill material or intervals with obvious indications of contamination. Sampling at this location will address WDNR's comments to the Fehr Graham (2022) SIWP.	2	2	2	0
SB-33	0.5-2.5 ft (directly below top soil) 7-9 ft (above WT)	Evaluate soil quality at the site of the two former rail lines identified in the early/mid 20th century Sanborn® Fire Insurance Maps, preferentially sampling intervals of anthropogenic fill material or intervals with obvious indications of contamination. Sampling at this location will address WDNR's comments to the Fehr Graham (2022) SIWP.	2	2	2	0
SB-34	0.5-2.5 ft (directly below top soil) 7-9 ft (above WT)	Evaluate soil quality at the site of the two former rail lines identified in the early/mid 20th century Sanborn® Fire Insurance Maps, preferentially sampling intervals of anthropogenic fill material or intervals with obvious indications of contamination. Sampling at this location will address WDNR's comments to the Fehr Graham (2022) SIWP.	2	2	2	0
SB-35	1-3 ft (near surface sample) 3-5 ft (FG previously sampled interval)	Supplemental soil sampling at the former degreaser area to further evaluate soil quality where TCE exceedances for groundwater pathway and non-industrial direct contact RCL were measured. Specifically, evaluate soil quality to the north and west of MW-7, at the site of the former degreasing room.	2	0	0	0
SB-36	1-3 ft (near surface sample) 3-5 ft (FG previously sampled interval)	Supplemental soil sampling to evaluate soil quality where TCE exceedances for groundwater pathway and non-industrial direct contact RCL were measured. Specifically, evaluate soil quality to the south and west of MW-7.	2	0	0	0
SB-37	1-3 ft (near surface sample) 3-5 ft (FG previously sampled interval)	Supplemental soil sampling to evaluate soil quality where TCE exceedances for groundwater pathway and non-industrial direct contact RCL were measured. Specifically, evaluate soil quality to the south and east of MW-7.	2	0	0	0
SB-38	0-4 ft (DC interval) 7-9 ft (above WT)	Evaluate soil quality at the site of a former 65-gallon gas tank. Soil will be sampled at the interval of the highest PID reading or at intervals with field indications of petroleum impacts. Sample the surface or near surface interval to assess potential surface releases of petroleum, or leaking pipes at depth. Sample at the soil-groundwater interface to assess if metals and/or PAH impacts are site-wide. Sampling at this location will address WDNR's comments to the Fehr Graham (2022) SIWP.	2	2	2	0
SB-39	0-4 ft (DC interval) 7-9 ft (above WT)	Evaluate soil quality at the site of a former 65-gallon gas tank. Soil will be sampled at the interval of the highest PID reading or at intervals with field indications of petroleum impacts. Sample the surface or near surface interval to assess potential surface releases of petroleum, or leaking pipes at depth. Sample at the soil-groundwater interface to assess if metals and/or PAH impacts are site-wide. Sampling at this location will address WDNR's comments to the Fehr Graham (2022) SIWP.	2	2	2	0
SB-40	0-4 ft (DC interval) 7-9 ft (above WT)	Evaluate soil quality at the site of a former 65-gallon gas tank. Soil will be sampled at the interval of the highest PID reading or at intervals with field indications of petroleum impacts. Sample the surface or near surface interval to assess potential surface releases of petroleum, or leaking pipes at depth. Sample at the soil-groundwater interface to assess if metals and/or PAH impacts are site-wide. Sampling at this location will address WDNR's comments to the Fehr Graham (2022) SIWP.	2	2	2	0

Table 1  
Proposed Laboratory Analysis for Soil  
1621 14th Street  
Two Rivers, Wisconsin

Soil Boring ID	Estimated Sample Depths (ft)	Rationale	VOCs (8260 B)	RCRA Metals (6010)	PAHs (8270D)	PCBs (8082A)
SB-41	0-4 ft (DC interval) 7-9 ft (above WT)	Evaluate soil quality at the site of a former 65-gallon gas tank. Soil will be sampled at the interval of the highest PID reading or at intervals with field indications of petroleum impacts. Sample the surface or near surface interval to assess potential surface releases of petroleum, or leaking pipes at depth. Sample at the soil-groundwater interface to assess if metals and/or PAH impacts are site-wide. Sampling at this location will address WDNR's comments to the Fehr Graham (2022) SIWP.	2	2	2	0
SB-42	0-4 ft (DC interval) 4-8 ft (above WT)	Evaluate soil quality at the site of the two former rail lines identified in the early/mid 20th century Sanborn® Fire Insurance Maps, preferentially sampling intervals of anthropogenic fill material or intervals with obvious indications of contamination. Sampling at this location will address WDNR's comments to the Fehr Graham (2022) SIWP.	2	2	2	0
SB-43	0-4 ft (DC interval) 4-8 ft (above WT)	Evaluate soil quality at the site of the two former rail lines identified in the early/mid 20th century Sanborn® Fire Insurance Maps, preferentially sampling intervals of anthropogenic fill material or intervals with obvious indications of contamination. Sampling at this location will address WDNR's comments to the Fehr Graham (2022) SIWP.	2	2	2	0
SB-44	0-4 ft (DC interval) 7-9 ft (above WT)	Evaluate soil quality at the site of the two former rail lines identified in the early/mid 20th century Sanborn® Fire Insurance Maps, preferentially sampling intervals of anthropogenic fill material or intervals with obvious indications of contamination. Sampling at this location will address WDNR's comments to the Fehr Graham (2022) SIWP.	2	2	2	0
SB-45	0-4 ft (DC interval) 7-9 ft (above WT)	Evaluate soil quality at the site of the two former rail lines identified in the early/mid 20th century Sanborn® Fire Insurance Maps, preferentially sampling intervals of anthropogenic fill material or intervals with obvious indications of contamination. Sampling at this location will address WDNR's comments to the Fehr Graham (2022) SIWP.	2	2	2	0
SB-46	0-4 ft (DC interval) 7-9 ft (above WT)	Evaluate soil quality at the site of the two former rail lines identified in the early/mid 20th century Sanborn® Fire Insurance Maps, preferentially sampling intervals of anthropogenic fill material or intervals with obvious indications of contamination. Sampling at this location will address WDNR's comments to the Fehr Graham (2022) SIWP.	2	2	2	0
SB-47	0-4 ft (DC interval) 7-9 ft (above WT)	Further evaluate the presence of historic fill rich in PAHs and heavy metals. This boring will also serve as an evaluation of soil quality along the southern Property boundary, providing insight on possible migration of impacts onto or offsite.	2	2	2	0
SB-48	0-4 ft (DC interval) 7-9 ft (above WT)	Further evaluate the presence of historic fill rich in PAHs and heavy metals at the site of a former warehouse.	2	2	2	0
SB-49	0-4 ft (DC interval) 7-9 ft (above WT)	Further evaluate the presence of historic fill rich in PAHs and heavy metals. Investigate the magnitude of possible VOC, PAH, and heavy metal impacts to soil associated with historic fuel oil USTs.	2	2	2	0
SB-50	0-4 ft (DC interval) 7-9 ft (above WT)	Further evaluate the presence of historic fill rich in PAHs and heavy metals. This boring will also serve as an evaluation of soil quality along the southern Property boundary, providing insight on possible migration of impacts onto or offsite.	2	2	2	0
Estimated number of investigative samples to be analyzed			68	60	58	8
Trip Blank			2	0	0	0
Matrix Spike/Matrix Spike Duplicate			2	2	2	2
Field Duplicate			2	2	2	2
Estimated number of QAQC samples to be analyzed			6	4	4	4
Estimated number of samples to be analyzed			74	64	62	12

Notes:  
 FG = Fehr Graham & Associates, LLC  
 DC Interval = Depth interval corresponding to the greatest direct contact risk.  
 FD = Field Duplicate  
 QAQC = Quality Assurance Quality Control  
 VOCs = Volatile Organic Compounds  
 RCRA = Resource Conservation and Recovery Act  
 PAH = Polycyclic Aromatic Hydrocarbons  
 (6010) = Laboratory analytical method (SW-846)

Table 2  
Proposed Laboratory Analysis for Groundwater  
1621 14th Street  
Two Rivers, Wisconsin

Soil Boring ID	Rationale	VOCs (8260 B)	RCRA Metals (6010)	PAHs (8270D)	PCBs (8082)
MW-1	Replace existing 1" temporary groundwater monitoring well with a 2", NR 141-compliant groundwater monitoring well per WDNR's rejection of well variance at the Site. Evaluate Arsenic impacts to groundwater along the northwestern portion of the Property, near the river.	0	1 (Arsenic only)	0	0
MW-2	Replace existing 1" temporary groundwater monitoring well with a 2", NR 141-compliant groundwater monitoring well per WDNR's rejection of well variance at the Site. Evaluate Arsenic and PAH impacts to groundwater along the northwestern portion of the Property, near the river.	0	1 (Arsenic only)	1	0
MW-4	Replace existing 1" temporary groundwater monitoring well with a 2", NR 141-compliant groundwater monitoring well per WDNR's rejection of well variance at the Property, and sample for VOCs and PAHs.	1	0	1	0
MW-5	Replace existing 1" temporary groundwater monitoring well with a 2", NR 141-compliant groundwater monitoring well per WDNR's rejection of well variance at the Site. Evaluate VOC, Arsenic, PAH, and PCB impacts to groundwater along the northeastern portion of the Property, near the river.	1	1 (Arsenic only)	1	1
MW-6	Replace existing 1" temporary groundwater monitoring well with a 2", NR 141-compliant groundwater monitoring well per WDNR's rejection of well variance at the Property. Groundwater will be sampled for VOCs, and heavy metals.	1	1	0	0
MW-7	Replace existing 1" temporary groundwater monitoring well with a 2", NR 141-compliant groundwater monitoring well per WDNR's rejection of well variance at the Property. Sample groundwater for VOCs, heavy metals, and PAHs.	1	1	1	0
MW-8	Replace existing 1" temporary groundwater monitoring well with a 2", NR 141-compliant groundwater monitoring well per WDNR's rejection of well variance at the Property, and sample for VOCs, PAHs, and Lead.	1	1 (Lead only)	1	0
MW-9	Replace existing 1" temporary groundwater monitoring well with a 2", NR 141-compliant groundwater monitoring well per WDNR's rejection of well variance at the Property. Groundwater will be sampled for Arsenic, and PAHs.	0	1 (Arsenic only)	1	0
MW-11	Replace existing 1" temporary groundwater monitoring well with a 2", NR 141-compliant groundwater monitoring well per WDNR's rejection of well variance at the Property. Groundwater will be sampled for PAHs only.	0	0	1	0
SB-5R1/MW-5R1	Define the northern extent of VOC, Arsenic, PAH, and PCB impacts observed at MW-5 and associated test pits.	1	1 (Arsenic only)	1	1
SB-5R2/MW-5R2	Define the eastern extent of VOC, Arsenic, PAH, and PCB observed at MW-5 and associated test pits.	1	1 (Arsenic only)	1	1
SB-13/MW-13	Evaluate groundwater quality near the western Property boundary, west of building perimeter boring B-4. Specifically, sample for VOCs, Arsenic, and PAHs. This well will also investigate the possibility of impacts migrating onto or off of the site.	1	1 (Arsenic only)	1	0
SB-14/MW-14	Evaluate groundwater quality near the western Property boundary, west of building perimeter boring B-10. Specifically, sample for VOCs, Lead, and PAHs. This well will also investigate the possibility of impacts migrating onto or off of the site.	1	1 (Lead only)	1	0
SB-15/MW-15	Evaluate soil quality near the western Site boundary, west of building perimeter boring B-11. Specifically, sample for VOCs, Arsenic, and PAHs. This well will also investigate the possibility of impacts migrating onto or off of the site.	1	1 (Arsenic only)	1	0
SB-16/MW-16	Evaluate soil quality near the western Site boundary, west of MW-11. Specifically, sample for VOCs, Arsenic, and PAHs. This well will also investigate the possibility of impacts migrating onto or off of the site.	1	1 (Arsenic only)	1	0
SB-17/MW-17	Delineate subsurface impacts to the southwest of MW-7, near the southern Site boundary. Specifically, sample for VOCs, Arsenic, and PAHs. This well will also investigate the possibility of impacts migrating onto or off of the site.	1	1 (Arsenic only)	1	0
SB-18/MW-18	Delineate subsurface impacts to the south of MW-7, near the southern Site boundary. Specifically, sample for VOCs, Arsenic, and PAHs. This well will also investigate the possibility of impacts migrating onto or off of the site.	1	1 (Arsenic only)	1	0
SB-19/MW-19	Evaluate possible solvent impacts to groundwater in the former degreaser room.	1	0	0	0
SB-20/MW-20	Delineate potential impacts moving offsite or migrating onto the site. Specifically, sample for VOCs, Lead, and PAHs. The well will be advanced northeast of MW-9 to investigate if impacts are migrating to the river, and to investigate possible impacts relating to the historic oil house.	1	1 (Lead only)	1	0
SB-21/MW-21	Define the eastern extent of contamination observed at MW-6 and associated test pits. Specifically, sample for VOCs, RCRA Metals, PAHs, and PCBs.	1	1	1	1
SB-25/TW-25	TW-25 will solely provide groundwater elevation for the center of the Property to help further constrain the direction of groundwater flow.	0	0	0	0

Table 2  
Proposed Laboratory Analysis for Groundwater  
1621 14th Street  
Two Rivers, Wisconsin

Soil Boring ID	Rationale	VOCs (8260 B)	RCRA Metals (6010)	PAHs (8270D)	PCBs (8082)
Estimated number of investigative samples to be analyzed		16	14	17	4
Trip Blank	Field and Laboratory QAQC Sample	1	0	0	0
Matrix Spike/Matrix Spike Duplicate	Assess the influence of the matrix on lab results	1	1	1	1
Field Duplicate	Assess the quality of the data and collection techniques.	1	1	1	1
Estimated number of QAQC samples to be analyzed		3	2	2	2
Estimated number of samples to be analyzed		19	16	19	6

Notes:  
 FD = Field Duplicate  
 QAQC = Quality Assurance Quality Control  
 VOCs = Volatile Organic Compounds  
 RCRA = Resource Conservation and Recovery Act  
 PAH = Polycyclic Aromatic Hydrocarbons  
 (6010) = Laboratory analytical method (SW-846)

## APPENDIX A

# FEHR GRAHAM 2022 SITE INVESTIGATION WORK PLAN

Due to file size limitations, the SIWP cannot be included in the PDF version of this SSSAP. To review a copy of the SIWP, please download the file directly from the WDNR BRRTS Database at:  
[https://dnr.wi.gov/botw/DownloadBlobFile.do?docSeqNo=240463&docName=20220623\\_135\\_SIWP.pdf&docDsn=589295](https://dnr.wi.gov/botw/DownloadBlobFile.do?docSeqNo=240463&docName=20220623_135_SIWP.pdf&docDsn=589295)

**APPENDIX B**  
**WDNR REVIEW OF FEHR GRAHAM SITE  
INVESTIGATION WORK PLAN**





July 29, 2022

West River Lofts, LLC  
Attn: Que El-Amin  
4201 N. 27<sup>th</sup> Street  
Milwaukee, WI 53216  
Via electronic mail only to [que@scott-crawford.com](mailto:que@scott-crawford.com)

Subject: Review of Site Investigation Work Plan  
Bright Horizon Properties LLC (Former)  
1621 14<sup>th</sup> Street (formerly 1702 13<sup>th</sup> Street), Two Rivers, WI  
BRRTS #: 02-36-589295

Dear Mr. El-Amin:

On June 23, 2022, the Wisconsin Department of Natural Resources (DNR) received the *Site Investigation Work Plan* (SIWP) prepared on West River Lofts, LLC's behalf by Fehr Graham Engineering & Environmental (Fehr Graham). The SIWP was submitted with a fee for DNR review and response. The submittal of a SIWP is required per Wis. Admin. Code § NR 716.09, as this site is subject to regulation under Wis. Stat. Ch. 292. The DNR reviewed the SIWP for consistency with Wis. Admin. Code §§ NR 716.07 and 716.09 and has determined that the general code requirements have been met with additional comments as provided in this response letter.

#### DNR Review of the SIWP

The DNR review of the SIWP has determined that the general code requirements have been met. However, the well variance is not granted for 1-inch wells due to PAH variability in groundwater across the site even in areas where PAHs were not found in soil. Follow code for installation of 2-inch monitoring wells to evaluate PAH exceedances in groundwater.

The additional clarifications/comments below may be addressed as an addendum to this SIWP before the work is completed or in a future SIWP after additional site data has been collected:

- Soil:
  - Additional soil sampling needed in areas of the former rail line and the 65-gallon gas tank to evaluate potential impacts from recognized environmental conditions (RECs).
  - Additional soil sampling needed in the area near MW-7 where trichloroethylene (TCE) was detected above groundwater pathway and non-industrial direct contact residual contaminant levels (RCLs).
  - Additional soil sample needed between B-8 and MW-11. Analyze for volatile organic compounds (VOCs) and polychlorinated biphenyls (PCBs).
  - Evaluate if polycyclic aromatic hydrocarbon (PAH) and metal contamination should be considered site wide and the implications on extent of site investigation sampling needed.
  - Evaluation of aluminum in areas of former aluminum operations.
- Groundwater:
  - Provide evaluation of existing one inch monitoring wells and potential replacement of those monitoring wells with 2-inch wells after the next comprehensive groundwater monitoring event.

- Evaluate whether MW-6 should be replaced with a 2-inch well as part of the site investigation since groundwater was only sampled once before the monitoring well was destroyed.
- Vapor:
  - For each building being evaluated for vapors, determine the building foundation construction (i.e. slab on grade, basement, crawlspace, if a sump is present). There may be buildings which also have additions and are separated by footings; if this is the case, each slab may need a vapor port. Vapor sampling may change based on this information.
  - For 1600 12<sup>th</sup> Street – 4 sub slab ports have been proposed along the east side of the building. If possible, place two sub slab ports close to the contamination, and two ports closer to the center of the building to account for spatial variability of vapors under a building.
  - For 1702 13<sup>th</sup> Street – 3 sub slab ports have been proposed along the north side of the building. If possible, place two sub slab ports close to the contamination, and one port closer to the center of the building to account for spatial variability of vapors under a building.
  - Evaluate whether vapor sampling is warranted at 1612 12<sup>th</sup> Street or 1700 12<sup>th</sup> Street.
  - A utility vapor investigation was not included in the work plan. In-pipe and/or utility backfill investigation may be needed if it is a potential pathway for contaminant migration. Information needs to be obtained to determine what investigation may be needed. Information can include but may not be limited to: type of utility backfill compared to surrounding soils, historic and current sanitary sewer and storm utilities and laterals, and removal or replacement of utilities. Figure(s) should be provided to depict locations of historic and/or current utilities, as applicable.
- Sediment:
  - While there may have been no direct discharge to the river historically, the data from MW-5 for PAHs, metals, and PCBs is above the probable effects concentration (PEC) Consensus Based Sediment Quality Guidelines (CBSQGs). Provide more historical information of building construction, operations adjacent to the river, any potential discharge pipes, potential for overland flow, etc. Provide additional justification or conduct sediment sampling within the river for PAHs, metals, and PCBs. Justification or sediment sampling will either need to be conducted at this time or will need to be evaluated after further upland investigation is completed.
- Surface Water:
  - Depending on groundwater contaminant concentrations an evaluation of surface water impacts may be necessary.
- Emerging Contaminants: Based on the historic use of the property as former Mirro Plant No. 4, which is associated with per- and polyfluoroalkyl substance (PFAS) used in the manufacturing operations of non-stick cookware, sampling for PFAS is needed for this site, unless additional information can be provided regarding specific operations at this plant location to indicate PFAS was not used.

#### Other DNR Comments

1. A site investigation is an iterative process. Depending upon the results of the sampling from this proposed work, additional investigation may be necessary to define the degree and extent of the contamination.
2. All Wis. Admin. Code ch. NR 700 submittals must be submitted in an electronic format through the RR Submittal Portal.
3. NR 700 semi-annual progress reports will be required until the case is closed.

### Schedule

The SIWP includes an implementation schedule for conducting the field investigation, per Wis. Admin. Code § NR 716.09(2)(h), which includes:

- Per Wis. Admin. Code § NR 716.11(1)(2r), field investigation activities will be initiated within 60 days after the DNR approval of the work plan, by September 27, 2022.
- Results of the site investigation activities will be submitted to the DNR in a Site Investigation Report (SIR) that meets the requirements in Wis. Admin. Code § NR 716.15. The SIR will be submitted to the DNR within 60 days after completion of the field investigation and receipt of laboratory data. A fee may be submitted for DNR review and response.

The DNR appreciates the efforts you are taking to address the contamination at this site. If you have any questions about this letter, please contact me, the DNR Project Manager, at 920-510-3472 or at [Tauren.Beggs@wisconsin.gov](mailto:Tauren.Beggs@wisconsin.gov).

Sincerely,



Tauren R. Beggs  
Project Manager – Hydrogeologist  
Remediation and Redevelopment Program  
Wisconsin Department of Natural Resources

cc: Matt Dahlem, Fehr Graham ([mdahlem@fehrgraham.com](mailto:mdahlem@fehrgraham.com))  
Elizabeth Runge, City of Two Rivers ([elirun@two-rivers.org](mailto:elirun@two-rivers.org))  
Kristin Jones, Newell Operating Company ([Kristin.Jones@newellco.com](mailto:Kristin.Jones@newellco.com))  
Andrew Sawula, Arent Fox Schiff ([andrew.sawula@afslaw.com](mailto:andrew.sawula@afslaw.com))  
Gabriel Rodriguez, Arent Fox Schiff ([gabriel.rodriguez@afslaw.com](mailto:gabriel.rodriguez@afslaw.com))  
Paul Lindquist, Ramboll ([plindquist@ramboll.com](mailto:plindquist@ramboll.com))  
Susan Petrofske, Ramboll ([spetrofske@ramboll.com](mailto:spetrofske@ramboll.com))

**APPENDIX C**  
**SITE SPECIFIC HEALTH AND SAFETY PLAN**  
**(STANTEC RMS-1)**

- If the project requires fieldwork a HASP or RMS1 must be completed.
- If the scope of work for a project that originally did not involve field work changes to include field work, an RMS1 form must be completed and reviewed with employees before field work begins.
- Although the RMS1 is intended to be part of the desktop planning process for a project, please be aware that the RMS1 must be carried as a field resource as well, to complement use of the Field Level Risk Assessment (RMS2).

<b>Date:</b> September 26, 2022	This form expires 1 year from the date of creation	
<b>Project / proposal number:</b> 193708490	<b>Project name:</b> 1621 14 <sup>th</sup> Street	
<b>Location:</b> Two Rivers, Wisconsin		
<b>Project description (Companies involved, what, where, when)</b>		
Stantec to contract Horizon Construction and Exploration to install up to 40 soil borings, 11 of which will be converted to permanent groundwater monitoring wells in conformance with ch. NR 141 WAC. 9 existing 1-inch temporary wells will be abandoned and replaced with 2-inch permanent monitoring wells, and all 1-inch temporary wells on the Property will be abandoned with bentonite. Soil borings to be advanced to a depth of 10 feet while monitoring wells will be 15 feet in depth. Soil from all borings will be logged in two foot intervals, or for every change in lithology. Each interval will be screened with a PID and sampled depending on the highest reading, and shipped to Eurofins TestAmerica (Chicago, IL). Constituents of concern at the Property include: volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), heavy metals, and polychlorinated biphenyls (PCBs).		
<b>Does this project involve fieldwork?</b>	Yes - continue with this form	
<b>Is this project <a href="#">remote work</a>?</b>	No	
<b>What method of communication will be used?</b>	<input checked="" type="checkbox"/> Cell Phone	<input type="checkbox"/> Satellite Phone
	<input type="checkbox"/> Spot Messenger	<input type="checkbox"/> Other:
<b>Is there a call in – call out system?</b>	No	
<b>Are there any unique security concerns?</b>	No	
<b>Will workers on this project be crossing into different states/provinces or countries?</b>	No	
<b>Is Stantec the Constructor/Prime Contractor?</b>	Yes	
<b>Is Stantec hiring subcontractors?</b>	Yes	
<b>Will Stantec staff or subcontractors be working alone?</b>	No	
<b>Client/Constructor HSSE training required?</b>	No	
<b>Is there a Client/Constructor HSSE program that the project is required to follow?</b>	No	
<b>Is this work taking place outside of North America?</b>	No	
<b>List the major tasks associated with this project.</b>		
1. Drive to and from the site		
2. Coordinate with Horizon for drilling of soil borings and installation of permanent monitoring wells. Horizon to also abandon soil borings/temporary wells with bentonite.		
3. Screen and sample soil and groundwater, ship samples to Eurofins TestAmerica. .		
4. <a href="#">Click here to enter text</a>		
5. <a href="#">Click here to enter text</a>		
6. <a href="#">Click here to enter text</a>		
7. <a href="#">Click here to enter text</a>		

8. [Click here to enter text](#)

9. [Click here to enter text](#)

10. [Click here to enter text](#)

**Identify critical risk(s) that staff may encounter on this project.**

**For each critical risk identified, review the flatsheet using the In Case of Crisis app or a printed copy.**

Driving	Working at Heights	Traffic Control	Wildlife, Insects, and Vegetation	Mobile and Heavy Equipment	Environments with Water or Ice
Yes	No	Yes	No	Yes	No
Ground Disturbance	Ergonomic Hazards and Manual Handling	Hazardous Materials and Environments	Control of Hazardous Energy	Hot Work	Confined Spaces
Yes	Yes	No	No	No	No

**When assessing energy sources please consider task and site hazards including activities, time of day, time of year and project stages. If an SWP for a task below is not available, please perform a Quantified Hazard Assessment (RMS7) for the task and include below.**

Please identify SWPs below that apply to your project:

- [SWP 107 – First Aid](#)
- [SWP 111 – Medical Surveillance](#)
- [SWP 105 – PPE](#)
- [SWP 103 – WHMIS \(CA\)](#)
- [SWP 104 – HAZCOM \(US\)](#)
- [SWP 118 – Working Alone In the Field](#)

	Hazards	Applicable SWPs, forms, SOPS, RMS7s	Specialized training beyond the SWPs	Specific Site Controls
<b>Thermal</b>				
	<input type="checkbox"/> Cold stress <input type="checkbox"/> Cold surfaces <input type="checkbox"/> Heat stress <input type="checkbox"/> Hot surfaces <input type="checkbox"/> Hot work <input checked="" type="checkbox"/> Weather conditions <input type="checkbox"/> Other:	<input checked="" type="checkbox"/> <a href="#">SWP 514 - Working on or Near Ice</a> <input checked="" type="checkbox"/> <a href="#">SWP 114 - Working in Cold Environments</a> <input type="checkbox"/> <a href="#">SWP 113 - Heat Stress</a> <input type="checkbox"/> <a href="#">SWP 414, 414a – Hot Work</a> Enter additional SWPs, SOPS	Enter specialized training	Will wear weather appropriate clothing. This time of year may be hot or cold, so be prepared with clothes for either setting.
<b>Chemical</b>				
	<input type="checkbox"/> Oxygen deficient atmosphere <input type="checkbox"/> H <sub>2</sub> S (Hydrogen sulfide) <input type="checkbox"/> Asbestos <input type="checkbox"/> Silica <input type="checkbox"/> Acids <input type="checkbox"/> Caustics <input checked="" type="checkbox"/> Petroleum hydrocarbons <input type="checkbox"/> Solvents/Flammables <input checked="" type="checkbox"/> Volatile organic compounds <input checked="" type="checkbox"/> Heavy metals <input type="checkbox"/> Benzene <input checked="" type="checkbox"/> Lead	<input checked="" type="checkbox"/> <a href="#">SWP 409 - Respiratory Protection</a> <input type="checkbox"/> <a href="#">SWP 411, 411a, 411b, 411c – Confined Space Entry</a> <input type="checkbox"/> <a href="#">SWP 304 - Asbestos Safety</a> <input checked="" type="checkbox"/> <a href="#">SWP 309 - Silica Awareness</a> <input checked="" type="checkbox"/> <a href="#">SWP 312 - Fueling Gasoline Engines</a> <input checked="" type="checkbox"/> <a href="#">SWP 305 - Benzene Safety</a> <input checked="" type="checkbox"/> <a href="#">SWP 314 – Working Around Hazardous Waste and Wastewater</a> <input checked="" type="checkbox"/> <a href="#">SWP 315 - Arsenic Safety</a>	Enter specialized training	. Wear nitrile gloves, protective clothing, glasses, etc.  Subsurface impacts are not known to exist. Impacts to the subsurface form hazardous substances could be present..

<input checked="" type="checkbox"/>	Arsenic	<input type="checkbox"/>	<a href="#">SWP 319 - Hydrogen Fluoride / Hydrofluoric Acid Safety</a>		
<input checked="" type="checkbox"/>	Polycyclic Aromatic Hydrocarbons (PAH)	<input type="checkbox"/>	<a href="#">SWP 519 - Post-Disaster Building Entry</a>		
<input checked="" type="checkbox"/>	PCBs	Enter additional SWPs, SOPs			
<input type="checkbox"/>	Pesticides				
<input type="checkbox"/>	Herbicides				
<input type="checkbox"/>	Hydrogen fluoride / Hydrofluoric acid				
	Other:				

### Biological




	<input type="checkbox"/>	Wildlife	<input checked="" type="checkbox"/>	<a href="#">SWP 409 - Respiratory Protection</a>	Enter specialized training	COVID-19 Field Guidance and Best Practices (attached to this document). COVID community transmission within Manitowoc County is considered low. If transmission rates raise a surgical mask will be worn and social distancing maintained.
	<input type="checkbox"/>	Domestic animals (dogs, cattle)	<input checked="" type="checkbox"/>	<a href="#">SWP 314 - Working Around Hazardous Waste and Waste Water</a>		
	<input type="checkbox"/>	Bees / wasps / hornets	<input type="checkbox"/>	<a href="#">SWP 108 - Bloodborne Pathogens</a>		
	<input type="checkbox"/>	Ticks	<input type="checkbox"/>	<a href="#">SWP 508 - Wildlife Encounters</a>		
	<input type="checkbox"/>	Black flies	<input type="checkbox"/>	<a href="#">SWP 102 - Workplace Violence</a>		
	<input type="checkbox"/>	Other stinging or biting insects	<input checked="" type="checkbox"/>	<a href="#">SWP 510 - Working in Abandoned Buildings</a>		
	<input type="checkbox"/>	Pedestrians / onlookers	<input type="checkbox"/>	<a href="#">SWP 511 - Ticks and Tickborne Diseases</a>		
	<input type="checkbox"/>	Protesters	<input type="checkbox"/>	<a href="#">SWP 519 - Post-Disaster Building Entry</a>		
	<input type="checkbox"/>	Poison ivy				
	<input type="checkbox"/>	Poison oak				
	<input type="checkbox"/>	Giant hogweed				
	<input type="checkbox"/>	Wild parsnip				
	<input type="checkbox"/>	Sewage				
	<input type="checkbox"/>	Wastewater				
	<input type="checkbox"/>	Domestic waste				
	<input type="checkbox"/>	Medical waste				
	<input type="checkbox"/>	Bloodborne pathogens				
	<input checked="" type="checkbox"/>	Other: COVID-19				
	<input type="checkbox"/>	Other:				
<input type="checkbox"/>	Other:					
<input type="checkbox"/>	Other:					

### Radiation

	<input type="checkbox"/>	Solar (UVA/UVB)	<input type="checkbox"/>	<a href="#">SWP 502, 502a-g (CA) - Radiation Safety Program Field Manual for Portable Gauges (Canada)</a>	Enter specialized training	Enter specific controls		
	<input type="checkbox"/>	Welding	<input type="checkbox"/>	<a href="#">SWP 516, 516a-e (US) - Radiation Safety (US)</a>				
	<input type="checkbox"/>	Nuclear densometers	Enter additional SWPs, SOPs					
	<input type="checkbox"/>	NORMs						
	<input type="checkbox"/>	Microwave						
	<input type="checkbox"/>	Other:						

### Noise

	<input checked="" type="checkbox"/>	Mobile equipment	Enter additional SWPs, SOPs	Enter specialized training	Noise/vibration/impact is expected from the geoprobe. Wear earplugs during sampling and while Horizon is drilling
	<input type="checkbox"/>	Stationary equipment			
	<input checked="" type="checkbox"/>	Manual equipment			
	<input checked="" type="checkbox"/>	Impact			

	<input checked="" type="checkbox"/> Vibration <input type="checkbox"/> Impact on communications <input type="checkbox"/> Other:		
<b>Gravity</b>			
	<input checked="" type="checkbox"/> Slip / Trip / Fall <input type="checkbox"/> Work from heights <input type="checkbox"/> Falling objects  <input type="checkbox"/> Other:	<input type="checkbox"/> <a href="#">SWP 201 - Fall Protection / Working at Heights</a> <input type="checkbox"/> <a href="#">SWP 202 - Ladder Safety</a> <input type="checkbox"/> <a href="#">SWP 203 - Aerial Work Platform</a> <input type="checkbox"/> <a href="#">SWP 205 - Scaffold Safety</a> <input type="checkbox"/> <a href="#">SWP 208 - Hoisting and Lifting</a> <input type="checkbox"/> <a href="#">SWP 510 - Working in Abandoned Buildings</a> Enter additional SWPs, SOPs	Enter specialized training  Wear appropriate footwear; use traction enhancement if needed. Wear safety toed boots with at least a 6" ankle for support onsite. Keep focus on path and off of phone/maps while walking..  Do not enter building due to risk of collapse.
<b>Motion</b>			
	<input checked="" type="checkbox"/> Working near traffic <input checked="" type="checkbox"/> Automobile/truck/trailer <input type="checkbox"/> Construction equipment <input type="checkbox"/> Elevated work platform <input type="checkbox"/> Pedestrians <input type="checkbox"/> Cyclists <input type="checkbox"/> Rail <input type="checkbox"/> ATV <input type="checkbox"/> ARGO <input type="checkbox"/> Watercraft / water <input type="checkbox"/> Snowmobile <input type="checkbox"/> Aircraft (fixed wing or rotary) <input type="checkbox"/> UAVs/Drones <input checked="" type="checkbox"/> Walking/Hiking <input checked="" type="checkbox"/> Lifting <input checked="" type="checkbox"/> Pushing/Pulling <input checked="" type="checkbox"/> Bending <input checked="" type="checkbox"/> Posture/position <input type="checkbox"/> Climbing <input checked="" type="checkbox"/> Twisting <input type="checkbox"/> Other:	<input type="checkbox"/> <a href="#">SWP 507 - Aircraft Safety</a> <input checked="" type="checkbox"/> <a href="#">SWP 124, 124a, 124b – Safe Driving</a> <input checked="" type="checkbox"/> <a href="#">SWP 216 - Working Near Mobile Equipment</a> <input type="checkbox"/> <a href="#">SWP 217, 217a – Forklift Operation</a> <input type="checkbox"/> <a href="#">SWP 407, 407a, 407b, 407c – Traffic Control and Protection Planning</a> <input type="checkbox"/> <a href="#">SWP 505, 505a, 505b, 505c, 505d - Off Road Vehicles</a> <input type="checkbox"/> <a href="#">SWP 506 - Rail Safety</a> <input checked="" type="checkbox"/> <a href="#">SWP 115 - Material Handling and Safe Lifting</a> <input type="checkbox"/> <a href="#">SWP 125 - Workstation Ergonomics</a> <input type="checkbox"/> <a href="#">SWP 513 - Boat and Water Safety</a>  Enter additional SWPs, SOPs	Enter specialized training  Green defensive driving in transit to/from/around Site, Use traffic cones as needed. Wear high-vis vest. Use situational awareness to identify potential vehicle risks
<b>Mechanical</b>			
	<input type="checkbox"/> Cutting edges <input type="checkbox"/> Blades <input checked="" type="checkbox"/> Rotating parts (e.g., drill/auger) <input type="checkbox"/> Wrap points <input type="checkbox"/> Shear points <input type="checkbox"/> Pinch points	<input checked="" type="checkbox"/> <a href="#">SWP 416 - Supervision of Contracted Drilling Activities</a> <input type="checkbox"/> <a href="#">SWP 518, 518a – Using a Chainsaw</a> <input checked="" type="checkbox"/> <a href="#">SWP 206 - Hand and Portable Power Tools</a>	Enter specialized training  Stay 10' clear of Geoprobe and keep within eyesight at all times.



	<input type="checkbox"/> Freewheeling point <input type="checkbox"/> Chains <input type="checkbox"/> Cables  <input type="checkbox"/> Other:	<input type="checkbox"/> <a href="#">SWP 517 - Safe Machete Use</a> <input type="checkbox"/> <a href="#">SWP 408, 408a, 408b, 408c</a> – Lock, Tag & Try <input type="checkbox"/> <a href="#">SWP 216 - Working Near Mobile Equipment</a> <input checked="" type="checkbox"/> <a href="#">SWP 510 - Working in Abandoned Buildings</a> Enter additional SWPs, SOPs		
--	----------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	--

### Electrical

	<input type="checkbox"/> Power and communication lines <input type="checkbox"/> Static charge and lightning <input type="checkbox"/> Wiring <input checked="" type="checkbox"/> Batteries <input checked="" type="checkbox"/> Lighting levels <input type="checkbox"/> Wet environment <input checked="" type="checkbox"/> GFCI cords/plugs <input type="checkbox"/> Double insulated tools <input type="checkbox"/> Exposed circuits <input type="checkbox"/> Other:	<input checked="" type="checkbox"/> <a href="#">SWP 213, 213a, 213b, 213c</a> – Utility Clearance <input type="checkbox"/> <a href="#">SWP 406, 406a, 406b</a> – Electrical Safety Program <input type="checkbox"/> <a href="#">SWP 408, 408a, 408b, 408c</a> – Lock, Tag & Try <input type="checkbox"/> <a href="#">SWP 504 - Backpack and Boat Mounted Electro-Fishing</a> <input type="checkbox"/> <a href="#">SWP 519 - Post-Disaster Building Entry</a> Enter additional SWPs, SOPs	Enter specialized training	Clear utilities per SWP, including public and private locates and communication with current property owner..
--	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------	---------------------------------------------------------------------------------------------------------------

### Pressure

	<input type="checkbox"/> Excavations and spoil piles <input checked="" type="checkbox"/> Hydraulic systems <input checked="" type="checkbox"/> Pneumatic systems <input type="checkbox"/> Steam <input type="checkbox"/> Vacuum <input checked="" type="checkbox"/> Cylinders <input type="checkbox"/> Other:	<input type="checkbox"/> <a href="#">SWP 215 - Supervision of Hydro-Excavation Activities</a> <input checked="" type="checkbox"/> <a href="#">SWP 310 - Compressed Gas Cylinders</a> <input type="checkbox"/> <a href="#">SWP 214 - Entering Excavations and Trenches</a> Enter additional SWPs, SOPs	Enter specialized training	Be mindful in transporting PID calibration gas. Maintain safe distance from drill rig.
--	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------	----------------------------------------------------------------------------------------

PPE	REQ'd	If you need assistance to answer these questions, please contact an HSSE advisor or HSSE manager		
Head (CSA/ANSI)	☒	<b>Choose a Type and Class:</b> <input checked="" type="checkbox"/> Type 1 (no side impact) <span style="float: right;"><input type="checkbox"/> Class E (rated for 20000 volts)</span> <input type="checkbox"/> Type 2 (side impact) <span style="float: right;"><input type="checkbox"/> Class G (rated for 2200 volts)</span> <span style="float: right;"><input type="checkbox"/> Class C (no electrical rating)</span> <input type="checkbox"/> Other		
Eye/face (CSA/ANSI)	☒	<input checked="" type="checkbox"/> safety glasses with rigid side shields <span style="float: right;"><input type="checkbox"/> safety glasses and face shield</span> <input type="checkbox"/> polarized safety glasses with rigid side shields <span style="float: right;"><input type="checkbox"/> goggles and face shield</span> <input type="checkbox"/> goggles <span style="float: right;"><input type="checkbox"/> UV glasses, UV shield</span> <input type="checkbox"/> spoggles		
Hand	☒	<b>Hazard Protection</b> <input type="checkbox"/> <a href="#">Abrasion</a> <input type="checkbox"/> <a href="#">Cut</a> <input type="checkbox"/> Vibration <input type="checkbox"/> <a href="#">Puncture</a> <input type="checkbox"/> <a href="#">FR (flame resistant)</a> <input type="checkbox"/> <a href="#">Arc Flash</a> <input checked="" type="checkbox"/> <a href="#">Chemical</a> <input type="checkbox"/> Impact <input checked="" type="checkbox"/> Cold <input type="checkbox"/> Heat <input type="checkbox"/> Other:		

		<b>Glove Type</b> <input checked="" type="checkbox"/> Nitrile <input type="checkbox"/> Leather <input type="checkbox"/> Cotton <input type="checkbox"/> High Performance Polyethylene <input type="checkbox"/> Polyurethane <input type="checkbox"/> Kevlar <input type="checkbox"/> Latex <input type="checkbox"/> PVC <input type="checkbox"/> Neoprene <input type="checkbox"/> Viton <input type="checkbox"/> Other:	
Foot (6" minimum ankle support)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> CSA Green triangle and orange omega boots (CA) / ASTM / ANSI boots (US) <input type="checkbox"/> CSA Green triangle and orange omega rubber boots (CA) / ASTM / ANSI rubber boots (US)	<input type="checkbox"/> CSA Green triangle and orange omega waders (CA) / ASTM / ANSI waders boots (US) <input type="checkbox"/> Traction Aids
High visibility clothing	<input checked="" type="checkbox"/>	Class 1 - not used <input checked="" type="checkbox"/> Class 2 (under 80km/h / 50 mph and daylight)	<input type="checkbox"/> Class 3 (over 80km/h / 50 mph and/or twilight/dark)
Hearing	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Ear plugs <input type="checkbox"/> Ear muffs	<input type="checkbox"/> Ear plugs and muffs
Coveralls	<input type="checkbox"/>	<input type="checkbox"/> Standard <input type="checkbox"/> FR (Flame Resistant) – Type: <input type="checkbox"/> Tyvek (disposable) <input type="checkbox"/> Chemical resistant	
Respiratory	<input type="checkbox"/>	<input checked="" type="checkbox"/> N95 (dust mask) <input type="checkbox"/> 1/2 mask - Cartridge type:            - Filter type: <input type="checkbox"/> Full face - Cartridge type:            - Filter type: <input type="checkbox"/> PAPR - Cartridge type:            - Filter type:	
Fall arrest/limit	<input type="checkbox"/>	<b>Fall arrest harness (verify capacity)</b> <input type="checkbox"/> Class A (fall arrest) <input type="checkbox"/> Class D (controlled descent) <input type="checkbox"/> Class E (evacuation) <input type="checkbox"/> Class L (ladder) <input type="checkbox"/> Class P (positioning) <b>Lanyard</b> <input type="checkbox"/> 6' with shock absorber (verify capacity) <input type="checkbox"/> 4' with shock absorber (verify capacity) <input type="checkbox"/> 6' Y with shock absorber (verify capacity) <input type="checkbox"/> 6' with NO shock absorber (verify capacity) for use on aerial lifts <input type="checkbox"/> 4' with NO shock absorber (verify capacity) for use on aerial lifts <input type="checkbox"/> Other:	<b>Additional equipment</b> <input type="checkbox"/> Rope Grab <input type="checkbox"/> Rope <input type="checkbox"/> Self-retracting lifeline – <input type="checkbox"/> <a href="#">SRL</a> <input type="checkbox"/> <a href="#">SRL-R (integral rescue capability)</a> <input type="checkbox"/> <a href="#">SRL-LE (leading edge capability)</a> <input type="checkbox"/> Tripod <input type="checkbox"/> Retrieval winch <input type="checkbox"/> Anchorage connector <input type="checkbox"/> Beam anchor <input type="checkbox"/> Vertical or horizontal lifeline <input type="checkbox"/> Carabiner <input type="checkbox"/> Suspension trauma straps
Flotation device	<input type="checkbox"/>	<input type="checkbox"/> Lifejacket <input type="checkbox"/> Floater Jacket <input type="checkbox"/> PFD - Type:	<input type="checkbox"/> PFD inflatable <input type="checkbox"/> Survival Suit
Other	<input checked="" type="checkbox"/>	This work is being performed during the COVID-19 pandemic. A cloth mask is recommended to be used (or at least, made available) for this work. Wear this mask in situations where it is not possible to maintain the six-foot distance between one's	

		self and others. Maintain this six-foot buffer wherever possible. Further guidance is attached to this RMS1 for hygiene and wellness guidance..

## EMERGENCY RESOURCES

**(NOTE: This plan is not adequate for [working at heights](#) or [confined space](#) activities. A separate plan is required, please contact your Regional HSSE Manager or Advisor)**

<b>Site emergency number:</b>	<b>Fire Department:</b> Two Rivers Fire Department 2122 Monroe Street (920) 793-5521
<b>Ambulance:</b> 911 Two Rivers Fire Department 2122 Monroe Street 920) 793-5521	<b>Spill Response:</b> National Response Center (NRC). 1 (800) 424 – 8802.
<b>Police:</b> Two Rivers Police Department (920) 793 - 1191	<b>Regional HR:</b> <span style="color: #E67E22;">US Central - Ricardo Carlos Perez - (512) 469-5330</span>
<b>Workers' Compensation Claim Coordinator:</b> US - Melissa Helton - cell 513-720-3706	
<b>OSEC:</b> Kurt Rubsam – (262) 402-8153	
<b>Public Relations:</b> US Central – Laura Krinke (612) 712-2072	
<b>HSSE Manager:</b> US Central – Wes Cline (916) 281-7459	
<b>First aid facilities are located:</b>	In field vehicle
<b>First aiders on site:</b>	Jiyan Hatami
<b>Fire extinguisher are located:</b>	In field vehicle
<b>SDS are located:</b>	N/A
<b>Eyewash station is located:</b>	N/A
<b>Spill response equipment is located:</b>	N/A
<b>Muster point is located</b>	N/A

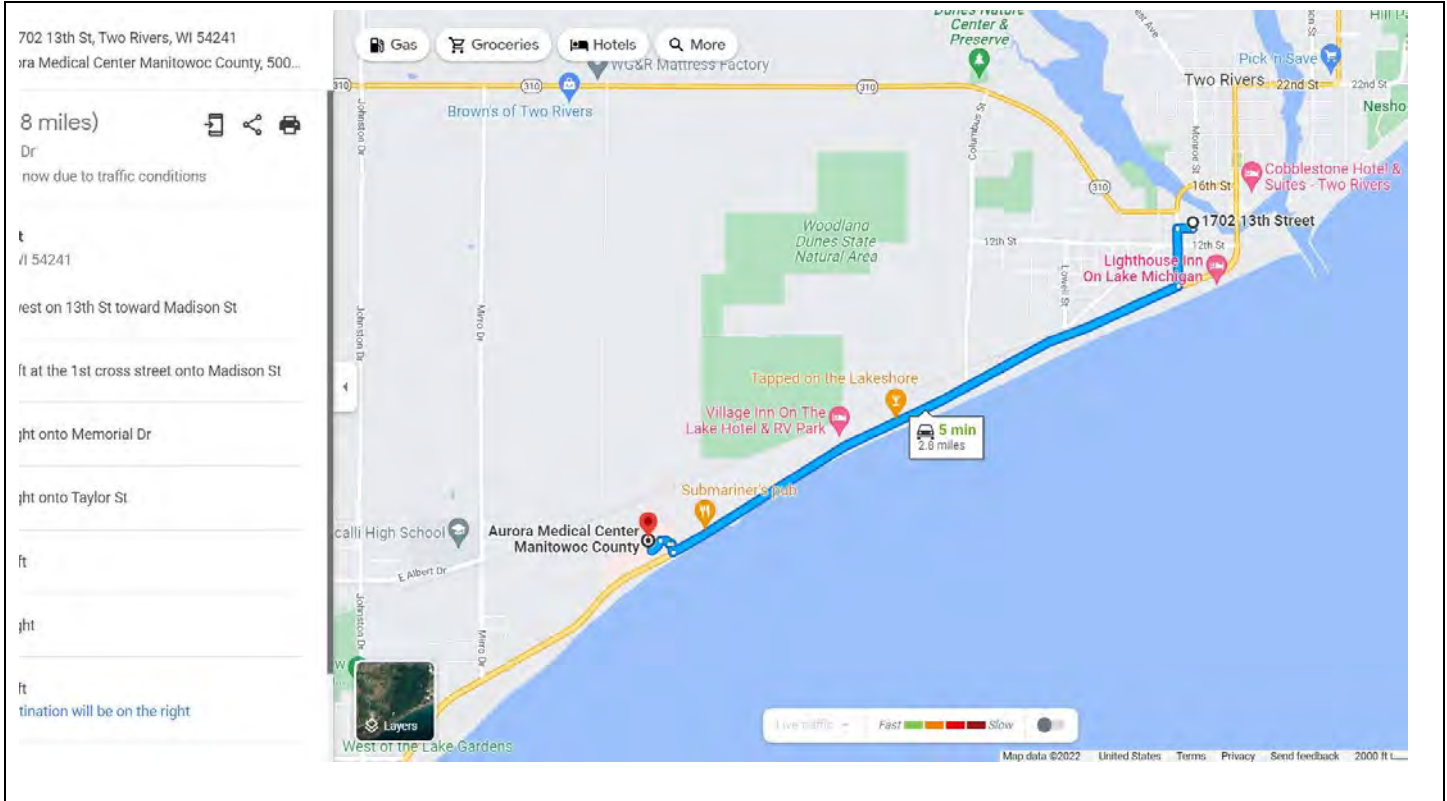
### Incident reporting protocol based on work location (Select USA and / or Canada and / or International)

#### Incident Reporting Protocol US

#### IMMEDIATE ACTIONS

1. Keeping safety in mind, care for injured people (if applicable) and stabilize the scene.
2. For life threatening injuries, **immediately contact 911**. Accompany the injured employee to the medical facility whenever possible.
3. Call **WorkCare (24-hour service): 1-888-449-7787** for work-related symptoms or injuries and speak to a medical professional for guidance and treatment options.
4. Make voice contact with your supervisor within 1 hour or less of the incident occurring. Leaving a voicemail does not count. If you cannot contact your supervisor, contact the HSSE Manager or HSSE Advisor for your region.
5. Supervisors must immediately contact their HSSE Manager or HSSE Advisor by phone to discuss incident severity and determine if further notifications (internal or external) are required.
6. When an employee is guided by WorkCare to obtain medical assistance, or the employee requests medical attention for a non-life-threatening injury, and after alerting the supervisor; the employee must **immediately call Melissa Helton, Stantec's US WC Claims Coordinator at 513-720-3706** for assistance.
7. In most cases WorkCare will provide guidance about which clinic is available and provide directions. Here is a link accessing additional clinic locations: Clinic Search [link](#).
8. Additional notifications may be required based on the client requirements

**Maps are provided to the nearest medical clinic or hospital**



## PROJECT CONTACT INFORMATION

Title	Name	Company	Phone Number
<b>Stantec Office</b>	Mequon, WI	Stantec	(262) 241-3133
<b>Project Manager</b>	Harris Byers	Stantec	(414) 581-6476
<b>Project Site Safety</b>	Jiyan Hatami	Stantec	(262) 278-9154
<b>Client or Owner</b>	Adam Tegen; City of Manitowoc	Manitowoc	920-686-6931
<b>Stantec After-Hours Number</b>	Harris Byers	Stantec	(414) 581-6476
<b>Other: (specify)</b>	<a href="#">Click here to enter text</a>	<a href="#">Click here to enter text</a>	<a href="#">Phone Number</a>
<b>Other: (specify)</b>	<a href="#">Click here to enter text</a>	<a href="#">Click here to enter text</a>	<a href="#">Phone Number</a>

### Approvals

By signing this approval, the Project Manager is acknowledging that (s)he has communicated the hazards, controls, required PPE and applicable SWPs to the employees working on this project. It also indicates that the Project Manager has communicated to employees that they must have the equipment required to work safely, they must verify the equipment is in working order, and that they have the knowledge required to operate/use the equipment.

Prepared by:	Jiyan Hatami		9/23/2022
	Print Name	Signature	Date
Reviewed by: <i>(not author)</i>	Harris Byers		9/23/2022
	Print Name	Signature	Date
Approved by PM:	Harris Byers		9/23/2022
	Print Name	Signature	Date

## Employee Review

All employees conducting field work on this project will review the Risk Management Strategy (RMS1) and sign below acknowledging that they have been advised of the hazards, controls, PPE, and other safety equipment required, and have reviewed the applicable SWPs. Employees in the field who identify additional hazards not listed above will notify the project manager of the hazard, and prior to proceeding, will confirm the controls that will be used. Document any on-site changes and communications using the RMS2 as appropriate; see section 4.4 of the HSSE Program Manual on Management of Change.

Please designate Team Lead for field activities below.

<b>Reviewed by:</b>	Jiyan Hatami		9/23/2022
	_____ Print Name (Team Lead Field)	_____ Signature	_____ Date
	Madeline Edwards		9/23/2022
	_____ Print Name <a href="#">Click here to enter text.</a>	_____ Signature	_____ Date <a href="#">Click here to enter a date.</a>
	_____ Print Name <a href="#">Click here to enter text.</a>	_____ Signature	_____ Date <a href="#">Click here to enter a date.</a>
	_____ Print Name <a href="#">Click here to enter text.</a>	_____ Signature	_____ Date <a href="#">Click here to enter a date.</a>
	_____ Print Name	_____ Signature	_____ Date