

From: [Byers, Harris](#)
To: [Beggs, Tauren R - DNR](#)
Subject: RE: PFAS Scoping Statement for Phase I Construction Area of River Point
Date: Tuesday, September 7, 2021 8:36:29 PM
Attachments: [Fire Department Response on River Point.pdf](#)
Importance: High

**CAUTION: This email originated from outside the organization.
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Tauren:

A response to your question below is attached.

Please review and let me know if you need anything else to support you in your meeting.

Sincerely,

Harris Byers, Ph.D.

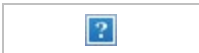
Sr. Brownfields Project Manager
Contaminant Hydrogeologist / Urban Geochemist

Direct: 414 581-6476

Harris.Byers@stantec.com

Stantec

12075 Corporate Parkway Suite 200
Mequon WI 53092-2649



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From: Beggs, Tauren R - DNR <Tauren.Beggs@wisconsin.gov>
Sent: Tuesday, September 7, 2021 11:48 AM
To: Byers, Harris <Harris.Byers@stantec.com>
Subject: RE: PFAS Scoping Statement for Phase I Construction Area of River Point

Thanks Harris

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 (preferred contact method during work at home)

From: Byers, Harris <Harris.Byers@stantec.com>
Sent: Tuesday, September 7, 2021 11:47 AM

To: Beggs, Tauren R - DNR <Tauren.Beggs@wisconsin.gov>

Subject: RE: PFAS Scoping Statement for Phase I Construction Area of River Point

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Good morning; just letting you know I'm working on this. Paul B. has been in meetings all morning. I know he and I looked at photos of the training event – and I'm almost 100% sure I know which structure it was.....but let me confirm.

I'll send over ASAP in a short letter (figures and photos if I can get them) so you can share with your team.

Sincerely,

Harris Byers, Ph.D.

Sr. Brownfields Project Manager
Contaminant Hydrogeologist / Urban Geochemist

Direct: 414 581-6476

Harris.Byers@stantec.com

Stantec
12075 Corporate Parkway Suite 200
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From: Beggs, Tauren R - DNR <Tauren.Beggs@wisconsin.gov>

Sent: Tuesday, September 7, 2021 8:58 AM

To: Byers, Harris <Harris.Byers@stantec.com>

Subject: RE: PFAS Scoping Statement for Phase I Construction Area of River Point

Hi Harris,

Where was the location of the former structure that was used for fire department training activities?
I am assuming I may get asked that question tomorrow.

Regards,

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 (preferred contact method during work at home)

From: Beggs, Tauren R - DNR
Sent: Tuesday, September 7, 2021 8:48 AM
To: Byers, Harris <Harris.Byers@stantec.com>
Subject: RE: PFAS Scoping Statement for Phase I Construction Area of River Point

No problem, I have time to review it before tomorrow. Thanks for sending it over Harris

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 (preferred contact method during work at home)

From: Byers, Harris <Harris.Byers@stantec.com>
Sent: Tuesday, September 7, 2021 8:37 AM
To: Beggs, Tauren R - DNR <Tauren.Beggs@wisconsin.gov>
Subject: RE: PFAS Scoping Statement for Phase I Construction Area of River Point

**CAUTION: This email originated from outside the organization.
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Good morning – I realize I sent this late in the day on a Friday before a holiday weekend, so I wanted to put a note towards the top of your inbox to take a look at the scoping statement and call/email with thoughts on strengthening the document.

Sincerely,

Harris Byers, Ph.D.

Sr. Brownfields Project Manager
Contaminant Hydrogeologist / Urban Geochemist

Direct: 414 581-6476

Harris.Byers@stantec.com

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From: Byers, Harris
Sent: Friday, September 3, 2021 4:00 PM
To: Beggs, Tauren R - DNR <Tauren.Beggs@wisconsin.gov>

Subject: PFAS Scoping Statement for Phase I Construction Area of River Point

Importance: High

Tauren:

From our earlier discussion, attached is a draft PFAS scoping statement for the Phase I Construction Area of River Point for your review.

Please let me know if you need additional information to present to the PFAS committee later this month.

Thanks for your continued support on the project!

Sincerely,

Harris Byers, Ph.D.

Sr. Brownfields Project Manager
Contaminant Hydrogeologist / Urban Geochemist

Direct: 414 581-6476

Harris.Byers@stantec.com

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12075 Corporate Parkway Suite 200
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September 7, 2021

Attention: Tauren Beggs
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
2984 Shawano Ave
Green Bay, WI 54313

Dear Mr. Beggs,

**Reference: Fire Department Response During Explosive Demolition of a Former Grain Elevator
1101 Buffalo Street
River Point District – Phase I Construction Area
Manitowoc, Wisconsin
BRRTS ID: 02-36-585491 (Open ERP); 07-36-583000 (LGU Exemption/ General Property)
Stantec Project #: 193708427**

The Stantec (2021b) *Summary of Prior Site Operations and PFAS Scoping Statement* letter evaluated the potential historic uses of per- and polyfluorinated alkyl substances (PFAS) in the Phase I Construction Area (outlined in green on Figure 1) at the River Point District (outlined in yellow on Figure 1) in the City of Manitowoc, Wisconsin. The Phase I Construction Area relative to historic leases issued by the former property owner (Wisconsin Central Limited) to previous industrial tenants (defined as unique parcel identification numbers) is illustrated on Figure 2.

Former Grain Elevator. In following up to our email discussion today, this letter describes a supplemental review of records related to the City of Manitowoc Fire Department's response to a building fire accidentally initiated by the prior owner during demolition of a grain elevator formerly located at 1101 Buffalo Street (PIN No. 000173080; Figure 2). Depending on the georeferencing of historic maps/orthophotographs, the eastern portion of the former grain elevator may be located within the Phase I Construction Area (Figure 3).

Sanborn® Fire Insurance Maps indicate a multi-story grain elevator was constructed on PIN 000173080 between 1894 and 1900, with expansion between 1900 and 1906 by the "Northern Grain Co". Significant expansion occurred between 1906 and 1919 by the "Northern Elevator Co." Historic City Directories published in 1964 and 1967 confirm the "Northern Elevator" was located at 1101 Buffalo Street. The occupants listed at 1101 Buffalo Street in subsequent City Directories included "Enreco Natural Feeds" (1990, 1992, 1995, 2000) and "Enreco, Inc." (2000 and 2001). Photographs (date unknown) of the structure when the grain elevator was occupied by Enreco are shown below.



Source: Stantec (2019) Phase I Environmental Site Assessment; Appendix E.

Fire Department Response. As noted in the Stantec (2019) Phase I ESA, the grain elevator had fallen into disrepair in the late 20th Century, and a demolition permit was issued to Wisconsin Central LTD on February 5, 2001. Utilities were disconnected from the structure in April 2001 and the building was subsequently demolished using explosives. During demolition, records indicate grain residues in the structure combusted

Reference: Fire Department Response During Explosive Demolition of a Former Grain Elevator; 1101 Buffalo Street; River Point District – Phase I Construction Area; Manitowoc, Wisconsin

and the building caught fire. The City of Manitowoc Fire Department responded to manage risks to nearby structures. City records do not indicate the City of Manitowoc Fire Department used aqueous film forming foam (AFFF) during their management of the fire at the structure.

Groundwater Quality Near the Former Grain Elevator.

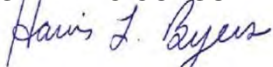
Use of AFFF to manage fires could result in a release of PFAS compounds to the subsurface. The two predominant PFAS compounds associated with AFFF are perfluorooctane sulfonate (PFOS) and perfluorohexane sulfonate (PFHxS). The concentrations of these two fluorinated compounds in groundwater (adapted from the Stantec (2021) *ch. NR 716 Site Investigation Report*) near the former grain elevator are summarized on Figure 3.

The potentiometric surface of shallow groundwater decreases in a southwestern direction from the former grain elevator. The concentrations of PFOS and PFHxS in groundwater from the nearest downgradient/sidegradient monitoring wells, where detected, are mostly single digit nanogram per kilogram concentrations.

Given the absence of records indicating AFFF was used onsite and the magnitude and gradient of detected compounds in groundwater, the “source” of detected PFAS compounds in groundwater does not appear to be located in the Phase I Construction Area. Therefore, PFAS are not considered constituents of concern for the *ch. NR 716 Site Investigation* on this portion of the River Point District. Stantec requests a written response from the WDNR which concurs with these findings.

Regards,

STANTEC CONSULTING SERVICES INC



Harris L. Byers, Ph.D.

Sr. Brownfields Project Manager

Email: Harris.Byers@Stantec.com

Attachments: Figures

SELECT REFERENCES

ITRC, 2020 (September), “Per- and Polyfluoroalkyl Substances (PFAS).” <https://pfas-1.itrcweb.org/>

Stantec, 2019, 10th Street Railroad Property, Manitowoc, Wisconsin, Phase I Environmental Site Assessment, March 21, 2019.

Stantec, 2021a, NR716 Site Investigation Report, River Point District Phase 1 Construction Area; Manitowoc, Wisconsin, July 19, 2021.

Stantec, 2021b, Summary of Prior Site Operations and PFAS Scoping Statement, September 3, 2021.

FIGURES

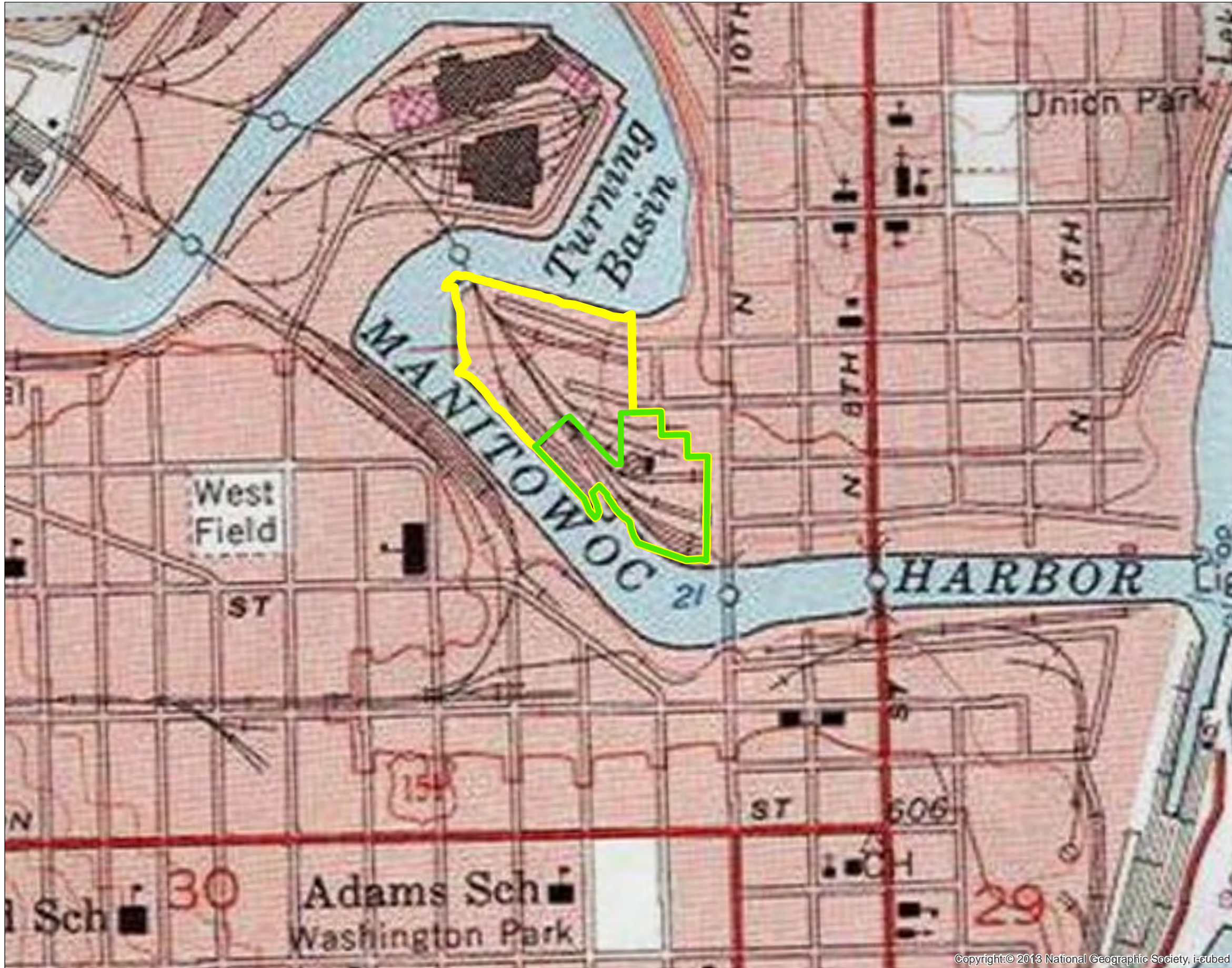



Figure No.
1
 Title
Property Location and Regional Topography
 Client/Project
 Site Investigation Project Area
 River Point District
 City of Manitowoc
 0 390 780 Feet
 Prepared by HLB on 4/21/21

Legend

- Site Investigation Project Area
- River Point District



- 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





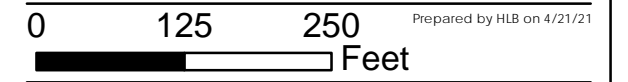
Figure No.

2

Title

Project Area and Property Identification Numbers

Client/Project
 Site Investigation Project Area
 River Point District
 City of Manitowoc



Legend

- Site Investigation Project Area
- River Point District
- Parcel Identification Numbers



NOTE:
 1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
 2. Orthophotograph: Manitowoc County, 2017



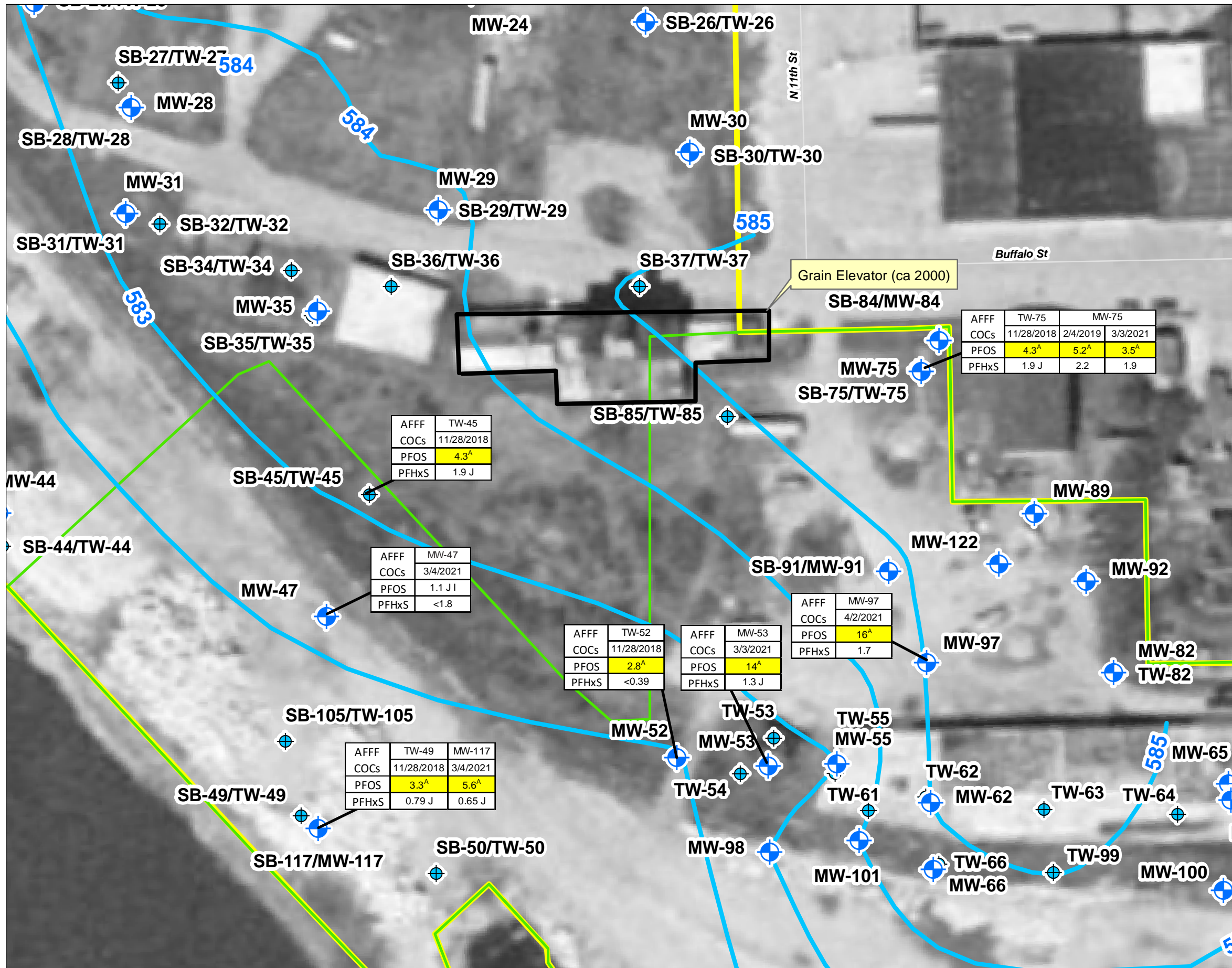
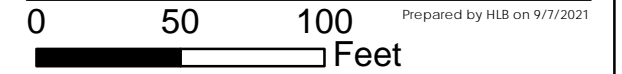


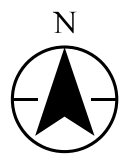
Figure No. **3**
 Title
2000 Orthophoto and Concentration of AFFF COCs in Groundwater (ng/L)

Client/Project
 Site Investigation Project Area
 River Point District
 City of Manitowoc



Legend

- Groundwater Elevation (ft amls)
 - Site Investigation Project
 - River Point District
- Sample Locations**
- ⊕ Monitoring Well (29)
 - ⊕ Soil Boring / Temp Well (32)



AFFF COCs	TW-75 11/28/2018	MW-75 2/4/2019	MW-75 3/3/2021
PFOS	4.3 ^A	5.2 ^A	3.5 ^A
PFHxS	1.9 J	2.2	1.9

AFFF COCs	TW-45 11/28/2018
PFOS	4.3 ^A
PFHxS	1.9 J

AFFF COCs	MW-47 3/4/2021
PFOS	1.1 J I
PFHxS	<1.8

AFFF COCs	TW-52 11/28/2018
PFOS	2.8 ^A
PFHxS	<0.39

AFFF COCs	MW-53 3/3/2021
PFOS	14 ^A
PFHxS	1.3 J

AFFF COCs	MW-97 4/2/2021
PFOS	16 ^A
PFHxS	1.7

AFFF COCs	TW-49 11/28/2018	MW-117 3/4/2021
PFOS	3.3 ^A	5.6 ^A
PFHxS	0.79 J	0.65 J

- Notes**
- Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
 - Orthophotograph: Manitowoc County, 2017
 - Fluorinated compounds commonly associated with aqueous film-forming foam (AFFF) include perfluorooctane sulfonate (PFOS) and perfluorohexane sulfonate (PFHxS).
 - Concentrations of PFOS greater than the proposed preventive action limit are highlighted yellow with an "A" superscript and concentrations greater than the proposed enforcement standard are highlighted red with a "AB" superscript.





September 3, 2021

Attention: Tauren Beggs
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
2984 Shawano Ave
Green Bay, WI 54313

Dear Mr. Beggs,

**Reference: Summary of Prior Site Operations and PFAS Scoping Statement
Phase I Construction Area
River Point District
Manitowoc, Wisconsin
BRRTS ID: 02-36-585491 (Open ERP); 02-36-176478 (Closed ERP); 02-36-000408 (Closed
ERP); 07-36-583000 (LGU Exemption/ General Property)
Stantec Project #: 193708427**

As a continuance of our phone conversation following your review of the Stantec (2021) *NR 716 Site Investigation Report for River Point District Phase 1 Construction Area*, we have prepared this letter to summarize prior operations in relation to detections of per- and polyfluorinated alkyl substances (PFAS) in groundwater at the Phase I Construction Area of the River Point District in Manitowoc (here in referred to as the SI Project Area). The following summarizes information detailed in numerous prior Stantec (2019, 2020a-c, and 2021a-f) reports.

SI Project Area Location

As illustrated on Figure 1, the SI Project Area is located in the northeast quarter of the northeast quarter of Section 30, Township 19 North, Range 24 East, in the City of Manitowoc, Manitowoc County, Wisconsin. The Property consists of all or portions of nine contiguous parcels of land totaling approximately 7.7 acres and forming the southeast and east-central portions of a larger 21-acre former railroad/industrial peninsula referred to locally as the "River Point District". The location of the 7.7-acre Property and the larger 21-acre River Point District relative to nearby topography is illustrated on Figure 1. The nine parcels comprising the Property are shown on the orthophotograph provided as Figure 2 and include Parcel IDs 173000, 173003, 173080, 173090, 173100, 173130, 173140, 173160, and 173170. It is important to note the Parcel IDs generally correspond to leases between the historic railroad owner and commercial tenants.

The approximate geographic coordinates of the center of the Property in the Wisconsin Transverse Mercator 1991 coordinate system are (X: 707175, Y: 404904); this was determined using the WDNR Remediation and Redevelopment Sites Map at a scale of 1 to 495 (WDNR, 2020a).

Historic Site Operations

As described in the Stantec (2019a, 2021a, and 2101f) Phase I ESAs, the Property appears undeveloped in 1835. The historic uses and occupancies of the Phase I Construction Area in the 19th century and 20th century are depicted on **Figure 3** and **Figure 4**, respectively, and key historic Site tenants are depicted on **Figure 5**. Historic uses of each parcel are summarized below.

Central Portion of the Property (Parcel ID 173100)

As depicted on Figure 3, the central portion of the Property operated as the Carl Zander Planing Mill and Factory from ~1870 through 1895, and included a planing mill, a warehouse and lumber storage. The Stantec (2019a) Phase I ESA notes a portion of this parcel was developed for bulk petroleum storage/distribution by the "Clarke Oil Company" (presumably a tenant) between 1912 and 1919. Bulk petroleum storage operations expanded between 1919 and 1927, at which point the operation consisted of eight oil tanks and a pump house (Figure 4). Bulk petroleum storage ceased between 1927 and 1946. The owner, Soo Line Minneapolis St. Paul and Sault St. Marie Railroad Company, leased the parcel to "JF Kerscher Co." on May 22, 1950, who constructed a large warehouse at the Property and utilized the Property for a variety of storage/commercial

Reference: Summary of Prior Site Operations and PFAS Scoping Statement; Phase I Construction Area; River Point District; Manitowoc, Wisconsin

uses (Figure 5). The warehouse was demolished in the later portion of the 20th century, and the slab was removed in August 2020 (Stantec, 2020b) to facilitate completion of this Site Investigation.

Southern Portion of the Property (Parcel IDs 173000, 173003, 173160, 173170)

As depicted on Figure 3, the southern portion of the Property operated as the Carl Zander Planing Mill and Factory from ~1870 through 1895 and included an engine room for the north-adjointing planing mill, steam boxes, various areas of lumber storage, and an office along North 10th Street. John Crainik and Co. operated a lumber yard on the southern portion of the Property by ~1870-1895 and the Manitowoc Boat Club constructed several boat houses adjacent to the Manitowoc River by 1887. As adapted from historic Sanborn® Fire Insurance Maps drawn in the late 19th Century, the southern/western portions of the Property were once part of the Manitowoc River (Figure 3). Placement of fill in the late 19th Century on the Property and nearby areas altered the bank of the Manitowoc River to its current location prior to acquisition of the River Point District (and presumably the Property) by the Western Railroad Company on July 22, 1895. The southern portion of the parcel was developed for railroad use by 1895 and remained in railroad use through most of the 20th century (Stantec, 2019a). Key features included multiple spur lines/ferry loading area/sheds/maintenance areas (ex. tool house and wash house identified as “22” and “23”, respectively on Figure 4) and depots (ex. freight house and transportation depot identified as “3” and “2”, respectively on Figure 4). A building permit was issued to the Soo Line Railroad on 11/24/1980 to raze the former railroad depot, which largely terminated railroad use of the Property, though at least one set of vacant steel rails remained through at least 2004. Additionally, as depicted on Figure 5, “Valders Stone and Marble, Inc.” leased the southern portion of the parcel for transloading stone prior to the CDA taking ownership in 2019.

Northern Portion of the Property (Parcel IDs 173130, 173080, 173090)

As depicted on Figure 3, the northern portion of the Property was used for lumber storage and occupied by a blacksmith shop by 1893. Per Stantec (2019a), a junk yard/metal scrap yard was constructed on and occupied the majority of the northern portion of the Property by 1900 and appears to have remained in operation through the latter portion of the 20th century. Identifiable features at the facility have included numerous scrap piles, buildings, and railroad spurs (Figure 4), operating under the name “Manitowoc Iron and Metal Company” (Figure 5). Orthophotography indicates the junk yard was asphalt paved between 2000 and 2006.

Western Portion of the Property (Parcel IDs 173140, 173170)

As depicted on Figure 3, the western portion of the Property was largely vacant in the 19th century but included a small storage area from 1883 through 1887. The western portion of the Property was developed for railroad use by 1895, including a railroad roundhouse (identified as “5” on Figure 4) and multiple spurs/tracks. Rail operations remained at on the western portion of the Property until the early 2000s when the remaining steel rails were removed.

Prior and Current Property Ownership

Ownership of the SI Project Area in the 19th Century likely corresponded to occupants/users, which included the “Carl Zander Planing Mill”, “John Crainik and Co.”, and “The Manitowoc Boat Club” in addition to other unknown property owners. Historic records indicate the Property was transferred from the Manitowoc Terminal Company to the Manitowoc and Western Railroad Company on July 22, 1895, which is consistent with railroad development in the late 19th century. Assessor records suggest the Property was later transferred to the Soo Line Railroad Company and ultimately transferred to Wisconsin Central, Ltd. sometime during the latter half of the 20th century. Railroad use of the Property ceased in the 1980s and the Property was decommissioned in the 2000s. The Community Development of the City of Manitowoc (City) acquired the Property on April 12, 2019 for the purpose of blight elimination and subsequently received a Local Government Unit (LGU) Environmental Liability Exemption from WDNR on March 18, 2019 with a BRRTS activity number of 07-36-583000. Approximately 1.6 acres of the SI Project Area were sold to River North, LLC on August 27, 2021 for redevelopment as a multi-family residential apartment building.

Reference: Summary of Prior Site Operations and PFAS Scoping Statement; Phase I Construction Area; River Point District; Manitowoc, Wisconsin

Identified PFAS Impacts to Groundwater

PFAS were an emerging class of constituents of concern when the City began their pre-acquisition due diligence activities in the summer of 2018. Based on prior industrial operations, PFAS were not identified as potential constituents of concern in the Stantec (2019) Phase I ESA. However, given other ongoing brownfield projects in Manitowoc (e.g. Former Mirro Facility located at 1512 Washington Street in Manitowoc; Open BRRTS Case No. 02-36-545108), the City decided to voluntarily include PFAS in the list of groundwater constituents evaluated in November 2018 and further evaluated in April 2019, as summarized in the Stantec (2020a) Phase II ESA.

A continued evaluation of PFAS to further delineate impacts was included in the Stantec (2021a) Site Investigation Workplan. A cumulative summary of detected PFAS compounds was included in the Stantec (2021e) Site Investigation Report. As presented in the Stantec (2021e) Site Investigation Report, the potentiometric surface of shallow groundwater measured in March 21 is illustrated on Figure 6 and the combined concentrations of perfluorooctane sulfonate + perfluorooctane sulfonamide + perfluorooctanoic acid + n-ethyl perfluorooctanesulfonamido ethanol + n-ethyl perfluorooctane sulfonamidoacetic acid + n-ethyl perfluorooctane sulfonamide are tabulated on Figure 7.

As illustrated on Figure 7, the greatest concentrations of PFAS in groundwater were consistently noted in the most hydraulically upgradient monitoring wells (e.g. MW-75, MW-84, and MW-89) with PFAS concentrations decreasing along the potentiometric surface of groundwater. This spatial distribution in concentration suggests the source(s) of PFAS in groundwater are likely offsite and the detection of PFAS in groundwater at the Property is a result of impacted groundwater migrating onto the property.

Although the detected PFAS compounds in groundwater in the SI Project Area are greater than the proposed groundwater quality criteria, the magnitude of the detections are two to three orders of magnitude less than at other properties where PFAS compounds were used in an industrial capacity (e.g. Former Mirro Facility located at 1512 Washington Street in Manitowoc; Open BRRTS Case No. 02-36-545108).

Evaluation of PFAS Uses Onsite

Prior Industrial Uses of PFAS. PFAS source evaluation relating to historical operations at the Property is based upon guidance provided in the RR-01 publication (WDNR, 2019) and also guidance provided by the Interstate Technology Regulatory Council (ITRC, 2020). Based on dates of operation and prior occupants/uses identified in the Stantec (2019a, 2021a, and 2101f) Phase I ESAs and summarized herein, we have not identified evidence that PFAS were formerly used at the Property.

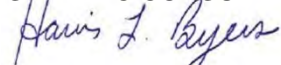
Fire Response Actions. As noted in the Stantec (2019) Phase I ESA, the fire department used a former structure adjacent to the SI Project Area for training activities. Records indicate the training did NOT include the use of Aqueous Film Forming Foam (AFFF), which is supported by the general absence of perfluorooctane sulfonate in groundwater at the River Point District.

PFAS Scoping Statement

Given the absence of records indicating PFAS were used onsite and the magnitude and gradient of detected PFAS compounds in groundwater, the "source" of detected PFAS compounds in groundwater does not appear to be located in the SI Project Area. Therefore, PFAS are not considered constituents of concern for the ch. NR 716 Site Investigation on this portion of the River Point District. Stantec requests a written response from the WDNR which concurs with these findings.

Regards,

STANTEC CONSULTING SERVICES INC

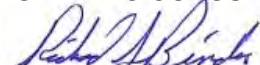


Harris L. Byers, Ph.D.

Sr. Brownfields Project Manager

Email: Harris.Byers@Stantec.com

STANTEC CONSULTING SERVICES INC.



Richard J. Binder, P.G., CPG

QA/QC Manager

Rick.Binder@stantec.com



September 3, 2021
Page 4 of 4

Reference: Summary of Prior Site Operations and PFAS Scoping Statement; Phase I Construction Area; River Point District; Manitowoc, Wisconsin

Attachments: Figures

REFERENCES

ITRC, 2020 (September), "Per- and Polyfluoroalkyl Substances (PFAS)."
<https://pfas-1.itrcweb.org/>

Stantec, 2019, 10th Street Railroad Property, Manitowoc, Wisconsin, Phase I Environmental Site Assessment, March 21, 2019.

Stantec, 2020a, Phase II Environmental Site Assessment, Riverpoint District; Manitowoc, Wisconsin, March 23, 2020.

Stantec, 2020b, Phase II Environmental Site Assessment, River Point District; Manitowoc, Wisconsin, 200 North 10th Street (Site 1), August 24, 2020.

Stantec, 2020c, Construction Documentation Report, 200 N 10th Street, Manitowoc, Wisconsin, November 4, 2020.

Stantec, 2021a, Site Investigation Workplan, Phase 1 Construction Area of the River Point District; Manitowoc, Wisconsin, 200 North 10th Street (Site 1), 1101 Buffalo Street (Site 2), January 13, 2021.

Stantec, 2021b, River Point District Lot 1 & Lot 2 Phase I Environmental Site Assessment, March 10, 2021.

Stantec, 2021c, Analysis of Brownfield Cleanup Alternatives, River Point District; Manitowoc, Wisconsin, May 4, 2021.

Stantec, 2021d, Decision Memorandum, River Point District; Manitowoc, Wisconsin, May 19, 2021.

Stantec, 2021e, NR716 Site Investigation Report, River Point District Phase 1 Construction Area; Manitowoc, Wisconsin, July 19, 2021.

Stantec, 2021f, Phase I ESA, 1000 River Point Drive Manitowoc, Wisconsin, August 25, 2021.

FIGURES

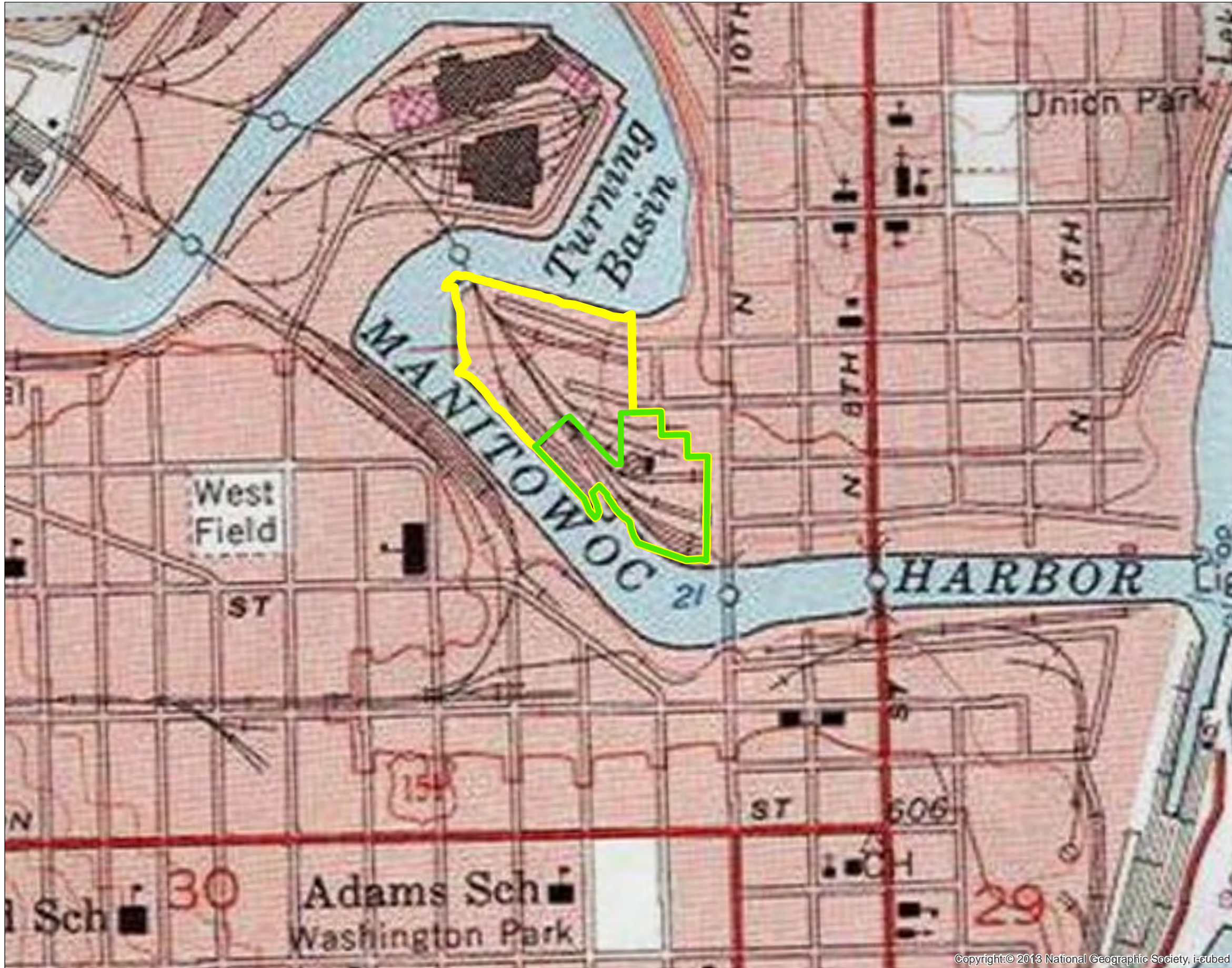



Figure No. **1**
 Title
Property Location and Regional Topography
 Client/Project
 Site Investigation Project Area
 River Point District
 City of Manitowoc
 0 390 780 Feet Prepared by HLB on 4/21/21

Legend

- Site Investigation Project Area
- River Point District



- 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





Figure No.

2

Title

Project Area and Property Identification Numbers

Client/Project
 Site Investigation Project Area
 River Point District
 City of Manitowoc

0 125 250 Feet
 Prepared by HLB on 4/21/21

Legend

Cap Maintenance Area



Site Definitions

Site 1 - 200 North 10th Street

Site 2 - 1101 Buffalo Street

Site 3 - 1110 Buffalo Street

Site 4 - 1103 Chicago Street

Site 5 - 1200 Buffalo Street

Site Investigation Project Area

River Point District

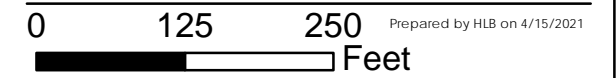
Parcel Identification Numbers

NOTE:
 1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
 2. Orthophotograph: Manitowoc County, 2017



Figure No. **3**
 Title
Historic Site Features (19th Century)

Client/Project
 Site Investigation Project Area
 River Point District
 City of Manitowoc



Legend

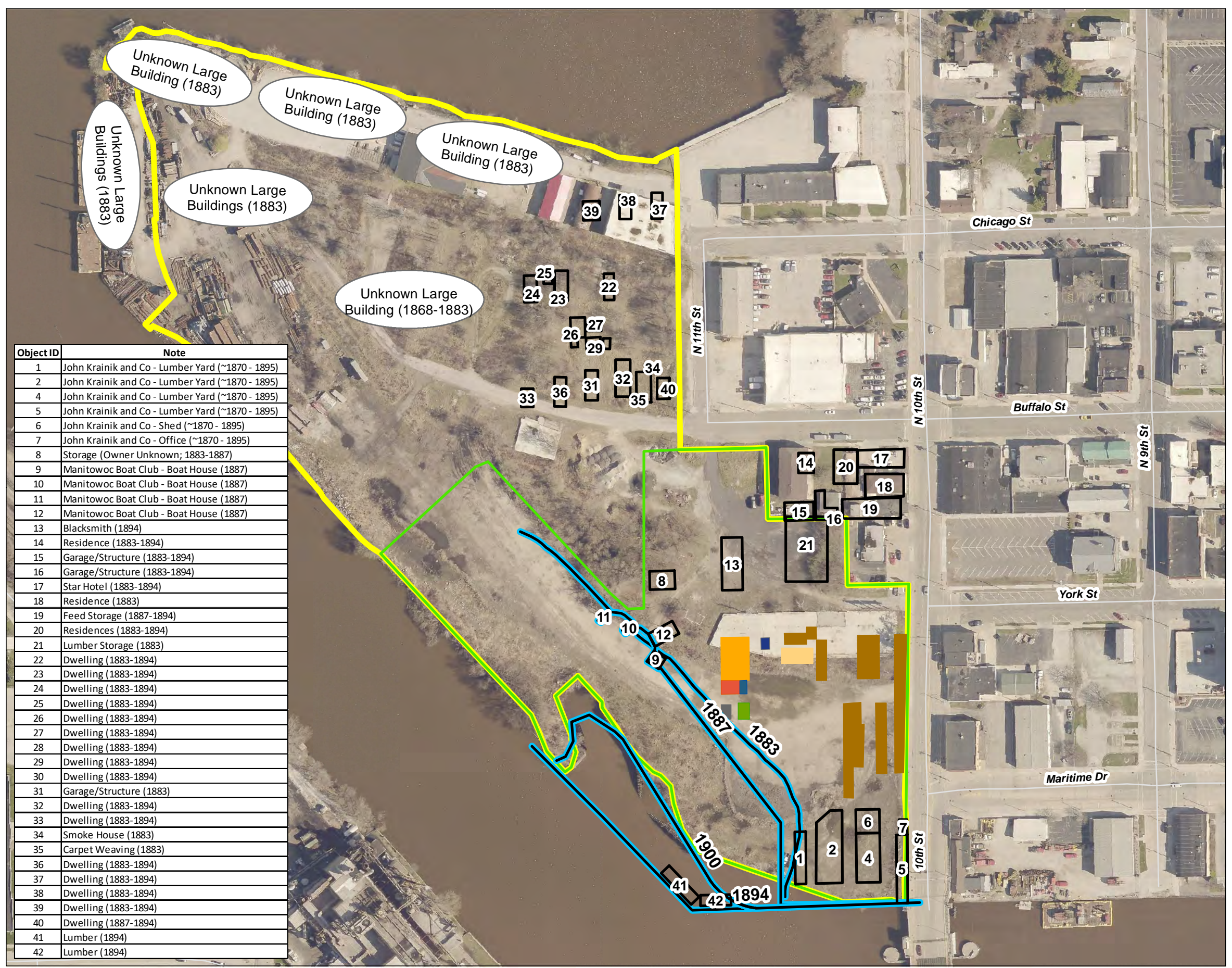
- Site Investigation Project Area
- River Point District
- Additional Site Features (see table)
- Bank of the Manitowoc River

Carl Zander Planing Mill and Factory (~1870s-1895)

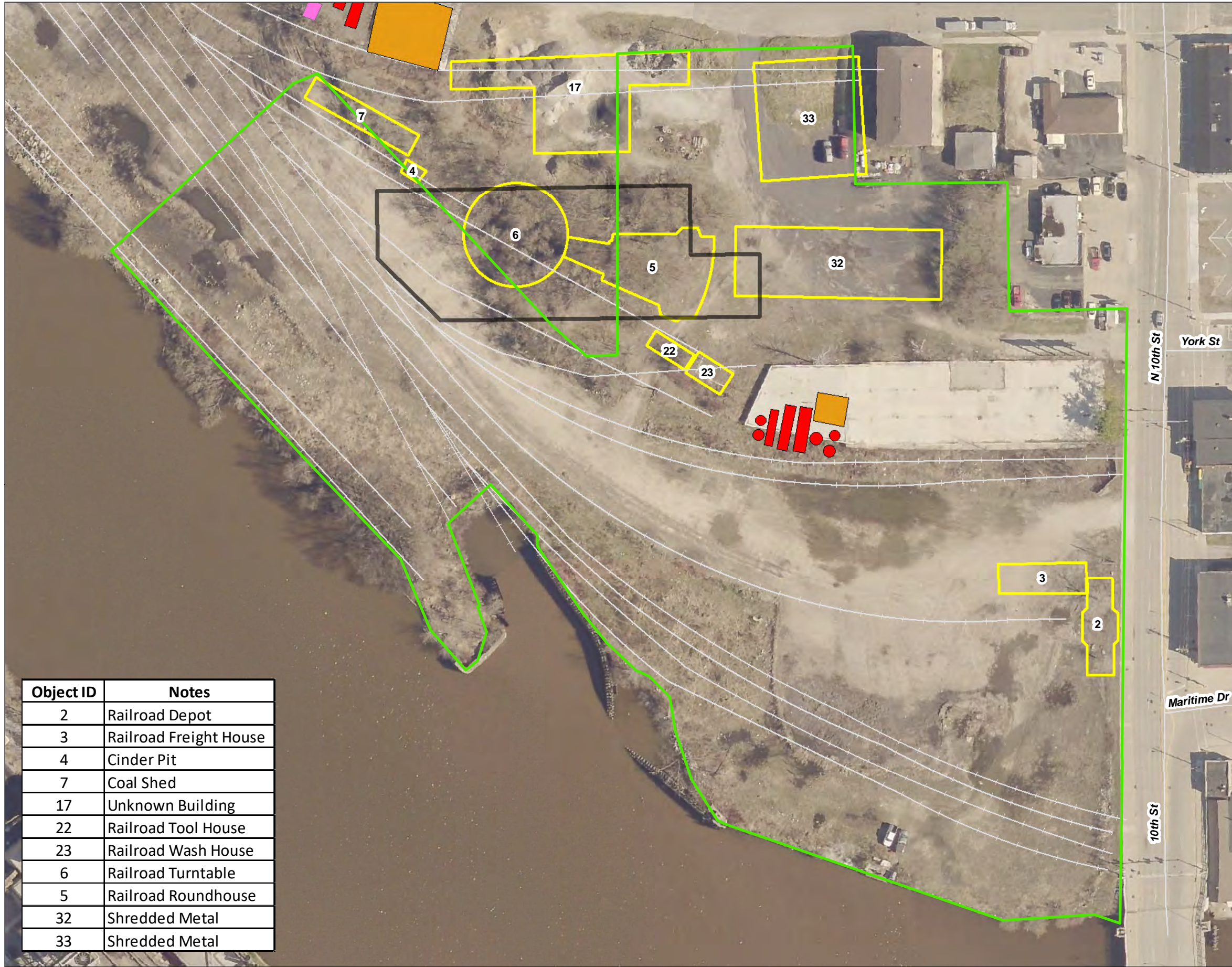
- Drying House
- Engine Room
- Lumber
- Planing Mill
- Warehouse
- Shavings
- Shed
- Steam Boxes

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



Object ID	Note
1	John Krainik and Co - Lumber Yard (~1870 - 1895)
2	John Krainik and Co - Lumber Yard (~1870 - 1895)
4	John Krainik and Co - Lumber Yard (~1870 - 1895)
5	John Krainik and Co - Lumber Yard (~1870 - 1895)
6	John Krainik and Co - Shed (~1870 - 1895)
7	John Krainik and Co - Office (~1870 - 1895)
8	Storage (Owner Unknown; 1883-1887)
9	Manitowoc Boat Club - Boat House (1887)
10	Manitowoc Boat Club - Boat House (1887)
11	Manitowoc Boat Club - Boat House (1887)
12	Manitowoc Boat Club - Boat House (1887)
13	Blacksmith (1894)
14	Residence (1883-1894)
15	Garage/Structure (1883-1894)
16	Garage/Structure (1883-1894)
17	Star Hotel (1883-1894)
18	Residence (1883)
19	Feed Storage (1887-1894)
20	Residences (1883-1894)
21	Lumber Storage (1883)
22	Dwelling (1883-1894)
23	Dwelling (1883-1894)
24	Dwelling (1883-1894)
25	Dwelling (1883-1894)
26	Dwelling (1883-1894)
27	Dwelling (1883-1894)
28	Dwelling (1883-1894)
29	Dwelling (1883-1894)
30	Dwelling (1883-1894)
31	Garage/Structure (1883)
32	Dwelling (1883-1894)
33	Dwelling (1883-1894)
34	Smoke House (1883)
35	Carpet Weaving (1883)
36	Dwelling (1883-1894)
37	Dwelling (1883-1894)
38	Dwelling (1883-1894)
39	Dwelling (1883-1894)
40	Dwelling (1887-1894)
41	Lumber (1894)
42	Lumber (1894)



Object ID	Notes
2	Railroad Depot
3	Railroad Freight House
4	Cinder Pit
7	Coal Shed
17	Unknown Building
22	Railroad Tool House
23	Railroad Wash House
6	Railroad Turntable
5	Railroad Roundhouse
32	Shredded Metal
33	Shredded Metal

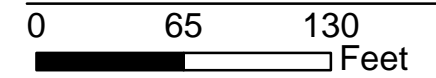
Figure No.

4

Title

Historic Site Features (20th Century)

Client/Project
 Site Investigation Project Area
 River Point District
 City of Manitowoc



Legend

Site Investigation Project Area

Cap Maintenance

Prior Site Features (City Records)

Oil House (2)

Oil Tank (AST) (10)

Pump House (1)

Railroad Spurs

Historic Site Features (see table for details)



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





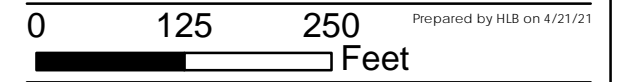
Figure No.

5





Title

Prior Site Tenants

Client/Project
 Site Investigation Project Area
 River Point District
 City of Manitowoc



Legend

-  Cap Maintenance Area
-  Prior Tenants
-  Site Investigation Project Area
-  River Point District



NOTE:
 1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
 2. Orthophotograph: Manitowoc County, 2017





Figure No. **6**
 Title
Groundwater Elevation at the River Point District (March 2021)
 Client/Project
 Site Investigation Project Area
 River Point District
 City of Manitowoc
 0 125 250 Feet
 Prepared by HLB on 4/21/21

Legend

- River Point District
- Site Investigation Project Area
- Groundwater Elevation (ft amsl)

Monitoring Locations

- ◆ Monitoring Well (NR 141) (38)
- ◆ Staff Gage (3)
- ⊕ Temporary Monitoring Well (16)

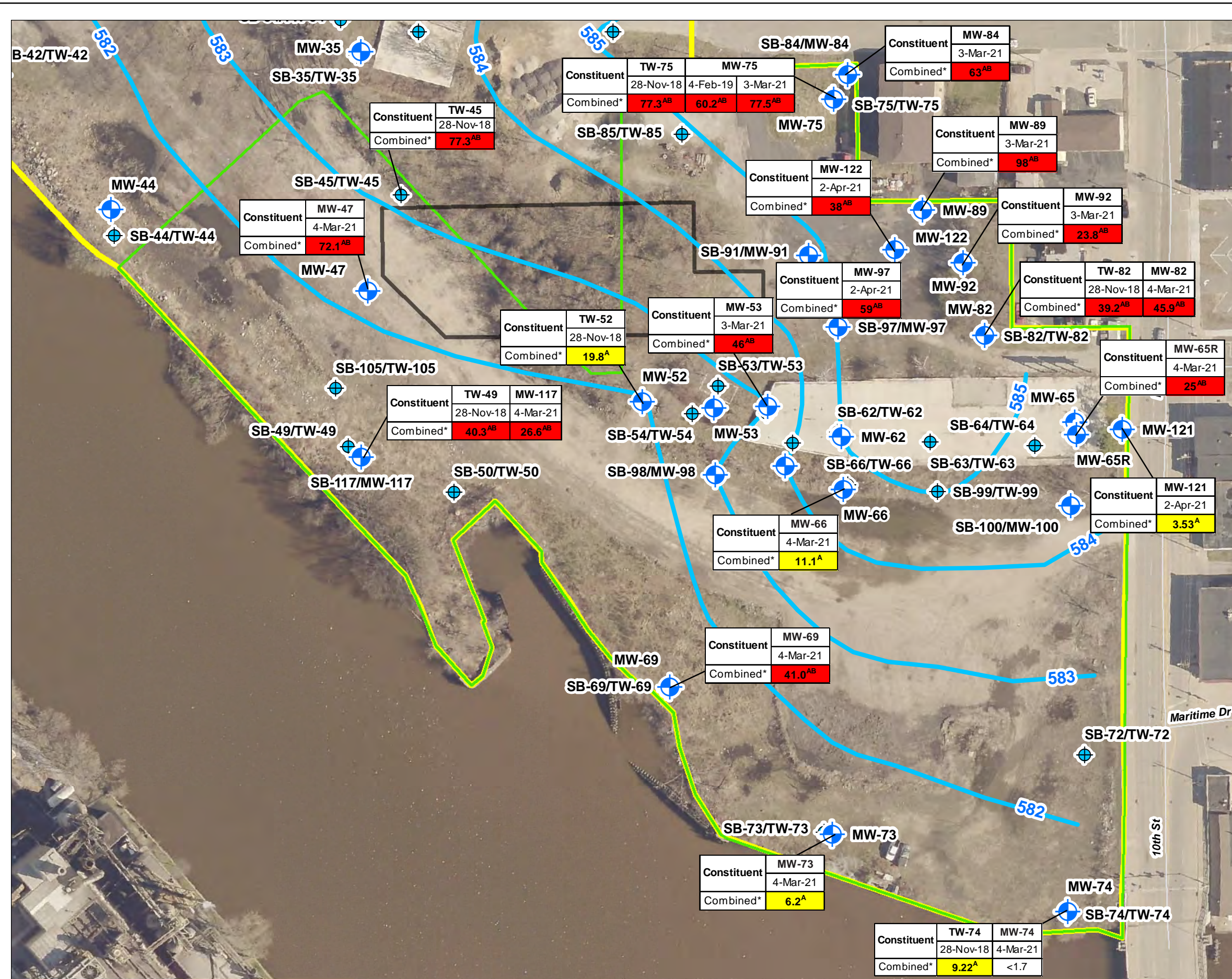


Figure No. 7
 Title: Concentration of Combined PFAS Compounds in Groundwater (ng/L)
 Client/Project: Site Investigation Project Area
 River Point District
 City of Manitowoc
 Prepared by HLB on 4/15/2021

Legend

- Groundwater Elevation (ft amsl)
- Site Investigation Project
- Cap Maintenance
- River Point District

Sample Locations

- Monitoring Well (26)
- Soil Boring / Temp Well (29)

Notes

- Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
- Orthophotograph: Manitowoc County, 2017
- The combined concentration of per- and polyfluoroalkyl substances (PFAS) include perfluorooctane sulfonate + perfluorooctane sulfonamide + perfluorooctanoic acid + n-ethyl perfluorooctanesulfonamido ethanol + n-ethyl perfluorooctane sulfonamidoacetic acid + n-ethyl perfluorooctane sulfonamide.
- Combined concentrations of PFAS compounds in nanograms per liter (ng/L) greater than the proposed preventive action limit are highlighted yellow with a "A" superscript.
- Combined concentrations of PFAS compounds greater than the proposed preventive action limit and proposed enforcement standard are highlighted red with a "AB" superscript.