

From: Byers, Harris <Harris.Byers@stantec.com>
Sent: Monday, August 13, 2018 4:35 PM
To: Choi, Christopher
Cc: Kathleen McDaniel; Dan Koski; Paul Braun (PBraun@manitowoc.org); Beggs, Tauren R - DNR
Subject: [WARNING: ATTACHMENT(S) MAY CONTAIN MALWARE]SSSAP for Geophysical Survey at Former RR Properties
Attachments: SSSAP for Geophysical Survey - Former RR Properties.pdf

Chris:

Attached is a site-specific sampling and analysis plan (SSSAP) for a geophysical survey at the former railroad properties located in Manitowoc. Please review at your earliest convenience.

Kathleen – can you please forward this to the property owner for their review.

Sincerely,

Harris Byers

Brownfields Project Manager

Direct: 414 581-6476

Fax: 262 241-4901

Harris.Byers@stantec.com

Stantec



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Stantec Consulting Services Inc.
12075 Corporate Parkway, Suite 200 Mequon WI 53092

August 13, 2018

Attention: Mr. Chris Choi

Program Officer Brownfields Program
United States Environmental Protection Agency
Region 5 77 West Jackson Blvd.
Chicago, IL 60604-3590

**Reference: Site Specific Sampling and Analysis Plan - Geophysical Survey
Former Railroad Property Along North 10th and North 11th Streets (Site 1) and
Former Railroad Property Along Revere Drive (Site 2)
Manitowoc, Wisconsin
USEPA Cooperative Agreement No. BF- BF 00E02377-0 (pending)
Stantec Project No. 193706269**

Dear Mr. Choi:

As will be recommended in the two pending Stantec Consulting Services (Stantec) 2018 *Phase I* ESAs for the above referenced Properties, and on behalf of the City of Manitowoc, Stantec has prepared this site specific sampling and analysis plan for a geophysical survey to be completed at the former railroad property located on a peninsula formed by the Manitowoc River and bounded to the east by North 10th Street and North 11th Street (herein referred to as "Site 1") and the former railroad property located along Revere Drive (herein referred to as "Site 2"). The locations of Site 1 and Site 2 relative to topographic features and illustrated on an orthophotograph from 2017 are illustrated on Figure 1 and Figure 2, respectively. A health and safety plan for oversight of the geophysical survey is provided in Attachment A.

Background

Site 1 - Former Railroad Property Along North 10th Street and North 11th Street. This Property appears vacant in 1835 with development for railroad use by 1895. As illustrated on Figure 4, identified railroad features include approximately 3.5 miles of railroad tracks, rail depots, a turn table, an engine house, a cinder pit, and multiple maintenance (tooling, washing, repair) garages/storage sheds/houses.

In addition to railroad use, as illustrated on Figure 3, large portions of the Property were leased to a variety of entities who utilized the property for a variety of industrial uses through the 20th Century. Uses included bulk coal storage/handling on the northern portion of the Property, bulk petroleum storage in the central/eastern portions of the Property, ship building on the northern/north central portion of the Property, grain storage/elevator on the eastern/southern portions of the Property, metal/scrap/junk yard storage on the eastern portion of the Property, and transloading of stone along the southern portion of the Property. With respect to bulk petroleum storage, as illustrated on Figure 4, multiple areas of concern have been identified and include approximately 42 ASTs, 12 USTs, 7 pump houses, 5 oil houses, and associated product pipes. Based on the time period of bulk petroleum storage and other industrial uses, the possibility exists that unregistered storage tanks were, and could remain, at the Property.



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Site 2 - Former Railroad Property Along Revere Drive. This Property appears vacant/undeveloped through 1893 and developed for railroad use by 1899. Historic records are rather sparse for the Property; however, railroad use continued through the mid/late 20th Century and Property features appear to include construction, operation, and maintenance of a weigh station and two sets of rail tracks and associated ballasts/ties.

PROBLEM STATEMENTS

As described above and illustrated on Figure 4, numerous historic features may remain at Site 1 and Site 2 which could either serve as an ongoing source(s) or could pose a significant obstacle to completing subsurface sampling and/or redevelopment of the former railroad Properties. Therefore, the pending Stantec (2018) *Phase I ESAs* will recommend conducting a geophysical survey at each Site as the first step in evaluating several Recognized Environmental Conditions. Specific focus areas and objectives for each Site are summarized below.

Site 1 - Former Railroad Property Along North 10th Street and North 11th Street. The following table provides a summary of possible features of interest based on prior Site occupant/use.

Prior Occupant / Use <i>(see Figure 3 for prior occupant/use)</i>	Possible Features of Interest <i>(see Figure 4 for approximate feature locations)</i>
Frank J. Kerscher Warehouse	Basement; features associated with former bulk petroleum storage (ex. foundations, USTs, piping, etc.)
Manitowoc Shipbuilding Company	Not much is known about specific Site operations; possibly building foundation
Stephani-Strupp Oil Co. (Bulk Oil Station)	Features associated with former bulk petroleum storage (ex. foundations, USTs, piping, etc.)
William H. Froehlich (Bulk Oil Station)	Features associated with former bulk petroleum storage (ex. foundations, USTs, piping, etc.)
Manitowoc Shipbuilding Company	Not much is known about specific Site operations; possibly building foundation and railroad tracks
Shell Oil Company (Bulk Oil Station)	Features associated with former bulk petroleum storage (ex. foundations, USTs, piping, etc.)
Standard Oil Company (Bulk Oil Station)	Features associated with former bulk petroleum storage and railroad use (ex. foundations, USTs, piping, rail tracks, etc.)
CM Shaw (Residential ?)	Features associated with former railroad and residential use (ex. foundations, USTs, rail tracks)



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Manitowoc Iron and Metal Company	Features associated with former junkyard and railroad use (ex. foundations, USTs, buried debris/metal, rail tracks)
Northern Elevator Company Grain Elevator	Features associated with former grain elevator and railroad use (ex. foundations, USTs, rail tracks)
Valders Stone and Marble, Inc.	Features associated with former railroad use (ex. tracks, depots, etc.)
Lake Park Oil, Inc. (Bulk Oil Station)	Features associated with former bulk petroleum storage and railroad use (ex. foundations, USTs, piping, rail tracks, etc.)
Wisconsin Public Service Commission	Features associated with former railroad use (ex. tracks)
Laird Lumber Company	An active facility, possible underground utilities along with potential for buried debris and a UST
Railroad (remaining portion of Property)	Features associated with former railroad use (ex. tracks, foundations/sheds, cinder pit, engine/tool/wash houses, etc.)

Site 2 - Former Railroad Property Along Revere Drive. Much remains unknown regarding specific operations at the Revere Drive facility. Therefore, the geophysical survey will target underground anomalies consistent with former railroad uses (ex. USTs, rail road tracks/ties/ballast, etc.)

PROPOSED GEOPHYSICAL SURVEY

Both former railroad properties are heavily vegetated. Therefore, the perennial vegetation will be mowed to increase access to target areas. The City of Manitowoc will manage site clearing activities; Stantec will not be involved with this work.

Ground Penetrating Radar Systems, Inc (GPRS; Oconomowoc, Wisconsin) will be retained to complete the geophysical survey in two stages. The first stage will use electromagnetic (EM) surveying techniques to profile the property. Based on anomalies identified with EM, a ground penetrating radar (GPR) survey will be conducted in focus areas during the second stage of work using a Geophysical Survey Systems Inc SIR-3000 GPR Radar unit with a 400 MHz antenna and RD 4000 Radiofrequency Detection System. GPR survey data will be generated and interpreted in real-time using Radan Version 6.6 software. The GPR survey will be completed using a grid-pattern with adjacent scans no more than three feet apart. Where access is limited, scanning will be performed in as complete a manner as possible. The GPR survey will be extended approximately 10-20 feet into the adjacent rights-of-way to determine if the UST illustrated on Figure 3 (adjacent to Braun Building Company) has been removed. A geodetic survey will be completed per Stantec



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SOP-15 to document the locations, extents, and depths of identified anomalies relative to the ground surface.

DATA EVALUATION AND REPORT

A written summary report will be prepared and include the following:

- The locations, depths, and extents of subsurface anomalies consistent with potential release areas (i.e. USTs, foundations, pipes, etc.) and the locations/extents of remaining railroad features,
- A copy of the GPR Summary Report, and
- Recommendations for removal.

SCHEDULE

Mowing/cutting vegetation is expected to take one day to complete and is targeted for the second week of August. The geophysical survey is tentatively scheduled for the second week of August and is expected to take two to three days to complete. The final report documenting the results of this work will be available within 10 calendar days of the receipt of documentation from GPRS.

Future subsurface work targeting Recognized Environmental Conditions to be described in the pending Stantec (2018) *Phase I ESAs* will be described in a future sampling and analysis plan and will be adjusted based on the results of the geophysical survey.

We trust this information meets your needs. Please feel free to contact me at 414-581-6476 if you have any questions or concerns.

STANTEC CONSULTING SERVICES INC.

A handwritten signature in blue ink that reads "Harris L. Byers".

Harris L. Byers
Brownfields Project Manager

Harris.Byers@stantec.com

(414) 581-6476

STANTEC CONSULTING SERVICES INC.

A handwritten signature in blue ink that reads "Hiedi Ann Waller".

Hiedi A. Waller, P.E.
Environmental Engineer

Hiedi.Waller@stantec.com



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STANTEC CONSULTING SERVICES INC.

Richard J. Binder, P.G., CPG

QA/QC Manager

Rick.Binder@stantec.com

LIMITATIONS

Stantec's observations, findings, and opinions should not be considered as scientific certainties, but only as opinion based on our professional judgment concerning the significance of the data reviewed in developing this site-specific sampling and analysis plan. Specifically, Stantec cannot represent that the Site does not contain any hazardous or toxic materials or other latent conditions beyond that observed by Stantec during the course of the investigation. Additionally, due to limitations of this investigation 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 report.

Enclosures:

Figures

Attachments: A - Health and Safety Plan

FIGURES

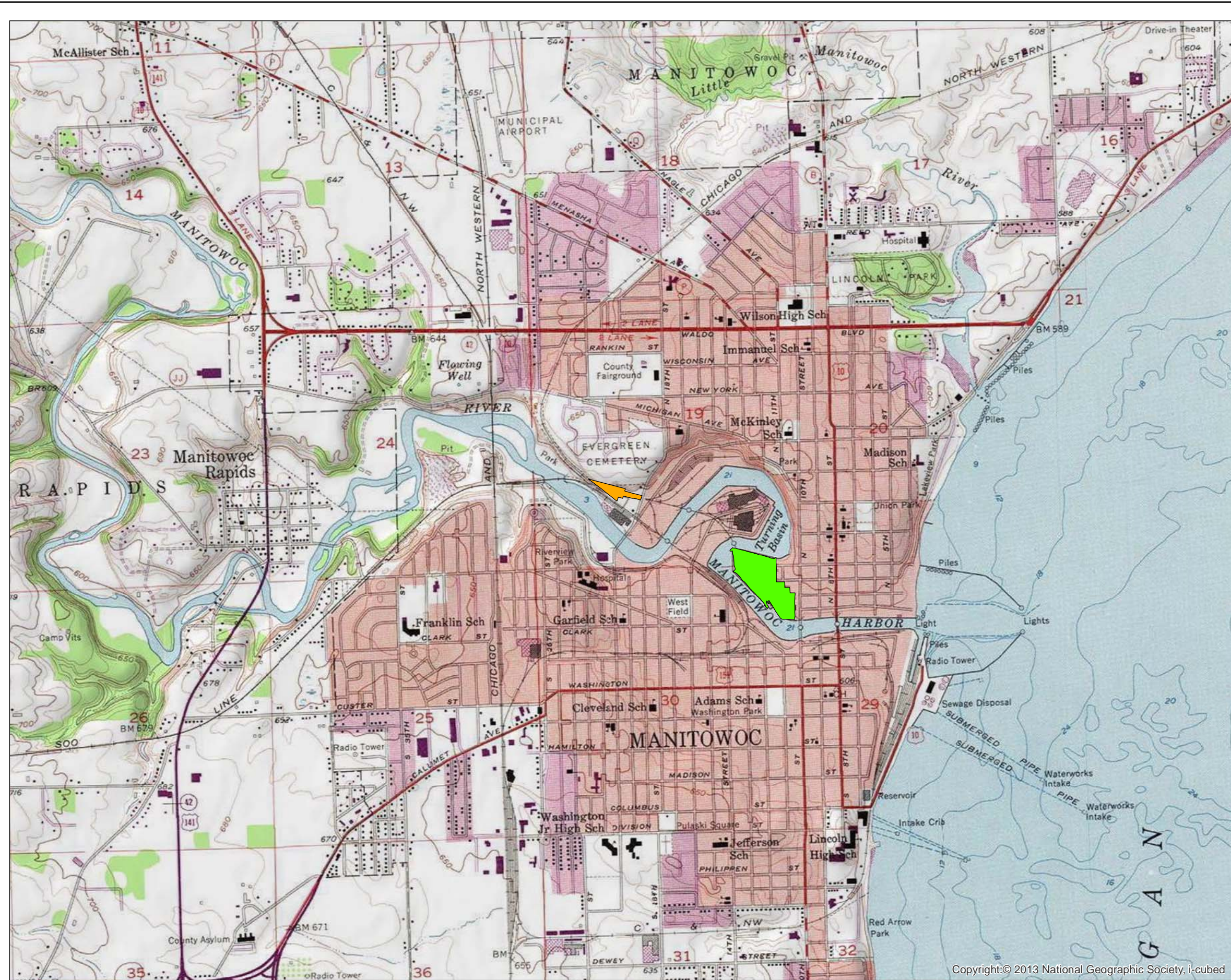


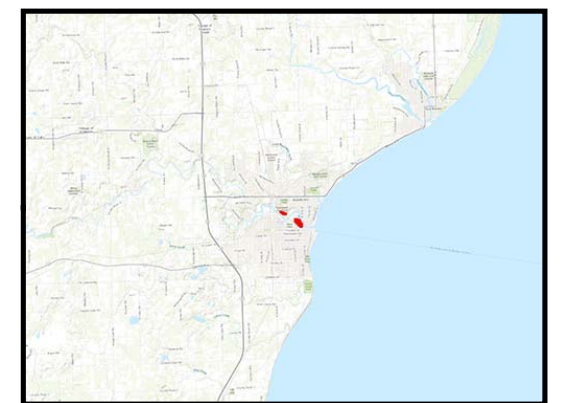
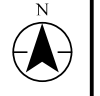
Figure No. **1**
 Title
Location of Sites and Local Topography

Client/Project
 City of Manitowoc
 USEPA Brownfield Assessment Grant

0 1,450 2,900 Feet
 193703931
 Prepared by HLB on 5/17/18

Legend

- Site 1 - North 10th Street
- Site 2 - Revere Drive



Notes
 1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet



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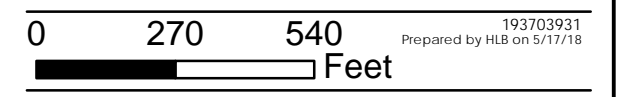
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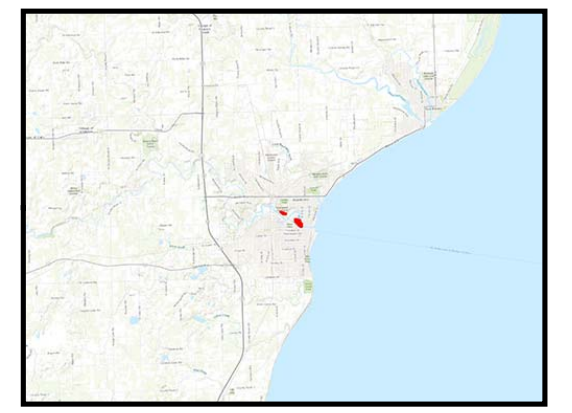
Figure No. **2**
 Title

**Location of Sites and
 Nearby Features**

Client/Project
 City of Manitowoc
 USEPA Brownfield Assessment Grant



- Legend**
- Site 1 - North 10th Street
 - Site 2 - Revere Drive



Notes
 1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet



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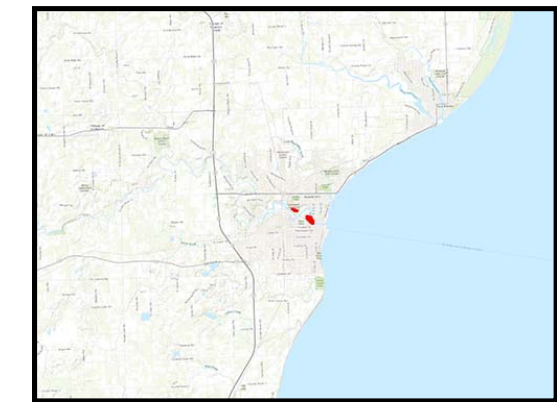


Figure No.
3
 Title
Target Property and Historic Occupants/Uses

Client/Project
 City of Manitowoc
 USEPA Brownfield Assessment Grant

0 120 240 Feet
 193703931
 Prepared by HLB on 7/11/18

Legend
 Target Property
 Historic Occupants/Uses



- Notes**
1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
 2. Historic Site features illustrated on this figure were digitized from multiple historic maps/sources, including City Assessor files, WDNR files, and Sanborn (R) Fire Insurance Maps. These features are provided for illustration purposes only; Stantec makes no warranty as to the accuracy of these features.
 3. Orthophotograph: Manitowoc County, 2017





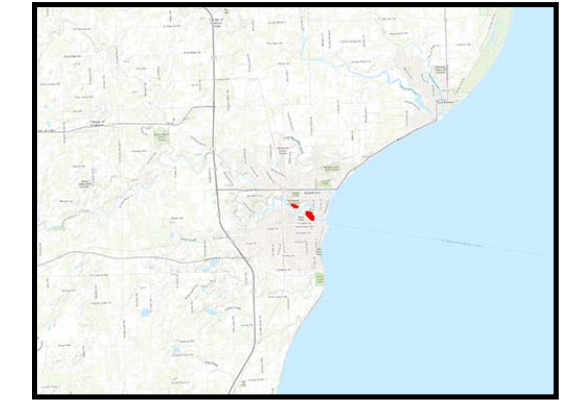
Feature ID	Notes on Historic Site Features
1	Frank J. Kerscher Warehouse
2	Railroad Depot
3	Railroad Freight House
4	Cinder Pit
5	Railroad Roundhouse
6	Railroad Turntable
7	Coal Shed
8	Coal Storage
9	Laird Lumber Company
10	Manitowoc Shipbuilding Company
11	Stephani-Strupp Oil Co. (Bulk Oil Station)
12	William H. Froehlich (Bulk Oil Station)
13	Manitowoc Shipbuilding Company
14	Shell Oil Company (Bulk Oil Station)
15	Standard Oil Company (Bulk Oil Station)
16	CM Shaw (Residential ?)
17	Unk
18	Manitowoc Iron and Metal Company
19	Northern Elevator Company Grain Elevator
20	Valders Stone and Marble, Inc.
21	Garage
22	Railroad Tool House
23	Railroad Wash House
24	Storage
25	Unknown
26	Residential Dwelling
27	Lake Park Oil, Inc. (Bulk Oil Station)
28	Unknown Bldg
29	Unk (possible AST?)
30	Unk (possible AST?)
31	Unk (possible AST?)
32	Shreaded Metal
33	Shreaded Metal
34	Wisconsin Public Service Comission

Figure No. **4**
 Title
Target Property and Historic Features

Client/Project
 City of Manitowoc
 USEPA Brownfield Assessment Grant

0 120 240 Feet
 193703931
 Prepared by HLB on 7/11/18

- Legend**
- Railroad Tracks ca. 1956 (white)
 - Target Property
 - Historic Site Features (see table for details)
 - Prior Site Features (City Records)**
 - Oil House (5)
 - Oil Tank (AST) (42)
 - Pump House (5)
 - UST (2)
 - Additional Site Features (WDNR Files)**
 - Cap Maintenance Area (1)
 - Former UST (10)
 - Product Piping (2)
 - Pump House (2)
 - Soil Excavation (3)



Notes

- Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
- Historic Site features illustrated on this figure were digitized from multiple historic maps/sources, including City Assessor files, WDNR files, and Sanborn (R) Fire Insurance Maps. These features are provided for illustration purposes only; Stantec makes no warranty as to the accuracy of these features.
- Orthophotograph: Manitowoc County, 2017



ATTACHMENT A

HEALTH AND SAFETY PLAN

Project: Manitowoc Brownfields
 Client: City of Manitowoc
 Location: Former RR Properties; Revere Drive and North 10th and North 11th Streets

File No.
 Project No: 193706269

- **Where a project with fieldwork does not require a Health and Safety Plan (HASP), a Risk Management Strategy (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 can be carried as a field resource as well, to complement use of the RMS2 – Field Level Risk Assessment.**

1. PROJECT SUMMARY:

Description of the work:

Oversee a geophysical survey at the Property

General

Does a Prime Contractor (Constructor) or Client HSE Program apply? Yes No

If yes, please identify.

If Client, Prime Contractor or Constructor provides Orientation and/or Training, attach a copy of the training record to the project file and provide a copy to the OSEC.

Does this project involve work outside of North America (International) Yes No

(If yes, you must contact international@stantec.com)

2. HAZARD RECOGNITION

Health Hazard (Check all appropriate categories)

Is this work where MSDSs are required? Yes No

If yes, copies of MSDSs must be available at project site and attached to this document.

Chemical

- Acids or Caustics
- Asbestos
- H₂S
- Halogenated Organic Compounds
- Heavy Metals
- Metals
- PCBs
- Pesticides / Herbicides
- Petroleum Hydrocarbons
- Poisonous Materials
- Solvents/Flammables
- Other – specify:

Physical

- Cold Stress/Frostbite
- Confined Space
- Driver Fatigue
- Dust / Dusty environments
- Flora or Fauna (type):Goldenrod
- Heat Stress / Sunburn
- Noise
- Radiation (type):
- Remote Location
- Rough Terrain/Heavy Brush
- Road / Trail Conditions
- Vibration
- Water
- Wildlife
- Working at Heights

Physical

Other – specify:

Ergonomic

- Force
- Posture
- Repetitive Motion
- Tools
- Workplace Design
- Other – specify:

Biological

- Bacterial Control Cultures
- Domestic Waste
- Medical Waste
- Sewage / Wastewater
- Other – specify:Ticks

Not Applicable

Safety Hazards (Check all appropriate categories)

<p>Machine</p> <hr/> <input type="checkbox"/> ATV <input type="checkbox"/> Automobile <input type="checkbox"/> Blades <input type="checkbox"/> Chains / Cables / Ropes <input type="checkbox"/> Crush Points <input type="checkbox"/> Cutting Edges <input type="checkbox"/> Free-Wheeling Point <input type="checkbox"/> Heavy Equipment <input type="checkbox"/> Helicopter <input type="checkbox"/> Hydraulic Systems <input type="checkbox"/> Levers <input type="checkbox"/> Moving Parts <input type="checkbox"/> Pinch Points <input type="checkbox"/> Rotating Parts (i.e. auger)	<p>Machine</p> <hr/> <input type="checkbox"/> Shear Points <input type="checkbox"/> Springs <input type="checkbox"/> Wrap Points <input type="checkbox"/> Other – specify: <p>Energy</p> <hr/> <input type="checkbox"/> Chemical <input type="checkbox"/> Electrical <input type="checkbox"/> Hydraulic <input type="checkbox"/> Mechanical <input type="checkbox"/> Pneumatic <input type="checkbox"/> Potential <input type="checkbox"/> Thermal <input type="checkbox"/> Other – specify:	<p>Material Handling & Task Completion</p> <hr/> <input type="checkbox"/> Bending <input type="checkbox"/> Falling/Flying Objects <input type="checkbox"/> Fatigue <input type="checkbox"/> Heavy Load (> 50 pounds) <input type="checkbox"/> Load (< 50 pounds) <input type="checkbox"/> Repetitive <input type="checkbox"/> Sharp/Rough Surface <input type="checkbox"/> Twisting <input type="checkbox"/> Other – specify: <p>Work Practices</p> <hr/> <input type="checkbox"/> Deviation of SWP <input type="checkbox"/> Not Applicable
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3. HAZARD ASSESSMENT

Check off all SWPs that apply to job

- **Unless required by client, printing SWPs is not required. However, review of all applicable SWPs before commencing work is mandatory. The most current version of each below is hyperlinked to allow review, and printing where desired.**

100 Series – General HSE

- [102 – Workplace Violence Prevention Program](#)
- [103 – Workplace Hazardous Materials Information System \(WHMIS\)](#)
- [104 - Hazard Communication](#)
- [105 – Personal Protective Equipment \(PPE\)](#)
- [107 – First Aid](#)
- [108 – Bloodborne Pathogens](#)
- [111 – Medical Surveillance](#)
- [113 – Heat Stress](#)
- [114 – Working in Cold Environments](#)
- [115 – Material Handling and Safe Lifting](#)
- [116 – Office Safety](#)
- [118 – Working Alone in the Field](#)
- [124 – Safe Driving](#)

- [125 – Workstation Ergonomics](#)

- [126 – Using a Chainsaw](#)
- [130 – Rail Safety](#)

200 Series – Construction HSE

- [201 – Fall Protection/Working from Heights](#)
- [202 – Ladder Safety](#)
- [203 – Aerial Work Platforms](#)
- [205 – Scaffold Safety](#)
- [206 – Hand and Portable Power Tools](#)
- [208 – Hoisting and Lifting](#)
- [213 – Utility Clearance](#)
- [214 – Entering Excavations and Trenches](#)
- [215 – Supervision of Hydro-Excavation Activities](#)
- [216 – Working Near Mobile Equipment](#)
- [217 – Forklift Operation](#)

300 Series – Hazardous Materials

- [304 – Asbestos Safety](#)
- [305 – Benzene Safety](#)
- [308 – Working in Geotechnical and Materials Laboratories](#)
- [309 – Silica Awareness](#)
- [310 – Compressed Gas Cylinders](#)
- [311 – Working in Environmental Laboratories](#)
- [312 – Fueling Gasoline Engines](#)
- [314 - Working Around Hazardous Waste and Wastewater](#)
- [315 - Arsenic Safety](#)
- [319 – Hydrogen Fluoride/Hydrofluoric Acid Safety](#)

400 Series – Program Specific

- [406 – Electrical Safety Program](#)
- [407 - Traffic Control and Protection Planning](#)
- [408 – Lock, Tag & Try \(LTT\)](#)
- [409 Respiratory Protection](#)
- [411 – Confined Space Entry](#)
- [414 – Hot Work](#)
- [416 – Supervision of Contracted Drilling Activities](#)

500 – PA/PC/Region Specific Programs

- [501 - Using the Spot Messenger System](#)
- [502 - Use and Handling of Nuclear Density Gauges](#)
- [504 - Backpack and Boat Mounted Electro-fishing](#)
- [507 – Aircraft Safety](#)
- [508 – Wildlife Encounters](#)
- [509 - Guideline for 2-way Radio Use on Radio Controlled Roads in BC](#)

500 – PA/PC/Region Specific Programs

- [510 – Working in Abandoned Buildings](#)
- [513 – Boat and Water Safety](#)
- [514 – Working On or Near Ice](#)
- [516 – Radiation Safety \(US\)](#)
- [517 – Safe Machete Use](#)
- [519 – Post-Disaster Building Entry](#)

Other SWPs not listed

- Select and list others here

SWP for this task being performed is not available – Quantified Hazard Assessment (RMS7) must be performed, please speak with Regional Safety Environment Coordinator (RSEC) for assistance.

4. PERSONAL PROTECTIVE EQUIPMENT (PPE)

Based on hazard recognition and assessment as identified in the documents above, identify required PPE.

- | | |
|--|---|
| <input checked="" type="checkbox"/> Head Protection (CSA or ANSI) – Type: ANSI Z89.1 | <input type="checkbox"/> Hearing Protection – Type: |
| <input checked="" type="checkbox"/> Work Boots (CSA or ANSI) – Type: ANSI Z41.1-1991 | <input type="checkbox"/> Respiratory Protection – Type: |
| <input checked="" type="checkbox"/> Eye/Face Protection – Type: Glasses | <input checked="" type="checkbox"/> Coveralls – Type: D |
| <input checked="" type="checkbox"/> High Visibility Vest – Type: Class 2 | <input type="checkbox"/> Fall Protection – Type: |
| <input checked="" type="checkbox"/> Gloves – Type: Leather | <input type="checkbox"/> Other - |

5. JOB ADMINISTRATION

Training

Is there any training required outside that identified in the applicable SWPs? Yes No
If yes, please identify:

Do workers require site-specific orientation? Yes No

Emergency Planning

It is the responsibility of the Project Manager to prepare and communicate an Emergency Preparedness and Response plan to all field staff.

Site Emergency #	911	Fire Dept.	911
Ambulance	911	Police	911
OSEC	608-220-7768	Environment Dept.	
		Regional HR	614-486-4383x3024

Stantec Corporate HSE Representative: US Central – Wes Cline (916) 281-7459

Stantec Public Relations/Media Contact*: US Central – Laura Krinke (651-967-4697)

Project Contact Information:

Title	Name	Company	Phone Number
Stantec Office	Harris Byers	Stantec	414-581-6476
Project Manager	Same		
Project Site Safety	Same		
Client or Owner	Paul Braun	City of Manitowoc	920-686-6930
Stantec After-Hours Number	Harris Byers		414-581-6476
Other: (specify)			
Other: (specify)			

First Aid facilities are located: Holy Family Memorial Hospital; 2300 Western Ave; Manitowoc

First Aiders on site are: Stantec Staff

Fire extinguishers are located: NA

Fire alarms are located: NA

SDSs are located: NA

Eyewash station is located: NA

Spill response equipment is: NA

The nearest phone is: On Person

Medical Assistance (Contact to discuss non-emergency signs or symptoms of work-related injury or illness): WorkCare – 1-888-449-7787

Record site-specific information below (evacuation signal, muster points, routes/map to clinic/hospital, etc.): See Attached Maps

For any injury, the employee shall:

1. Initiate necessary first aid or medical treatment.
2. Immediately notify their supervisor.

* Employees who are not authorized to speak on Stantec's behalf must not respond to inquiries from the investment community or media unless specifically asked to do so by an authorized spokesperson. All such inquiries shall be referred to Public Relations.

6. REVIEW, APPROVAL AND DISTRIBUTION

Employee Review

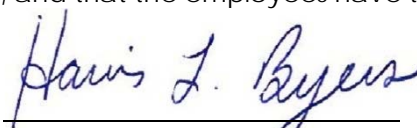
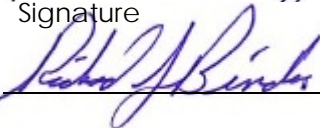
All employees conducting field work on this project will review the Risk Management Strategy (RMS1) and sign below acknowledging that they have been advised of the hazards, controls, PPE, and other safety equipment required, and have reviewed the applicable SWPs. Employees in the field who identify additional hazards not listed above shall 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 2.4 of the HSE Program Manual on Management of Change.

Please designate Team Lead for field activities below.

Reviewed by:	Harris Byers		8/13/18
	Print Name (Team Lead Field)	Signature	Date
	Print Name	Signature	Date
	Print Name	Signature	Date
	Print Name	Signature	Date
	Print Name	Signature	Date

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 verified that employees have all the equipment required to work safely, that the equipment is in working order, and that the employees have the knowledge required to operate/use this equipment.

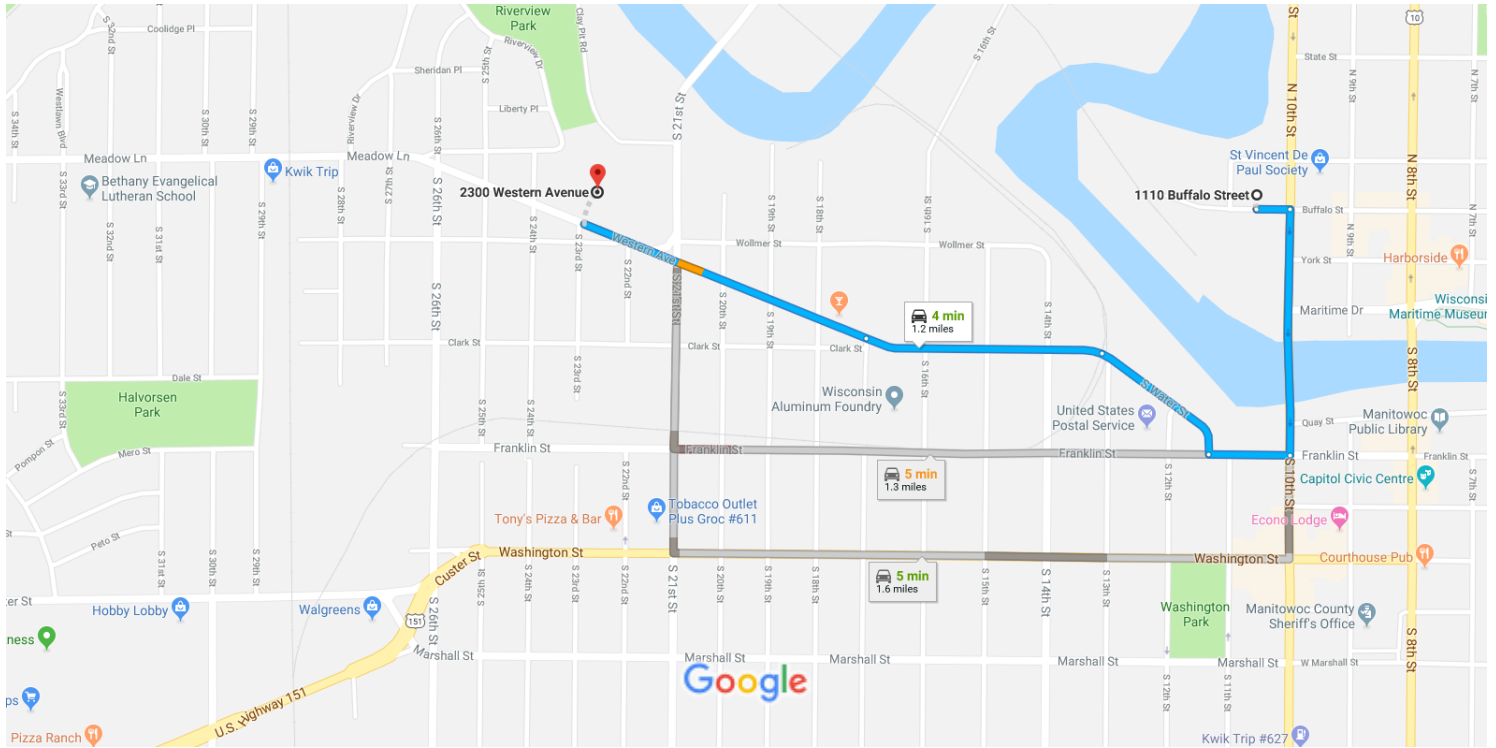
Prepared by:	Harris Byers		8/13/18
	Print Name	Signature	Date
Approved by:	Rick Binder		8/13/18
	Print Name (Project QA Manager)	Signature	Date

Distribution: Original: Project File
Copies: Field Staff



1110 Buffalo St, Manitowoc, WI 54220 to 2300 Western Ave, Manitowoc, WI 54220

Drive 1.2 miles, 4 min



Map data ©2018 Google 500 ft

1110 Buffalo St

Manitowoc, WI 54220

- ↑ 1. Head east on Buffalo St toward N 10th St 200 ft
- ↘ 2. Turn right at the 1st cross street onto N 10th St 0.3 mi
- ↘ 3. Turn right onto Franklin St 486 ft
- ↘ 4. Turn right onto S Water St 0.2 mi
- ↑ 5. Continue onto Clark St 0.3 mi
- ↑ 6. Continue onto Western Ave 0.3 mi
i Destination will be on the right

2300 Western Ave

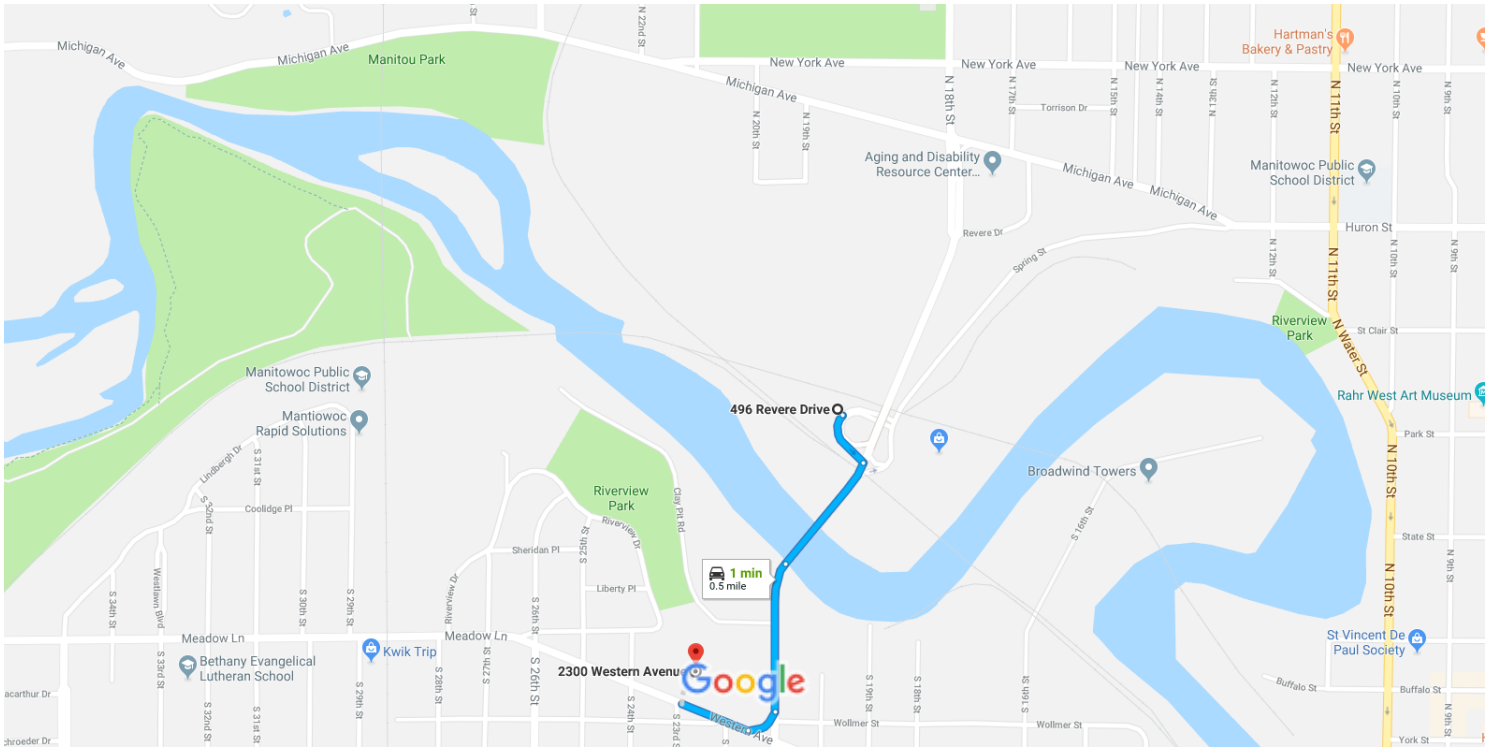
Manitowoc, WI 54220

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.



496 Revere Dr, Manitowoc, WI 54220 to 2300 Western Ave, Manitowoc, WI 54220

Drive 0.5 mile, 1 min



Map data ©2018 Google 500 ft



via Revere Dr and S 21st St
Fastest route, the usual traffic

1 min
0.5 mile

Project: _____ Project No: _____
 Client: _____
 Location: _____
 Start Date: _____

Work Description Provide a general description of the work to be conducted.

Documentation and Procedure Review

- 1. Risk Management Strategy (RMS1) form and/or Site Specific Health and Safety Plan signed and reviewed? Yes **No***
- 2. Emergency Response Plan reviewed? Yes **No*** N/A
- 3. Tested two-way communications (cell phone, satellite phone) and security measures? Yes **No***
- 4. Attended Client Site Health and Safety meeting? Yes **No*** N/A
- 5. Conducted Stantec site safety meeting with all workforces? Yes **No*** N/A
- 6. Are there any new or unexpected hazards not identified in the RMS1/HASP?
If yes, include in the Job Safety Analysis (JSA). Yes No
- 7. Working alone or remote work?
If yes, complete call in/out process – Safe Work form must be completed. Yes No

Notifications and Permits

- 8. Are work permits required for this site?
If yes, have they been completed and submitted as required? Yes No
 Yes **No***
- 9. Are utility locates required for this site?
If yes, have they been completed and reviewed? Yes No
 Yes **No***
- 10. Does the Client require any notification prior to starting the work?
If yes, has the notification been provided? Yes No
 Yes **No***

***Contact your Project Manager immediately.**

Personal Protective Equipment List specific PPE as needed. Verify type and inspect condition.

- | | | |
|--|--|---|
| <input type="checkbox"/> Head Protection Type: _____ | <input type="checkbox"/> Hearing Protection: _____ | <input type="checkbox"/> Gloves Type: _____ |
| <input type="checkbox"/> Foot Protection Type: _____ | <input type="checkbox"/> Respiratory Protection: _____ | <input type="checkbox"/> Water Safety Gear: _____ |
| <input type="checkbox"/> Eye Protection Type: _____ | <input type="checkbox"/> Fire Retardant Coveralls: _____ | <input type="checkbox"/> _____ |
| <input type="checkbox"/> High Visibility Vest: _____ | <input type="checkbox"/> Fall Protection: _____ | <input type="checkbox"/> _____ |

Tools and Equipment List specific equipment to be used. Verify type and inspect condition.

- | | | |
|--------------------------------|--------------------------------|--------------------------------|
| <input type="checkbox"/> _____ | <input type="checkbox"/> _____ | <input type="checkbox"/> _____ |
| <input type="checkbox"/> _____ | <input type="checkbox"/> _____ | <input type="checkbox"/> _____ |

Daily Tailgate Discussions/Subcontractor Input

Start	Time:	Weather:
Mid-Day	Time:	Weather:
Post-Day	Time:	Weather:

I know the hazards:

By signing here, you are stating the following:

1. I have been involved in the Job Safety Analysis and understand the hazards and risk control actions associated with each task I am about to perform.
2. I understand the permit to work requirements applicable to the work I am about to perform (if it includes permitted activities).
3. I am aware that no jobs or work (that is not risk-assessed) is to be performed.
4. I am aware of my obligation to **“Stop Work”** (See *Stop Work Section*).

I arrived and departed fit for duty:

5. I am physically and mentally fit for duty.
6. I am not under the influence of any type of medication, drugs or alcohol that could affect my ability to work safely.
7. I am aware of my responsibility to bring any illness, injury (regardless of where or when it occurred) or fatigue issue I may have to the attention of the Crew Lead.
8. I signed out uninjured unless I have otherwise informed the Crew Lead.

Insert fitness level under corresponding time column: Fit for Duty = F Alternate Plan = AP Team Lead to contact Project Manager for any personnel identified as AP			
Individual Name/Company Name/Signature	Time:	Time:	Time:

I will STOP the job any time anyone is concerned or uncertain about safety.

I will STOP the job if anyone identifies a hazard or additional mitigation not recorded.

I will be alert to any changes in personnel or their fitness level (AP), conditions at the work site or hazards.

If it is necessary to **STOP THE JOB**, I will reassess the task, hazards and mitigations; and then proceed only when safe to do so.



Are you ready to work safely?

Remember to

1. Stop and think
2. Look around
3. Assess risk
4. Control risks
5. Begin/resume work


Conclusion of day: I certify that the planned work activities are completed for the day and all injuries and first aids have been reported via RMS3.

Signature of Crew Lead: _____ Date: _____

Job Safety Analysis (JSA) Must be completed for all field activities.

Basic Job Steps	Potential Hazards	Controls to Reduce or Eliminate Hazard	Person Responsible

Review the hazard categories below and check the mitigation measures applicable to the identified scope of work.

<p>Environmental Hazards</p> <ol style="list-style-type: none"> 1. Work area clean <input type="checkbox"/> 2. Material storage identified <input type="checkbox"/> 3. Dust/Mist/Fume <input type="checkbox"/> 4. Noise in area <input type="checkbox"/> 5. Extreme temperatures <input type="checkbox"/> 6. Spill potential <input type="checkbox"/> 7. Waste containers needed <input type="checkbox"/> 8. Waste properly disposed <input type="checkbox"/> 9. Waste plan identified <input type="checkbox"/> 10. Excavation permit required <input type="checkbox"/> 11. Other workers in area <input type="checkbox"/> 12. Weather conditions <input type="checkbox"/> 13. MSDS reviewed <input type="checkbox"/> 	<p>Access/Egress Hazards</p> <ol style="list-style-type: none"> 23. Aerial life/Man basket (inspected & tagged) <input type="checkbox"/> 24. Scaffold (inspected & tagged) <input type="checkbox"/> 25. Ladders (tied off) <input type="checkbox"/> 26. Slips & trips <input type="checkbox"/> 27. Hoisting (tools, equipment) <input type="checkbox"/> 28. Evacuation (alarms, routes, ph. #) <input type="checkbox"/> 29. Confined space entry permit required <input type="checkbox"/> 	<p>Rigging & Hoisting Hazards</p> <ol style="list-style-type: none"> 38. Lift study required <input type="checkbox"/> 39. Proper tools used <input type="checkbox"/> 40. Tools inspected <input type="checkbox"/> 41. Equipment inspected <input type="checkbox"/> 42. Slings inspected <input type="checkbox"/> 43. Others working overhead/below <input type="checkbox"/> 44. Critical lift permit <input type="checkbox"/>
<p>Ergonomic Hazards</p> <ol style="list-style-type: none"> 14. Awkward body position <input type="checkbox"/> 15. Over extension <input type="checkbox"/> 16. Prolonged twisting/bending motion <input type="checkbox"/> 17. Working in a tight area <input type="checkbox"/> 18. Lift too heavy/awkward to lift <input type="checkbox"/> 19. Parts of body in line of fire <input type="checkbox"/> 20. Repetitive motion <input type="checkbox"/> 21. Hands not in line of sight <input type="checkbox"/> 22. Working above your head <input type="checkbox"/> 	 <p style="color: orange; font-weight: bold;">Remember to</p> <ol style="list-style-type: none"> 1. Stop and think 2. Look around 3. Assess risk 4. Control risks 5. Begin/resume work 	<p>Electrical Hazards</p> <ol style="list-style-type: none"> 45. GFI test <input type="checkbox"/> 46. Lighting levels too low <input type="checkbox"/> 47. Working on/near energized equipment <input type="checkbox"/> 48. Electrical cords condition <input type="checkbox"/> 49. Electrical tools condition <input type="checkbox"/> 50. Fire extinguisher <input type="checkbox"/> 51. Hot work or electrical permit required <input type="checkbox"/>
	<p>Overhead Hazards</p> <ol style="list-style-type: none"> 30. Barricades & signs in place <input type="checkbox"/> 31. Hole coverings identified <input type="checkbox"/> 32. Harness/lanyard inspected <input type="checkbox"/> 33. 100% Tie-off with harness <input type="checkbox"/> 34. Tie off points identified <input type="checkbox"/> 35. Falling items <input type="checkbox"/> 36. Foreign bodies in eyes <input type="checkbox"/> 37. Hoisting or moving loads overhead <input type="checkbox"/> 	<p>Personal Limitations/Hazards</p> <ol style="list-style-type: none"> 52. Procedure not available for task <input type="checkbox"/> 53. Confusing instructions <input type="checkbox"/> 54. No training for task or tools to be used <input type="checkbox"/> 55. First time performing the task <input type="checkbox"/> 56. Micro break (stretching/flexing) <input type="checkbox"/> 57. Report all injuries to your supervisor <input type="checkbox"/>

**It is important that all relevant hazards have plans in place to reduce risk.
Be sure that all associated permits are closed off at the end of the job.
Remember: Stop and Think**

Reviewed by Name and Signature: _____

Fit for Duty

Safety is influenced by many factors, but the most important is the health and well-being of Stantec’s employees and partners. Physical and mental health are just as important as good tools, good practices, and good job planning.

This card is designed to help you do a quick self-assessment of your physical and mental health. Any concerns resulting from your assessment regarding your ability to carry out your job responsibilities safely and in good health need to be discussed with your supervisor before starting work.

- Am I feeling good today and ready to work at my typical level of physical activity and responsibility?
- Do I have any sprains/strains, areas of weakness or soreness?
- Am I managing multiple sources of stress?
- Am I well hydrated?
- Any physically-demanding activities recently (chores, sports, hobbies)?
- Am I well-rested with a good energy level? When did I eat last?
- Am I taking any medications that can make me drowsy or adversely affect my safe performance?
- Any cuts/scrapes are clean and bandaged?
- Did I remember to bring with me my health maintenance medications (blood pressure, diabetes, cholesterol, heart, etc.)?

If your answers to any of the questions above indicate that you may not be ready to work, contact your supervisor immediately to discuss a plan of action.

LAST-MINUTE RISK ASSESSMENT (LMRA)

1. STOP and Think

2. Look around

Is the work area safe?
Will my work endanger others?
Will other people pose risk?

3. Assess risk

Do I clearly understand the task?
Will lifting or manual handling be required?
Potential for slips, trips, or falls?
Are there driving or vehicle concerns?
Have I considered all underground services?
Moving or pressurized equipment?
What could go wrong?

4. Control risk

What can I do to control hazards?
Do I have the right tools?
Is the SWP (Safe Work Practice) appropriate?
Do I have the appropriate PPE?
Are emergency plans in place?

5. Begin/Resume work

If you’re unsure, talk to your supervisor.



Are you ready to work safely?