230 W Monroe St., Suite 630
Chicago, IL 60606
T 312.578.0870
TRCcompanies.com

January 14, 2021

Bill Fitzpatrick, P.E., P.G.
Water Resources Engineer
Remediation & Redevelopment Program
Wisconsin Department of Natural Resources
101 S. Webster Street
P.O. Box 7921
Madison, WI 53707-7921

[sent electronically]

Re: Site Investigation Work Plan
Downstream of Hayton Mill Pond Dam
BRRTS 02-08-281506

Dear Mr. Fitzpatrick:

On behalf of Tecumseh Products Company ("Tecumseh"), enclosed is a *Site Investigation Work Plan* ("SIWP") and the associated *Quality Assurance Project Plan* ("QAPP") for approximately two river miles of the South Branch Manitowoc River downstream of the Hayton Millpond Dam ("Downstream Area") prepared by TRC Environmental Corporation ("TRC").

The SIWP was prepared in accordance with Sec. III (K) of the Negotiated Agreement (BRRTS #02-08-281506) ("Negotiated Agreement") between WDNR, TRC and Tecumseh entered in November 2018. This SIWP is being submitted in response to WDNR's response letter, dated November 18, 2020, regarding the January 8, 2019, *Sampling and Analysis Plan* ("Sampling Plan").

In addition, Tecumseh respectfully requests that WDNR establish a new BRRTS tracking number for Downstream of the Hayton Mill Pond Dam project as required by the Negotiated Agreement. Pursuant to Sec. IV (A) of the Negotiated Agreement, WDNR "…shall establish two new BRRTS tracking numbers in its statewide database titled "HARP Site Long-Term Monitoring" and "HARP Downstream of the Hayton Millpond Dam".

If you have any questions, please contact me at 312.800.5910 or via e-mail at charvey@trccompanies.com.

Sincerely,

TRC

Chris Harvey, PE
Principal

cc: William Nelson/WDNR – Madison, WI
S. Jason Smith/Tecumseh Products Co. – Paris, TN
Curtis Toll/Greenberg Traurig LLP – Philadelphia, PA
Marc Faecher/TRC – New Providence, NJ
Ronald Bock/TRC – Irvine, CA
Bruce Iverson/TRC – Madison, WI
David Crass/Michael Best & Friedrich LLP – Madison, WI

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

Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request

Form 4400-237 (R 12/18)

Notice: Use this form to request **a written response (on agency letterhead)** from the Department of Natural Resources (DNR) regarding technical assistance, a post-closure change to a site, a specialized agreement or liability clarification for Property with known or suspected environmental contamination. A fee will be required as is authorized by s. 292.55, Wis. Stats., and NR 749, Wis. Adm. Code., unless noted in the instructions below. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records law [ss. 19.31 - 19.39, Wis. Stats.].

Definitions

"Property" refers to the subject Property that is perceived to have been or has been impacted by the discharge of hazardous substances.

"Liability Clarification" refers to a written determination by the Department provided in response to a request made on this form. The response clarifies whether a person is or may become liable for the environmental contamination of a Property, as provided in s. 292.55, Wis. Stats.

"Technical Assistance" refers to the Department's assistance or comments on the planning and implementation of an environmental investigation or environmental cleanup on a Property in response to a request made on this form as provided in s. 292.55, Wis. Stats.

"Post-closure modification" refers to changes to Property boundaries and/or continuing obligations for Properties or sites that received closure letters for which continuing obligations have been applied or where contamination remains. Many, but not all, of these sites are included on the GIS Registry layer of RR Sites Map to provide public notice of residual contamination and continuing obligations.

Select the Correct Form

This from should be used to request the following from the DNR:

- Technical Assistance
- Liability Clarification
- Post-Closure Modifications
- Specialized Agreements (tax cancellation, negotiated agreements, etc.)

Do not use this form if one of the following applies:

- Request for an **off-site liability exemption or clarification** for Property that has been or is perceived to be contaminated by one or more hazardous substances that originated on another Property containing the source of the contamination. Use DNR's Off-Site Liability Exemption and Liability Clarification Application Form 4400-201.
- Submittal of an Environmental Assessment for the **Lender Liability Exemption**, s 292.21, Wis. Stats., **if no response or review by DNR is requested**. Use the Lender Liability Exemption Environmental Assessment Tracking Form 4400-196.
- Request for an **exemption to develop on a historic fill site** or licensed landfill. Use DNR's Form 4400-226 or 4400-226A.
- **Request for closure** for Property where the investigation and cleanup actions are completed. Use DNR's Case Closure - GIS Registry Form 4400-202.

All forms, publications and additional information are available on the internet at: dnr.wi.gov/topic/Brownfields/Pubs.html.

Instructions

1. Complete sections 1, 2, 6 and 7 for all requests. Be sure to provide adequate and complete information.
2. Select the type of assistance requested: Section 3 for technical assistance or post-closure modifications, Section 4 for a written determination or clarification of environmental liabilities; or Section 5 for a specialized agreement.
3. Include the fee payment that is listed in Section 3, 4, or 5, unless you are a "Voluntary Party" enrolled in the Voluntary Party Liability Exemption Program **and** the questions in Section 2 direct otherwise. Information on to whom and where to send the fee is found in Section 8 of this form.
4. Send the completed request, supporting materials and the fee to the appropriate DNR regional office where the Property is located. See the map on the last page of this form. A paper copy of the signed form and all reports and supporting materials shall be sent with an electronic copy of the form and supporting materials on a compact disk. For electronic document submittal requirements see: http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf

The time required for DNR's determination varies depending on the complexity of the site, and the clarity and completeness of the request and supporting documentation.

Section 1. Contact and Recipient Information

Requester Information

This is the person requesting technical assistance or a post-closure modification review, that his or her liability be clarified or a specialized agreement and is identified as the requester in Section 7. DNR will address its response letter to this person.

Last Name	First	MI	Organization/ Business Name		
Smith	Jason		Tecumseh Products Company		
Mailing Address			City	State	ZIP Code
2700 West Wood Street			Paris	TN	38242
Phone # (include area code)	Fax # (include area code)		Email		
(731) 644-8127	(731) 644-8156		jason.smith@tecumseh.com		

The requester listed above: (select all that apply)

- ☐ Is currently the owner
- ☐ Is considering selling the Property
- ☐ Is renting or leasing the Property
- ☐ Is considering acquiring the Property
- ☐ Is a lender with a mortgagee interest in the Property
- ☒ Other. Explain the status of the Property with respect to the applicant:

Responsible Party

Contact Information (to be contacted with questions about this request) ☒ Select if same as requester

Contact Last Name	First	MI	Organization/ Business Name		
Smith	Jason		Tecumseh Products Company		
Mailing Address			City	State	ZIP Code
2700 West Wood Street			Paris	TN	38242
Phone # (include area code)	Fax # (include area code)		Email		
(731) 644-8127	(731) 644-8156		jason.smith@tecumseh.com		

Environmental Consultant (if applicable)

Contact Last Name	First	MI	Organization/ Business Name		
Harvey	Chris		TRC Environmental Corporation		
Mailing Address			City	State	ZIP Code
230 West Monroe St., Suite 630			Chicago	IL	60606
Phone # (include area code)	Fax # (include area code)		Email		
(312) 800-5910	(312) 578-0877		charvey@trccompanies.com		

Property Owner (if different from requester)

Contact Last Name	First	MI	Organization/ Business Name		
NA					
Mailing Address			City	State	ZIP Code
Phone # (include area code)	Fax # (include area code)		Email		

Section 2. Property Information

Property Name			FID No. (if known)
Downstream of Hayton Mill Pond Dam			WID006116529
BRRTS No. (if known)	Parcel Identification Number		
02-08-281506	see attached list		
Street Address	City	State	ZIP Code
3755 Weeks Road	Chilton	WI	53014

County	Municipality where the Property is located	Property is composed of:	Property Size Acres
Calumet	○ City ◉ Town ○ Village of Charlestown	○ Single tax parcel ◉ Multiple tax parcels	266

1. Is a response needed by a specific date? (e.g., Property closing date) Note: Most requests are completed within 60 days. Please plan accordingly.

◉ No ○ Yes

Date requested by: _____

Reason:

2. Is the "Requester" enrolled as a Voluntary Party in the Voluntary Party Liability Exemption (VPLE) program?

◉ No. **Include the fee that is required for your request in Section 3, 4 or 5.**

○ Yes. **Do not include a separate fee.** This request will be billed separately through the VPLE Program.

Fill out the information in Section 3, 4 or 5 which corresponds with the type of request:
Section 3. Technical Assistance or Post-Closure Modifications;
Section 4. Liability Clarification; or Section 5. Specialized Agreement.

Section 3. Request for Technical Assistance or Post-Closure Modification

Select the type of technical assistance requested: **[Numbers in brackets are for WI DNR Use]**

☐ No Further Action Letter (NFA) (Immediate Actions) - NR 708.09, [183] - **Include a fee of $350.** Use for a written response to an immediate action after a discharge of a hazardous substance occurs. Generally, these are for a one-time spill event.

☒ Review of Site Investigation Work Plan - NR 716.09, [135] - **Include a fee of $700.**

☐ Review of Site Investigation Report - NR 716.15, [137] - **Include a fee of $1050.**

☐ Approval of a Site-Specific Soil Cleanup Standard - NR 720.10 or 12, [67] - **Include a fee of $1050.**

☐ Review of a Remedial Action Options Report - NR 722.13, [143] - **Include a fee of $1050.**

☐ Review of a Remedial Action Design Report - NR 724.09, [148] - **Include a fee of $1050.**

☐ Review of a Remedial Action Documentation Report - NR 724.15, [152] - **Include a fee of $350**

☐ Review of a Long-term Monitoring Plan - NR 724.17, [25] - **Include a fee of $425.**

☐ Review of an Operation and Maintenance Plan - NR 724.13, [192] - **Include a fee of $425.**

Other Technical Assistance - s. 292.55, Wis. Stats. [97] (For request to build on an abandoned landfill use Form 4400-226)

☐ Schedule a Technical Assistance Meeting - **Include a fee of $700.**

☐ Hazardous Waste Determination - **Include a fee of $700.**

☐ Other Technical Assistance - **Include a fee of $700.** Explain your request in an attachment.

Post-Closure Modifications - NR 727, [181]

☐ Post-Closure Modifications: Modification to Property boundaries and/or continuing obligations of a closed site or Property; sites may be on the GIS Registry. This also includes removal of a site or Property from the GIS Registry. **Include a fee of $1050, and:**

☐ Include a fee of $300 for sites with residual soil contamination; and

☐ Include a fee of $350 for sites with residual groundwater contamination, monitoring wells or for vapor intrusion continuing obligations.

Attach a description of the changes you are proposing, and documentation as to why the changes are needed (if the change to a Property, site or continuing obligation will result in revised maps, maintenance plans or photographs, those documents may be submitted later in the approval process, on a case-by-case basis).

Skip Sections 4 and 5 if the technical assistance you are requesting is listed above and complete Sections 6 and 7 of this form.

Section 5. Request for a Specialized Agreement

Select the type of agreement needed. Include the appropriate draft agreements and supporting materials. Complete Sections 6 and 7 of this form. More information and model draft agreements are available at: dnr.wi.gov/topic/Brownfields/lgu.html#tabx4.

☐ Tax cancellation agreement - s. 75.105(2)(d), Wis. Stats. [654]

- ❖ **Include a fee of $700, and the information listed below:**

(1) Phase I and II Environmental Site Assessment Reports,
(2) a copy of the Property deed with the correct legal description.

☐ Agreement for assignment of tax foreclosure judgement - s.75.106, Wis. Stats. [666]

- ❖ **Include a fee of $700, and the information listed below:**

(1) Phase I and II Environmental Site Assessment Reports,
(2) a copy of the Property deed with the correct legal description.

☐ Negotiated agreement - Enforceable contract for non-emergency remediation - s. 292.11(7)(d) and (e), Wis. Stats. [630]

- ❖ **Include a fee of $1400, and the information listed below:**

(1) a draft schedule for remediation; and,
(2) the name, mailing address, phone and email for each party to the agreement.

Section 6. Other Information Submitted

Identify all materials that are included with this request.

Send both a paper copy of the signed form and all reports and supporting materials, and an electronic copy of the form and all reports, including Environmental Site Assessment Reports, and supporting materials on a compact disk.

Include one copy of any document from any state agency files that you want the Department to review as part of this request. The person submitting this request is responsible for contacting other state agencies to obtain appropriate reports or information.

☐ Phase I Environmental Site Assessment Report - Date: _____
☐ Phase II Environmental Site Assessment Report - Date: _____
☐ Legal Description of Property (required for all liability requests and specialized agreements)
☐ Map of the Property (required for all liability requests and specialized agreements)
Analytical results of the following sampled media: Select all that apply and include date of collection.
☐ Groundwater ☐ Soil ☐ Sediment ☐ Other medium - Describe: _____
Date of Collection: _____
☐ A copy of the closure letter and submittal materials
☐ Draft tax cancellation agreement
☐ Draft agreement for assignment of tax foreclosure judgment
☒ Other report(s) or information - Describe: Site Investigation Work Plan

For Property with newly identified discharges of hazardous substances only: Has a notification of a discharge of a hazardous substance been sent to the DNR as required by s. NR 706.05(1)(b), Wis. Adm. Code?

◯ Yes - Date (if known): _____
◯ No

Note: The Notification for Hazardous Substance Discharge (non-emergency) form is available at: dnr.wi.gov/files/PDF/forms/4400/4400-225.pdf.

Section 7. Certification by the Person who completed this form

☐ I am the person submitting this request (requester)
☒ I prepared this request for: Tecumseh Products Company
Requester Name

I certify that I am familiar with the information submitted on this request, and that the information on and included with this request is true, accurate and complete to the best of my knowledge. I also certify I have the legal authority and the applicant's permission to make this request.

1/7/2021

Signature | Date Signed

Principal | (312) 800-5910

Title | Telephone Number (include area code)

Section 8. DNR Contacts and Addresses for Request Submittals

Send or deliver one paper copy and one electronic copy on a compact disk of the completed request, supporting materials, and fee to the region where the property is located to the address below. Contact a DNR regional brownfields specialist with any questions about this form or a specific situation involving a contaminated property. For electronic document submittal requirements see: http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf.

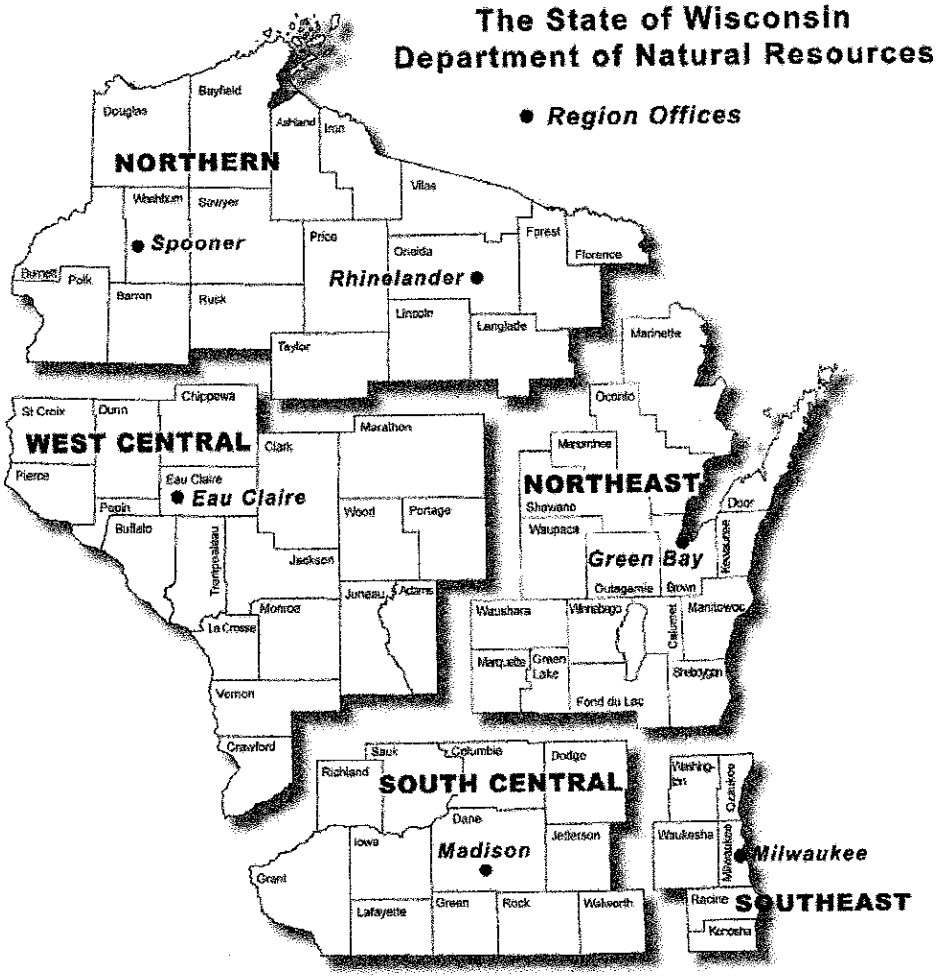
DNR NORTHERN REGION
Attn: RR Program Assistant
Department of Natural Resources
223 E Steinfest Rd Antigo, WI 54409

DNR NORTHEAST REGION
Attn: RR Program Assistant
Department of Natural Resources
2984 Shawano Avenue
Green Bay WI 54313

DNR SOUTH CENTRAL REGION
Attn: RR Program Assistant
Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg WI 53711

DNR SOUTHEAST REGION
Attn: RR Program Assistant
Department of Natural Resources
2300 North Martin Luther King Drive
Milwaukee WI 53212

DNR WEST CENTRAL REGION
Attn: RR Program Assistant
Department of Natural Resources
1300 Clairemont Ave.
Eau Claire WI 54702



Note: These are the Remediation and Redevelopment Program's designated regions. Other DNR program regional boundaries may be different.

DNR Use Only			
Date Received	Date Assigned	BRRTS Activity Code	BRRTS No. (if used)
DNR Reviewer	Comments		
Fee Enclosed? ◯ Yes ◯ No	Fee Amount $	Date Additional Information Requested	Date Requested for DNR Response Letter
Date Approved	Final Determination		

Owner	Parcel ID	Alternate Tax ID	Address	Acreage
Hayton Property Company LLC	006-0000-0000000-000-0-182016-00-330C	3826	5683 Hines Drive, Ann Arbor, MI 48108	4.32
Candy M Brassfield	006-0117-040020A-000-0-182016-00-3400	4383	N3770 Weeks Road, Charlestown, WI 53014	4.37
Roman P Gozdziewski	006-0117-030030A-000-0-182016-00-3400	4387	W1598 Center Road, Charlestown, WI 53014	0.85
Evergreen Valley Acres LLC	006-0117-030010A-000-0-182016-00-3400	4386	N3774 Weeks Road, Charlestown, WI 53014	0.7
Rex L Shipley	006-0117-020040A-000-0-182016-00-3400	4385	W1570 Center Street, Charlestown, WI 53014	0.75
RC Koehler Rentals LLC	006-0117-040010B-000-0-182016-00-3400	4384	W1603 Highway 151, Charlestown, WI 53014	9
Evergreen Valley Acres LLC	006-0117-040010A-000-0-182016-00-3400	4382	N3774 Weeks Road, Charlestown, WI 53014	3.37
Evergreen Valley Acres LLC	006-0000-0000000-000-0-182016-00-430B	3840	N3774 Weeks Road, Charlestown, WI 53014	3
Donald E Bonlander	006-0000-0000000-000-0-182016-00-430A	3839	N3742 North Mill Road, Charlestown, WI 53014	35.4699999
Johanna K Bonlander	006-0000-0000000-000-0-182016-00-440A	3843	N3742 North Mill Road, Charlestown, WI 53014	40
State of Wisconsin	006-0000-0000000-000-0-182016-00-410A	3837	101 South Webster Street, Madison, WI 53707	40
Therese Geiser	006-0000-0000000-000-0-182016-00-140A	3812	901 First Street, Kiel, WI 53042	15
State of Wisconsin	006-0000-0000000-000-0-182016-00-140B	3813	101 South Webster Street, Madison, WI 53707	5
State of Wisconsin DNR	006-0000-0000000-000-0-182015-00-230A	3790	101 South Webster Street, Madison, WI 53707	18
State of Wisconsin	006-0000-0000000-000-0-182015-00-230B	3791	101 South Webster Street, Madison, WI 53707	22
State of Wisconsin DNR	006-0000-0000000-000-0-182015-00-240B	3793	101 South Webster Street, Madison, WI 53707	19.68
Charles J Zarnoth Etux	006-0000-0000000-000-0-182015-00-240C	3794	N3166 South Mill Road, New Holstein, WI 53061	5.35
Charles J Zarnoth Etux	006-0000-0000000-000-0-182015-00-310B	3796	N3166 South Mill Road, New Holstein, WI 53061	9.15
State of Wisconsin	006-0000-0000000-000-0-182015-00-310A	3795	101 South Webster Street, Madison, WI 53707	30.4499999
				266.4599998

Site Investigation Work Plan Additional Investigation Sampling Plan

Downstream Hayton Millpond Dam
Chilton, Wisconsin

January 2021
Revision 1

BRRTS No. 02-08-281506

Prepared For:

Tecumseh Products Company

Prepared By:

TRC Environmental Corporation
230 W. Monroe Street, Suite 630
Chicago, IL 60606

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APPENDICES

1.0 Professional Certification

Consistent with NR 712.09(1) Wis. Adm. Code that submittals prepared by, or under the supervision of, a professional engineer, a hydrogeologist or a scientist shall be dated and certified by the professional engineer, hydrogeologist or scientist using the appropriate certification:

"I, Meredith Westover, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, am registered in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code, or licensed in accordance with the requirements of ch. GHSS 3, Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."

Meredith Westover, P.G. #1205

(SEAL)

2.0 Project Management Plan

Consistent with NR 716.09(2)(a) to (c) Wis. Adm. Code, the following information is provided:

1. **Site Address and Location:**
   - Street Address: 3770 Weeks Road, Chilton, Wisconsin 53014
   - Quarter-Quarter Section, Township, Range, and County: SE ¼ of SW ¼ of Section 16, SW ¼ and SE ¼ and NE ¼ of SE ¼ of Section 16, SE ¼ of NE ¼ of Section 16, SW ¼ and SE ¼ of NW ¼ of Section 15 of Township 18 North, Range 20 East, Calumet County
   - NR 716.15 (5) (d) Location Information: Refer to **Figure 1**
   - Latitude and Longitude: 88°07'06.40"W 44°01'29.00"N
   - Wisconsin Transverse Mercator (WTM) Coordinates: 1,300,324.49342 U.S. ft. N, 2,200,751.36494 U.S. ft. E
2. **Responsible Party:**
   - Tecumseh Products Company
     5683 Hines Drive
     Ann Arbor, MI 48108

     Ms. Carrie Williamson, General Counsel
     (734) 585-9616 direct
     carrie.williamson@tecumseh.com
3. **Name of the Consultant Involved with the Project:**
   - TRC Environmental Corporation
     230 West Monroe Street, Suite 630
     Chicago, IL 60606

     Mr. Chris Harvey, P.E.
     charvey@trccompanies.com
     (312) 909-0043 cell

While not a requirement of the Wisconsin Department of Natural Resources (WDNR), included in Appendix A is a completed Site Investigation Work Plan Preparation Checklist, Form 4400-316 (R 07/19) to reference how this Site Investigation Work Plan (SIWP) addresses the requirements of NR 716.07 Wis. Adm. Code.

3.0 Introduction

Consistent with NR 716.09(2)(d) Wis. Adm. Code, the following applicable information per NR 716.07 (Site Investigation Scoping) is provided.

3.1 Site History and Background

This SIWP outlines TRC Environmental Corporation's (TRC's) site investigation scoping and proposed sampling approach to conduct additional investigation downstream of the Hayton Millpond Dam. This additional investigation will expand on the reconnaissance study that was completed in August 2015.

In November 2018, WDNR, Tecumseh Products Company (Tecumseh), and TRC (for limited purposes only) executed a Negotiated Agreement (BRRTS #02-08-281506) (Negotiated Agreement), in which Tecumseh agreed to certain response actions and obligations (WDNR, 2018). In accordance with Section III.K. of the Negotiated Agreement, , Tecumseh was required to submit to the Department, within 60 days of the Agreement, a Wis. Admin. Code ch. NR 716 sampling plan to characterize the nature and extent of polychlorinated biphenyl (PCB) contamination below the Hayton Mill Pond Dam.

Tecumseh timely submitted a Sampling and Analysis Plan (SAP) to the WDNR on January 8, 2019, consistent with prior SAPs submitted concerning the Hayton Area Remediation Project (HARP). On November 18, 2020, WDNR rejected the SAP and requested a SIWP that follows Wis. Adm. Code ch. NR 716 including a revised Quality Assurance Project Plan (QAPP). This submittal complies with WDNR's request.

The Site includes the HARP and areas downstream of the dam at the Hayton Millpond where hazardous substances attributable to the former Tecumseh manufacturing facility may have migrated (WDNR, 2018). Significant PCB source removal (greater than 96% mass removal) and restoration efforts have been completed in HARP OU1 through OU4/Lower. No further action (NFA) letters have been received for OU1 through OU4/Upper (which terminates through a portion of Reach S). The lone remaining area of HARP which has not received an NFA determination is the OU4/Lower area. That area (OU4/Lower-Reach S) was remediated in 2019 and 2020 and a Remedial Documentation Report was submitted on January 4, 2021, and pursuant to Sec. IV (B) of the Negotiated Agreement WDNR "…shall issue a similar [NFA] for OU4 Lower of HARP" within 30 days of that submittal.

This SIWP deals solely with the proposed investigation area downstream of the dam and does not address the HARP Site. The area downstream of the dam is located over 8.5 miles downstream from the potential source, a former manufacturing facility in New Holstein, Wisconsin (see Section 3.2). Figure 1 shows the location of the proposed investigation area downstream of the Hayton Millpond Dam.

In August 2015, Tecumseh completed a reconnaissance study downstream of the dam at the request of the WDNR in its letter dated January 15, 2015 (WDNR, 2015). The methods and means used in this reconnaissance study were established in a WDNR-approved SAP (WDNR, 2013).

The reconnaissance study area extended from the Hayton Millpond Dam to approximately 1.5 miles downstream of the dam in the South Branch Manitowoc River. Seven transects, each

with three sample locations (right, left, and center of the channel looking downstream) were selected for the reconnaissance investigation. As requested by WDNR, stream sections likely to have soft sediment deposits (i.e. slow-moving sections and inside stream bends) were targeted.

On August 18, 2015, TRC collected sediment samples at each of the seven transect locations with oversight from a WDNR representative. Once a sampling transect was located, TRC and WDNR probed sediment within the river to find adequate soft sediment for sampling. All sampling locations were approved by WDNR during the investigation. The sampling locations were biased toward areas with soft sediment accumulation and did not include fast flowing portions of the river or areas dominated by sand, gravel, or sand and soft sediments combined.

Adequate soft sediment for sample collection was recovered at 20 of the 21 sampling locations. Only soft sediment (not gravel or clay) was collected for sample analyses. In cores where discernable layers were identified within soft sediment, care was taken to collect discrete samples representing each zone. In cores without discernable soft sediment layers, all soft sediment was collected for sampling. Soft sediment sampling zones ranged in thickness from the top 1.8 inches to 12.0 inches of sediment within the core tubes.

The total PCB concentrations from the August 18, 2015 sampling event ranged from non-detect with a 0.0286 mg/kg reporting limit (MR1-IC-901C) to 3.67 mg/kg (MR3-IC-003L). Only 5 of 20 samples had total PCB concentrations above 1 mg/kg, and only 2 samples had PCB concentrations above 2 mg/kg. A surface-area weighted average concentration (SWAC) of 0.53 mg/kg was calculated for the study area. This SWAC is biased high and is conservative, as sampling areas were focused on portions of the river having the greatest soft sediment accumulation and the sample cores did not include any native underlying material (e.g., hardpan clay) (TRC, 2015b).

The distribution and range of results indicated low levels of PCBs below the Hayton Millpond Dam. The sampling methodology did not “dilute” any sample results or otherwise bias the results. The SWAC confirmed the effectiveness of the upstream HARP remediation program, that there is no on-going source of contamination, and that there is little PCB-associated risk downstream of the dam (TRC, 2015b).

3.2 Type and Amount of Contamination

From 1956 to 2006, Tecumseh previously owned and operated a small engine manufacturing facility located at 1604 Michigan Avenue, New Holstein, Wisconsin (TRC, 2019). The property consists of approximately 39 acres (8 total parcels) that includes a developed section and an undeveloped lot. The former manufacturing building occupies approximately 404,700 square feet, and there are several outbuildings along the western portion of the property (TRC, 2019). Immediately north of the property is the storm water drainage ditch/outfall and agricultural fields. The storm sewer discharges to drainage ditches adjacent to the facility, which flow into Jordan Creek, Pine Creek, the Hayton Mill pond, and the South Branch Manitowoc River (downstream of the dam).

The facility is currently unoccupied and zoned as heavy industrial. Adjacent zoning includes heavy industrial to the north; heavy industrial, light industrial, and multi-family residential to the east; heavy industrial and commercial to the south; and heavy industrial and light industrial to the west. During Tecumseh’s ownership, the facility housed offices, production, testing, and storage areas. Procedures/structures previously identified as environmental concerns included the

chromium plating, painting, engine testing, foundry work, a wastewater treatment plant sludge pit, a coolant pit, fuel oil tanks, and hazardous waste storage (TRC, 2019). The environmental impacts in these areas were addressed under previous and on-going site investigations and remediation (see Section 3.3).

Based on historic sampling, low levels of PCBs in sediment are present below the dam. It has been stated in previous reports that the source of PCBs in HARP is a result of an accidental discharge into the storm sewer from a dielectric fluid/transformer. Aroclor 1254 is predominantly detected in the site sediments and only transformers were listed by Monsanto as a principal end use for Aroclor 1254 (Foth, 1996). The facility allegedly discharged PCBs and other hazardous substances to a storm sewer that drained to storm water ditches adjacent to the facility.

This SIWP focuses on further characterization of PCBs downstream of the Hayton Millpond Dam as required by the Negotiated Agreement.

3.3 History of Previous Hazardous Substance Discharges

The former Tecumseh facility in New Holstein has been the subject of environmental investigations and response since the early 1990s. Several environmental case numbers (i.e., BRRTS) have been opened with the WDNR, and most of these cases have been fully addressed and closed out, including several cases related to underground storage tanks (USTs). The bulk of the environmental work performed at the site has been done under BRRTS cases related to volatile organic compounds (VOCs) (BRRTS #02-08-100332 and #03-08-001070), and chromium (BRRTS #02-08-363333). The BRRTS cases related to VOCs have all been closed (TRC, 2019).

Tecumseh's operations included two chromium plating lines on the south end of the facility. The former chromium plating lines resulted in associated chromium impacts to soil and groundwater that are being addressed. Per- and polyfluoroalkyl substances (PFAS) were known to be used in some chromium plating processes to suppress the formation of chromium vapors. Based on a site investigation in February 2020, PFAS was detected in groundwater and BRRTS #02-08-585623 was assigned (TRC, 2020). The chromium BRRTS case and the PFAS case (BRRTS #02-08- 585623) are the only BRRTS cases open at the former facility at this time. These contaminants and cases are being addressed separately.

3.4 Environmental Media Potentially Affected

Potential or known environmental media affected includes soil, sediment, surface water, fish and other biological organisms. This SIWP focuses on soil and sediment to further characterize and assess PCBs and to evaluate the potential impact to receptors, including potential biological uptake.

Based on previous studies, low level PCBs have been detected in sediment. The sample locations were selected to be representative of the river such that data can be extrapolated to adjacent geomorphic settings. Channel gradient, meander bends, and depositional settings are parameters that have been considered in the sample location selection process.

Previous studies by WDNR showed low level PCB impacts to fish tissue downstream of the dam. The most recent results, dated July 2014, showed low level of PCB concentrations (0.15 ppm to 0.56 ppm) from Rock Bass. As would be expected based on the fish, higher PCB concentrations were detected in Carp (up to 3.9 ppm) and Greater Redhorse (up to 2.2 ppm). Concentrations in

fish tissue upstream of the dam had higher concentrations of PCBs prior to completion of the HARP remediation.

Previous studies by WDNR showed low level PCB concentrations in surface water downstream of the dam. The most recent samples, dated May 2003, showed low level of PCB concentrations (0.018 nanograms per litter [N/l]), immediately downstream of the dam. These samples were collected long before the HARP remediation activities were implemented and completed.

As part of the Negotiated Agreement, Tecumseh will complete Natural Recovery Monitoring of surface water and fish tissue, including downstream of the dam. The potentially affected surface water (Section III.M.) and fish tissue (Section III.L. and Exhibit G) sampling and monitoring will be completed in accordance with the Negotiated Agreement.

3.5 Location of Site and Proximity to Other Sources of Contamination

As mentioned above, downstream of Hayton Mill Pond Dam is more than 8.5 miles from the potential source, the former manufacturing facility in New Holstein, Wisconsin. Other sources of contamination have been addressed or are being addressed under separate environmental cases. In addition, HARP (located upstream of the dam) has been successfully remediated and is undergoing natural recovery and wetland mitigation monitoring.

Based on a review of WDNR's BRRTS website, a closed LUST site (BRRTS #03-08-000285) is located approximately 0.2 miles south of the river within ½ mile downstream of the dam. In addition, there are several open (shown below in Table A) and closed environmental cases in close proximity to the South Branch Manitowoc River upstream of the dam in Chilton, Wisconsin.

Table A

BRRTS No	Activity Name	Address	Municipality	Zip	FID	Activity Type	Comments
02-08-520157	Mirro Plt #20 (Former)	44 Walnut St	Chilton Cty	53014	408021130	ERP	
06-08-426946	Mirro Co Plt #20 (Former) (VPLE)	44 Walnut St	Chilton Cty	53014	408021130	VPLE	Previous Applicant-Newell Rubbermaid Inc 29 E Stephensen Freeport Il 61032
02-08-000040	Chilton Plating Co Inc	420 E Main St	Chilton	53014	408026300	ERP	
04-08-049117	Chilton Plating	420 E Main St	Chilton	53014	408026300	Spill	Old Spill ID: 931116-04
02-08-000632	Schneider Property	476 E Main St	Chilton		None	ERP	
02-08-561133	Chilton Metal Products (Former) - CVOC	300 E Breed St Site A	Chilton	53014	408013760	ERP	
03-08-000802	Chilton Metal Products	300 E Breed St Site A	Chilton	53014	408013760	LUST	
02-08-562919	Chilton E Main St (State Lead)	E Main St	Chilton		None	ERP	

3.6 Need for Permission from Property Owners to Allow Access

The sampling described in this SIWP will be performed on private and municipal property, so permission from these property owners will be required prior to work taking place. The property owners, parcel IDs, and their current mailing addresses along the South Branch of the Manitowoc River are listed in Table B below:

Table B

Owner Name	Parcel ID	Alternate Tax ID	Mailing Address
Hayton Property Company LLC	006-0000-0000000-000-0-182016-00-330C	3826	5683 Hines Drive Ann Arbor, MI 48108
Candy M Brassfield	006-0117-040020A-000-0-182016-00-3400	4383	N3770 Weeks Road Charlestown, WI 53014
Roman P Gozdziewski	006-0117-030030A-000-0-182016-00-3400	4387	W1598 Center Road Charlestown, WI 53014
Evergreen Valley Acres LLC	006-0117-030010A-000-0-182016-00-3400	4386	N3774 Weeks Road Charlestown, WI 53014
Rex L Shipley	006-0117-020040A-000-0-182016-00-3400	4385	W1570 Center Street Charlestown, WI 53014
RC Koehler Rentals LLC	006-0117-040010B-000-0-182016-00-3400	4384	W1603 Highway 151 Charlestown, WI 53014
Evergreen Valley Acres LLC	006-0117-040010A-000-0-182016-00-3400	4382	N3774 Weeks Road Charlestown, WI 53014
Evergreen Valley Acres LLC	006-0000-0000000-000-0-182016-00-430B	3840	N3774 Weeks Road Charlestown, WI 53014
Donald E Bonlander	006-0000-0000000-000-0-182016-00-430A	3839	N3742 North Mill Road Charlestown, WI 53014
Johanna K Bonlander	006-0000-0000000-000-0-182016-00-440A	3843	N3742 North Mill Road Charlestown, WI 53014
State of Wisconsin	006-0000-0000000-000-0-182016-00-410A	3837	101 South Webster Street Madison, WI 53707
Therese Geiser	006-0000-0000000-000-0-182016-00-140A	3812	901 First Street Kiel, WI 53042
State of Wisconsin	006-0000-0000000-000-0-182016-00-140B	3813	101 South Webster Street Madison, WI 53707
State of Wisconsin DNR	006-0000-0000000-000-0-182015-00-230A	3790	101 South Webster Street Madison, WI 53707
State of Wisconsin	006-0000-0000000-000-0-182015-00-230B	3791	101 South Webster Street Madison, WI 53707
State of Wisconsin DNR	006-0000-0000000-000-0-182015-00-240B	3793	101 South Webster Street Madison, WI 53707
Charles J Zarnoth Etux	006-0000-0000000-000-0-182015-00-240C	3794	N3166 South Mill Road New Holstein, WI 53061
Charles J Zarnoth Etux	006-0000-0000000-000-0-182015-00-310B	3796	N3166 South Mill Road New Holstein, WI 53061
State of Wisconsin	006-0000-0000000-000-0-182015-00-310A	3795	101 South Webster Street Madison, WI 53707

3.7 Potential or Known Impacts to Receptors

There are no potential or known impacts to receptors, including buildings, utilities or other subsurface improvements, and water supply wells within 1,200 feet of the outermost edge of contamination. Buildings are not within the floodplain of the South Branch Manitowoc River downstream of the dam. Based on a search of the WDNR Well Driller Viewer database, there are 10 water supply wells within 1,200 feet of the South Branch Manitowoc River study area downstream of the dam. Information about these wells is listed below in Table C. Groundwater is not known to be or potentially affected by PCBs, and there is no suspected interaction between the study area and the wells based on their screened intervals.

Table C

Well ID	Owner Name	Well Location	Approximate Distance from Study Area	Screened Interval
8DT969	N/A	SW 1/4 of Section 16 of T18N R20E	375 ft	41 to 73 ft bgs
AY011	Lydia Urban	N3770 Weeks Road, Chilton, WI 53014	180 ft	61 to 138 ft bgs
LV892	William Mueller	W1570 Center Street, Chilton, WI 53014	195 ft	52 to 160 ft bgs
VD212	Vince Bradley	W1580 Highway 151, Chilton, WI 53014	730 ft	72 to 180 ft bgs
8DT976	Lloyd Tiffany	SE 1/4 of SW 1/4 of Section 16 of T18N 20E	295 ft	42 to 141 ft bgs
8DT975	Leroy P. Coudex	SE 1/4 of SW 1/4 of Section 16 of T18N 20E	295 ft	58 to 154 ft bgs
8DT977	John Rahmer	SE 1/4 of SW 1/4 of Section 16 of T18N 20E	295 ft	63 to 117 ft bgs
JC805	Leroy Dudek	Route 4, Chilton, WI 53014	295 ft	42 to 130 ft bgs
HB013	Lucille Cullen	W1490 Highway 151, Chilton, WI 53014	570 ft	63 to 160 ft bgs
LV857	Lynette Wingers	W1421 Highway 151, Chilton, WI 53014	445 ft	105 to 200 ft bgs

3.8 Potential Impacts to Resources

Potential for impacts to the following resources were evaluated:

- **Sensitive species, habitats or ecosystems** - The study area downstream of the dam was reviewed for state and federally threatened and endangered species in June 2018 and again in December 2020 through the WDNR and U.S. Fish and Wildlife Service Information for Planning and Consultation (IPaC) online tool. This information was reviewed to determine the potential presence of sensitive species in the vicinity of the Study Area. The state review from 2018 and 2020 indicated no records of pertinent endangered resources being present within a 1-mile buffer (for terrestrial and wetland species) and a 2-mile buffer (for aquatic species) of the Study Area. The IPaC review indicated two federally-listed species may occur in the vicinity: the northern long-eared bat (*Myotis septentrionalis*) and whooping crane (*Grus americana*). It is unlikely potential PCB contamination directly impacted the northern long-eared bat or whooping crane. The northern long-eared bat roosts in trees and would therefore not likely have contact with impacted soils or sediment. The whooping crane uses western Wisconsin as a temporary stopover during migration and would not likely have been at the Study Area.

- **Wetlands** - Mapped wetlands are present within the Study Area. 71.43 acres of Wisconsin Wetland Inventory (WWI) mapped wetlands are present within the Study Area as well as three wetlands mapped as being too small to delineate. The classification and amount of mapped wetlands within the Study Area are provided in Table D below.

Table D

ID	Wetland Classification	Acres
E2K	Emergent/wet meadow; Narrow-leaved persistent; Wet soil, Palustrine	42.29
T3/S3K	Forested, Scrub/shrub	5.52
T3/E2K	Forested; Emergent/wet meadow; Narrow-leaved persistent; Wet soil, Palustrine	0.37
E1Hf	Emergent/wet meadow; Standing water, Palustrine; Farmed	1.80
T3K	Forested; Broadleaved deciduous' Wet soil, Palustrine	21.45
Point	Wetland too small to delineate	NA

Potential functional values or uses of wetlands include the following Water Quality Standards, as listed in chapter NR 103.03:

- Storm and flood water storage and retention and the moderation of water level fluctuation extremes;
- Hydrologic functions including the maintenance of dry season streamflow, the discharge of groundwater to a wetland, the recharge of groundwater from a wetland to another area and the flow of groundwater through a wetland;
- Filtration or storage of sediments, nutrients or toxic substances that would otherwise adversely impact the quality of other waters of the state;
- Shoreline protection against erosion through the dissipation of wave energy and water velocity and anchoring of sediments;
- Habitat for aquatic organisms in the food web including, but not limited to fish, crustaceans, mollusks, insects, annelids, planktonic organisms and the plants and animals upon which these aquatic organisms feed and depend upon for their needs in all life stages;
- Habitat for resident and transient wildlife species, including mammals, birds, reptiles and amphibians for breeding, resting, nesting, escape cover, travel corridors and food; and
- Recreational, cultural, educational, scientific and natural scenic beauty values and uses.

It is not anticipated that PCBs would directly or indirectly impact the first, second, or fourth Water Quality Standards. PCBs have the potential to impact the quality of waters of the state; habitat for aquatic organisms in the food web; habitat for resident and transient wildlife species; and recreational, cultural, educational, and scientific values and uses. PCBs are not anticipated to directly impact the natural scenic beauty of wetlands.

- **Outstanding resource waters (ORWs), and exceptional resource waters (ERWs)** - ORWs and ERWs as listed in chapters NR 102.10 NR 102.11 are not present within the Study Area. Therefore, potential impacts to these resources are not likely.

- **Sites or facilities of historical or archaeological significance** - Sources reviewed for sites or facilities of historical or archaeological significance included the Wisconsin Historic Preservation Database (WHPD), the Archaeological Report Inventory (ARI), the Archaeological Site Inventory (ASI), the Architecture History Inventory (AHI), the C.E. Brown Atlas and C.E. Brown Manuscripts, Wisconsin Land Economic Inventory plat maps (WLEI), General Land Office (GLO) survey plat maps, and the National Register of Historic Places (NRHP), Wisconsin Historical Aerial Image Finder (WHAIF) .

  The literature and archives review determined that two historic structures are recorded within the Study Area. The first is the West Street Bridge (AHI #2696). The bridge was replaced in 2019.The bridge was built in 1901 and carries Weeks Road over Pine Creek. The bridge was a rubble limestone bridge with six segmentally arched spans. The West Street Bridge was determined eligible for listing on the National Register of Historic Places (NRHP) and was added on October 14, 2016. The bridge was demolished and replaced in 2019 and is no longer eligible for listing on the NRHP.

  The second historic structure is the Old Mill Supper Club (AHI #2703). The building was built in 1908 and consists of a two-story vernacular mill building. The Old Mill Supper Club has not been reviewed for listing on the NRHP. No known archaeological sites, cemeteries, or previous archaeological surveys overlap the Study Area as it is currently outlined.

  As a standard part of a desktop review, cultural resources within one mile of the Study Area noted 11 archaeological sites, 2 cemeteries, and 15 historic buildings or structures. These cultural resources will not be affected by this site investigation.

3.9 Potential Interim and Remedial Actions Applicable to Release

There are no potential interim and remediation actions applicable to downstream of the Hayton Mill Pond Dam. The proposed investigation will help determine the need for an interim and/or remedial action for PCB contamination downstream of the dam.

3.10 Immediate or Interim Actions Taken or in Progress

As mentioned above, significant risk reduction has been achieved by the remedial activities completed in HARP. The remediation activities resulted in significant PCB source removal (greater than 96% mass removal) and restoration efforts have been completed in HARP OU1 through OU4/Lower between 2001 and 2020. The WDNR-approved remediation actions were completed by removing in-channel sediment and overbank soil in the dry. The excavated material was stabilized and disposed at a nearby landfill. More than 140,000 tons of sediment and soil was removed and disposed. All operable units have received NFA letters, except for OU4/Lower, which is pending. The remediation areas were successfully restored to approximately pre-existing conditions. The Site will progress to monitored natural recovery in accordance with the Negotiated Agreement.

3.11 Other Items

A comprehensive scoping and evaluation (as discussed in the subsections of Section 3.0) has been conducted for this SIWP and no other items, including climatological conditions and background water or soil quality information would affect the scope of the investigation.

3.12 Need to Gather Data to Determine Hydraulic Conductivity

Groundwater is not a known or potentially affected media for PCBs downstream of the dam. There is no need to gather data to determine the hydraulic conductivity.

3.13 Emerging Contaminants

An evaluation of emerging contaminants, PFAS and 1,4-dioxane is provided below.

3.13.1 PFAS

The PCB impacts associated with the Site downstream of the Hayton Dam are likely the result of a release of dielectric oil containing the PCB mixture Aroclor 1254 to the City of New Holstein stormwater system. The release likely occurred before 1970, between 1952 to 1969. It is believed to be the result of a single, relatively short duration release of less than 1,000-gallons of liquid material to the City of New Holsten stormwater system. The contamination was transported downstream in the HARP watershed by alternate scour and redeposition of contaminant-laden fine-grained soils during storm events (ATS, 2001).

PFAS has not been identified as an additive to PCB-containing dielectric oil in scientific literature (Glüge, et. al., 2020), by Interstate Technology & Regulatory Council's PFAS Team (ITRC, 2020), or in WDNR's guidance document on Site Investigation Scoping, DNR-RR-101E (WDNR, 2019). As such, PCB-containing dielectric fluid is not a known source of PFAS.

As discussed in Section 3.3, a PFAS investigation is currently underway at the facility (BRRTS #02-08-585623) associated with the chrome plating operations. This environmental case is being investigated and addressed separately.

Based on the above information, further investigation into PFAS downstream of the dam is not warranted.

3.13.2 1,4-Dioxane

1,4-dioxane is a common contaminant at sites contaminated with certain chlorinated solvents (particularly 1,1,1-trichloroethane) because of its widespread use as a stabilizer for chlorinated solvents (USEPA, 2017). The environmental cases involving chlorinated solvents and VOCs (BRRTS #02-08-100332 and #03-08-001070) associated with the former facility are closed (see Section 3.3). In addition, the contaminants of concern for this investigation are PCBs from dielectic fluid; as such, investigation into 1,4-dioxane downstream of the dam is not warranted.

3.14 Purpose

The purpose of this SIWP is to address the Wis. Adm. Code NR 716 requirements to submit a work plan to conduct the site characterization of PCB contamination downstream of the Hayton Millpond Dam, as required by the Negotiated Agreement. In addition, the proposed investigation will evaluate the potential PCB impacts to receptors and to determine the need for an interim and/or remedial action for PCB contamination downstream of the Hayton Millpond Dam.

4.0 Site Description

Consistent with NR 716.09(2)(e) Wis. Adm. Code, this section provides basic information on the physiographical and geological setting to choose sampling methods and locations.

4.1 Existing Topography

In consideration of site conditions, this physiographical and geological setting factor (i.e., existing topography, including prominent topographic features) were considered in the choice of sampling methods, and sample locations have been accounted for based on these factors.

4.2 Surface Water Drainage Patterns and Significant Hydrogeologic Features

In consideration of site conditions, this physiographical and geological setting factor (e.g., surface waters, springs, surface water drainage basins, divides, wetlands and whether the site lies within a floodplain or floodway) will not affect the choice of sampling methods, and sample locations have been accounted for based on these factors.

4.3 Texture and Classification of Surface Soils

In consideration of site conditions, this physiographical and geological setting factor will not affect the choice of sampling methods, and sample locations have been accounted for based on these factors.

4.4 Nature and Distribution of Geologic Materials

In consideration of site conditions, this physiographical and geological setting factor will not affect the choice of sampling methods, and sample locations have been accounted for based on these factors.

4.5 General Hydrogeologic Information

In consideration of site conditions, this physiographical and geological setting factor (i.e., thickness and type of unconsolidated materials and the type and nature of bedrock) will not affect the choice of sampling methods, and sample locations have been accounted for based on these factors.

4.6 Potential Hazardous Substance Migration Pathways

In consideration of site conditions, this physiographical and geological setting factor will not affect the choice of sampling methods, and sample locations have been accounted for based on these factors.

5.0 Sampling and Analysis Plan

Consistent with NR 716.09(2)(f) and (g) Wis. Adm. Code, this section provides information on the proposed sampling and analysis strategy. Samples will be collected and analyzed in accordance with the Quality Assurance Project Plan (QAPP) developed for the South Branch Manitowoc River investigation area (TRC, 2021).

5.1 Scope of Work

Based on the purposes discussed in Section 3.14, the SIWP includes the following tasks:

- **In-Channel Sediment Sampling**
  - Up to three sediment cores will be collected at each of 21 sampling transect locations shown on Figure 2 (up to 63 cores).
  - At each transect, one core will be collected within 10 feet of the left bank, one core will be collected within 10 feet of the right bank, and one core will be collected at the approximate center of the channel where sediment is present. Each recovered sediment core will be physically logged.
  - A total of 21 sediment samples will be processed for laboratory analysis, one from each of the sampling transects shown on Figure 2, following the sample selection process described in Section 5.3.3, below.
- **Overbank Soil Sampling**
  - A total of 16 overbank soil samples will be collected at the eight transect with overbank sample locations shown on Figure 2.
  - Two samples will be collected at each of the eight transects; one from either side of the eight transect locations.
  - These first eight sampling transects are within the first approximately 4,000 feet below the Hayton Mill Pond Dam.
  - These results will be used to evaluate the overbank soil conditions and potential source areas.

The rationale for sample locations is described in the following Section 5.2.

5.2 Sample Location Rationale

TRC will collect 21 total sediment samples (one from each of the 21 sampling transects), and 16 overbank soil samples (one sample on either side of the river at eight transect locations, shown on Figure 2) from the first eight sampling transects within the first approximately 4,000 feet below the Hayton Mill Pond Dam for laboratory analysis. The sample locations were selected to evaluate the overbank soil conditions and potential source areas. Figure 2 shows the sampling transect locations. The locations of the proposed samples were determined using the following guidelines:

- To characterize the nature and extent of potential low-level PCB impacts, samples are based on a grid of approximately 500 feet transect interval.

- Each transect location was evaluated and slightly modified to account for geomorphological characteristics and the results of previous investigations. A transect location was slightly modified to a river bend or wider section of the river that may have higher rates of sediment accumulation. Channel gradient, proximity to the river channel and meander bends, surface elevation, depositional setting, and number of similar surfaces were factors considered in the sample location selection process.

- A transect location was slightly modified if it was near a previous sediment sample location with slightly higher PCB concentrations to confirm those previous sample results.

- Based on WDNR's concerns that there is a potential source area in the floodplain downstream of the Hayton Mill Pond Dam, TRC proposes to collect overbank soil samples from each transect within 4,000 feet of the dam. This distance correlates to the higher PCB concentrations detected in previous sediment sample events.

- The overbank soil samples will be collected approximately five feet from the top of the river bank.

The following Sections describe the in-channel sediment sampling and overbank soil sampling plans in more detail.

5.3 In-Channel Sediment Sample Collection

This section describes the sampling equipment and methodology for the collection of sediment samples in the Manitowoc River from the locations described above.

5.3.1 Sediment Sampling Locations

Prior to mobilizing to the field, the site will be cleared through Digger's Hotline and the site will be marked to indicate identified underground utilities that cross the river. Riparian landowners whose land will be accessed along the investigation area will be contacted prior to the initiation of field activities (see Section 3.6).

The locations of the proposed sediment transects will be pre-loaded into a global positioning system (GPS) receiver capable of sub-meter accuracy (Trimble Geoexplorer handheld GPS unit, Juniper Geode bluetooth GPS, or equivalent). The GPS unit will be used to navigate as close as practicable to each target transect location. The field technician will access the sampling locations by wading. At each transect, three sediment cores will be collected and physically logged. At each transect, one core will be collected from within 10 feet of the left (looking downstream) bank of the river, one core from the approximate center of the river, and one core from within 10 feet of the right bank of the river. The final locations of each sediment core will be recorded with the GPS unit.

5.3.2 Sediment Sample Collection

Consistent with the sample methodology implemented throughout this project, sediment core samples will be collected using 2-inch diameter clear plastic (PVC, lexan, polycarbonate, or equivalent) core tubes. At each location, the core tube will be lowered through the water column until in contact with the sediment surface, and the water depth, estimated to the nearest 0.1 foot, will be recorded. The core tube will then be pushed by hand through the entire thickness of soft

sediment and into the underlying soil until refusal is encountered, or to a maximum of 3 feet below the sediment/surface water interface. The penetration depth will be recorded. The sample core will be extracted from the sediment, capped, labeled, maintained in a vertical orientation, and transported to shore for processing. If soft sediment is not present; or the core recovery at the time of retrieval is less than 12 inches and does not appear representative of sediment conditions, up to three attempts may be made to collect a representative core sample at the sample location.

Physical data collected at each location will include the following:

- The water depth;
- The distance that the core is pushed into the sediments;
- The thickness of soft sediment;
- The conditions of refusal (physical impediment or resistance);
- The visual description of the deposit; and
- The recovery length.

5.3.3 Sediment Sample Processing

Sediment cores will be processed at a designated location on shore or at the TRC office in Madison, Wisconsin. Standing water in the core tubes will be carefully removed using a suction pump equipped with low-density polyethylene (LDPE) tubing. New, clean tubing will be used for each core, and care will be taken to preserve any fine material at the top of the sediment surface. After removing the standing water, each core tube will be cut lengthwise and the core will be split to allow for visual logging and sample preparation. The cores will be described in accordance with the Unified Soil Classification System (USCS) and core logs will be prepared.

After the cores from a given transect have been logged, one core from the transect will be selected for the collection of an analytical sample. The analytical sample will be collected from the core within the transect with the greatest thickness of soft sediment. If 12 inches or more of soft sediment are recovered at a sample location, the upper 12 inches of the sediment core will be placed in a homogenization vessel (e.g. steel bowl, foil pan, or equivalent). If less than 12 inches of soft sediment are recovered at a sample location, the full thickness of the sediment will be placed in a homogenization vessel. Once the sample material has been selected and segregated, it will be thoroughly homogenized and placed into the laboratory sample container. The sample containers will be placed on ice and shipped to Pace Analytical Laboratories in Green Bay, Wisconsin for PCB analysis (USEPA Method 8082-WIS).

Excess sediment material, if any, will be placed in 5-gallon buckets, sealed, and managed as investigation-derived waste (IDW) in accordance with Section 5.9. Sample processing equipment may be new, single-use, and disposable; or may be re-used at the discretion of the field crew, if these materials can be adequately decontaminated following use. All non-dedicated, non-disposable sampling equipment will be decontaminated in accordance with Section 5.8 prior to collecting or processing the next sample.

5.4 Overbank Soil Sample Collection

This section describes the sampling equipment and methodology for the collection of overbank sediment samples.

5.4.1 Overbank Soil Sampling Locations

TRC will collect 16 overbank soil samples (one sample on either side of the river at eight transect locations, shown on Figure 2) within the first approximately 4,000 feet below the Hayton Mill Pond Dam. These samples will be collected to evaluate the overbank soil conditions and potential source areas. The overbank samples will be collected approximately five feet from the edge of the riverbank. The final locations of each sediment core will be recorded with the GPS unit. Subsequent samples may be collected and analyzed laterally or at additional depth intervals based on the results from the initial samples.

5.4.2 Overbank Soil Sample Collection and Processing

Overbank soil samples will be collected using either a spade, a hand auger, a push tube sampler, or equivalent. Each soil sample will be collected from the ground surface to a depth of 6 inches below ground surface (bgs) to evaluate the soil conditions. The soil will be either placed directly into a homogenization vessel (e.g. steel bowl, foil pan, or equivalent) and processed at the sample location, or transferred to a suitable container for transport to a designated location on-site or to the TRC office in Madison, Wisconsin for processing.

Sample descriptions will be completed for each sampling location. The USCS soil texture, color, moisture, root content, mottling, and other features (such as odor, presence of shell fragments, or sand or gravel lenses) will be recorded. Descriptions will be completed of the material recovered at each of the sampling locations on WDNR boring log forms.

Soil samples for analysis will be thoroughly homogenized and placed into the laboratory sample containers. Sample containers will be placed on ice and shipped to Pace Analytical Laboratories in Green Bay, Wisconsin for PCB analysis (USEPA Method 8082-WIS).

Excess soil sample material, if any, will be placed in 5-gallon buckets, sealed, and managed as investigation-derived waste (IDW) in accordance with Section 5.9. Sample processing equipment may be new, single-use, and disposable; or may be re-used at the discretion of the field crew, if these materials can be adequately decontaminated following use. All non-dedicated, non-disposable sampling equipment will be decontaminated in accordance with Section 5.8 prior to collecting or processing the next sample.

5.5 Sediment and Soil Sample Identification

All samples collected for this investigation will be designated with a “MR-“ location identifier (ID) representing the South Branch Manitowoc River. The sample locations in this investigation will use the following naming system:

- **In-Channel Sediment Samples**

  In-channel samples will have the additional prefix “IC” following the location ID.

  - For in-channel samples on the left side of the river:
    - MR IC [#010-499]L
      Example: MR IC 012L
  - For in-channel samples on the right side of the river:
    - MR IC [#510-899]R
      Example: MR IC 512R
  - For in-channel samples (center of the river):
    - MR IC [#910-999]C
      Example: MR IC 912C

- **Overbank Soil Samples**
  - Overbank characterization samples on the left side of the river will be named as follows:
    - MR [#010-499]L [interval]
      Example: MR 012L 0-6”
  - And on the right side of the river:
    - MR [#510-899]R [interval]
      Example: MR 512R 0-6”

The 3-digit sample number for all in channel and overbank sample locations will be unique for a given sample type (e.g., overbank soil on the left side of the river) and will be labeled in sequence from upstream to downstream (e.g., beginning with “010” for soil on the left bank). The ground surface will be used as the 0” reference for the sample interval. In addition, where sample interval potentially become deeper than 6”, additional samples will be collected in 12” intervals.

5.6 Sediment and Soil Sample Shipment and Laboratory Analysis

Each homogenized soil sample will be placed in (1) 4-ounce glass jar for laboratory analysis. Samples for chemical analysis will be placed on ice immediately after collection for transport to Pace Analytical Laboratories in Green Bay, Wisconsin. The analytical lists and methods are included in Table 1. Representative laboratory detection limits are included in the QAPP (TRC, 2021) and are summarized in Table 2.

5.7 Sediment and Soil Samples Quality Assurance/Quality Control (QA/QC) Samples

In accordance with NR 716.13 (6), the condition of each cooler will be evaluated upon receipt at the laboratory. Samples received on ice are considered preserved at the correct temperature (4°C, ± 2°). Temperature blanks may also be analyzed to assess whether the sample temperature was maintained during sample transport, especially in the case that the ice has all melted.

Temperature blanks consist of a sample container, generally polyethylene, filled with tap water. One temperature blank will be transported with each cooler containing sample containers. No other QA/QC samples will be collected as a part of this investigation.

5.8 Equipment Decontamination

Equipment decontamination will be performed in accordance with the QAPP (TRC, 2021).

5.8.1 Single-Use Sampling Equipment

To the extent practicable, single-use sampling equipment and materials will be used for the collection of samples. The materials used will be new and clean and will be placed in plastic for transport to the site. Once used, single-use equipment will be placed in plastic bags and managed as IDW material. Single-use equipment may include, but is not limited to, the following:

- Disposable foil pans
- PVC, polycarbonate, acrylic (or similar material) core barrel liners
- Polyethylene (or similar) core tube caps
- Disposable nitrile or latex gloves

5.8.2 Non-dedicated Sampling Equipment

Non-dedicated equipment used for sample collection or sample processing will be new or cleaned before its initial use in the field and cleaned again before use at each subsequent sampling site (and between sample intervals). Equipment subject to this decontamination procedure includes, but is not limited to, the following:

- Coring tools (e.g., pistons or core barrels)
- Scoops, spatulas, and mixing bowls (if re-used)

The general procedure for decontaminating field equipment is as follows:

- Scrape off as much loose material as possible.
- Disassemble the equipment, as appropriate.
- Wash with detergent/potable water solution.
- Rinse thoroughly with distilled or deionized (DI) water.
- Allow equipment to air dry prior to next use.
- Wrap equipment for transport with inert material (aluminum foil or plastic wrap) to prevent direct contact with potentially contaminated material.

Field decontamination of sampling equipment will take place at a designated location on-site. Decontamination will be performed in 5-gallon buckets and managed as IDW (Section 5.9).

Decontamination water will be changed out for new, clean solutions at a minimum of once per sampling day.

5.9 Sediment and Soil Sampling Investigation Derived Waste (IDW)

IDW streams generated during this investigation are expected to include excess sediment sample material, excess soil sample material, decontamination fluids, and general refuse (e.g., used personal protective equipment, single-use sampling equipment, and trash). If sediment and soil sample processing occurs at the site, excess sample material and decontamination water will be sealed in 5-gallon buckets, labeled with the date and contents, and properly disposed.

If processing is performed at the TRC office, excess sample material will be sealed in 5-gallon buckets, labeled, and held in a secure location at the TRC office until they are transported back to the site for disposal. Decontamination fluid generated at the Madison office will be discharged to the sanitary sewer. General refuse will be collected in sealed trash bags and placed in a waste dumpster at the TRC office.

5.10 Sediment and Soil Sample Results Data Management and Validation

Laboratory data generated under the sampling described in this SIWP will be subject to Level II data reporting, which includes the following:

- Cover letter
- Analytical results
- Analytical batch QA/QC results (e.g., surrogate recoveries, method blanks, laboratory control samples, MS/MSDs, as appropriate)
- Summary of nonconformances
- Laboratory copies of the Chain-of-Custody forms

TRC will maintain the analytical data in a project database. Prior to importing the laboratory data into the database, TRC will review the analytical data reports for usability. If data completeness or usability is uncertain, TRC will attempt to resolve conflicts with the laboratory and obtain a revised analytical report.

5.11 Other Procedures for Site Management - HASP

The sampling activities will adhere to the Health and Safety Plan (HASP) that was developed by TRC for the reconnaissance study activities described in Section 3.1 (TRC, 2015a). The HASP includes safety precaution information and emergency procedures. The HASP is updated as needed based on the work to be performed. The HASP is incorporated into this SIWP by reference.

6.0 Schedule/Reporting

Consistent with NR 716.09(2)(h) Wis. Adm. Code, this section provides information on the proposed schedule and reporting:

- Pending WDNR approval of this SIWP, as well as landowner access notifications, the investigation activities are scheduled to start in late spring/early summer 2021.
- Sample results will be reported to the WDNR and property owners/occupants within 10 business days of receiving the sample results.
- The results will be submitted to WDNR in a technical memorandum (described below) within 60 days after completion of field investigations and receipt of all laboratory data.

Following the field investigation and receipt of laboratory analytical results, the data will be compiled, analyzed, and incorporated into a technical memorandum. The technical memorandum will document the investigative activities conducted and will describe the methods employed during the investigation.

The report will also include a computed SWAC for the investigation area using the in-channel sediment samples from this sampling effort and the 2015 reconnaissance sampling event. The SWAC approach has been used at numerous sediment remediation sites in the U.S. and specifically in Wisconsin to evaluate risk reduction (e.g., Reible, et al., 2003). The SWAC represents the area of exposure across a river or creek system and is the widely accepted methodology used to evaluate potential risk and to guide remediation. The SWAC approach has also been used to confirm closure for upstream OUs of HARP.

As requested by the WDNR in previous Reaches of HARP, the SWAC will be calculated using the actual width of the stream at the sampling locations. The SWAC analysis zones have been set to start and end at the mid-points between adjacent sample/transect locations.

The technical memorandum will include a base map that shows the sampling locations. The analytical and physical results will be presented on figures and tables attached to the technical memorandum. The logs for sediment sampling locations, as well as laboratory analytical reports, will be appended to the technical memorandum. In addition, other appropriate data collected during the field investigation will be appended to the memorandum to document the quality of work performed.

7.0 Technical Review Request

Pursuant to NR 749.02, Wis. Adm. Code, TRC requests a technical review response from WDNR of this SIWP. TRC will provide a $700 review fee.

8.0 References

ATS. 2001. Ann Arbor Technical Services, Inc. Technical Memorandum – Probable Release Date for HARP PCB Contamination. July 23, 2001.

Foth & Van Dyke. 1996. Final Remedial Investigation Report - Hayton Area Remediation Project. December 4, 1996.

Glüge, et. al. 2020. Juliane Glüge, Martin Scheringer, Ian T. Cousins, Jamie C. DeWitt, Gretta Goldenman, Dorte Herzke, Rainer Lohmann, Carla A. Ng, Xenia Trieri, and Zhanyun Wang. An overview of the uses of per- and polyfluoroalkyl substances (PFAS). https://doi.org/10.1039/d0em00291g September 23, 2020.

ITRC. 2020. Interstate Technology & Regulatory Council's PFAS Team. https://pfas-1.itrcweb.org/ Accessed December 16, 2020.

Reible, et. al. 2003. D.D. Reible, D. Hayes, C. Lue-Hing, J. Patterson, N. Bhowmik, M. Johnson, and J. Teal. "Comparison of the long-term risks of removal and In-Situ management of contaminated sediments in the Fox River," Journal of Soil and Sediment Contamination, 12(3) 325-344.

TRC. 2015a. Site-Specific Health and Safety Plan. Sediment Investigations. South Branch of the Manitowoc River, Downstream of the Hayton Millpond, Calumet County, Wisconsin. June 2015.

TRC. 2015b. Results Reporting – South Branch of the Manitowoc River Reconnaissance Study. October 7, 2015.

TRC. 2019. Site Investigation Work Plan - PFAS Groundwater Sampling. September 30, 2019.

TRC. 2020. Per- and Polyfluoroalkyl Substances (PFAS) Groundwater Sampling Results. March 30, 2020.

TRC. 2021. Quality Assurance Project Plan (QAPP). January 2021.

WDNR. 2013. Letter from WDNR to Tecumseh, Conditional Approval of Hayton Area Remediation Project Reconnaissance Sampling Plan Downstream of Hayton Millpond Dam. July 1, 2013.

WDNR. 2015. Letter from WDNR to Tecumseh, PCB Sampling Downstream of Hayton Mill Pond Dam, Hayton Area Remediation Project. January 15, 2015.

WDNR, Tecumseh Products, and TRC. 2018. Negotiated Agreement; BRRTS #02-08-281506.

WDNR. 2019. Wisconsin Department of Natural Resources. Site Investigation Scoping: Identifying Contaminants of Concern, Wis. Admin. Code § NR 716.07 (DNR-RR-101E). September 2019. https://dnr.wi.gov/files/PDF/pubs/rr/RR101.pdf.

USEPA. 2017. United States Environmental Protection Agency. Technical Fact Sheet – 1,4-Dioxane. November 2017. https://www.epa.gov/sites/production/files/2014-03/documents/ffrro_factsheet_contaminant_14-dioxane_january2014_final.pdf.

Table 1: Sample Container, Preservation and Holding Time Requirements
HARP - Sediment Investigation Work Plan

Analyte	CAS Number	Matrix	Analytical Method	Sample Container	Preservation	Maximum Holding Time
Total PCB	NA	Solid	USEPA SW-846 Method 8082	2 oz. wide mouth glass jar	4° ± 2°C	The laboratory recognizes the SW846 Chapter 4 hold time of none, and uses a 1 year hold time for extraction and extracts
PCB-1016 (Aroclor 1016)	12674-11-2					
PCB-1221 (Aroclor 1221)	11104-28-2					
PCB-1232 (Aroclor 1232)	11141-16-5					
PCB-1242 (Aroclor 1242)	53469-21-9					
PCB-1248 (Aroclor 1248)	12672-29-6					
PCB-1254 (Aroclor 1254)	11097-69-1					
PCB-1260 (Aroclor 1260)	11096-82-5					

Table 2: Detection Limits and Reporting Limits - Soil Analysis by EPA Method 8082
HARP - Sediment Investigation Work Plan

Analyte	CAS Number	True MDL (ug/kg)	PQL (ug/kg)
Total PCB	NA	15.22	50.0
PCB-1016 (Aroclor 1016)	12674-11-2	15.22	50.0
PCB-1221 (Aroclor 1221)	11104-28-2	15.22	50.0
PCB-1232 (Aroclor 1232)	11141-16-5	15.22	50.0
PCB-1242 (Aroclor 1242)	53469-21-9	15.22	50.0
PCB-1248 (Aroclor 1248)	12672-29-6	15.22	50.0
PCB-1254 (Aroclor 1254)	11097-69-1	15.22	50.0
PCB-1260 (Aroclor 1260)	11096-82-5	15.22	50.0

Notes:

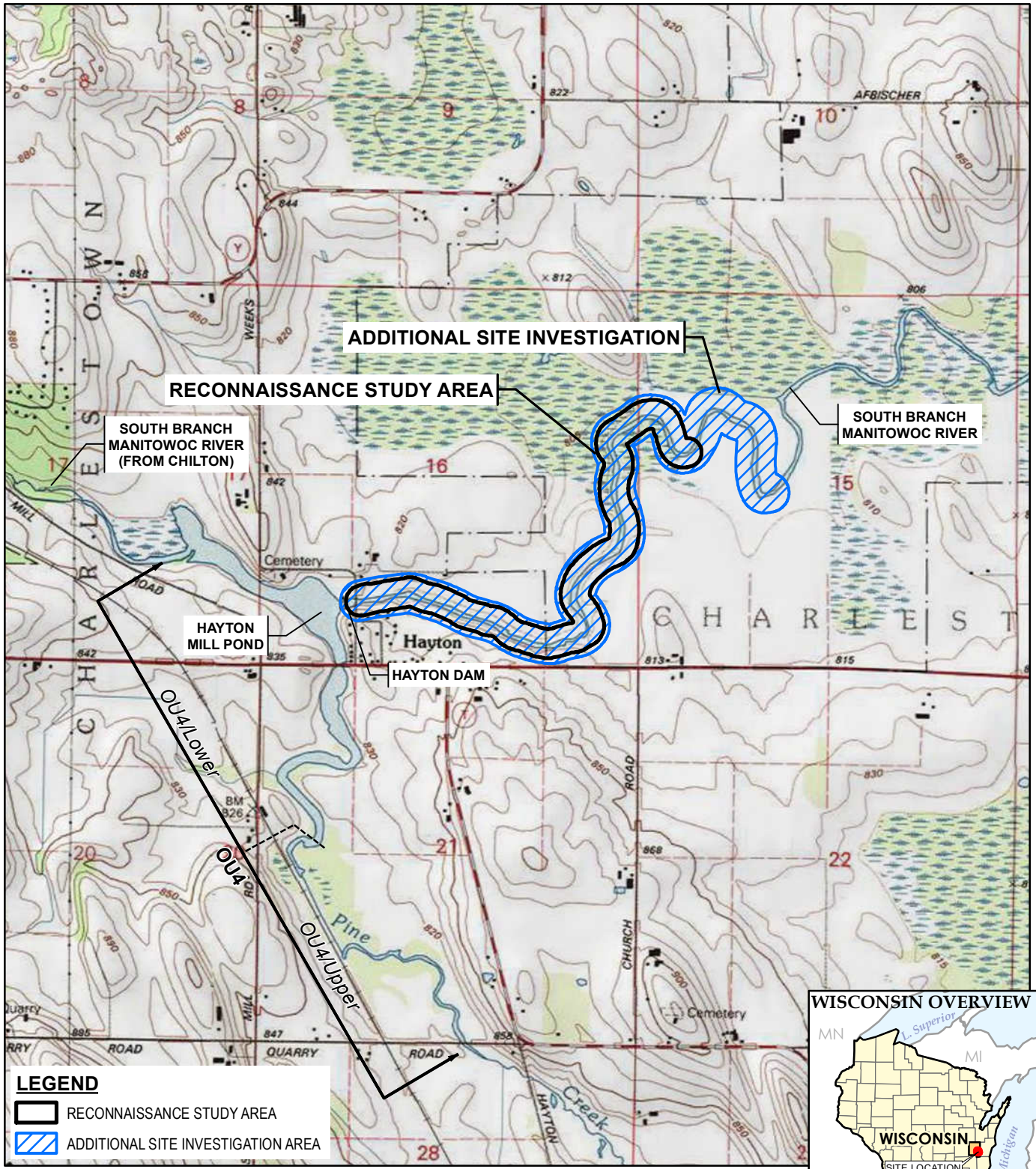
1. Actual solid reporting limits are on a dry weight basis and will be higher than the values listed due to moisture content and the volume of the solid sample.
2. Samples may be diluted due to the presence of high levels of target and non-target analytes, or other matrix interferences.
3. Laboratory MDLs, PQLs and Control Limits are subject to change.

PCB = polychlorinated biphenyl

MDL = Method Detection Limit

PQL = Practical Quantitation Limit

TRC - GIS



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

N

1 " = 2,000 '
1:24,000

0 2,000 4,000
FEET

TRC
708 Heartland Trail
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Phone: 608.826.3600

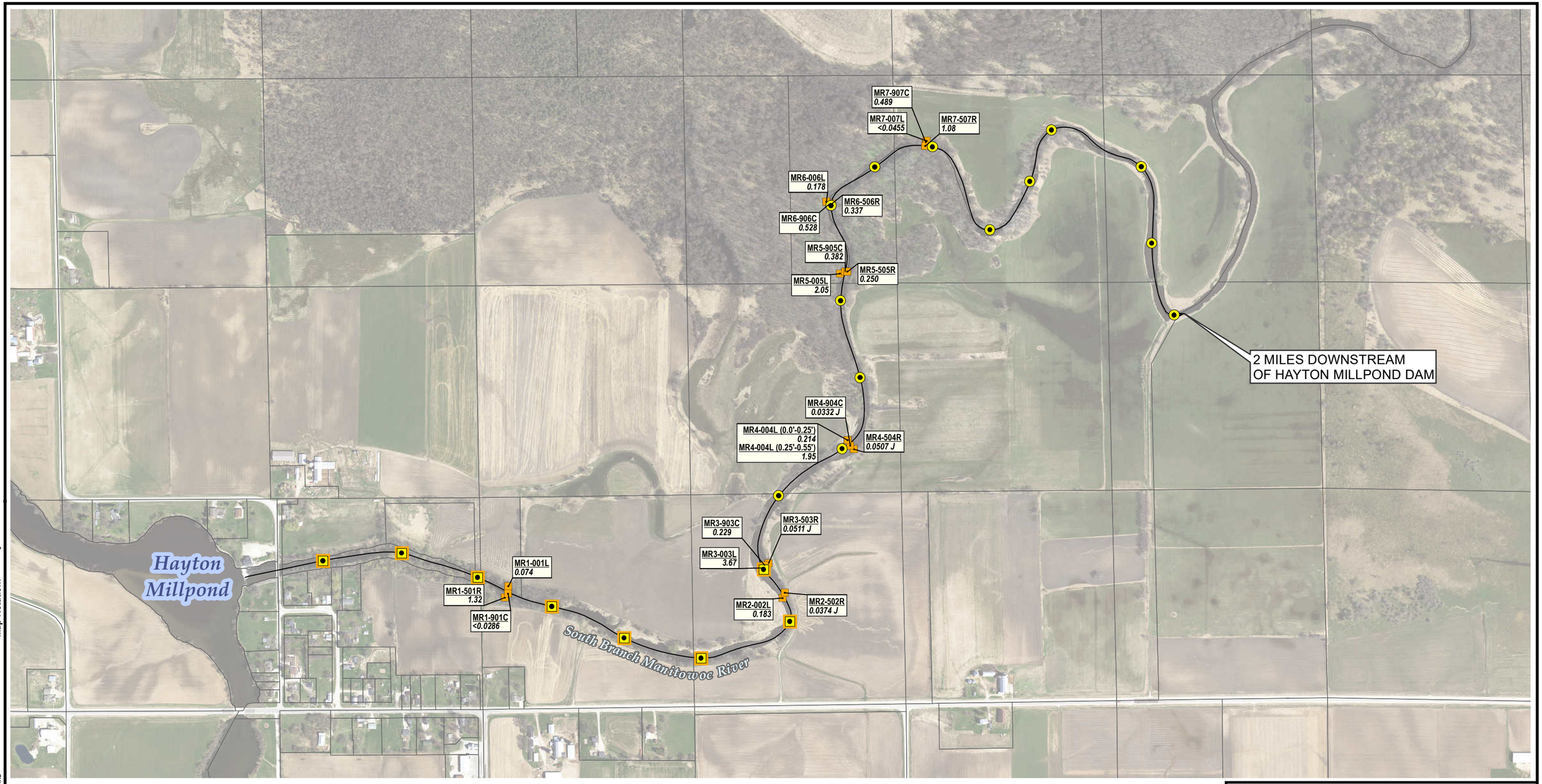
DOWNSTREAM HAYTON MILL POND DAM
ADDITIONAL SITE INVESTIGATION

SITE LOCATION MAP

DRAWN BY:	J. PAPEZ
APPROVED BY:	C. HARVEY
PROJECT NO:	320928
FILE NO.	320928-002.mxd
DATE:	JANUARY 2019

FIGURE 1

Coordinate System: NAD 1983 HARN WISCRS Calumet County Feet (Foot US)
Map Rotation: 0
Plot Date: 12/20/2018, 10:26:54 AM by JPAPEZ -- LAYOUT: ANSI B (11"x17")
Path: E:\Tecumseh\HARP\2018_320928\320928-001.mxd



LEGEND

- TRC SEDIMENT SAMPLING/TRANSECT LOCATION (AUGUST 2015)
- IN-CHANNEL TRANSECT LOCATION
- TRANSECT WITH OVERBANK SOIL SAMPLES

NOTES

1. BASE MAP IMAGERY FROM CALUMET COUNTY 2014.

0 600 1,200 Feet

1 " = 600 '
1:7,200

PROJECT:
DOWNSTREAM HAYTON MILL POND DAM ADDITIONAL SITE INVESTIGATION

TITLE:
DOWNSTREAM SAMPLING

DRAWN BY:	J. PAPEZ	PROJ NO.:	320928
CHECKED BY:	J. RICE		
APPROVED BY:	C. HARVEY		**FIGURE 2**
DATE:	DECEMBER 2018		

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FILE NO.: 320928-001.mxd

Appendix A: Site Investigation Work Plan Preparation Checklist

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

Site Investigation Work Plan Preparation Checklist
Wis. Admin. Code § NR 716.07

Form 4400-316 (R 07/19)

Wisconsin DNR – NR 700 Process

Remediation and Redevelopment Program — **April 2019**

Purpose

This guidance is offered as an optional tool to help develop and review site investigation work plans for compliance with Wis. Admin. Code ch. NR 716 Site Investigation requirements. Consultants may choose to use this checklist as an outline for preparation of the site investigation work plan. Use of this checklist is not required. Rule citations are added for clarity. The checklist is meant for use with Wis. Admin. Code § NR 716.09 and other site investigation related guidance. For more comprehensive site investigation related information, visit our web page at dnr.wi.gov and search: "site investigation."

Receipt of Site Investigation Work Plan NR 716.09 (1)		**Comments**
☒ NR 716.09 (1)	Within 60 days of receipt of RP letter, or other notification that a site investigation is required	
☐ NR 716.09 (1), NR 700.11 (3g)	One paper copy	Not applicable; DNR has temporarily suspended the requirement for one paper copy.
☒ NR 716.09 (1), NR 700.11 (3g)	One electronic copy	
☒ NR 749	Review fee, if review by DNR is requested	See Section 7
Purpose NR 716.01		**Comments**
☒ NR 716.01	Proposed investigation will define the nature, degree and extent of contamination	See Section 3.14
☐ NR 716.01	Proposed investigation will define the source or sources of contamination	Not purpose of this SIWP
☒ NR 716.01	Proposed investigation will determine the need for an interim and/or remedial action	
☐ NR 716.01	Proposed investigation will provide information needed to select an interim and/or remedial action	Not purpose of this SIWP
Contents NR 716.09 (2)		**Comments**
☒ NR 716.09 (2) (a)	Site name and address	See Section 2
☒ NR 716.09 (2) (a)	Site location – ¼ ¼ section, Township, Range, County	See Section 2
☒ NR 716.09 (2) (a)	WTM coordinates	See Section 2
☒ NR 716.09 (2) (b)	RP's name and address (May be more than one RP – current property owner, lessee, operator, other RP.)	See Section 2
☒ NR 716.09 (2) (b)	Consultant or contractor's name and address	See Section 2
☒ NR 716.09 (2) (c)	Site location on a USGS topo map	See Figure 1
☒ NR 716.09 (2) (c)	Site layout map(s) with: buildings, roads, discharge location & other relevant site features	See Figure 2
☐ NR 716.09 (2) (d)	Scoping of the Investigation:	
☒ NR 716.07 (1)	• History of the site or facility, including land uses that may have one or more associated hazardous substance discharges or environmental pollution, including emerging contaminants such as PFAS	See Section 3.1
☒ NR 716.07 (2)	• Type and amount of contamination, if known	See Section 3.2

Contents (continue) NR 716.09 (2)		**Comments**
☒ NR 716.07 (3)	• History of previous hazardous substance discharges or environmental pollution	See Section 3.3
☒ NR 716.07 (4)	• Environmental media affected or potentially affected by contamination	See Section 3.4
☒ NR 716.07 (5)	• Location of the site or facility and its proximity to other sources of contamination	See Section 3.5
☒ NR 716.07 (6)	• Need for permission from property owners to allow access to the site or facility and to adjacent or nearby properties	See Section 3.6
☒ NR 716.07 (7)	• Potential or known impacts to receptors, including buildings, utilities or other subsurface improvements, and water supply wells within 1,200 feet of outermost edge of contamination	See Section 3.7
☒ NR 716.07 (8) (a), (b), (c), (d)	• Potential for impacts to sensitive species, habitats or ecosystems, wetlands, resource waters, sites of historical/archaeological significance	See Section 3.8
☒ NR 716.07 (9)	• Potential interim and remedial actions applicable to the contamination	See Section 3.9
☒ NR 716.07 (10)	• Immediate or interim actions taken or in progress, including any evaluations made of whether an interim action is necessary	See Section 3.10
☒ NR 716.07 (11)	• Any other items, including climatological conditions and background water or soil quality info that may affect the scope or conduct of the investigation	See Section 3.11
☐ NR 716.07 (12)	• Need to gather data to determine the hydraulic conductivity of materials where contaminated groundwater is found	See Section 3.12
☐ NR 716.09 (2) (e)	Physiographical and geological setting of the site necessary to choose sampling methods and locations, including:	
☒ NR 716.09 (2) (e) 1.	• Existing topography, including prominent topographic features	See Section 4.1
☒ NR 716.09 (2) (e) 2.	• Surface water drainage patterns and significant hydrologic features, such as surface waters, springs, drainage basins, divides, wetlands, floodplain or floodway	See Section 4.2
☒ NR 716.09 (2) (e) 3.	• Texture and classification of surficial soils	See Section 4.3
☒ NR 716.09 (2) (e) 4.	• Nature and distribution of geologic materials, including the thickness and type of unconsolidated materials and type and nature of bedrock	See Section 4.4
☒ NR 716.09 (2) (e) 5.	• General hydrogeologic information	See Section 4.5
☒ NR 716.09 (2) (e) 6.	• Potential hazardous substance migration pathways	See Section 4.6
☐ NR 716.09 (2) (f)	Sampling and analysis strategy to be used during the field investigation, including:	
☒ NR 716.09 (2) (f) 1.	• Description of the investigative techniques to be used to characterize the site or facility	See Section 5.1
☒ NR 716.09 (2) (f) 2.	• Site layout map(s), in planimetric and vertical views, with locations from which samples of environmental media will be obtained or a description of the strategy to be used for determining sample locations	See Figure 2

Contents (continue) NR 716.09 (2)		**Comments**
☒ NR 716.09 (2) (f) 3.	• Description of sampling methods to be used, including methods for collecting, preserving, and delivering samples and leak detection methods (for vapor sampling)	See Sections 5.3, 5.4, and 5.6
☒ NR 716.09 (2) (f) 4.	• List of the parameters for which samples will be analyzed, analytical methods to be used including method detection limits	See Section 5.6
☒ NR 716.09 (2) (f) 5.	• Description of quality control and quality assurance procedures to be used per sampling method, including the items listed in NR 716.13	See Section 5.7
☒ NR 716.09 (2) (f) 6.	• Description of procedures to prevent cross-contamination between samples	See Section 5.8
☒ NR 716.09 (2) (f) 7.	• Description of the type of investigative wastes that will be generated during the site investigation and how they will be collected, stored, transported, treated or disposed	See Sections 5.3, 5.4, and 5.9
☒ NR 716.09 (2) (f) 8.	• Discussion of how the sampling and analysis results will be related to previous investigations at the site or facility and how the results will be used to determine the degree and extent of contamination and the selection of a remedial action, including natural attenuation, where appropriate	See Section 6 including discussion of SWAC that involves using results of previous investigations.
☒ NR 716.09 (2) (g)	Description of other procedures to be used for site management, including erosion control and repair of structural, soil or ground disturbance	See Sections 5.3, 5.4 and 5.11
☒ NR 716.09 (2) (h)	Schedule for conducting the field investigation and reporting the results to the DNR	See Section 6
☒ NR 712	Certification of professional(s) that will conduct or supervise the work necessary to obtain data, develop conclusions and recommendations, and prepare the site investigation submittal, per Wis. Admin. Code NR 712	See Section 1