Final

2016 Site Monitoring Report

Former City of Rhinelander Landfill
Rhinelander, Wisconsin

GHD | 1801 Old Highway 8 Northwest Suite 114 St. Paul Minnesota 55112
11115796 | Report No 2 | January 18 2017

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1. Introduction

This report presents the results of the surface water sampling program, along with the operation and maintenance activities, associated with former City of Rhinelander Landfill (Site). GHD Services Inc. (GHD) completed this report on behalf of the Rhinelander Landfill Group (RLG). The RLG retained GHD in June 2016 to perform the Site maintenance and monitoring activities.

1.1 Location

The former City of Rhinelander Landfill is located in the NE ¼ of Section 8 in Township 36 North, Range 9 East, Oneida County, Wisconsin. It is located at the confluence of Slaughterhouse Creek and the Pelican River along Old Highway 8. The landfill is shown on Figure 1.

1.2 Background

The City of Rhinelander Landfill was opened in 1939 and ceased accepting waste in 1979. The landfill was closed and capped in 1980. The landfill was owned and operated by the City of Rhinelander throughout the entire 40-year operational period. The landfill is still currently owned by the City of Rhinelander.

1.3 2016 Activities

The following activities associated with the Site were conducted in 2016:

- June 14: RLG retained GHD to perform the Site maintenance and monitoring activities.
- June 29-30: Semi-Annual groundwater sampling of 9 monitoring wells.
- June 30: Semi-Annual surface water sampling at four locations in Slaughterhouse Creek.
- August 18: City of Rhinelander mows the landfill cover.
- August 22: GHD submits semi-annual groundwater monitoring report to WDNR.
- October 3-4: Annual groundwater sampling/monitoring of 23 monitoring wells.
- October 4: Semi-Annual surface water sampling at three locations in Slaughterhouse Creek.
- November 21: GHD submits semi-annual groundwater monitoring report to WDNR.

1.4 Groundwater Monitoring Results

Groundwater monitoring events take place in April and October of each year for the Site. Groundwater monitoring reports for each respective sampling round are submitted to the WDNR. Groundwater data or discussions are not included in this year-end report.

2. Landfill Inspections

A landfill inspection was completed during each of the two sampling rounds.

2.1 Grass Cover

The grass cover on the landfill is in good condition. Mowing was completed by the City of Rhinelander in August 2016.

2.2 Phytoremediation/Poplar Tree Cover

The hybrid poplar trees installed between 1999 and 2000 are periodically evaluated for overall health and survival. Several fallen trees were observed and end-of-life mortality was noted in a small percentage of the trees.

2.3 Trespassing and Site Security

The fence surrounding the landfill is currently in good condition. There are no trespassing issues for this reporting period.

2.4 Beavers – Area 2 Restoration

A small percentage of the Area 2 restoration willow trees have been harvested by beavers. This is especially noted along the waters' edge on the north side of the restoration. Harvested trees are noted to be re-sprouting and no additional effort is planned in this regard.

3. Surface Water Sampling

3.1 Sampling Dates and Methods

Two rounds of surface water sampling were conducted in Slaughterhouse Creek this year: one in June and one in October. Typically surface water samples are collected in April instead of June but due to the RLG switching consultants, the WDNR approved a delayed April sampling event. Samples were collected from the following locations and are presented on Figure 1:

- Upstream of the Rhinelander Landfill near the old Slaughterhouse (sample point 10)
- Downstream of the landfill at the Newell Street Bridge (sample point 20).
- At the toe of the Area 2 Restoration project (sample point 28).
- At a location roughly 75 feet north of point 28, in the main channel of Slaughterhouse Creek (sample point 30).

Sampling was accomplished by filling a 1 liter jar by dipping it into the creek. The creek water was used to rinse the jar several times before collecting the sample. Care was taken not to disturb sediments while rinsing or sampling the water.

Sample points 10, 20, and 28 were collected near the shore while sample point 30 was collected from a kayak. Sample point 30 was unable to be accessed in the fall sampling event due to a low water level.

3.2 Sample Results

Surface water results from this period are shown in Table 1. Most or all the results from this period are similar or within the normal range of variation when compared to prior sampling dates.

Surface water laboratory reports for this period are in Appendix A.

The two main water bodies adjacent to the Rhinelander Landfill – Slaughterhouse Creek and the Pelican River – have been sampled more or less constantly since at least 1982. Over that period, more than 14,500 individual sample records have been compiled covering more than 35 different sample points.

Samples analyzed for chloride, ammonia, copper, lead, and zinc have established surface water quality standards as enumerated in Chapter NR 105, Wisc. Admin Code. None of the results from 2016 indicated an exceedance of any applicable standard as expressed in NR 105. The discussion in this section compares the results to their codified (NR 105) standards. In order to do this, certain field parameters (pH and temperature for ammonia/ammonium and hardness for metals) need to be considered in making the comparison to the standards. Comparisons of values using straight concentration comparisons are not valid for NR 105 exceedance evaluation for certain substances.

The chloride concentrations had very little variation among the eight samples analyzed in 2016, ranging from 40.7 mg/L to 52.4 mg/L. The acute toxicity surface water quality criteria as listed in Table 1 of NR 105 is 757 mg/L and the chronic standard for warm water sportfish as listed in Table 5 of NR 105 is 395 mg/L. Table 2 shows the chloride data relative to the applicable NR 105 standards.

None of the metals results relative to their applicable standard (analysis for zinc, copper, and lead) exceeded their respective standards listed in Table 2 and Table 6 of NR 105. Table 3 shows the lead, zinc, and copper data relative to the applicable NR 105 standards.

Ammonium-nitrogen is regulated in NR 105 under Table 2C (acute toxicity), Table 4B (30-day chronic), and Table 4B (4-day chronic toxicity). The applicable standard is based on the temperature and pH of the sample water, and thus results from point to point or round to round are not directly comparable based on total concentrations. No sample from any location had concentrations above the acute or chronic standards in the 2016 data. Table 4 shows the ammonium data relative to the applicable NR 105 standards.

4. 2017 Activities

4.1 Landfill Cover Maintenance

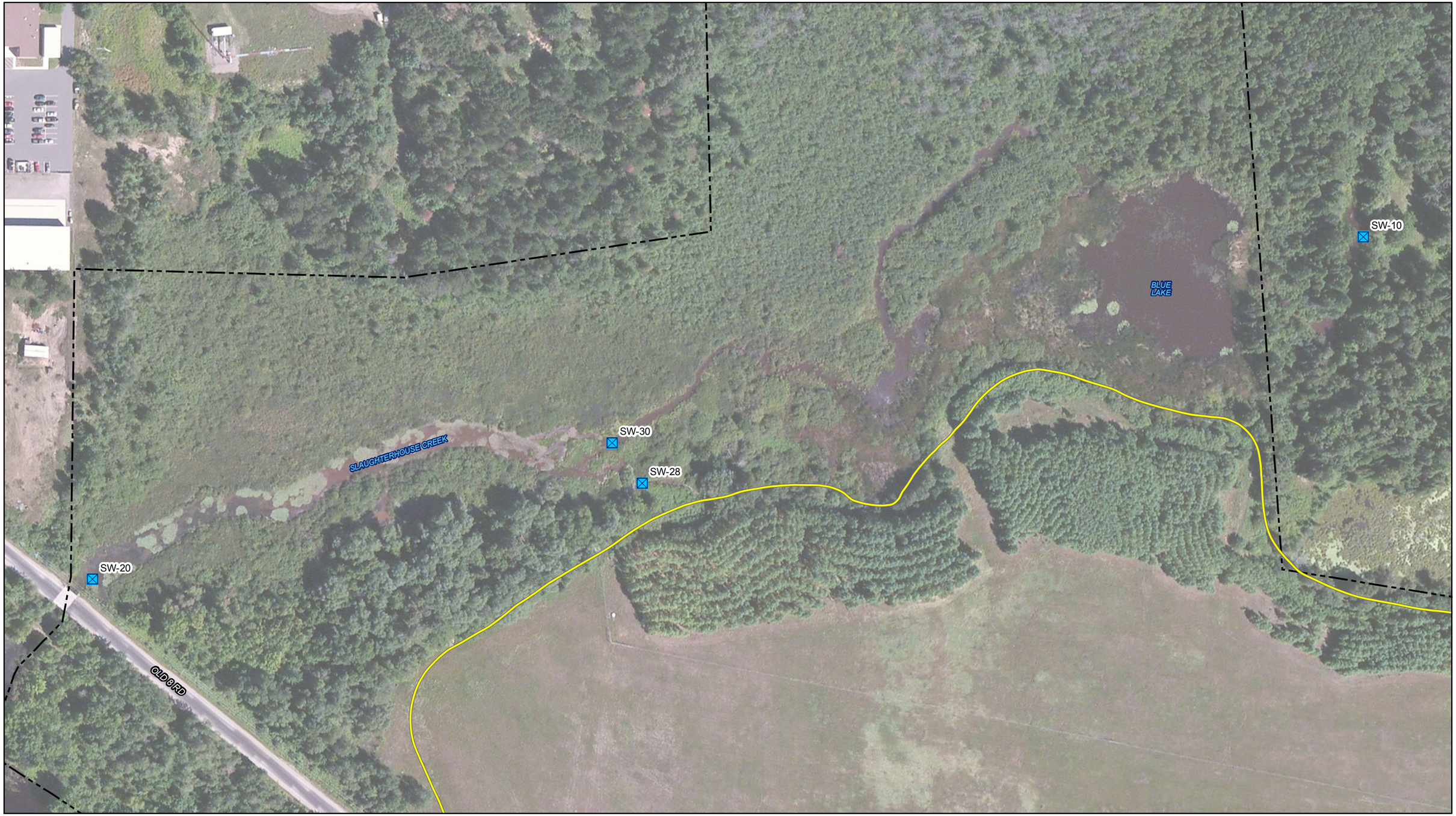
The landfill cover will be inspected for erosion at least twice in the coming summer. Repairs will be made, as necessary.

4.2 Surface Water Sampling

The same surface water sampling plan, as was in effect this year, is expected to be planned next year. Two rounds of samples, one in the spring and one in the fall, will be collected next year.

4.3 Reporting

It is anticipated that a report similar to this one will be prepared at year end, containing results and observations from the year.



Source: Sand Creek Consultants, Inc.; Oneida County GIS

0 50 100 150 ft

N

LEGEND

- SURFACE WATER SAMPLING LOCATION
- APPROXIMATE EDGE OF WASTE
- SITE PROPERTY BOUNDARY

GHD

FORMER CITY OF RHINELANDER LANDFILL
RHINELANDER, WISCONSIN
ANNUAL REPORT

11115796-50

Dec 16, 2016

SURFACE WATER SAMPLING LOCATIONS

FIGURE 1

GIS File: I:\GIS\Projects\8-chars\11------\1111----\111157--\11115796\11115796-REPORTS\11115796-50(002)\11115796-50(002)GIS-SP001.mxd

Table 1

2016 Surface Water Sample Results
Former City of Rhinelander Landfill - Slaughterhouse Creek
Rhinelander, Wisconsin

Sample Location:		Upstream		Downstream		Near Seep			Main Channel Near Seep
		SW-10	SW-10	SW-20	SW-20	SW-28	SW-28 (Dup)	SW-28	SW-30
Sample Date:		06/29/2016	10/04/2016	06/30/2016	10/04/2016	06/30/2016	06/30/2016	10/04/2016	06/30/2016
Parameters	**Unit**								
Metals									
Hardness, calculation	mg/L	45.2	67.2	89.7	93.6	90.4	90.8	84.1	86.0
Copper	µg/L	< 3.4	< 3.4	< 3.4	4.4	< 3.4	< 3.4	< 3.4	< 3.4
Iron	µg/L	7920	9590	8480	7450	9300	9410	6670	6350
Lead	µg/L	4.4	2.6	4.4	< 1.6	< 1.6	< 1.6	< 1.6	4.3
Sodium	µg/L	25900	21500	20200	24500	20500	20300	22600	21600
Zinc	µg/L	< 5.8	< 5.8	< 5.8	< 5.8	< 5.8	< 5.8	< 5.8	6.0
General Chemistry									
Fecal coliform bacteria	cfu/100mL	95	6.56	72.5	29.3	38	62.5	82.0	82.5
Ammonia	mg/L	< 0.25	< 0.25	0.84	1.0	1.7	1.9	1.6	0.69
Chemical oxygen demand (COD)	mg/L	43.3	43.3	47.7	29.9	38.8	43.3	38.8	38.8
Chloride	mg/L	49.3	40.7	42.6	52.4	44.2	43.6	48.5	48.5
Nitrite/Nitrate	mg/L	< 0.095	0.13	< 0.095	0.11	< 0.095	< 0.095	0.34	0.10
Total kjeldahl nitrogen (TKN)	mg/L	1.1	0.96	1.8	1.6	2.5	2.6	2.4	1.5
Turbidity	NTU	18.7	--	12.2	--	15.8	15.8	--	11.5
Field Data									
Temperature	^{0} C	15.96	13.53	16.71	13.63	16.93	16.93	6.92	15.74
pH	SU	7.24	7.3	7.2	7.32	7.04	7.04	6.9	7.08
Conductivity	µS	260	257	304	257	332	332	263	332
Dissolved Oxygen	mg/L	0.61	1.24	0	2.48	0	0	2.44	0
Oxidation Reduction Potential	mV	163	2	249	-21	133	133	-21	134
Turbidity	NTU	5.9	38.4	8.2	66.5	10.8	10.8	95.7	4
Salinity	ppt	0.1	0.12	0.1	0.12	0.2	0.2	0.13	0.2

Chloride Results Relative to NR 105 Standards
Former City of Rhinelander Landfill - Slaughterhouse Creek
Rhinelander, Wisconsin

Sample Location	Sample Date	Parameter	Units	Result	WWSF Table 1 Standard	WWSF Table 5 Standard
SW-10	06/29/2016	Chloride	mg/L	49.3	757	395
SW-10	10/04/2016	Chloride	mg/L	40.7	757	395
SW-20	06/30/2016	Chloride	mg/L	42.6	757	395
SW-20	10/04/2016	Chloride	mg/L	52.4	757	395
SW-28	06/30/2016	Chloride	mg/L	44.2	757	395
SW-28 (Dup)	06/30/2016	Chloride	mg/L	43.6	757	395
SW-28	10/04/2016	Chloride	mg/L	48.5	757	395
SW-30	06/30/2016	Chloride	mg/L	48.5	757	395

Notes:

mg/L - milligram per liter
WWSF - warm water sportfish

Table 3

Metals Results Relative to NR 105 Standards
Former City of Rhinelander Landfill - Slaughterhouse Creek
Rhinelander, Wisconsin

Sample Location	Sample Date	Parameter	Units	Result	WWSF Table 2 Calculated Standard	WWSF Table 6 Calculated Standard
SW-10	06/29/2016	Copper	µg/L	< 3.4	8.52	6.04
SW-10	06/29/2016	Lead	µg/L	4.4	49.64	13.00
SW-10	06/29/2016	Zinc	µg/L	< 5.8	60.11	60.11
SW-10	10/04/2016	Copper	µg/L	< 3.4	11.97	8.48
SW-10	10/04/2016	Lead	µg/L	2.6	72.82	19.07
SW-10	10/04/2016	Zinc	µg/L	< 5.8	85.03	85.03
SW-20	06/30/2016	Copper	µg/L	< 3.4	15.33	10.86
SW-20	06/30/2016	Lead	µg/L	4.4	96.26	25.21
SW-20	06/30/2016	Zinc	µg/L	< 5.8	109.46	109.46
SW-20	10/04/2016	Copper	µg/L	4.4	15.89	11.26
SW-20	10/04/2016	Lead	µg/L	< 1.6	100.30	26.27
SW-20	10/04/2016	Zinc	µg/L	< 5.8	113.61	113.61
SW-28	06/30/2016	Copper	µg/L	< 3.4	15.43	10.93
SW-28	06/30/2016	Lead	µg/L	< 1.6	96.99	25.40
SW-28	06/30/2016	Zinc	µg/L	< 5.8	110.21	110.21
SW-28 (Dup)	06/30/2016	Copper	µg/L	< 3.4	15.43	10.93
SW-28 (Dup)	06/30/2016	Lead	µg/L	< 1.6	96.99	25.40
SW-28 (Dup)	06/30/2016	Zinc	µg/L	< 5.8	110.21	110.21
SW-28	10/04/2016	Copper	µg/L	< 3.4	14.50	10.27
SW-28	10/04/2016	Lead	µg/L	< 1.6	90.45	23.69
SW-28	10/04/2016	Zinc	µg/L	< 5.8	103.46	103.46
SW-30	06/30/2016	Copper	µg/L	< 3.4	14.78	10.47
SW-30	06/30/2016	Lead	µg/L	4.3	92.42	24.21
SW-30	06/30/2016	Zinc	µg/L	6.0	105.50	105.50

Notes:

µg/L - milligram per liter
WWSF - warm water sportfish

Table 4

Ammonia Results Relative to NR 105 Standards
Former City of Rhinelander Landfill - Slaughterhouse Creek
Rhinelander, Wisconsin

Sample Location	Sample Date	Parameter	Units	Result	Temperature (^{0}C)	pH	WWSF Table 2C Acute Calculated Standard	WWSF Table 4B 30-Day Calculated Standard	WWSF Table 4B Ammonia 4-Day Calculated Standard
SW-10	06/29/2016	Ammonia	mg/L	< 0.25	15.96	7.24	28.20	4.80	12.00
SW-10	10/04/2016	Ammonia	mg/L	< 0.25	13.53	7.30	26.21	5.41	13.53
SW-20	06/30/2016	Ammonia	mg/L	0.84	16.71	7.20	29.54	4.68	11.70
SW-20	10/04/2016	Ammonia	mg/L	1.0	13.63	7.32	25.56	5.31	13.27
SW-28	06/30/2016	Ammonia	mg/L	1.7	16.93	7.04	34.82	4.10	10.26
SW-28 (Dup)	06/30/2016	Ammonia	mg/L	1.9	16.93	7.04	34.82	4.10	10.26
SW-28	10/04/2016	Ammonia	mg/L	1.6	6.92	6.90	39.16	9.98	24.96
SW-30	06/30/2016	Ammonia	mg/L	0.69	15.74	7.08	33.52	5.29	13.21

Notes:

mg/L - milligram per liter
WWSF - warm water sportfish

Appendix A
Surface Water Sampling Laboratory Reports

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

July 20, 2016

Grant Anderson
GHD Services; St. Paul
1801 Old Highway 8 Northwest
Suite 114
Saint Paul, MN 55112

RE: Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

Dear Grant Anderson:
Enclosed are the analytical results for sample(s) received by the laboratory on July 01, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,

Dan Milewsky
dan.milewsky@pacelabs.com
Project Manager

Enclosures

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

CERTIFICATIONS

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
Virginia VELAP ID: 460263
North Dakota Certification #: R-150
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
US Dept of Agriculture #: S-76505
Virginia VELAP Certification ID: 460263
Virginia VELAP ID: 460263
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444

REPORT OF LABORATORY ANALYSIS

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

SAMPLE SUMMARY

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40134665001	**SW-30**	Water	06/30/16 08:25	07/01/16 08:15
40134665002	**SW-20**	Water	06/30/16 08:40	07/01/16 08:15
40134665003	**SW-28**	Water	06/30/16 09:00	07/01/16 08:15
40134665004	**SW-28 DUP**	Water	06/30/16 09:00	07/01/16 08:15
40134665005	**SW-10**	Water	06/29/16 00:00	07/01/16 08:15

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

SAMPLE ANALYTE COUNT

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40134665001	**SW-30**	EPA 6010	DLB	6
		SM 9222D	DEY	1
		SM 2130B	DEY	1
		EPA 300.0	HMB	1
		EPA 350.1	TMK	1
		EPA 351.2	TMK	1
		EPA 353.2	DAW	1
		EPA 410.4	TJJ	1
40134665002	**SW-20**	EPA 6010	DLB	6
		SM 9222D	DEY	1
		SM 2130B	DEY	1
		EPA 300.0	HMB	2
		EPA 350.1	TMK	1
		EPA 351.2	TMK	1
		EPA 353.2	DAW	1
		EPA 410.4	TJJ	1
40134665003	**SW-28**	EPA 6010	DLB	6
		SM 9222D	DEY	1
		SM 2130B	DEY	1
		EPA 300.0	HMB	2
		EPA 350.1	TMK	1
		EPA 351.2	TMK	1
		EPA 353.2	DAW	1
		EPA 410.4	TJJ	1
40134665004	**SW-28 DUP**	EPA 6010	DLB	6
		SM 9222D	DEY	1
		SM 2130B	DEY	1
		EPA 300.0	HMB	2
		EPA 350.1	TMK	1
		EPA 351.2	TMK	1
		EPA 353.2	DAW	1
		EPA 410.4	TJJ	1
40134665005	**SW-10**	EPA 6010	DLB	6
		SM 9222D	DEY	1
		SM 2130B	DEY	1
		EPA 300.0	HMB	2
		EPA 350.1	TMK	1

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 351.2	TMK	1
		EPA 353.2	DAW	1
		EPA 410.4	TJJ	1

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

ANALYTICAL RESULTS

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

Sample: SW-30 **Lab ID: 40134665001** Collected: 06/30/16 08:25 Received: 07/01/16 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Copper	**<3.4**	ug/L	10.0	3.4	1	07/06/16 09:54	07/07/16 11:05	7440-50-8	
Iron	**6350**	ug/L	100	15.9	1	07/06/16 09:54	07/07/16 11:05	7439-89-6	
Lead	**4.3J**	ug/L	12.0	1.6	1	07/06/16 09:54	07/07/16 11:05	7439-92-1	
Sodium	**21600**	ug/L	1000	46.3	1	07/06/16 09:54	07/07/16 11:05	7440-23-5	
Total Hardness by 2340B	**86.0**	mg/L	2.0	0.15	1	07/06/16 09:54	07/07/16 11:05		
Zinc	**6.0J**	ug/L	40.0	5.8	1	07/06/16 09:54	07/07/16 11:05	7440-66-6	
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**82.5**	CFU/100 mL	2.5	2.5	2.5	07/01/16 11:30	07/01/16 11:30		H3
2130B Turbidity	Analytical Method: SM 2130B								
Turbidity	**11.5**	NTU	1.0	0.50	1		07/01/16 10:35		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**48.5**	mg/L	20.0	10.0	5		07/13/16 16:34	16887-00-6	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**0.69**	mg/L	0.50	0.25	1		07/08/16 16:13	7664-41-7	M0
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**1.5**	mg/L	0.73	0.22	1	07/05/16 12:55	07/05/16 16:56	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.10J**	mg/L	0.25	0.095	1		07/11/16 10:42		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**38.8J**	mg/L	44.8	13.4	1	07/07/16 07:15	07/07/16 12:30		

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

Sample: SW-20 **Lab ID: 40134665002** Collected: 06/30/16 08:40 Received: 07/01/16 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Copper	**<3.4**	ug/L	10.0	3.4	1	07/05/16 09:20	07/06/16 20:05	7440-50-8	
Iron	**8480**	ug/L	100	15.9	1	07/05/16 09:20	07/06/16 20:05	7439-89-6	
Lead	**4.4J**	ug/L	12.0	1.6	1	07/05/16 09:20	07/06/16 20:05	7439-92-1	
Sodium	**20200**	ug/L	1000	46.3	1	07/05/16 09:20	07/06/16 20:05	7440-23-5	
Total Hardness by 2340B	**89.7**	mg/L	2.0	0.15	1	07/05/16 09:20	07/06/16 20:05		
Zinc	**<5.8**	ug/L	40.0	5.8	1	07/05/16 09:20	07/06/16 20:05	7440-66-6	1q
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**72.5**	CFU/100 mL	2.5	2.5	2.5	07/01/16 11:30	07/01/16 11:30		H3
2130B Turbidity	Analytical Method: SM 2130B								
Turbidity	**12.2**	NTU	1.0	0.50	1		07/01/16 10:36		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**42.6**	mg/L	20.0	10.0	5		07/13/16 17:07	16887-00-6	
Sulfate	**<10.0**	mg/L	20.0	10.0	5		07/13/16 17:07	14808-79-8	D3
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**0.84**	mg/L	0.50	0.25	1		07/08/16 16:16	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**1.8**	mg/L	0.73	0.22	1	07/05/16 12:55	07/05/16 16:59	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**<0.095**	mg/L	0.25	0.095	1		07/11/16 10:43		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**47.7**	mg/L	44.8	13.4	1	07/07/16 07:15	07/07/16 12:30		

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

Sample: SW-28 **Lab ID: 40134665003** Collected: 06/30/16 09:00 Received: 07/01/16 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Copper	**<3.4**	ug/L	10.0	3.4	1	07/05/16 09:20	07/06/16 20:07	7440-50-8	
Iron	**9300**	ug/L	100	15.9	1	07/05/16 09:20	07/06/16 20:07	7439-89-6	
Lead	**4.6J**	ug/L	12.0	1.6	1	07/05/16 09:20	07/06/16 20:07	7439-92-1	
Sodium	**20500**	ug/L	1000	46.3	1	07/05/16 09:20	07/06/16 20:07	7440-23-5	
Total Hardness by 2340B	**90.4**	mg/L	2.0	0.15	1	07/05/16 09:20	07/06/16 20:07		
Zinc	**<5.8**	ug/L	40.0	5.8	1	07/05/16 09:20	07/06/16 20:07	7440-66-6	1q
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**38**	CFU/100 mL	2.0	2.0	2	07/01/16 11:30	07/01/16 11:30		H3
2130B Turbidity	Analytical Method: SM 2130B								
Turbidity	**15.8**	NTU	1.0	0.50	1		07/01/16 10:37		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**44.2**	mg/L	20.0	10.0	5		07/13/16 17:18	16887-00-6	
Sulfate	**<10.0**	mg/L	20.0	10.0	5		07/13/16 17:18	14808-79-8	D3
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**1.7**	mg/L	0.50	0.25	1		07/08/16 16:17	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**2.5**	mg/L	0.73	0.22	1	07/05/16 12:55	07/05/16 17:01	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**<0.095**	mg/L	0.25	0.095	1		07/11/16 10:43		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**38.8J**	mg/L	44.8	13.4	1	07/07/16 07:15	07/07/16 12:30		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

Sample: SW-28 DUP **Lab ID: 40134665004** Collected: 06/30/16 09:00 Received: 07/01/16 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Copper	**<3.4**	ug/L	10.0	3.4	1	07/05/16 09:20	07/06/16 20:10	7440-50-8	
Iron	**9410**	ug/L	100	15.9	1	07/05/16 09:20	07/06/16 20:10	7439-89-6	
Lead	**<1.6**	ug/L	12.0	1.6	1	07/05/16 09:20	07/06/16 20:10	7439-92-1	
Sodium	**20300**	ug/L	1000	46.3	1	07/05/16 09:20	07/06/16 20:10	7440-23-5	
Total Hardness by 2340B	**90.8**	mg/L	2.0	0.15	1	07/05/16 09:20	07/06/16 20:10		
Zinc	**<5.8**	ug/L	40.0	5.8	1	07/05/16 09:20	07/06/16 20:10	7440-66-6	1q
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**62.5**	CFU/100 mL	2.5	2.5	2.5	07/01/16 11:30	07/01/16 11:30		H3
2130B Turbidity	Analytical Method: SM 2130B								
Turbidity	**16.5**	NTU	1.0	0.50	1		07/01/16 10:38		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**43.6**	mg/L	20.0	10.0	5		07/13/16 17:29	16887-00-6	
Sulfate	**<10.0**	mg/L	20.0	10.0	5		07/13/16 17:29	14808-79-8	D3
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**1.9**	mg/L	0.50	0.25	1		07/13/16 17:46	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**2.6**	mg/L	0.73	0.22	1	07/05/16 12:55	07/05/16 17:02	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**<0.095**	mg/L	0.25	0.095	1		07/11/16 10:44		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**43.3J**	mg/L	44.8	13.4	1	07/07/16 07:15	07/07/16 12:30		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

Sample: SW-10 **Lab ID: 40134665005** Collected: 06/29/16 00:00 Received: 07/01/16 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Copper	**<3.4**	ug/L	10.0	3.4	1	07/05/16 09:20	07/06/16 20:12	7440-50-8	
Iron	**7920**	ug/L	100	15.9	1	07/05/16 09:20	07/06/16 20:12	7439-89-6	
Lead	**4.4J**	ug/L	12.0	1.6	1	07/05/16 09:20	07/06/16 20:12	7439-92-1	
Sodium	**25900**	ug/L	1000	46.3	1	07/05/16 09:20	07/06/16 20:12	7440-23-5	
Total Hardness by 2340B	**45.2**	mg/L	2.0	0.15	1	07/05/16 09:20	07/06/16 20:12		
Zinc	**<5.8**	ug/L	40.0	5.8	1	07/05/16 09:20	07/06/16 20:12	7440-66-6	1q
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**95**	CFU/100 mL	2.5	2.5	2.5	07/01/16 11:30	07/01/16 11:30		H3
2130B Turbidity	Analytical Method: SM 2130B								
Turbidity	**18.7**	NTU	1.0	0.50	1		07/01/16 10:38		H3
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**49.3**	mg/L	20.0	10.0	5		07/13/16 17:40	16887-00-6	
Sulfate	**<10.0**	mg/L	20.0	10.0	5		07/13/16 17:40	14808-79-8	D3
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**<0.25**	mg/L	0.50	0.25	1		07/13/16 17:50	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**1.1**	mg/L	0.73	0.22	1	07/05/16 12:55	07/05/16 17:03	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**<0.095**	mg/L	0.25	0.095	1		07/11/16 10:45		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**43.3J**	mg/L	44.8	13.4	1	07/07/16 07:15	07/07/16 12:30		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

QC Batch: 228972 Analysis Method: SM 9222D
QC Batch Method: SM 9222D Analysis Description: 9222D MICRO Fecal Coliform by MF
Associated Lab Samples: 40134665001, 40134665002, 40134665003, 40134665004, 40134665005

METHOD BLANK: 1359586 Matrix: Water
Associated Lab Samples: 40134665001, 40134665002, 40134665003, 40134665004, 40134665005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fecal Coliforms	CFU/100 mL	<1	1.0	07/01/16 11:30	

METHOD BLANK: 1359589 Matrix: Water
Associated Lab Samples: 40134665001, 40134665002, 40134665003, 40134665004, 40134665005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fecal Coliforms	CFU/100 mL	<1	1.0	07/01/16 11:30	

SAMPLE DUPLICATE: 1359587

Parameter	Units	40134665001 Result	Dup Result	RPD	Max RPD	Qualifiers
Fecal Coliforms	CFU/100 mL	82.5	75			

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QUALITY CONTROL DATA

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

QC Batch: 228940 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 40134665002, 40134665003, 40134665004, 40134665005

METHOD BLANK: 1359477 Matrix: Water
Associated Lab Samples: 40134665002, 40134665003, 40134665004, 40134665005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	<3.4	10.0	07/06/16 19:27	
Iron	ug/L	<15.9	100	07/07/16 13:11	
Lead	ug/L	<1.6	12.0	07/06/16 19:27	
Sodium	ug/L	<46.3	1000	07/06/16 19:27	
Total Hardness by 2340B	mg/L	1.1J	2.0	07/06/16 19:27	
Zinc	ug/L	<5.8	40.0	07/06/16 19:27	

LABORATORY CONTROL SAMPLE: 1359478

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	500	500	100	80-120	
Iron	ug/L	5000	5040	101	80-120	
Lead	ug/L	500	496	99	80-120	
Sodium	ug/L	5000	4940	99	80-120	
Total Hardness by 2340B	mg/L		32.4			
Zinc	ug/L	500	498	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1359479 1359480

Parameter	Units	40134618003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	<10.0	500	500	511	515	102	103	75-125	1	20	
Iron	ug/L	2370	5000	5000	7450	7420	102	101	75-125	0	20	
Lead	ug/L	<12.0	500	500	502	498	100	99	75-125	1	20	
Sodium	ug/L	246000	5000	5000	241000	249000	-102	64	75-125	3	20	P6
Total Hardness by 2340B	mg/L	220000 ug/L			252	249				1	20	
Zinc	ug/L	<40.0	500	500	505	499	101	100	75-125	1	20	

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QUALITY CONTROL DATA

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

QC Batch: 229078
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 40134665001

METHOD BLANK: 1359986 Matrix: Water
Associated Lab Samples: 40134665001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	<3.4	10.0	07/07/16 11:00	
Iron	ug/L	72.4J	100	07/07/16 11:00	
Lead	ug/L	<1.6	12.0	07/07/16 11:00	
Sodium	ug/L	<46.3	1000	07/07/16 11:00	
Total Hardness by 2340B	mg/L	0.61J	2.0	07/07/16 11:00	
Zinc	ug/L	<5.8	40.0	07/07/16 11:00	

LABORATORY CONTROL SAMPLE: 1359987

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	500	494	99	80-120	
Iron	ug/L	5000	5080	102	80-120	
Lead	ug/L	500	475	95	80-120	
Sodium	ug/L	5000	4790	96	80-120	
Total Hardness by 2340B	mg/L		32.0			
Zinc	ug/L	500	495	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1359988 1359989

Parameter	Units	40134665001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	<3.4	500	500	510	511	102	102	75-125	0	20	
Iron	ug/L	6350	5000	5000	11500	11600	103	104	75-125	0	20	
Lead	ug/L	4.3J	500	500	488	486	97	96	75-125	0	20	
Sodium	ug/L	21600	5000	5000	26600	26700	100	102	75-125	0	20	
Total Hardness by 2340B	mg/L	86.0			118	119				1	20	
Zinc	ug/L	6.0J	500	500	508	503	100	99	75-125	1	20	

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QUALITY CONTROL DATA

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

QC Batch: 228836 Analysis Method: SM 2130B
QC Batch Method: SM 2130B Analysis Description: 2130B Turbidity
Associated Lab Samples: 40134665001, 40134665002, 40134665003, 40134665004, 40134665005

METHOD BLANK: 1358424 Matrix: Water
Associated Lab Samples: 40134665001, 40134665002, 40134665003, 40134665004, 40134665005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Turbidity	NTU	<0.50	1.0	07/01/16 10:34	

LABORATORY CONTROL SAMPLE: 1358425

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Turbidity	NTU	538	539	100		

SAMPLE DUPLICATE: 1358426

Parameter	Units	40134665001 Result	Dup Result	RPD	Max RPD	Qualifiers
Turbidity	NTU	11.5	12.5	8	10	

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QUALITY CONTROL DATA

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

QC Batch: 229292 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 40134665001, 40134665002, 40134665003, 40134665004, 40134665005

METHOD BLANK: 1360969 Matrix: Water
Associated Lab Samples: 40134665001, 40134665002, 40134665003, 40134665004, 40134665005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<2.0	4.0	07/13/16 16:12	
Sulfate	mg/L	<2.0	4.0	07/13/16 16:12	

LABORATORY CONTROL SAMPLE: 1360970

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	18.8	94	90-110	
Sulfate	mg/L	20	18.9	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1360971 1360972

Parameter	Units	40134665001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	48.5	100	100	147	148	98	100	90-110	1	20	
Sulfate	mg/L	<10.0	100	100	97.7	98.9	91	93	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1360973 1360974

Parameter	Units	40134874001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	146	200	200	354	354	104	104	90-110	0	20	
Sulfate	mg/L	<20.0	200	200	203	203	93	93	90-110	0	20	

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QUALITY CONTROL DATA

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

QC Batch: 229391 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 40134665001, 40134665002, 40134665003

METHOD BLANK: 1361355 Matrix: Water
Associated Lab Samples: 40134665001, 40134665002, 40134665003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	<0.25	0.50	07/08/16 15:52	

LABORATORY CONTROL SAMPLE: 1361356

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	10	10.6	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1361357 1361358

Parameter	Units	40134740001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	<0.25	10	10	10.1	10.2	101	102	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1361359 1361360

Parameter	Units	40134665001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	0.69	10	10	11.9	11.9	112	112	90-110	1	20	M0

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QUALITY CONTROL DATA

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

QC Batch: 229767 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 40134665004, 40134665005

METHOD BLANK: 1363288 Matrix: Water
Associated Lab Samples: 40134665004, 40134665005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	<0.25	0.50	07/13/16 17:44	

LABORATORY CONTROL SAMPLE: 1363289

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	10	10.7	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1363290 1363291

Parameter	Units	40134665004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	1.9	10	10	12.3	12.1	103	102	90-110	1	20	

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QUALITY CONTROL DATA

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

QC Batch: 228985 Analysis Method: EPA 351.2
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN
Associated Lab Samples: 40134665001, 40134665002, 40134665003, 40134665004, 40134665005

METHOD BLANK: 1359623 Matrix: Water
Associated Lab Samples: 40134665001, 40134665002, 40134665003, 40134665004, 40134665005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	<0.22	0.73	07/05/16 16:41	

LABORATORY CONTROL SAMPLE: 1359624

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1359625 1359626

Parameter	Units	40134546002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	0.65J	5	5	5.6	5.6	99	99	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1359627 1359628

Parameter	Units	40134665001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	1.5	5	5	6.3	6.2	97	96	90-110	1	20	

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QUALITY CONTROL DATA

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

QC Batch: 229457 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 40134665001, 40134665002, 40134665003, 40134665004, 40134665005

METHOD BLANK: 1361942 Matrix: Water
Associated Lab Samples: 40134665001, 40134665002, 40134665003, 40134665004, 40134665005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.095	0.25	07/11/16 10:33	

LABORATORY CONTROL SAMPLE: 1361943

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2.5	2.5	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1361944 1361945

Parameter	Units	40134711015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	13.9	12.5	12.5	25.7	25.7	95	95	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1361946 1361947

Parameter	Units	40134920004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	1.2	2.5	2.5	3.7	3.6	97	95	90-110	2	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

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

QUALITY CONTROL DATA

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

QC Batch: 229113 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 40134665001, 40134665002, 40134665003, 40134665004, 40134665005

METHOD BLANK: 1360125 Matrix: Water
Associated Lab Samples: 40134665001, 40134665002, 40134665003, 40134665004, 40134665005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<13.4	44.8	07/07/16 12:27	

LABORATORY CONTROL SAMPLE: 1360126

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	500	504	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1360127 1360128

Parameter	Units	40134204002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	745	2000	2000	2690	2690	97	97	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1360129 1360130

Parameter	Units	40134547002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	123	526	526	657	681	101	106	90-110	4	10	

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

Pace Analytical Services, Inc.
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Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

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

1q	Analyte was measured in the associated method blank at a concentration of -9.3 ug/L.
D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40134665

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40134665001	**SW-30**	EPA 3010	229078	EPA 6010	229150
40134665002	**SW-20**	EPA 3010	228940	EPA 6010	229031
40134665003	**SW-28**	EPA 3010	228940	EPA 6010	229031
40134665004	**SW-28 DUP**	EPA 3010	228940	EPA 6010	229031
40134665005	**SW-10**	EPA 3010	228940	EPA 6010	229031
40134665001	**SW-30**	SM 9222D	228971	SM 9222D	228972
40134665002	**SW-20**	SM 9222D	228971	SM 9222D	228972
40134665003	**SW-28**	SM 9222D	228971	SM 9222D	228972
40134665004	**SW-28 DUP**	SM 9222D	228971	SM 9222D	228972
40134665005	**SW-10**	SM 9222D	228971	SM 9222D	228972
40134665001	**SW-30**	SM 2130B	228836		
40134665002	**SW-20**	SM 2130B	228836		
40134665003	**SW-28**	SM 2130B	228836		
40134665004	**SW-28 DUP**	SM 2130B	228836		
40134665005	**SW-10**	SM 2130B	228836		
40134665001	**SW-30**	EPA 300.0	229292		
40134665002	**SW-20**	EPA 300.0	229292		
40134665003	**SW-28**	EPA 300.0	229292		
40134665004	**SW-28 DUP**	EPA 300.0	229292		
40134665005	**SW-10**	EPA 300.0	229292		
40134665001	**SW-30**	EPA 350.1	229391		
40134665002	**SW-20**	EPA 350.1	229391		
40134665003	**SW-28**	EPA 350.1	229391		
40134665004	**SW-28 DUP**	EPA 350.1	229767		
40134665005	**SW-10**	EPA 350.1	229767		
40134665001	**SW-30**	EPA 351.2	228985	EPA 351.2	229038
40134665002	**SW-20**	EPA 351.2	228985	EPA 351.2	229038
40134665003	**SW-28**	EPA 351.2	228985	EPA 351.2	229038
40134665004	**SW-28 DUP**	EPA 351.2	228985	EPA 351.2	229038
40134665005	**SW-10**	EPA 351.2	228985	EPA 351.2	229038
40134665001	**SW-30**	EPA 353.2	229457		
40134665002	**SW-20**	EPA 353.2	229457		
40134665003	**SW-28**	EPA 353.2	229457		
40134665004	**SW-28 DUP**	EPA 353.2	229457		
40134665005	**SW-10**	EPA 353.2	229457		
40134665001	**SW-30**	EPA 410.4	229113	EPA 410.4	229215
40134665002	**SW-20**	EPA 410.4	229113	EPA 410.4	229215
40134665003	**SW-28**	EPA 410.4	229113	EPA 410.4	229215
40134665004	**SW-28 DUP**	EPA 410.4	229113	EPA 410.4	229215
40134665005	**SW-10**	EPA 410.4	229113	EPA 410.4	229215

CHAIN OF CUSTODY RECORD

COC NO.: SP-01945

PAGE 1 OF 1

(See Reverse Side for Instructions)

CONESTOGA-ROVERS & ASSOCIATES
1801 Old Highway 8 Northwest, Suite 114
St. Paul, Minnesota 55112 United States
Phone: (651) 639-0913 Fax: (651) 639-0923

401346

Project No/ Phase/Task Code: 111 5796	**Laboratory Name:**	**Lab Location:**	**SSOW ID:**
Project Name: Rhinelander Landfill - Creek	**Lab Contact:**	**Lab Quote No:**	**Cooler No:**
Project Location: Rhinelander			**Carrier:**
Chemistry Contact: Grant Anderson			**Airbill No:**
Sampler(s): Ryan Aamodt / Chris Kay			**Date Shipped:**

Item	Sample Identification (Containers for each sample may be combined on one line)	Date (mm/dd//yy)	Time (hh:mm)	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Container Quantity & Preservation: Unpreserved	HCl	HNO_3	H_2SO_4	NaOH	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other:	Total Containers/Sample	Analysis Requested: Chlorinated Solvents	Hardness, Manganese, Iron	Alkalinity, Manganese, Iron	Total Coliform	MS/MSD Request	Comments/ Special Instructions:
1	MW-160630-RA-13	6/13/16	825	WS	G	2		1	1					4	X	X	X	X		001
2	MW-160630-RA-12		840			2		1	1					4	X	X	X	X		002
3	MW-160630-RA-14		900			2		1	1					4	X	X	X	X		003
4	MW-160630-RA-15		900			2		1	1					4	X	X	X	X		004
5	DW-160630-RA-16	6/29/16																		005
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

3-250ml ACD 1-sterile

TAT Required in business days (use separate COCs for different TATs):

☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☐ 2 Week ☐ Other:

Total Number of Containers: 16

All Samples in Cooler must be on COC

Notes/ Special Requirements:

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
1.	CRA	6/13/16	1200	1.			
2. Dunham Fedex	7/1/16	0700		2.	Pace	7/1/16	0815 0700
3. 7/1/16		0815 7/1/16		3.			7/1/16

0 added to COC by lab 7/1/16

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

CRA Form: COC-10A (20110804)

Sample Condition Upon Receipt

Pace Analytical Services, Inc.
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Pace Analytical™

Project #: **WO# : 40134665**

40134665

Client Name: CRA

Courier: ☑ Fed Ex ☐ UPS ☐ Client ☐ Pace Other: _____

Tracking #: 783488410377

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other _____

Thermometer Used NA **Type of Ice:** (Wet) Blue Dry None ☑ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: RO1 /Corr: **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp Blank Present: ☐ yes ☑ no

Person examining contents:
Date: 7/1/16
Initials: DMS

Temp should be above freezing to 6°C for all sample except Biota.
Frozen Biota Samples should be received ≤ 0°C.

				Comments:
Chain of Custody Present:	☑Yes	☐No	☐N/A	1.
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A	2. added DMS 7/1/16 sample ID to COC by lab DMS 7/1/16
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☐Yes	☑No	☐N/A	4.
Samples Arrived within Hold Time: DMS 7/1/16	☑Yes	☐No	☐N/A	5.
- VOA Samples frozen upon receipt	☐Yes	☐No		Date/Time:
Short Hold Time Analysis (<72hr):	☑Yes	☐No	☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A	7.
Sufficient Volume:	☑Yes	☐No	☐N/A	8.
Correct Containers Used:	☑Yes	☐No	☐N/A	9.
-Pace Containers Used:	☑Yes	☐No	☐N/A	
-Pace IR Containers Used:	☐Yes	☐No	☑N/A	
Containers Intact:	☑Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A	11.
Sample Labels match COC:	☐Yes	☑No	☐N/A	12. dates on labels say 6/29/16 no times 005 HNO3 bottle cannot read ID bagged together and says "16" on cap DMS 7/1/16
-Includes date/time/ID/Analysis Matrix: W				
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	☑Yes	☐No	☐N/A	13. ☑ HNO3 ☑ H2SO4 ☐ NaOH ☐ NaOH +ZnAct
All containers needing preservation are found to be in compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	☑Yes	☐No	☐N/A	
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	☑Yes	☐No		Initial when completed DMS / Lab Std #ID of preservative / Date/Time:
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☑N/A	14.
Trip Blank Present:	☐Yes	☐No	☑N/A	15.
Trip Blank Custody Seals Present	☐Yes	☐No	☑N/A	
Pace Trip Blank Lot # (if purchased):				

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: cap on 001 fecal bottle open was standing up in cooler but unsure if melt water went into cooler DMS 7/1/16
All ID's say "160629" DMS 7/1/16

Project Manager Review: LJ for DMS **Date:** 7-1-16

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

October 22, 2016

Grant Anderson
GHD Services; St. Paul
1801 Old Highway 8 Northwest
Suite 114
Saint Paul, MN 55112

RE: Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40139475

Dear Grant Anderson:
Enclosed are the analytical results for sample(s) received by the laboratory on October 05, 2016. 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,

Dan Milewsky
dan.milewsky@pacelabs.com
Project Manager

Enclosures

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

CERTIFICATIONS

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40139475

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
Virginia VELAP ID: 460263
North Dakota Certification #: R-150
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
US Dept of Agriculture #: S-76505
Virginia VELAP Certification ID: 460263
Virginia VELAP ID: 460263
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444

REPORT OF LABORATORY ANALYSIS

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

SAMPLE SUMMARY

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40139475

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40139475001	**SW-20**	Water	10/04/16 12:35	10/05/16 07:30
40139475002	**SW-28**	Water	10/04/16 12:45	10/05/16 07:30
40139475003	**SW-10**	Water	10/04/16 13:10	10/05/16 07:30

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40139475

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40139475001	**SW-20**	EPA 6010	DLB	6
		SM 9222D	DEY	1
			AMH	6
		EPA 300.0	JMN	1
		EPA 350.1	TMK	1
		EPA 351.2	TMK	1
		EPA 353.2	DAW	1
		EPA 410.4	TJJ	1
40139475002	**SW-28**	EPA 6010	DLB	6
		SM 9222D	DEY	1
			AMH	6
		EPA 300.0	JMN	1
		EPA 350.1	TMK	1
		EPA 351.2	TMK	1
		EPA 353.2	DAW	1
		EPA 410.4	TJJ	1
40139475003	**SW-10**	EPA 6010	DLB	6
		SM 9222D	DEY	1
			AMH	6
		EPA 300.0	JMN	1
		EPA 350.1	TMK	1
		EPA 351.2	TMK	1
		EPA 353.2	DAW	1
		EPA 410.4	TJJ	1

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40139475

Sample: SW-20 **Lab ID: 40139475001** Collected: 10/04/16 12:35 Received: 10/05/16 07:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Copper	**4.4J**	ug/L	10.0	3.4	1	10/07/16 10:20	10/07/16 17:46	7440-50-8	
Iron	**7450**	ug/L	100	15.9	1	10/07/16 10:20	10/07/16 17:46	7439-89-6	
Lead	**<1.6**	ug/L	12.0	1.6	1	10/07/16 10:20	10/07/16 17:46	7439-92-1	
Sodium	**24500**	ug/L	1000	46.3	1	10/07/16 10:20	10/07/16 17:46	7440-23-5	
Total Hardness by 2340B	**93.6**	mg/L	2.0	0.15	1	10/07/16 10:20	10/07/16 17:46		
Zinc	**<5.8**	ug/L	40.0	5.8	1	10/07/16 10:20	10/07/16 17:46	7440-66-6	
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**29.3**	CFU/100 mL	2.4	2.4	2.44	10/05/16 11:20	10/05/16 11:20		H3
Field Data	Analytical Method:								
Field pH	**7.32**	Std. Units			1		10/04/16 12:35		
Field Specific Conductance	**257**	umhos/cm			1		10/04/16 12:35		
Oxygen, Dissolved	**2.48**	mg/L			1		10/04/16 12:35	7782-44-7	
REDOX	**-21**	mV			1		10/04/16 12:35		
Turbidity	**0**	NTU			1		10/04/16 12:35		
Temperature, Water (C)	**13.63**	deg C			1		10/04/16 12:35		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**52.4**	mg/L	10.0	2.5	5		10/13/16 15:43	16887-00-6	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**1.0**	mg/L	0.50	0.25	1		10/17/16 16:03	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**1.6**	mg/L	0.73	0.22	1	10/10/16 13:16	10/10/16 18:11	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.11J**	mg/L	0.25	0.095	1		10/12/16 11:34		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**29.9J**	mg/L	44.8	13.4	1	10/11/16 07:29	10/11/16 11:19		

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40139475

Sample: SW-28 **Lab ID: 40139475002** Collected: 10/04/16 12:45 Received: 10/05/16 07:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Copper	**<3.4**	ug/L	10.0	3.4	1	10/07/16 10:20	10/07/16 17:53	7440-50-8	
Iron	**6670**	ug/L	100	15.9	1	10/07/16 10:20	10/07/16 17:53	7439-89-6	
Lead	**<1.6**	ug/L	12.0	1.6	1	10/07/16 10:20	10/07/16 17:53	7439-92-1	
Sodium	**22600**	ug/L	1000	46.3	1	10/07/16 10:20	10/07/16 17:53	7440-23-5	
Total Hardness by 2340B	**84.1**	mg/L	2.0	0.15	1	10/07/16 10:20	10/07/16 17:53		
Zinc	**<5.8**	ug/L	40.0	5.8	1	10/07/16 10:20	10/07/16 17:53	7440-66-6	
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**82.0**	CFU/100 mL	2.0	2.0	2	10/05/16 11:20	10/05/16 11:20		H3
Field Data	Analytical Method:								
Field pH	**6.9**	Std. Units			1		10/04/16 12:45		
Field Specific Conductance	**263**	umhos/cm			1		10/04/16 12:45		
Oxygen, Dissolved	**2.44**	mg/L			1		10/04/16 12:45	7782-44-7	
REDOX	**-21**	mV			1		10/04/16 12:45		
Turbidity	**0**	NTU			1		10/04/16 12:45		
Temperature, Water (C)	**6.92**	deg C			1		10/04/16 12:45		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**48.5**	mg/L	10.0	2.5	5		10/13/16 15:53	16887-00-6	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**1.6**	mg/L	0.50	0.25	1		10/17/16 16:08	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**2.4**	mg/L	0.73	0.22	1	10/10/16 13:16	10/10/16 18:12	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.34**	mg/L	0.25	0.095	1		10/12/16 11:35		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**38.8J**	mg/L	44.8	13.4	1	10/11/16 07:29	10/11/16 11:19		

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40139475

Sample: SW-10 **Lab ID: 40139475003** Collected: 10/04/16 13:10 Received: 10/05/16 07:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Copper	**<3.4**	ug/L	10.0	3.4	1	10/07/16 10:20	10/07/16 17:55	7440-50-8	
Iron	**9590**	ug/L	100	15.9	1	10/07/16 10:20	10/07/16 17:55	7439-89-6	
Lead	**2.6J**	ug/L	12.0	1.6	1	10/07/16 10:20	10/07/16 17:55	7439-92-1	
Sodium	**21500**	ug/L	1000	46.3	1	10/07/16 10:20	10/07/16 17:55	7440-23-5	
Total Hardness by 2340B	**67.2**	mg/L	2.0	0.15	1	10/07/16 10:20	10/07/16 17:55		
Zinc	**<5.8**	ug/L	40.0	5.8	1	10/07/16 10:20	10/07/16 17:55	7440-66-6	
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**6.56**	CFU/100 mL	1.6	1.6	1.64	10/05/16 11:20	10/05/16 11:20		H3
Field Data	Analytical Method:								
Field pH	**7.3**	Std. Units			1		10/04/16 13:10		
Field Specific Conductance	**257**	umhos/cm			1		10/04/16 13:10		
Oxygen, Dissolved	**1.24**	mg/L			1		10/04/16 13:10	7782-44-7	
REDOX	**2**	mV			1		10/04/16 13:10		
Turbidity	**0**	NTU			1		10/04/16 13:10		
Temperature, Water (C)	**13.53**	deg C			1		10/04/16 13:10		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**40.7**	mg/L	10.0	2.5	5		10/13/16 16:04	16887-00-6	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**<0.25**	mg/L	0.50	0.25	1		10/17/16 16:08	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**0.96**	mg/L	0.73	0.22	1	10/10/16 13:16	10/10/16 18:14	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.13J**	mg/L	0.25	0.095	1		10/12/16 11:35		
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4								
Chemical Oxygen Demand	**43.3J**	mg/L	44.8	13.4	1	10/11/16 07:29	10/11/16 11:19		

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40139475

QC Batch: 237407 Analysis Method: SM 9222D
QC Batch Method: SM 9222D Analysis Description: 9222D MICRO Fecal Coliform by MF
Associated Lab Samples: 40139475001, 40139475002, 40139475003

METHOD BLANK: 1406977 Matrix: Water
Associated Lab Samples: 40139475001, 40139475002, 40139475003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fecal Coliforms	CFU/100 mL	<1	1.0	10/05/16 11:20	

METHOD BLANK: 1406979 Matrix: Water
Associated Lab Samples: 40139475001, 40139475002, 40139475003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fecal Coliforms	CFU/100 mL	<1	1.0	10/05/16 11:20	

SAMPLE DUPLICATE: 1406978

Parameter	Units	40139475001 Result	Dup Result	RPD	Max RPD	Qualifiers
Fecal Coliforms	CFU/100 mL	29.3	29.3			

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40139475

QC Batch: 237464 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 40139475001, 40139475002, 40139475003

METHOD BLANK: 1407186 Matrix: Water
Associated Lab Samples: 40139475001, 40139475002, 40139475003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	<3.4	10.0	10/07/16 17:37	
Iron	ug/L	<15.9	100	10/07/16 17:37	
Lead	ug/L	<1.6	12.0	10/07/16 17:37	
Sodium	ug/L	67.4J	1000	10/07/16 17:37	
Total Hardness by 2340B	mg/L	<0.15	2.0	10/07/16 17:37	
Zinc	ug/L	<5.8	40.0	10/07/16 17:37	

LABORATORY CONTROL SAMPLE: 1407187

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	500	528	106	80-120	
Iron	ug/L	5000	5000	100	80-120	
Lead	ug/L	500	503	101	80-120	
Sodium	ug/L	5000	5240	105	80-120	
Total Hardness by 2340B	mg/L		32.0			
Zinc	ug/L	500	502	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1407188 1407189

Parameter	Units	40139475001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	4.4J	500	500	522	528	104	105	75-125	1	20	
Iron	ug/L	7450	5000	5000	12300	12400	96	99	75-125	1	20	
Lead	ug/L	<1.6	500	500	496	502	99	100	75-125	1	20	
Sodium	ug/L	24500	5000	5000	29600	29400	101	98	75-125	1	20	
Total Hardness by 2340B	mg/L	93.6			124	125				1	20	
Zinc	ug/L	<5.8	500	500	500	505	99	100	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(920)469-2436

QUALITY CONTROL DATA

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40139475

QC Batch: 237382 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 40139475001, 40139475002, 40139475003

METHOD BLANK: 1406818 Matrix: Water
Associated Lab Samples: 40139475001, 40139475002, 40139475003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.50	2.0	10/13/16 13:15	

LABORATORY CONTROL SAMPLE: 1406819

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	19.9	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1406820 1406821

Parameter	Units	40139447001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	69.8	100	100	172	172	102	102	90-110	0	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1406822 1406823

Parameter	Units	40139519001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	39.3	100	100	142	143	103	103	90-110	1	15	

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REPORT OF LABORATORY ANALYSIS

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(920)469-2436

QUALITY CONTROL DATA

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40139475

QC Batch: 238293 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 40139475001, 40139475002, 40139475003

METHOD BLANK: 1411965 Matrix: Water
Associated Lab Samples: 40139475001, 40139475002, 40139475003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	<0.25	0.50	10/17/16 16:01	

LABORATORY CONTROL SAMPLE: 1411966

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	10	10.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1411967 1411968

Parameter	Units	40139475001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	1.0	10	10	10.5	10.4	95	94	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1411969 1411970

Parameter	Units	40139519020 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	265	10	10	273	275	74	100	90-110	1	20	P6

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REPORT OF LABORATORY ANALYSIS

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Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40139475

QC Batch: 237628 Analysis Method: EPA 351.2
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN
Associated Lab Samples: 40139475001, 40139475002, 40139475003

METHOD BLANK: 1408382 Matrix: Water
Associated Lab Samples: 40139475001, 40139475002, 40139475003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	<0.22	0.73	10/10/16 17:49	

LABORATORY CONTROL SAMPLE: 1408383

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	5	5.2	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1408384 1408385

Parameter	Units	40139487001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	38.4	20	20	58.3	58.0	99	98	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1408386 1408387

Parameter	Units	40139640001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	1.4	5	5	6.6	6.5	104	103	90-110	1	20	

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REPORT OF LABORATORY ANALYSIS

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Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40139475

QC Batch: 237848 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 40139475001, 40139475002, 40139475003

METHOD BLANK: 1409180 Matrix: Water
Associated Lab Samples: 40139475001, 40139475002, 40139475003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	<0.095	0.25	10/12/16 11:43	

LABORATORY CONTROL SAMPLE: 1409181

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2.5	2.6	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1409182 1409183

Parameter	Units	40139484002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/L	0.64	2.5	2.5	3.0	2.9	93	92	90-110	0	20	

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REPORT OF LABORATORY ANALYSIS

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(920)469-2436

QUALITY CONTROL DATA

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40139475

QC Batch: 237626 Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 Analysis Description: 410.4 COD
Associated Lab Samples: 40139475001, 40139475002, 40139475003

METHOD BLANK: 1408370 Matrix: Water
Associated Lab Samples: 40139475001, 40139475002, 40139475003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<13.4	44.8	10/11/16 11:18	

LABORATORY CONTROL SAMPLE: 1408371

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	500	499	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1408372 1408373

Parameter	Units	40139254001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	2250	10000	10000	12100	12400	99	101	90-110	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1408374 1408375

Parameter	Units	40139354001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	2390	10000	10000	12400	12300	100	99	90-110	1	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40139475

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

H3	Sample was received or analysis requested beyond the recognized method holding time.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 11115796 RHINELANDER LF CREEK
Pace Project No.: 40139475

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40139475001	**SW-20**	EPA 3010	237464	EPA 6010	237523
40139475002	**SW-28**	EPA 3010	237464	EPA 6010	237523
40139475003	**SW-10**	EPA 3010	237464	EPA 6010	237523
40139475001	**SW-20**	SM 9222D	237406	SM 9222D	237407
40139475002	**SW-28**	SM 9222D	237406	SM 9222D	237407
40139475003	**SW-10**	SM 9222D	237406	SM 9222D	237407
40139475001	**SW-20**				
40139475002	**SW-28**				
40139475003	**SW-10**				
40139475001	**SW-20**	EPA 300.0	237382		
40139475002	**SW-28**	EPA 300.0	237382		
40139475003	**SW-10**	EPA 300.0	237382		
40139475001	**SW-20**	EPA 350.1	238293		
40139475002	**SW-28**	EPA 350.1	238293		
40139475003	**SW-10**	EPA 350.1	238293		
40139475001	**SW-20**	EPA 351.2	237628	EPA 351.2	237681
40139475002	**SW-28**	EPA 351.2	237628	EPA 351.2	237681
40139475003	**SW-10**	EPA 351.2	237628	EPA 351.2	237681
40139475001	**SW-20**	EPA 353.2	237848		
40139475002	**SW-28**	EPA 353.2	237848		
40139475003	**SW-10**	EPA 353.2	237848		
40139475001	**SW-20**	EPA 410.4	237626	EPA 410.4	237729
40139475002	**SW-28**	EPA 410.4	237626	EPA 410.4	237729
40139475003	**SW-10**	EPA 410.4	237626	EPA 410.4	237729

CHAIN OF CUSTODY RECORD

COC NO.: SP- 01975

PAGE 1 OF 1

CONESTOGA-ROVERS & ASSOCIATES
1801 Old Highway 8 Northwest, Suite 114
St. Paul, Minnesota 55112 United States
Phone: (651) 639-0913 Fax: (651) 639-0923

40134475

(See Reverse Side for Instructions)

Page 1 of 2

Project No/ Phase/Task Code: 11115796	**Laboratory Name:** Pace	**Lab Location:**	**SSOW ID:**
Project Name: Rhinelander LF	**Lab Contact:** Dan Milewsky	**Lab Quote No:**	**Cooler No:**
Project Location: Rhinelander WI			**Carrier:**
Chemistry Contact: GAnderson			**Airbill No:**
Sampler(s): RAamot			**Date Shipped:**

Item	Sample Identification (Containers for each sample may be combined on one line)	Date (mm/dd/yy)	Time (hh:mm)	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Unpreserved	Hydrochloric Acid (HCl)	Nitric Acid (HNO_3)	Sulfuric Acid (H_2SO_4)	Sodium Hydroxide (NaOH)	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other: Freeze	Total Containers/Sample	Chloride	Metals: Hardness	Ammonia, N+N	TKN, COD	Fecal Coliform					MS/MSD Request	Comments/ Special Instructions:
001	W-161004-RA-100	10/4/16	1235	SW	G	1		1	1				1	4	✓	✓	✓	✓	✓	1-sterile					3-250 mlp CAD
002	W-161004-RA-101	10/4/16	1245	↓	↓	1		1	1				1	4	✓	✓	✓	✓	✓	↓					↓
003	W-161004-RA-102	10/4/16	1310	↓	↓	1		1	1				1	4	✓	✓	✓	✓	✓	↓					↓
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									
13																									
14																									
15																									

TAT Required in business days (use separate COCs for different TATs):
☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☐ 2 Week ☐ Other:

Total Number of Containers: 12

All Samples in Cooler must be on COC

Notes/ Special Requirements:

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
1.	GRD	10/4/16	1500	1.			
2. DAaman		10/5/16	0730	2. Susan Kilgore Pace		10/5/16	0730
3.				3.			

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

CRA Form: COC-10A (20110804)

Sample Condition Upon Receipt

Pace Analytical Services, Inc.
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Pace Analytical™

Project: **WO#: 40139475**

40139475

Client Name: ContinestogaRovers

Courier: ☐ Fed Ex ☐ UPS ☐ Client ☐ Pace Other: Durham

Tracking #: 1220043

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Thermometer Used N/A **Type of Ice:** (Wet) Blue Dry None ☑ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: 2.0T /Corr: **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp Blank Present: ☐ yes ☒ no

Person examining contents:
Date: 10-5-16
Initials: SW

Temp should be above freezing to 6°C for all sample except Biota.
Frozen Biota Samples should be received ≤ 0°C.

				Comments:
Chain of Custody Present:	☑Yes	☐No	☐N/A	1. Original and a copy. 10-5-16 SW
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A	2.
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☐Yes	☑No	☐N/A	4.
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A	5.
- VOA Samples frozen upon receipt	☐Yes	☐No		Date/Time:
Short Hold Time Analysis (<72hr):	☑Yes	☐No	☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A	7.
Sufficient Volume:	☑Yes	☐No	☐N/A	8.
Correct Containers Used:	☑Yes	☐No	☐N/A	9.
-Pace Containers Used:	☑Yes	☐No	☐N/A	
-Pace IR Containers Used:	☐Yes	☐No	☑N/A	
Containers Intact:	☑Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A	11.
Sample Labels match COC:	☐Yes	☑No	☐N/A	12. No collect time on all samples. 10-5-16 SW
-Includes date/time/ID/Analysis Matrix: W				
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	☑Yes	☐No	☐N/A	13. ☑ HNO3 ☐ H2SO4 ☐ NaOH ☐ NaOH +ZnAct
All containers needing preservation are found to be in compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	☑Yes	☐No	☐N/A	
~~exceptions:~~ VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	☐Yes	☑No		Initial when completed: SW / Lab Std #ID of preservative / Date/ Time:
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☑N/A	14.
Trip Blank Present:	☐Yes	☐No	☑N/A	15.
Trip Blank Custody Seals Present	☐Yes	☐No	☑N/A	
Pace Trip Blank Lot # (if purchased):				

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: Date/Time:

Comments/ Resolution: No seal, tape, or straps around coolers. 10-5-16 SW

Project Manager Review: AMH for DM **Date:** 10/5/16

GHD Field Sample Key (FSK)

Site Rhinelander Landfill

Sample Reason Annual

Sampler Name Ryan Aamot

Sampling Company GHD

Laboratory(s) Pace

SSOW Refer

Sample ID	Location	Sample Date (mm/dd/yyyy)	Sample Time (hh:mm)	Sample Type	Sample Matrix	Grab or Composite
W-161003-RA-18	20C	10/3/2016	13:20	N	WG	grab
W-161003-RA-15	20A	10/3/2016	13:25	N	WG	grab
W-161003-RA-16	20B	10/3/2016	13:40	EB	WG	grab
W-161003-RA-17	20B	10/3/2016	13:40	N	WG	grab
W-161003-RA-09	16B	10/3/2016	14:16	N	WG	grab
W-161003-RA-10	16B	10/3/2016	14:16	FD	WG	grab
W-161003-RA-07	16A	10/3/2016	14:20	FB	WG	grab
W-161003-RA-08	16A	10/3/2016	14:20	N	WG	grab
W-161003-RA-11	16C	10/3/2016	14:45	N	WG	grab
W-161003-RA-22	26C	10/3/2016	15:10	N	WG	grab
W-161003-RA-21	26B	10/3/2016	15:25	N	WG	grab
W-161003-RA-12	18A	10/3/2016	15:55	N	WG	grab
W-161003-RA-13	18B	10/3/2016	16:15	N	WG	grab
W-161003-RA-14	18C	10/3/2016	15:58	N	WG	grab
W-161003-RA-06	5A	10/3/2016	16:50	N	WG	grab
W-161003-RA-05	4A	10/3/2016	17:15	N	WG	grab
W-161004-RA-23	27B	10/4/2016	8:10	N	WG	grab
W-161004-RA-24	28A	10/4/2016	8:30	N	WG	grab
W-161004-RA-20	25B	10/4/2016	9:08	N	WG	grab
W-161004-RA-19	21A	10/4/2016	10:00	N	WG	grab
W-161004-RA-04	3A	10/4/2016	10:20	N	WG	grab
W-161004-RA-01	2A	10/4/2016	10:45	N	WG	grab
W-161004-RA-02	2A	10/4/2016	10:45	FD	WG	grab

Key

Required Field

Populate When Appropriate

Field Data

GHD Field Sample Key (FSK)

Site Rhinelander Landfill

Sample Reason Annual

Sampler Name Ryan Aamot

Sampling Company GHD

Laboratory(s) Pace

SSOW Refer

W-161004-RA-03	2B	10/4/2016	11:15	N	WG	grab
W-161004-RA-100	SW20	10/4/2016	12:35	N	WS	grab
W-161004-RA-101	SW28	10/4/2016	12:45	N	WS	grab
W-161004-RA-102	SW10	10/4/2016	13:10	N	WS	grab

Footnotes

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Key

- Required Field
- Populate When Appropriate
- Field Data

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