Flambeau Mining Company 4700 Daybreak Parkway South Jordan, UT 84095 801-204-2526



-> File

June 27, 2017

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Mr. Dave Siebert Bureau Director Wisconsin Department of Natural Resources 101 S. Webster Street – GEF2 P.O. Box 7921 Madison, WI 53707-7921

RE: Flambeau Mining Company License # 03180 Facility ID 855034730 Environmental Surface Water Monitoring (First Half of 2017)

Dear Dave:

Enclosed please find copies of the first half of 2017 environmental monitoring surface water data which include analyses of surface water collected from sample stations SW-C1 and SW-C9. Sampling was completed in accordance with the approved monitoring plan prepared for IP-NO-2015-55-01907.

Stream flow, field results, and analytical results are provided in Table 1. The four surface water sampling events were completed on: April 4, 2017; April 10, 2017; May 17, 2017; and June 12, 2017. The laboratory analytical reports are attached.

Duplicate samples for each of the four events were collected for SW-C1 (SW Dup-2017-X).

If you have any questions, please contact me at (801) 204-2526 or Sharon Kozicki, of Foth Infrastructure & Environment, LLC, at (920) 496-6737.

Sincerely

Dave Cline President – Flambeau Mining Company

Enclosures

Mr. Dave Siebert Wisconsin DNR June 27, 2017 Page 2

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cc:

Sharon Kozicki, Foth Infrastructure & Environment, LLC
Kyle McLaughlin, WDNR (w/o enclosures)
Zoe C McManama, WDNR (w/o enclosures)
Al Christianson, City of Ladysmith (w/o enclosures)
Pete Boss, Rusk Co. (w/o enclosures)
Tom Riegel, Town of Grant (w/o enclosures)
CeCe Tesky, Rusk Co. Zoning (w/o enclosures)

# Table 1 Flambeau Mining Company Surface Water Analytical Summary First Half of 2017

	Location			-C1		6 · ·	SW	/-C9			SW	-C1	
	Sample ID Sample Date	SW-C1-2017-4 4/4/2017	SW-C1-2017-4-10 4/10/2017	SW-C1-2017-5-17 5/17/2017	SW-C1-2017-6 6/12/2017	SW-C9-2017-4 4/4/2017	SW-C9-2017-4-10 4/10/2017	SW-C9-2017-5-17 5/17/2017	SW-C9-2017-6 6/12/2017	SW-DUP-2017-4 4/4/2017	SW-DUP-2017-4-10	SW-DUP-2017-5-17	-
Stream Flow	Units							0/1//201/	0/12/2017	4/4/2017	4/10/2017	5/17/2017	6/12/2017
	cfs	3.79	3.02	8.175	5.79	3.02	5.79	8.12					
Parameter	Units							0.12	3.7				
Copper	ug/L	8.9	9.3	9.8	14.6	5.0	5.6	65					
Dissolved Oxygen	mg/L	10.85	10.05	6.64	5.57	8.07	7.97	6.5	6.4	8.8	9.2	9.4	9.7
Hardness	mg/L	29.7	19.8	16.7	22.1	13.9		4.98	5.12				
pH		6.61	6.36	6.63	7.0 H6	6.08		11.0	11.5	30.5	19.8	16.1	22.8
Redox Potential	mV	202	209.9	150.6	185.4		6.22	6.22	6.7 H6				6.8 H6
Specific Conductance	umhos/cm	190	120	130.0	185.4	232	253.4	160.7	220.9				
Temperature	deg c	4.72	6.46	18.18		94	50	31	39				<b></b> _
Total Suspended Solids	mg/L	3.0	4.0		16.96	3.86	6.46	17.35	16.59				
Zinc				3.21	3.4	3.2	4.0	3.21	3.4	3.4	3.6	3.6J	3.6
	ug/L	10.2	11.7	12.5	8.8J	17.0	13.5	14.0	13.7J	10.5	11.6	11.0	8.33

### Notes:

1. Stream Flow calculations were performed with Flowmaster program with the following assumptions: for C9 culvert (36" diameter concrete box (n=0.013) slope= 0.0083 ft/ft); for C1 culvert (60" with smooth interior (n=0.012), slope = 0.0106 ft/ft). For the sampling event on 6/12/2017, the field pH meter was malfuntioning. pH was analyzed at the lab in order to confirm pH values.

J: Estimated concentration at or above Limit of Detection and below the Limit of Qantitation.

H6: Analysis initiated outside of the 15 minute EPA required holding time.

cfs: cubic feet per second ug/L: micrograms per liter mg/L: milligrams per liter s.u.: standard unit mV: millivolts umhos/cm: micromhos per centimeter deg c: degrees Celsius

Prepared by: NMG1 Checked by: SVF

## Table 1 Flambeau Mining Company Surface V First Half of 2

Location		CIAL				
Sample ID		500	-C1			
Sample ID	SW-C1-2017-4	SW-C1-2017-4-10	SW-C1-2017-5-17	SW-C1-2017-6	SW-C9-2017-4	SW
Sample Date	4/4/2017	4/10/2017	5/17/2017	6/12/2017	4/4/2017	
Units						
cfs	3.79	3.02	8.175	5.79	3.02	
Units						
ug/L	8.9	9.3	9.8	14.6	5.0	
mg/L	10.85	10.05	6.64	5.57	8.07	
mg/L	29.7	19.8	16.7	22.1	13.9	
s.u.	6.61	6.36	6.63	7.0 H6	6.08	
mV	202	209.9	150.6	185.4	232	
umhos/cm	190	120	54	100	94	
deg c	4.72	6.46	18.18	16.96	3.86	
mg/L	3.0	4.0	3.2J	3.4	3.2	
ug/L	10.2	11.7	12.5	8.8J	17.0	
	Units cfs Units ug/L mg/L s.u. mV umhos/cm deg c mg/L	Sample Date         4/4/2017           Units	Sample Date         4/4/2017         4/10/2017           Units         3.02           cfs         3.79         3.02           Units         9.3           ug/L         8.9         9.3           mg/L         10.85         10.05           mg/L         29.7         19.8           s.u.         6.61         6.36           mV         202         209.9           umhos/cm         190         120           deg c         4.72         6.46           mg/L         3.0         4.0	Sample Date4/4/20174/10/20175/17/2017Unitscfs3.793.028.175Unitsug/L8.99.39.8mg/L10.8510.056.64mg/L29.719.816.7s.u.6.616.366.63mV202209.9150.6umhos/cm19012054deg c4.726.4618.18mg/L3.04.03.2J	Sample Date4/4/20174/10/20175/17/20176/12/2017Unitscfs3.793.028.1755.79Unitsug/L8.99.39.814.6mg/L10.8510.056.645.57mg/L29.719.816.722.1s.u.6.616.366.637.0 H6mV202209.9150.6185.4umhos/cm19012054100deg c4.726.4618.1816.96mg/L3.04.03.2J3.4	Sample Date4/4/20174/10/20175/17/20176/12/20174/4/2017Units </td

### Notes:

1. Stream Flow calculations were performed with Flowmaster program with the following assumptions: for C9 culvert (36" diameter concrete box (n=0.013) slope= 0.00 For the sampling event on 6/12/2017, the field pH meter was malfuntioning. pH was analyzed at the lab in order to confirm pH values.

J: Estimated concentration at or above Limit of Detection and below the Limit of Qantitation.

H6: Analysis initiated outside of the 15 minute EPA required holding time.

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cfs: cubic feet per second

ug/L: micrograms per liter

mg/L: milligrams per liter

s.u.: standard unit

mV: millivolts

umhos/cm: micromhos per centimeter

deg c: degrees Celsius

# le 1 ace Water Analytical Summary <sup>5</sup> of 2017

	SW-C9			SW	/-C1	
SW-C9-2017-		SW-C9-2017-6	SW-DUP-2017-4	SW-DUP-2017-4-10	SW-DUP-2017-5-17	SW-DUP-2017-6
4/10/2017	7 5/17/2017	6/12/2017	4/4/2017	4/10/2017	5/17/2017	6/12/2017
5.79	8.12	3.7				
5.6	6.5	6.4	8.8	9.2	9.4	9.7
7.97	4.98	5.12				
10.5	11.0	11.5	30.5	19.8	16.1	22.8
6.22	6.22	6.7 H6				6.8 H6
253.4	160.7	220.9				
50	31	39				
6.46	17.35	16.59				
4.0	3.2J	3.4	3.4	3.6	3.6J	3.6
13.5	14.0	13.7J	10.5	11.6	11.0	8.3J
						0.00

e= 0.0083 ft/ft); for C1 culvert (60" with smooth interior (n=0.012), slope = 0.0106 ft/ft).

Prepared by: NMG1 Checked by: SVF

# **Attachment 1**

First Half of 2017 Surface Water Analytical Data

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April 20, 2017

SHARON KOZICKI Foth Infrastructure & Environment, LLC 2121 Innovation Court Suite 300 De Pere, WI 54115

RE: Project: 1ST SPRING SW EVENT Pace Project No.: 40147786

## Dear SHARON KOZICKI:

Enclosed are the analytical results for sample(s) received by the laboratory on April 06, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tod holtemeyor

Tod Noltemeyer tod.noltemeyer@pacelabs.com (920)469-2436 Project Manager

Enclosures

cc: Heather Hallett, Foth Infrastructure & Environment Max Malmquist, Flambeau Mining Co



### **REPORT OF LABORATORY ANALYSIS**

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## CERTIFICATIONS

Project: 1ST SPRING SW EVENT Pace Project No.: 40147786

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### **Green Bay Certification IDs**

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky UST Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334 New York Certification #: 12064 North Dakota Certification #: R-150 Virginia VELAP ID: 460263 South Carolina Certification #: 83006001 Texas Certification #: T104704529-14-1 Wisconsin Certification #: 405132750 Wisconsin DATCP Certification #: 105-444 USDA Soil Permit #: P330-16-00157 Federal Fish & Wildlife Permit #: LE51774A-0

## **REPORT OF LABORATORY ANALYSIS**

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## SAMPLE SUMMARY

Project:1ST SPRING SW EVENTPace Project No.:40147786

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Sample ID	Matrix	Date Collected	Date Received
SW-C1-2017-4	Water	04/04/17 08:40	04/06/17 09:43
SW-C9-2017-4	Water	04/04/17 09:40	04/06/17 09:43
SW-DUP-2017-4	Water	04/04/17 00:00	04/06/17 09:43
	SW-C1-2017-4 SW-C9-2017-4	SW-C1-2017-4         Water           SW-C9-2017-4         Water	SW-C1-2017-4         Water         04/04/17 08:40           SW-C9-2017-4         Water         04/04/17 09:40

## **REPORT OF LABORATORY ANALYSIS**

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## SAMPLE ANALYTE COUNT

Project: 1ST SPRING SW EVENT Pace Project No.: 40147786

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Lab ID	Sample ID	Method	Analysts	Analytes Reported
40147786001	SW-C1-2017-4	EPA 6020	SDW	3
		SM 2540D	DDY	1
40147786002	SW-C9-2017-4	EPA 6020	SDW	3
		SM 2540D	DDY	1
40147786003	SW-DUP-2017-4	EPA 6020	SDW	3
		SM 2540D	DDY	1

## **REPORT OF LABORATORY ANALYSIS**

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### **PROJECT NARRATIVE**

## Project: 1ST SPRING SW EVENT

Pace Project No.: 40147786

### Method: EPA 6020

 Description:
 6020 MET ICPMS

 Client:
 FOTH INFRASTRUCTURE & ENVIRONMENT

 Date:
 April 20, 2017

\* \*

### **General Information:**

3 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

### **Sample Preparation:**

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

### Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### **Additional Comments:**

## **REPORT OF LABORATORY ANALYSIS**

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## **PROJECT NARRATIVE**

Project: 1ST SPRING SW EVENT

Pace Project No.: 40147786

### Method: SM 2540D

Description:2540D Total Suspended SolidsClient:FOTH INFRASTRUCTURE & ENVIRONMENTDate:April 20, 2017

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### **General Information:**

3 samples were analyzed for SM 2540D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

### Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

## **REPORT OF LABORATORY ANALYSIS**

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Project: 1ST SPRING SW EVENT

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Pace Project No.: 40147786

Sample: SW-C1-2017-4	Lab ID:	40147786001	Collecte	d: 04/04/17	08:40	Received: 04/	06/17 09:43 Ma	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	020 Prepa	ration Metho	od: EP	A 3010			
Copper	8.9	ug/L	1.0	0.26	1	04/13/17 08:32	04/14/17 16:44	7440-50-8	
Total Hardness by 2340B	29.7	mg/L	5.0	0.15	1	04/13/17 08:32	04/14/17 16:44		
Zinc	10.2	ug/L	10.0	3.1	1	04/13/17 08:32	04/14/17 16:44	7440-66-6	
2540D Total Suspended Solids	Analytical	Method: SM 25	40D						
Total Suspended Solids	3.0	mg/L	2.0	0.95	1		04/07/17 10:36		

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## ANALYTICAL RESULTS

Project: 1ST SPRING SW EVENT

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Pace Project No.: 40147786

Sample: SW-C9-2017-4	Lab ID:	40147786002	Collecte	d: 04/04/17	09:40	Received: 04/	06/17 09:43 Ma	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	020 Prepa	ration Methe	od: EPA	3010			
Copper	5.0	ug/L	1.0	0.26	1	04/13/17 08:32	04/14/17 16:51	7440-50-8	
Total Hardness by 2340B	13.9	mg/L	5.0	0.15	1	04/13/17 08:32	04/14/17 16:51		
Zinc	17.0	ug/L	10.0	3.1	1	04/13/17 08:32	04/14/17 16:51	7440-66-6	
2540D Total Suspended Solids	Analytical	Method: SM 2	540D						
Total Suspended Solids	3.2	mg/L	2.0	0.95	1		04/07/17 10:36	-	

## **REPORT OF LABORATORY ANALYSIS**

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Project: 1ST SPRING SW EVENT

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Pace Project No.: 40147786

Sample: SW-DUP-2017-4	Lab ID:	40147786003	Collecte	d: 04/04/17	7 00:00	Received: 04/	06/17 09:43 M	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	020 Prepa	ration Methe	od: EP/	A 3010			
Copper	8.8	ug/L	1.0	0.26	1	04/13/17 08:32	04/14/17 16:58	7440-50-8	
Total Hardness by 2340B	30.5	mg/L	5.0	0.15	1	04/13/17 08:32	04/14/17 16:58		
Zinc	10.5	ug/L	10.0	3.1	1	04/13/17 08:32	04/14/17 16:58	7440-66-6	
2540D Total Suspended Solids	Analytical	Method: SM 25	40D						
Total Suspended Solids	3.4	mg/L	2.0	0.95	1		04/07/17 10:36		

## **REPORT OF LABORATORY ANALYSIS**

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## QUALITY CONTROL DATA

		s	QUALITY	CONTRO	DL DA	ATA						
	1ST SPRING SW	EVENT										
Pace Project No.:	40147786											
QC Batch:	252613		Analysis	Method:	EF	PA 6020						
QC Batch Method:	EPA 3010		Analysis	Description:	60	20 MET						
Associated Lab Sam	ples: 40147786	001, 40147786002,	401477860	03								
METHOD BLANK:	1490465		Ma	atrix: Water								
Associated Lab Sam	ples: 40147786	001, 40147786002,	401477860	03								
			Blank	Repo	-							
Param	eter	Units	Result	Lin	nit	Analyz	ed	Qualifiers				
Copper		ug/L	<(	0.26	1.0							
Total Hardness by 23	340B	mg/L	1	0.15	5.0							
Zinc		ug/L		<3.1	10.0	04/14/17	14:55					
LABORATORY CON	ITROL SAMPLE:	1490466			3							
			Spike	LCS		LCS	% Rec					
Param	neter	Units	Conc.	Result		% Rec	Limits	Q	ualifiers	_		
Copper		ug/L	500	5	14	103	80	-120				
Total Hardness by 2	340B	mg/L			3.6							
Zinc		ug/L	500	5	70	114	80	-120				
MATRIX SPIKE & M		PLICATE: 14904	67	14	190468							
			MS	MSD								
		40148132001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	er Ur	nits Result	Conc.	Conc. F	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
						1200120-001					00	

Parameter	2 Units	40148132001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Copper	ug/L	9.5	500	500	543	532	107	105	75-125	2	20 20	
Total Hardness by 2340B Zinc	mg/L ug/L	19.7 <30.5	500	500	55.5 566	53.3 574	111	113	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

## **REPORT OF LABORATORY ANALYSIS**

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## QUALITY CONTROL DATA

Project: 1ST SPR	RING SW EVENT						
Pace Project No.: 4014778	6						
QC Batch: 252137		Analysis Me	thod:	SM 2540D			
QC Batch Method: SM 254	40D	Analysis De	scription:	2540D Total S	suspended Solids	6	
Associated Lab Samples: 4	40147786001, 40147786002	2, 40147786003					
METHOD BLANK: 1487774		Matrix	: Water				
Associated Lab Samples: 4	40147786001, 40147786002	2, 40147786003					
		Blank	Reporting				
Parameter	Units	Result	Limit	Analyz	ed Qualif	fiers	
Total Suspended Solids	mg/L	<0.48	1	.0 04/07/17	10:35		
LABORATORY CONTROL SA	AMPLE: 1487775						
		Spike	LCS	LCS	% Rec		
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Total Suspended Solids	mg/L	100	82.0	82	80-120		
SAMPLE DUPLICATE: 148	7778						
SAMPLE DUPLICATE. 140	1110	40147786001	Dup		Max		
Parameter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Suspended Solids	mg/L	3.0	3		0	5	
SAMPLE DUPLICATE: 148	7779						
Parameter	Units	40147789001 Result	Dup Result	RPD	Max RPD	Qualifiers	
Total Suspended Solids	mg/L	3.8	3	3.6	5	5	_

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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## QUALIFIERS

Project: 1ST SPRING SW EVENT Pace Project No.: 40147786

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

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LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

**RPD** - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

<sup>s</sup>ace Analytical<sup>®</sup> www.pacelabs.com

# , QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:1ST SPRING SW EVENTPace Project No.:40147786

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
40147786001	SW-C1-2017-4	EPA 3010	252613	EPA 6020	252704
40147786002	SW-C9-2017-4	EPA 3010	252613	EPA 6020	252704
40147786003	SW-DUP-2017-4	EPA 3010	252613	EPA 6020	252704
40147786001	SW-C1-2017-4	SM 2540D	252137		
40147786002	SW-C9-2017-4	SM 2540D	252137		
40147786003	SW-DUP-2017-4	SM 2540D	252137		

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( <i>H</i> )	(Please Print Clearly)		ſ	UPPER MIDWEST REGION	EGION	Page 1 of
Company Name: Branch/Location:	Flambeau Mining Co.		ace Analytical	MN: 612-607-1700 WI: 920-469-2436	WI: 920-469-2436	40147786
Project Contact:	Charlon Kozicki		www.pacelabs.com	P	Quote #:	
Phone:	0	<b>ס</b> -	CHAIN OF CUSTODY	STODY	Mail To Contact:	Sharon Kozicki
Project Number:		A=None B=HCL	Preservation Codes C=H2SO4 D=HNO3 E=DI Water		Mail To Company:	Foth
Project Name:	let Spring SW Frent		Solution I=Sodium Thiosulfate	J≃Other	Mail To Address:	2121 Innovation Ct.
Project State:		FILTERED?				De Pere, WI SHII 5
Sampled By (Print):	2	PRESERVATION (CODE)*	AD		Involce To Contact:	Sharon Kozicki
Sampled By (Sign):	Max Malm				Involce To Company:	Feth
PO #:	Program:	ttory um:			Invoice To Address:	2121 Innovation Ct.
Data Package Options	USW/SW	Matrix Codes W = Water	550			DePere, WI SYIIS
	(billable)	B = Blota DW = Drinking Water     C = Charcoal GW = Ground Water     C = Charcoal GW = Ground Water     Anne Water     Anne Water	53		Invoice To Phone:	(920) 496-6737
EPA Level IV	your sample	WW = Waste Water	S_		CLIENT	LAB COMMENTS Profile #
PACE LAB#	CLIENT FIELD ID	COLLECTION MATRIX			COMMENTS	(Lab Use Only)
001 Su	502-C1-2017-4 WH	COS QHB LYMA	X X X		1-160+	1-250 MOD
00261	5	940	XX		-	-
W3 600	7-4	UNS KIN	XX		4	A
Rush Turnarot (Rush TAT su	Rush Turnaround Time Requested - Prelims (Rush TAT sublect to approval/surcharge)	Relinguesped By: Marin	MIN MIDE 41517 8	Bizdam Received By: ACOUNTER (1	(Walter) 4/5/17	Pace Project No. イババン 8: 20ar イカレイファロト
Date	Date Needed:	110	U Date Time:	Retrived By:	5	- 1(
Transmit Prelim Rus Email #1:	Transmit Prelim Rush Results by (complete what you want): tall #1:	Relinquished By:	Date/Time:	Received By:		Receipt
Email #2:			Cutoffice.	Developed Bur	Date/Time:	Sample Receipt pH
Telephone: Fax:	-	Kelinquisned by:		Nacaivau by.		Cooler-Custody Seal
	Samples on HOLD are subject to special pricing and release of liability	Relinquished By:	Date/Time:	Received By:	Date/Time:	Present / Not Present ListerCt / Not Intact
C019a(27Jun2006)						Version 6.0 08/14/06 ORIGINAL

	Sample Condition Upon Receipt	Pace Analytical Services, Inc. 1241 Bellevue Street, Suite 9
Pace Analytical		Green Bay, WI 54302
Client Name: <u>Hambeau</u> Courier: Fed Ex FUPS TClient F	Liung	
Tracking #: <u>/326590</u>		<b>8                                      </b>
Custody Seal on Cooler/Box Present: 🍞 ye		
Packing Material: T Bubble Wrap T		
Thermometer Used N/A		Samples on ice, cooling process has begun
Cooler Temperature Uncorr: ROT ICo		
Temp Blank Present: Ves K no		Person examining contents:
Temp should be above freezing to $6^{\circ}C$ for all samples frozen Biota Samples should be received $\leq 0^{\circ}C$ .	le except Biota. Comments:	Date: <u>4-6-77</u> Initials: <u>Stu</u>
Chain of Custody Present:	Exes DNO DN/A 1. Mininal	and a coper 4600.
Chain of Custody Filled Out:	1784Yes □No □N/A 2.	su su
Chain of Custody Relinquished:	∰Yes □No □N/A 3.	
Sampler Name & Signature on COC:		
Samples Arrived within Hold Time:	Yes DNo DN/A 5.	
- VOA Samples frozen upon receipt	□Yes □No Date/Time:	
Short Hold Time Analysis (<72hr):	Ares DNo DNA 6.	
Rush Turn Around Time Requested: 4	1417 + 15/105 (DA)0 = N/A 7.	
Sufficient Volume:	DXXes DNo DN/A 8.	
Correct Containers Used:	Ares Ino Inva 9.	
-Pace Containers Used:		
-Pace IR Containers Used:		
Containers Intact:	ØKes □No □N/A 10.	
Filtered volume received for Dissolved tests	□Yes □No □NTA 11.	
Sample Labels match COC:	Wres DNo DNA 12.	~
-Includes date/time/ID/Analysis Matrix	ι <u>λ</u> /	
All containers needing preservation have been chee (Non-Compliance noted in 13.)		H2SO4 T NaOH T NaOH +ZnAct
All containers needing preservation are found to be	13.	
compliance with EPA recommendation. (HNO3, H2SO4 (2:NaOH+ZnAct ≥9, NaOH ≥12)		
exceptions: VOA, coliform, TOC, TOX, TOH,	Initial when HI Lab S	Std #ID of Date/
O&G, WIDROW, Phenolics, OTHER:		ervative Time:
Headspace in VOA Vials ( >6mm):		
Trip Blank Present:	□Yes □No 1201/14 15.	
Trip Blank Custody Seals Present		
Pace Trip Blank Lot # (if purchased): Client Notification/ Resolution:	If check	ked, see attached form for additional comments
Person Contacted:	Date/Tíme:	
Comments/ Resolution:		
	for tal	Date: 4/6/17

ace Analytica www.pacelabs.com

April 20, 2017

SHARON KOZICKI Foth Infrastructure & Environment, LLC 2121 Innovation Court Suite 300 De Pere, WI 54115

\* \*

RE: Project: 2ND SPRING SW EVENT Pace Project No.: 40148128

## Dear SHARON KOZICKI:

Enclosed are the analytical results for sample(s) received by the laboratory on April 12, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tod holtemeyor

Tod Noltemeyer tod.noltemeyer@pacelabs.com (920)469-2436 Project Manager

Enclosures

cc: Heather Hallett, Foth Infrastructure & Environment Max Malmquist, Flambeau Mining Co



## **REPORT OF LABORATORY ANALYSIS**

# Pace Analytical®

Pace Analytical Services, LLC 1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

## CERTIFICATIONS

Project: 2ND SPRING SW EVENT Pace Project No.: 40148128

\* 5

## **Green Bay Certification IDs**

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky UST Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334 New York Certification #: 12064 North Dakota Certification #: R-150 Virginia VELAP ID: 460263 South Carolina Certification #: 83006001 Texas Certification #: T104704529-14-1 Wisconsin Certification #: 405132750 Wisconsin DATCP Certification #: 105-444 USDA Soil Permit #: P330-16-00157 Federal Fish & Wildlife Permit #: LE51774A-0

## **REPORT OF LABORATORY ANALYSIS**

ace Analytical www.pacelabs.com

## SAMPLE SUMMARY

Project:2ND SPRING SW EVENTPace Project No.:40148128

\* \*

Lab ID	Sample ID	Matrix	Date Collected	Date Received	
		matrix			
40148128001	SW-C1-2017-4-10	Water	04/10/17 11:30	04/12/17 08:50	
40148128002	SW-C9-2017-4-10	Water	04/10/17 12:20	04/12/17 08:50	
40148128003	SW-DUP-2017-4-10	Water	04/10/17 00:00	04/12/17 08:50	

## **REPORT OF LABORATORY ANALYSIS**

<sup>s</sup>ace Analytical<sup>®</sup> www.pacelabs.com

## SAMPLE ANALYTE COUNT

Project: 2ND SPRING SW EVENT Pace Project No.: 40148128

\* 5

Method	Analysts	Analytes Reported
EPA 6020	SDW	3
SM 2540D	JMN	1
EPA 6020	SDW	3
SM 2540D	JMN	1
EPA 6020	SDW	3
SM 2540D	JMN	. 1
	EPA 6020 SM 2540D EPA 6020 SM 2540D EPA 6020	EPA 6020         SDW           SM 2540D         JMN           EPA 6020         SDW

## **REPORT OF LABORATORY ANALYSIS**

e Analvtic www.pacelabs.com

## **PROJECT NARRATIVE**

Project: 2ND SPRING SW EVENT Pace Project No.: 40148128

## Method: EPA 6020

 Description:
 6020 MET ICPMS

 Client:
 FOTH INFRASTRUCTURE & ENVIRONMENT

 Date:
 April 20, 2017

\* 5

### **General Information:**

3 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

### Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### Additional Comments:

## **REPORT OF LABORATORY ANALYSIS**

ww.pacelabs.co

## **PROJECT NARRATIVE**

Project: 2ND SPRING SW EVENT

Pace Project No.: 40148128

### Method: SM 2540D

Description:2540D Total Suspended SolidsClient:FOTH INFRASTRUCTURE & ENVIRONMENTDate:April 20, 2017

\* 1

### **General Information:**

3 samples were analyzed for SM 2540D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

### QC Batch: 252564

R1: RPD value was outside control limits.

• DUP (Lab ID: 1490061)

· Total Suspended Solids

### Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

ace Analytical` www.pacelabs.com

Project: 2ND SPRING SW EVENT

\* 5

Pace Project No.: 40148128

Sample: SW-C1-2017-4-10	Lab ID:	40148128001	Collecte	d: 04/10/17	11:30	Received: 04/	(12/17 08:50 M	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	020 Prepa	ration Metho	od: EP/	A 3010			
Copper	9.3	ug/L	1.0	0.26	1	04/13/17 08:32	04/14/17 18:05	7440-50-8	
Total Hardness by 2340B	19.8	mg/L	5.0	0.15	1	04/13/17 08:32	04/14/17 18:05		
Zinc	11.7	ug/L	10.0	3.1	1	04/13/17 08:32	04/14/17 18:05	7440-66-6	
2540D Total Suspended Solids	Analytical	Method: SM 25	540D						
Total Suspended Solids	4.0	mg/L	2.0	0.95	1		04/12/17 15:25		

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Project: 2ND SPRING SW EVENT

\* 5

Pace Project No.: 40148128

Sample: SW-C9-2017-4-10	Lab ID:	40148128002	Collected	1: 04/10/17	12:20	Received: 04/	12/17 08:50 Ma	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	020 Prepa	ation Metho	od: EPA	3010			
Copper	5.6	ug/L	1.0	0.26	1	04/13/17 08:32	04/14/17 18:12	7440-50-8	
Total Hardness by 2340B	10.5	mg/L	5.0	0.15	1	04/13/17 08:32	04/14/17 18:12		
Zinc	13.5	ug/L	10.0	3.1	1	04/13/17 08:32	04/14/17 18:12	7440-66-6	
2540D Total Suspended Solids	Analytical	Method: SM 2	540D						
Total Suspended Solids	4.0	mg/L	2.0	0.95	1		04/12/17 15:25		

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Project: 2ND SPRING SW EVENT

\* \*

Pace Project No.: 40148128

Sample: SW-DUP-2017-4-10	Lab ID:	40148128003	Collecte	d: 04/10/17	7 00:00	Received: 04/	12/17 08:50 Ma	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	020 Prepa	ration Methe	od: EPA	A 3010			
Copper	9.2	ug/L	1.0	0.26	1	04/13/17 08:32	04/14/17 18:19	7440-50-8	
Total Hardness by 2340B	19.8	mg/L	5.0	0.15	1	04/13/17 08:32	04/14/17 18:19		
Zinc	11.6	ug/L	10.0	3.1	1	04/13/17 08:32	04/14/17 18:19	7440-66-6	
2540D Total Suspended Solids	Analytical	Method: SM 25	540D						
Total Suspended Solids	3.6	mg/L	2.0	0.95	1		04/12/17 15:25		

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## **QUALITY CONTROL DATA**

	• '		QUALIT	Y CONT	ROL DA	ATA						
	2ND SPRING SW 40148128	EVENT										
QC Batch:	252613		Analysi	s Method:	E	PA 6020						
QC Batch Method:	EPA 3010		Analysi	s Descriptio	on: 60	020 MET						
Associated Lab Samp	oles: 40148128	001, 40148128002,	, 401481280	003								
METHOD BLANK:	1490465		М	atrix: Wate	er							
Associated Lab Sam	ples: 40148128	001, 40148128002	, 401481280	003								
			Blank		porting							
Parame	eter	Units	Result		Limit	Analyz	ed	Qualifier	S			
Copper		ug/L	<	0.26	1.0	04/14/17	14:55					
Total Hardness by 23	40B	mg/L		0.15	5.0							
Zinc		ug/L		<3.1	10.0	04/14/17	14:55					
LABORATORY CON	TROL SAMPLE:	1490466										
			Spike	LCS		LCS	% Re	C				
Param	eter	Units	Conc.	Result	t	% Rec	Limit	s	Qualifiers			
Copper		ug/L	500		514	103	8	0-120		-		
Total Hardness by 23	40B	mg/L			33.6							
Zinc		ug/L	500		570	114	8	0-120				
MATRIX SPIKE & MA	ATRIX SPIKE DUF	PLICATE: 14904			1490468							
		40140400004	MS	MSD	MC	MSD	MS	MSD	% Rec		Max	
Parameter	Uni	40148132001 its Result	Spike Conc.	Spike Conc.	MS Result	Result	% Rec	% Rec		RPD		Qual

Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Copper	ug/L	9.5	500	500	543	532	107	105	75-125	2	20	
Total Hardness by 2340B	mg/L	19.7			55.5	53.3				4	20	
Zinc	ug/L	<30.5	500	500	566	574	111	113	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

## **REPORT OF LABORATORY ANALYSIS**

<sup>ø</sup>ace Analytical www.pacelabs.com

\* 5

## QUALITY CONTROL DATA

Project: 21	ID SPRING SW	EVENT						
Pace Project No.: 40	148128							
QC Batch:	252564		Analysis Me	ethod:	SM 2540D			
QC Batch Method:	SM 2540D		Analysis De	escription:	2540D Total S	Suspended Solids	3	
Associated Lab Sample	es: 40148128	8001, 40148128002,	40148128003					
METHOD BLANK: 14	90053		Matrix	: Water				
Associated Lab Sample	es: 40148128	8001, 40148128002,	40148128003					
			Blank	Reporting				
Paramet	er	Units	Result	Limit	Analyz	ed Qualif	iers	
Total Suspended Solid	3	mg/L	<0.48	1	.0 04/12/17	15:23		
LABORATORY CONT	ROL SAMPLE:	1490054						
			Spike	LCS	LCS	% Rec		
Paramet	ər	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Total Suspended Solid	5	mg/L	100	100	100	80-120		
SAMPLE DUPLICATE	1490055		40148068001	Dur		Мах		
Paramet	ər	Units	Result	Dup Result	RPD	RPD	Qualifiers	
			423		17	2	5	
Total Suspended Solid	5	mg/L	420	9 4	17	2	5	
SAMPLE DUPLICATE	1490061							
			40148060001	Dup		Max		
Paramet	er	Units	Result	Result	RPD	RPD	Qualifiers	
Total Suspended Solid		mg/L	163		37	17	5 R1	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

## **REPORT OF LABORATORY ANALYSIS**

Date: 04/20/2017 11:08 AM

ace Analvtical

## QUALIFIERS

Project: 2ND SPRING SW EVENT Pace Project No.: 40148128

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

**RPD** - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

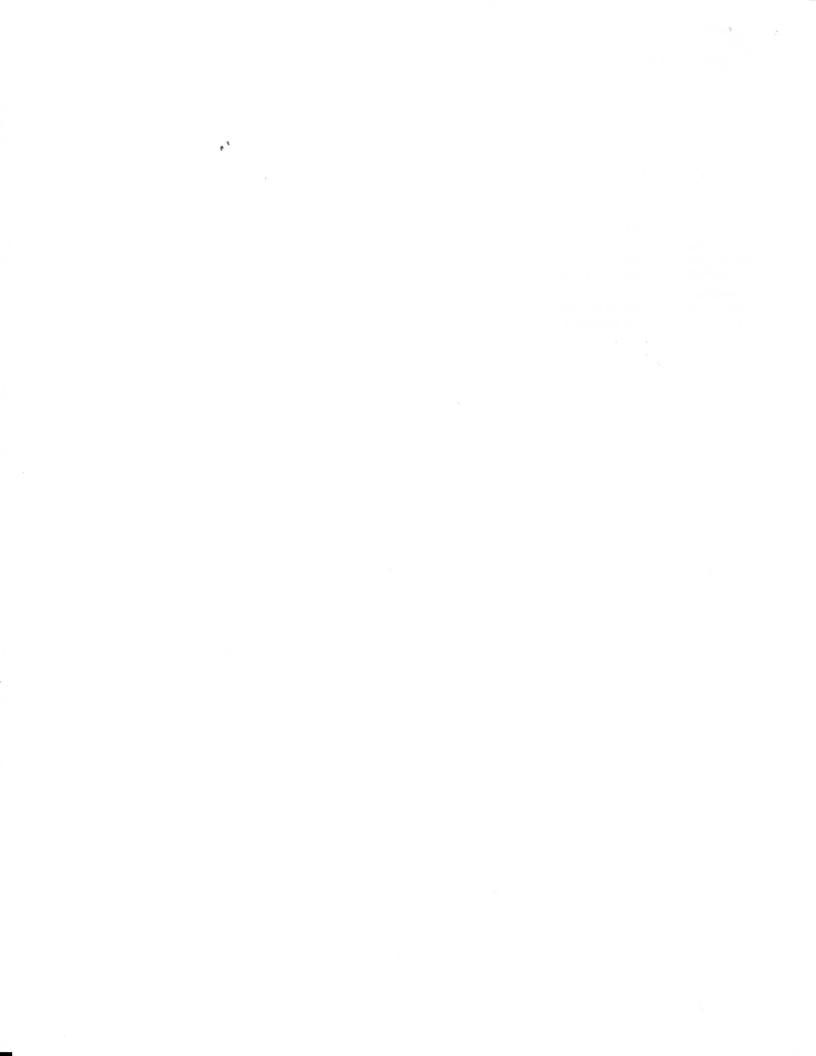
R1 RPD value was outside control limits.

Pace Analytical` www.pacelabs.com

# , QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	2ND SPRING SW EVENT
Pace Project No.:	40148128

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40148128001	SW-C1-2017-4-10	EPA 3010	252613	EPA 6020	252704
40148128002	SW-C9-2017-4-10	EPA 3010	252613	EPA 6020	252704
40148128003	SW-DUP-2017-4-10	EPA 3010	252613	EPA 6020	252704
40148128001	SW-C1-2017-4-10	SM 2540D	252564		
40148128002	SW-C9-2017-4-10	SM 2540D	252564		
40148128003	SW-DUP-2017-4-10	SM 2540D	252564		



Chusmith, WT Sharon Kozicki (920) 496-6737				9-2436	.,
10-9	- ace	Face Analytical			40148128
191				Quote #:	
	כ	TAIN OF CUSTODY		_	Sharon Kozicki
Sara Ru Fant	A=None B=HCL C=H29 H=Sodium Bisulfate Solution	2SO4 D=HNO3 E=DI Water F≭Meth I=Sodium Thiosuifate J=Other	4aOH		FOR
	~			Mail To Address: 2.13	2121 Innovation Ct
	PRESERVATION	N N N			PEPER, WT SYIIS
1 Million	(CODE)*		Invoice To	-	Sharan Kezicki
Regulatory		53	Invoice To Company:		Foth
MS/MSD Mai	T	<i>, , , , , , , , , , , , , , , , , , , </i>	Invoice To Address:		L'I I nnovation Ct
On your sample B = Blota	Water	uf		12 R	Ve Pere, wI S4115
1 on 0 = Oil S = Soll	Vater Porter	204 12 5	Invoice To Phone:	$\sim$	620)-49-40-(02b)
	WY	0	CLIENT		LAB COMMENTS Profile #
1-	THRE MANTUM	2	COMMENTS		(Lab Use Only)
1-117	WZ 25.11	X		11-11	ULTR I DAMA
1-1 107	112:20SW	X			-
DUP-7017-4 4/1/11	$\sim 50$			1.	
-				*	*
Rush Turnaround Time Requested - Prelims Relind (Rush TAT subject to approval/surcharge)	Retinquished By: Walnumerick	HaterTime: C: CO	Received By:	Date/Time:	
Relinqu	1	Date/Time:	Acceived By:	11/1 ( 7.00 m	T 4014X12A
all #1: Belinning the second state of (complete what you want): Belinning	Palinetiched Br	0580 [1.70]	MOUNTCKO, MM.	Lic/h/m	$\sim$
	- Ka neusu	Date/Time:	Received By.	iate/Time:	Receipt Temp = 001 °C
Refinqui	Relinquished By:	Date/Time:	Received By:	Date/Time:	Sumple Receipt pH OK J Adjusted
Samples on HOLD are subject to Relinqui special pricing and release of liability	Relinquished By:	Date/Time:	Received By: D	Date/Time:	Present   Not Present

	Sample Con	dition Upon Receipt	Pace Analytical Services, Inc.
Pace Analytical"			1241 Bellevue Street, Suite 9 Green Bay, WI 54302
Client Name: <u>Flump</u> Courier: F Fed Ex F UPS F Client F Pa Tracking #: 1331929	ace Other:		40148128
Custody Seal on Cooler/Box Present: 17 yes			
Custody Seal on Samples Present: \[ yes	t no Seals in	nact: // yes / no	
Packing Material: T Bubble Wrap T Bu	bble Bags 17		
Thermometer Used	Type of Ice: /		on ice, cooling process has begun
Cooler Temperature Uncorr: RDI /Corr:		liological Tissue is Frozen: Tyes	in ice, cooling process has begun
Temp Blank Present: Fyes V no		r⊓ no	Person examining contents:
Temp should be above freezing to 6°C for all sample e Frozen Biota Samples should be received ≤ 0°C.	xcept Biota.	Comments:	Date: <u> </u>
Chain of Custody Present:	Yes DNo D	JN/A 1.	
Chain of Custody Filled Out:	ŹÍYes ⊡No [	]N/A 2.	
Chain of Custody Relinquished:	ØYes ⊡No □	]N/A 3.	
Sampler Name & Signature on COC:		Inva 4.	
Samples Arrived within Hold Time:		JN/A 5.	
- VOA Samples frozen upon receipt	<pre>/</pre>		
Short Hold Time Analysis (<72hr):	1	Date/Time:	
Rush Turn Around Time Requested:		IN/A 6.	
Sufficient Volume:	,	IN/A 7.	
		IN/A 8.	
Correct Containers Used:	•	IN/A 9.	
-Pace Containers Used:	ØYes ⊡No □	N/A	
-Pace IR Containers Used:	DYes DNo 🗸	N/A	
Containers Intact:	Yes INO I	N/A 10.	
Filtered volume received for Dissolved tests		N/A 11.	
Sample Labels match COC:	Ves INO I	N/A 12.	A.
-Includes date/time/ID/Analysis Matrix:	11)		
All containers needing preservation have been checked (Non-Compliance noted in 13.)			
All containers needing preservation are found to be in		NA 13. V HNOS I H2SO4 I	NaOH / NaOH +ZnAct
compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	Øyes 🗆 No 🗆	N/A	
exceptions: VOA, coliform, TOC, TOX, TOH,		Initial when Lab Std #ID of	Date/
D&G, WIDROW, Phenolics, OTHER:	□Yes ØNo	completed MM preservative	Time:
Headspace in VOA Vials ( >6mm):	DYes DNo D	VA 14.	
Trip Blank Present:	DYes DNo 10	VA 15.	·
Trip Blank Custody Seals Present		N/A	
Pace Trip Blank Lot # (if purchased):	-		
Client Notification/ Resolution: Person Contacted:		If checked, see attach	ed form for additional comments
Comments/ Resolution: <u>DDI - SUM</u>		Lertime:	. MM 4.12.17
Project Manager Review:	ret-br	TN Date:	4/12/17

F-GB-C-031-Rev.03 (9April2015) SCUR Form

and the second second

......

ace Analvtic www.pacelabs.com

May 26, 2017

SHARON KOZICKI Foth Infrastructure & Environment, LLC 2121 Innovation Court Suite 300 De Pere, WI 54115

\* 5

RE: Project: 3RD SPRING SW EVENT Pace Project No.: 40150203

### Dear SHARON KOZICKI:

Enclosed are the analytical results for sample(s) received by the laboratory on May 19, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tod holtemeyor

Tod Noltemeyer tod.noltemeyer@pacelabs.com (920)469-2436 Project Manager

Enclosures

cc: Heather Hallett, Foth Infrastructure & Environment Max Malmquist, Flambeau Mining Co



### **REPORT OF LABORATORY ANALYSIS**

ce Analytical www.pacelabs.com

### CERTIFICATIONS

Project: 3RD SPRING SW EVENT Pace Project No.: 40150203

\* 5

#### **Green Bay Certification IDs**

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky UST Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334 New York Certification #: 12064 North Dakota Certification #: R-150 Virginia VELAP ID: 460263 South Carolina Certification #: 83006001 Texas Certification #: T104704529-14-1 Wisconsin Certification #: 405132750 Wisconsin DATCP Certification #: 105-444 USDA Soil Permit #: P330-16-00157 Federal Fish & Wildlife Permit #: LE51774A-0

### **REPORT OF LABORATORY ANALYSIS**

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### SAMPLE SUMMARY

Project:3RD SPRING SW EVENTPace Project No.:40150203

\* 5

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40150203001	SW-C1-2017-5	Water	05/17/17 17:40	05/19/17 08:45
40150203002	SW-C9-2017-5	Water	05/17/17 18:30	05/19/17 08:45
40150203003	SW-DUP-2017-5	Water	05/17/17 00:00	05/19/17 08:45

### **REPORT OF LABORATORY ANALYSIS**

<sup>s</sup>ace Analytical<sup>®</sup> www.pacelabs.com

### SAMPLE ANALYTE COUNT

Project: 3RD SPRING SW EVENT Pace Project No.: 40150203

\* 5

Method	Analysts	Analytes Reported
EPA 6020	SDW	3
SM 2540D	JMN	
EPA 6020	SDW	3
SM 2540D	JMN	
EPA 6020	SDW	3
SM 2540D	JMN	
	EPA 6020 SM 2540D EPA 6020 SM 2540D EPA 6020	EPA 6020         SDW           SM 2540D         JMN           EPA 6020         SDW

### **REPORT OF LABORATORY ANALYSIS**

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#### PROJECT NARRATIVE

Project: 3RD SPRING SW EVENT Pace Project No.: 40150203

### Method: EPA 6020

Description:6020 MET ICPMSClient:FOTH INFRASTRUCTURE & ENVIRONMENTDate:May 26, 2017

\* \*

#### **General Information:**

3 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

#### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

#### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

#### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

#### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### Additional Comments:

### **REPORT OF LABORATORY ANALYSIS**

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#### **PROJECT NARRATIVE**

Project: 3RD SPRING SW EVENT

Pace Project No.: 40150203

#### Method: SM 2540D

 Description:
 2540D Total Suspended Solids

 Client:
 FOTH INFRASTRUCTURE & ENVIRONMENT

 Date:
 May 26, 2017

\* 1

#### **General Information:**

3 samples were analyzed for SM 2540D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

#### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

#### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

### Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

### **REPORT OF LABORATORY ANALYSIS**

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### ANALYTICAL RESULTS

Project: 3RD SPRING SW EVENT

\* \*

Pace Project No.: 40150203

Sample: SW-C1-2017-5	Lab ID:	40150203001	Collecte	d: 05/17/17	7 17:40	Received: 05/	19/17 08:45 M	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	020 Prepa	ration Meth	od: EP/	A 3010			
Copper	9.8	ug/L	1.0	0.26	1	05/23/17 09:00	05/24/17 23:25	7440-50-8	
Total Hardness by 2340B	16.7	mg/L	5.0	0.15	1	05/23/17 09:00	05/24/17 23:25		
Zinc	12.5	ug/L	10.0	3.1	1	05/23/17 09:00	05/24/17 23:25	7440-66-6	
2540D Total Suspended Solids	Analytical	Method: SM 25	540D						
Total Suspended Solids	3.2J	mg/L	4.0	1.9	1		05/23/17 10:42		

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### ANALYTICAL RESULTS

Project: 3RD SPRING SW EVENT

\* \*

Pace Project No.: 40150203

Sample: SW-C9-2017-5	Lab ID:	40150203002	Collected	: 05/17/17	18:30	Received: 05/	19/17 08:45 Ma	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	020 Prepara	ation Metho	od: EPA	3010			
Copper	6.5	ug/L	1.0	0.26	1	05/23/17 09:00	05/24/17 23:32	7440-50-8	
Total Hardness by 2340B	11.0	mg/L	5.0	0.15	1	05/23/17 09:00	05/24/17 23:32		
Zinc	14.0	ug/L	10.0	3.1	1	05/23/17 09:00	05/24/17 23:32	7440-66-6	
2540D Total Suspended Solids	Analytical	Method: SM 2	540D						
Total Suspended Solids	3.2J	mg/L	4.0	1.9	1		05/23/17 10:43		

### **REPORT OF LABORATORY ANALYSIS**

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### ANALYTICAL RESULTS

Project: 3RD SPRING SW EVENT

\* \*

Pace Project No.: 40150203

Sample: SW-DUP-2017-5	Lab ID:	40150203003	Collecte	d: 05/17/17	00:00	Received: 05/	19/17 08:45 M	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	020 Prepa	ration Metho	od: EPA	A 3010			
Copper	9.4	ug/L	1.0	0.26	1	05/23/17 09:00	05/24/17 23:39	7440-50-8	
Total Hardness by 2340B	16.1	mg/L	5.0	0.15	1	05/23/17 09:00	05/24/17 23:39		
Zinc	11.0	ug/L	10.0	3.1	1	05/23/17 09:00	05/24/17 23:39	7440-66-6	
2540D Total Suspended Solids	Analytical	Method: SM 25	40D						
Total Suspended Solids	3.6J	mg/L	4.0	1.9	1		05/23/17 10:43		

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\* \*

### QUALITY CONTROL DATA

QC Batch:	256457		Analysis M	Method:	EF	PA 6020				
QC Batch Method:	EPA 3010		Analysis [	Description:	60	20 MET				
Associated Lab Samp	les: 401502030	001, 40150203002,	40150203003	3						
METHOD BLANK: 1	511633		Mat	rix: Water						
Associated Lab Samp	les: 401502030	001, 40150203002,	40150203003	3						
			Blank	Reportin	g					
Parame	ter	Units	Result	Limit		Analyze	4 C	Qualifier	S	
Copper		ug/L	<0.2	26	1.0	05/24/17 2	:36			
Total Hardness by 234	40B	mg/L	<0.	15	5.0	05/24/17 21	:36			
Zinc		ug/L	<3	5.1	10.0	05/24/17 21	:36			
LABORATORY CONT	ROL SAMPLE:	1511634								
			Spike	LCS		LCS	% Rec			
Parame	eter	Units	Conc.	Result	1	% Rec	Limits		Qualifiers	
Copper		ug/L	500	543		109	80-	120		
Total Hardness by 234	40B	mg/L		34.1						
Zinc		ug/L	500	547		109	80-	120		
		10ATE: 454400	5	1511	626					
MATRIX SPIKE & MA	I KIA SPIKE DUP	LICATE: 151163		MSD	030					
		40150205001		Spike MS		MSD	MS	MSD	% Rec	Max

	4	40150205001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Copper	ug/L	9.7	500	500	554	544	109	107	75-125	2	20	
Total Hardness by 2340B	mg/L	16.2			49.9	49.0				2	20	
Zinc	ug/L	11.2	500	500	568	560	111	110	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### **REPORT OF LABORATORY ANALYSIS**

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### **QUALITY CONTROL DATA**

Project: 3RD SPRING SV	VEVENT						
Pace Project No.: 40150203							
QC Batch: 256490		Analysis Me	ethod:	SM 2540D			
QC Batch Method: SM 2540D		Analysis De	escription:	2540D Total Su	spended Solids		
Associated Lab Samples: 4015020	3001, 4015020300	02, 40150203003					
METHOD BLANK: 1511747		Matrix	: Water				
Associated Lab Samples: 4015020	3001, 4015020300	02, 40150203003					
		Blank	Reporting				
Parameter	Units	Result	Limit	Analyzed	d Qualif	iers	
Total Suspended Solids	mg/L	<0.48	1	.0 05/23/17 10	:40		
LABORATORY CONTROL SAMPLE:	1511748						
		Spike	LCS	LCS	% Rec		
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Total Suspended Solids	mg/L	100	106	106	80-120		
SAMPLE DUPLICATE: 1511749					p. a. a. m. 19		
		40150166001	Dup		Max		
Parameter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Suspended Solids	mg/L	616	6 61	6	0	5	
SAMPLE DUPLICATE: 1511751							
		40150203001	Dup		Max		
Parameter	Units	Result	Result	RPD	RPD	Qualifiers	
Total Suspended Solids	mg/L	3.2.	3.6	5J		5	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### **REPORT OF LABORATORY ANALYSIS**



#### QUALIFIERS

### Project: 3RD SPRING SW EVENT Pace Project No.: 40150203

#### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

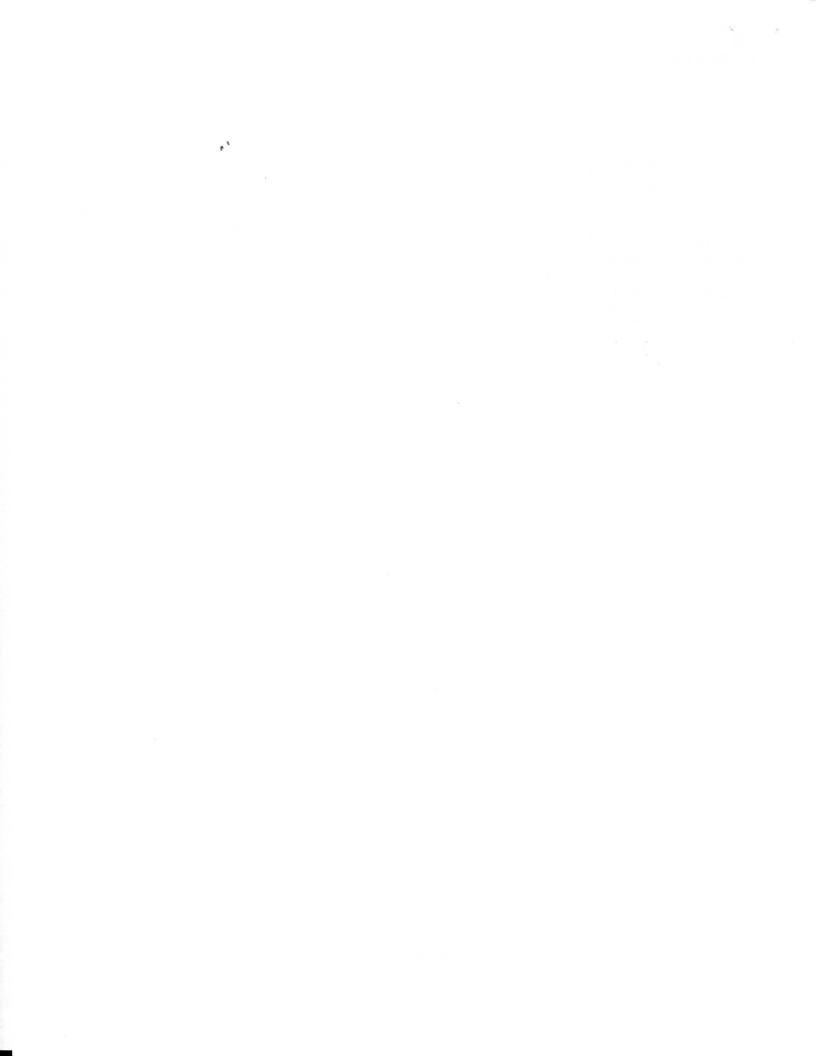
TNI - The NELAC Institute.

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# , QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	3RD SPRING SW EVENT
Pace Project No.:	40150203

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40150203001	SW-C1-2017-5	EPA 3010	256457	EPA 6020	256558
40150203002	SW-C9-2017-5	EPA 3010	256457	EPA 6020	256558
40150203003	SW-DUP-2017-5	EPA 3010	256457	EPA 6020	256558
40150203001	SW-C1-2017-5	SM 2540D	256490		
40150203002	SW-C9-2017-5	SM 2540D	256490		
40150203003	SW-DUP-2017-5	SM 2540D	256490		



(Ple	(Please Print Clearly)	Γ	(		UPPER MIDWEST REGION	EGION	Page 1 of
Company Name:	Flambeau Mining Co			•	MN: 612-607-1700 WI: 920-469-2436	WI: 920-469-2436	ACX
Branch/Location:	Ladysmith, WI		race Analyucal	al	7		
Project Contact:	Sharan Kozicki		D TODOODOO MALM		Ą	Quote #:	Pag
Phone:	16-67		<b>CHAIN OF CUSTOD</b>	<b>CUSTO</b>		Mail To Contact:	Sharpy Kozicki
Project Number:		A=None B=F	B=HCL C=H2SO4 D=HNO3	Preservation Codes D=HNO3 E=DI Water F=Metha	F=Methanol G≖NaOH	Mail To Company:	Foth
Project Name:	3rd Spring Sub Even	1		I=Sodium Thiosulfate J≃Other		Mail To Address:	2121 Innovation Ct.
Project State:	Wisconsin		$\mathcal{N} \mathcal{N}$				DePere, WIT SYIIS
Sampled By (Print):	Mox Malmavist	PRESERVATION (CODE)*	AD -			Invoice To Contact:	Sharon Koeicki
Sampled By (Sign):	Man Mahmacist					Invoice To Company:	Foth
Po#:	/ Regulatory Program:	atory ram:	, , , , , , , , , , , , , , , , , , ,			Invoice To Address:	2121 Innovation Ct.
Data Package Options (bittable)	MS/MSD	Matrix Codes W = Water					Defere, wI SHIIS
	(billable)	B = Bkota         DW = Drinking Water           C = Charcoal         GW = Ground Water           D         Oil         SW = Surface Water	S			Invoice To Phone:	(920)496-6737
	your sample	WW = Waste Water ge WP = Wipe				CLIENT	LAB COMMENTS Profile #
PACE LAB# C		COLLECTION MATRUX				COMMENTS	(Lab Use Only)
5	-CI-2017-5 /1	0050H:L1/L1/L1/L1/S	XX			1-100	1-250mip
002 SW	-C9-2017-5 \$1	J17/17 18:30 5W	XX				
-	- DUP-2017-571	With - 5W	XX				U U
			2				
Rush Turmaround (Rush TAT subj	Rush Turmaround Time Requested - Prelims (Rush TAT subject to approval/surcharge)	Relinquished By:	UNI ALLOC SIBILITION	117 8:30	Received By: W Jalf CO LOUN	(avrier) S/18/17	8:30 UNICTONN
Date N Transmit Prelim Rush R	Date Needed: Transmit Prelim Rush Results by (complete what you want):	0	05-19-17	-		a	NR IN JULY
Email #1:		Relinquished By:	Date	Date/Time:	Received By:	Date/Time:	Receipt
Email #2: Telephone:							Sample Racelot bH
releptione: Fax:		Kelinquished By:	Date	Date/Time:	Received By:	Date/Time:	W Cooler Custody Seal
Samples on special pricing	Samples on HOLD are subject to special pricing and release of llability	Relinquished By:	Date	Date/Time:	Received By:	Date/Time:	Present Mot Present Intact / Not Intact
C019a(27Jun2006)			The design of the second s				Vertion 6.0 06/14/06 ORIGINAL

	Sample Conditi	on Upon Receipt	Pace Analytical Services, Inc. 1241 Bellevue Street, Suite 9
Pace Analytical"			Green Bay, WI 54302
		Project #: LIOH ·	40150203
Client Name: <u>FLAM BEAN</u> Courier: Fed Ex F UPS F Client F	ining Car	WUT	40100200
Courier: Fed Ex TUPS Client	Pace Other: WAL	1Ca	
Tracking #:		40150203	
Custody Seal on Cooler/Box Present:	yes 🔁 no Seals intact	r yes r no	
Custody Seal on Samples Present: Г ус		yes no	
Packing Material:  Bubble Wrap	-		
Thermometer Used <u>SKR</u>	Type of Ice:		n ice, cooling process has begun
Cooler Temperature Uncorr: 0 -0 /C	orr: 0.5 Biolo	gical Tissue is Frozen: 🔽 yes	
Temp Blank Present: Fyes Fno		<b>Γ</b> no	Person examining contents: Date: 5-19-17
Temp should be above freezing to $6^{\circ}$ C for all samp Frozen Biota Samples should be received $\leq 0^{\circ}$ C.		Comments:	Initials:
Chain of Custody Present:	Yes No N/A	1.	
Chain of Custody Filled Out:	ØYes □No □N/A	2.	
Chain of Custody Relinquished:	Yes □No □N/A	3.	S
Sampler Name & Signature on COC:	⊡Yes ⊡No ⊠N/A	4.	
Samples Arrived within Hold Time:	Notes INO IN/A	5.	
- VOA Samples frozen upon receipt	□Yes □No	Date/Time:	
Short Hold Time Analysis (<72hr):		6.	
Rush Turn Around Time Requested:	⊡Yes 23No □N/A	7.	
Sufficient Volume:	Ayes No N/A	8.	
Correct Containers Used:	Karyes ⊡No ⊡N/A	9.	
-Pace Containers Used:			
-Pace IR Containers Used:	□Yes □No DN/A		
Containers Intact:	SZIYes ⊡No ⊡N/A	10.	
Filtered volume received for Dissolved tests	□Yes □No ©N/A	11.	
Sample Labels match COC:		12.	
-Includes date/time/ID/Analysis Matrix			
All containers needing preservation have been che (Non-Compliance noted in 13.)	scked are 5-19-17	13. FT-HNO3 T H2SO4	NaOH T NaOH +ZnAct
All containers needing preservation are found to be			
compliance with EPA recommendation.	( ETYRS DNO DAMA		
(HNO3) H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12) exceptions: VOA, coliform, TOC, TOX, TOH,	\	Initial when A Lab Std #ID of	Date/
O&G, WIDROW, Phenolics, OTHER:	OYes No	completed R preservative	Time:
Headspace in VOA Vials ( >6mm):	DYes DNO DN/A	14.	
Trip Blank Present:	□Yes □No QN/A	15.	1 4 4 - C
Trip Blank Custody Seals Present	□Yes □No ①N/A		
Pace Trip Blank Lot # (if purchased):	<b></b>	L	
Client Notification/ Resolution: Person Contacted:	Deta	If checked, see attac Time:	ched form for additional comments
Comments/ Resolution:			
		······································	
Project Manager Review:	THING AS	TA / Date	5/14/17

F-GB-C-031-Rev.03 (9April2015) SCUR Form

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June 19, 2017

SHARON KOZICKI Foth Infrastructure & Environment, LLC 2121 Innovation Court Suite 300 De Pere, WI 54115

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RE: Project: 4TH SPRING SW EVENT Pace Project No.: 40151558

### Dear SHARON KOZICKI:

Enclosed are the analytical results for sample(s) received by the laboratory on June 14, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tod holtemeyer

Tod Noltemeyer tod.noltemeyer@pacelabs.com (920)469-2436 Project Manager

Enclosures

cc: Heather Hallett, Foth Infrastructure & Environment Max Malmquist, Flambeau Mining Co



### **REPORT OF LABORATORY ANALYSIS**

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### CERTIFICATIONS

Project: 4TH SPRING SW EVENT Pace Project No.: 40151558

\* \*

#### **Green Bay Certification IDs**

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky UST Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334 New York Certification #: 12064 North Dakota Certification #: R-150 Virginia VELAP ID: 460263 South Carolina Certification #: 83006001 Texas Certification #: T104704529-14-1 Wisconsin Certification #: 405132750 Wisconsin DATCP Certification #: 105-444 USDA Soil Permit #: P330-16-00157 Federal Fish & Wildlife Permit #: LE51774A-0

### **REPORT OF LABORATORY ANALYSIS**

ace Analytical<sup>®</sup>

### SAMPLE SUMMARY

Project:4TH SPRING SW EVENTPace Project No.:40151558

\* 1

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40151558001	SW-C1-2017_6	Water	06/12/17 08:45	06/14/17 09:00
40151558002	SW-C9-2017_6	Water	06/12/17 09:50	06/14/17 09:00
40151558003	SW-DUP-2017_6	Water	06/12/17 00:00	06/14/17 09:00

### **REPORT OF LABORATORY ANALYSIS**

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### SAMPLE ANALYTE COUNT

Project: 4TH SPRING SW EVENT Pace Project No.: 40151558

\* 1

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40151558001	SW-C1-2017_6	EPA 6020	DS1	3
		SM 2540D	JMN	1
		SM 4500-H+B	ALY	1
40151558002	SW-C9-2017_6	EPA 6020	DS1	3
		SM 2540D	JMN	1
		SM 4500-H+B	ALY	1
40151558003	SW-DUP-2017_6	EPA 6020	DS1	3
		SM 2540D	JMN	1
		SM 4500-H+B	ALY	1

### **REPORT OF LABORATORY ANALYSIS**

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### **PROJECT NARRATIVE**

Project: 4TH SPRING SW EVENT

Pace Project No.: 40151558

### Method: EPA 6020

 Description:
 6020 MET ICPMS

 Client:
 FOTH INFRASTRUCTURE & ENVIRONMENT

 Date:
 June 19, 2017

\* 5

#### **General Information:**

3 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

#### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

#### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

#### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

#### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### **Additional Comments:**

### REPORT OF LABORATORY ANALYSIS

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#### **PROJECT NARRATIVE**

Project: 4TH SPRING SW EVENT

Pace Project No.: 40151558

#### Method: SM 2540D

Description:2540D Total Suspended SolidsClient:FOTH INFRASTRUCTURE & ENVIRONMENTDate:June 19, 2017

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#### **General Information:**

3 samples were analyzed for SM 2540D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

#### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

#### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

#### Additional Comments:

### **REPORT OF LABORATORY ANALYSIS**

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### **PROJECT NARRATIVE**

Project: 4TH SPRING SW EVENT

Pace Project No.: 40151558

### Method: SM 4500-H+B

Description:4500H+ pH, ElectrometricClient:FOTH INFRASTRUCTURE & ENVIRONMENTDate:June 19, 2017

\*\*

#### **General Information:**

3 samples were analyzed for SM 4500-H+B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

#### Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

H6: Analysis initiated outside of the 15 minute EPA required holding time.

- SW-C1-2017\_6 (Lab ID: 40151558001)
- SW-C9-2017\_6 (Lab ID: 40151558002)
- SW-DUP-2017\_6 (Lab ID: 40151558003)

#### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

#### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

#### Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

### **REPORT OF LABORATORY ANALYSIS**

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### ANALYTICAL RESULTS

Project: 4TH SPRING SW EVENT

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Pace Project No.: 40151558

Sample: SW-C1-2017_6	Lab ID:	40151558001	Collected	d: 06/12/17	08:45	Received: 06/	14/17 09:00 Ma	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	020 Prepar	ration Methe	od: EPA	A 3010			
Copper	14.6	ug/L	3.6	1.1	1	06/15/17 08:37	06/15/17 18:16	7440-50-8	
Total Hardness by 2340B	22.1	mg/L	5.0	0.15	1	06/15/17 08:37	06/15/17 18:16		
Zinc	8.8J	ug/L	15.3	4.6	1	06/15/17 08:37	06/15/17 18:16	7440-66-6	
2540D Total Suspended Solids	Analytical	Method: SM 2	540D						
Total Suspended Solids	3.4	mg/L	2.0	0.95	1		06/15/17 10:31		
4500H+ pH, Electrometric	Analytical	Method: SM 4	500-H+B						
pН	7.0	Std. Units	0.10	0.010	. 1		06/16/17 10:45		H6

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### ANALYTICAL RESULTS

Project: 4TH SPRING SW EVENT

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Pace Project No.: 40151558

Sample: SW-C9-2017_6	Lab ID:	40151558002	Collecter	d: 06/12/17	09:50	Received: 06/	14/17 09:00 Ma	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	020 Prepa	ration Meth	od: EP	A 3010			
Copper	6.4	ug/L	3.6	1.1	1	06/15/17 08:37	06/15/17 18:57	7440-50-8	
Total Hardness by 2340B	11.5	mg/L	5.0	0.15	1	06/15/17 08:37	06/15/17 18:57		
Zinc	13.7J	ug/L	15.3	4.6	1	06/15/17 08:37	06/15/17 18:57	7440-66-6	
2540D Total Suspended Solids	Analytica	I Method: SM 25	540D						
Total Suspended Solids	3.4	mg/L	2.0	0.95	1		06/15/17 10:32		
4500H+ pH, Electrometric	Analytica	I Method: SM 4	500-H+B						
рН	6.7	Std. Units	0.10	0.010	1		06/16/17 10:45		H6

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### ANALYTICAL RESULTS

Project: 4TH SPRING SW EVENT

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Pace Project No.: 40151558

Sample: SW-DUP-2017_6	Lab ID:	40151558003	Collected	: 06/12/17	00:00	Received: 06/	14/17 09:00 Ma	atrix: Water	
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytica	Method: EPA 6	020 Prepar	ation Methe	od: EPA	3010			
Copper	9.7	ug/L	3.6	1.1	1	06/15/17 08:37	06/15/17 19:10	7440-50-8	
Total Hardness by 2340B	22.8	mg/L	5.0	0.15	1	06/15/17 08:37	06/15/17 19:10		
Zinc	8.3J	ug/L	15.3	4.6	1	06/15/17 08:37	06/15/17 19:10	7440-66-6	
2540D Total Suspended Solids	Analytica	Method: SM 2	540D						
Total Suspended Solids	3.6	mg/L	2.0	0.95	1		06/15/17 10:32		
4500H+ pH, Electrometric	Analytica	Method: SM 4	500-H+B						
ρΗ	6.8	Std. Units	0.10	0.010	. 1		06/16/17 10:45		H6

### **REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL DATA

QC Batch: 258633 QC Batch Method: EPA 3010 Associated Lab Samples: 40151	558001, 4015155800		Description:		PA 6020 20 MET			
METHOD BLANK: 1523818		Mat	trix: Water					
Associated Lab Samples: 40151	558001, 4015155800	02, 4015155800	3					
		Blank	Reporting	g				
Parameter	Units	Result	Limit		Analyze	d Qualit	fiers	
Copper	ug/L	<*	1.1	3.6	06/15/17 17	7:35		
Total Hardness by 2340B	mg/L	<0.		5.0	06/15/17 17			
Zinc	ug/L	<4	4.6	15.3	06/15/17 1	7:35		
LABORATORY CONTROL SAMPL	E: 1523819							
		Spike	LCS		LCS	% Rec		
Parameter	Units	Conc.	Result	9	% Rec	Limits	Qualifiers	
Copper	ug/L	500	509		102	80-120		
Total Hardness by 2340B	mg/L		34.3					
Zinc	ug/L	500	524		105	80-120		

Parameter	Units	40151558001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Copper	ug/L	14.6	500	500	536	530	104	103	75-125	1	20		
Total Hardness by 2340B	mg/L	22.1			59.0	58.0				2	20		
Zinc	ug/L	8.8J	500	500	550	542	108	107	75-125	1	20		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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### QUALITY CONTROL DATA

Project: 4TH SPRING SV	V EVENT						
Pace Project No.: 40151558	,						
QC Batch: 258664		Analysis Me	ethod:	SM 2540D			
QC Batch Method: SM 2540D		Analysis De	scription:	2540D Total St	uspended Solids	5	
Associated Lab Samples: 4015155	8001, 40151558002	2, 40151558003					
METHOD BLANK: 1523936		Matrix	: Water				
Associated Lab Samples: 4015155	8001, 40151558002	2, 40151558003					
		Blank	Reporting				
Parameter	Units	Result	Limit	Analyze	ed Qualit	fiers	
Total Suspended Solids	mg/L	<0.48	1	.0 06/15/17 1	0:30		
LABORATORY CONTROL SAMPLE:	1523937						
		Spike	LCS	LCS	% Rec		
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Total Suspended Solids	mg/L	100	100	100	80-120		
SAMPLE DUPLICATE: 1523938							
		40151551001	Dup		Max		
Parameter	Units	Result	Result	RPD	RPD	Qualifiers	_
Total Suspended Solids	mg/L	128	3 1:	35	5	5	
SAMPLE DUPLICATE: 1523939							
		40151566002			Max	-	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers	_
Total Suspended Solids	mg/L	31.5	5 33	3.0	5	5	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### **REPORT OF LABORATORY ANALYSIS**

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### **QUALITY CONTROL DATA**

Project:	4TH SPRING SW EVENT				
Pace Project No.:	40151558				
QC Batch:	258838	Analysis Method:	SM 4500-H+B		
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH		
Associated Lab Sar	mples: 40151558001, 40151558002	, 40151558003			
SAMPLE DUPLICA	TE: 1524965				
		40151558001 Dup		Max	

	Parameter	Units	Result	Result	RPD	RPD	Qualifiers	
pН		Std. Units	7.0	6.9	0		5 H6	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### **REPORT OF LABORATORY ANALYSIS**

Date: 06/19/2017 08:36 AM

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#### QUALIFIERS

Project: 4TH SPRING SW EVENT Pace Project No.: 40151558

#### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

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LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### ANALYTE QUALIFIERS

H6 Analysis initiated outside of the 15 minute EPA required holding time.

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## , QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:4TH SPRING SW EVENTPace Project No.:40151558

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch		
40151558001	SW-C1-2017_6	EPA 3010	258633	EPA 6020	258750		
40151558002	SW-C9-2017_6	EPA 3010	258633	EPA 6020	258750		
40151558003	SW-DUP-2017_6	EPA 3010	258633	EPA 6020	258750		
40151558001	SW-C1-2017_6	SM 2540D	258664				
40151558002	SW-C9-2017_6	SM 2540D	258664				
40151558003	SW-DUP-2017_6	SM 2540D	258664				
40151558001	SW-C1-2017_6	SM 4500-H+B	258838				
40151558002	SW-C9-2017_6	SM 4500-H+B	258838				
40151558003	SW-DUP-2017_6	SM 4500-H+B	258838				



Page 1 of	Quote #: 00 Mail To Contact: 2. 1. 1. 1. 1. 1. 2. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.		Mail To Address: 2121 Innovation Ct.	Depere, wI Sylls	Involce To Contact: Sharon Kozirchi	Involce To Company: Folh	Involce To Address: 212121 Involce To Address:	De Pere, WISHIS	Involce To Phone: / (000) Lat.	I AR COMMENTS	TS	3-Dail 1-11 - 1-250m120		AT V V	A C O	Plob	ea len pr	se ns ne	ct st	ed /f	)は よ	Z / 2 / J / C / C / C / C / C / C / C / C / C	DetraTime:	Be ultil	H	Date/Time: OK.)Adjusted	Date/Time: Present Not Present Intac// Not Intact
<b>Monthead and Antiper Midwest Region</b> MN: 612-607-1700 WI: 920-469-2436		ter F≕Methanol G≃NaOH	1			ovul				H ·			X	$\checkmark$									0,00	7 0900 ×ake dehisame	ate/Time:	Date/Time: Received By:	Date/Time: Received By:
Co. Pace Analytical	CHAIN OF		H=Sodium Bisulfate So						м <u>)`</u> 5'		MATTRUK	XX N2 543 LIM	9:50	Ì	-							M. Kona wind 1	avraulaeur of	20 (a)141	Relinquished By:	Relinquished By: Dat	Relinquished By: Dat
early) U MTNTNE S., W T.	Project Contact: Sharen Kozicki Phone: (a70) Ua 6-672	Project Number:	Project Name: 4th Soning SW Event		Sampled By (Print): Max Ma Ma, US +	Sampled By (Sign): Max Mathiaccust		Data Package Options MS/MSD	Dn your sampi (billable)	EPA Level IV DOT needed on $0 \le 0$		SW-C1-2017-6 4/1	- 69-2017-6	Sw-DUP-2017-6 6/1								Rush Turnaround Time Requested - Prelims	Date Needed:	Transmit Prelim Rush Results by (complete what you want):	Sheron Kozickie tom. Com	(420) 496-6737	Samples on HOLD are subject to special pricing and release of liability

Pace Analytical"				
Client Name: Flambeau			Project # WO#:4	10151558
Courier: Fed Ex FUPS - Client F Par		5. 0		
Tracking #: 1393206-1, -2	ce/Other:	Jar	<u>40151558</u>	
Custody Seal on Cooler/Box Present: Tyes	no Sea	als intact	ves r no	n fayt sing signa a sing signa a sing barang data an na sing sing an ang barang barang barang sing sing sing si
Custody Seal on Samples Present: T yes	no Sea	als intact	r Ves T no	
Packing Material: T Bubble Wrap TBut	oble Bags	T Non	e 🗂 Other	
Thermometer Used <u>NA</u>				n ice, cooling process has begun
1	ROI	Biolo	ogical Tissue is Frozen: Tyes	·····
Temp Blank Present:  yes  no Temp should be above freezing to 6°C.			∫ no	Person examining contents: Date: (0)
Biota Samples may be received at $\leq 0^{\circ}$ C.			Comments:	Initials:
Chain of Custody Present:	ZYes □N	0 □N/A	1.	
Chain of Custody Filled Out:	Ves DN	o □n/A	2.	
Chain of Custody Relinquished:	Ves DN		3.	
Sampler Name & Signature on COC:				
Samples Arrived within Hold Time:	Kes DN			
- VOA Samples frozen upon receipt	□Yes □N		Date/Time:	
Short Hold Time Analysis (<72hr):		o □N/A		
Rush Turn Around Time Requested:				
Sufficient Volume:	ZYes DN			
Correct Containers Used:				
-Pace Containers Used:	ØYes □N			
-Pace IR Containers Used:				
Containers Intact:	ØYes □No		10	
iltered volume received for Dissolved tests				
Sample Labels match COC:				
-Includes date/time/ID/Analysis Matrix:	Ŵ		12.	
All containers needing preservation have been checked			HNO3 - H2SO4 1	NaOH J NaOH +ZnAct
Non-Compliance noted in 13.) Il containers needing preservation are found to be in		> ∐N/A	13. 7 11100 12004 1	HAUT I HAUT TZIACI
ompliance with EPA recommendation.	ØYes ⊡No			
HNO3, H2SO4 <2; NaOH+ZnAct ≥9, NaOH ≥12) cceptions: VOA, coliform, TOC, TOX, TOH,			Initial when , / Lab Std #ID of	Date/
&G, WIDROW, Phenolics, OTHER:			completed Kg preservative	Time:
leadspace in VOA Vials ( >6mm):	□Yes □No		14.	
rip Blank Present:	□Yes □No		15.	
rip Blank Custody Seals Present	□Yes □No	ØN/A		
ace Trip Blank Lot # (if purchased): lient Notification/ Resolution:			16 - b b	ad form for additional annuals
Person Contacted:		Date/		ed form for additional comments
Comments/ Resolution O Custody Al	als n	ōt	aped down, no t	ape Kt ull
round cooler				
	0			1

Pace Analytical Services LLC. - Green Bay WI

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