

LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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110 South Hill Street
 South Bend, IN 46617
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 1 800 332 4345

Laboratory Report

Client: Superior Watershed Partnership & Land Trust

Report:

334329

Attn: Geraldine Grant

Priority:

Standard Written

2 Peter White Drive

Status:

Final

Presque Isle Park

PWS ID:

Not Supplied

Marquette, MI 49855

Copies

to: None

Sample Information					
EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
3188795	MER001 CEM-10010234	200.8	02/16/15 09:30	Client	02/17/15 12:00
3188795	MER001 CEM-10010234	245.1	02/16/15 09:30	Client	02/17/15 12:00
3188795	MER001 CEM-10010234	200.7	02/16/15 09:30	Client	02/17/15 12:00
3188799	MER001 CEM-10010234	4500-NH3 D	02/16/15 09:30	Client	02/17/15 12:00
3188803	MER001 CEM-10010234	300.0	02/16/15 09:30	Client	02/17/15 12:00
3188803	MER001 CEM-10010234	353.2	02/16/15 09:30	Client	02/17/15 12:00
3188803	MER001 CEM-10010234	353.2	02/16/15 09:30	Client	02/17/15 12:00
3188803	MER001 CEM-10010234	2320 B	02/16/15 09:30	Client	02/17/15 12:00
3188807	MER001 CEM-10010234	4500-P E	02/16/15 09:30	Client	02/17/15 12:00
3188796	MER003 CEM-10010235	200.8	02/16/15 11:00	Client	02/17/15 12:00
3188796	MER003 CEM-10010235	245.1	02/16/15 11:00	Client	02/17/15 12:00
3188796	MER003 CEM-10010235	200.7	02/16/15 11:00	Client	02/17/15 12:00
3188800	MER003 CEM-10010235	4500-NH3 D	02/16/15 11:00	Client	02/17/15 12:00
3188804	MER003 CEM-10010235	300.0	02/16/15 11:00	Client	02/17/15 12:00
3188804	MER003 CEM-10010235	353.2	02/16/15 11:00	Client	02/17/15 12:00
3188804	MER003 CEM-10010235	353.2	02/16/15 11:00	Client	02/17/15 12:00
3188804	MER003 CEM-10010235	2320 B	02/16/15 11:00	Client	02/17/15 12:00
3188808	MER003 CEM-10010235	4500-P E	02/16/15 11:00	Client	02/17/15 12:00
3188797	WBR001 CEM-10010236	200.8	02/16/15 11:30	Client	02/17/15 12:00
3188797	WBR001 CEM-10010236	245.1	02/16/15 11:30	Client	02/17/15 12:00
3188797	WBR001 CEM-10010236	200.7	02/16/15 11:30	Client	02/17/15 12:00
3188801	WBR001 CEM-10010236	4500-NH3 D	02/16/15 11:30	Client	02/17/15 12:00
3188805	WBR001 CEM-10010236	300.0	02/16/15 11:30	Client	02/17/15 12:00
3188805	WBR001 CEM-10010236	353.2	02/16/15 11:30	Client	02/17/15 12:00
3188805	WBR001 CEM-10010236	353.2	02/16/15 11:30	Client	02/17/15 12:00
3188805	WBR001 CEM-10010236	2320 B	02/16/15 11:30	Client	02/17/15 12:00
3188809	WBR001 CEM-10010236	4500-P E	02/16/15 11:30	Client	02/17/15 12:00
3188798	WBR003 CEM-10010237	200.8	02/16/15 12:00	Client	02/17/15 12:00
3188798	WBR003 CEM-10010237	245.1	02/16/15 12:00	Client	02/17/15 12:00
3188798	WBR003 CEM-10010237	200.7	02/16/15 12:00	Client	02/17/15 12:00
3188802	WBR003 CEM-10010237	4500-NH3 D	02/16/15 12:00	Client	02/17/15 12:00

Client Name: Superior Watershed Partnership & Land Trust

Report #: 334329

3188806	WBR003 CEM-10010237	300.0	02/16/15 12:00	Client	02/17/15 12:00
3188806	WBR003 CEM-10010237	353.2	02/16/15 12:00	Client	02/17/15 12:00
3188806	WBR003 CEM-10010237	353.2	02/16/15 12:00	Client	02/17/15 12:00
3188806	WBR003 CEM-10010237	2320 B	02/16/15 12:00	Client	02/17/15 12:00
3188810	WBR003 CEM-10010237	4500-P E	02/16/15 12:00	Client	02/17/15 12:00

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

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Authorized Signature

Title

03/18/2015

Date

Client Name: Superior Watershed Partnership & Land Trust

Report #: 334329

Sampling Point: MER001 CEM-10010234

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
---	Alkalinity, Bicarbonate	2320 B	---	1.00	24.2	mg/L as CaCO3	---	02/18/15 19:48	3188803
16887-00-6	Chloride	300.0	250 ^	2.0	10	mg/L	---	02/26/15 18:27	3188803
14808-79-8	Sulfate	300.0	250 ^	5.0	< 5.0	mg/L	---	02/26/15 18:27	3188803
14797-55-8	Nitrate	353.2	10 *	0.1	0.2	mg/L	---	02/17/15 23:08	3188803
14797-65-0	Nitrite	353.2	1 *	0.01	< 0.01	mg/L	---	02/17/15 19:54	3188803
7664-41-7	Nitrogen, Ammonia	4500-NH3 D	---	0.1	< 0.1	mg/L	---	02/24/15 17:23	3188799
7723-14-0	Phosphorus	4500-P E	---	0.05	0.05	mg P/L	---	03/16/15 22:25	3188807

Metals									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
7440-70-2	Calcium	200.7	---	0.1	8.6	mg/L	03/12/15 17:35	03/13/15 16:28	3188795
7439-89-6	Iron	200.7	0.3 ^	0.020	1.4	mg/L	03/12/15 17:35	03/13/15 16:28	3188795
7439-95-4	Magnesium	200.7	---	0.1	2.5	mg/L	03/12/15 17:35	03/13/15 16:28	3188795
7440-09-7	Potassium	200.7	---	0.2	0.7	mg/L	03/12/15 17:35	03/13/15 16:28	3188795
7440-23-5	Sodium	200.7	---	0.1	5.0	mg/L	03/12/15 17:35	03/13/15 16:28	3188795
7440-36-0	Antimony	200.8	6 *	1.0	< 1.0	ug/L	03/12/15 17:35	03/13/15 13:08	3188795
7440-38-2	Arsenic	200.8	10 *	1.0	< 1.0	ug/L	03/12/15 17:35	03/13/15 13:08	3188795
7440-39-3	Barium	200.8	2000 *	2.0	6.9	ug/L	03/12/15 17:35	03/13/15 13:08	3188795
7440-41-7	Beryllium	200.8	4 *	0.3	< 0.3	ug/L	03/12/15 17:35	03/13/15 13:08	3188795
7440-42-8	Boron	200.8	---	5.0	5.6	ug/L	03/12/15 17:35	03/13/15 13:08	3188795
7440-47-3	Chromium	200.8	100 *	0.9	< 0.9	ug/L	03/12/15 17:35	03/13/15 13:08	3188795
7440-48-4	Cobalt	200.8	---	2.0	< 2.0	ug/L	03/12/15 17:35	03/13/15 13:08	3188795
7440-50-8	Copper	200.8	1300 !	1.0	< 1.0	ug/L	03/12/15 17:35	03/13/15 13:08	3188795
7439-92-1	Lead	200.8	15 !	1.0	< 1.0	ug/L	03/12/15 17:35	03/13/15 13:08	3188795
7439-93-2	Lithium	200.8	---	2.0	< 2.0	ug/L	03/12/15 17:35	03/13/15 13:08	3188795
7439-96-5	Manganese	200.8	50 ^	2.0	78	ug/L	03/12/15 17:35	03/13/15 13:08	3188795
7439-98-7	Molybdenum	200.8	---	2.0	< 2.0	ug/L	03/12/15 17:35	03/13/15 13:08	3188795
7440-02-0	Nickel	200.8	---	1.0	< 1.0	ug/L	03/12/15 17:35	03/13/15 13:08	3188795
7440-24-6	Strontium	200.8	---	2.0	23	ug/L	03/12/15 17:35	03/13/15 13:08	3188795
7440-28-0	Thallium	200.8	2 *	0.3	< 0.3	ug/L	03/12/15 17:35	03/13/15 13:08	3188795
7440-62-2	Vanadium	200.8	---	2.0	< 2.0	ug/L	03/12/15 17:35	03/13/15 13:08	3188795
7440-66-6	Zinc	200.8	5000 ^	5.0	13	ug/L	03/12/15 17:35	03/13/15 13:08	3188795
7439-97-6	Mercury	245.1	2 *	0.1	< 0.1	ug/L	03/05/15 00:00	03/05/15 18:52	3188795

Sampling Point: MER003 CEM-10010235

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
---	Alkalinity, Bicarbonate	2320 B	---	1.00	31.5	mg/L as CaCO3	---	02/18/15 19:55	3188804
16887-00-6	Chloride	300.0	250 ^	2.0	10	mg/L	---	02/26/15 18:50	3188804
14808-79-8	Sulfate	300.0	250 ^	5.0	12	mg/L	---	02/26/15 18:50	3188804
14797-55-8	Nitrate	353.2	10 *	0.1	0.2	mg/L	---	02/17/15 23:11	3188804
14797-65-0	Nitrite	353.2	1 *	0.01	< 0.01	mg/L	---	02/17/15 19:56	3188804
7664-41-7	Nitrogen, Ammonia	4500-NH3 D	---	0.1	< 0.1	mg/L	---	02/24/15 17:36	3188800
7723-14-0	Phosphorus	4500-P E	---	0.05	0.08	mg P/L	---	03/16/15 22:26	3188808

Metals									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
7440-70-2	Calcium	200.7	---	0.1	12	mg/L	03/12/15 17:35	03/13/15 16:31	3188796
7439-89-6	Iron	200.7	0.3 ^	0.020	1.7	mg/L	03/12/15 17:35	03/13/15 16:31	3188796
7439-95-4	Magnesium	200.7	---	0.1	3.7	mg/L	03/12/15 17:35	03/13/15 16:31	3188796
7440-09-7	Potassium	200.7	---	0.2	1.1	mg/L	03/12/15 17:35	03/13/15 16:31	3188796
7440-23-5	Sodium	200.7	---	0.1	6.5	mg/L	03/12/15 17:35	03/13/15 16:31	3188796
7440-36-0	Antimony	200.8	6 *	1.0	< 1.0	ug/L	03/12/15 17:35	03/13/15 13:11	3188796
7440-38-2	Arsenic	200.8	10 *	1.0	1.1	ug/L	03/12/15 17:35	03/13/15 13:11	3188796
7440-39-3	Barium	200.8	2000 *	2.0	8.5	ug/L	03/12/15 17:35	03/13/15 13:11	3188796
7440-41-7	Beryllium	200.8	4 *	0.3	< 0.3	ug/L	03/12/15 17:35	03/13/15 13:11	3188796
7440-42-8	Boron	200.8	---	5.0	9.5	ug/L	03/12/15 17:35	03/13/15 13:11	3188796
7440-47-3	Chromium	200.8	100 *	0.9	< 0.9	ug/L	03/12/15 17:35	03/13/15 13:11	3188796
7440-48-4	Cobalt	200.8	---	2.0	< 2.0	ug/L	03/12/15 17:35	03/13/15 13:11	3188796
7440-50-8	Copper	200.8	1300 !	1.0	< 1.0	ug/L	03/12/15 17:35	03/13/15 13:11	3188796
7439-92-1	Lead	200.8	15 !	1.0	< 1.0	ug/L	03/12/15 17:35	03/13/15 13:11	3188796
7439-93-2	Lithium	200.8	---	2.0	< 2.0	ug/L	03/12/15 17:35	03/13/15 13:11	3188796
7439-96-5	Manganese	200.8	50 ^	2.0	110	ug/L	03/12/15 17:35	03/13/15 13:11	3188796
7439-98-7	Molybdenum	200.8	---	2.0	< 2.0	ug/L	03/12/15 17:35	03/13/15 13:11	3188796
7440-02-0	Nickel	200.8	---	1.0	1.0	ug/L	03/12/15 17:35	03/13/15 13:11	3188796
7440-24-6	Strontium	200.8	---	2.0	35	ug/L	03/12/15 17:35	03/13/15 13:11	3188796
7440-28-0	Thallium	200.8	2 *	0.3	< 0.3	ug/L	03/12/15 17:35	03/13/15 13:11	3188796
7440-62-2	Vanadium	200.8	---	2.0	< 2.0	ug/L	03/12/15 17:35	03/13/15 13:11	3188796
7440-66-6	Zinc	200.8	5000 ^	5.0	< 5.0	ug/L	03/12/15 17:35	03/13/15 13:11	3188796
7439-97-6	Mercury	245.1	2 *	0.1	< 0.1	ug/L	03/05/15 00:00	03/05/15 18:54	3188796

Sampling Point: WBR001 CEM-10010236

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
---	Alkalinity, Bicarbonate	2320 B	---	1.0	2.3	mg/L as CaCO3	---	02/18/15 20:02	3188805
16887-00-6	Chloride	300.0	250 ^	2.0	18	mg/L	---	02/26/15 19:14	3188805
14808-79-8	Sulfate	300.0	250 ^	5.0	< 10.0	mg/L	---	02/26/15 19:14	3188805
14797-55-8	Nitrate	353.2	10 *	0.1	< 0.1	mg/L	---	02/17/15 23:12	3188805
14797-65-0	Nitrite	353.2	1 *	0.01	0.02	mg/L	---	02/17/15 19:57	3188805
7664-41-7	Nitrogen, Ammonia	4500-NH3 D	---	0.1	0.2	mg/L	---	02/24/15 17:50	3188801
7723-14-0	Phosphorus	4500-P E	---	0.05	0.09	mg P/L	---	03/16/15 22:26	3188809

Metals									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
7440-70-2	Calcium	200.7	---	0.1	4.6	mg/L	03/12/15 17:35	03/13/15 16:34	3188797
7439-89-6	Iron	200.7	0.3 ^	0.020	2.0	mg/L	03/12/15 17:35	03/13/15 16:34	3188797
7439-95-4	Magnesium	200.7	---	0.1	1.8	mg/L	03/12/15 17:35	03/13/15 16:34	3188797
7440-09-7	Potassium	200.7	---	0.2	0.6	mg/L	03/12/15 17:35	03/13/15 16:34	3188797
7440-23-5	Sodium	200.7	---	0.1	8.2	mg/L	03/12/15 17:35	03/13/15 16:34	3188797
7440-36-0	Antimony	200.8	6 *	1.0	< 1.0	ug/L	03/12/15 17:35	03/13/15 13:15	3188797
7440-38-2	Arsenic	200.8	10 *	1.0	1.2	ug/L	03/12/15 17:35	03/13/15 13:15	3188797
7440-39-3	Barium	200.8	2000 *	2.0	9.3	ug/L	03/12/15 17:35	03/13/15 13:15	3188797
7440-41-7	Beryllium	200.8	4 *	0.3	< 0.3	ug/L	03/12/15 17:35	03/13/15 13:15	3188797
7440-42-8	Boron	200.8	---	5.0	< 5.0	ug/L	03/12/15 17:35	03/13/15 13:15	3188797
7440-47-3	Chromium	200.8	100 *	0.9	< 0.9	ug/L	03/12/15 17:35	03/13/15 13:15	3188797
7440-48-4	Cobalt	200.8	---	2.0	< 2.0	ug/L	03/12/15 17:35	03/13/15 13:15	3188797
7440-50-8	Copper	200.8	1300 !	1.0	< 1.0	ug/L	03/12/15 17:35	03/13/15 13:15	3188797
7439-92-1	Lead	200.8	15 !	1.0	1.4	ug/L	03/12/15 17:35	03/13/15 13:15	3188797
7439-93-2	Lithium	200.8	---	2.0	< 2.0	ug/L	03/12/15 17:35	03/13/15 13:15	3188797
7439-96-5	Manganese	200.8	50 ^	2.0	100	ug/L	03/12/15 17:35	03/13/15 13:15	3188797
7439-98-7	Molybdenum	200.8	---	2.0	< 2.0	ug/L	03/12/15 17:35	03/13/15 13:15	3188797
7440-02-0	Nickel	200.8	---	1.0	< 1.0	ug/L	03/12/15 17:35	03/13/15 13:15	3188797
7440-24-6	Strontium	200.8	---	2.0	15	ug/L	03/12/15 17:35	03/13/15 13:15	3188797
7440-28-0	Thallium	200.8	2 *	0.3	< 0.3	ug/L	03/12/15 17:35	03/13/15 13:15	3188797
7440-62-2	Vanadium	200.8	---	2.0	< 2.0	ug/L	03/12/15 17:35	03/13/15 13:15	3188797
7440-66-6	Zinc	200.8	5000 ^	5.0	6.0	ug/L	03/12/15 17:35	03/13/15 13:15	3188797
7439-97-6	Mercury	245.1	2 *	0.1	< 0.1	ug/L	03/05/15 00:00	03/05/15 18:56	3188797

Sampling Point: WBR003 CEM-10010237

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
---	Alkalinity, Bicarbonate	2320 B	---	1.00	34.9	mg/L as CaCO ₃	---	02/18/15 20:09	3188806
16887-00-6	Chloride	300.0	250 ^	2.0	34	mg/L	---	02/26/15 19:37	3188806
14808-79-8	Sulfate	300.0	250 ^	5.0	< 10.0	mg/L	---	02/26/15 19:37	3188806
14797-55-8	Nitrate	353.2	10 *	0.1	< 0.1	mg/L	---	02/17/15 23:12	3188806
14797-65-0	Nitrite	353.2	1 *	0.01	0.01	mg/L	---	02/17/15 19:58	3188806
7664-41-7	Nitrogen, Ammonia	4500-NH ₃ D	---	0.1	0.2	mg/L	---	02/24/15 17:54	3188802
7723-14-0	Phosphorus	4500-P E	---	0.05	0.08	mg P/L	---	03/16/15 22:27	3188810

Metals									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
7440-70-2	Calcium	200.7	---	0.1	11	mg/L	03/12/15 17:35	03/13/15 16:37	3188798
7439-89-6	Iron	200.7	0.3 ^	0.020	6.1	mg/L	03/12/15 17:35	03/13/15 16:37	3188798
7439-95-4	Magnesium	200.7	---	0.1	5.0	mg/L	03/12/15 17:35	03/13/15 16:37	3188798
7440-09-7	Potassium	200.7	---	0.2	1.6	mg/L	03/12/15 17:35	03/13/15 16:37	3188798
7440-23-5	Sodium	200.7	---	0.1	19	mg/L	03/12/15 17:35	03/13/15 16:37	3188798
7440-36-0	Antimony	200.8	6 *	1.0	< 1.0	ug/L	03/12/15 17:35	03/13/15 13:18	3188798
7440-38-2	Arsenic	200.8	10 *	1.0	2.3	ug/L	03/12/15 17:35	03/13/15 13:18	3188798
7440-39-3	Barium	200.8	2000 *	2.0	11	ug/L	03/12/15 17:35	03/13/15 13:18	3188798
7440-41-7	Beryllium	200.8	4 *	0.3	< 0.3	ug/L	03/12/15 17:35	03/13/15 13:18	3188798
7440-42-8	Boron	200.8	---	5.0	8.6	ug/L	03/12/15 17:35	03/13/15 13:18	3188798
7440-47-3	Chromium	200.8	100 *	0.9	< 0.9	ug/L	03/12/15 17:35	03/13/15 13:18	3188798
7440-48-4	Cobalt	200.8	---	2.0	< 2.0	ug/L	03/12/15 17:35	03/13/15 13:18	3188798
7440-50-8	Copper	200.8	1300 !	1.0	< 1.0	ug/L	03/12/15 17:35	03/13/15 13:18	3188798
7439-92-1	Lead	200.8	15 !	1.0	< 1.0	ug/L	03/12/15 17:35	03/13/15 13:18	3188798
7439-93-2	Lithium	200.8	---	2.0	< 2.0	ug/L	03/12/15 17:35	03/13/15 13:18	3188798
7439-96-5	Manganese	200.8	50 ^	2.0	1000	ug/L	03/12/15 17:35	03/13/15 13:18	3188798
7439-98-7	Molybdenum	200.8	---	2.0	< 2.0	ug/L	03/12/15 17:35	03/13/15 13:18	3188798
7440-02-0	Nickel	200.8	---	1.0	1.5	ug/L	03/12/15 17:35	03/13/15 13:18	3188798
7440-24-6	Strontium	200.8	---	2.0	38	ug/L	03/12/15 17:35	03/13/15 13:18	3188798
7440-28-0	Thallium	200.8	2 *	0.3	< 0.3	ug/L	03/12/15 17:35	03/13/15 13:18	3188798
7440-62-2	Vanadium	200.8	---	2.0	< 2.0	ug/L	03/12/15 17:35	03/13/15 13:18	3188798
7440-66-6	Zinc	200.8	5000 ^	5.0	< 5.0	ug/L	03/12/15 17:35	03/13/15 13:18	3188798
7439-97-6	Mercury	245.1	2 *	0.1	< 0.1	ug/L	03/05/15 00:00	03/05/15 18:58	3188798

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

Sample Analysis Report

Client: Superior Watershed Partnership & Land Trust
Contact: Geraldine Grant
 2 Peter White Dr. Presque Isle Park
 Marquette, MI 49855
 Voice: (906)228-6095
 geri@superiorwatersheds.org

Order No.: 272069
Receipt Batch No.: 334329

Analytical Method Summary:

This was an ICP-MS method based on EPA Method 200.8 with linear calibration ranges of 0.2-100 µg/L for silver and cadmium, and 1.0-100 µg/L for selenium. These samples displayed turbidity > 1 NTU and required digestion prior to analysis. The acidified, digested samples were analyzed in an analysis batch that included an initial calibration curve, initial calibration verification (ICV), an initial calibration blank (ICB), two digested reporting level checks (DRL) at the minimum reporting limit (MRL) for each analyte, a quality control sample (QCS), a laboratory digested blank (LDB), a digested fortified blank (DFB), a continuing calibration verification (CCV), and a continuing calibration blank (CCB) at the end of the run.

QC RESULTS:

Analyte	MRL (µg/L)	DRL Recovery (%)	LFB Recovery (%)	QCS Recovery (%)	CCV Recovery (%)
Se82	1.0	140	102	106	101
Ag107	0.2	114	98	107	100
Cd111	0.2	143	98	107	101

Sample Lab ID: 3188811

Sample Site: MER001 CEM-10010234

Analyte	MRL (µg/L)	Result (µg/L)	MS Recovery (%)	MSD Recovery (%)
Se82	1.0	< 1.0	103	NA
Ag107	0.2	< 0.2	97	NA
Cd111	0.2	< 0.2	100	NA

Sample Lab ID: 3188812

Sample Site: MER003 CEM-10010235

Analyte	MRL (µg/L)	Result (µg/L)	MS Recovery (%)	MSD Recovery (%)
Se82	1.0	< 1.0	NA	NA
Ag107	0.2	< 0.2	NA	NA
Cd111	0.2	< 0.2	NA	NA

Sample Lab ID: 3188813

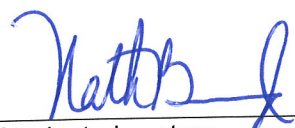
Sample Site: WBR001 CEM-10010236


Analyte	MRL (µg/L)	Result (µg/L)	MS Recovery (%)	MSD Recovery (%)
Se82	1.0	< 1.0	NA	NA
Ag107	0.2	< 0.2	NA	NA
Cd111	0.2	< 0.2	NA	NA

Sample Lab ID: 3188814

Sample Site: WBR003 CEM-10010237

Analyte	MRL (µg/L)	Result (µg/L)	MS Recovery (%)	MSD Recovery (%)
Se82	1.0	< 1.0	NA	NA
Ag107	0.2	< 0.2	NA	NA
Cd111	0.2	< 0.2	NA	NA


 Analyst signature 03/13/2015
 Date


 Reviewer signature 03-13-2015
 Date



Eaton Analytical

110 S. Hill Street
South Bend, IN 46617
T: 1.800.332.4345
F: 1.574.233.8207

Order # 260740
Batch # _____

www.eatonanalytical.com

REPORT TO: Shaded area for EEA use only

CHAIN OF CUSTODY RECORD

Page 5 of 5

BILL TO: Ceri Grant

2 Peter White Dr
Marquette MI 49855

SAMPLER (Signature)

C. Hunter Ky

PWS ID #

STATE (sample origin)

PROJECT NAME

PO#

OF CONTAINERS

MATRIX CODE

TURNAROUND TIME

COMPLIANCE MONITORING

Yes

POPULATION SERVED

SOURCE WATER

CEMP

CHLORINATED

YES

NO

NO

NO

COLLECTION

SAMPLING SITE

TEST NAME

SAMPLE REMARKS

CHLORINATED

YES

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Table 1
Parameters, Analytical Methods and Target Detection Limits
Humboldt Mill Surface Water Samples

Parameter	Frequency of Analysis*	Sample Type	Analytical Method	Quantitation/Reporting Limit	Units
Field					
Flow	Quarterly	Grab	Field	NA	cfs
Temperature	Quarterly	Grab	Field	NA	°C
Dissolved Oxygen	Quarterly	Grab	Field	NA	mg/L
Specific Conductance	Quarterly	Grab	Field	NA	µmhos/cm
pH	Quarterly	Grab	Field	NA	S.U.
Turbidity	Quarterly	Grab	Field	NA	NTU
Metals					
Aluminum	Quarterly	Grab	EPA 6010	50	µg/l
Antimony	Quarterly	Grab	EPA 6020	2.0	µg/l
Arsenic	Quarterly	Grab	EPA 6020	1.0	µg/l
Barium	Quarterly	Grab	EPA 6020	10.0	µg/l
Beryllium	Quarterly	Grab	EPA 6020	1.0	µg/l
Boron	Quarterly	Grab	EPA 6020	50.0	µg/l
Cadmium	Quarterly	Grab	EPA-1638	0.01	µg/l
Chromium	Quarterly	Grab	EPA 6020	1.0	µg/l
Cobalt	Quarterly	Grab	EPA-1638	0.10	µg/l
Copper	Quarterly	Grab	EPA-1638	0.05	µg/l
Iron	Quarterly	Grab	EPA 6010	20.0	µg/l
Lead	Quarterly	Grab	EPA-1638	0.05	µg/l
Lithium	Quarterly	Grab	EPA 6010	10.0	µg/l
Manganese	Quarterly	Grab	EPA 6020	10.0	µg/l
Mercury (low level)	Quarterly	Grab	EPA-1631C	0.0005	µg/l
Molybdenum	Quarterly	Grab	EPA 6020	10.0	µg/l
Nickel	Quarterly	Grab	EPA-1638	0.20	µg/l
Selenium	Quarterly	Grab	EPA-1638	0.05	µg/l
Silver	Quarterly	Grab	EPA 6020	0.2	µg/l
Thallium	Quarterly	Grab	EPA 6020	2.0	µg/l
Vanadium	Quarterly	Grab	EPA 6020	2.0	µg/l
Zinc	Quarterly	Grab	EPA-1638	0.20	µg/l
Anions					
Alkalinity, Bicarbonate	Quarterly	Grab	310.2/SM 2320 B	2.0	mg/l
Alkalinity, Carbonate	Quarterly	Grab	310.2/SM 2320 B	2.0	mg/l
Chloride	Quarterly	Grab	325.2/4500-CLE	1.0	mg/l
Fluoride	Quarterly	Grab	SM 4500 F-C	0.1	mg/l
Nitrate	Quarterly	Grab	353.2/4500 NO3F	0.5	mg/l
Nitrite	Quarterly	Grab	354.1/4500 NO3F or 353.2	0.5	mg/l
Nitrogen, Ammonia	Quarterly	Grab	350.1/4500 NH3 G	0.5	mg/l
Sulfate	Quarterly	Grab	ASTMD516-90(02)	1.0	mg/l
Sulfide	Quarterly	Grab	376.1/4500 S2-D	5.0	mg/l
Cations					
Calcium (Total)	Quarterly	Grab	EPA-200.7/6010B	0.50	mg/l
Sodium (Total)	Quarterly	Grab	EPA-200.7/6010B	0.50	mg/l
Magnesium (Total)	Quarterly	Grab	EPA-200.7/6010B	0.50	mg/l
Potassium	Quarterly	Grab	EPA-200.7/6010B	0.50	mg/l
General Chemistry					
Hardness, (calculated) as CaCO3	Quarterly	Grab	Freeze and Cherry, 1979	NL	mg/l
Total Dissolved Solids	Quarterly	Grab	EPA-160.2/SM 2540 C	50.0	mg/l
Total Suspended Solids	Quarterly	Grab	EPA-160.2/SM 2540 D	1 / 3.3	mg/l

North Shore Analytical, Inc.

4511 W. 1st St., Suite #1, Duluth, MN 55807

MDH Lab # 027-137-389

WDNR Lab # 399017190

Analytical Report

Project: CEMP

Superior Watershed Partnership

Attn: Geri Grant

2 Peter White Dr.

Marquette, MI 49855

Chain of Custody # 18232

Report Date: 2/24/2015

Sample Receipt Date: 2/17/2015

Phone: 906-228-6095 ex 13

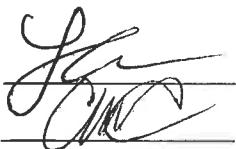
EPA Method 1631E

Fax: 906-228-6863

Method Blanks (ng/L): < 0.100, < 0.100, < 0.100

Sample #	Client Sample ID	Mercury (ng/L)	Collection Date	Collection Time	Sampled By	Date Analyzed	Analyzed by	LOD (ng/L)	LOQ (ng/L)
75762	MER001 CEM-10010234M	1.96	2/16/2015	9:30	Hunter King	2/23/2015	LC	0.10	0.30
75763	MER003 CEM-10010235M	1.94	2/16/2015	11:00	Hunter King	2/23/2015	LC	0.10	0.30
75764	WBR001 CEM-10010236M	7.64	2/16/2015	11:30	Hunter King	2/23/2015	LC	0.10	0.30
75765	WBR003 CEM-10010237M	1.64	2/16/2015	12:00	Hunter King	2/23/2015	LC	0.10	0.30

Reported by:



Reviewed by:

If you have any questions or feedback please call

Chris Gross or Linda Christensen at 218-729-4658.

Values in brackets represent results greater than the LOD but less than or equal to the LOQ and are within a region of "Less Certain Quantitation". Results greater than the LOQ are considered to be in the region of "Certain Quantitation".

LOD = Limit of Detection LOQ = Limit of Quantitation

Page 1 of 1

STF-COC-001
Revision Number: 5
Revision Date: 05/01/06

North Shore Analytical, Inc.

511 W. 1st St., Suite #1
Duluth, MN 55807
Phone (218) 729-4658
Fax (218) 729-4659

Record #: 19232

Chain of Custody

[illegible]