

Statement of Basis

Aitkin agri-peat, Inc. – Cromwell Location
1303 Peat Plant Road
Cromwell, MN 55726
NPDES/SDS Permit No. MN0055662

Facility Description

The principal activity at this facility is the mining of peat (fibric sphagnum and hemic reed-sedge) for horticultural uses, at a maximum rate of 130,000 cubic yards per year. The facility consists of all mine excavation areas, mining waste disposal areas, plant areas and non-sewage wastewater disposal systems within the area designated on the attached map.

A system of field ditches and drainage ditches within the facility drains ground water and surface runoff to ditches outside the facility. Field ditches are spaced at 60-100 meters and average 1.3 meters deep. That portion of the facility north of the Burlington Northern railroad tracks drains to a ditch that parallels the tracks on the north side and flows to the west. Outfall SD-002 (formerly known as 040) is located in this westward flowing ditch, at the westernmost boundary of the facility, in the SE $\frac{1}{4}$, SW $\frac{1}{4}$, NW $\frac{1}{4}$, of Section 5. This same ditch continues to flow westward until it discharges to the Kettle River (Class 2B, 3C, 4A, 4B, 5, 6 water) in the SE $\frac{1}{4}$, NE $\frac{1}{4}$, of Section 6. Outfall SD-002 has average and maximum flows of 2.2 and 4.3 million gallons per day (MGD), respectively.

Milled peat is excavated, stockpiled and transported to the process plant, in the NW $\frac{1}{4}$, NW $\frac{1}{4}$, of Section 4, where it is screened, ground, and bagged. The process waste, which consists mainly of woody and fibrous material, is disposed of onsite or used as road material in the facility. A second shop and equipment storage area is located north of the Burlington Northern railroad tracks, in the NW $\frac{1}{4}$, SW $\frac{1}{4}$, of Section 4. Drainage from both plant/shop/equipment areas is routed to the SD-002 outfall ditch. Sewage generated at the facility is disposed of through a septic tank/drainfield system.

The Permittee is proposing to construct two sedimentation basins to be located near the plant area of the site to provide better treatment for the discharge from SD-002. One sedimentation basin will provide treatment for the sphagnum peat mining area and the other will provide treatment for the sedge peat mining area. Mining from the area that drains to SD-002 has ceased and is undergoing reclamation. Once reclamation is complete, it will be necessary to relocate the outfall to better obtain representative samples from the mined areas. A new outfall, SD-003, will be created approximately $\frac{3}{4}$ miles to the east of SD-002 and will be used to collect samples after the sedimentation basins. Outfall SD-002 will be inactivated and monitoring at that location will cease. If, in the future, mining becomes active in the area formerly monitored by SD-002, the Permittee is required to notify the MPCA and the outfall will become reactivated.

The portion of the facility south of the Burlington Northern railroad tracks drains to a ditch that flows south along the boundary between Section 8 and 9. Outfall SD-001 (formerly known as 030) is located in this ditch, at the southernmost boundary of the facility, at the southeastern most corner of Section 8. The same ditch continues to flow southward until it discharges to Kettle Lake (Class 2B, 3C, 4A, 4B, 5, 6 water) in the NE $\frac{1}{4}$ of Section 20. Outfall SD-001 is permitted for average and maximum flows of 1.8 and 3.5 MGD, respectively. Kettle Lake supports the growth of wild rice.

Mining in the area of SD-001 has ceased and the area is in the process of reclamation. Once the area is fully reclaimed, outfall SD-001 will be inactivated and monitoring will no longer be required. If the area

becomes actively mined in the future, the Permittee is required to notify the MPCA and monitoring will resume at SD-001.

Monitoring station SW-001 (formerly known as 701) is located on an unnamed ditch tributary to Annamahasing Creek on the east side of Olesiak Road, approximately 0.4 miles north of Highway 210. Monitoring station SW-002 (formerly known as 703) is located approximately 120 feet west of the eastern boundary of Section 17, in the ditch parallel to the north side of the road through the middle of the section. Monitoring station SW-003 (formerly known as 704) is located on the Kettle River, on the west side of Kettle Lake Road, approximately 1.1 miles south of Highway 210. Stations SW-001 is an upstream station and SW-002 and SW-003 are downstream of the facility discharges.

State Water Discharge Restrictions

Requirements that must be met by dischargers to waters of the state of Minnesota are detailed in Minnesota Rules Chapter 7053. The MPCA may develop effluent limitations based on Minnesota state water discharge criteria, Minnesota state water quality standards for the receiving water use classification, federal technology-based treatment standards applicable to specific discharge types, or combination of these standards to regulate discharge of wastewater. In addition, MPCA may derive standards that are specific to a particular discharge. These standards may be based on toxicity studies, professional judgment analysis, technology based standards, and in some instances, standards developed by other U.S. states or regulatory agencies.

The effluent limit for total suspended solids (TSS) is a state water discharge restriction based on Minnesota Rules 7053.0225 and 7053.0215. The calendar month average effluent limit for TSS is 30 mg/L and the daily maximum effluent limit is 45 mg/L.

Water Quality Based Effluent Limitations

The effluent limitations of 6.5 – 8.5 SU for pH are based on state water quality standards for unlisted waters. Unlisted waters, in accordance with Minnesota Rules Chapter 7050.0430 have a default use classification of 2B, 3C, 4A, 4B, 5, and 6. The pH effluent limitations for SD-001, SD-002 and SD-003 were set in accordance with Minnesota Rules Chapter 7050.0222 Subpart 4 for the lower pH limit of 6.5 and 7050.0224 Subpart 2 for the upper pH limit of 8.5.

The effluent limitation for total phosphorus at SD-001 is a water quality based effluent limit based on Minnesota Rule 7053.0255 subp. 3.a.(1) which states that phosphorus removal to 1.0 mg/L is required when the discharge of effluent is directly to or affects a lake, shallow lake or reservoir. Because the discharge of SD-001 is to a ditch which flows directly to Kettle Lake, the 1.0 mg/L total phosphorus effluent limitation applies to the discharge. Discharge SD-002 and the replacement outfall, SD-003, flow to the Kettle River, therefore the effluent limitation for total phosphorus does not apply. Monitoring without effluent limits is required for SD-002 and SD-003.

The facility discharges are located upstream of Lake St. Croix which is on the impaired waters list for eutrophication due to excess nutrients (phosphorus). A total maximum daily load (TMDL) study for this impairment is near completion and a draft waste load allocation of 594 kg/year total phosphorus has been developed. The permit contains an annual phosphorus limit of 594 kg/year for SD-002 in the interim, and SD-003 once outfall SD-001 and SD-002 have been eliminated.

The current waste load allocation and associated annual phosphorus limit of 594 kg/year may be subject to modification once the Lake St. Croix TMDL is approved by EPA. Although the Permittee can easily meet the recommended annual phosphorus limit, it should be aware that this limit is subject to change.

The effluent limit of 25 NTU for turbidity is a water quality based effluent limit based on Minnesota Rule 7050.0222 Subpart 4. Monitoring over the past three years indicate that turbidity values in the discharge at SD-002 have occasionally exceeded the standard of 25 NTU. The background and downstream values did not exceed the standard. Due to the potential for exceedance of the standard, it is recommended to keep the monthly average limit of 25 NTU in the permit for SD-001, SD-002 (while active) and SD-003 (when activated)

Other Pollutants of Concern

Mercury

Effluent data for total mercury was reviewed for permit reissuance. The Agency reviewed data collected by the Permittee during the previous permit cycle which used the high-level detection method EPA 245. This method is outdated and the detection level is not low enough to get accurate results. Reported mercury concentrations in the discharge were an order of magnitude greater than the limit of 0.007 µg/L required by the current permit as well as the current standard of 0.0069 µg/L (dissolved). The Agency does not have confidence in the data collected by the Permittee. Collecting mercury samples involves a specialized procedure and the Permittee likely did not have any training on how to properly collect the sample.

MPCA Staff were unable to find justification in the previous permit to support a mercury effluent limitation. At the time of the previous permit issuance there was no data available to conduct a reasonable potential analysis. Reasonable potential is a procedure specified by EPA regulation that compares preliminary effluent limits for a pollutant with effluent monitoring data to determine the need for an effluent limitation. Federal regulations at 40 CFR § 122.44(d)(1) require that pollutants be evaluated for the potential to cause or contribute to an excursion of water quality standards ("Reasonable Potential") using acceptable technical procedures accounting for variability in the effluent. Without a reasonable potential analysis, it would not be possible to assign an effluent limit. It appears the mercury limit was placed in the current permit without data to support the need for effluent limits.

It is recommended that the mercury limit be removed during this permit cycle and monitoring be continued twice per year at SD-001, SD-002 (while active) and SD-003 (when activated), as well as SW-001 (background monitoring location). The draft permit requires mercury samples to be collected twice per year during the life of the permit using EPA's low-level detection method 1631. The samples are required to be collected by a qualified third party professional using EPA "clean-sampling" method 1669 at SD-001, SD-002, SD-003 and SW-001. The MPCA will evaluate mercury data throughout the life of the permit as it is submitted by the Permittee. Upon permit reissuance, the data collected throughout the life of the permit will be evaluated to conduct a reasonable potential analysis. If necessary, the permit may be reopened by the MPCA based on mercury data received pursuant to Minn. R. 7001.0170.

Removal of the mercury limit is justified under the Clean Water Act Section 402(2)(B)(ii) which states in part "a permit may be reissued to contain a less stringent effluent limitation applicable to a pollutant if the Administrator determines that technical mistakes or mistaken interpretations of the law were made". The mercury limit appears to have been required in the previous permit without data to support the limit. This is considered a technical mistake and anti-backsliding does not apply for removal of this limit.

The Agency needs better data to determine reasonable potential. By requiring facilities to collect data using qualified third parties as well as the current low-level detection method, the Agency will have better data that can be used to determine reasonable potential with a higher confidence level.

Kettle River Mercury TMDL

The Kettle River is listed on the 303d list of impaired waters and has been identified as being impaired for mercury. At this time, no work has been completed on the Kettle River TMDL and a waste load allocation for mercury has not been established. The waste load allocation for mercury will be considered for permit limits once it has been determined. The scheduled date for completion of the Kettle River TMDL is unknown. Work conducted for the Kettle River TMDL will be considered for future permit reissuances.

Specific Conductance

Specific conductance is an indicator pollutant used to monitor potential changes in the watershed over time. Monitoring for specific conductance is required once per month between the months of April – October.

Removal of Previous Limits and Monitoring Requirements

Ammonia & Un-ionized Ammonia

Low pH and temperature in the receiving waters resulted in a low un-ionized fraction of the total ammonia that is generally below the water quality standard of 0.04 mg/L. There is no reasonable potential for ammonia or unionized ammonia to contribute to an exceedance of water quality standards. Removal of limits and monitoring for ammonia and un-ionized ammonia is recommended.

Temperature

Based on monitoring results collected in previous permits, there is no appreciable effect of the discharge on receiving water temperatures. It is recommended that monitoring for temperature be removed in the reissued permit.

Aluminum & Iron

Natural background concentrations exceed effluent concentrations for aluminum and iron. If the background concentration information had been available in previous permit reissuances, no effluent limits would have been required for these parameters. None of the downstream reaches are impaired for aluminum or iron. It is recommended that limits and monitoring for aluminum and iron be removed from the reissued permit.

Industrial Stormwater Requirements

On April 5, 2010, the Industrial Stormwater General Permit (MNR050000) was issued. This permit addresses stormwater discharges associated with industrial activity for facilities that discharge stormwater to waters of the state, including Municipal Separate Storm Sewer Systems. The General Permit also addressed stormwater discharges associated with industrial activities at facilities that provide on-site infiltration of industrial stormwater discharges associated with the facility.

For both industrial and municipal wastewater facilities, in lieu of obtaining coverage under both the General Permit and the individual NPDES permit, the MPCA has added the necessary industrial stormwater requirements language and limits and monitoring to this permit so that coverage under this NPDES permit alone will cover both permits. An additional discharge station (SD-004) has been created

with an intervention limit of 100 mg/L as required by the sector specific requirement for peat mines contained in the general permit, and a Discharge Monitoring Report is required to be submitted by the Permittee annually for this monitoring. There is also an Industrial Stormwater Chapter specific to peat mining facilities as part of this permit.

Chemical Additives

No chemical additives are used at the site.

Nondegradation

In accordance with MPCA rules regarding nondegradation for all waters that are not Outstanding Resource Value Waters, nondegradation review is required for any new or expanded significant discharge (Minn. R. 7050.0185). A significant discharge is 1) a new discharge (not in existence before January 1, 1988) that is greater than 200,000 gallons per day to any water other than a Class 7 water or 2) an expanded discharge that expands by greater than 200,000 gallons per day that discharges to any water other than a Class 7 water or 3) a new or expanded discharge containing any toxic pollutant at a mass loading rate likely to increase the concentration of the toxicant in the receiving water by greater than one percent over the baseline quality. The flow rate used to determine significance is the design **maximum daily** flow. The January 1, 1988, design **maximum daily** flow for this facility is 4.3 mgd.

This Permit also complies with Minn. R. 7053.0275 regarding anti-backsliding.

Any point source discharger of sewage, industrial, or other wastes for which a NPDES permit has been issued by the MPCA that contains effluent limits more stringent than those that would be established by parts 7053.0215 to 7053.0265 shall continue to meet the effluent limits established by the permit, unless the Permittee establishes that less stringent effluent limits are allowable pursuant to federal law, under section 402(o) of the Clean Water Act, United States Code, title 33, section 1342.

Prepared by:

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