Appendix H

Sludge Depth Analysis

AMERICAN ENGINEERING TESTING, INC.

CONSULTANTS
- ENVIRONMENTAL
- GEOTECHNICAL
- MATERIALS
- FORENSICS

REPORT OF FOLEY PRIMARY CELL SAMPLING

PROJECT:
FOLEY PRIMARY CELLS SAMPLING
FOLEY, MN

AET PROJECT NO: 14-01963

REPORTED TO:
CITY OF FOLEY
PO BOX 709
FOLEY, MN 56329
ATTN: SARAH BRUNN

DATE: November 15, 2017

INTRODUCTION

This report presents the results of the Birch and Golf Pond sediment sampling we conducted at the Foley wastewater facility in Foley, Minnesota. This work was done per your authorization of our proposal dated September 25, 2017. AET's authorized work scope consists of:

- Determine the depth of the biosolids layer at the bottom of the ponds and collect samples for analysis.
- Preparation of this field data report.

PROJECT INFORMATION

The project consisted of measuring the biosolids layers and collecting composite samples from three primary cells. Total depth, water depth, and biosolids depth were recorded for each sampling point. The composite samples collected were representative of each sampling area. Each composite sample consisted of 10 sub samples that were composited for analysis.

SAMPLING PROCEDURES

Golf Pond Primary Cell (North)

The Golf Pond Primary Cell (North) consists of areas 1 & 2. Total depth, water depth, and biosolids depth measurements were recorded at 20 locations in the North pond. Two additional total depth, water depth, and biosolids depth measurements were recorded for each of following locations in the North pond: G2C, G2D, G2E, G2F, G2G, and G2H. See figure 2. The measurements can be found in Table 2.

A single composite sample was collected for the North pond. The composite sample was comprised from the following sub samples: G1B, G1D, G1F, G1H, G1I, G2A, G2D, G2E, G2H, and G2J. Sample was delivered to Pace Laboratories for analysis. Results can be found in Appendix A

Golf Pond Primary Cell (South)

The South pond consists of area 3 & 4. Total depth, water depth, and biosolids depth measurements were recorded at 20 locations in the South pond. Two additional total depth, water depth, and biosolids depth measurements were recorded for each of following locations in the South pond: G4D, G4E, G4F, G4G, and G4H. See figure 2. The measurements can be found in Table 2.

A single composite sample was collected for the South pond. The composite sample was comprised from the following sub samples: G3A, G3B, G3D, G3G, G3I, G4B, G4C, G4E, G4F, and G4I. Sample was delivered to Pace Laboratories for analysis. Results can be found in Appendix A

Birch Pond Primary Cell

The Birch pond consists of areas 1, 2 & 3. Total depth, water depth, and biosolids depth measurements were recorded at 36 locations in the Birch pond. Two additional total depth, water depth, and biosolids depth measurements were recorded for each of following locations in the Birch pond: B1C, B1D, B1E, B1H, B1I, and B1J. See figure 1. The measurements can be found in Table 1

Three composite samples were collected from the Birch pond. The composite sample from area 1 was comprised from the following sub samples: B1A, B1B, B1C, B1D, B1E, B1F, B1G, B1H, B1J, and B1K. The composite sample from area 2 was comprised from the following sub samples: B2A, B2B, B2D, B2E, B2F, B2G, B2H, B2I, B2J, and B2K. The composite sample from area 3 was comprised from the following sub samples: B3A, B3B, B3C, B3D, B3F, B3G, B3H, B3I, B3K, and B3L. Samples were delivered to Pace Laboratories for analysis. Results can be found in Appendix A.

All samples and measurements were collected using a graduated sludge judge sampler.

Monitoring Points

All monitoring point were assigned GPS coordinates. Monitoring points can be found on Figure 1 and Figure 2. The GPS coordinates are listed in Table 3.

CLOSURE

AET's services for this project have been conducted in a manner consistent with the level of care and skill exercised by members of the profession currently practicing in this area under similar budget and time constrains. No warranty, express or implied, is made.

If you have any questions regarding the work reported herein, or if we can be of further service to you, please do not hesitate to contact me at 612-845-6444.

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Attachments:

- Table 1 & 2 – Field Measurements
- Table 3 – GPS Coordinates
- Figure 1 & 2 – Monitoring Points
- Appendix A – Laboratory Report
- Appendix B – Field Data Sheets

Tables

Table 1

Birch Pond Field Data

October 23-24, 2017

AET Project # 14-01963

Location	Total Depth Inches	Water Depth Inches	Biosolids Depth Inches
B1A	42	24	18
B1B	36	21	15
B1C	32	15	17
B1C-2	33	15	18
B1C-3	32	15	17
B1D	38	24	14
B1D-2	39	26	13
B1D-3	38	26	12
B1E	32	24	8
B1E-2	32	24	8
B1E-3	32	23	9
B1F	35	23	12
B1G	35	24	11
B1H	38	24	14
B1H-2	36	26	10
B1H-3	37	25	12
B1I	25	21	4
B1I-2	24	22	2
B1I-3	25	22	3
B1J	35	27	8
B1J-2	35	26	9
B1J-3	35	26	9
B1K	36	26	10
B1L	38	24	14

Location	Total Depth Inches	Water Depth Inches	Biosolids Depth Inches
B2A	38	30	8
B2B	36	28	8
B2C	39	29	10
B2D	39	27	12
B2E	37	26	11
B2F	36	28	8
B2G	40	28	12
B2H	43	31	12
B2I	38	30	8
B2J	48	31	17
B2K	48	33	15
B2L	56	36	20
B3A	30	20	10
B3B	35	24	11
B3C	38	25	13
B3D	37	25	12
B3E	28	17	11
B3F	30	23	7
B3G	34	24	10
B3H	39	27	12
B3I	32	17	15
B3J	30	24	6
B3K	40	24	16
B3L	47	29	18

Table 2

Golf Pond Field Data

October 23-24, 2017

AET Project # 14-01963

Location	Total Depth Inches	Water Depth Inches	Biosolids Depth Inches
G1A	35	29	6
G1B	37	31	6
G1C	31	27	4
G1D	35	27	8
G1E	34	25	9
G1F	33	23	10
G1G	35	29	6
G1H	36	30	6
G1I	37	31	6
G1J	44	38	6
G2A	37	31	6
G2B	37	28	9
G2C	34	26	8
G2C-2	35	29	6
G2C-3	35	29	6
G2D	34	26	8
G2D-2	34	23	11
G2D-3	34	25	9
G2E	34	22	12
G2E-2	34	28	6
G2E-3	34	26	8
G2F	34	28	6
G2F-2	35	28	7
G2F-3	35	28	7
G2G	32	26	6
G2G-2	33	26	7
G2G-3	32	25	7
G2H	34	22	12
G2H-2	34	23	11
G2H-3	34	22	12
G2I	36	29	7

Location	Total Depth Inches	Water Depth Inches	Biosolids Depth Inches
G2J	38	28	10
G3A	36	30	6
G3B	36	30	6
G3C	36	29	7
G3D	32	24	8
G3E	37	25	12
G3F	32	20	12
G3G	35	29	6
G3H	32	21	11
G3I	36	29	7
G3J	36	30	6
G4A	35	29	6
G4B	35	29	6
G4C	36	29	7
G4D	34	30	4
G4D-2	34	26	8
G4D-3	34	30	4
G4E	35	29	6
G4E-2	36	30	6
G4E-3	34	26	8
G4F	34	22	12
G4F-2	35	26	9
G4F-3	35	23	12
G4G	35	22	13
G4G-2	36	28	8
G4G-3	36	24	12
G4H	35	29	6
G4H-2	35	29	6
G4H-3	35	29	6
G4I	35	28	7
G4J	36	24	12

Table 3
Foley GPS Coordinates
October 23-24, 2017
AET Project # 14-01963

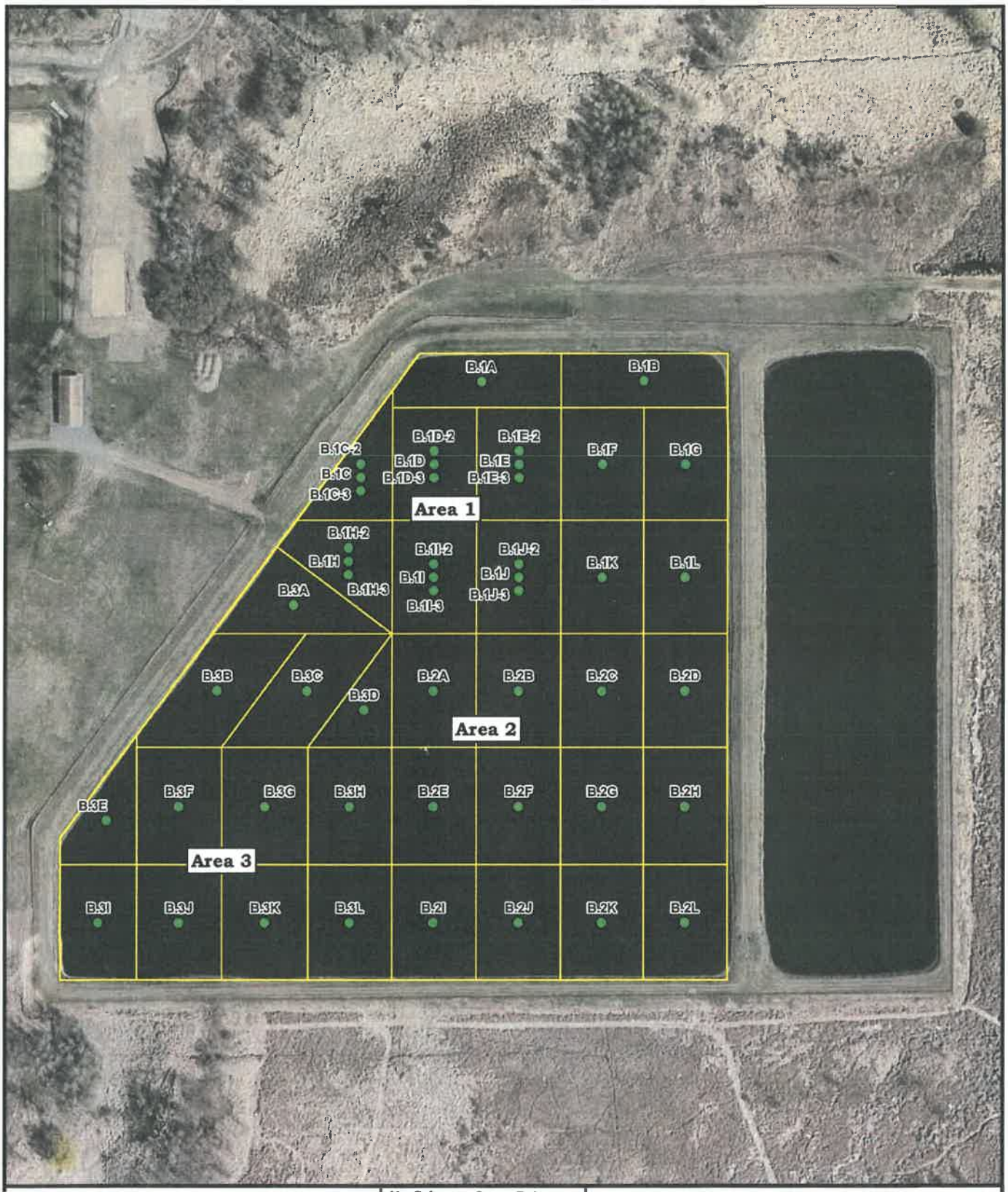
Code 2	Layer	ET_X	ET_Y	X_DD	Y_DD	X_UTM	Y_UTM
B.1A	Base-Birch	536746.46579	136002.90133	-93.9063019293	136002.9013336230	429391.66	5056427.85
B.1B	Base-Birch	536992.10064	136004.18924	-93.9053413604	136004.1892389260	429466.50	5056427.27
B.1C	Base-Birch	536564.96347	135860.59738	-93.9070126913	135860.5973813690	429335.79	5056385.22
B.1C-2	Base-Birch	536564.96347	135880.59738	-93.9070125517	135880.5973813680	429335.87	5056391.32
B.1C-3	Base-Birch	536564.96347	135840.59738	-93.9070128310	135840.5973813830	429335.71	5056379.13
B.1D	Base-Birch	536676.07537	135879.82612	-93.9065780544	135879.8261179070	429369.72	5056390.64
B.1D-2	Base-Birch	536676.07537	135899.82612	-93.9065779143	135899.8261179170	429369.80	5056396.73
B.1D-3	Base-Birch	536676.07537	135859.82612	-93.9065781945	135859.8261179170	429369.64	5056384.55
B.1E	Base-Birch	536802.82614	135879.82612	-93.9060823961	135879.8261179070	429408.34	5056390.13
B.1E-2	Base-Birch	536802.82614	135899.82612	-93.9060822555	135899.8261179170	429408.42	5056396.23
B.1E-3	Base-Birch	536802.82614	135859.82612	-93.9060825366	135859.8261179170	429408.26	5056384.04
B.1F	Base-Birch	536929.28458	135879.82612	-93.9055878809	135879.8261179070	429446.86	5056389.63
B.1G	Base-Birch	537054.72181	135879.82612	-93.9050973591	135879.8261179070	429485.08	5056389.13
B.1H	Base-Birch	536547.21967	135735.33257	-93.9070829525	135735.3325690340	429329.89	5056347.13
B.1H-2	Base-Birch	536547.21967	135755.33257	-93.9070828130	135755.3325690320	429329.97	5056353.23
B.1H-3	Base-Birch	536547.21967	135715.33257	-93.9070830921	135715.3325690470	429329.81	5056341.04
B.1I	Base-Birch	536676.07537	135711.07723	-93.9065792363	135711.0772252600	429369.05	5056339.23
B.1I-2	Base-Birch	536676.07537	135731.07723	-93.9065790962	135731.0772252530	429369.13	5056345.32
B.1I-3	Base-Birch	536676.07537	135691.07723	-93.9065793763	135691.0772252530	429368.97	5056333.14
B.1J	Base-Birch	536802.82614	135711.07723	-93.9060835820	135711.0772252600	429407.66	5056338.72
B.1J-2	Base-Birch	536802.82614	135731.07723	-93.9060834414	135731.0772252530	429407.74	5056344.82
B.1J-3	Base-Birch	536802.82614	135691.07723	-93.9060837226	135691.0772252530	429407.58	5056332.63
B.1K	Base-Birch	536929.28458	135711.07723	-93.9055890709	135711.0772252600	429446.19	5056338.22
B.1L	Base-Birch	537054.72181	135711.07723	-93.9050985532	135711.0772252600	429484.40	5056337.72
B.2A	Base-Birch	536676.07537	135541.29405	-93.9065804253	135541.2940513840	429368.37	5056287.50
B.2B	Base-Birch	536802.82614	135541.29405	-93.9060847752	135541.2940513840	429406.99	5056287.00
B.2C	Base-Birch	536929.28458	135541.29405	-93.9055902682	135541.2940513840	429445.51	5056286.49
B.2D	Base-Birch	537054.72181	135541.29405	-93.9050997546	135541.2940513840	429483.73	5056285.99
B.2E	Base-Birch	536676.07537	135368.74169	-93.9065816338	135368.7416888640	429367.68	5056234.93
B.2F	Base-Birch	536802.82614	135368.74169	-93.9060859878	135368.7416888640	429406.30	5056234.43
B.2G	Base-Birch	536929.28458	135368.74169	-93.9055914850	135368.7416888640	429444.82	5056233.92
B.2H	Base-Birch	537054.72181	135368.74169	-93.9051009755	135368.7416888640	429483.04	5056233.42
B.2I	Base-Birch	536676.07537	135195.20590	-93.9065828491	135195.2058979680	429366.99	5056182.07
B.2J	Base-Birch	536802.82614	135195.20590	-93.9060872074	135195.2058979680	429405.60	5056181.56
B.2K	Base-Birch	536929.28458	135195.20590	-93.9055927087	135195.2058979680	429444.13	5056181.06
B.2L	Base-Birch	537054.72181	135195.20590	-93.9051022034	135195.2058979680	429482.34	5056180.55
B.3A	Base-Birch	536464.62490	135669.50311	-93.9074063951	135669.5031120120	429304.46	5056327.41
B.3B	Base-Birch	536349.86474	135541.70708	-93.9078560467	135541.7070843070	429268.99	5056288.93
B.3C	Base-Birch	536484.86953	135541.29405	-93.9073281227	135541.2940513840	429310.12	5056288.27
B.3D	Base-Birch	536570.95045	135513.00692	-93.9069917066	135513.0069168150	429336.23	5056279.31
B.3E	Base-Birch	536184.13386	135347.91793	-93.9085054650	135347.9179336350	429217.73	5056230.56
B.3F	Base-Birch	536292.72629	135368.74169	-93.9080806814	135368.7416888640	429250.89	5056236.47
B.3G	Base-Birch	536421.55240	135368.74169	-93.9075769200	135368.7416888640	429290.14	5056235.95
B.3H	Base-Birch	536549.84475	135368.74169	-93.9070752458	135368.7416888640	429329.22	5056235.44
B.3I	Base-Birch	536171.60194	135195.20590	-93.9085555245	135195.2058979680	429213.30	5056184.08
B.3J	Base-Birch	536292.72629	135195.20590	-93.9080818840	135195.2058979680	429250.20	5056183.60
B.3K	Base-Birch	536421.55240	135195.20590	-93.9075781269	135195.2058979680	429289.45	5056183.08
B.3L	Base-Birch	536549.84475	135195.20590	-93.9070764570	135195.2058979680	429328.53	5056182.57

Table 3
Foley GPS Coordinates
October 23-24, 2017
AET Project # 14-01963

Code 2	Layer	ET_X	ET_Y	X_DD	Y_DD	X_UTM	Y_UTM
G.1A	Base-Golf	539043.16651	134845.42937	-93.8973292682	134845.4293676000	430086.74	5056066.05
G.1B	Base-Golf	539198.99375	134848.54354	-93.8967199142	134848.5435410060	430134.22	5056066.38
G.1C	Base-Golf	539042.56518	134725.25717	-93.8973325154	134725.2571655960	430086.07	5056029.44
G.1D	Base-Golf	539198.99375	134728.51958	-93.8967208125	134728.5195799080	430133.74	5056029.81
G.1E	Base-Golf	539042.56464	134605.50552	-93.8973334103	134605.5055170630	430085.60	5055992.96
G.1F	Base-Golf	539198.99375	134608.49562	-93.8967217109	134608.4956188100	430133.26	5055993.25
G.1G	Base-Golf	539043.16651	134485.35748	-93.8973319525	134485.3574843060	430085.30	5055956.36
G.1H	Base-Golf	539198.99375	134488.47166	-93.8967226092	134488.4716577120	430132.78	5055956.68
G.1I	Base-Golf	539043.16651	134365.33352	-93.8973328472	134365.3335232080	430084.82	5055919.79
G.1J	Base-Golf	539198.99375	134368.44770	-93.8967235075	134368.4476966130	430132.31	5055920.12
G.2A	Base-Golf	539331.44690	134851.19059	-93.8962019631	134851.1905883800	430174.59	5056066.66
G.2B	Base-Golf	539488.47281	134854.32872	-93.8955879214	134854.3287169940	430222.44	5056066.99
G.2C	Base-Golf	539331.44690	134731.16663	-93.8962028645	134731.1666272820	430174.11	5056030.09
G.2C-2	Base-Golf	539331.44690	134751.16663	-93.8962027143	134751.1666273020	430174.19	5056036.18
G.2C-3	Base-Golf	539331.44690	134711.16663	-93.8962030147	134711.1666272870	430174.03	5056024.00
G.2D	Base-Golf	539488.47281	134734.30476	-93.8955888264	134734.3047558960	430221.96	5056030.42
G.2D-2	Base-Golf	539488.47281	134754.30476	-93.8955886756	134754.3047558960	430222.04	5056036.51
G.2D-3	Base-Golf	539488.47281	134714.30476	-93.8955889772	134714.3047558960	430221.88	5056024.33
G.2E	Base-Golf	539331.44690	134611.14267	-93.8962037659	134611.1426661840	430173.63	5055993.53
G.2E-2	Base-Golf	539331.44690	134631.14267	-93.8962036157	134631.1426661900	430173.71	5055999.62
G.2E-3	Base-Golf	539331.44690	134591.14267	-93.8962039161	134591.1426661900	430173.55	5055987.43
G.2F	Base-Golf	539488.47281	134614.28079	-93.8955897314	134614.2807947980	430221.48	5055993.85
G.2F-2	Base-Golf	539488.47281	134634.28079	-93.8955895806	134634.2807948140	430221.56	5055999.95
G.2F-3	Base-Golf	539488.47281	134594.28079	-93.8955898822	134594.2807948140	430221.40	5055987.76
G.2G	Base-Golf	539331.44690	134491.11871	-93.8962046672	134491.1187050860	430173.15	5055956.96
G.2G-2	Base-Golf	539331.44690	134511.11871	-93.8962045170	134511.1187050790	430173.23	5055963.05
G.2G-3	Base-Golf	539331.44690	134471.11871	-93.8962048174	134471.1187050790	430173.07	5055950.87
G.2H	Base-Golf	539488.47281	134494.25683	-93.8955906363	134494.2568337000	430221.00	5055957.29
G.2H-2	Base-Golf	539488.47281	134514.25683	-93.8955904856	134514.2568337020	430221.08	5055963.38
G.2H-3	Base-Golf	539488.47281	134474.25683	-93.8955907871	134474.2568337020	430220.92	5055951.20
G.2I	Base-Golf	539331.44690	134371.09474	-93.8962055686	134371.0947439880	430172.67	5055920.39
G.2J	Base-Golf	539488.47281	134374.23287	-93.8955915413	134374.2328726020	430220.52	5055920.72
G.3A	Base-Golf	539043.16651	134220.51355	-93.8973339268	134220.5135450180	430084.24	5055875.67
G.3B	Base-Golf	539198.99375	134223.62772	-93.8967245914	134223.6277184230	430131.73	5055876.00
G.3C	Base-Golf	539043.16651	134104.85562	-93.8973347890	134104.8556224340	430083.78	5055840.43
G.3D	Base-Golf	539198.99375	134107.96980	-93.8967254570	134107.9697958400	430131.27	5055840.76
G.3E	Base-Golf	539043.12948	133989.18850	-93.8973357960	133989.1884997380	430083.31	5055805.20
G.3F	Base-Golf	539198.99375	133992.31187	-93.8967263226	133992.3118732570	430130.80	5055805.52
G.3G	Base-Golf	539043.12948	133869.18146	-93.8973366906	133869.1814588820	430082.83	5055768.63
G.3H	Base-Golf	539198.99375	133872.28791	-93.8967272209	133872.2879121590	430130.32	5055768.96
G.3I	Base-Golf	539043.16651	133749.14978	-93.8973374405	133749.1497776550	430082.36	5055732.07
G.3J	Base-Golf	539198.99375	133752.26395	-93.8967281191	133752.2639510600	430129.84	5055732.39
G.4A	Base-Golf	539331.44690	134226.27477	-93.8962066561	134226.2747657980	430172.09	5055876.27
G.4B	Base-Golf	539488.47281	134229.41289	-93.8955926332	134229.4128944120	430219.94	5055876.60
G.4C	Base-Golf	539331.44690	134110.61684	-93.8962075247	134110.6168432140	430171.63	5055841.04
G.4D	Base-Golf	539488.47281	134113.75497	-93.8955935052	134113.7549718280	430219.48	5055841.37
G.4D-2	Base-Golf	539488.47281	134133.75497	-93.8955933544	134133.7549718460	430219.56	5055847.46
G.4D-3	Base-Golf	539488.47281	134093.75497	-93.8955936560	134093.7549718320	430219.40	5055835.27
G.4E	Base-Golf	539331.44690	133994.95892	-93.8962083932	133994.9589206310	430171.17	5055805.80
G.4E-2	Base-Golf	539331.44690	134014.95892	-93.8962082430	134014.9589206270	430171.25	5055811.90
G.4E-3	Base-Golf	539331.44690	133974.95892	-93.8962085434	133974.9589206270	430171.09	5055799.71
G.4F	Base-Golf	539488.47281	133998.09705	-93.8955943772	133998.0970492450	430219.02	5055806.13
G.4F-2	Base-Golf	539488.47281	134018.09705	-93.8955942264	134018.0970492660	430219.10	5055812.22
G.4F-3	Base-Golf	539488.47281	133978.09705	-93.8955945280	133978.0970492510	430218.94	5055800.04
G.4G	Base-Golf	539331.44690	133874.93496	-93.8962092945	133874.9349595330	430170.69	5055769.24
G.4G-2	Base-Golf	539331.44690	133894.93496	-93.8962091443	133894.9349595300	430170.77	5055775.33
G.4G-3	Base-Golf	539331.44690	133854.93496	-93.8962094447	133854.9349595450	430170.61	5055763.14
G.4H	Base-Golf	539488.47281	133878.07309	-93.8955952821	133878.0730881470	430218.54	5055769.57
G.4H-2	Base-Golf	539488.47281	133898.07309	-93.8955951313	133898.0730881540	430218.62	5055775.66
G.4H-3	Base-Golf	539488.47281	133858.07309	-93.8955954329	133858.0730881540	430218.46	5055763.47
G.4I	Base-Golf	539331.44690	133754.91100	-93.8962101958	133754.9109984350	430170.21	5055732.67
G.4J	Base-Golf	539488.47281	133758.04913	-93.8955961870	133758.0491270490	430218.06	5055733.00

NAD_1983_HARN_Adj_MN_Benton_F GCS_WGS_1984 NAD_1983_UTM_Zone_15N

Figures



AMERICAN ENGINEERING TESTING, INC

Map Reference: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

N

0 100 200
Feet

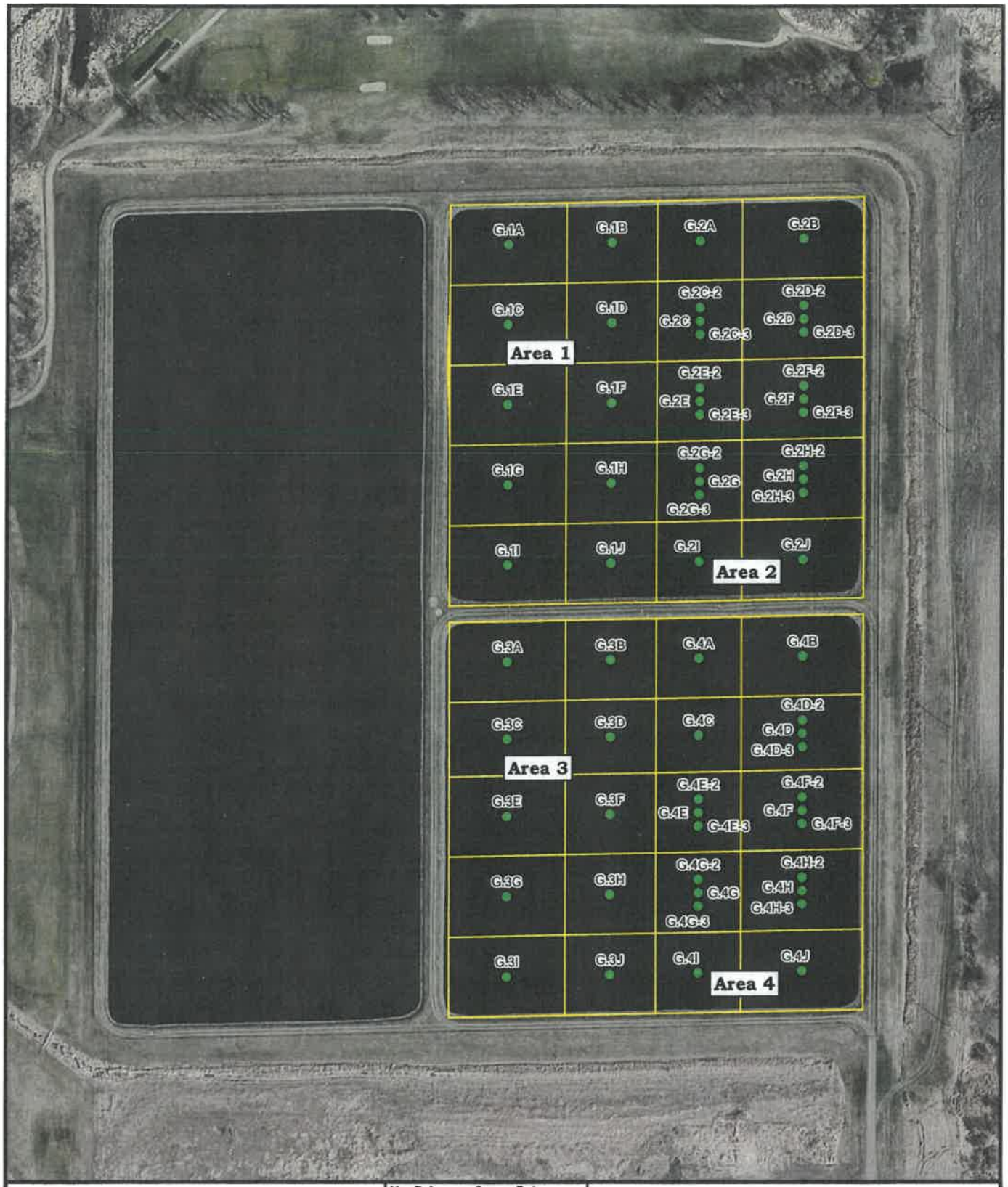
Figure 1

Birch Pond Primary Cell
October 23-24, 2017

Foley, Minnesota

Date: 11/13/2017 AET Project No. 14-01963

File: BirchPond.mxd Date: 11/13/2017



AMERICAN ENGINEERING TESTING, INC

Map Reference: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

N

0 100 200

Feet

Figure 2

Golf Pond Primary Cells
October 23-24, 2017

Foley, Minnesota

Date: 11/13/2017 AET Project No. 14-01963

File: GolfPond.mxd Date: 11/13/2017

Appendix A

Laboratory Report

AET Project No. 14-01963

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

November 03, 2017

Mr. Paul Schoening
American Engineering Testing
550 Cleveland Ave. N
Saint Paul, MN 55114

RE: Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

Dear Mr. Schoening:
Enclosed are the analytical results for sample(s) received by the laboratory on October 25, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Tina Soltani
tina.soltani@pacelabs.com
(612)607-6384
Project Manager

Enclosures

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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CERTIFICATIONS

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

Minnesota Certification IDs
1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

Virginia Minnesota Certification ID's
315 Chestnut Street, Virginia, MN 55792
California Certification #2973
Montana Certificate #CERT0103
California Certification #2973
Alaska Certification UST-107
Alaska Certification UST-107
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842018-1
Oklahoma Department of Environmental Quality
California Certification #2973

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SAMPLE SUMMARY

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10408491001	Golf Pond South	Solid	10/23/17 16:00	10/25/17 13:57
10408491002	Golf Pond North	Solid	10/24/17 13:00	10/25/17 13:57
10408491003	Birch Pond Area 1	Solid	10/24/17 15:30	10/25/17 13:57
10408491004	Birch Pond Area 2	Solid	10/24/17 16:00	10/25/17 13:57
10408491005	Birch Pond Area 3	Solid	10/24/17 17:00	10/25/17 13:57

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SAMPLE ANALYTE COUNT

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10408491001	Golf Pond South	EPA 6010C	DM	9	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 160.4	NAS	1	PASI-M
		SM 2540G	MCT	1	PASI-V
		EPA 9045	AJS	1	PASI-M
		EPA 350.1	DMB	1	PASI-V
		EPA 351.2	DMB	1	PASI-V
		EPA 365.1	DMB	1	PASI-V
10408491002	Golf Pond North	EPA 6010C	DM	9	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 160.4	NAS	1	PASI-M
		SM 2540G	MCT	1	PASI-V
		EPA 9045	AJS	1	PASI-M
		EPA 350.1	DMB	1	PASI-V
		EPA 351.2	DMB	1	PASI-V
		EPA 365.1	DMB	1	PASI-V
10408491003	Birch Pond Area 1	EPA 8082A	SNG	12	PASI-M
		EPA 6010C	DM	9	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 160.4	NAS	1	PASI-M
		SM 2540G	MCT	1	PASI-V
		EPA 9045	AJS	1	PASI-M
		EPA 350.1	DMB	1	PASI-V
		EPA 351.2	DMB	1	PASI-V
		EPA 365.1	DMB	1	PASI-V
10408491004	Birch Pond Area 2	EPA 8082A	SNG	12	PASI-M
		EPA 6010C	DM	9	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 160.4	NAS	1	PASI-M
		SM 2540G	MCT	1	PASI-V
		EPA 9045	AJS	1	PASI-M
		EPA 350.1	DMB	1	PASI-V
		EPA 351.2	DMB	1	PASI-V

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SAMPLE ANALYTE COUNT

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 365.1	DMB	1	PASI-V
10408491005	Birch Pond Area 3	EPA 8082A	SNG	12	PASI-M
		EPA 6010C	DM	9	PASI-M
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 160.4	NAS	1	PASI-M
		SM 2540G	MCT	1	PASI-V
		EPA 9045	AJS	1	PASI-M
		EPA 350.1	DMB	1	PASI-V
		EPA 351.2	DMB	1	PASI-V
		EPA 365.1	DMB	1	PASI-V

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ANALYTICAL RESULTS

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

Sample: Golf Pond South **Lab ID: 10408491001** Collected: 10/23/17 16:00 Received: 10/25/17 13:57 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050							
Arsenic	ND	mg/kg	12.2	1	10/26/17 07:23	10/27/17 17:44	7440-38-2	
Cadmium	**2.3**	mg/kg	1.8	1	10/26/17 07:23	10/27/17 17:44	7440-43-9	
Copper	**365**	mg/kg	6.1	1	10/26/17 07:23	10/27/17 17:44	7440-50-8	
Lead	**27.1**	mg/kg	6.1	1	10/26/17 07:23	10/27/17 17:44	7439-92-1	
Molybdenum	**19.8**	mg/kg	9.2	1	10/26/17 07:23	10/27/17 17:44	7439-98-7	
Nickel	**40.4**	mg/kg	12.2	1	10/26/17 07:23	10/27/17 17:44	7440-02-0	
Potassium	**1760**	mg/kg	1530	1	10/26/17 07:23	10/27/17 17:44	7440-09-7	
Selenium	ND	mg/kg	12.2	1	10/26/17 07:23	10/27/17 17:44	7782-49-2	
Zinc	**495**	mg/kg	12.2	1	10/26/17 07:23	10/27/17 17:44	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B							
Mercury	**1.1**	mg/kg	0.24	1	10/26/17 07:25	10/31/17 14:49	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974							
Percent Moisture	**91.8**	%	0.10	1		10/26/17 13:05		
160.4 Total Volatile Solids	Analytical Method: EPA 160.4							
Total Volatile Solids	**28.7**	% (w/w)	1.0	1		10/30/17 15:54		
2540G Total Percent Solids	Analytical Method: SM 2540G							
Total Solids	**19.5**	%	0.10	1		10/30/17 15:32		D6
9045 pH	Analytical Method: EPA 9045							
pH at 25 Degrees C	**7.8**	Std. Units	0.10	1		10/26/17 13:38		
350.1 Ammonia	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1							
Nitrogen, Ammonia	**751**	mg/kg	36.6	1	10/31/17 10:00	10/31/17 16:17	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2							
Nitrogen, Kjeldahl, Total	**15100**	mg/kg	611	1	11/01/17 14:37	11/02/17 10:31	7727-37-9	
365.1 Phosphorus, Total	Analytical Method: EPA 365.1 Preparation Method: SM 4500P B							
Phosphorus	**4410**	mg/kg	153	5	10/30/17 12:26	10/31/17 10:25	7723-14-0	

REPORT OF LABORATORY ANALYSIS

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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

Sample: Golf Pond North **Lab ID: 10408491002** Collected: 10/24/17 13:00 Received: 10/25/17 13:57 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050							
Arsenic	ND	mg/kg	2.0	1	10/26/17 07:23	10/27/17 17:47	7440-38-2	
Cadmium	ND	mg/kg	0.30	1	10/26/17 07:23	10/27/17 17:47	7440-43-9	
Copper	33.1	mg/kg	1.0	1	10/26/17 07:23	10/27/17 17:47	7440-50-8	
Lead	3.3	mg/kg	1.0	1	10/26/17 07:23	10/27/17 17:47	7439-92-1	
Molybdenum	1.6	mg/kg	1.5	1	10/26/17 07:23	10/27/17 17:47	7439-98-7	
Nickel	9.7	mg/kg	2.0	1	10/26/17 07:23	10/27/17 17:47	7440-02-0	
Potassium	324	mg/kg	249	1	10/26/17 07:23	10/27/17 17:47	7440-09-7	
Selenium	ND	mg/kg	2.0	1	10/26/17 07:23	10/27/17 17:47	7782-49-2	
Zinc	45.3	mg/kg	2.0	1	10/26/17 07:23	10/27/17 17:47	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B							
Mercury	0.11	mg/kg	0.038	1	10/26/17 07:25	10/31/17 14:51	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974							
Percent Moisture	51.3	%	0.10	1		10/26/17 13:06		
160.4 Total Volatile Solids	Analytical Method: EPA 160.4							
Total Volatile Solids	9.8	% (w/w)	1.0	1		10/30/17 15:54		
2540G Total Percent Solids	Analytical Method: SM 2540G							
Total Solids	37.6	%	0.10	1		10/30/17 15:35		
9045 pH	Analytical Method: EPA 9045							
pH at 25 Degrees C	7.7	Std. Units	0.10	1		10/26/17 13:42		
350.1 Ammonia	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1							
Nitrogen, Ammonia	178	mg/kg	6.2	1	10/31/17 10:00	10/31/17 16:19	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2							
Nitrogen, Kjeldahl, Total	2010	mg/kg	103	1	11/01/17 14:37	11/02/17 10:32	7727-37-9	
365.1 Phosphorus, Total	Analytical Method: EPA 365.1 Preparation Method: SM 4500P B							
Phosphorus	519	mg/kg	10.3	2	10/30/17 12:26	10/31/17 09:48	7723-14-0	

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ANALYTICAL RESULTS

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

Sample: Birch Pond Area 1 **Lab ID: 10408491003** Collected: 10/24/17 15:30 Received: 10/25/17 13:57 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3550							
PCB-1016 (Aroclor 1016)	ND	ug/kg	185	1	10/26/17 10:33	10/28/17 04:07	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	185	1	10/26/17 10:33	10/28/17 04:07	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	185	1	10/26/17 10:33	10/28/17 04:07	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	185	1	10/26/17 10:33	10/28/17 04:07	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	185	1	10/26/17 10:33	10/28/17 04:07	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	185	1	10/26/17 10:33	10/28/17 04:07	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	185	1	10/26/17 10:33	10/28/17 04:07	11096-82-5	
PCB-1262 (Aroclor 1262)	ND	ug/kg	185	1	10/26/17 10:33	10/28/17 04:07	37324-23-5	
PCB-1268 (Aroclor 1268)	ND	ug/kg	185	1	10/26/17 10:33	10/28/17 04:07	11100-14-4	
PCB, Total	ND	ug/kg	185	1	10/26/17 10:33	10/28/17 04:07	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	72	%.	41-135	1	10/26/17 10:33	10/28/17 04:07	877-09-8	
Decachlorobiphenyl (S)	39	%.	45-144	1	10/26/17 10:33	10/28/17 04:07	2051-24-3	CL,S0
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050							
Arsenic	ND	mg/kg	5.5	1	10/26/17 07:23	10/27/17 17:50	7440-38-2	
Cadmium	**2.1**	mg/kg	0.83	1	10/26/17 07:23	10/27/17 17:50	7440-43-9	
Copper	**298**	mg/kg	2.8	1	10/26/17 07:23	10/27/17 17:50	7440-50-8	
Lead	**69.9**	mg/kg	2.8	1	10/26/17 07:23	10/27/17 17:50	7439-92-1	
Molybdenum	**21.9**	mg/kg	4.1	1	10/26/17 07:23	10/27/17 17:50	7439-98-7	
Nickel	**30.0**	mg/kg	5.5	1	10/26/17 07:23	10/27/17 17:50	7440-02-0	
Potassium	**765**	mg/kg	689	1	10/26/17 07:23	10/27/17 17:50	7440-09-7	
Selenium	ND	mg/kg	5.5	1	10/26/17 07:23	10/27/17 17:50	7782-49-2	
Zinc	**450**	mg/kg	5.5	1	10/26/17 07:23	10/27/17 17:50	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B							
Mercury	**2.5**	mg/kg	0.11	1	10/26/17 07:25	10/31/17 14:53	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974							
Percent Moisture	**82.2**	%	0.10	1		10/26/17 13:06		
160.4 Total Volatile Solids	Analytical Method: EPA 160.4							
Total Volatile Solids	**14.3**	% (w/w)	1.0	1		10/30/17 15:54		
2540G Total Percent Solids	Analytical Method: SM 2540G							
Total Solids	**23.1**	%	0.10	1		10/30/17 15:37		
9045 pH	Analytical Method: EPA 9045							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		10/26/17 13:43		
350.1 Ammonia	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1							
Nitrogen, Ammonia	**611**	mg/kg	16.9	1	10/31/17 10:00	10/31/17 16:20	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2							
Nitrogen, Kjeldahl, Total	**8770**	mg/kg	281	1	11/01/17 14:37	11/02/17 10:38	7727-37-9	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

Sample: Birch Pond Area 1 **Lab ID: 10408491003** Collected: 10/24/17 15:30 Received: 10/25/17 13:57 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
365.1 Phosphorus, Total	Analytical Method: EPA 365.1 Preparation Method: SM 4500P B							
Phosphorus	**2800**	mg/kg	141	10	10/30/17 12:26	10/31/17 09:47	7723-14-0	

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ANALYTICAL RESULTS

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

Sample: Birch Pond Area 2 **Lab ID: 10408491004** Collected: 10/24/17 16:00 Received: 10/25/17 13:57 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3550							
PCB-1016 (Aroclor 1016)	ND	ug/kg	156	1	10/26/17 10:33	10/28/17 04:23	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	156	1	10/26/17 10:33	10/28/17 04:23	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	156	1	10/26/17 10:33	10/28/17 04:23	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	156	1	10/26/17 10:33	10/28/17 04:23	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	156	1	10/26/17 10:33	10/28/17 04:23	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	156	1	10/26/17 10:33	10/28/17 04:23	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	156	1	10/26/17 10:33	10/28/17 04:23	11096-82-5	
PCB-1262 (Aroclor 1262)	ND	ug/kg	156	1	10/26/17 10:33	10/28/17 04:23	37324-23-5	
PCB-1268 (Aroclor 1268)	ND	ug/kg	156	1	10/26/17 10:33	10/28/17 04:23	11100-14-4	
PCB, Total	ND	ug/kg	156	1	10/26/17 10:33	10/28/17 04:23	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	62	%.	41-135	1	10/26/17 10:33	10/28/17 04:23	877-09-8	
Decachlorobiphenyl (S)	36	%.	45-144	1	10/26/17 10:33	10/28/17 04:23	2051-24-3	CL,S0
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050							
Arsenic	ND	mg/kg	4.6	1	10/26/17 07:23	10/27/17 17:53	7440-38-2	
Cadmium	**1.7**	mg/kg	0.69	1	10/26/17 07:23	10/27/17 17:53	7440-43-9	
Copper	**180**	mg/kg	2.3	1	10/26/17 07:23	10/27/17 17:53	7440-50-8	
Lead	**47.7**	mg/kg	2.3	1	10/26/17 07:23	10/27/17 17:53	7439-92-1	
Molybdenum	**7.8**	mg/kg	3.4	1	10/26/17 07:23	10/27/17 17:53	7439-98-7	
Nickel	**13.5**	mg/kg	4.6	1	10/26/17 07:23	10/27/17 17:53	7440-02-0	
Potassium	ND	mg/kg	573	1	10/26/17 07:23	10/27/17 17:53	7440-09-7	
Selenium	ND	mg/kg	4.6	1	10/26/17 07:23	10/27/17 17:53	7782-49-2	
Zinc	**318**	mg/kg	4.6	1	10/26/17 07:23	10/27/17 17:53	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B							
Mercury	**3.0**	mg/kg	0.083	1	10/26/17 07:25	10/31/17 14:55	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974							
Percent Moisture	**78.8**	%	0.10	1		10/26/17 13:06		
160.4 Total Volatile Solids	Analytical Method: EPA 160.4							
Total Volatile Solids	**26.6**	% (w/w)	1.0	1		10/30/17 15:54		
2540G Total Percent Solids	Analytical Method: SM 2540G							
Total Solids	**24.7**	%	0.10	1		10/30/17 15:39		
9045 pH	Analytical Method: EPA 9045							
pH at 25 Degrees C	**7.3**	Std. Units	0.10	1		10/26/17 13:45		
350.1 Ammonia	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1							
Nitrogen, Ammonia	**432**	mg/kg	14.2	1	10/31/17 10:00	10/31/17 16:21	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2							
Nitrogen, Kjeldahl, Total	**6800**	mg/kg	236	1	11/01/17 14:37	11/02/17 10:40	7727-37-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

Sample: Birch Pond Area 2 **Lab ID: 10408491004** Collected: 10/24/17 16:00 Received: 10/25/17 13:57 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
365.1 Phosphorus, Total	Analytical Method: EPA 365.1 Preparation Method: SM 4500P B							
Phosphorus	**1540**	mg/kg	59.0	5	10/30/17 12:26	10/31/17 09:45	7723-14-0	M1

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ANALYTICAL RESULTS

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

Sample: Birch Pond Area 3 **Lab ID: 10408491005** Collected: 10/24/17 17:00 Received: 10/25/17 13:57 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082A GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3550							
PCB-1016 (Aroclor 1016)	ND	ug/kg	418	1	10/26/17 10:33	10/28/17 04:38	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	418	1	10/26/17 10:33	10/28/17 04:38	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	418	1	10/26/17 10:33	10/28/17 04:38	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	418	1	10/26/17 10:33	10/28/17 04:38	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	418	1	10/26/17 10:33	10/28/17 04:38	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	418	1	10/26/17 10:33	10/28/17 04:38	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	418	1	10/26/17 10:33	10/28/17 04:38	11096-82-5	
PCB-1262 (Aroclor 1262)	ND	ug/kg	418	1	10/26/17 10:33	10/28/17 04:38	37324-23-5	
PCB-1268 (Aroclor 1268)	ND	ug/kg	418	1	10/26/17 10:33	10/28/17 04:38	11100-14-4	
PCB, Total	ND	ug/kg	418	1	10/26/17 10:33	10/28/17 04:38	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	66	%.	41-135	1	10/26/17 10:33	10/28/17 04:38	877-09-8	
Decachlorobiphenyl (S)	43	%.	45-144	1	10/26/17 10:33	10/28/17 04:38	2051-24-3	CL,S0
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3050							
Arsenic	ND	mg/kg	12.3	1	10/26/17 07:23	10/27/17 17:55	7440-38-2	
Cadmium	**4.5**	mg/kg	1.9	1	10/26/17 07:23	10/27/17 17:55	7440-43-9	
Copper	**541**	mg/kg	6.2	1	10/26/17 07:23	10/27/17 17:55	7440-50-8	
Lead	**95.5**	mg/kg	6.2	1	10/26/17 07:23	10/27/17 17:55	7439-92-1	
Molybdenum	**44.5**	mg/kg	9.3	1	10/26/17 07:23	10/27/17 17:55	7439-98-7	
Nickel	**26.0**	mg/kg	12.3	1	10/26/17 07:23	10/27/17 17:55	7440-02-0	
Potassium	ND	mg/kg	1540	1	10/26/17 07:23	10/27/17 17:55	7440-09-7	
Selenium	ND	mg/kg	12.3	1	10/26/17 07:23	10/27/17 17:55	7782-49-2	
Zinc	**831**	mg/kg	12.3	1	10/26/17 07:23	10/27/17 17:55	7440-66-6	
7471B Mercury	Analytical Method: EPA 7471B Preparation Method: EPA 7471B							
Mercury	**3.8**	mg/kg	0.25	1	10/26/17 07:25	10/31/17 14:57	7439-97-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974							
Percent Moisture	**92.1**	%	0.10	1		10/26/17 13:06		
160.4 Total Volatile Solids	Analytical Method: EPA 160.4							
Total Volatile Solids	**38.5**	% (w/w)	1.0	1		10/30/17 15:54		
2540G Total Percent Solids	Analytical Method: SM 2540G							
Total Solids	**16.4**	%	0.10	1		10/30/17 15:40		
9045 pH	Analytical Method: EPA 9045							
pH at 25 Degrees C	**7.3**	Std. Units	0.10	1		10/26/17 13:46		
350.1 Ammonia	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1							
Nitrogen, Ammonia	**1130**	mg/kg	38.1	1	10/31/17 10:00	10/31/17 16:22	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2							
Nitrogen, Kjeldahl, Total	**19400**	mg/kg	636	1	11/01/17 14:37	11/02/17 10:41	7727-37-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

Sample: Birch Pond Area 3 **Lab ID: 10408491005** Collected: 10/24/17 17:00 Received: 10/25/17 13:57 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
365.1 Phosphorus, Total	Analytical Method: EPA 365.1 Preparation Method: SM 4500P B							
Phosphorus	**4180**	mg/kg	159	5	10/30/17 12:26	10/31/17 10:24	7723-14-0	

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QUALITY CONTROL DATA

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

QC Batch: 504713 Analysis Method: EPA 7471B
QC Batch Method: EPA 7471B Analysis Description: 7471B Mercury Solids
Associated Lab Samples: 10408491001, 10408491002, 10408491003, 10408491004, 10408491005

METHOD BLANK: 2743605 Matrix: Solid
Associated Lab Samples: 10408491001, 10408491002, 10408491003, 10408491004, 10408491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.017	10/31/17 14:26	

LABORATORY CONTROL SAMPLE: 2743606

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.48	0.49	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2743607 2743608

Parameter	Units	10408479002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	0.085	.59	.54	0.71	0.63	104	100	75-125	11	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

QC Batch: 504707 Analysis Method: EPA 6010C
QC Batch Method: EPA 3050 Analysis Description: 6010C Solids
Associated Lab Samples: 10408491001, 10408491002, 10408491003, 10408491004, 10408491005

METHOD BLANK: 2743581 Matrix: Solid
Associated Lab Samples: 10408491001, 10408491002, 10408491003, 10408491004, 10408491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	0.97	10/27/17 17:19	
Cadmium	mg/kg	ND	0.15	10/27/17 17:19	
Copper	mg/kg	ND	0.49	10/27/17 17:19	
Lead	mg/kg	ND	0.49	10/27/17 17:19	
Molybdenum	mg/kg	ND	0.73	10/27/17 17:19	
Nickel	mg/kg	ND	0.97	10/27/17 17:19	
Potassium	mg/kg	ND	121	10/27/17 17:19	
Selenium	mg/kg	ND	0.97	10/27/17 17:19	
Zinc	mg/kg	ND	0.97	10/27/17 17:19	

LABORATORY CONTROL SAMPLE: 2743582

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	48.5	45.5	94	80-120	
Cadmium	mg/kg	48.5	45.6	94	80-120	
Copper	mg/kg	48.5	49.8	103	80-120	
Lead	mg/kg	48.5	49.3	102	80-120	
Molybdenum	mg/kg	48.5	51.0	105	80-120	
Nickel	mg/kg	48.5	48.8	101	80-120	
Potassium	mg/kg	971	952	98	80-120	
Selenium	mg/kg	48.5	43.9	90	80-120	
Zinc	mg/kg	48.5	49.1	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2743583 2743584

Parameter	Units	10408555001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	4.7	48.5	49.5	43.1	43.3	79	78	75-125	0	20	
Cadmium	mg/kg	0.20	48.5	49.5	38.7	39.3	79	79	75-125	2	20	
Copper	mg/kg	18.7	48.5	49.5	63.3	62.1	92	88	75-125	2	20	
Lead	mg/kg	50.6	48.5	49.5	87.6	87.6	76	75	75-125	0	20	
Molybdenum	mg/kg	ND	48.5	49.5	39.5	40.5	81	81	75-125	2	20	
Nickel	mg/kg	12.6	48.5	49.5	53.7	52.3	85	80	75-125	3	20	
Potassium	mg/kg	1310	971	990	2380	2300	110	100	75-125	3	20	
Selenium	mg/kg	ND	48.5	49.5	36.9	37.4	75	74	75-125	1	20	M1
Zinc	mg/kg	55.5	48.5	49.5	98.3	92.2	88	74	75-125	6	20	M1

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QUALITY CONTROL DATA

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

QC Batch: 504726 | Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 | Analysis Description: Dry Weight / %M by ASTM D2974
Associated Lab Samples: 10408491001, 10408491002, 10408491003, 10408491004, 10408491005

SAMPLE DUPLICATE: 2743880

Parameter	Units	50181532005 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	19.2	18.9	2	30	

SAMPLE DUPLICATE: 2743881

Parameter	Units	10408479001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	7.5	7.8	3	30	

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QUALITY CONTROL DATA

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

QC Batch: 504824 — Analysis Method: EPA 8082A
QC Batch Method: EPA 3550 — Analysis Description: 8082A GCS PCB
Associated Lab Samples: 10408491003, 10408491004, 10408491005

METHOD BLANK: 2743910 — Matrix: Solid
Associated Lab Samples: 10408491003, 10408491004, 10408491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	33.0	10/28/17 01:44	
PCB-1221 (Aroclor 1221)	ug/kg	ND	33.0	10/28/17 01:44	
PCB-1232 (Aroclor 1232)	ug/kg	ND	33.0	10/28/17 01:44	
PCB-1242 (Aroclor 1242)	ug/kg	ND	33.0	10/28/17 01:44	
PCB-1248 (Aroclor 1248)	ug/kg	ND	33.0	10/28/17 01:44	
PCB-1254 (Aroclor 1254)	ug/kg	ND	33.0	10/28/17 01:44	
PCB-1260 (Aroclor 1260)	ug/kg	ND	33.0	10/28/17 01:44	
PCB-1262 (Aroclor 1262)	ug/kg	ND	33.0	10/28/17 01:44	
PCB-1268 (Aroclor 1268)	ug/kg	ND	33.0	10/28/17 01:44	
Decachlorobiphenyl (S)	%.	71	45-144	10/28/17 01:44	CL
Tetrachloro-m-xylene (S)	%.	81	41-135	10/28/17 01:44	

LABORATORY CONTROL SAMPLE: 2743911

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	667	516	77	57-125	
PCB-1260 (Aroclor 1260)	ug/kg	667	502	75	57-125	
Decachlorobiphenyl (S)	%.			69	45-144	CL
Tetrachloro-m-xylene (S)	%.			77	41-135	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2743912 — 2743913

Parameter	Units	10408004008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	ND	750	749	596	589	79	79	33-125	1	30	
PCB-1260 (Aroclor 1260)	ug/kg	39.6	750	749	611	598	76	75	37-125	2	30	
Decachlorobiphenyl (S)	%.						70	69	45-144			CL
Tetrachloro-m-xylene (S)	%.						78	78	41-135			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

QC Batch: 505497 | Analysis Method: EPA 160.4
QC Batch Method: EPA 160.4 | Analysis Description: 160.4 Total Volatile Solids
Associated Lab Samples: 10408491001, 10408491002, 10408491003, 10408491004, 10408491005

SAMPLE DUPLICATE: 2747782

Parameter	Units	10408491001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Volatile Solids	% (w/w)	28.7	29.0	1	10	

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QUALITY CONTROL DATA

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

QC Batch: 130160 | Analysis Method: SM 2540G
QC Batch Method: SM 2540G | Analysis Description: 2540G Total Solids
Associated Lab Samples: 10408491001, 10408491002, 10408491003, 10408491004, 10408491005

METHOD BLANK: 517929 | Matrix: Solid
Associated Lab Samples: 10408491001, 10408491002, 10408491003, 10408491004, 10408491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Solids	%	ND	0.10	10/30/17 15:29	

LABORATORY CONTROL SAMPLE: 517930

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Solids	%	491	494	101	80-120	

SAMPLE DUPLICATE: 517931

Parameter	Units	10408491001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Solids	%	19.5	14.7	28	10	D6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

QC Batch: 504823 Analysis Method: EPA 9045
QC Batch Method: EPA 9045 Analysis Description: 9045 pH
Associated Lab Samples: 10408491001, 10408491002, 10408491003, 10408491004, 10408491005

LABORATORY CONTROL SAMPLE: 2743905

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH at 25 Degrees C	Std. Units	5	5.0	100	98-102	

SAMPLE DUPLICATE: 2743906

Parameter	Units	10406797001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	11.6	11.6	1	3	

SAMPLE DUPLICATE: 2743907

Parameter	Units	10407781003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	10.2	10.2	0	3	

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QUALITY CONTROL DATA

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

QC Batch: 130229 — Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 — Analysis Description: 350.1 Ammonia
Associated Lab Samples: 10408491001, 10408491002, 10408491003, 10408491004, 10408491005

METHOD BLANK: 518219 — Matrix: Solid
Associated Lab Samples: 10408491001, 10408491002, 10408491003, 10408491004, 10408491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/kg	ND	3.0	10/31/17 15:59	

LABORATORY CONTROL SAMPLE: 518218

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/kg	300	318	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 518220 — 518221

Parameter	Units	10408440001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/kg	68.5	351	351	436	422	105	101	90-110	3	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

QC Batch: 130387 Analysis Method: EPA 351.2
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN
Associated Lab Samples: 10408491001, 10408491002, 10408491003, 10408491004, 10408491005

METHOD BLANK: 519141 Matrix: Solid
Associated Lab Samples: 10408491001, 10408491002, 10408491003, 10408491004, 10408491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	ND	50.0	11/02/17 10:22	

LABORATORY CONTROL SAMPLE: 519140

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	1000	964	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 519142 519143

Parameter	Units	10407140003 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/kg	649	1170	1170	2390	2380	140	139	90-110	0	15	E

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 519144 519145

Parameter	Units	10407140008 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/kg	247	1220	1220	1500	1500	98	98	90-110	0	15	

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.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

QC Batch: 130117 Analysis Method: EPA 365.1
QC Batch Method: SM 4500P B Analysis Description: 365.1 Phosphorus, Total
Associated Lab Samples: 10408491001, 10408491002, 10408491003, 10408491004, 10408491005

METHOD BLANK: 517737 Matrix: Solid
Associated Lab Samples: 10408491001, 10408491002, 10408491003, 10408491004, 10408491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/kg	ND	2.5	10/31/17 09:44	

LABORATORY CONTROL SAMPLE: 517736

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/kg	24.8	23.5	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 517738 517739

Parameter	Units	10408491004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/kg	1540	118	118	1620	1580	65	35	90-110	2	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 517740 517741

Parameter	Units	10407837001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/kg	1190	51.4	51.4	1230	1450	80	510	90-110	17	10	M6,R1

Reviewed by: PMB

Date: 11/6/17

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

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QUALIFIERS

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

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 adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

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.

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.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

CL	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
R1	RPD value was outside control limits.
S0	Surrogate recovery outside laboratory control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10408491003	Birch Pond Area 1	EPA 3550	504824	EPA 8082A	505188
10408491004	Birch Pond Area 2	EPA 3550	504824	EPA 8082A	505188
10408491005	Birch Pond Area 3	EPA 3550	504824	EPA 8082A	505188
10408491001	Golf Pond South	EPA 3050	504707	EPA 6010C	504891
10408491002	Golf Pond North	EPA 3050	504707	EPA 6010C	504891
10408491003	Birch Pond Area 1	EPA 3050	504707	EPA 6010C	504891
10408491004	Birch Pond Area 2	EPA 3050	504707	EPA 6010C	504891
10408491005	Birch Pond Area 3	EPA 3050	504707	EPA 6010C	504891
10408491001	Golf Pond South	EPA 7471B	504713	EPA 7471B	504863
10408491002	Golf Pond North	EPA 7471B	504713	EPA 7471B	504863
10408491003	Birch Pond Area 1	EPA 7471B	504713	EPA 7471B	504863
10408491004	Birch Pond Area 2	EPA 7471B	504713	EPA 7471B	504863
10408491005	Birch Pond Area 3	EPA 7471B	504713	EPA 7471B	504863
10408491001	Golf Pond South	ASTM D2974	504726		
10408491002	Golf Pond North	ASTM D2974	504726		
10408491003	Birch Pond Area 1	ASTM D2974	504726		
10408491004	Birch Pond Area 2	ASTM D2974	504726		
10408491005	Birch Pond Area 3	ASTM D2974	504726		
10408491001	Golf Pond South	EPA 160.4	505497		
10408491002	Golf Pond North	EPA 160.4	505497		
10408491003	Birch Pond Area 1	EPA 160.4	505497		
10408491004	Birch Pond Area 2	EPA 160.4	505497		
10408491005	Birch Pond Area 3	EPA 160.4	505497		
10408491001	Golf Pond South	SM 2540G	130160		
10408491002	Golf Pond North	SM 2540G	130160		
10408491003	Birch Pond Area 1	SM 2540G	130160		
10408491004	Birch Pond Area 2	SM 2540G	130160		
10408491005	Birch Pond Area 3	SM 2540G	130160		
10408491001	Golf Pond South	EPA 9045	504823		
10408491002	Golf Pond North	EPA 9045	504823		
10408491003	Birch Pond Area 1	EPA 9045	504823		
10408491004	Birch Pond Area 2	EPA 9045	504823		
10408491005	Birch Pond Area 3	EPA 9045	504823		
10408491001	Golf Pond South	EPA 350.1	130229	EPA 350.1	130264
10408491002	Golf Pond North	EPA 350.1	130229	EPA 350.1	130264
10408491003	Birch Pond Area 1	EPA 350.1	130229	EPA 350.1	130264
10408491004	Birch Pond Area 2	EPA 350.1	130229	EPA 350.1	130264
10408491005	Birch Pond Area 3	EPA 350.1	130229	EPA 350.1	130264
10408491001	Golf Pond South	EPA 351.2	130387	EPA 351.2	130486
10408491002	Golf Pond North	EPA 351.2	130387	EPA 351.2	130486
10408491003	Birch Pond Area 1	EPA 351.2	130387	EPA 351.2	130486
10408491004	Birch Pond Area 2	EPA 351.2	130387	EPA 351.2	130486
10408491005	Birch Pond Area 3	EPA 351.2	130387	EPA 351.2	130486
10408491001	Golf Pond South	SM 4500P B	130117	EPA 365.1	130203

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 14-01963 Foley Ponds
Pace Project No.: 10408491

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10408491002	Golf Pond North	SM 4500P B	130117	EPA 365.1	130203
10408491003	Birch Pond Area 1	SM 4500P B	130117	EPA 365.1	130203
10408491004	Birch Pond Area 2	SM 4500P B	130117	EPA 365.1	130203
10408491005	Birch Pond Area 3	SM 4500P B	130117	EPA 365.1	130203

AMERICAN ENGINEERING TESTING, INC.

☒ St. Paul Office
550 Cleveland Ave. N.
St. Paul, MN 55114
651-659-9001
651-659-1379 (fax)

☐ OTHER _____

ADDRESS: _____

PHONE: _____

(1040849)

№ 22165

PAGE 1 OF 2

AET PROJECT NUMBER: 14-01963

PROJECT NAME/LOCATION: Foley Ponds

AET PROJECT MANAGER: Paul Schoenmy

SEND REPORT TO: Paul Schoenmy

SAMPLED BY (PRINT): William Tomczyk

SAMPLER SIGNATURE: [signature]

REQUESTED TURNAROUND TIME: ☐ NORMAL ☐ RUSH

DATE NEEDED BY: _____

ANALYSIS

ITEM#	SAMPLE DESCRIPTION	DATE	TIME	SAMPLE TYPE	NO. OF CONTAINERS	UNPRESERVED	MeOH	HCL	H_2SO_4	HNO_3	FIELD FILTERED Y/N	Total solids	Volatile Solids	PH	TKN	Ammonia Nitrogen	Phosphorus	Potassium	PCB's	REMARKS	
GPS	Golf pond South	10/26/17	1600	Sludge	8	8						X	X	X	X	X	X	X			001
GP-N	Golf pond North	10/26/17	1300	Sludge	8	8						X	X	X	X	X	X	X		Report	002
BP-1	Birch pond Area 1	10/26/17	1530	Sludge	9	9						X	X	X	X	X	X	X	X	results	003
BP-2	Birch pond Area 2	10/26/17	1600	Sludge	9	9						X	X	X	X	X	X	X	X	on a dry	004
BP-3	Birch pond Area 3	10/26/17	1700	Sludge	9	9						X	X	X	X	X	X	X	X	weight	005
																				basis	

NOTE:

ITEM NUMBER	RELINQUISHED BY/AFFILIATION	ACCEPTED BY/AFFILIATION	DATE	TIME
	[signature]		10/26/17	1030
		[signature] PACE	10/25/17	1357 T=1.5 2.6

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 30Aug2017 Page 1 of 2
	Document No.: F-MN-L-213-rev.21	Issuing Authority: Pace Minnesota Quality Office

WO#: 10408491

10408491

Sample Condition Upon Receipt

Client Name: AET

Project #:

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

Tracking Number:

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

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

Thermometer Used: ☐ 151401163 ☒ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 1.7, 2.5 **Cooler Temp Corrected (°C):** 1.5, 2.6 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C **Correction Factor:** −0.2 **Date and Initials of Person Examining Contents:** ET 10/25/18

USDA Regulated Soil (☐ N/A, water sample)

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

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

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

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume?	☒ Yes	☐ No		8.
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☐ Yes	☒ No		12. DW CONTAINERS FOR SAMPLES 1-3 MISSING ID, DATE, & TIME ON LABELS. (IDENTIFIED BASED ON SAMPLES IN SAME BAG)
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin.	☐ Yes	☐ No	☒ N/A	Initial when completed: Lot # of added preservative:
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 **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Tina Soltani **Date:** 10/27/17

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

AMERICAN ENGINEERING TESTING, INC.

☒ St. Paul Office
550 Cleveland Ave. N.
St. Paul, MN 55114
651-659-9001
651-659-1379 (fax)

☐ OTHER

ADDRESS:

PHONE:

№ 22166

PAGE 2 OF 2

AET PROJECT NUMBER 14-01963

PROJECT NAME/LOCATION Foley Ponds

AET PROJECT MANAGER Paul Schoening

SEND REPORT TO Paul Schoening

SAMPLED BY (PRINT) William Tomczyk

SAMPLER SIGNATURE

REQUESTED TURNAROUND TIME: ☐ NORMAL ☐ RUSH

DATE NEEDED BY:

ITEM#	SAMPLE DESCRIPTION	DATE	TIME	SAMPLE TYPE	NO. OF CONTAINERS	PRESERVATIVES: UNPRESERVED	MeOH	HCL	H_2SO_4	HNO_3	FIELD FILTERED Y/N	ANALYSIS: Arsenic	Cadmium	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Zinc	REMARKS	
GP-S	golf pond South	10/25/17	1600	sludge	8	8						X	X	X	X	X	X	X	X	X		001
GP-N	golf pond North	10/25/17	1300	sludge	8	8						X	X	X	X	X	X	X	X	X	~~TSS~~ Report	002
BP-1	Birch pond Area 1	10/25/17	1530	sludge	9	9						X	X	X	X	X	X	X	X	X	results	003
BP-2	Birch pond Area 2	10/25/17	1600	sludge	9	9						X	X	X	X	X	X	X	X	X	on a	004
BP-3	Birch pond Area 3	10/25/17	1700	sludge	9	9						X	X	X	X	X	X	X	X	X	dry weight	005
																					basis.	

NOTE:

ITEM NUMBER	RELINQUISHED BY/AFFILIATION	ACCEPTED BY/AFFILIATION	DATE	TIME
	[signature]		10/25/17	1036
		[signature] AET 10/25/17		1357

F-2.6
1.5

Chain of Custody

WO#: 1299804
PM: HRZ Due Date: 11/01/17
CLIENT: PACE MPLS

Workorder: 10408491 Workorder Name: 14-01963 Foley Ponds Owner Received Date: 10/25/2017 Results Requested 2017

Report To

Tina Soltani
Pace Analytical Minnesota.
1700 Elm Street
Suite 200
Minneapolis, MN 55414
Phone (612)607-6384

Subcontract To

Pace Analytical Virginia MN
315 Chestnut Street
Virginia, MN 55792
Phone (218)742-1042

Item	Sample ID	Sample Type	Collected Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved						TKN by 351.2	Total Phosphorus by 365.4	Ammonia by 350.1										LAB USE ONLY
1	Golf Pond South	PS	10/23/2017 16:00	10408491001	Solid	2						X	X	X										
2	Golf Pond North	PS	10/24/2017 13:00	10408491002	Solid	2						X	X	X										
3	Birch Pond Area 1	PS	10/24/2017 15:30	10408491003	Solid	2						X	X	X										
4	Birch Pond Area 2	PS	10/24/2017 16:00	10408491004	Solid	2						X	X	X										
5	Birch Pond Area 3	PS	10/24/2017 17:00	10408491005	Solid	2						X	X	X										

Transfers	Released By	Date/Time	Received By	Date/Time
1	Pace	10/26/17 1458		10/26/17 1845
2		10/26/17 2318		10/27/17 0315
3				

Comments

Cooler Temperature on Receipt 1.9 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.*

AET Project # 14-01963

Appendix B

Field Data Sheets

Golf Pond Field Data Sheet
Foley, MN 14-01963

Location	Total Depth	Water Depth	Biosolids Depth
G1A	2'11"		6"
G1B	3'1"		6"
G1C	2'7"		4"
G1D	2'11"		8"
G1E	2'10"		9"
G1F	2'9"		10"
G1G	2'11"		6"
G1H	3'0"		6"
G1I	3'1"		6"
G1J	3'8"		6"
G2A	3'1"		6"
G2B	3'1"		9"
G2C	2'10"		8"
G2C-2	2'11"		6"
G2C-3	2'11"		6"
G2D	2'10"		8"
G2D-2	2'10"		11"
G2D-3	2'10"		9"
G2E	2'10"		12"
G2E-2	2'10"		6"
G2E-3	2'10"		8"
G2F	2'10"		6"
G2F-2	2'11"		7"
G2F-3	2'11"		9"
G2G	2'8"		6"
G2G-2	2'9"		7"
G2G-3	2'8"		7"
G2H	2'10"		12"
G2H-2	2'10"		11"
G2H-3	2'10"		12"
G2I	3'0"		7"
G2J	3'2"		10"

Location	Total Depth	Water Depth	Biosolids Depth
G3A	3'0"		6"
G3B	3'0"		6"
G3C	3'0"		7"
G3D	2'8"		8"
G3E	3'1"		12"
G3F	2'8"		12"
G3G	2'11"		6"
G3H	2'8"		11"
G3I	3'0"		7"
G3J	3'0"		6"
G4A	2'11"		6"
G4B	2'11"		6"
G4C	3'0"		7"
G4D	2'10"		4"
G4D-2	2'10"		8"
G4D-3	2'10"		4"
G4E	2'11"		6"
G4E-2	3'0"		6"
G4E-3	2'10"		8"
G4F	2'10"		6"
G4F-2	2'11"		9"
G4F-3	2'11"		12"
G4G	2'11"		13"
G4G-2	3'0"		8"
G4G-3	3'0"		12"
G4H	2'11"		6"
G4H-2	2'11"		8"
G4H-3	2'11"		6"
G4I	2'11"		7"
G4J	3'0"		12"

Birch Pond Field Data Sheet
Foley, MN 14-01963

Location	Total Depth	Water Depth	Biosolids Depth
B1A	3'6"		1'6"
B1B	3'0"		1'3"
B1C	2'8"		1'5"
B1C-2	2'9"		1'6"
B1C-3	2'8"		1'5"
B1D	3'2"		1'2"
B1D-2	3'3"		1'1"
B1D-3	3'2"		10"
B1E	2'8"		8"
B1E-2	2'8"		8"
B1E-3	2'8"		9"
B1F	2'11"		12"
B1G	2'11"		11"
B1H	3'2"		1'2"
B1H-2	3'0"		10"
B1H-3	3'1"		12"
B1I	2'1"		4"
B1I-2	2'0"		2"
B1I-3	2'1"		3"
B1J	2'11"		8"
B1J-2	2'11"		9"
B1J-3	2'11"		9"
B1K	3'02"		10"
B1L	3'2"		1'2"
B2A	3'2"		8"
B2B	3'0"		8"
B2C	3'7"		10"
B2D	3'3"		12"
B2E	3'1"		11"
B2F	3'0"		8"
B2G	3'4"		12"
B2H	3'7"		12"

Location	Total Depth	Water Depth	Biosolids Depth
B2I	3'2"		8"
B2J	4'0"		1'5"
B2K	4'0"		1'3"
B3A	2'6"		10"
B3B	2'11"		11"
B3C	3'2"		1'1"
B3D	3'1"		12"
B3E	2'4"		11"
B3F	2'6"		7"
B3G	2'10"		10"
B3H	3'3"		12"
B3I	2'8"		1'3"
B3J	2'6"		6"
B3K	3'4"		1'4"
B3L	3'11"		1'6"
B2L	4'8"		1'8"