

ENVIRONMENTAL ANALYSIS AND DECISION ON THE NEED  
FOR AN ENVIRONMENTAL IMPACT STATEMENT (EIS)

Form 1600-1

Rev. 7-2006

Department of Natural Resources (DNR)

Region or Bureau

SCR

Type List Designation

3

**NOTE TO REVIEWERS:** This document is a DNR environmental analysis that evaluates probable environmental effects and decides on the need for an EIS. The attached analysis includes a description of the proposal and the affected environment. The DNR has reviewed the attachments and, upon certification, accepts responsibility for their scope and content to fulfill requirements in s. NR 150.22, Wis. Adm. Code. Your comments should address completeness, accuracy or the EIS decision. For your comments to be considered, they must be received by the contact person before 4:30 p.m., Insert Date.

Contact Person:

Dan Hunt

Title: Water Regulation and Zoning Specialist

Address: N 7725 Hwy 28

Horicon, WI, 53032

Telephone Number

(920)387-7878

Applicant: Tom Paque

Address: W 11024 Eagle Dr., Lodi, WI, 53555

Title of Proposal: Harmony Grove Channel Dredging

Location: County: Columbia City/Town/Village: Town of Lodi

Township Range Section(s): Dredging: Section 4, T. 10 N.-R. 8 E., Disposal: Section 10 and 11, T. 10 N.-R. 8 E., Columbia County

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**PROJECT SUMMARY**

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**1. Brief overview of the proposal including the DNR action (include cost and funding source if public funds involved)**

The project includes dredging five navigation lanes located in the Harmony Grove Lake Protection and Rehabilitation District (Attachment 1) to improve recreational watercraft navigation in the 50' to 90' wide man made navigational channels. The channels currently provide access to Lake Wisconsin and the Wisconsin River from home sites in the Village of Harmony Grove. Currently, portions of the channels are shallow making navigation difficult. In order to maintain navigational depths of at least 5 feet throughout the channels, an estimated 20,200 cubic yards of material is proposed to be removed. The material will be removed using a barge operated suction dredge.

The planned lake improvements are designed to improve navigation and benefit those who use Lake Wisconsin from home sites in the Village of Harmony Grove. If the project is not completed, the channels would most likely convert to a shallow marsh making watercraft navigation impossible in the channels.

The project will be funded through a special assessment by the Harmony Grove Lake Protection and Rehabilitation District. This tax will apply to only those that will benefit.

**2. Purpose and Need (include history and background as appropriate)**

The navigation channels that are proposed to be dredged were created in the late 1950s by a developer for residential use. The dredged material was placed between the channels to elevate the land and then roads and cottages/homes were built on top of the dredged material.

The purpose of the project is to restore navigability to the channels. The navigation channels, proposed to be dredged, provide access to Lake Wisconsin for 185 home owners in the Harmony Grove area. Over time these navigation channels have silted in to the point where they are difficult to navigate safely and in some cases can not be navigated at all.

**3. Authorities and Approvals (list local, state and federal permits or approvals required)**

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PROPOSED PHYSICAL CHANGES (more fully describe the proposal)

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4. Manipulation of Terrestrial Resources (include relevant quantities - sq. ft., cu. yard, etc.)

The proposed spoil site for the dredged material is on land owned by the Winnequah Gun Club (WGC). The spoil site is located approximately 5200 to 8300 feet southeast of the proposed dredged channels. The proposed spoil disposal site will be an open area of the WGC near the private road as shown in Attachments 2, 3 and 4. None of these sites are located in a delineated wetland or site with Wetland Indicator soils according to the WDNR Surface Water Data Viewer.

The dredge disposal technique will be either construction of a dewatering basin or using geobags or a combination of these two methods.

If the dewatering basin method is used, a temporary earthen berm will be constructed around the material storage site. The berm will feature an outlet structure that controls water discharge rates to settle out the dredged material particles and to assure the quality of water leaving the storage area can be regulated. After the dredged material is dewatered, it will be used for local construction projects within the Gun Club with the possibility of some material being incorporated into the field topography and seeded with regular farm crops.

If the geobag disposal technique is used, approximately 40 geobags will be used and stacked two high in an area north of the private road. These dewatered dredge bags will be kept in place after dredging is completed and used for an earthen berm along the roadway.

5. Manipulation of Aquatic Resources (include relevant quantities - cfs, acre feet, MGD, etc.)

As previously mentioned the project includes dredging five navigation lanes located in the Harmony Grove Lake Protection and Rehabilitation District to improve recreational watercraft navigation in the 50' to 90' wide channels. The channels currently provide access to the Lake Wisconsin and Wisconsin River from home sites in the Village of Harmony Grove. Portions of the channels are shallow making navigation difficult. In order to maintain navigational depths of at least 5 feet throughout the channels, an estimated 20,200 cubic yards of material will need to be removed. The material will be removed using a barge operated suction dredge. The equipment proposed to be used is a 12 horsepower 8 to 10 inch floating suction dredge with an 18 to 22 inch cutting head. Attachment 5 shows cross sections of the channels to be dredged.

6. Buildings, Treatment Units, Roads and Other Structures (include size of facilities, road miles, etc.)

There are no buildings or other structures that will be created as part of this project other than the previously mentioned dewatering basin. The proposal is to pump the spoil material directly to the disposal site where it would be dewatered and then land spread. The disposal site does contain buildings and other structures associated with a gun club. None of these structures will be impacted.

7. Emissions and Discharges (include relevant characteristics and quantities)

With large machinery, malfunctions can occur. Equipment may break down, require maintenance or spill hydraulic fluid, gas or oil. The application states that the contractor will be required to maintain and clean the area as it is required. As a condition of the permit the applicant should develop a contingency plan for a spill and submit it to the department for approval before the project is started.

Since the spoil material would be dewatered at the disposal site, no other discharge should occur unless there is a break or leak in the pipe.

8. Other Changes

None

9. Identify the maps, plans and other descriptive material attached

- Attachment 1. USGS map showing the location of the channels.
- Attachment 2. Air photo showing the location of the 3 proposed spoil disposal sites.
- Attachment 3. USGS map showing the location of the disposal site.
- Attachment 4. Air photo showing both the navigation channels and the disposal sites.
- Attachment 5. Plan showing the proposed dredging area for each channel.
- Attachment 6. Map showing the spoil testing sites.
- Attachment 7. Spoil testing results.
- Attachment 8. Spoil testing results.

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AFFECTED ENVIRONMENT (describe existing features that may be affected by proposal)

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10. Information Based On (check all that apply):

Literature/correspondence (specify major sources)

Personal Contacts (list in item 26)

Field Analysis By:  Author  Other (list in item 26)

Past Experience With Site By:  Other (list in item 26)

11. Physical Environment (topography, soils, water, air)

The waterway proposed to be dredged includes 5 artificial navigation channels that provide water access from residential development to Lake Wisconsin.

There are three disposal sites that are located in an open field that are part of a Gun Club. None of the disposal sites are located in wetlands or hydric soils. The topography of the disposal site is rolling hills with a mixture of forest land and open fields. Two of the three disposal sites are in agricultural production. The other is a wooded site adjacent to a firing range.

Attachments 6 thru 8 includes a map of the sampling sites along with the results from the sediment sampling. The results were reviewed by Water Resources Management Specialist Jim Amhrein who determined that the results show low levels of pollutants with little or no chance for environmental harm.

12. Biological Environment (dominant aquatic and terrestrial plant and animal species and habitats including threatened/endangered resources; wetland amounts, types and hydraulic value)

The artificial navigation channels are mostly open water with some vegetation at the banks and the end of the channel. The aquatic vegetation that is present is mostly Duckweed (*Lemna* sp.), cattails (*Typha* sp.) and Eurasian Milfoil (*Myriophyllum spicatum*); The disposal site is mostly open fields and farmland. The soils are well drained sandy loams and sand. There are no waters or wetlands nearby that could be impacted by the spoil disposal. The Natural Heritage Inventory has identified endangered and threatened species in the area. However, the project's disposal site has been cleared by the regional Conservation Biologist.

13. Cultural Environment

a. Land use (dominant features and uses including zoning if applicable)

The dredging site is highly developed for residential use. The 5 artificial navigation channels provide access to Lake Wisconsin for the home owners. There is a public boat ramp near the site that will not be impacted by the dredging project.

The disposal site is mostly open space with a few buildings and other structures associated with a gun club. The shoreline on both sides is mostly riprap and seawalls.

b. Social/Economic (including ethnic and cultural groups)

The project is not expected to have a socio economic impact on local resources.

c. Archaeological/Historical

There are no known historical or archeological sites that would be impacted by the project.

14. Other Special Resources (e.g., State Natural Areas, prime agricultural lands)

No other special resources would be impacted.

**ENVIRONMENTAL CONSEQUENCES (probable adverse and beneficial impacts including indirect and secondary impacts)**

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15. Physical (include visual if applicable)

The primary long term effect of the dredging will be the deepening of the channels to improve navigation from the homes in the Village of Harmony Grove to Lake Wisconsin. The navigation lanes have been designed to be wide enough for safe navigation while not interfering with docks along the channels. Other long term effects of the project will be the fish and lake habitat that is recreated with the removal of the foreign dredged materials.

During the dredging process some silt will be released that will cause the water to become temporarily turbid. This temporary suspension can also release nutrients resulting in another environmental impact being an algal bloom. Another short term effect of the proposed project includes the creation of the spoil site located southeast of the channels in the WGC property. The site is currently an open area used for long range shooting. The dredging will occur in fall period (October-December) and will only occur during the weekdays when the shooting range is not used. The disposal site is located north of the active shooting area so that no conflicts will occur during active shooting on the weekends (Stray bullets etc). After dredging is completed, the excess fill will be used locally by the WGC for on-site for construction projects or berm construction. The restoration plan for the areas disturbed during construction will be a long-term benefit to both the Harmony Lake Protection and Rehab District and mitigate the short term effects of the project.

16. Biological (including impacts to threatened/endangered resources)

The navigation channels are heavily used and the sides of the channel is mostly riprap or seawall and devoid of habitat. Because of these two factors it is unlikely that the dredging project will have a biological impact. The disposal sites are mostly farm fields and do not contain much habitat. The locations have been checked for threatened and endangered resources. Although some are in the vicinity, it has been determined that none will be impacted.

17. Cultural

a. Land Use (including indirect and secondary impacts)

The project should have no impact on land use. The largest land disturbances are located in open fields at the Conservation Club.

b. Social/Economic (including ethnic and cultural groups, and zoning if applicable)

The project should have no social or economic impacts.

c. Archaeological/Historical

No archeological or historical sites will be impacted.

18. Other Special Resources (e.g., State Natural Areas, prime agricultural lands)

There are no special resources impacted by the project.

19. Summary of Adverse Impacts That Cannot Be Avoided (more fully discussed in 15 through 18)

Adverse impacts that can not be avoided would be temporary turbidity and suspension of nutrients leading to temporary algae blooms. The impacts can be limited to the channels by the use of a turbidity curtain at the end of the channel where it enters Lake Wisconsin.

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**DNR EVALUATION OF PROJECT SIGNIFICANCE (complete each item)**

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20. Environmental Effects and Their Significance

a. Discuss which of the primary and secondary environmental effects listed in the environmental consequences section are long-term or short-term.

The environmental effects are all short term and include increased turbidity and the release of nutrients leading to algae blooms.

b. Discuss which of the primary and secondary environmental effects listed in the environmental consequences section are effects on geographically scarce resources (e.g. historic or cultural resources, scenic and recreational resources, prime agricultural lands, threatened or endangered resources or ecologically sensitive areas).

There will be no impacts on scarce resources.

c. Discuss the extent to which the primary and secondary environmental effects listed in the environmental consequences section are reversible.

All impacts are temporary but can be limited to the channel through the use of turbidity curtains at the mouth of the channels.

21. Significance of Cumulative Effects

Discuss the significance of reasonably anticipated cumulative effects on the environment (and energy usage, if applicable). Consider cumulative effects from repeated projects of the same type. Would the cumulative effects be more severe or substantially change the quality of the environment? Include other activities planned or proposed in the area that would compound effects on the environment.

This site is already heavily developed and the navigation channels are manmade. Because of this there should be little negative environmental impact.

22. Significance of Risk

- a. Explain the significance of any unknowns that create substantial uncertainty in predicting effects on the quality of the environment. What additional studies or analysis would eliminate or reduce these unknowns?

If I knew of any unknowns they wouldn't be unknown.

- b. Explain the environmental significance of reasonably anticipated operating problems such as malfunctions, spills, fires or other hazards (particularly those relating to health or safety). Consider reasonable detection and emergency response, and discuss the potential for these hazards.

As with all mechanical operations there is always a chance for malfunctions and spills. However, since only the dredge pipe is placed in the water the chance for contamination is minimal. There is a chance that a malfunction can occur in the discharge pipe. It is important to make sure that all connections are fitted properly and maintained during the operation. If there is malfunction of the discharge pipe, the main concern is if the spoil material discharges to a waterway or wetland. Proper maintenance should help eliminate or reduce the chance of this happening.

23. Significance of Precedent

Would a decision on this proposal influence future decisions or foreclose options that may additionally affect the quality of the environment? Describe any conflicts the proposal has with plans or policy of local, state or federal agencies. Explain the significance of each.

These navigation channels have been dredged before and will most likely continue to need dredging to keep them open for navigation.

24. Significance of Controversy Over Environmental Effects

Discuss the effects on the quality of the environment, including socio-economic effects, that are (or are likely to be) highly controversial, and summarize the controversy.

The project is not anticipated to be controversial. No comments were received during the public notice period.

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ALTERNATIVES

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25. Briefly describe the impacts of no action and of alternatives that would decrease or eliminate adverse environmental effects. (Refer to any appropriate alternatives from the applicant or anyone else.)

There really are no alternatives to dredging the channel to improve navigation. If no action is taken the channels would continue to fill in and would probably become non navigable.

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SUMMARY OF ISSUE IDENTIFICATION ACTIVITIES

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26. List agencies, citizen groups and individuals contacted regarding the project (include DNR personnel and title) and summarize public contacts, completed or proposed).

<u>Date</u>	<u>Contact</u>	<u>Comment Summary</u>
8-12-2009	Cathy Bleser	As long as spoils aren't dumped during the nesting period (May 15-August 15, then the disposal sites should be OK.
6-22-2009	Jim Amrhein	The amount of contaminates looks low. If the samples are representative of the spoil material then no further testing is required.
10-2009	Laura Stremick-Thompson	No impact on fish habitat.

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DECISION (This decision is not final until certified by the appropriate authority)

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In accordance with s. 1.11, Stats., and Ch. NR 150, Adm. Code, the Department is authorized and required to determine whether it has complied with s.1.11, Stats., and Ch. NR 150, Wis. Adm. Code.

Complete either A or B below:

A. EIS Process Not Required

The attached analysis of the expected impacts of this proposal is of sufficient scope and detail to conclude that this is not a major action which would significantly affect the quality of the human environment. In my opinion, therefore, an environmental impact statement is not required prior to final action by the Department.

B. Major Action Requiring the Full EIS Process

The proposal is of such magnitude and complexity with such considerable and important impacts on the quality of the human environment that it constitutes a major action significantly affecting the quality of the human environment.

Signature of Evaluator	Date Signed
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Number of responses to news release or other notice:

Certified to be in compliance with WEPA	
Environmental Analysis and Liaison Program Staff	Date Signed

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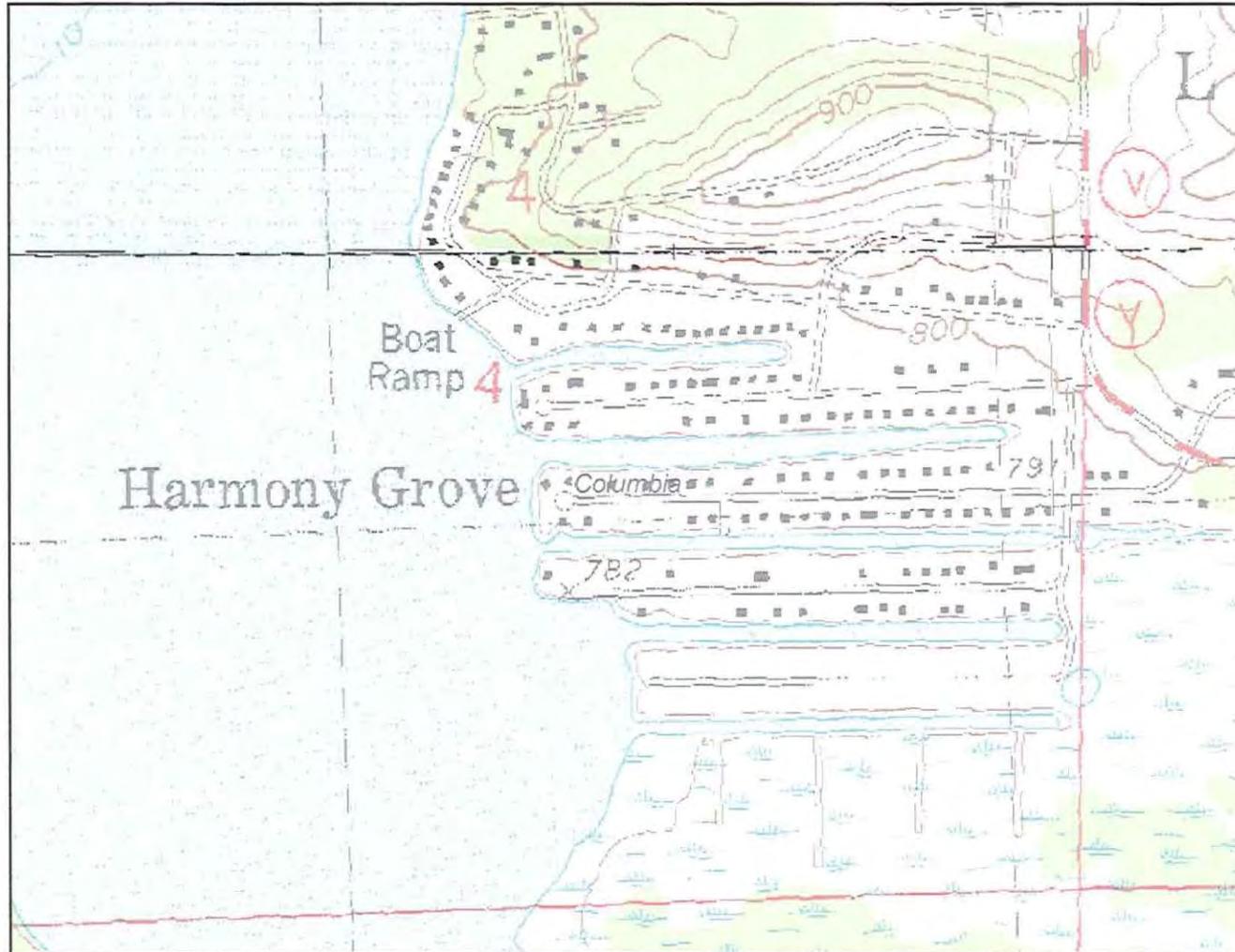
NOTICE OF APPEAL RIGHTS

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If you believe you have a right to challenge this decision made by the Department, you should know that Wisconsin statutes, administrative codes and case law establish time periods and requirements for reviewing Department decisions.

To seek judicial review of the Department's decision, ss. 227.52 and 227.53, Stats., establish criteria for filing a petition for judicial review. Such a petition shall be filed with the appropriate circuit court and shall be served on the Department. The petition shall name the Department of Natural Resources as the respondent.

Map Created on Sep 09, 2009



**Legend**

Major Highways

- Interstate (Green line)
- State Highway (Red line)
- U.S. Highway (Red line)

County Boundary (Dashed line)

Municipalities

- Village (Small square)
- City (Large square)

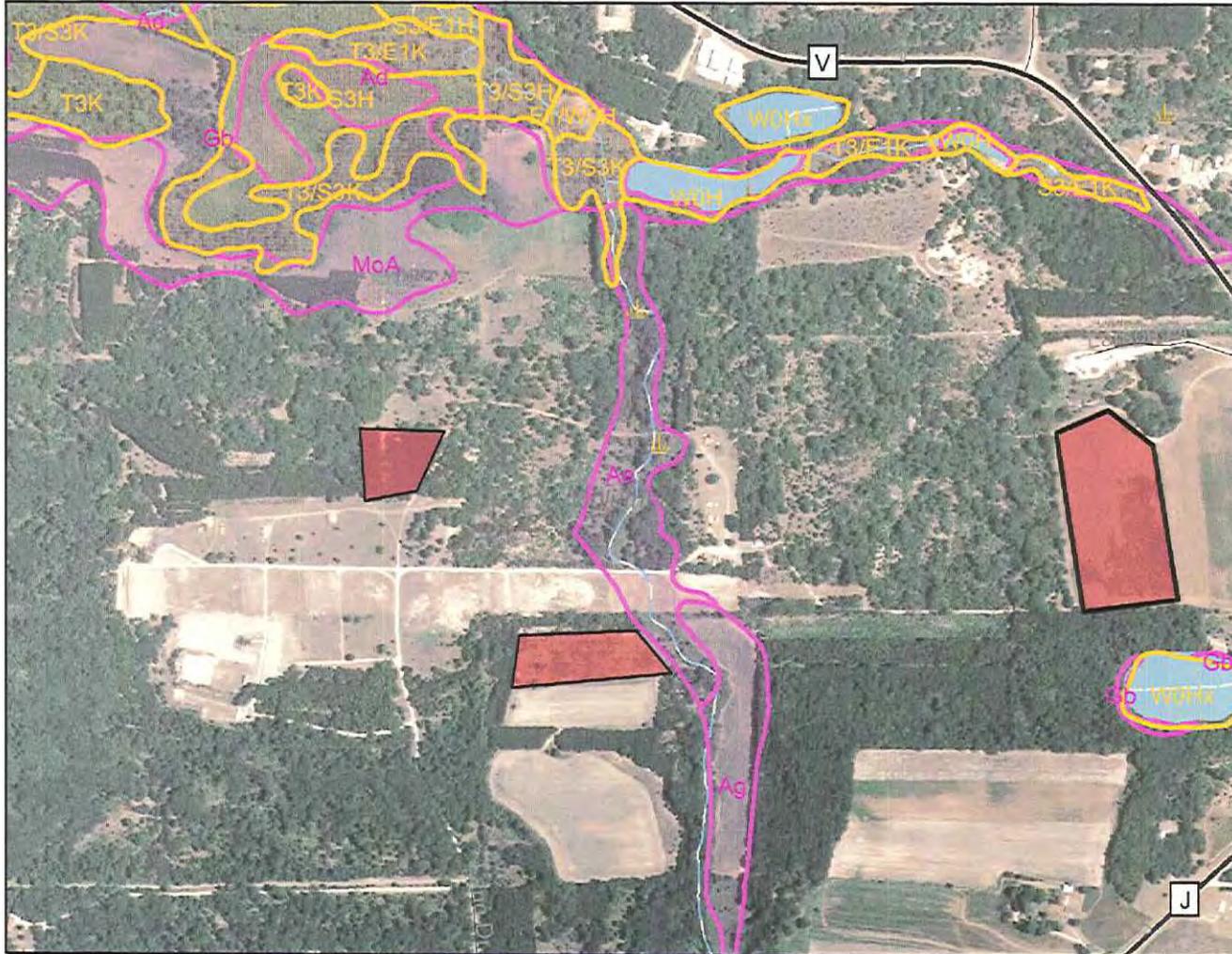
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This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Attachment 1

Map Created on Jul 13, 2009



**Legend**

- Major Highways**
  - Interstate
  - State Highway
  - U.S. Highways
  - County Roads
  - Local Roads
- Wetland Points**
  - Excavated Pond
  - Dammed Pond
  - Wetland Too Small to Delineate
  - Filled Excavated Pond
  - Filled Dammed Pond
  - Filled Wetland Too Small to Delineate
- Wetland Areas**
  - Upland
  - Filled or drained wetland
  - Wetland
- NRCS Wetland Soils**
- Rivers and Streams**
  - Intermittent
  - Fluctuating
  - Perennial
  - 24K Open Water
- County Boundary**
- Municipalities**
  - Village
  - City

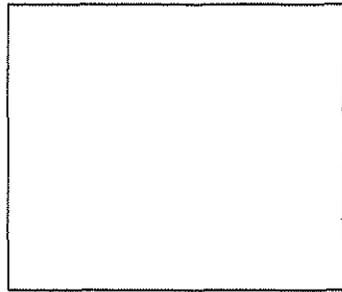
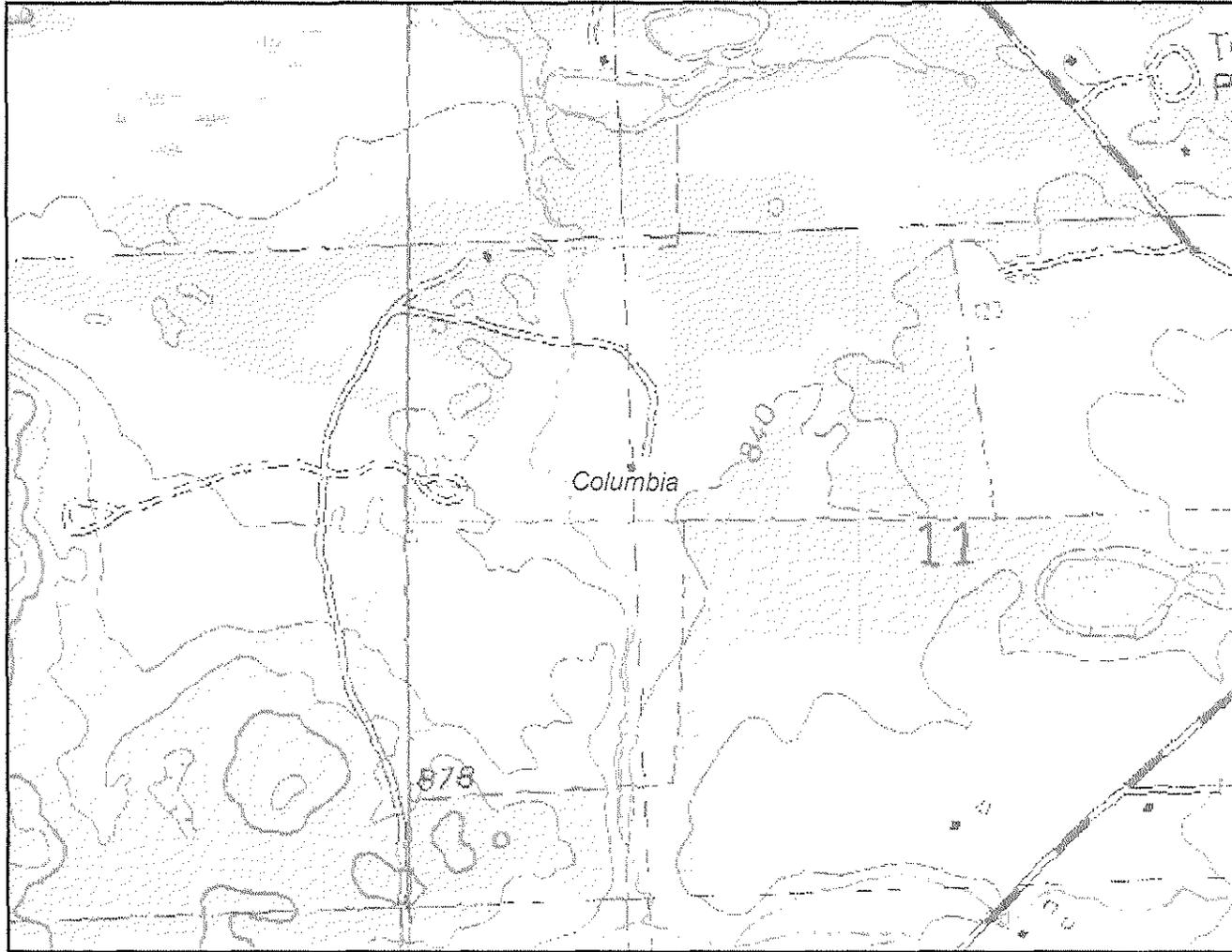
0 1000 2000 3000 ft.



Scale: 1:10,000

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# Disposal Site



## Legend

-  County Boundary
-  Municipalities
-  Village
-  City

0 1000 2000 3000 ft.

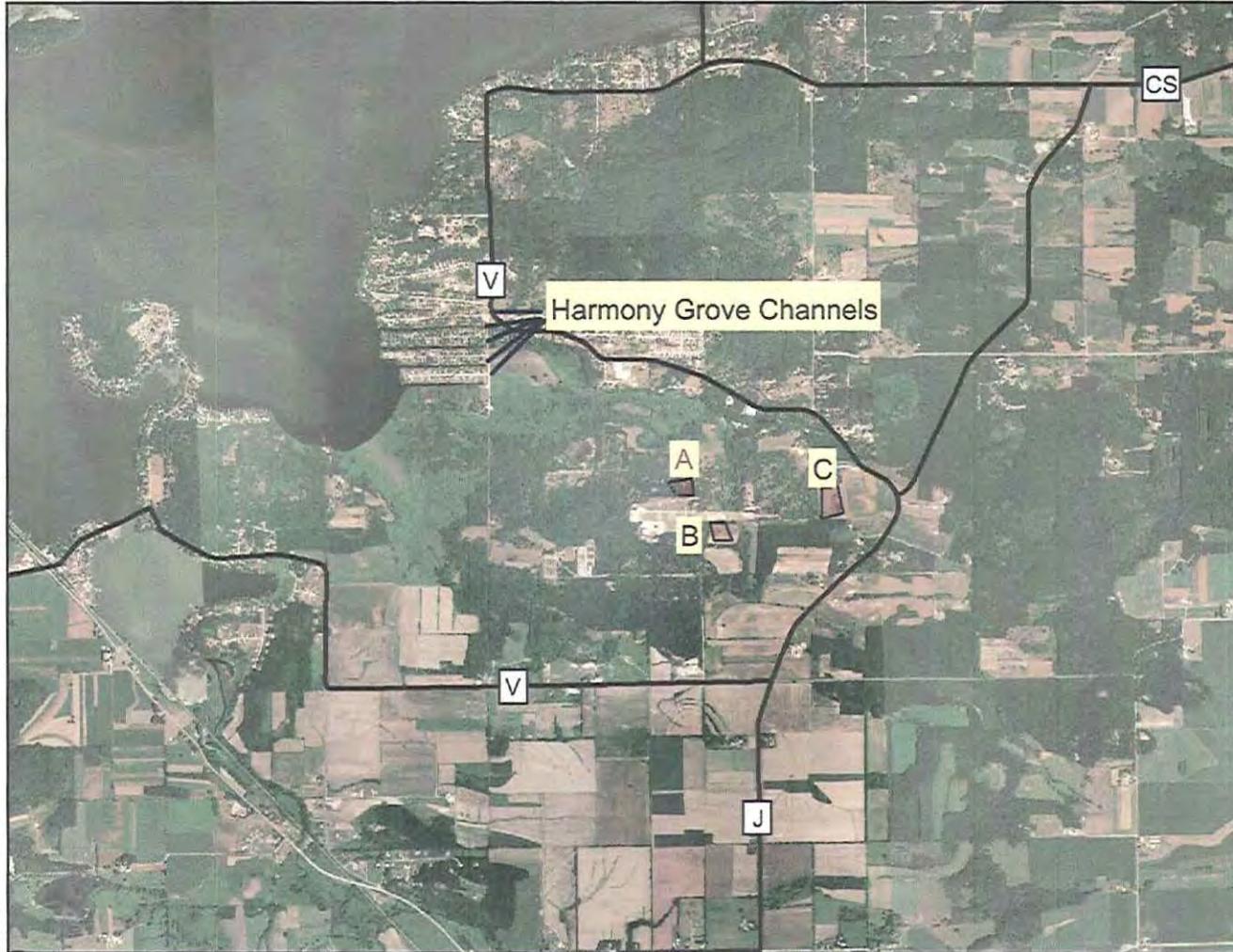


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Attachment 3

Map Created on Aug 11, 2009



- Legend**
- County Roads
  - County Boundary
  - Municipalities
  - Village
  - City

0 5000 10000 15000 ft.

Scale: 1:50,000

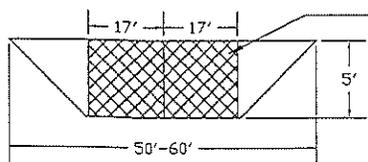
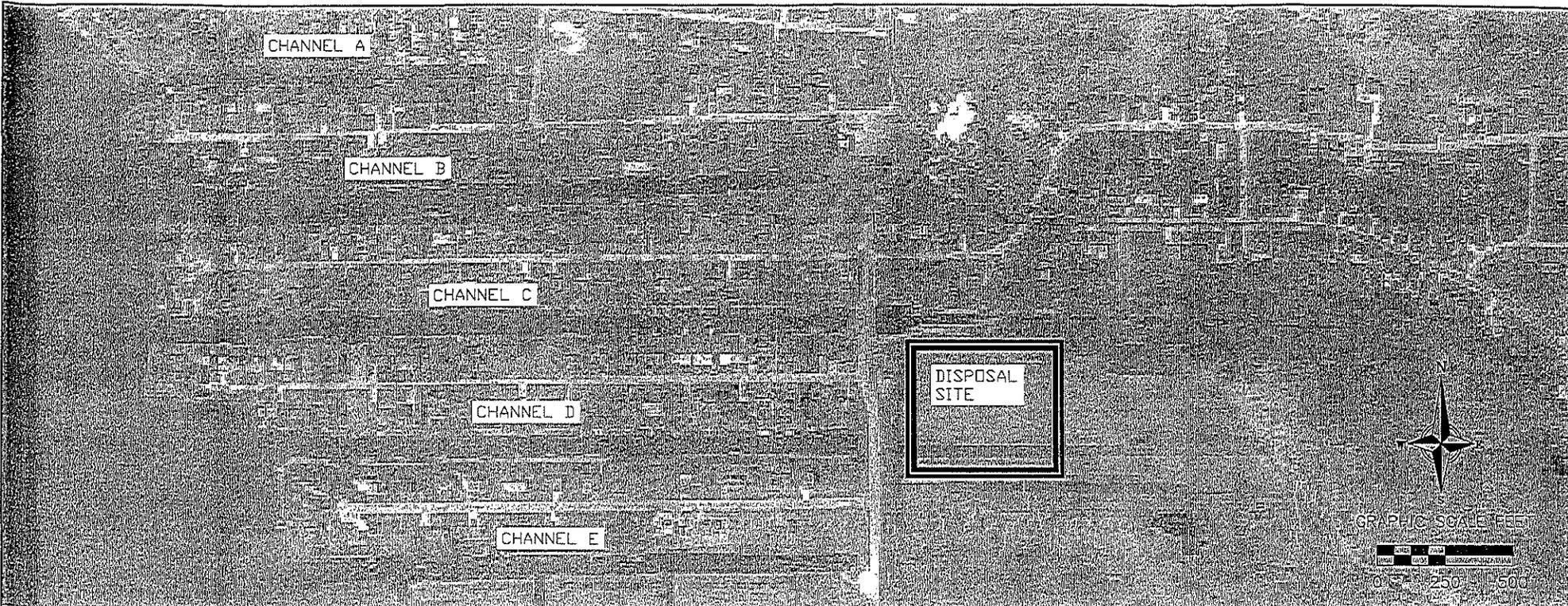
This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Notes: Harmony Grove Channels and Three Disposal Sites

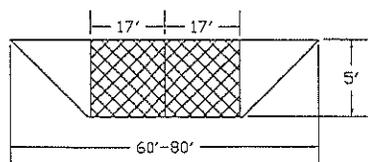
Attachment 4

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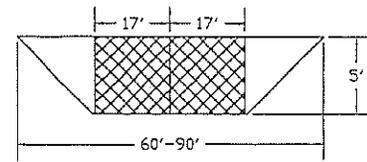
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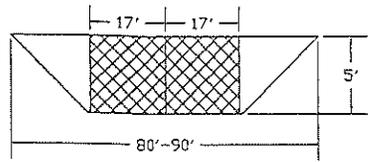
CHANNEL A CROSS SECTION



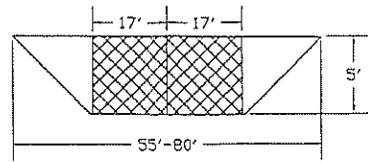
CHANNEL B CROSS SECTION



CHANNEL C CROSS SECTION



CHANNEL D CROSS SECTION



CHANNEL E CROSS SECTION

CHANNEL	WIDTH	LENGTH	MATERIAL VOLUME
A	50'-60'	1,400'	4,400 CY
B	60'-80'	2,360'	6,300 CY
C	60'-90'	2,570'	4,300 CY
D	80'-90'	2,120'	1,200 CY
E	55'-80'	2,090'	4,000 CY
<b>TOTAL DREDGED VOLUME</b>			<b>20,200 CY</b>

Revisions					
No.	Date	Remarks	No.	Date	Remarks



HARMONY GROVE NAVIGATION CHANNEL  
DREDGING  
HARMONY GROVE, WI

Drafter/Checker  
MWLC  
Scale

Project #  
Number  
Date

ATTACHMENT #5A

Sheet  
1

Drawing Number  
026076142

Figure 3. Location of sediment sampling points in the Harmony Grove channels



**Table 2. Results of sediment analyses performed in April 2005 from Channels A, B and C of Harmony Grove, Columbia, County, Wisconsin.**

Parameter	Units	LOD <sup>1</sup>	Pollutant concentration <sup>2</sup>	Channel A		Channel B		Channel C	
				Upper	Lower	Upper	Lower	Upper	Lower
Arsenic	mg/kg	5	41	ND	ND	ND	ND	ND	ND
Cadmium	mg/kg	0.6	39	ND	ND	ND	ND	ND	ND
Chromium	mg/kg	0.5	n/a	5.9	3.2	5.8	1.9	32.5	4.5
Copper	mg/kg	0.5	1500	2.7	2.0	4	1.4	18.3	2.1
Lead	mg/kg	3	300	ND	ND	4.0	ND	15.0	ND
Mercury	mg/kg	0.015	17	ND	ND	ND	ND	0.1	ND
Nickel	mg/kg	2	420	2.0	ND	3.0	ND	11.0	ND
Zinc	mg/kg	2	2800	6	4	10	3	44	4
Ammonia - nitrogen	mg/kg	0.16	n/a	9.7	3.6	26.6	4.9	81.3	5.7
Nitrate plus nitrite - nitrogen	mg/kg	0.25	n/a	0.3	0.5	0.6	ND	2.0	ND
Total Kjeldahl nitrogen	mg/kg	n/a	n/a	380	<230	1840	<230	5260	727
Total phosphorus	mg/kg	9.9	n/a	111	57.9	343	47.9	484	87.1
Total organic carbon	ug/g	1650	n/a	6760	2510	39000	ND	54800	6100
Percent Solids (SLOH)	%	0	n/a	72.1	75.2	31.5	78.2	31.6	73.8
Percent Solids (Badger Labs)	%	0.1	n/a	65.6	72.5	73	74	24.1	66.1
Volatile Solids	%	0.1	n/a	2.1	0.84	0.75	0.46	13.1	2.7

<sup>1</sup> Limit of Detection

<sup>2</sup> Concentration limit for pollutant for sludge to be considered high quality.

n/a = not applicable

ND = not detected

**Table 3. Results of sediment analyses performed in April 2005 from Channels D and E of Harmony Grove, Columbia, County, Wisconsin.**

Parameter	Units	LOD <sup>1</sup>	Pollutant concentration <sup>2</sup>	Channel D		Channel E	
				Upper	Lower	Upper	Lower
Arsenic	mg/kg	5	41	ND	ND	15	ND
Cadmium	mg/kg	0.6	39	ND	ND	ND	ND
Chromium	mg/kg	0.5	n/a	2.2	1.7	27.9	2.4
Copper	mg/kg	0.5	1500	1.7	1.4	10.1	0.8
Lead	mg/kg	3	300	ND	ND	8	ND
Mercury	mg/kg	0.015	17	ND	ND	0.022	ND
Nickel	mg/kg	2	420	ND	ND	10	ND
Zinc	mg/kg	2	2800	3	3.0	21	4.0
Ammonia - nitrogen	mg/kg	0.16	n/a	4.7	1.7	43	2.2
Nitrate plus nitrite - nitrogen	mg/kg	0.25	n/a	ND	ND	n/a	0.4
Total Kjeldahl nitrogen	mg/kg	n/a	n/a	<230	<230	5030	<230
Total phosphorus	mg/kg	9.9	n/a	66.5	54.8	297	54.0
Total organic carbon	ug/g	1650	n/a	3960	ND	52900	ND
Percent Solids (SLOH)	%	0	n/a	73.9	79.4	29.8	79.7
Percent Solids (Badger Labs)	%	0.1	n/a	75.5	74.1	28	73.7
Volatile Solids	%	0.1	n/a	0.35	0.2	17.2	0.3

<sup>1</sup> Limit of Detection

<sup>2</sup> Concentration limit for pollutant for sludge to be considered high quality.

n/a = not applicable

ND = not detected