



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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Scott Hassett, Secretary
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June 1st, 2006

Mr. Steven Dischler, P.E.
Foth & Van Dyke
2737 S. Ridge Road
PO Box 19012
Green Bay, WI 53407-9012

Subject: Sediment Sampling Protocols and Analysis for Proposed Nagawicka Lake Dredging Project

Dear Mr. Dischler:

In order to adequately characterize the sediments proposed for dredging as described in your NR 347 Preliminary Application, dated April 21st, 2006, please undertake sediment sampling within the following locations and according to the following directions:

Mill Pond

Within the impoundment, two core samples shall be taken to a depth of two feet beyond project depth. The cores should be taken a minimum of 200 feet apart, and located in areas to be most representative of the Mill Pond sediment. The top half of each of the two core samples taken should be mixed, and a single grab composite sample should then be taken from the resulting mixture and analyzed for the parameters listed in the attached table. The bottom half of each of the two core samples taken should also be mixed, with single grab composite sample then taken from the resulting mixture and analyzed for the parameters in the attached table. Additionally, 4-5 random cores should be taken from within the whole impoundment. These cores should then be composited together, and a single grab sample taken from the resultant mixture and analyzed as previously discussed.

Bark River Inlet

Within the Bark River Inlet proposed dredged area, three core samples shall be taken. The cores should be located in areas most representative of the Inlet sediment profile, and be taken two feet beyond dredge depth. Each of three core samples taken should be separated into sediment and "beyond dredge depth" portions. The sediment portions from each core should then be composited together, and a single grab composite sample should then be taken from the resulting mixture and analyzed for the parameters listed in the attached table. The "beyond dredge depth" portions of each of the three core samples taken should also be mixed, with single grab composite sample then taken from the resulting mixture and analyzed for the parameters in the attached table.

General

Core appearances for all cores taken should be documented with photos prior to separating. Sediment depths and core locations should be recorded. All sample analyses should follow the suggested analytical methods, and meet the required detection limits listed in the attached table. Additionally, sampling and analyses shall be done in accordance with ch. NR 347.06 Wis. Admin. Code, unless modified by specific methods described in this memo. All analyses submitted to the Department shall be done by a laboratory certified or registered under ch. NR 149, Wis. Admin. Code. Finally, I would suggest that the composite samples be saved and preserved until the Project Manager determines that extra testing will not be necessary.

Please don't hesitate to contact me at 262-884-2357 if you have any questions regarding the information above.

Sincerely,

Craig Helker
Water Resources Biologist

Cc: File
Tom Hafner, City of Delafield
Craig Webster, WDNR
Jim D'Antuono, WDNR (electronic)
Vic Pappas, WDNR (electronic)
Bizhan Shiekholeslami, WDNR (electronic)
Ken Denow, WDNR (electronic)

Parameters for Testing (Nagawicka Lake - 6/01/06)		
Parameter	Suggested Analytical Method	Required Detection Limit (ug/g dry)
Inorganics-Metals		
Arsenic	EPA 6010 or 7060	2.0
Cadmium	EPA 7131	0.02
Chromium (total)	EPA 6010 or 7191	5.0
Copper	EPA 6010 or 7211	2.0
Lead	EPA 6010 or 7421	5.0
Mercury	EPA 7471	0.02
Nickel	EPA 6010	5.0
Zinc	EPA 6010 or 7951	5.0
Inorganics-Nutrients		
Nitrate		
Nitrite		
Ammonia-Nitrogen		
Available Phosphorus		
Total Phosphorus		
Total K-Nitrogen		
Particle Size Analysis		
Organics		
Total Organic Carbon	SW 846 EPA 9060	
Polycyclic Aromatic Hydrocarbons (PAHs- 16 unsubstituted Parent Compounds)	EPA 8310	0.03
Chlordane	EPA 8081, 354440B, 3541	0.01
DDT	EPA 8081, 354440B, 3541	0.01
DDE	EPA 8081, 354440B, 3541	0.01
PCBs (total)*		0.05

* Note: PCB analysis should be included on Mill Pond samples only, and not run on the Inlet samples