*** All present are expected to conduct themselves in accordance with our City's Core Values ***

OFFICIAL NOTICE AND AGENDA

of a meeting of a City Board, Commission, Department Committee, Agency, Corporation, Quasi-Municipal Corporation or Sub-unit thereof.

Notice is hereby given that the Park and Recreation Committee of the City of Wausau, Wisconsin will hold a regular or special meeting on the date, time and location shown below.

Meeting of the:	**PARKS AND RECREATION COMMITTEE OF THE CITY OF WAUSAU**
Date/Time:	**Monday January 6, 2020 at 4:30pm**
Location:	**City Hall (407 Grant Street, Wausau WI 54403) - Council Chambers**
Members:	**Gary Gisselman, Tom Neal, David Nutting, Patrick Peckham(c), Dennis Smith**

AGENDA ITEMS FOR CONSIDERATION (All items listed may be acted upon)

1 Call the Meeting to Order
2 Public Comment or Suggestions
3 Approve Minutes - December 2, 2019
4 Discussion and Possible Action Regarding Riverside Park Soil Testing
5 Discussion and Possible Action Reviewing Department Usage of Chemicals Where Needed on City Property
6 Educational Items
A. Dog Park Special Committee Update
B. Winter Activity Facility Update
7 Future Agenda Items
8 Next Meeting Date - February 3, 2020 at 4:30pm
9 Adjournment

Patrick Peckham, Chairperson

This Notice was posted at City Hall and faxed to the Daily Herald newsroom on 01/3/2020 @ 2:15 p.m. Questions regarding this agenda may be directed to Jodi Luebbe, Park Office (715) 261-1560.

In accordance with the requirements of Title II of the Americans with Disabilities Act (ADA), the City of Wausau will not discriminate against qualified individuals with disabilities on the basis of disability in its services, programs, or activities. If you need assistance or reasonable accommodations in participating in this meeting or event due to a disability as defined under the ADA, please call the City's ADA Coordinator at (715) 261-6620 or e-mail clerk@ci.wausau.wi.us at least 48 hours prior to the scheduled meeting or event to request an accommodation.

Distribution List: City Website, Media, WSD-Admin, Alderpersons, Mayor, Polley, Dept. Staff, Maryanne Groat, Brad Lenz, Eric Lindman, Christian Schock, Brad Karger, Wisconsin Woodchucks, Wausau Events, Public Access, Wausau River District, Patrick Hoerter

DRAFT

CITY OF WAUSAU – PARK AND RECREATION COMMITTEE MEETING MINUTES

Date/Time: December 2, 2019 at 4:30 p.m. Location: Council Chambers, City Hall
Members Present: Gary Gisselman, David Nutting, Pat Peckham (c), Dennis Smith, Tom Neal
Others Present: Jamie Polley-Parks, Recreation and Forestry Director, Robert Mielke-Mayor, Bradley Sippel-City Assistant Planner, Judith Miller, other interested parties

In accordance with Chapter 19, Wisc. Statutes, notice of this meeting was posted and sent to the Daily Herald in the proper manner. It was noted that a quorum was present and the meeting was called to order by Chairman Peckham at 4:30 p.m.

Public Comment – none

Approval of Minutes – **Motion** by Neal, second by Nutting to approve the Park and Recreation Committee draft November 4, 2019 minutes. Motion **carried** by voice vote, vote reflected as 5-0.

Discussion and Possible Action Regarding the River Edge Parkway 2020 Master Plan – Bradley Sippel, Assistant City Planner, noted that the plan was updated because there has been decades of progress made on the River Edge Parkway. They looked at what had been done, reassessed the public's priorities, and looked at the future focus and the feasibility of completing some of the segments. They wanted to get Park Committee's feedback before taking it to the Plan Commission and Council. Sippel discussed the planning process and said it included an RFP for services, baseline data gathering and assessment, staff and stakeholders meetings, site tours of the trail, and public input events. Preliminary engineering concepts were then identified for some of the priority segments along with initial cost estimates and their feasibility. Some issues and opportunities identified include improvement of existing bridge crossings, gaps in the trail, the city's southeast side being disconnected from the trail system, and some confusing signage and inadequate lighting. The highest priorities for connections along the river include a connection to the southeast side, completing the connection from Winton Street to Gilbert Park and the two segments on the west side of the river. Some additional priorities identified in getting across the river include improving the Scott Street and Washington Street bridges for bicycle and pedestrian access. Other options explored include a northern bike/pedestrian bridge between Scholfield Park and Winton Street which would complete a northern loop segment. The Bridge Street and Thomas Street bridges were also identified as priorities for improvement for the trail system. Some of the short term recommendations include improving the existing Prospect Avenue bike route as a way to get people connected to the trail. A couple of options were looked at for southeast side trail connections and it was decided that a trail along the river was both more desirable and potentially more feasible. Discussion followed on the placement of that trail on the ridge along the river. Sippel felt the plan gives them a concept that they can use in talking to property owners and the Railroad Commission. No further input was given regarding the plan.

Discussion and Possible Action Reviewing Information Received Regarding Soil Testing in the Riverside Park Area -
Judith Miller, 903 Kickbusch Street, thought they had received the DNR results and noted that the CCW test results also were not in yet. She gave some reasons why she felt that the conclusions from the Solid Waste Director's emails about the topsoil from the path of Thomas Street were not valuable in evaluating whether or not testing is needed in Riverside Park. Miller also felt this Committee often used the wording "they believe there is no danger in Riverside Park" and she felt this wasn't a matter of belief but of fact. She hopes they seriously consider the forthcoming CCW's test results and urged Committee to ask Council for more testing.

Peckham explained he had asked for the information from the Solid Waste Director be included in the packet. He was struck by the fact that the DNR said that is pretty clean soil and they might want to use it for planting purposes or something like that. He was also struck by the fact that as they moved that soil around, there had been concern for the neighbors having airborne dust and such, so Mr. Lindman had it removed. He believed that it was not found to be hazardous and was found to be suitable for use per the September 26th e-mail from the Solid Waste Director that said the soil is considered a non-hazardous solid waste and therefore is suitable for disposal in our landfill. Peckham said that they have Wauleco's submittal but are waiting for the DNR's reaction to that yet. Gisselman thought they were supposed to have the DNR's results already in November. Mayor Mielke will call Matt Thompson from the DNR to find out where the DNR is at with those.

Neal said that for months this Committee has been very open to testing, asked for testing and sent it forward for consideration. He felt that was a constant coming out of this Committee regardless of this or that comment that might have been made in session of the Committee, they have always supported going forth with any testing that's relatable to this park. He was concerned about some of the reporting after the release of the state testing that positioned it as the City says the Park is now safe which is not what the press release said and is not what they are saying. He thinks their position remains that they want to

wait for the results of the citizens group tests and have that and everything else in total and then discuss if there is a need to go further with testing or if they are comfortable.

Peckham agreed with Neal and also said in reviewing the statement from the State Toxicologist he was again pleased that they considered the levels of dioxin that Wauleco found in the soil surface samples and applied that as if somebody was going to be exposed to that just as a park user and as a resident. He thought they are very conservative and cautious and was pleased that the results were no worse than they were.

Mielke thanked Committee members for recognizing that more attention has been paid to individuals, residents and groups then ever before. He felt disappointed sometimes in how things were brought out but they are committed to doing the right thing. He felt the DNR was being cautious and that was why they haven't heard anything yet. Gisselman thought the DNR's main task was to report on the Wauleco findings and not wait for everything. Peckham agreed that they were going to react to the Wauleco analysis but felt were being careful before they make a statement.

Educational Items

A. Vegetative Invasive Species Strategy – Polley said that the Department doesn't have a formal written policy for invasive species at this time. Their current working policy is based on past practice as invasive vegetative species have been reported by the public or identified by park staff in lands under the Departments management. When identified the Department has taken a proactive and practical stance on control or eradication measures based on individual plant species, scope of infestation and site specifics. Control measures have included mechanical plant removal (including hand pulling), stem cutting accompanied by chemical treatment and chemical treatment with appropriate labeled products. To date the individual species that the Department has invested time and resources in trying to control include Glossy Buckthorn, Garlic Mustard, Japanese Barberry, Japanese Knotweed, Purple Loosestrife, Canada Thistle, and Tansy. In response to Gisselman's questions about the use of chemicals like Roundup, Polley will have operations management staff give more of a detailed explanation about their use at a future meeting.

B. Dog Park Special Committee Update – Polley said the group had a successful fundraiser at Malarkey's on November 17th. The total amount raised is $67,980 which doesn't include the $20,000 from C.I.P. Because of the wetness and weather the fence will not be installed until spring. The Engineering Department will be laying out the parking lot and putting in the water line. The Dog Park Committee members will walk in the holiday parade as part of the Park Department's float. Neal will be applying to another area foundation and said the group will continue to fundraise over the winter.

C. Project Update

Sylvan Tubing Hill: Snowmaking operations began the week of November 3 based on cold temperatures and were halted later in the week as warm temperatures returned. Snow making will resume the week of December 1 and the opening date is December 14. Grooming at Sylvan Hill will start either tonight or tomorrow. They are working with the golf course to layout the trail throughout the golf course so that will be groomed for cross country skiing. Riverlife/River Edge Trail: Debris (piles) from the bridge cleanup adjacent to park areas are to be hauled away. Ice Rinks: Rink sites have been prepared for the season; warming houses are in place, hockey boards are installed. With recent snowfall rinks will be packed next week if temperatures allow. Vista Clearing: Staff has been working on removing and/or reducing vegetation in designated vistas as time allows. Discussion occurred on some of the locations where vista clearing is taking place. Holiday Trees: Staff has obtained, delivered, set up and decorated trees at the 400 Block, Marathon County Courthouse, Wausau City Hall and the corner of Stewart and First Avenues. Routine Operations/Programs: Snow removal operations; urban forestry program includes tree trimming, removals, and stump grinding; building and structure maintenance; shelter reservations and special events; equipment maintenance and repair.

D. Program Update

Working on contracts and details for numerous events for 2020, including: IronBull Events, Wausau Area Events, numerous 400 Block events, and a new Wausau Triathlon based out of Oak Island

Future Agenda Items – pesticide/herbicide topic, Riverside Park testing. Staff was asked to follow up on work with WPS in clearing growth along river, evaluate masonry structures at Stewart Park, Forest Park playground funds

Next Meeting Date – January 6, 2020 at 4:30 pm in Council Chambers at City Hall.

Adjourn – **Motion** by Neal, second by Smith to adjourn at 5:30 p.m. Motion **carried** by voice vote, vote reflected as 5-0.

CITY OF WAUSAU
PARK AND RECREATION COMMITTEE January 6, 2020

AGENDA SUMMARY

4. Discussion and Possible Action Regarding Riverside Park Soil Testing

In November, Citizens for a Clean Wausau hired Sand Creek Consultants to conduct three soil samples in Riverside Park as approved by the City Council. The soil sampling and analysis results have been presented to the City and are attached to the agenda packet for your review. The results were also been sent to the Department of Health Services for their review and analysis. The response letter from Clara Jeong, PhD Toxicologist is also in the agenda packet for your review.

Mr. Lindman has included a memo that addresses the results submitted. He also outlines the City's responsibility for additional testing required along the railroad corridor by the Department of Natural Resources (DNR).

The Committee is asked to review the materials provided and listen to the information presented to consider whether to propose some additional testing in the open area of the park. If additional testing is to be proposed it is recommended that the testing take place in conjunction with the testing along the railroad corridor that will be required by the DNR.

5. Discussion and Possible Action Reviewing Department Usage of Chemicals Where Needed on City Property

At the December meeting the Committee requested information from staff on chemical use on City properties. Staff will provide the Committee with an overview of what chemicals are currently used, why and when they are used, and protocols taken when the chemicals are used.

6. Educational Items

6A. Dog Park Special Committee Update

An update on items the committee has been discussing and working on will be provided. The Committee has raised $67,980 to date and an additional $20,000 has been requested to be allocated from the City CIP budget. The Committee participated in the Holiday Parade with the Parks Department and handed out information on how to donate to the project.

6B. Winter Activity Facility Update

Sylvan Hill tubing opened on December 14th and has remained open despite the warmer weather around Christmas. Staff began to groom the cross country ski trails but the wet weather has not allowed the trails to open. The groomer cannot effectively groom wet snow.

The 400 Block outdoor rink opened just before Christmas but due to the warmer weather was temporarily closed. Staff tried clearing it off on New Year's Eve following the snow storm but the ground under the snow was too saturated and the equipment was breaking through the ice. Marathon Park and Thom Field outdoor rinks have not yet been open due to the warm wet weather. If the weather gets colder staff will continue to work on the rinks for possible opening.

Department of Public Works

Eric Lindman, P.E.
Director of Public Works and Utilities

TO: Park & Recreation Committee

FROM: Eric Lindman, P.E.
Director of Public Works & Utilities

DATE: January 6, 2020 – Park & Rec Committee

SUBJECT: Riverside Park – CCW Testing Results and WDNR RP Letter to City

---

CCW Testing & Results

The City Council, based on a recommendation by the Park & Rec Committee, authorized Citizens for a Clean Wausau (CCW) to conduct three soil tests in Riverside Park.

We received a copy of the CCW testing results and attached is a copy of the results as well as a review of the results by the Department of Health Services (DHS) toxicologists. DHS response is there are no health hazards associated within the areas tested.

To summarize the results from the CCW testing:

1. None of these results exceeded the Department of Natural Resources (DNR) Residential Contaminant Levels (RCL) for non-industrial (residential) sites.
2. Two of the Toxicity Equivalent (TEQ) values are above the EPA/WHO screening levels
    a. TEQ's were determined by two different methods, both give similar values.
    b. DHS has concluded there are no health risks associated with the results.

The latest CCW test results are very similar and even lower than what has been previously reported along the RR corridor and what was found in some residential areas where burning barrels may have been in back yards near alleys. The recent test result values are also typical values found in urban areas around the country, as was reported by DHS. The WDNR has not provided any formal response to the City related to the latest CCW testing results.

WDNR RP Letter to the City

The City has received a Responsible Party (RP) letter from the WDNR. This was issued after Wauleco completed their testing related to their Aerial Deposition Study in connection with past burning of treated lumber on what is now Wauleco property. Three of those tests were found to have WDNR Residual Contaminant Level (RCL) exceedances. All three tests were along the abandoned railroad corridor between Thomas Street and the Wisconsin River. Based on the RCL exceedances, the WDNR has requested the City to prepare a plan for future testing along the railroad corridor. The City has hired REI to prepare the plan for WDNR review and it will be submitted to the WDNR by mid-January.

City staff will take direction from the WDNR moving forward with any proposed testing they may require. It is recommended the city follow WDNR's and environmental expert's direction related to any future testing.

Environmental and Geological
Scientists and Engineers

151 Mill Street • P.O. Box 218 • Amherst, WI 54406 • 715.824.5169

December 6, 2019

Citizens for a Clean Wausau
c/o Mr. Tom Kilian
133 East Thomas Street
Wausau, Wisconsin 54401

Re: **Riverside Park**
Wausau, Wisconsin

Subject: **Soil Sampling and Analysis Results**

Dear Mr. Killian:

The purpose of this letter is to present the methods and results of soil sampling performed along the southwest border of Riverside Park. The information is submitted for your review, consideration, and use.

Work Performed

The work was performed in accordance with the *Soil Sampling Plan*[1]. Samples were collected by Pete Arntsen/Sand Creek Consultants on November 5, 2019. Matt Guptail/City of Wausau met Pete at the Park and subsequently surveyed the sample locations using global positioning system equipment.

Soil samples were collected by using a shovel to excavate holes approximately 12 inches in diameter and 12 inches deep. Soil samples were collected by hand and placed in a sample jar, which was then placed on ice in a cooler. All samples were collected from near the base of the "A-horizon" (topsoil) at depths of 8 to 10 inches. New nitrile gloves were worn during sample collection and handling, and the shovel was washed with soapy water, rinsed with tap water, and final rinsed with distilled water between uses. Samples were stored on ice in a cooler pending shipment to Pace Analytical Services, LLC.

Results

The physical characteristics of all samples were similar: the samples were moist and dark brown, with soil texture ranging from silt loam to sandy loam.

Sample locations are indicated on the enclosed **Figure**; the laboratory analysis results and their associated toxicity equivalent (TEQ) values are summarized on the enclosed **Table 1**; the **laboratory report** and a **Photolog** are also enclosed.

[1] Sand Creek Consultants, 2019, *Soil Sampling Plan Riverside Park Wausau, Wisconsin* October 2019

Evaluation

The data from the sample with the highest dioxin/furan concentrations (RP-102) were entered into the Wisconsin Department of Natural Resources Residual Contaminant Levels (RCL) spreadsheet. The results are presented in **Table 2**. None of the individual substances nor the cumulative Hazard Index exceeded their respective Non-Industrial Direct-Contact RCL.

The TEQ process is a method used by the US Environmental Protection Agency (EPA) to relate all the dioxin/furan congeners to 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD), considered to be the most toxic congener. The cumulative TEQ value of a sample can then be used for toxicity assessment purposes. The cumulative TEQ value for samples RP-102 and RP-103 (19 nanograms per kilogram [ng/kg] TEQ and 7.5 ng/kg TEQ, respectively) exceed the 2,3,7,8-TCDD Non-Industrial Direct-Contact Level of 4.82 ng/kg. [Note: The TEQ values presented in Table 1 are based on the Toxic Equivalency Factors (TEF) established by the World Health Organization in 2005 (WHO '05); the TEQ values included on the laboratory report are based on the International Toxic Equivalents (ITE) TEFs. For these samples, the ITE factors result in slightly higher TEQ values as compared with the WHO '05 factors. The ITE TEQ values for samples RP-102 and RP-103 are 23 ng/kg and 10 ng/kg, respectively.]

If you have any questions or would like to discuss, please contact me at 715.824.5969 or by email at pete.arntsen@sand-creek.com.

Sincerely,

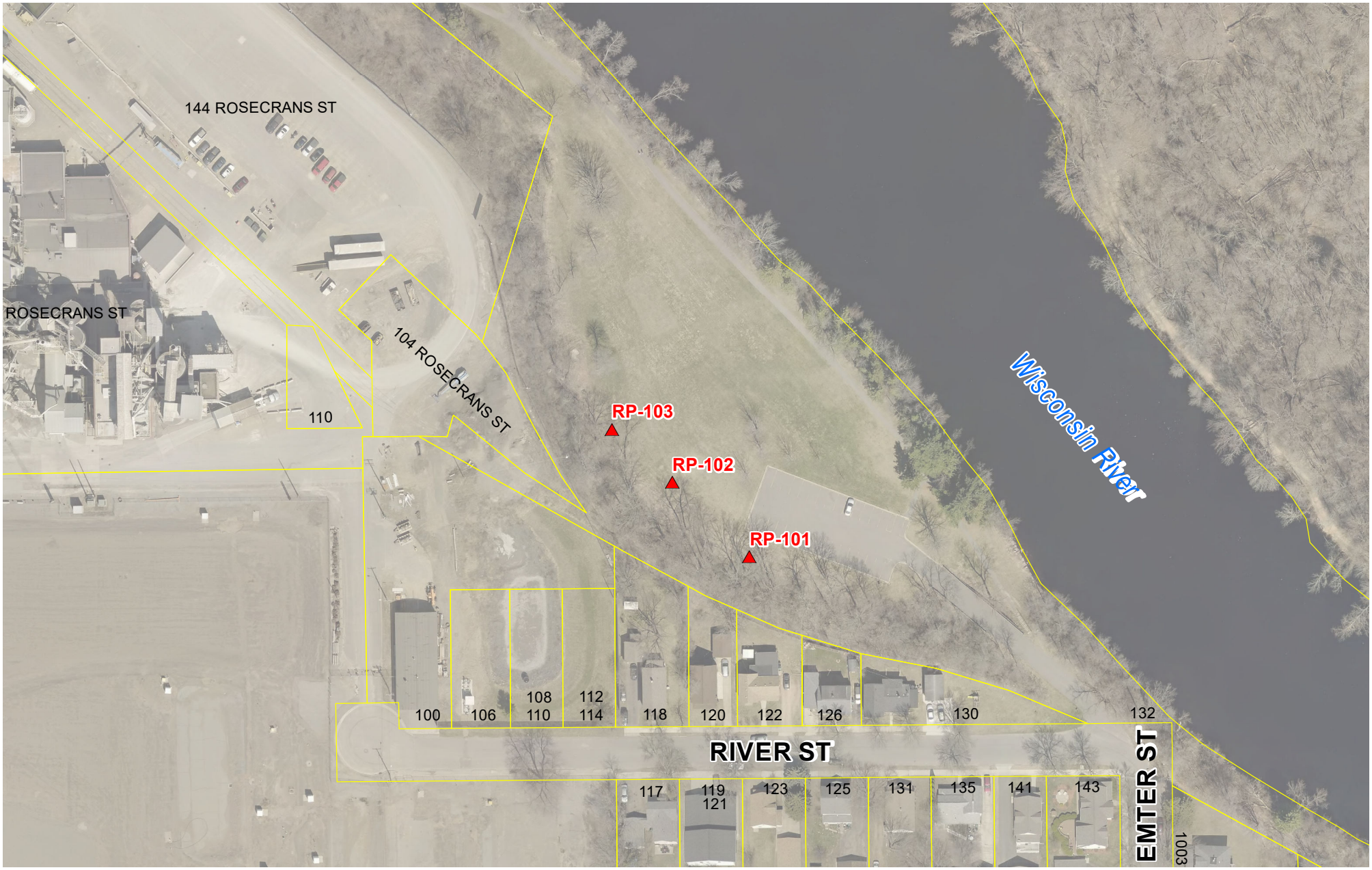
SAND CREEK CONSULTANTS, INC.

Pete Arntsen, MS, PH, PG
Senior Hydrogeologist

Enclosures: Figure 1
Tables 1 and 2
Laboratory Report
Photolog

Via email only

Figure 1
Soil Boring Locations



NOTES:
1. DUPLICATION OF THIS MAP IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF THE CITY OF WAUSAU ENGINEERING DEPT.
2. THIS MAP WAS COMPILED AND DEVELOPED BY THE CITY OF WAUSAU AND MARATHON COUNTY GIS. THE CITY AND COUNTY ASSUME NO RESPONSIBILITY FOR THE ACCURACY OF THE INFORMATION CONTAINED HEREIN.
3. SOIL SAMPLES COLLECTED BY SAND CREEK CONSULTANTS, INC ON NOVEMBER 5, 2019

Soil Samples Locations
Riverside Park

City of Wausau

** Samples Collected by Sand Creek Consultants, Inc**

Legend

Parcels

Soil Samples

N W E S

0 100 200 Feet

Map Date: December 05, 2019
2016 Airphoto

Path: P:...\eng\mxds\RiversidePark_SoilSamples_8x11L.mxd

Tables

Table 1: Analysis Results and Calculated Toxicity Equivalents of Soil Samples Collected from Riverside Park, Wausau, WI

Sample Identification Sample Date		Direct-Contact Levels (ng/kg) Non-Industrial	 Industrial	Laboratory Results (ng/kg) RP-101 10" 11/5/2019	 RP-102 8" 11/5/2019	 RP-103 10" 11/5/2019	WHO_{05} TEF	Toxicity Equivalent (TEQ) (ng/kg) RP-101 10" 11/5/2019	 RP-102 8" 11/5/2019	 RP-103 10" 11/5/2019
Dioxin Congeners										
2,3,7,8-TCDD	ng/kg	4.82	21.8	<2.1	<0.27	<0.25	1	<2.1	<0.27	<0.25
Total TCDD	ng/kg	--	--	<2.1	2.0	4.7	--	--	--	--
1,2,3,7,8-PeCDD	ng/kg	4.93	22	<1.5	1.9	<0.55	1	<1.5	1.9	<0.55
Total PeCDD	ng/kg	--	--	<1.5	9.6	7.2	--	--	--	--
1,2,3,4,7,8-HxCDD	ng/kg	49.3	223	<2.9	4.8	1.4	0.1	<0.29	0.48	0.14
1,2,3,6,7,8-HxCDD	ng/kg	49.3	223	6.0	21	4.7	0.1	0.60	2.1	0.47
1,2,3,7,8,9-HxCDD	ng/kg	49.3	223	3.4	8.9	2.0	0.1	0.34	0.89	0.20
Total HxCDD	ng/kg	--	--	45	120	35	--	--	--	--
1,2,3,4,6,7,8-HpCDD	ng/kg	484	2190	95	380	77	0.01	0.95	3.80	0.77
Total HpCDD	ng/kg	--	--	180	710	140	--	--	--	--
1,2,3,4,6,7,8,9-OCDD	ng/kg	16,400	74,400	610	3,000	520	0.0003	0.18	0.90	0.16
Furan Congeners										
2,3,7,8-TCDF	ng/kg	48.4	219	<2.4	1.4	1.9	0.1	<0.24	0.14	0.19
Total TCDF	ng/kg	--	--	<2.4	41	35	--	--	--	--
1,2,3,7,8-PeCDF	ng/kg	164	744	<1.5	1.8	<0.29	0.03	<0.045	0.05	<0.0087
2,3,4,7,8-PeCDF	ng/kg	16	74	<1.7	14	12	0.3	<0.052	4.2	3.6
Total PcCDF	ng/kg	--	--	130	260	190	--	--	--	--
1,2,3,4,7,8-HxCDF	ng/kg	48.5	220	4.8	6.3	2.1	0.1	0.48	0.63	0.21
1,2,3,6,7,8-HxCDF	ng/kg	48.5	220	3.8	14	6.2	0.1	0.38	1.4	0.62
2,3,4,6,7,8-HxCDF	ng/kg	49.3	223	3.9	6.2	5.2	0.1	0.39	0.62	0.52
1,2,3,7,8,9-HxCDF	ng/kg	49.3	223	2.0	2.9	1.5	0.1	0.20	0.29	0.15
Total HxCDF	ng/kg	--	--	110	280	210	--	--	--	--
1,2,3,4,6,7,8-HpCDF	ng/kg	490	2,220	37	99	45	0.01	0.37	0.99	0.45
1,2,3,4,7,8,9-HpCDF	ng/kg	490	2,220	2.3	6.3	2.4	0.01	0.023	0.063	0.024
Total HpCDF	ng/kg	--	--	91	250	110	--	--	--	--
1,2,3,4,6,7,8,9-OCDF	ng/kg	16,400	74,400	49	170	68	0.0003	0.0147	0.051	0.020
Total Dioxin/Furan	**ng/kg**	**--**	**--**	**1,215**	**4,843**	**1,320**		**3.9**	**19**	**7.5**

TCDD: Tetrachlorodibenzo-p-dioxin
PeCDD: Pentachlorodibenzo-p-dioxin
HxCDD: Hexachlorodibenzo-p-dioxin
HPCDD: Heptachlorodibenzo-p-dioxin
OCDD: Octachlorodibenzo-p-dioxin
TCDF: Tetrachlorodibenzofuran
PeCDF: Pentachlorodibenzofuran
HxCDF: Hexachlorodibenzofuran
HPCDF: Heptachlorodibenzofuran
OCDF: Octachlorodibenzofuran

--: Not established/Not applicable
<: Less than the indicated estimated detection limit
Estimated Maximum Possible Concentration
WHO_{05} TEF: Toxic Equivalent Factor established by the World Health Organization in 2005
TEQ: Toxic Equivalency relative to 2,3,7,8-TCDD
TEF: Toxic Equivalency Factor
See lab report for additional notes.

Table 2: NR 720 Direct-Contact ***Exceedance*** - ***Hazard*** - ***Risk*** Calculation Summary from Soil Data

BRRTS # :
Type BRRTS No. Here (If Known)

# of Soil-Concentration Entries: 17

Number of Individual Exceedance	(Cumulative) Hazard Index	(Cumulative) Cancer Risk
0	0.3677	3.8E-06

Bottom-Line: Yes, levels are below direct-contact concern.

Date of Entry: 12/2/2019.
Date of Worksheet Used: 11/20/2018.

List below only has contaminants with data.

Contaminant	CAS Number	NC RCL (mg/kg)	C RCL (mg/kg)	Not-To-Exceed D-C RCL (mg/kg)	Basis	BTV (mg/kg)	INPUTTED Site Data (mg/kg)	Flag E = Individual Exceedance!	Hazard Quotient (HQ) from Data	Cancer Risk (CR) from Data
Heptachlorodibenzofuran, 1,2,3,4,6,7,8-	67562-39-4	0.005	4.90E-04	4.90E-04	ca		9.90E-05		0.0194	2.0E-07
Hexachlorodibenzofuran, 1,2,3,4,7,8-	70648-26-9	5.11E-04	4.85E-05	4.85E-05	ca		6.30E-06		0.0123	1.3E-07
Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-	39227-28-6	5.11E-04	4.93E-05	4.93E-05	ca		4.80E-06		0.0094	9.7E-08
HpCDD, 1,2,3,4,6,7,8,-	35822-46-9	0.005	4.84E-04	4.84E-04	ca		3.80E-04		0.0744	7.9E-07
HpCDF, 1,2,3,4,7,8,9-	55673-89-7	0.005	4.90E-04	4.90E-04	ca		6.30E-06		0.0012	1.3E-08
HxCDD, 1,2,3,6,7,8-	57653-85-7	5.11E-04	4.93E-05	4.93E-05	ca		2.10E-05		0.0411	4.3E-07
HxCDD, 1,2,3,7,8,9-	19408-74-3	5.11E-04	4.93E-05	4.93E-05	ca		8.90E-06		0.0174	1.8E-07
HxCDF, 1,2,3,6,7,8-	57117-44-9	5.11E-04	4.85E-05	4.85E-05	ca		1.40E-05		0.0274	2.9E-07
HxCDF, 1,2,3,7,8,9-	72918-21-9	5.11E-04	4.93E-05	4.93E-05	ca		2.90E-06		0.0057	5.9E-08
HxCDF, 2,3,4,6,7,8-	60851-34-5	5.11E-04	4.93E-05	4.93E-05	ca		6.20E-06		0.0121	1.3E-07
OCDD	3268-87-9	0.17	0.016	0.016	ca		0.003		0.0176	1.8E-07
OCDF	39001-02-0	0.17	0.016	0.016	ca		1.70E-04		0.001	1.0E-08
PeCDF, 1,2,3,7,8-	57117-41-6	0.002	1.64E-04	1.64E-04	ca		1.80E-06		0.0011	1.1E-08
PeCDF, 2,3,4,7,8-	57117-31-4	1.70E-04	1.64E-05	1.64E-05	ca		1.40E-05		0.0824	8.5E-07
Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-	40321-76-4	5.11E-05	4.93E-06	4.93E-06	ca		1.90E-06		0.0372	3.9E-07
TCDD, 2,3,7,8-	1746-01-6	5.11E-05	4.82E-06	4.82E-06	ca		2.70E-07		0.0053	5.6E-08
TCDF, 2,3,7,8-	51207-31-9	5.11E-04	4.84E-05	4.84E-05	ca		1.40E-06		0.0027	2.9E-08

Laboratory Report

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, LLC.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

Report Prepared for:

Pete Arntsen
Sand Creek Consultants
PO Box 218
Amherst WI 54406

REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

Report Information:

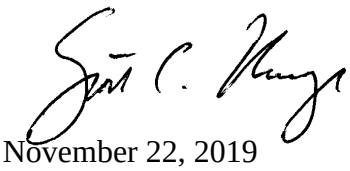
Pace Project #: 10498739
Sample Receipt Date: 11/08/2019
Client Project #: RiverSide Park
Client Sub PO #: N/A
State Cert #: 999407970

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Scott Unze, your Pace Project Manager.

This report has been reviewed by:



November 22, 2019

Scott Unze, Project Manager
(612) 607-6383
(612) 607-6444 (fax)
scott.unze@pacelabs.com

Report Prepared Date:
November 22, 2019

Report of Laboratory Analysis

Pace Analytical Services, LLC.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on three samples submitted by a representative of Sand Creek Consultants. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using USEPA Method 1613B. The reporting limits were based on signal-to-noise measurements. Estimated Maximum Possible Concentration (EMPC) values were treated as positives in the toxic equivalence calculations. Method blank and field sample results with reporting limits set to correspond to the lowest calibration points and a nominal 10-gram sample amount were provided in Appendix A. The quantitation limits, adjusted for sample extraction amount or dilution, may be somewhat higher or lower than the reporting limits provided in Appendix A.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 52-134%. Except for one elevated value, which was flagged "R" on the results table, the labeled standard recoveries obtained for this project were within the target ranges specified in Method 1613B. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for recovery and accurate values were obtained.

Values were flagged "I" where incorrect isotope ratios were obtained or "P" where polychlorinated diphenyl ethers were present. Concentrations below the calibration range were flagged "J" and should be regarded as estimates. Values obtained from the analysis of a diluted extract were flagged "D". The values reported for 2,3,7,8-TCDF in the field samples were obtained from second column confirmation analyses (flagged "C") or verified by second column confirmation analyes (flagged "V"). In cases where the estimated detection limit (EDL) values were above the standard reporting limits, the EDLs were provided and flagged "A" (in Appendix A).

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show that PCDDs and PCDFs were not detected.

A laboratory spike sample was also prepared with the sample batch using clean reference matrix that had been fortified with native standard materials. The results show that the spiked native compounds were recovered at 96-110%. These results were within the target range for the method. Matrix spikes were prepared with the sample batch using sample material from a separate project; results from these analyses will be provided upon request.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Minnesota - Pet	1240
Alabama	40770	Mississippi	MN00064
Alaska - DW	MN00064	Missouri - DW	10100
Alaska - UST	17-009	Montana	CERT0092
Arizona	AZ0014	Nebraska	NE-OS-18-06
Arkansas - DW	MN00064	Nevada	MN00064
Arkansas - WW	88-0680	New Hampshire	2081
CNMI Saipan	MP0003	New Jersey (NE	MN002
California	2929	New York	11647
Colorado	MN00064	North Carolina	27700
Connecticut	PH-0256	North Carolina -	27700
EPA Region 8+	via MN 027-053	North Carolina -	530
Florida (NELAP	E87605	North Dakota	R-036
Georgia	959	Ohio - DW	41244
Guam	17-001r	Ohio - VAP	CL101
Hawaii	MN00064	Oklahoma	9507
Idaho	MN00064	Oregon - Primar	MN300001
Illinois	200011	Oregon - Secon	MN200001
Indiana	C-MN-01	Pennsylvania	68-00563
Iowa	368	Puerto Rico	MN00064
Kansas	E-10167	South Carolina	74003
Kentucky - DW	90062	South Dakota	NA
Kentucky - WW	90062	Tennessee	TN02818
Louisiana - DE	03086	Texas	T104704192
Louisiana - DW	MN00064	Utah (NELAP)	MN00064
Maine	MN00064	Virginia	460163
Maryland	322	Washington	C486
Massachusetts	M-MN064	West Virginia -	382
Michigan	9909	West Virginia -	9952C
Minnesota	027-053-137	Wisconsin	999407970
Minnesota - De	via MN 027-053	Wyoming - UST	2926.01

REPORT OF LABORATORY ANALYSIS

Appendix A

Sample Management

Report No....10498739_1613FC_DFR

Page 5 of 18

CHAIN-OF-CUSTODY / Analytical Request Document

Pace Analytical® www.pacelabs.com

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of 2278780

Section A Required Client Information:

Company: Sand Creek
Address: 151 Mill St. Amherst, WI 54406
Email To: pete.dirutsen@sand-creek.com
Phone: 715-824-5964 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Pete Arntsen
Copy To:
Purchase Order No.:
Project Name: Riverside Park
Project Number:

Section C Invoice Information:

Attention: Ted Werpinski
Company Name: Davis Kuelthau
Address: 319 S. Washington, Green Bay
Pace Quote Reference: Michael Rau
Pace Project Manager: Scott Urze
Pace Profile #:

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER

Site Location STATE:

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Dioxins/Furans EPA 1613	Res	Pace Project No./ Lab I.D.
1	RP-101 10"	SL	G	11/1/19		11/1/19	3:20		1										X		W1
2	RP-102 8"	"	"				3:30		1										X		W2
3	RP-103 10"	"	"				3:40		1										X		W3
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

WO#: 10498739

10498739

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
				Courtspace	11/2/19	7:45	5.4	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Pete Arntsen

SIGNATURE of SAMPLER: Pete Arntsen DATE Signed (MM/DD/YY): 11/06/2019

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-C-010-rev.00, 09Nov2017

Pace Analytical®	Document Name: Sample Condition Upon Receipt Form	Document Revised: 23Aug2019 Page 1 of 1
	Document No.: F-MN-L-213-rev.29	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt **Client Name:** Sand Creek **Project #:** WO#: 10498739

PM: CT1 Due Date: 11/22/19

CLIENT: Sand Creek

Courier: ☒Fed Ex ☐UPS ☐USPS ☐Client ☐Pace ☐SpeeDee ☐Commercial See Exceptions ☐

Tracking Number: 4633 0201 2655

Custody Seal on Cooler/Box Present? ☐Yes ☒No **Seals Intact?** ☐Yes ☒No **Biological Tissue Frozen?** ☐Yes ☐No ☒N/A

Packing Material: ☐Bubble Wrap ☒Bubble Bags ☐None ☐Other:_____ **Temp Blank?** ☐Yes ☒No

Thermometer: ☐T1(0461) ☒T2(1336) ☐T3(0459) ☐T4(0254) ☐T5(0489) **Type of Ice:** ☒Wet ☐Blue ☐None ☐Dry ☒Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	Cooler Temp Read w/temp blank:_____ °C	Average Corrected Temp (no temp blank only): ☒See Exceptions ☐1 Container
Correction Factor: +0.1	Cooler Temp Corrected w/temp blank:_____ °C	5.4 °C

USDA Regulated Soil: (☐ N/A, water sample/Other:_____) **Date/Initials of Person Examining Contents:** GN2 11/8/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☒No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☒No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present and Filled Out?	☒Yes ☐No	1.
Chain of Custody Relinquished?	☐Yes ☒No	2.
Sampler Name and/or Signature on COC?	☒Yes ☐No ☐N/A	3.
Samples Arrived within Hold Time?	☒Yes ☐No	4.
Short Hold Time Analysis (<72 hr)?	☐Yes ☒No	5. ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome ☐Turbidity ☐Nitrate ☐Nitrite ☐Orthophos ☐Other_____
Rush Turn Around Time Requested?	☐Yes ☒No	6.
Sufficient Volume?	☒Yes ☐No	7.
Correct Containers Used?	☒Yes ☐No	8.
-Pace Containers Used?	☒Yes ☐No	
Containers Intact?	☒Yes ☐No	9.
Field Filtered Volume Received for Dissolved Tests?	☐Yes ☐No ☒N/A	10. Is sediment visible in the dissolved container? ☐Yes ☐No
Is sufficient information available to reconcile the samples to the COC?	☒Yes ☐No	11. If no, write ID/ Date/Time on Container Below: See Exception ☐
Matrix: ☐Water ☒Soil ☐Oil ☐Other_____		
All containers needing acid/base preservation have been checked?	☐Yes ☐No ☒N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐Yes ☐No ☒N/A	☐NaOH ☐HNO_3 ☐H_2SO_4 ☐Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐Yes ☐No ☒N/A	Positive for Res. Chlorine? ☐Yes ☐No pH Paper Lot# See Exception ☐
		Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in VOA Vials (greater than 6mm)?	☐Yes ☐No ☒N/A	13. See Exception ☐
Trip Blank Present?	☐Yes ☐No ☒N/A	14.
Trip Blank Custody Seals Present?	☐Yes ☐No ☒N/A	Pace Trip Blank Lot # (if purchased):_____

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted:_____ Date/Time:_____

Comments/Resolution:_____

Project Manager Review: Susan C. Hugo **Date:** 11/08/19

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: AH2

Pace Analytical	Document Name: SCUR Exception Form – Coolers Above 6°C	Document Revised: 08Apr2019 Page 1 of 1
	Document No.: F-MN-C-298-Rev.02	Issuing Authority: Pace Minnesota Quality Office

During sample triage, this form is to be placed in each cooler that arrives above 6.0 degrees Celsius

SCUR Exceptions: **Workorder #:**

Out of Temp Sample IDs	Container Type	# of Containers

PM Notified? ☐Yes ☐No

If yes, indicate who was contacted/date/time.
If no, indicate reason why.

Multiple Cooler Project? ☐Yes ☐No
If you answered yes, fill out information to the left.

No Temp Blank

Read Temp	Corrected Temp	Average Temp
5.6	5.7	5.4
5.2	5.3	
5.0	5.1	

Other Issues

Issue Type: Sample ID	Container Type	# of Containers

Tracking Number/Temperature

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Blank Analysis Results

Lab Sample Name	DFBLKQG			
Lab Sample ID	BLANK-74734	Matrix	Solid/Wipe	
Filename	Y191114B_09	Dilution	NA	
Total Amount Extracted	10.7 g	Extracted	11/12/2019	13:30
ICAL ID	Y191104	Analyzed	11/14/2019	19:44
CCal Filename(s)	Y191114A_11	Injected By	SMT	

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.0	2,3,7,8-TCDF-13C	2.00	81
Total TCDF	ND	-----	1.0	2,3,7,8-TCDD-13C	2.00	80
				1,2,3,7,8-PeCDF-13C	2.00	89
2,3,7,8-TCDD	ND	-----	1.0	2,3,4,7,8-PeCDF-13C	2.00	87
Total TCDD	ND	-----	1.0	1,2,3,7,8-PeCDD-13C	2.00	90
				1,2,3,4,7,8-HxCDF-13C	2.00	99
1,2,3,7,8-PeCDF	ND	-----	5.0	1,2,3,6,7,8-HxCDF-13C	2.00	106
2,3,4,7,8-PeCDF	ND	-----	5.0	2,3,4,6,7,8-HxCDF-13C	2.00	97
Total PeCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDF-13C	2.00	80
				1,2,3,4,7,8-HxCDD-13C	2.00	102
1,2,3,7,8-PeCDD	ND	-----	5.0	1,2,3,6,7,8-HxCDD-13C	2.00	93
Total PeCDD	ND	-----	5.0	1,2,3,4,6,7,8-HpCDF-13C	2.00	94
				1,2,3,4,7,8,9-HpCDF-13C	2.00	82
1,2,3,4,7,8-HxCDF	ND	-----	5.0	1,2,3,4,6,7,8-HpCDD-13C	2.00	92
1,2,3,6,7,8-HxCDF	ND	-----	5.0	OCDD-13C	4.00	64
2,3,4,6,7,8-HxCDF	ND	-----	5.0			
1,2,3,7,8,9-HxCDF	ND	-----	5.0	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	5.0	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0	2,3,7,8-TCDD-37Cl4	0.20	77
1,2,3,6,7,8-HxCDD	ND	-----	5.0			
1,2,3,7,8,9-HxCDD	ND	-----	5.0			
Total HxCDD	ND	-----	5.0			
1,2,3,4,6,7,8-HpCDF	ND	-----	5.0	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	5.0	(Lower-bound - Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.0			
Total HpCDD	ND	-----	5.0			
OCDF	ND	-----	10			
OCDD	ND	-----	10			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

Results reported on a total weight basis and are valid to no more than 2 significant figures.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Sample Analysis Results

Client - Sand Creek Consultants

Client's Sample ID	RP-101 10"		
Lab Sample ID	10498739001		
Filename	Y191120A_10		
Injected By	SMT		
Total Amount Extracted	12.0 g	Matrix	Solid
% Moisture	26.7	Dilution	5
Dry Weight Extracted	8.80 g	Collected	11/05/2019 03:20
ICAL ID	Y191104	Received	11/08/2019 10:15
CCal Filename(s)	Y191120A_03	Extracted	11/12/2019 13:30
Method Blank ID	BLANK-74734	Analyzed	11/20/2019 20:36

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery	
2,3,7,8-TCDF	ND	-----	2.4	DA	2,3,7,8-TCDF-13C	2.00	83	D
Total TCDF	ND	-----	2.4	D	2,3,7,8-TCDD-13C	2.00	80	D
					1,2,3,7,8-PeCDF-13C	2.00	88	D
2,3,7,8-TCDD	ND	-----	2.1	DA	2,3,4,7,8-PeCDF-13C	2.00	83	D
Total TCDD	ND	-----	2.1	D	1,2,3,7,8-PeCDD-13C	2.00	82	D
					1,2,3,4,7,8-HxCDF-13C	2.00	124	D
1,2,3,7,8-PeCDF	ND	-----	5.0	D	1,2,3,6,7,8-HxCDF-13C	2.00	134	RD
2,3,4,7,8-PeCDF	ND	-----	5.0	D	2,3,4,6,7,8-HxCDF-13C	2.00	132	D
Total PeCDF	130	-----	5.0	D	1,2,3,7,8,9-HxCDF-13C	2.00	98	D
					1,2,3,4,7,8-HxCDD-13C	2.00	118	D
1,2,3,7,8-PeCDD	ND	-----	5.0	D	1,2,3,6,7,8-HxCDD-13C	2.00	83	D
Total PeCDD	ND	-----	5.0	D	1,2,3,4,6,7,8-HpCDF-13C	2.00	92	D
					1,2,3,4,7,8,9-HpCDF-13C	2.00	85	D
1,2,3,4,7,8-HxCDF	ND	-----	5.0	D	1,2,3,4,6,7,8-HpCDD-13C	2.00	82	D
1,2,3,6,7,8-HxCDF	ND	-----	5.0	D	OCDD-13C	4.00	65	D
2,3,4,6,7,8-HxCDF	ND	-----	5.0	D				
1,2,3,7,8,9-HxCDF	ND	-----	5.0	D	1,2,3,4-TCDD-13C	2.00	NA	
Total HxCDF	100	-----	5.0	D	1,2,3,7,8,9-HxCDD-13C	2.00	NA	
1,2,3,4,7,8-HxCDD	ND	-----	5.0	D	2,3,7,8-TCDD-37Cl4	0.20	79	D
1,2,3,6,7,8-HxCDD	6.0	-----	5.0	JD				
1,2,3,7,8,9-HxCDD	ND	-----	5.0	D				
Total HxCDD	42	-----	5.0	D				
1,2,3,4,6,7,8-HpCDF	37	-----	5.0	D	Total 2,3,7,8-TCDD			
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0	D	Equivalence: 2.6 ng/Kg			
Total HpCDF	91	-----	5.0	D	(Lower-bound - Using ITE Factors)			
1,2,3,4,6,7,8-HpCDD	95	-----	5.0	D				
Total HpCDD	180	-----	5.0	D				
OCDF	-----	49	10	IJD				
OCDD	610	-----	10	D				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
A = Reporting Limit based on signal to noise
R = Recovery outside target range
I = Interference present
D = Result obtained from analysis of diluted sample

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Sample Analysis Results

Client - Sand Creek Consultants

Client's Sample ID	RP-102 8"		
Lab Sample ID	10498739002		
Filename	Y191115A_13		
Injected By	SMT		
Total Amount Extracted	11.5 g	Matrix	Solid
% Moisture	24.6	Dilution	NA
Dry Weight Extracted	8.67 g	Collected	11/05/2019 03:30
ICAL ID	Y191104	Received	11/08/2019 10:15
CCal Filename(s)	Y191114B_17	Extracted	11/12/2019 13:30
Method Blank ID	BLANK-74734	Analyzed	11/15/2019 10:48

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	1.4	-----	1.0	C	2,3,7,8-TCDF-13C	2.00	80
Total TCDF	41	-----	1.0		2,3,7,8-TCDD-13C	2.00	76
					1,2,3,7,8-PeCDF-13C	2.00	78
2,3,7,8-TCDD	ND	-----	1.0		2,3,4,7,8-PeCDF-13C	2.00	77
Total TCDD	1.1	-----	1.0	J	1,2,3,7,8-PeCDD-13C	2.00	78
					1,2,3,4,7,8-HxCDF-13C	2.00	73
1,2,3,7,8-PeCDF	ND	-----	5.0		1,2,3,6,7,8-HxCDF-13C	2.00	75
2,3,4,7,8-PeCDF	14	-----	5.0		2,3,4,6,7,8-HxCDF-13C	2.00	74
Total PeCDF	260	-----	5.0		1,2,3,7,8,9-HxCDF-13C	2.00	71
					1,2,3,4,7,8-HxCDD-13C	2.00	74
1,2,3,7,8-PeCDD	ND	-----	5.0		1,2,3,6,7,8-HxCDD-13C	2.00	63
Total PeCDD	ND	-----	5.0		1,2,3,4,6,7,8-HpCDF-13C	2.00	63
					1,2,3,4,7,8,9-HpCDF-13C	2.00	65
1,2,3,4,7,8-HxCDF	6.3	-----	5.0		1,2,3,4,6,7,8-HpCDD-13C	2.00	65
1,2,3,6,7,8-HxCDF	-----	14	5.0	P	OCDD-13C	4.00	52
2,3,4,6,7,8-HxCDF	6.2	-----	5.0				
1,2,3,7,8,9-HxCDF	ND	-----	5.0		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	280	-----	5.0		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0		2,3,7,8-TCDD-37Cl4	0.20	79
1,2,3,6,7,8-HxCDD	21	-----	5.0				
1,2,3,7,8,9-HxCDD	8.9	-----	5.0				
Total HxCDD	120	-----	5.0				
1,2,3,4,6,7,8-HpCDF	99	-----	5.0		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	6.3	-----	5.0		Equivalence: 21 ng/Kg		
Total HpCDF	250	-----	5.0		(Lower-bound - Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	380	-----	5.0				
Total HpCDD	710	-----	5.0				
OCDF	170	-----	10				
OCDD	3000	-----	10				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
P = PCDE Interference
C = Result obtained from confirmation analysis

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Sample Analysis Results

Client - Sand Creek Consultants

Client's Sample ID	RP-103 10"		
Lab Sample ID	10498739003		
Filename	Y191115A_12		
Injected By	SMT		
Total Amount Extracted	14.1 g	Matrix	Solid
% Moisture	22.6	Dilution	NA
Dry Weight Extracted	10.9 g	Collected	11/05/2019 03:40
ICAL ID	Y191104	Received	11/08/2019 10:15
CCal Filename(s)	Y191114B_17	Extracted	11/12/2019 13:30
Method Blank ID	BLANK-74734	Analyzed	11/15/2019 10:05

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	1.9	-----	1.0	V	2,3,7,8-TCDF-13C	2.00	76
Total TCDF	35	-----	1.0		2,3,7,8-TCDD-13C	2.00	73
					1,2,3,7,8-PeCDF-13C	2.00	78
2,3,7,8-TCDD	ND	-----	1.0		2,3,4,7,8-PeCDF-13C	2.00	73
Total TCDD	4.1	-----	1.0		1,2,3,7,8-PeCDD-13C	2.00	74
					1,2,3,4,7,8-HxCDF-13C	2.00	74
1,2,3,7,8-PeCDF	ND	-----	5.0		1,2,3,6,7,8-HxCDF-13C	2.00	80
2,3,4,7,8-PeCDF	12	-----	5.0		2,3,4,6,7,8-HxCDF-13C	2.00	79
Total PeCDF	190	-----	5.0		1,2,3,7,8,9-HxCDF-13C	2.00	72
					1,2,3,4,7,8-HxCDD-13C	2.00	75
1,2,3,7,8-PeCDD	ND	-----	5.0		1,2,3,6,7,8-HxCDD-13C	2.00	66
Total PeCDD	ND	-----	5.0		1,2,3,4,6,7,8-HpCDF-13C	2.00	67
					1,2,3,4,7,8,9-HpCDF-13C	2.00	65
1,2,3,4,7,8-HxCDF	ND	-----	5.0		1,2,3,4,6,7,8-HpCDD-13C	2.00	69
1,2,3,6,7,8-HxCDF	-----	6.2	5.0	P	OCDD-13C	4.00	52
2,3,4,6,7,8-HxCDF	5.2	-----	5.0				
1,2,3,7,8,9-HxCDF	ND	-----	5.0		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	210	-----	5.0		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	5.0		2,3,7,8-TCDD-37Cl4	0.20	70
1,2,3,6,7,8-HxCDD	ND	-----	5.0				
1,2,3,7,8,9-HxCDD	ND	-----	5.0				
Total HxCDD	23	-----	5.0				
1,2,3,4,6,7,8-HpCDF	45	-----	5.0		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	5.0		Equivalence: 8.9 ng/Kg		
Total HpCDF	110	-----	5.0		(Lower-bound - Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	77	-----	5.0				
Total HpCDD	140	-----	5.0				
OCDF	68	-----	10				
OCDD	520	-----	10				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
P = PCDE Interference
V = Result verified by confirmation analysis

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interferencepresent

J = Estimated value

L = Suppressive interference, analyte may be biased low

Nn = Value obtained from additional analysis

P = PCDEInterference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = SeeDiscussion

REPORT OF LABORATORY ANALYSIS

Appendix B

Sample Analysis Summary

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Sample Analysis Results

Client - Sand Creek Consultants

Client's Sample ID	RP-101 10"		
Lab Sample ID	10498739001		
Filename	Y191120A_10		
Injected By	SMT		
Total Amount Extracted	12.0 g	Matrix	Solid
% Moisture	26.7	Dilution	5
Dry Weight Extracted	8.80 g	Collected	11/05/2019 03:20
ICAL ID	Y191104	Received	11/08/2019 10:15
CCal Filename(s)	Y191120A_03	Extracted	11/12/2019 13:30
Method Blank ID	BLANK-74734	Analyzed	11/20/2019 20:36

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery	
2,3,7,8-TCDF	ND	-----	2.4	D	2,3,7,8-TCDF-13C	2.00	83	D
Total TCDF	ND	-----	2.4	D	2,3,7,8-TCDD-13C	2.00	80	D
					1,2,3,7,8-PeCDF-13C	2.00	88	D
2,3,7,8-TCDD	ND	-----	2.1	D	2,3,4,7,8-PeCDF-13C	2.00	83	D
Total TCDD	ND	-----	2.1	D	1,2,3,7,8-PeCDD-13C	2.00	82	D
					1,2,3,4,7,8-HxCDF-13C	2.00	124	D
1,2,3,7,8-PeCDF	ND	-----	1.5	D	1,2,3,6,7,8-HxCDF-13C	2.00	134	RD
2,3,4,7,8-PeCDF	ND	-----	1.7	D	2,3,4,6,7,8-HxCDF-13C	2.00	132	D
Total PeCDF	130	-----	1.5	D	1,2,3,7,8,9-HxCDF-13C	2.00	98	D
					1,2,3,4,7,8-HxCDD-13C	2.00	118	D
1,2,3,7,8-PeCDD	ND	-----	1.5	D	1,2,3,6,7,8-HxCDD-13C	2.00	83	D
Total PeCDD	ND	-----	1.5	D	1,2,3,4,6,7,8-HpCDF-13C	2.00	92	D
					1,2,3,4,7,8,9-HpCDF-13C	2.00	85	D
1,2,3,4,7,8-HxCDF	4.8	-----	3.1	JD	1,2,3,4,6,7,8-HpCDD-13C	2.00	82	D
1,2,3,6,7,8-HxCDF	3.8	-----	2.8	JD	OCDD-13C	4.00	65	D
2,3,4,6,7,8-HxCDF	3.9	-----	2.1	JD				
1,2,3,7,8,9-HxCDF	-----	2.0	0.66	IJD	1,2,3,4-TCDD-13C	2.00	NA	
Total HxCDF	110	-----	0.66	D	1,2,3,7,8,9-HxCDD-13C	2.00	NA	
1,2,3,4,7,8-HxCDD	ND	-----	2.9	D	2,3,7,8-TCDD-37Cl4	0.20	79	D
1,2,3,6,7,8-HxCDD	6.0	-----	2.7	JD				
1,2,3,7,8,9-HxCDD	3.4	-----	2.6	JD				
Total HxCDD	45	-----	2.6	D				
1,2,3,4,6,7,8-HpCDF	37	-----	1.7	D	Total 2,3,7,8-TCDD			
1,2,3,4,7,8,9-HpCDF	-----	2.3	2.0	IJD	Equivalence: 4.4 ng/Kg			
Total HpCDF	91	-----	1.7	D	(Lower-bound - Using ITE Factors)			
1,2,3,4,6,7,8-HpCDD	95	-----	1.5	D				
Total HpCDD	180	-----	1.5	D				
OCDF	-----	49	2.6	IJD				
OCDD	610	-----	3.1	D				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
R = Recovery outside target range
I = Interference present
D = Result obtained from analysis of diluted sample

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Sample Analysis Results

Client - Sand Creek Consultants

Client's Sample ID	RP-102 8"		
Lab Sample ID	10498739002		
Filename	Y191115A_13		
Injected By	SMT		
Total Amount Extracted	11.5 g	Matrix	Solid
% Moisture	24.6	Dilution	NA
Dry Weight Extracted	8.67 g	Collected	11/05/2019 03:30
ICAL ID	Y191104	Received	11/08/2019 10:15
CCal Filename(s)	Y191114B_17	Extracted	11/12/2019 13:30
Method Blank ID	BLANK-74734	Analyzed	11/15/2019 10:48

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	1.4	-----	0.23	C	2,3,7,8-TCDF-13C	2.00	80
Total TCDF	41	-----	0.58		2,3,7,8-TCDD-13C	2.00	76
					1,2,3,7,8-PeCDF-13C	2.00	78
2,3,7,8-TCDD	ND	-----	0.27		2,3,4,7,8-PeCDF-13C	2.00	77
Total TCDD	2.0	-----	0.27		1,2,3,7,8-PeCDD-13C	2.00	78
					1,2,3,4,7,8-HxCDF-13C	2.00	73
1,2,3,7,8-PeCDF	1.8	-----	0.41	J	1,2,3,6,7,8-HxCDF-13C	2.00	75
2,3,4,7,8-PeCDF	14	-----	0.61		2,3,4,6,7,8-HxCDF-13C	2.00	74
Total PeCDF	260	-----	0.41		1,2,3,7,8,9-HxCDF-13C	2.00	71
					1,2,3,4,7,8-HxCDD-13C	2.00	74
1,2,3,7,8-PeCDD	1.9	-----	0.54	J	1,2,3,6,7,8-HxCDD-13C	2.00	63
Total PeCDD	9.6	-----	0.54		1,2,3,4,6,7,8-HpCDF-13C	2.00	63
					1,2,3,4,7,8,9-HpCDF-13C	2.00	65
1,2,3,4,7,8-HxCDF	6.3	-----	0.59		1,2,3,4,6,7,8-HpCDD-13C	2.00	65
1,2,3,6,7,8-HxCDF	-----	14	0.52	P	OCDD-13C	4.00	52
2,3,4,6,7,8-HxCDF	6.2	-----	0.37				
1,2,3,7,8,9-HxCDF	2.9	-----	0.32	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	280	-----	0.32		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	4.8	-----	1.2	J	2,3,7,8-TCDD-37Cl4	0.20	79
1,2,3,6,7,8-HxCDD	21	-----	1.0				
1,2,3,7,8,9-HxCDD	8.9	-----	0.58				
Total HxCDD	120	-----	0.58				
1,2,3,4,6,7,8-HpCDF	99	-----	0.26		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	6.3	-----	0.20		Equivalence: 23 ng/Kg		
Total HpCDF	250	-----	0.20		(Lower-bound - Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	380	-----	0.89				
Total HpCDD	710	-----	0.89				
OCDF	170	-----	0.19				
OCDD	3000	-----	0.40				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
P = PCDE Interference
C = Result obtained from confirmation analysis

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Sample Analysis Results

Client - Sand Creek Consultants

Client's Sample ID	RP-103 10"		
Lab Sample ID	10498739003		
Filename	Y191115A_12		
Injected By	SMT		
Total Amount Extracted	14.1 g	Matrix	Solid
% Moisture	22.6	Dilution	NA
Dry Weight Extracted	10.9 g	Collected	11/05/2019 03:40
ICAL ID	Y191104	Received	11/08/2019 10:15
CCal Filename(s)	Y191114B_17	Extracted	11/12/2019 13:30
Method Blank ID	BLANK-74734	Analyzed	11/15/2019 10:05

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	1.9	-----	0.29	V	2,3,7,8-TCDF-13C	2.00	76
Total TCDF	35	-----	0.29		2,3,7,8-TCDD-13C	2.00	73
					1,2,3,7,8-PeCDF-13C	2.00	78
2,3,7,8-TCDD	ND	-----	0.25		2,3,4,7,8-PeCDF-13C	2.00	73
Total TCDD	4.7	-----	0.25		1,2,3,7,8-PeCDD-13C	2.00	74
					1,2,3,4,7,8-HxCDF-13C	2.00	74
1,2,3,7,8-PeCDF	ND	-----	0.29		1,2,3,6,7,8-HxCDF-13C	2.00	80
2,3,4,7,8-PeCDF	12	-----	0.57		2,3,4,6,7,8-HxCDF-13C	2.00	79
Total PeCDF	190	-----	0.29		1,2,3,7,8,9-HxCDF-13C	2.00	72
					1,2,3,4,7,8-HxCDD-13C	2.00	75
1,2,3,7,8-PeCDD	ND	-----	0.55		1,2,3,6,7,8-HxCDD-13C	2.00	66
Total PeCDD	7.2	-----	0.55		1,2,3,4,6,7,8-HpCDF-13C	2.00	67
					1,2,3,4,7,8,9-HpCDF-13C	2.00	65
1,2,3,4,7,8-HxCDF	2.1	-----	0.46	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	69
1,2,3,6,7,8-HxCDF	-----	6.2	0.96	P	OCDD-13C	4.00	52
2,3,4,6,7,8-HxCDF	5.2	-----	0.48				
1,2,3,7,8,9-HxCDF	-----	1.5	0.22	IJ	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	210	-----	0.22		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.4	-----	0.75	J	2,3,7,8-TCDD-37Cl4	0.20	70
1,2,3,6,7,8-HxCDD	4.7	-----	0.69				
1,2,3,7,8,9-HxCDD	-----	2.0	0.68	IJ			
Total HxCDD	35	-----	0.68				
1,2,3,4,6,7,8-HpCDF	45	-----	0.24		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	2.4	-----	0.19	J	Equivalence: 10 ng/Kg		
Total HpCDF	110	-----	0.19		(Lower-bound - Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	77	-----	0.22				
Total HpCDD	140	-----	0.22				
OCDF	68	-----	0.37				
OCDD	520	-----	0.26				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
P = PCDE Interference
I = Interference present
V = Result verified by confirmation analysis

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Blank Analysis Results

Lab Sample Name	DFBLKQG		
Lab Sample ID	BLANK-74734	Matrix	Solid/Wipe
Filename	Y191114B_09	Dilution	NA
Total Amount Extracted	10.7 g	Extracted	11/12/2019 13:30
ICAL ID	Y191104	Analyzed	11/14/2019 19:44
CCal Filename(s)	Y191114A_11	Injected By	SMT

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	0.11	2,3,7,8-TCDF-13C	2.00	81
Total TCDF	ND	-----	0.11	2,3,7,8-TCDD-13C	2.00	80
				1,2,3,7,8-PeCDF-13C	2.00	89
2,3,7,8-TCDD	ND	-----	0.11	2,3,4,7,8-PeCDF-13C	2.00	87
Total TCDD	ND	-----	0.11	1,2,3,7,8-PeCDD-13C	2.00	90
				1,2,3,4,7,8-HxCDF-13C	2.00	99
1,2,3,7,8-PeCDF	ND	-----	0.15	1,2,3,6,7,8-HxCDF-13C	2.00	106
2,3,4,7,8-PeCDF	ND	-----	0.13	2,3,4,6,7,8-HxCDF-13C	2.00	97
Total PeCDF	ND	-----	0.13	1,2,3,7,8,9-HxCDF-13C	2.00	80
				1,2,3,4,7,8-HxCDD-13C	2.00	102
1,2,3,7,8-PeCDD	ND	-----	0.19	1,2,3,6,7,8-HxCDD-13C	2.00	93
Total PeCDD	ND	-----	0.19	1,2,3,4,6,7,8-HpCDF-13C	2.00	94
				1,2,3,4,7,8,9-HpCDF-13C	2.00	82
1,2,3,4,7,8-HxCDF	ND	-----	0.22	1,2,3,4,6,7,8-HpCDD-13C	2.00	92
1,2,3,6,7,8-HxCDF	ND	-----	0.15	OCDD-13C	4.00	64
2,3,4,6,7,8-HxCDF	ND	-----	0.20			
1,2,3,7,8,9-HxCDF	ND	-----	0.14	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	0.14	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	0.19	2,3,7,8-TCDD-37Cl4	0.20	77
1,2,3,6,7,8-HxCDD	ND	-----	0.21			
1,2,3,7,8,9-HxCDD	ND	-----	0.17			
Total HxCDD	ND	-----	0.17			
1,2,3,4,6,7,8-HpCDF	ND	-----	0.15	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.15	Equivalence: 0.00 ng/Kg		
Total HpCDF	ND	-----	0.15	(Lower-bound - Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	0.16			
Total HpCDD	ND	-----	0.16			
OCDF	ND	-----	0.36			
OCDD	ND	-----	0.57			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

Results reported on a total weight basis and are valid to no more than 2 significant figures.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Laboratory Control Spike Results

Lab Sample ID	LCS-74735		
Filename	Y191114B_01	Matrix	Solid/Wipe
Total Amount Extracted	10.6 g	Dilution	NA
ICAL ID	Y191104	Extracted	11/12/2019 13:30
CCal Filename	Y191114A_11	Analyzed	11/14/2019 14:01
Method Blank ID	BLANK-74734	Injected By	SMT

Compound	Cs	Cr	Lower Limit	Upper Limit	% Rec.
2,3,7,8-TCDF	10	10	7.5	15.8	103
2,3,7,8-TCDD	10	10	6.7	15.8	101
1,2,3,7,8-PeCDF	50	51	40.0	67.0	101
2,3,4,7,8-PeCDF	50	53	34.0	80.0	106
1,2,3,7,8-PeCDD	50	48	35.0	71.0	96
1,2,3,4,7,8-HxCDF	50	54	36.0	67.0	108
1,2,3,6,7,8-HxCDF	50	51	42.0	65.0	101
2,3,4,6,7,8-HxCDF	50	49	35.0	78.0	98
1,2,3,7,8,9-HxCDF	50	49	39.0	65.0	99
1,2,3,4,7,8-HxCDD	50	53	35.0	82.0	107
1,2,3,6,7,8-HxCDD	50	55	38.0	67.0	109
1,2,3,7,8,9-HxCDD	50	49	32.0	81.0	97
1,2,3,4,6,7,8-HpCDF	50	51	41.0	61.0	102
1,2,3,4,7,8,9-HpCDF	50	48	39.0	69.0	97
1,2,3,4,6,7,8-HpCDD	50	49	35.0	70.0	99
OCDF	100	100	63.0	170.0	105
OCDD	100	110	78.0	144.0	110
2,3,7,8-TCDD-37Cl4	10	9.8	3.1	19.1	98
2,3,7,8-TCDF-13C	100	110	22.0	152.0	107
2,3,7,8-TCDD-13C	100	99	20.0	175.0	99
1,2,3,7,8-PeCDF-13C	100	100	21.0	192.0	102
2,3,4,7,8-PeCDF-13C	100	100	13.0	328.0	105
1,2,3,7,8-PeCDD-13C	100	110	21.0	227.0	106
1,2,3,4,7,8-HxCDF-13C	100	120	19.0	202.0	121
1,2,3,6,7,8-HxCDF-13C	100	130	21.0	159.0	127
2,3,4,6,7,8-HxCDF-13C	100	120	22.0	176.0	125
1,2,3,7,8,9-HxCDF-13C	100	99	17.0	205.0	99
1,2,3,4,7,8-HxCDD-13C	100	120	21.0	193.0	120
1,2,3,6,7,8-HxCDD-13C	100	110	25.0	163.0	112
1,2,3,4,6,7,8-HpCDF-13C	100	110	21.0	158.0	112
1,2,3,4,7,8,9-HpCDF-13C	100	100	20.0	186.0	102
1,2,3,4,6,7,8-HpCDD-13C	100	110	26.0	166.0	109
OCDD-13C	200	150	26.0	397.0	76

Cs = Concentration Spiked (ng/mL)
Cr = Concentration Recovered (ng/mL)
Rec. = Recovery (Expressed as Percent)
Control Limit Reference: Method 1613, Table 6, 10/94 Revision
R = Recovery outside of control limits
Nn = Value obtained from additional analysis
* = See Discussion

REPORT OF LABORATORY ANALYSIS

Photolog

Riverside Park
Soil Sampling and Analysis Results
Wausau, Wisconsin

Photo #1 Sample location RP-101

Photo #2 Sample location RP-102

Photo #3 Sample location RP-103

Photo #4 Landscape shot of sample locations

Tony Evers
Governor

Andrea Palm
Secretary

State of Wisconsin
Department of Health Services

DIVISION OF PUBLIC HEALTH

1 WEST WILSON STREET
PO BOX 2659
MADISON WI 53701-2659

Telephone: 608-266-1251
Fax: 608-267-2832
TTY: 711 or 800-947-3529

December 23, 2019

Mr. Eric Lindman

Director of Public Works & Utilities
City of Wausau
407 Grant St.
Wausau, WI 54403

Subject: Review of dioxin levels in three soil samples collected from Riverside Park, Wausau, WI

Dear Mr. Lindman,

Thank you for contacting the Department of Health Services (DHS) regarding recent dioxin soil samples collected from Riverside Park, Wausau, WI. At your request, DHS reviewed soil testing results collected along the southwest border of the Riverside Park and assessed the potential health risk. A total of three samples were collected on November 5, 2019 and analyzed on November 14, 2019. The toxic equivalency (TEQ)[1]-adjusted total dioxin levels were 2.6, 8.9, and 21 nanogram per kilogram (ng/kg).

Based on our review of these data, DHS concludes that there is no apparent public health hazard from exposure to dioxin in soil at Riverside Park. This conclusion is consistent with our previous assessments that were provided to the City in August 2018[2] and February 2019[3].

In our previous assessments, DHS used the highest dioxin levels from the reported data to assess the potential health risk from dioxin exposure for people living in the concerned area. The dioxin levels used for previous analysis were 87.7 (Riverside Park)[2,3], 47 (residential soil)[2,3], and 62.5 (railroad track)[4] ng/kg. The dioxin data that was recently submitted for our review were all below the levels that we used in previous analyses, and thus, our conclusion remains the same: The detected dioxin levels in soil do not constitute an apparent public health hazard.

[1] Toxic equivalency (TEQ) is a measure that allows us to compare the toxicity of different combinations of dioxins and dioxin-like compounds. The values are calculated by considering the relative toxicity of individual compounds in the dioxin family to the most toxic dioxin compound, 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). In general, total dioxin levels are presented as TEQ-adjusted values.

[2] Letter to the City of Wausau, August 20, 2018, subject line: Wausau Riverside Park Dioxin Contamination

[3] Letter to the City of Wausau, February 7, 2019, subject line: Response to Comments on the Wisconsin Department of Health Service's Letter on Dioxin Contamination

[4] Letter to the City of Wausau, November 13, 2019, subject line: Updated health risk assessment on the dioxin testing results from the Wauleco Inc. aerial deposition study

I would like to emphasize that DHS still recommends people to reduce their overall exposure to dioxins in everyday life by following general practices because dioxin is commonly found in the environment and dioxin can build up in the body over time. More information can be found in DHS's previous letter, dated November 13, 2019.[4]

Lastly, we appreciate the City of Wausau for informing us about the newly initiated site investigation (BRRTS # 02-37-584785) regarding dioxin contamination at Riverside Rail Corridor 132 River Street, Wausau, WI. DHS will continue to work with the City and the Department of Natural Resources by providing technical assistance and responding to health related concerns or questions.

Please feel free to contact me with additional questions.

Sincerely,

Clara Jeong, PhD

Toxicologist

Bureau of Environmental and Occupational Health

Cc:

Robert Mielke, City of Wausau

Patrick Peckham, City of Wausau

Matt Thompson, Department of Natural Resources

Dale Grosskurth, Marathon County Health Department

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
1300 W. Clairemont Ave.
Eau Claire WI 54701

Tony Evers, Governor
Preston D. Cole, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

November 21, 2019

City of Wausau
Attn: Eric Lindman
407 Grant St.
Wausau, WI 54403

Subject: Reported Contamination at Riverside Rail Corridor 132 River Street, Wausau, WI
DNR BRRTS Activity # 02-37-584785

Dear Mr. Lindman:

On October 31, 2019 the Department of Natural Resources ("department") was notified that environmental pollution was detected in the vicinity of the former rail road corridor at the site described above.

Information submitted to the department regarding this site indicates you are responsible for the discharge of a hazardous substance or other environmental pollution (hereafter referred to as "contamination") at the above-described site. "Site" refers to the property where the contamination occurred and any other property it has migrated to, as defined in Wisconsin Administrative Code ("Wis. Admin. Code") § NR 700.03(56).

This letter explains how to initiate the investigation and cleanup of contamination of the site, and how to access further information and assistance from the department. The longer contamination is left in the environment, the farther it can spread and the more it may cost to clean up. Quick action may lessen damage to your property and neighboring properties and reduce your costs in investigating and cleaning up the contamination.

Legal Responsibilities:

Persons meeting the definition of "responsible party" under Wis. Admin. Code § NR 700.03(51) must follow applicable law to address the discharge of a hazardous substance to the environment or other environmental pollution. Wisconsin Statutes ("Wis. Stats.") ch. 292 and Wis. Admin. Code chs. NR 700 through NR 754 provide specific requirements for undertaking appropriate response actions to address contamination, including requirements for emergency and interim actions, public information, site investigations, remedy selection, design and operation of remedial action systems, and case closure.

General Recommendations for Responsible Parties:

The department recommends that you:

1. *Hire a Qualified Environmental Consultant*

To ensure response actions you plan to undertake comply with Wisconsin law, you should hire an environmental consultant within **30 days,** by December 21, 2019 to meet the regulatory deadlines listed below. A delay in hiring an environmental consultant could result in you missing key submittal deadlines.

Hiring a consulting firm with staff that have the appropriate State of Wisconsin qualifications to supervise and certify the submittals is a critical component and necessary to meet your requirements. Further, an environmental consultant should be knowledgeable of Wisconsin's technical procedures and laws, and be able to answer questions regarding cleanup requirements. Required qualifications for environmental consultants are specified in Wis. Admin. Code ch. NR 712. Program guidance is available, see *Wis. Admin. Code ch. NR 712 Qualifications and Certifications, RR-081*.

2. Properly Submit Reports on Time with Required Information Included

Wisconsin law includes timeframes for submitting technical documents and conducting work, as well as specifications for what should be included in those submittals. This letter provides a general overview of the timeframes and first steps to take for site investigation and cleanup. For an overview of timing requirements, please refer to *NR 700 Process and Timeline Overview, RR-967*, *enclosed.*

The department developed the publication *Guidance for Electronic Submittals for the Remediation and Redevelopment Program, RR-690,* to assist responsible parties and consultants in properly submitting documents. Wis. Admin. Code § NR 700.11(3g), and other specific provisions within Wis. Admin. Code ch. NR 700, outline the requirements for submittals, including electronic submittals. Consultants and representatives of responsible parties are required to submit one paper copy and one electronic copy of submittals, including case closure documents. The electronic version must be an exact duplicate of the paper version. Failure to submit both a paper copy and electronic copy delays acceptance of your submittals.

3. Consider the Benefits of a Fee-based Technical Review of your Submittals

In-depth department review of technical reports and submittals is available for a fee. The Remediation and Redevelopment (RR) Program project managers are available throughout the process to answer general questions and provide general input as the site moves toward closure. However, if you want a formal written response from the department, a meeting or both on a specific submittal, a review fee will be required in accordance with Wis. Admin. Code ch. NR 749. **Obtaining technical assistance from department project managers throughout the process is an effective way to prevent problems and delays at the end of the process when case closure is requested.** Forms, a fee schedule, and further information on technical assistance is available at dnr.wi.gov and searching "brownfield fees".

Required Steps to Take and Documents to Submit:

The steps listed below serve as a general overview only — all mandatory steps and submittals specified in state law must be met before the department can grant "case closure", which is a determination by the department that no further cleanup is necessary at a site, as defined in Wis. Admin. Code § NR 700.03(3m).

1. **Scoping and Work Plan Submittal – NR 716.07 and 716.09**: The law requires that you appropriately scope out your site investigation and submit a work plan within **60 days of this notification,** by Monday, January 20th, 2020 for completing a site investigation. The work plan must comply with the requirements in Wis. Admin. Code, chs. NR 700 through NR 754. For additional assistance, the department has extensive guidance on its web page at dnr.wi.gov and search "brownfield publications".

Prior to and during a site investigation, you must evaluate whether any interim actions are needed to contain or stabilize a hazardous substance discharge or environmental pollution, pursuant to Wis. Admin. Code § NR 708.11. If you undertake an interim action (*e.g.*, free product removal), you must submit documentation of the action per Wis. Admin. Code § NR 708.15.

As you develop the site investigation work plan, you must include an assessment of the vapor intrusion pathway. Wis. Admin. Code § NR 716.11(5) outlines the requirements for when to evaluate for the presence of vapors in the sub-surface and in indoor air. The results and conclusions from the vapor assessment must be included in the Wis. Admin. Code § NR 716.15 site investigation report whether or not you elected to take vapor samples. *Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin, RR-800,* is available to help responsible parties and their consultants comply with these requirements.

2. **Field Investigation – NR 716.11**: Following submission of the work plan, the site investigation must be started within the timeframe provided under law. The timeframe varies depending on whether you are requesting the department's fee-based review of the work plan. If you do not request a fee-based review of the work plan, you must initiate the field investigation within 90 days of submitting the work plan, and you may proceed with the field investigation upon department notification to proceed; however, if the department has not responded within 30 days, from submittal of the work plan, you may then proceed with the field investigation. If a fee and request for department review of the work plan is submitted, the field investigation must begin within 60 days after receiving department approval.

3. **Sample Results Notification Requirements – NR 716.14**: You must report sampling results to the department, owners, occupants, and various other parties within 10 business days after receiving the sampling results, unless a different timeframe is approved by the department, in accordance with Wis. Admin. Code § NR 716.14.

4. **Site Investigation Report – NR 716.15**: Within 60 days after completion of the field investigation and receipt of the laboratory data, the law requires you to submit a Site Investigation Report (SIR) to the department. As part of the SIR or in the Remedial Actions Options Report (RAOR), if there is soil contamination, the responsible party shall identify the current land use (*i.e.*, industrial or non-industrial) and zoning for the site or facility in accordance with Wis. Admin. Code § NR 720.05(5). Also, as part of the SIR or in the RAOR, you must include any interim action report that may be required under Wis. Admin. Code § NR 708.15.

5. **Remedial Actions Options Report – NR 722**: Within 60 days after submitting the SIR, the law requires you to submit a RAOR. The selected remedy in the RAOR should include an evaluation of green and sustainable remediation criteria, as appropriate, as required by Wis. Admin. Code § NR 722.09(2m). This may be submitted as part of a broader SIR.

6. **Remedial and Interim Action Design, Implementation, Operation, Maintenance and Monitoring Reports – NR 724**: Unless otherwise directed by the department, the responsible party shall submit all plans and reports required in Wis. Admin. Code ch. NR 724.

7. **Notification of Residual Contamination or Continuing Obligations – NR 725**: In situations where notification is required, the responsible party must provide submittal(s) that confirms that continuing obligations have been identified and affected property owners have been notified by the responsible parties 30 days prior to case closure, as required by Wis. Admin. Code ch. NR 725.

8. **Semi-annual Reporting -- NR 700.11**: Wis. Admin. Code § NR 700.11(1)(a) requires responsible parties to submit semi-annual site progress reports to the department until final case closure is granted. The reports summarize the work completed over six months and additional work planned to adequately complete the

response action at the site. Consultants may submit these reports on behalf of responsible parties. These reports are due in January and July of each year. Please refer to department publication *NR 700 Semi-Annual Site Progress Report, RR-082*, for more information.

Submittals required under Wis. Admin. Code chs. NR 700 - 726

These documents, as applicable, must be submitted to the department prior to the responsible party requesting case closure, unless otherwise directed by the department:

- Ch. NR 708 reports and documentation for any immediate or interim actions.
- Ch. NR 712 professional certifications and signatures are included with applicable submittals.
- Ch. NR 716 work plan(s) and site investigation report.
- Ch. NR 722 remedial action options report (exception is for Dry Cleaners Environmental Response Fund sites), with the selected remedial action identified.
- Ch. NR 724 design, construction documentation, operation, maintenance and monitoring plans and reports, including vapor mitigation commissioning.
- Ch. NR 725 submittal(s) that confirms that continuing obligations have been identified and affected property owners have been notified by the responsible parties 30 days prior to case closure.
- If requesting case closure, the Ch. NR 726 case closure form and documentation substantiating compliance with the NR 700 rule series.
- Ch. NR 749 fees have been paid, as applicable, including closure and database fees.
- Ch. NR 700 semi-annual site progress reports starting six months after notification.

Additional Information:

The department tracks information on all cleanup sites in a department database available at dnr.wi.gov and search "BOTW". The Bureau for Remediation and Redevelopment Tracking System (BRRTS) identification number for this site is listed at the top of this letter. You may view information related to your site on this database at any time.

All correspondence regarding this site should be directed to:

Matt Thompson
Remediation and Redevelopment Program
1300 West Clairemont Avenue, Eau Claire, WI 54701
Matthewa.thompson@wisconsin.gov

As previously noted, you are required to submit one paper copy and one electronic copy of plans and reports. To speed up processing, your correspondence should reference the BRRTS and Facility Identification (FID) numbers (if assigned) listed at the top of this letter.

Please visit the department's Remediation and Redevelopment Program website at dnr.wi.gov and search "Brownfields", for information on selecting a consultant, seeking financial assistance, and understanding the investigation and cleanup process. Information regarding review fees, liability clarification letters, post-cleanup liability and more is also available.

If you have questions, please call the project manager at 715-839-3750 for more information.

Thank you for your cooperation.

Sincerely,

Matt Thompson
Hydrogeologist - Remediation & Redevelopment Program
West Central Region

cc: Kevin Fabel, City of Wausau