



**Environmental
Protection Agency**

John R. Kasich, Governor

Mary Taylor, Lt. Governor

Scott J. Nally, Director

July 3, 2012

RE: GEAUGA COUNTY
HANS ROTHENBUHLER & SON
MIDDLEFIELD CHEESE
NPDES # 3IH00025*ED

Mr. Gary Schoenwald
Mar-Bal, Inc.
16930 Munn Road
Chagrin Falls, OH 44023-5495

Dear Mr. Schoenwald:

On June 7, 2012, I met with you and Mr. Gary Sloan to conduct an inspection of the wastewater treatment system serving Middlefield Cheese. The intent of the inspection was to review operations and maintenance of the treatment system and gather information needed to issue the renewal National Pollutant Discharge Elimination System (NPDES) permit. The inspection also evaluated the systems compliance with the current NPDES permit. The current NPDES permit for the above referenced facility will expire on September 30, 2012.

The facility manufactures cheese onsite. The facility currently discharges treated wastewater from a membrane filtration treatment system that includes grit removal, aerated lagoon, an auxiliary lagoon, post aeration, sludge lagoon and disinfection. The manufacturing facility includes cheese production operations and general office space located on one site.

The discharge from the facility includes sanitary wastewater and production wastewater from the cheese production process. The wastewater treatment system was producing a satisfactory quality effluent at the time of the inspection. Below are the findings and recommendations from the inspection:

INSPECTION

The wastewater treatment plant consists of a grit chamber, aeration lagoon, auxiliary lagoon, chemical phosphorus removal, membrane ultra-filtration, PH adjustment, post aeration, sludge lagoon and final discharge to East Tare Creek. The facility currently dilutes the effluent for temperature and total dissolved solids. The dilution water is obtained from wells and is stored in a dilution tank onsite. The amount of dilution water used is estimated to be 14,500 gpd (for 2011).

At the time of the inspection, all treatment units were in operation. All wastewater influent goes to the grit chamber. The grit chamber settles out the larger particles. The grit chamber is cleaned at least yearly and sometimes biannually. The grit chamber is provided with an overflow pipe to prevent overflows to the surrounding area.

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The aerated lagoon was full at the time of the inspection. The surface aerators appeared to be in satisfactory condition. The aerated lagoon is provided with an overflow which would discharge to the auxiliary lagoon. Ferrous chloride is injected at the effluent mixing basin for phosphorus removal. The auxiliary lagoon is used as backup and currently receives the decant from the sludge lagoon. The auxiliary lagoon is not aerated regularly and there are dead areas in the outer corners of the lagoon where sludge has begun accumulating.

The membrane ultra-filtration system consists of ZeeWeed zenon membrane bioreactor treatment units.

The membrane bioreactor system incorporates reinforced hollow fiber membranes specifically designed to meet the requirements of wastewater treatment. The treatment system is provided with blowers and permeate pumps. It is understood the recirculation flow from the membranes is directed to the aerated lagoon. The facility uses a SCADA program to determine replacement of each membrane unit. It is understood some of the membranes are original to the plant installation.

The effluent from the membranes is sampled before a point of dilution. The facility uses dilution water to assist in controlling specific conductivity, total dissolved solids and temperature. The point of dilution is located directly between effluent monitoring outfall 601 and final effluent monitoring outfall 001. The dilution is provided through a small diameter flexible PVC pipe hooked up to a dosing pump. The final effluent from the treatment system appeared to be in satisfactory condition.

The sludge lagoon is located north west of the wastewater treatment units. The facility land applies sludge, per the NPDES permit outfall 581. The decant from the sludge lagoon is directed to the auxiliary lagoon. On occasion, the facility can pump from the sludge lagoon to the aerated lagoon.

A storm retention basin is located adjacent to the sludge lagoon. The storm retention basin collects storm water runoff from the facility.

NPDES PERMIT

Discharge Monitoring Report (DMR) data submitted to this office between January 1, 2008 and June 1, 2012, was reviewed for compliance with the NPDES permit. A summary of discharge violations and frequency violations has been attached to this letter.

A waste load allocation (WLA) was prepared by this office to evaluate the existing discharge monitoring report (DMR) data for the NPDES permit. The waste load allocation was prepared for ammonia, dissolved oxygen, and total dissolved solids.

The WLA recommends a lower ammonia limit at outfall 601 than is currently in the NPDES permit. After further review by this office, it appears there was an error in the previous permit cycle and the summer and winter limits may have been switched. The updated ammonia limit, for summer, shall be 1.0mg/l (average)/1.5 mg/l (maximum). According to the DMR data reviewed, the facility should be capable of meeting the updated limit.

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The WLA has recommended the current total dissolved solids monitoring to remain the same. The specific conductivity shall also remain the same. The data collected from specific conductivity is used to evaluate the total dissolved solids and also the dilution rate effectiveness.

During the inspection, the facility inquired about updating some monitoring requirements at outfall 001. The facility has expressed a concern that the specific conductivity at outfall 001 does not seem relevant since the specific conductivity is also collected at outfall 601. As mentioned above, this office is not prepared to remove specific conductivity from outfall 601. The information collected from this sample is used in evaluating total dissolved solids.

The facility has expressed a concern regarding the summer monitoring months for temperature. The current NPDES permit contains temperature monitoring requirements at outfall 001 that include summer monitoring months of June through September. The facility is having difficulty managing temperatures in May and October. The facility has routinely gone above the current maximum of 23^o C in May and October.

The facility has requested the following:

- 1) Remove specific conductivity from outfall 001; and
- 2) Update temperature so that summer includes May and October. Currently, the summer monitoring months for temperature range from June to September.

Adjusting the summer monitoring months to include May and October would change the maximum and minimum temperatures to 30^oC. Based on the waste load allocation prepared by this office, the NPDES permit can be adjusted to include May and October in the summer monitoring months.

STORM WATER COVERAGE

The facility does not qualify for a no exposure certificate and therefore will be subject to the storm water permit requirements in the permit. The storm water coverage shall be included in the renewal NPDES permit. The stormwater language that will be included in the individual permit will be located in Parts 4, 5 & 6 of the NPDES permit.

FACILITY UPDATES

It is understood the facility is running low on the water supply for the dilution water. Recently, the facility has added a booster pump to the well water supply for the dilution water. This has increased the dilution water supply by 25%. During the current drought conditions, the facility is struggling to maintain a steady dilution water supply. As such, the facility is interested in possibly expanding the size of old lagoon #4 (not in use) to use for water storage. This office recommends looking at potential sources of dissolved solids at the facility. Cleaners used at the processing operation could be causing heavy total dissolved solids getting through to the wastewater plant.

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This office has recently become aware of potential plans for the facility to update the wastewater treatment system to include spray irrigation. It was noted the facility is running low on dilution water supply. and could possibly run Please note, a Permit to Install (PTI) and an NPDES permit modification would be required prior to beginning spray irrigation. The following information is available regarding spray irrigation and some requirements this office has for spray irrigation:

NPDES permit forms:

<http://www.epa.ohio.gov/dsw/permits/npdesform.aspx>

Permit to Install forms:

<http://www.epa.ohio.gov/dsw/pti/PTIForms.aspx>

SUMMARY

In summary, the following items have been addressed and will be updated:

- 1) The summer monitoring months in the renewal NPDES permit shall be updated to include May and October. Therefore, the renewal NPDES permit shall include summer monitoring months of May through October;
- 2) The specific conductivity monitoring at outfall 601 shall remain the same;and
- 3) The total dissolved solids monitoring at outfall 001 shall remain the same.

Your NPDES permit will be public noticed in the near future. Once the permit is public noticed, you will have 30 days to make any comments. If you have any questions or comments regarding this letter, please contact this office at (330) 963-1299.

Respectfully,



Laura A. Weber, P.E.
Environmental Engineer
Division of Surface Water

LAW:bo

pc: Geauga County Health Department

File: Hans Rothenbuhler & Son 3IH00025

HANS ROTHENBUHLER, MIDDLEFIELD CHEESE DMR
VIOLATION SUMMARY (1/1/08-6/1/12)

DISCHARGE MONITORING VIOLATIONS

Reporting Period	Station	Reporting Code	Parameter	Limit Type	Limit	Reported Value	Violation Date
June 2008	001	00610	Nitrogen, Ammonia (NH3)	30D Conc	2.0	7.50125	6/1/2008
June 2008	001	00610	Nitrogen, Ammonia (NH3)	30D Qty	1.82	6.5736	6/1/2008
June 2008	001	00665	Phosphorus, Total (P)	30D Conc	1.0	4.0175	6/1/2008
June 2008	001	00665	Phosphorus, Total (P)	30D Qty	0.91	3.43838	6/1/2008
June 2008	001	00610	Nitrogen, Ammonia (NH3)	1D Conc	4.0	30.2	6/12/2008
June 2008	001	00610	Nitrogen, Ammonia (NH3)	1D Qty	3.64	26.2848	6/12/2008
June 2008	001	00665	Phosphorus, Total (P)	1D Conc	1.5	14.5	6/12/2008
June 2008	001	00665	Phosphorus, Total (P)	1D Qty	1.37	12.6202	6/12/2008
June 2008	001	00610	Nitrogen, Ammonia (NH3)	1D Conc	4.0	24.2	6/13/2008
June 2008	001	00610	Nitrogen, Ammonia (NH3)	1D Qty	3.64	21.0627	6/13/2008
May 2009	001	00665	Phosphorus, Total (P)	1D Conc	1.5	1.84	5/5/2009
June 2009	001	00610	Nitrogen, Ammonia (NH3)	30D Conc	2.0	6.02125	6/1/2009
June 2009	001	00610	Nitrogen, Ammonia (NH3)	30D Qty	1.82	4.53789	6/1/2009
June 2009	001	80082	CBOD 5 day	30D Conc	10.5	15.2857	6/1/2009
June 2009	001	80082	CBOD 5 day	1D Conc	22.8	39.	6/10/2009
June 2009	001	80082	CBOD 5 day	1D Conc	22.8	51.	6/11/2009
June 2009	001	80082	CBOD 5 day	1D Qty	20.8	30.4532	6/11/2009
June 2009	001	00610	Nitrogen, Ammonia (NH3)	1D Conc	4.0	6.16	6/17/2009
June 2009	001	00610	Nitrogen, Ammonia (NH3)	1D Qty	3.64	3.77293	6/17/2009
June 2009	001	00610	Nitrogen, Ammonia (NH3)	1D Conc	4.0	7.22	6/18/2009
June 2009	001	00610	Nitrogen, Ammonia (NH3)	1D Qty	3.64	6.0192	6/18/2009
June 2009	001	00610	Nitrogen, Ammonia (NH3)	1D Conc	4.0	15.4	6/24/2009
June 2009	001	00610	Nitrogen, Ammonia (NH3)	1D Qty	3.64	12.3904	6/24/2009
June 2009	001	00610	Nitrogen, Ammonia (NH3)	1D Conc	4.0	14.5	6/25/2009
June 2009	001	00610	Nitrogen, Ammonia (NH3)	1D Qty	3.64	11.6488	6/25/2009
October 2009	001	00010	Water Temperature	30D Conc	20	20.525	10/1/2009
October 2009	001	00515	Residue, Total Dissolv	1D Conc	1500	3260.	10/6/2009
October 2009	001	00515	Residue, Total Dissolv	1D Qty	1370	2653.52	10/6/2009
October 2009	001	00515	Residue, Total Dissolv	1D Conc	1500	3280.	10/7/2009
October 2009	001	00515	Residue, Total Dissolv	1D Qty	1370	2657.63	10/7/2009
October 2009	001	00515	Residue, Total Dissolv	1D Conc	1500	3250.	10/13/2009
October 2009	001	00515	Residue, Total Dissolv	1D Qty	1370	1901.77	10/13/2009
October 2009	001	00515	Residue, Total Dissolv	1D Conc	1500	3380.	10/14/2009
October 2009	001	00515	Residue, Total Dissolv	1D Conc	1500	3210.	10/20/2009
October 2009	001	00515	Residue, Total Dissolv	1D Qty	1370	1892.82	10/20/2009
October 2009	001	00515	Residue, Total Dissolv	1D Conc	1500	3120.	10/21/2009
October 2009	001	00515	Residue, Total Dissolv	1D Qty	1370	1999.29	10/21/2009

October 2009	001	00515	Residue, Total Dissolv	1D Conc	1500	3190.	10/22/2009
October 2009	001	00515	Residue, Total Dissolv	1D Qty	1370	2198.58	10/22/2009
October 2009	001	00010	Water Temperature	1D Conc	23	24.1	10/23/2009
October 2009	001	00515	Residue, Total Dissolv	1D Conc	1500	3230.	10/23/2009
October 2009	001	00515	Residue, Total Dissolv	1D Qty	1370	3185.00	10/23/2009
November 2009	001	00515	Residue, Total Dissolv	1D Conc	1500	3180.	11/3/2009
November 2009	001	00515	Residue, Total Dissolv	1D Qty	1370	1694.22	11/3/2009
November 2009	001	00515	Residue, Total Dissolv	1D Conc	1500	3150.	11/4/2009
November 2009	001	00515	Residue, Total Dissolv	1D Qty	1370	2529.53	11/4/2009
November 2009	001	00515	Residue, Total Dissolv	1D Conc	1500	3210.	11/10/2009
November 2009	001	00515	Residue, Total Dissolv	1D Qty	1370	3030.17	11/10/2009
November 2009	001	00515	Residue, Total Dissolv	1D Conc	1500	3260.	11/11/2009
November 2009	001	00515	Residue, Total Dissolv	1D Qty	1370	2979.76	11/11/2009
November 2009	001	00515	Residue, Total Dissolv	1D Conc	1500	3211.	11/17/2009
November 2009	001	00515	Residue, Total Dissolv	1D Qty	1370	2730.67	11/17/2009
November 2009	001	00515	Residue, Total Dissolv	1D Conc	1500	3200.	11/18/2009
November 2009	001	00515	Residue, Total Dissolv	1D Qty	1370	2729.56	11/18/2009
November 2009	001	00515	Residue, Total Dissolv	1D Conc	1500	2310.	11/24/2009
November 2009	001	00515	Residue, Total Dissolv	1D Qty	1370	1389.23	11/24/2009
November 2009	001	00515	Residue, Total Dissolv	1D Conc	1500	2820.	11/25/2009
November 2009	001	00515	Residue, Total Dissolv	1D Qty	1370	2298.90	11/25/2009
				30D			
April 2010	601	00610	Nitrogen, Ammonia (NH3	Conc	2.0	3.64	4/1/2010
April 2010	601	00610	Nitrogen, Ammonia (NH3	30D Qty	1.82	3.36499	4/1/2010
April 2010	601	00610	Nitrogen, Ammonia (NH3	1D Conc	4.0	6.56	4/27/2010
April 2010	601	00610	Nitrogen, Ammonia (NH3	1D Qty	3.64	7.44814	4/27/2010
April 2010	601	00610	Nitrogen, Ammonia (NH3	1D Conc	4.0	6.9	4/28/2010
April 2010	601	00610	Nitrogen, Ammonia (NH3	1D Qty	3.64	7.02168	4/28/2010
May 2010	601	00610	Nitrogen, Ammonia (NH3	1D Conc	4.0	8.61	5/5/2010
May 2010	601	00610	Nitrogen, Ammonia (NH3	1D Qty	7.27	8.53665	5/5/2010
May 2010	601	00610	Nitrogen, Ammonia (NH3	1D Conc	4.0	9.58	5/6/2010
May 2010	601	00610	Nitrogen, Ammonia (NH3	1D Qty	7.27	10.0513	5/6/2010
May 2010	601	00610	Nitrogen, Ammonia (NH3	1D Conc	4.0	5.94	5/13/2010
May 2010	601	00610	Nitrogen, Ammonia (NH3	1D Conc	4.0	5.38	5/14/2010
May 2010	601	00610	Nitrogen, Ammonia (NH3	1D Conc	4.0	4.71	5/21/2010
May 2010	601	00610	Nitrogen, Ammonia (NH3	1D Conc	4.0	8.89	5/27/2010
May 2010	601	00610	Nitrogen, Ammonia (NH3	1D Conc	4.0	8.81	5/28/2010
June 2010	601	00610	Nitrogen, Ammonia (NH3	1D Conc	4.0	22.9	6/6/2010
June 2010	601	00610	Nitrogen, Ammonia (NH3	1D Qty	7.27	20.7434	6/6/2010
June 2010	601	00610	Nitrogen, Ammonia (NH3	1D Conc	4.0	24.7	6/7/2010
June 2010	601	00610	Nitrogen, Ammonia (NH3	1D Qty	7.27	19.6767	6/7/2010
July 2010	901	00095	Specific Conductance a	1D Conc	2400	3153.	7/9/2010
July 2010	901	00095	Specific Conductance a	1D Conc	2400	2487.	7/18/2010
July 2010	901	00095	Specific Conductance a	1D Conc	2400	2625.	7/19/2010
July 2010	901	00095	Specific Conductance a	1D Conc	2400	2461.	7/23/2010
August 2010	901	00095	Specific Conductance a	1D Conc	2400	2428.	8/19/2010
August 2010	901	00095	Specific Conductance a	1D Conc	2400	2441.	8/20/2010
August 2010	901	00095	Specific Conductance a	1D Conc	2400	2529.	8/21/2010
August 2010	901	00095	Specific Conductance a	1D Conc	2400	2698.	8/29/2010

August 2010	901	00095	Specific Conductance a	1D Conc 30D	2400	2575.	8/30/2010
October 2011	001	00010	Water Temperature	Conc	20	25.65	10/1/2011
October 2011	001	00010	Water Temperature	1D Conc	23	26.3	10/4/2011
October 2011	001	00010	Water Temperature	1D Conc	23	27.2	10/5/2011
October 2011	001	00010	Water Temperature	1D Conc	23	27.9	10/11/2011
October 2011	001	00010	Water Temperature	1D Conc	23	28.1	10/12/2011
October 2011	001	00010	Water Temperature	1D Conc	23	24.3	10/18/2011
October 2011	001	00010	Water Temperature	1D Conc	23	24.3	10/19/2011
October 2011	001	00010	Water Temperature	1D Conc	23	23.4	10/25/2011
October 2011	001	00010	Water Temperature	1D Conc	23	23.7	10/26/2011
February 2012	601	80082	CBOD 5 day	1D Conc	22.8	26.	2/1/2012
February 2012	601	80082	CBOD 5 day	1D Qty	20.8	29.6017	2/1/2012
May 2012	901	00095	Specific Conductance a	1D Conc	2400	2435.	5/28/2012

FREQUENCY VIOLATIONS

Reporting Period	Station	Reporting Code	Parameter	Sample Frequency	Expected	Reported	Violation Date
October 2009	001	80082	CBOD 5 day	2/Week	2	1	10/1/2009
October 2009	001	80082	CBOD 5 day	2/Week	2	1	10/8/2009
October 2009	001	80082	CBOD 5 day	2/Week	2	1	10/15/2009
October 2009	001	80082	CBOD 5 day	2/Week	2	1	10/22/2009
October 2009	001	00665	Phosphorus, Total (P)	2/Week	2	1	10/1/2009
October 2009	001	00665	Phosphorus, Total (P)	2/Week	2	1	10/8/2009
October 2009	001	00665	Phosphorus, Total (P)	2/Week	2	1	10/15/2009
October 2009	001	00665	Phosphorus, Total (P)	2/Week	2	1	10/22/2009
November 2009	001	80082	CBOD 5 day	2/Week	2	1	11/1/2009
November 2009	001	80082	CBOD 5 day	2/Week	2	1	11/8/2009
November 2009	001	00665	Phosphorus, Total (P)	2/Week	2	1	11/1/2009
November 2009	001	00665	Phosphorus, Total (P)	2/Week	2	1	11/8/2009