Ohio EPA
40 years and moving forward
John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

Re: Sandusky County
Village of Woodville
NPDES Permit 2PB00052

January 9, 2013

Mayor & Council
Village of Woodville
530 Lime Street
P.O. Box 156
Woodville, Ohio 43469

Dear Mayor & Council:

On August 16, 2012, a Compliance Evaluation Inspection (CEI) was conducted at the Woodville wastewater treatment plant (WWTP). Mr. Keith Kruse, Village Administrator, and Mr. Ben Gittus, Operator, were present and provided information on the sewerage system and WWTP operations.

The purpose of the inspection was to evaluate compliance with the terms and conditions of your National Pollutant Discharge Elimination System (NPDES) permit and to evaluate the operation and maintenance of the plant. The following items were noted during the inspection:

- The two lagoon cells are being operated in series. Two of four aerators were in use in each lagoon cell.
- Barley straw is used to help control algae growth. The straw is typically replaced twice per year in the spring and fall. Enclosed is a copy of the Ohio State University Extension Fact Sheet: Algae Control with Barley Straw, for your reference.
- The final effluent being discharged had a green/brown cast due to algae.
- The sewer separation project to eliminate the combined sewer overflows (CSOs) as per the Village of Woodville's Combined Sewer Overflow Long-Term Control Plan (LTCP) has been completed. The Village has sent a letter to all property owners with information regarding connection to the new sanitary sewer, to be completed by June 15, 2013.

A review of your monthly discharge monitoring reports (DMRs) has also been conducted. A list of permit violations (June 2010 thru November 2012) is enclosed.

Review of your DMRs for the six month period ending in September 2012 indicates that you were in significant non-compliance (SNC) with Total Suspended Solids, E.coli and the Mercury effluent limitations contained in your NPDES permit. A facility becomes SNC when it exceeds the effluent limit for four or more months in two consecutive quarters or exceeds the effluent limit significantly in any two months in two consecutive quarters.

Please respond within 30 days of receipt of this letter, with how the Village proposes to return to compliance. Your written response should include the dates, either actual or proposed, for completion of the actions.

NPDES Permit Part I, C - Schedule of Compliance: Post-Construction Compliance Monitoring Part B.1.b., indicates the following:

> *b. No later than September 1, 2011, the permittee shall submit for acceptance two copies of a post-construction compliance monitoring plan. This plan shall be adequate to determine whether the goals for each project or group of projects implemented have been met, to evaluate the performance of each project in the LTCP separately, and to evaluate whether the goals of the LTCP have been achieved system wide.*

Please note that we have not yet received the "post construction compliance monitoring plan" as required by Part B.1.b. **This plan needs to be submitted as soon as possible, but no later than June 1, 2013**.

Please be advised that failure to comply with the effluent limitations and/or monitoring requirements, including adequate laboratory controls, appropriate quality assurance procedures, and records retention, as specified in your Part III-General Conditions of your NPDES permit, may be cause for enforcement action pursuant to Ohio Revised Code (ORC) Chapter 6111. If these violations continue to occur and if satisfactory progress is not made, it may be necessary to initiate enforcement action to achieve compliance.

Our completed inspection report form is enclosed for your review. If there are any questions, please contact Mary Beth Cohen at (419) 373-3014.

Yours truly,

Elizabeth A. Wick, P.E.
Environmental Engineer/Section Manager
Division of Surface Water

MBC/jlm

Enclosures

pc: Keith Kruse, Village Administrator

ec: Tracking

NPDES COMPLIANCE INSPECTION REPORT

Section A: National Data System Coding

Permit #	NPDES	Yr/Mo/Day	Inspection Type	Inspector	FacType
2PB00052	OH0020591	2012/08/16	C	S	1

Section B: Facility Data

Name and Location of Facility Inspected	Entry Time	Permit Effective Date
Village of Woodville WWTP 530 Lime Street P.O. Box 156 Woodville, Ohio 43469	9:30 a.m.	August 1, 2008
	Exit Time	**Permit Expiration Date**
	1:30 p.m.	July 31, 2013

Name(s) and Title(s) of On-Site Representative(s)	Phone Number(s)
Keith Kruse, Village Administrator Ben Gittus, Operator	419-849-3031

Name, Address and Title of Responsible Official	Phone Number
Mayor & Council, Village of Woodville 219 W. Main Street Woodville, OH 43469	419-849-2731

Section C: Areas Evaluated During Inspection
(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)

M Permit	S Flow Measurement	N Pretreatment
S Records/Reports	N Laboratory	S Compliance Schedules
S Operations & Maintenance	N Effluent/Receiving Waters	S Self-Monitoring Program
S Facility Site Review	N Sludge Storage/Disposal	___ Other
N Collection System		

Section D: Summary of Findings/Comments (Attach additional sheets if necessary)

- Sewer separation has been completed and the Village has sent a letter to all property owners with information regarding connection to the new sanitary sewer, to be completed by June 15, 2013.
- Barley straw is in use to help control algae growth. The straw is typically replaced twice per year in the spring and fall.
- The final effluent being discharged had a green/brown cast due to algae.

Mary Beth Cohen 1/7/13, Ohio EPA, Northwest District Office
Name(s) and Signature(s) of Inspector(s) Date

Thomas Poffenbarger, P.E. 1/7/13, Ohio EPA, Northwest District Office
Name and Signature of Reviewer Date

Village of Woodville 2PB00052 Effluent Violations

June 2010 thru November 2012

Reporting Period	Reporting Code	Parameter	Limit Type	Limit	Reported Value	Violation Date
June 2010	00530	Total Suspended Solids	30D Conc	25	26.	6/1/2010
June 2010	00530	Total Suspended Solids	30D Qty	28	42.2022	6/1/2010
June 2010	00530	Total Suspended Solids	7D Qty	40	53.4858	6/1/2010
June 2010	00530	Total Suspended Solids	7D Qty	40	44.5248	6/8/2010
June 2010	00530	Total Suspended Solids	7D Qty	40	44.2504	6/15/2010
July 2010	00530	Total Suspended Solids	30D Conc	25	30.25	7/1/2010
July 2010	00530	Total Suspended Solids	30D Qty	28	39.6403	7/1/2010
July 2010	00530	Total Suspended Solids	7D Conc	35	49.	7/8/2010
July 2010	00530	Total Suspended Solids	7D Qty	40	66.5705	7/8/2010
October 2010	50060	Chlorine, Total Residu	1D Conc	0.038	.085	10/25/2010
October 2010	00300	Dissolved Oxygen	1D Conc	5.0	3.8	10/25/2010
December 2010	00530	Total Suspended Solids	30D Conc	25.0	25.125	12/1/2010
February 2011	80082	CBOD 5 day	30D Qty	17.0	21.5881	2/1/2011
February 2011	00530	Total Suspended Solids	7D Qty	40.0	57.7856	2/22/2011
February 2011	80082	CBOD 5 day	7D Qty	26.0	42.5773	2/22/2011
March 2011	00530	Total Suspended Solids	30D Qty	28.0	45.8415	3/1/2011
March 2011	00530	Total Suspended Solids	7D Qty	40.0	64.5702	3/1/2011
March 2011	80082	CBOD 5 day	30D Qty	17.0	18.2293	3/1/2011
March 2011	80082	CBOD 5 day	7D Qty	26.0	30.6814	3/1/2011
March 2011	50092	Mercury, Total (Low Le	30D Qty	0.0000	.00002	3/1/2011
March 2011	00530	Total Suspended Solids	7D Qty	40.0	56.0104	3/8/2011
April 2011	00530	Total Suspended Solids	30D Qty	28.0	64.4793	4/1/2011
April 2011	80082	CBOD 5 day	30D Qty	17.0	24.8023	4/1/2011
April 2011	00530	Total Suspended Solids	7D Qty	40.0	48.3552	4/8/2011
April 2011	00530	Total Suspended Solids	7D Qty	40.0	110.909	4/15/2011
April 2011	80082	CBOD 5 day	7D Qty	26.0	42.6742	4/15/2011
April 2011	00530	Total Suspended Solids	7D Qty	40.0	72.1988	4/22/2011
May 2011	00530	Total Suspended Solids	30D Conc	25.0	28.875	5/1/2011
May 2011	00530	Total Suspended Solids	30D Qty	28.0	105.631	5/1/2011
May 2011	00530	Total Suspended Solids	7D Qty	40.0	102.265	5/1/2011
May 2011	80082	CBOD 5 day	30D Qty	17.0	39.8297	5/1/2011
May 2011	80082	CBOD 5 day	7D Qty	26.0	33.9362	5/1/2011
May 2011	31648	E. coli	30D Conc	126	278.222	5/1/2011
May 2011	00530	Total Suspended Solids	7D Qty	40.0	41.6255	5/8/2011
May 2011	00530	Total Suspended Solids	7D Qty	40.0	122.565	5/15/2011
May 2011	80082	CBOD 5 day	7D Qty	26.0	59.9646	5/15/2011
May 2011	31648	E. coli	7D Conc	284	2297.82	5/15/2011
May 2011	00530	Total Suspended Solids	7D Conc	35.0	47.5	5/22/2011
May 2011	00530	Total Suspended Solids	7D Qty	40.0	156.068	5/22/2011
May 2011	80082	CBOD 5 day	7D Qty	26.0	43.3383	5/22/2011
May 2011	31648	E. coli	7D Conc	284	1649.24	5/22/2011
June 2011	00530	Total Suspended Solids	30D Conc	25.0	34.875	6/1/2011
June 2011	00530	Total Suspended Solids	30D Qty	28.0	65.2832	6/1/2011
June 2011	00530	Total Suspended Solids	7D Qty	40.0	113.532	6/1/2011
June 2011	80082	CBOD 5 day	30D Qty	17.0	21.3986	6/1/2011
June 2011	80082	CBOD 5 day	7D Qty	26.0	36.5835	6/1/2011
June 2011	50092	Mercury, Total (Low Le	30D Conc	8.9	9.28	6/1/2011
June 2011	50092	Mercury, Total (Low Le	30D Qty	0.0000	.00002	6/1/2011

Reporting Period	Reporting Code	Parameter	Limit Type	Limit	Reported Value	Violation Date
June 2011	00530	Total Suspended Solids	7D Conc	35.0	35.3333	6/8/2011
June 2011	00530	Total Suspended Solids	7D Qty	40.0	46.0962	6/8/2011
June 2011	31648	E. coli	7D Conc	284	547.722	6/8/2011
June 2011	00530	Total Suspended Solids	7D Conc	35.0	37.	6/15/2011
June 2011	00530	Total Suspended Solids	7D Qty	40.0	51.1353	6/15/2011
June 2011	00530	Total Suspended Solids	7D Conc	35.0	36.	6/22/2011
June 2011	00530	Total Suspended Solids	7D Qty	40.0	54.6402	6/22/2011
August 2011	00530	Total Suspended Solids	30D Qty	28.0	47.4719	8/1/2011
August 2011	00530	Total Suspended Solids	7D Qty	40.0	94.0534	8/1/2011
August 2011	80082	CBOD 5 day	7D Qty	26.0	42.5386	8/1/2011
August 2011	31648	E. coli	7D Conc	284	924.662	8/1/2011
August 2011	00530	Total Suspended Solids	7D Qty	40.0	46.1050	8/22/2011
September 2011	00530	Total Suspended Solids	30D Qty	28.0	28.0742	9/1/2011
September 2011	00530	Total Suspended Solids	7D Qty	40.0	56.1769	9/8/2011
January 2012	00530	Total Suspended Solids	30D Conc	25.0	32.375	1/1/2012
January 2012	00530	Total Suspended Solids	30D Qty	28.0	54.5451	1/1/2012
January 2012	80082	CBOD 5 day	30D Qty	17.0	17.3802	1/1/2012
January 2012	00530	Total Suspended Solids	7D Conc	35.0	41.5	1/15/2012
January 2012	00530	Total Suspended Solids	7D Qty	40.0	106.191	1/15/2012
January 2012	80082	CBOD 5 day	7D Qty	26.0	32.3808	1/15/2012
January 2012	00530	Total Suspended Solids	7D Qty	40.0	57.8877	1/22/2012
February 2012	00530	Total Suspended Solids	30D Conc	25.0	31.625	2/1/2012
February 2012	00530	Total Suspended Solids	30D Qty	28.0	43.5710	2/1/2012
February 2012	00530	Total Suspended Solids	7D Qty	40.0	50.8704	2/1/2012
February 2012	80082	CBOD 5 day	30D Conc	15.0	15.0481	2/1/2012
February 2012	80082	CBOD 5 day	30D Qty	17.0	20.1560	2/1/2012
February 2012	00530	Total Suspended Solids	7D Conc	35.0	38.	2/15/2012
February 2012	00530	Total Suspended Solids	7D Qty	40.0	42.0608	2/15/2012
February 2012	00530	Total Suspended Solids	7D Conc	35.0	38.	2/22/2012
February 2012	00530	Total Suspended Solids	7D Qty	40.0	46.0104	2/22/2012
March 2012	00530	Total Suspended Solids	30D Conc	25.0	31.625	3/1/2012
March 2012	00530	Total Suspended Solids	30D Qty	28.0	51.4570	3/1/2012
March 2012	00530	Total Suspended Solids	7D Qty	40.0	43.3817	3/1/2012
March 2012	80082	CBOD 5 day	30D Qty	17.0	19.7570	3/1/2012
March 2012	00530	Total Suspended Solids	7D Qty	40.0	45.4048	3/8/2012
March 2012	00530	Total Suspended Solids	7D Conc	35.0	38.	3/15/2012
March 2012	00530	Total Suspended Solids	7D Qty	40.0	94.1367	3/15/2012
March 2012	80082	CBOD 5 day	7D Qty	26.0	27.4193	3/15/2012
April 2012	00530	Total Suspended Solids	30D Conc	25.0	41.125	4/1/2012
April 2012	00530	Total Suspended Solids	30D Qty	28.0	28.3425	4/1/2012
April 2012	00530	Total Suspended Solids	7D Conc	35.0	43.	4/8/2012
April 2012	00530	Total Suspended Solids	7D Conc	35.0	45.5	4/15/2012
April 2012	00530	Total Suspended Solids	7D Conc	35.0	46.5	4/22/2012
May 2012	00530	Total Suspended Solids	30D Conc	25.0	43.125	5/1/2012
May 2012	00530	Total Suspended Solids	7D Conc	35.0	47.5	5/1/2012
May 2012	00530	Total Suspended Solids	30D Qty	28.0	50.8685	5/1/2012
May 2012	00530	Total Suspended Solids	7D Qty	40.0	42.0797	5/1/2012
May 2012	00530	Total Suspended Solids	7D Conc	35.0	44.5	5/8/2012
May 2012	00530	Total Suspended Solids	7D Qty	40.0	92.1836	5/8/2012

Woodville 2PB00052 Effluent Violations

Reporting Period	Reporting Code	Parameter	Limit Type	Limit	Reported Value	Violation Date
May 2012	80082	CBOD 5 day	7D Qty	26.0	28.4435	5/8/2012
May 2012	31648	E. coli	7D Conc	284	435.889	5/8/2012
May 2012	00530	Total Suspended Solids	7D Conc	35.0	38.	5/15/2012
May 2012	00530	Total Suspended Solids	7D Conc	35.0	42.5	5/22/2012
June 2012	00530	Total Suspended Solids	30D Conc	25.0	46.5	6/1/2012
June 2012	00530	Total Suspended Solids	7D Conc	35.0	64.5	6/1/2012
June 2012	00530	Total Suspended Solids	30D Qty	28.0	32.5353	6/1/2012
June 2012	00530	Total Suspended Solids	7D Qty	40.0	56.2469	6/1/2012
June 2012	31648	E. coli	7D Conc	284	335.410	6/1/2012
June 2012	50092	Mercury, Total (Low Le	30D Conc	8.9	13.6	6/1/2012
June 2012	50092	Mercury, Total (Low Le	30D Qty	0.0000	.00001	6/1/2012
June 2012	00530	Total Suspended Solids	7D Conc	35.0	43.5	6/8/2012
June 2012	31648	E. coli	7D Conc	284	504.975	6/8/2012
June 2012	00530	Total Suspended Solids	7D Conc	35.0	37.	6/15/2012
June 2012	00530	Total Suspended Solids	7D Conc	35.0	41.	6/22/2012
July 2012	00530	Total Suspended Solids	30D Conc	25.0	48.125	7/1/2012
July 2012	00530	Total Suspended Solids	7D Conc	35.0	42.5	7/1/2012
July 2012	00530	Total Suspended Solids	7D Conc	35.0	47.	7/8/2012
July 2012	00530	Total Suspended Solids	7D Conc	35.0	52.	7/15/2012
July 2012	00530	Total Suspended Solids	7D Conc	35.0	51.	7/22/2012
August 2012	00530	Total Suspended Solids	30D Conc	25.0	43.	8/1/2012
August 2012	00530	Total Suspended Solids	7D Conc	35.0	57.	8/1/2012
August 2012	00530	Total Suspended Solids	30D Qty	28.0	32.2486	8/1/2012
August 2012	50092	Mercury, Total (Low Le	30D Conc	8.9	15.4	8/1/2012
August 2012	00530	Total Suspended Solids	7D Conc	35.0	36.	8/8/2012
August 2012	00530	Total Suspended Solids	7D Conc	35.0	37.5	8/15/2012
August 2012	00530	Total Suspended Solids	7D Conc	35.0	41.5	8/22/2012
September 2012	00530	Total Suspended Solids	30D Conc	25.0	28.75	9/1/2012
September 2012	00530	Total Suspended Solids	30D Qty	28.0	31.8181	9/1/2012
September 2012	00530	Total Suspended Solids	7D Qty	40.0	41.6179	9/1/2012
October 2012	31648	E. coli	7D Conc	284	1187.43	10/1/2012
October 2012	31648	E. coli	7D Conc	284	3346.64	10/22/2012

THE OHIO STATE UNIVERSITY EXTENSION

Extension FactSheet

A-12-02

School of Natural Resources, 2021 Coffey Road, Columbus, OH 43210-1085

Algae Control with Barley Straw

William E. Lynch Jr.
Extension Associate, Aquatic Ecosystem Management

Filamentous algae is the most common aquatic weed problem in Ohio ponds. Its "sudden" appearance as it floats off the bottom causes consternation to pond owners as it degrades the aesthetic and recreational value of their ponds. Additionally, large amounts of filamentous algae can lead to a fish kill if specific climatic conditions occur (see Ohio State University Extension Fact Sheet A-8-01, *Winter & Summer Fish Kills*). A number of mechanical, biological, and chemical control measures are available, each with their own advantages and disadvantages. A review of these measures can be found in Ohio State University Extension Fact Sheet A-3-98, *Controlling Filamentous Algae in Ponds*.

Barley straw has received considerable attention as an algaecide based on research done in England. Results showed that barley straw prohibits the growth of many types of algae, but not all. ***However, recent research in the United States has not yielded conclusively positive results.*** While research results are inconclusive, the use of barley straw to control pond algae has grown. The purpose of this fact sheet is to provide pond owners with application guidelines ***should they decide to try barley straw as an algae control technique.***

How Barley Straw May Work

The decomposition of barley straw in water produces and releases many compounds, one of which *may* control algae populations. The chemical compound does not eliminate existing algae cells but interferes with and prevents the growth of new algae cells. As "old" algae cells naturally die off, few new algae cells are produced and the algae population is controlled as long as the compound is being produced.

There are a number of other types of straws available, including wheat, linseed, and oil seed. However, research in England has shown that barley straw is the most effective straw and provides control for a longer period of time.

Note: pond owners should use dried straw, not barley hay or fresh barley. The addition of those materials actually releases nitrogen and phosphorus into the water which promotes algae growth. These fresher materials also decompose very quickly and can cause low oxygen problems in ponds.

How Much to Apply

The amount of straw to apply is based on pond surface area rather than volume (for calculation tips, see Ohio State University Extension Fact Sheet A-2-98, *Pond Measurements*). It is generally recommended that about 0.025 pounds of straw be used for every square yard of pond surface area. In a small ornamental pond of four square yards (about 100 square feet), only 0.01 pounds is needed. In a one-acre pond, the amount required would be about 107 pounds of straw or 2-3 standard bales. In a pond with a history of algae problems, a higher initial amount of 225 pounds per surface acre may be warranted.

How and Where to Apply

The production of the critical compound during straw decomposition must occur in the presence of oxygenated water. In small ornamental ponds, simply place the small amount required loosely in a mesh bag and place in the water. A weight of some sort should be added so the bag is on the pond bottom.

In larger ponds, more effort is needed. Each bale should be broken up as much as possible so that nearly all decomposition will occur in the presence of oxygen. About 1/3 of a bale should be placed in a large, weighted permeable bag of some sort. If an intact bale is placed in the pond, only the decomposition occurring along the outside of the bale will occur in the presence of oxygen. Decomposition inside the "tight" bales will occur in the absence of oxygen and will not produce the chemical. In a one-acre pond, this will result in 6-9 loosely filled separate

bags. These bags containing loose straw should be placed around the perimeter of the pond in water no deeper than 6 feet. Most algae production occurs in shallow water so the bulk of the control compound needs to be located there. Attaching a rope to each bag is advisable in order to retrieve the bags and replace the decomposed straw with fresh straw as needed.

When to Apply

Barley straw appears most effective when used to inhibit development of algae, but is apparently not effective in controlling existing algae. For this reason, barley straw should be placed in the pond in April for best results. As the pond water warms in May, filamentous algae growth and reproduction along the bottom can be explosive. Treatment after this period may not yield the desired control results. April treatment helps control algae growth during this critical May period.

Barley straw will fully decompose in about 4-6 months in Ohio's warm summers. If the barley straw decomposes completely before the end of July, substantial algae growth can still occur and may lead to an undesirable late summer situation. Therefore, in ponds with a history of algae problems, old straw should be replaced with fresh in mid-July. This may result in total seasonal control.

Advantages

Although the decomposition of barley straw produces a chemical to effect control, the chemical has not resulted in any documented ill effects to fish, waterfowl, or humans. The chemicals produced during this process are naturally occurring and are produced by the decomposition of any plant material in water. Many pond owners are reluctant to use manufactured chemicals in their ponds to control algae. Barley straw provides them with an alternative.

Another advantage is the slow decomposition process which provides for long-term control. Quite often, mechanical removal or herbicide control may have to occur frequently during the growing season. This can become physically exhaustive or expensive.

Disadvantages/Possible Remedies

Barley straw is not a "cure-for-all" to controlling filamentous algae in ponds. Several pond management concerns associated with barley straw need to be considered prior to its use.

- Barley straw will not control aquatic plants, such as pondweeds. In fact, barley straw may actually promote aquatic weed growth to nuisance levels. Barley straw may also control single-cell algae (phytoplankton) populations. This results in very clear water which allows for more sunlight to reach submerged plants, resulting in lush growth.
- Adding additional organic material to ponds carries the risk of a fish kill. Decaying vegetation, whether it be barley straw or aquatic plants, requires large amounts of oxygen. While the risk may be small, it could pose a problem for some ponds. In these situations, the pond owner may wish to consider installing an aerator to reduce this risk.

Regulatory Concerns

It is unlawful to sell barley straw if the seller claims that barley straw "controls" algae. This is because the words "controls algae" makes barley straw a pesticide from a legal perspective according to the U.S. EPA and is therefore subjected to all the rules associated with unregistered pesticides. Certified commercial applicators, lake management companies, and garden/nursery companies cannot legally sell barley straw if algae control claims are made.

The private pond owner is under no such regulatory obligation. In these instances, barley straw is considered to be a home remedy and is not subject to EPA regulations. People living along public lakes cannot use barley straw in front of their house as the lake is considered "public water" and falls under EPA regulations.

Reference

Newman, J. 1997. Control of Algae with Barley Straw. Information Sheet No. 3. Institute of Arable Crops Research, Center for Aquatic Plant Management. Berkshire, UK.

8/02-klw