

**Appendix F**

**2006 Sediment Sample Collection Procedures and  
Sediment Probe Logs**

## Overview

This memorandum outlines the supplemental sampling activities performed at Nagawicka Lake on June 28, 2006 to fulfill NR 347 requirements and the subsequent sample processing activities performed at the Foth & Van Dyke lab June 29, 2006. Sediment samples were collected from the Bark River Inlet; elutriate samples were collected from the Bark River Inlet, Northwest Channels and the West Channels; and soil samples were collected from the Hirschman Lane, Hirschman Lane North and Merten's Farm proposed upland disposal sites.

## Sediment Sampling in the Bark River Inlet

*Sediment Sampling Procedures.* Within the Bark River Inlet proposed dredge area, a total of six core samples were collected within three areas most representative of the Inlet sediment profile (BRI-1, BRI-2 and BRI-3) – two cores within the channel of the Bark River (BRI-1A and BRI-1B), two at the mouth (BRI-2A and BRI-2B), and two in the mouth further into the lake (BRI-3A and BRI-3B).

Prior to collecting the sediment samples, initial sediment probing was performed to determine the most representative locations to sample. During probing, at each location, the water depth was obtained using a surveyor's rod attached to a 6-inch round metal plate, and the depth of the soft sediment was measured using a probing rod with a 1-foot long, 0.5-inch diameter steel end. First a lighter effort was placed on the probing rod to obtain the thickness of the soft surficial sediment, and then a greater effort was placed on the probing rod to refusal to obtain the full sediment thickness. Once sediment thicknesses within the Bark River Inlet were determined, representative sampling stations were chosen.

To begin sediment sampling at each location, the sampling platform (pontoon boat) was anchored in place. The coordinates of the actual location were obtained using a hand-held GPS. The water depth and the depth of the soft sediment were measured using the procedures described above. Sample location, water depth and sediment thickness were recorded on field logs. See the attached field logs for details.

A hand-coring technique was used to obtain core samples. A 3-foot long, ~2-inch inside diameter stainless steel core barrel with a T-bar push rod was used. The coring device was assembled to the appropriate length based on water depth and sediment thickness. The 3' length of Lexan core tube, with core catcher, was placed in the core barrel. The coring device was then lowered to the sediment/water interface. After contact with the sediment, the core barrel was gently pushed into the substrate until reaching refusal. Once the core tube reached refusal, the depth of core penetration was noted and documented. Subsequent to reaching refusal, the core driver was rotated in a clock-wise direction. Once the barrel was brought to the surface, the core tube was extracted from the core barrel, caps were placed on each end, and the sample ID and other appropriate information was placed on the core.

A second core sample was collected at each of the three locations to ensure that a sufficient quantity of sample was collected to perform the required analyses.

*Sediment Sample Processing.* The thickness of the sediment recovered in each core tube was measured and recorded, and the contents of the core tube described, measured, and documented on the field log which includes strata formation, position, length, odor, texture and color. See the attached field logs for details. A photograph was taken of each of the cores prior to processing – photographs are attached. Each of the six core samples collected were separated into two segments; the top segment (6.75-12.75 inches) consisting of a very soft black/dark grayish brown silt with some clay, trace sand and organics and the bottom segment (6.75-16.25 inches) consisting of a more dense/stiff black/dark grayish brown silt higher in organic content – peat-like in some of the cores. The top segment from each core was then composited together, and a single grab composite sample was taken from the resulting mixture and analyzed for parameters listed in the attached table. The bottom segment of each of the six core samples was also mixed, with a single composite sample then taken from the resulting mixture and analyzed for the parameters in the table below.

### **Analyses Performed on Sediment Samples**

Analytical Parameter/Method	Required Detection Limits (ug/g)	Maximum Holding Times
<b>Inorganics-Metals</b>		
Arsenic (EPA 6010 or 7060)	2	6 Months
Cadmium (EPA 7131)	0.02	6 Months
Chromium (total) (EPA 6010 or 7191)	5	6 Months
Copper (EPA 6010 or 7211)	2	6 Months
Lead (EPA 6010 or 7421)	5	6 Months
Mercury (EPA 7471)	0.02	28 Days
Nickel (EPA 6010)	5	6 Months
Zinc (EPA 6010 or 7951)	5	6 Months
<b>Inorganics-Nutrients</b>		
Nitrate		48 Hours
Nitrite		48 Hours
Ammonia-Nitrogen		28 Days
Available Phosphorus		48 Hours
Total Phosphorus		28 Days
Total K-Nitrogen		28 Days
<b>Organics</b>		
Total Organic Carbon (SW 846 EPA 9060)		28 Days
Polycyclic Aromatic Hydrocarbons (PAHs- 16 unsubstituted Parent Compounds) (EPA 8310)	0.03	7 Days
Chlordane (EPA 8081, 354440B, 3541)	0.01	7 Days
Aldrin (EPA 8081, 354440B, 3541)	0.01	7 Days
Endrin (EPA 8081, 354440B, 3541)	0.01	7 Days
DDT (EPA 8081, 354440B, 3541)	0.01	7 Days
DDE (EPA 8081, 354440B, 3541)	0.01	7 Days

The composite sample was also tested for physical parameters, including the following:

- ♦ Grain-size distribution (sieve and hydrometer), ASTM D422,
- ♦ Specific gravity (ASTM D5550),
- ♦ Percent moisture content and solids (ASTM D2216), and
- ♦ Organic content (ASTM D2974)

The composite sediment samples were placed in 3-Liter amber jars (per Wisc. Admin. Code NR 219), labeled appropriately and stored in coolers at 4° C for delivery to the laboratory. The composite of the top segment of the cores was designated as BRI-(1-3)A, and the composite of the bottom segment of the cores was labeled BRI-(1-3)B. The samples were analyzed within the appropriate holding times given in Wisc. Admin. Code NR 219.

The majority of the chemical laboratory analyses were performed by US Filter. The physical analyses were performed by Maxim Technologies Inc., and the pesticide analysis was performed by Severn Trent Laboratories (STL).

### **Elutriate Sampling from the Bark River Inlet, Northwest Channels and West Channels**

*Elutriate Processing Procedure.* Sediment and lake water was collected from three locations within the Bark River Inlet (BRI-1, BRI-2, and BRI-3) and two locations each within the Northwest Channels (NWC-1 and NWC-2) and the West Channels (WC-1 and WC-2). A small ponar sampler was used to obtain the bulk samples for the elutriate test. The ponar sampler was lowered to the sediment surface in the open position where, upon landing on the surface, a spring loaded bolt is triggered and the jaws of the sampler allowed to close. The captured sediment was brought to the surface. Free water was drained from the sample and the sample was placed into a 5-gallon bucket. When the bucket was approximately 75% full, it was sealed with a cover. One-third of a 5-gallon bucket was filled with sediment at each of the discreet locations within the Bark River Inlet, while one-half a 5-gallon bucket was filled with sediment from each location within the Northwest Channels and the West Channels. A total of three buckets of sediment was collected. One 5-gallon bucket was filled with lake water.

*Elutriate Sample Processing.* The sediment from each of the discreet locations was homogenized with the other sediment samples from that dredge area within the bucket, and then composited with the composites from the other dredge areas on a volume-based ratio.

The final composited sample was placed into 1-gallon glass jars and stored in coolers at 4° C for delivery to the laboratory. The moisture content of the homogenized sediment sample was determined by the lab and used to determine the amount of water to add to achieve a dredge slurry of 6 percent solids (by dry weight). Six percent was selected based on experience with other hydraulic dredging projects of similar materials. The composite water sample obtained during the elutriate (settling) test was tested for the parameters listed in the table below.

## Analyses Performed on Elutriate

Parameter	Method	Suggested Detection Limit (mg/L)
<b>Pesticides</b>		
Aldrin	SW846 8081, 3510C	0.000007
Endrin	SW 846 8081, 3510C	0.000009
Chlordane-alpha (gama)	SW846 8081,3510C	0.0000061 (0.0000054)
DDE	SW846 8081, 3510C	
DDT	SW846 8081, 3510C	0.000014
<b>Metals</b>		
Arsenic	SW846 3010A/6010B or 6020	0.0076
Cadmium	SW846 3010A/6010B or 6020	0.00074
Chromium	SW846 3010A/6010B or 6020	0.0004
Copper	SW846 3010A/6010B or 6020	0.0015
Lead	SW8643010A/6010B or 6020	0.0034
Manganese	SW8643010A/6010B or 6020	0.0004
Mercury	SW8643010A/6010B or 6020	0.000072
Nickel	SW8643010A/6010B or 6020	0.0016
Zinc	SW8643010A/6010B or 6020	0.020
<b>Inorganics - Nutrients</b>		
Nitrate-Nitrite		
Ammonia Nitrogen	350.1	0.20
Total Phosphorus		
Total K-Nitrogen		
Total Suspended Solids		
pH		
<b>Organics</b>		
Total Organic Carbon	SW 846 EPA 9060	
Biochemical Oxygen Demand		
Polycyclic Aromatic Hydrocarbons (PAHs- 16 unsubstituted Parent Compounds)	EPA 8310	0.03

The elutriate analyses were performed by Severn Trent Laboratories.

## Soil Sampling of the Upland Disposal Sites - Merten's Farm Site, the Hirschman Lane Site, and the Hirschman Lane North Site

*Soil Sampling Procedure.* Background soil analyses were performed for the three primary proposed upland disposal locations; the Merten's Farm site, the Hirschman Lane site, and the Hirschman Lane North site (plot of land just north of the Hirschman Lane site). Four borings were advanced at the Hirschman Lane site (HL-1, HL-2, HL-3 and HL-4), while two each were advanced at the Merten's Farm site (MF-1 and MF-2) and the Hirschman Lane North site (HLN-1 and HLN-2). Two samples were collected per boring – a sample of the topsoil (soil horizon A) and a sample of the layer below the topsoil (soil horizon B). The sample of the topsoil was designated with "A" (i.e. HL-(1-4)A) while the sample of the layer beneath the topsoil was designated with "B" (i.e. HL-(1-4)B).

At each discreet sample location, a stainless steel hand-auger was used to obtain soil samples. The entire topsoil layer was collected – a portion placed in a glass jar and a portion placed in a plastic bag. The thickness of the topsoil ranged from 0.25 to 1.3 feet. A representative sample of the layer beneath the topsoil, consisting of primarily hard clay with gravel at some locations, was collected in a plastic bag. The thickness of soil horizon B ranged from 0.8 to 1.85 feet. Each boring was extended to approximately 1.15-2.7 feet in depth where refusal was reached. The soil column for each borehole was logged on field forms; noting color, consistency, presence of water, general grain size distribution, etc. See the attached logs for details.

*Soil Sample Processing.* Topsoil from each of the 2 or 4 locations was homogenized and composited into one sample for laboratory analysis. The topsoil collected in the glass jars were homogenized together and placed into a single glass jar for each site for the metals and pesticide analyses. The topsoil collected in the plastic bags were homogenized together and placed into a single plastic bag for each site for the organic content and physical analyses. The following is the list of analytical parameters for the topsoil samples:

- ◆ Arsenic
- ◆ Copper
- ◆ Lead
- ◆ Zinc
- ◆ Pesticides
- ◆ Grain Size Analysis (sieve and hydrometer) (ASTM D422)
- ◆ Organic Content (ASTM D2974)

Samples from the B Horizon were also composited and tested for grain size analysis (sieve and hydrometer) (ASTM D422) and organic content (ASTM D2974).

The composite soil samples were placed in the appropriate sample containers (glass jars or plastic bags) (per Wisc. Admin. Code NR 219) and stored in coolers at 4° C for delivery to the laboratory. The samples were analyzed within the appropriate holding times given in Wisc. Admin. Code NR 219.

The total solids, total volatile solids, and metals analyses were performed by US Filter. The physical analyses were performed by Maxim Technologies Inc., and the pesticide analysis was performed by Severn Trent Laboratories (STL).

Project Name: Nagawicka Lake Restoration  
 Project Location: Delafield, Wi  
 Scope ID: 06D006



### Sediment Core Collection And Processing Log

Date: 06/28/06 Time: 9:05  
 Sampling Personnel: TMK1, NED  
 Weather Conditions: Partly cloudy, 65-70°F, wind 5-10 mph

Sample Location ID: BRI-1A

Proposed Location Coordinates	
Northing	<u>NA</u>
Westing	<u>NA</u>
Datum	<u>Wisconsin SPS NAD 83/91</u>

Offset from Proposed Coordinates  
 ft. \_\_\_\_\_  
 ft. \_\_\_\_\_

Actual Sampling Location	
Northing	<u>43° 05' 00.1"</u>
Westing	<u>88° 23' 23.7"</u>
Water Elev.	<u>NA</u>

	Light Effort	To Refusal
Total Probed Length:	<u>2.80'</u>	<u>4.48'</u>
Water Depth:	<u>1.48'</u>	<u>1.48'</u>
Probed Sediment Thickness:	<u>1.32'</u>	<u>3.00'</u>
Probing Observation:	<u>Very Soft</u>	

Sediment Core Penetration: ~3'  
 Sediment Recovered: 1.4'  
 % Recovery: 46.7

#### Field Observation

##### Sediment Description

Black soft sediment with organics, high gas content

Core Length (in):	Core Processing (Observations)	Date Processed:
<u>16 3/4</u>		<u>6/29/2006</u>
Core Intervals (in)	Core Description	
<u>0-7 5/8</u>	<u>Black silt with clay, trace sand and organics, very soft, non-plastic, saturated</u>	
<u>7 5/8-16 3/4</u>	<u>Black silt with little clay and some organics, soft to medium stiff, wet</u>	

Processing Personnel: TMK1, TRV  
 Checked by: \_\_\_\_\_

Note: Total Probed Length = Water Depth + Sediment Thickness

Project Name: Nagawicka Lake Restoration  
 Project Location: Delafield, Wi  
 Scope ID: 06D006



### Sediment Core Collection And Processing Log

Date: 06/28/06 Time: 9:05  
 Sampling Personnel: TMK1, NED  
 Weather Conditions: Partly cloudy, 65-70° F, wind 5-10 mph

Sample Location ID: BRI-1B

Proposed Location Coordinates	
Northing	NA
Westing	NA
Datum	Wisconsin SPS NAD 83/91

Offset from Proposed Coordinates  
 ft. \_\_\_\_\_  
 ft. \_\_\_\_\_

Actual Sampling Location	
Northing	43° 05' 00.1" <u>43.08336111</u>
Westing	88° 23' 23.7" <u>-88.38991667</u>
Water Elev.	NA

	Light Effort	To Refusal
Total Probed Length:	<u>2.80'</u>	<u>4.48'</u>
Water Depth:	<u>1.48'</u>	<u>1.48'</u>
Probed Sediment Thickness:	<u>1.32'</u>	<u>3.00'</u>
Probing Observation:	<u>Very Soft</u>	

Sediment Core Penetration: ~3'  
 Sediment Recovered: 1.7'  
 % Recovery: ~56.7

#### Field Observation

#### Sediment Description

Black soft sediment with organics, high gas content

Core Length (in):	Core Processing (Observations)	Date Processed:
<u>20 3/4</u>		<u>6/29/2006</u>
Core Intervals (in)	Core Description	
<u>0-6 3/4</u>	<u>Black silt with clay, trace sand and organics, very soft, non-plastic, saturated</u>	
<u>6 3/4-19 3/4</u>	<u>Black silt with little clay and some organics, soft to medium stiff, wet</u>	
<u>19 3/4-20 3/4</u>	<u>Same as above containing densely packed organics</u>	

Processing Personnel: TMK1, TRV  
 Checked by: \_\_\_\_\_

Note: Total Probed Length = Water Depth + Sediment Thickness

Project Name: Nagawicka Lake Restoration  
 Project Location: Delafield, Wi  
 Scope ID: 06D006



### Sediment Core Collection And Processing Log

Date: 06/28/06 Time: 9:50  
 Sampling Personnel: TMK1, NED  
 Weather Conditions: Partly cloudy, 65-70° F, wind 5-10 mph

Sample Location ID: BRI-2A

Proposed Location Coordinates	
Northing	<u>NA</u>
Westing	<u>NA</u>
Datum	<u>Wisconsin SPS NAD 83/91</u>

Offset from Proposed  
Coordinates  
 ft. \_\_\_\_\_  
 ft. \_\_\_\_\_

Actual Sampling Location	
Northing	<u>43° 04' 58.5"      43.08291667</u>
Westing	<u>88° 23' 27.9"      -88.39108333</u>
Water Elev.	<u>NA</u>

	Light Effort	To Refusal
Total Probed Length:	<u>2.52'</u>	<u>7.72'</u>
Water Depth:	<u>1.78'</u>	<u>1.78'</u>
Probed Sediment Thickness:	<u>0.74'</u>	<u>5.94'</u>
Probing Observation:	_____	

Sediment Core Penetration: 6'  
 Sediment Recovered: 1.88'  
 % Recovery: 31.3

#### Field Observation

#### Sediment Description

Black soft sediment with organics, high gas content

Core Length (in): <u>20 1/2</u>	Core Processing (Observations)	Date Processed: <u>6/29/2006</u>
Core Intervals (in)	Core Description	
<u>0-10</u>	<u>Black/dark grayish brown silt with some clay, trace sand and organics, very soft, non-plastic, saturated</u>	
<u>10-18 1/2</u>	<u>Black/dark grayish brown silt with little clay and organics, soft to medium stiff, plastic, wet</u>	
<u>18 1/2-22 1/2</u>	<u>Black peat - organic silt, densely packed, wet</u>	

Processing Personnel: TMK1, TRV  
 Checked by: \_\_\_\_\_

Note: Total Probed Length = Water Depth + Sediment Thickness

Project Name: Nagawicka Lake Restoration  
 Project Location: Delafield, Wi  
 Scope ID: 06D006



### Sediment Core Collection And Processing Log

Date: 06/28/06 Time: 9:50  
 Sampling Personnel: TMK1, NED  
 Weather Conditions: Partly cloudy, 65-70°F, wind 5-10 mph

Sample Location ID: BRI-2B

Proposed Location Coordinates	
Northing	<u>NA</u>
Westing	<u>NA</u>
Datum	<u>Wisconsin SPS NAD 83/91</u>

Offset from Proposed  
Coordinates  
 ft. \_\_\_\_\_  
 ft. \_\_\_\_\_

Actual Sampling Location	
Northing	<u>43° 04' 58.5"</u>
Westing	<u>88° 23' 27.9"</u>
Water Elev.	<u>NA</u>

	Light Effort	To Refusal
Total Probed Length:	<u>2.52'</u>	<u>7.72'</u>
Water Depth:	<u>1.78'</u>	<u>1.78'</u>
Probed Sediment Thickness:	<u>0.74'</u>	<u>5.94'</u>
Probing Observation:	<u>Very Soft</u>	

Sediment Core Penetration: 7.8'  
 Sediment Recovered: 2.10'  
 % Recovery: 26.9

#### Field Observation

##### Sediment Description

Black soft sediment with organics, high gas content

Core Length (in): 25 1/4

Core Processing (Observations)

Date Processed:

6/29/2006

Core Intervals (in)	Core Description
<u>0-9</u>	<u>Black/dark grayish brown silt with some clay, trace sand and organics, very soft, non-plastic, saturated</u>
<u>9-14</u>	<u>Black/dark grayish brown silt with little clay and organics, soft to medium stiff, plastic, wet</u>
<u>14-25 1/4</u>	<u>Black peat - organic silt, densely packed, wet</u>

Processing Personnel: TMK1, TRV  
 Checked by: \_\_\_\_\_

Note: Total Probed Length = Water Depth + Sediment Thickness

Project Name: Nagawicka Lake Restoration  
 Project Location: Delafield, Wi  
 Scope ID: 06D006



### Sediment Core Collection And Processing Log

Date: 06/28/06 Time: 10:15  
 Sampling Personnel: TMK1, NED  
 Weather Conditions: Partly cloudy, 65-70° F, wind 5-10 mph

Sample Location ID: BRI-3A

Proposed Location Coordinates	
Northing	NA
Westing	NA
Datum	Wisconsin SPS NAD 83/91

Offset from Proposed Coordinates  
 ft. \_\_\_\_\_  
 ft. \_\_\_\_\_

Actual Sampling Location	
Northing	<u>43° 04' 58.3"</u>
Westing	<u>88° 23' 29.8"</u>
Water Elev.	NA

	Light Effort	To Refusal
Total Probed Length:	<u>2.95'</u>	<u>8.15'</u>
Water Depth:	<u>1.98'</u>	<u>1.98'</u>
Probed Sediment Thickness:	<u>0.97'</u>	<u>6.17'</u>
Probing Observation:	<u>Very Soft</u>	

Sediment Core Penetration: 7.2'  
 Sediment Recovered: 1.6'  
 % Recovery: 22.6

#### Field Observation

##### Sediment Description

Black soft sediment with organics, high gas content

Core Length (in):	Core Processing (Observations)	Date Processed:
<u>19 1/2</u>		<u>6/29/2006</u>
Core Intervals (in)	Core Description	
<u>0-12 3/4</u>	<u>Black/dark grayish brown silt with some clay, trace sand and organics, very soft, non-plastic, saturated</u>	
<u>12 3/4-19 1/2</u>	<u>Black peat - organic silt with clay, medium dense/stiff, non-plastic, wet</u>	

Processing Personnel: TMK1, TRV  
 Checked by: \_\_\_\_\_

Note: Total Probed Length = Water Depth + Sediment Thickness

Project Name: Nagawicka Lake Restoration  
 Project Location: Delafield, Wi  
 Scope ID: 06D006



### Sediment Core Collection And Processing Log

Date: 06/28/06 Time: 10:15  
 Sampling Personnel: TMK1, NED  
 Weather Conditions: Partly cloudy, 65-70°F, wind 5-10 mph

Sample Location ID: BRI-3B

Proposed Location Coordinates	
Northing	<u>NA</u>
Westing	<u>NA</u>
Datum	<u>Wisconsin SPS NAD 83/91</u>

Offset from Proposed Coordinates  
 ft. \_\_\_\_\_  
 ft. \_\_\_\_\_

Actual Sampling Location	
Northing	<u>43° 04' 58.3"</u>
Westing	<u>88° 23' 29.8"</u>
Water Elev.	<u>NA</u>

	Light Effort	To Refusal
Total Probed Length:	<u>2.95'</u>	<u>8.15'</u>
Water Depth:	<u>1.98'</u>	<u>1.98'</u>
Probed Sediment Thickness:	<u>0.97'</u>	<u>6.17'</u>
Probing Observation:	<u>Very Soft</u>	

Sediment Core Penetration: 6.8'  
 Sediment Recovered: 1.6'  
 % Recovery: 23.4

#### Field Observation

#### Sediment Description

Black soft sediment with organics, high gas content

Core Length (in): 19 1/8

Core Processing (Observations)

Date Processed:

6/29/2006

Core Intervals (in)	Core Description
<u>0-9 3/4</u>	<u>Black/dark grayish brown silt with some clay, trace sand and organics, very soft, non-plastic, saturated</u>
<u>9 3/4-19 1/8</u>	<u>Black peat - organic silt with clay, medium dense/stiff, non-plastic, wet</u>

Processing Personnel: TMK1, TRV  
 Checked by: \_\_\_\_\_

Note: Total Probed Length = Water Depth + Sediment Thickness

Project Name: Nagawicka Lake Restoration  
 Project Location: Delafield, WI  
 Scope ID: 06D006



### Sediment Probing Log

Date/Time: 6/28/2006 11:00  
 Probing Personnel: TMK1, NED  
 Weather Conditions: Partly Cloudy, 65-70° F, Wind 5-10 mph

Probing Location ID: NWC-1

Proposed Location Coordinates	
Northing	<u>NA</u>
Westing	<u>NA</u>
Datum	<u>Wisconsin SPS NAD 83/91</u>

Offset from Proposed Coordinates  
 ft. \_\_\_\_\_ N S E W  
 ft. \_\_\_\_\_ N S E W

Actual Sampling Location	
Northing	<u>43° 05' 00.1"</u>
Westing	<u>88° 24' 05.6"</u>
Water Elevation	<u>NA</u>

	Light Effort	To Refusal
Total Probed Length:	<u>4.56'</u>	<u>6.75'</u>
Water Depth:	<u>3.38'</u>	<u>3.38'</u>
Probed Sediment Thickness:	<u>1.18'</u>	<u>3.37'</u>

#### Field Observation

##### Poling Description

Soft, gravelly towards bottom

##### Other Comments:

\* From top of core

Note: Total Probed Length = Water Depth + Sediment Thickness

Prepared by: SRL  
 Checked by: TLB1

Project Name: Nagawicka Lake Restoration  
 Project Location: Delafield, WI  
 Scope ID: 06D006



### Sediment Probing Log

Date/Time: 6/28/2006 11:13  
 Probing Personnel: TMK1, NED  
 Weather Conditions: Partly Cloudy, 65-70° F, Wind 5-10 mph

Probing Location ID: NWC-2

Proposed Location Coordinates	
Northing	<u>NA</u>
Westing	<u>NA</u>
Datum	<u>Wisconsin SPS NAD 83/91</u>

Offset from Proposed Coordinates  
 ft. \_\_\_\_\_ N S E W  
 ft. \_\_\_\_\_ N S E W

Actual Sampling Location	
Northing	<u>43° 04' 47.4"</u>
Westing	<u>88° 24' 15.8"</u>
Water Elevation	<u>NA</u>

	Light Effort	To Refusal
Total Probed Length:	<u>4.00'</u>	<u>6.86'</u>
Water Depth:	<u>3.18'</u>	<u>3.18'</u>
Probed Sediment Thickness:	<u>0.82'</u>	<u>3.68'</u>

#### Field Observation

#### Poling Description

Soft, hard bottom

#### Other Comments:

\* From top of core

Note: Total Probed Length = Water Depth + Sediment Thickness

Prepared by: SRL  
 Checked by: TLB1

Project Name: Nagawicka Lake Restoration  
 Project Location: Delafield, WI  
 Scope ID: 06D006



### Sediment Probing Log

Date/Time: 6/28/2006 11:40  
 Probing Personnel: TMK1, NED  
 Weather Conditions: Partly Cloudy, 65-70° F, Wind 5-10 mph

Probing Location ID: WC-1

Proposed Location Coordinates	
Northing	NA
Westing	NA
Datum	Wisconsin SPS NAD 83/91

Offset from Proposed Coordinates  
 ft. \_\_\_\_\_ N S E W  
 ft. \_\_\_\_\_ N S E W

Actual Sampling Location	
Northing	43° 04' 15.7"
Westing	88° 24' 08.3"
Water Elevation	NA

	Light Effort	To Refusal
Total Probed Length:	3.30'	4.48'
Water Depth:	2.15'	2.15'
Probed Sediment Thickness:	1.15'	2.33'

#### Field Observation

#### Poling Description

Soft

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#### Other Comments:

\* From top of core

Note: Total Probed Length = Water Depth + Sediment Thickness

Prepared by: SRL  
 Checked by: TLB1

Project Name: Nagawicka Lake Restoration  
 Project Location: Delafield, WI  
 Scope ID: 06D006



### Sediment Probing Log

Date/Time: 6/28/2006 11:52  
 Probing Personnel: TMK1, NED  
 Weather Conditions: Partly Cloudy, 65-70° F, Wind 5-10 mph

Probing Location ID: WC-2

Proposed Location Coordinates	
Northing	<u>NA</u>
Westing	<u>NA</u>
Datum	<u>Wisconsin SPS NAD 83/91</u>

Offset from Proposed  
Coordinates

ft. \_\_\_\_\_ N S E W  
 ft. \_\_\_\_\_ N S E W

Actual Sampling Location	
Northing	<u>43° 04' 05.8"</u>
Westing	<u>88° 24' 11.3"</u>
Water Elevation	<u>NA</u>

	Light Effort	To Refusal
Total Probed Length:	<u>2.80'</u>	<u>5.65'</u>
Water Depth:	<u>1.88'</u>	<u>1.88'</u>
Probed Sediment Thickness:	<u>0.92'</u>	<u>3.77'</u>

#### Field Observation

##### Poling Description

Soft

##### Other Comments:

\* From top of core

Note: Total Probed Length = Water Depth + Sediment Thickness

Prepared by: SRL  
 Checked by: TLB1















